



Intergraph Smart Completions Help

Hexagon Documentation

Welcome to Smart Completions

Intergraph Smart® Completions creates a foundation of information with traceability and accountability for custody, control and work processes providing seamless transitions to operations and maintenance. Manage all your projects, large or small, by enabling your organization to effectively plan, prepare and execute a project.

Smart Completions is used on some of the largest mega-projects throughout the world with exceptional performance and results. It is a reliable and predictable system, designed to achieve owners' goals.

Smart Completions is designed to consolidate asset information and verify installation, testing and performance of all equipment, instruments, piping and Control System IO points. The flexible foundation provides projects the tools needed to track all facets to ensure system integrity and deliver the end product that meet ISO specifications or higher standards. Smart Completions, the "plant and project life-cycle" application suite includes:

- Completions & Commissioning Management System
- Operability Development Management System
- Safety & Risk Management System
- Turnaround Management System



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If you're using the new interface, check out these topics:

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- [Search options](#)
- [How to use the breadcrumb navigation?](#)
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- [Role Management](#)
- [User Management](#)

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[Hexagon Policy Against Software Piracy](#)

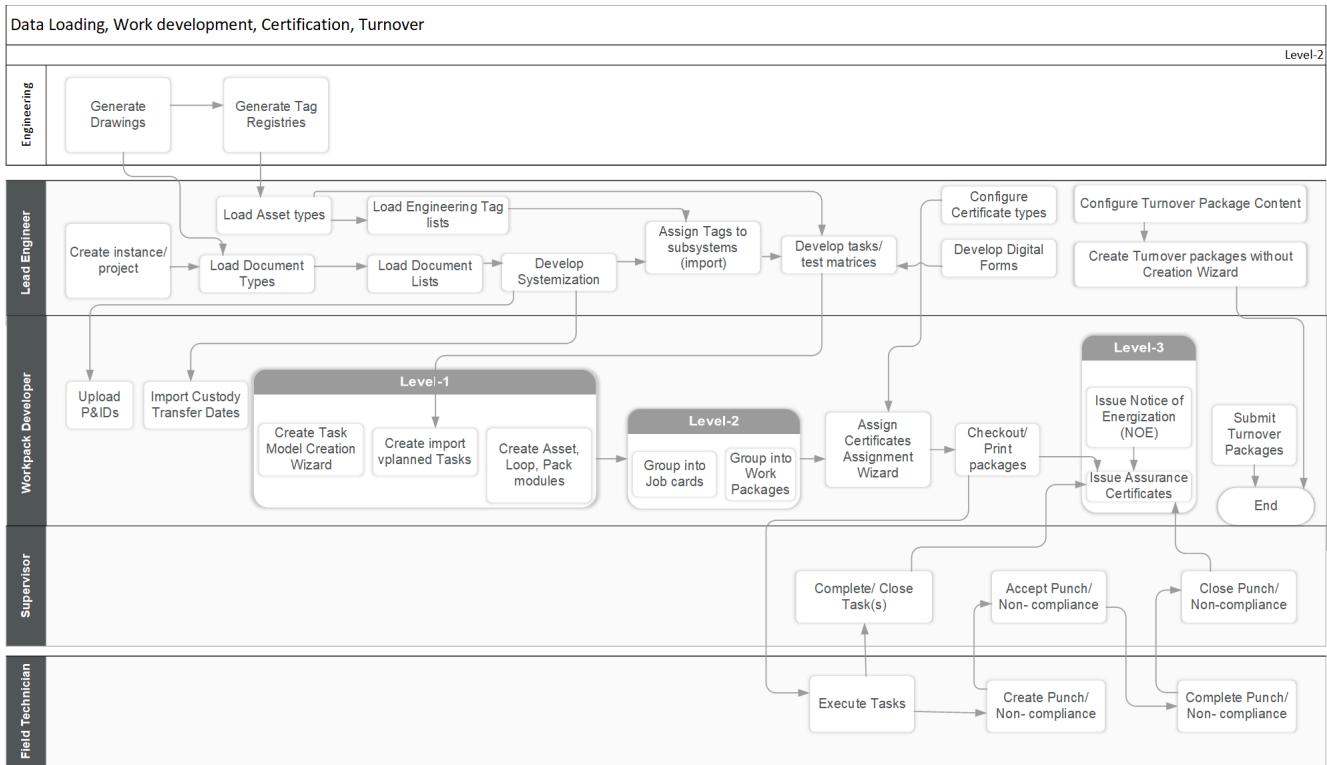
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Intergraph Smart Completions Update 2

Published Thursday, September 5, 2024 at 9:55 AM

Smart Completions Overview

The Smart Completions software suite is comprised of a complete set of Construction, Mechanical Completion and Commissioning managers designed to manage planning and work activities from early engineering stages through startup and turnover to operations. It is designed to manage one or multiple projects all within one database.



'Typical' Implementation Process:

- Step 1: Import Engineering Data, Define WBS, Systemization, Location, Structures, and Role Profiles & Rights assignments to Users.
- Step 2: Develop Task Models, Test Profiles, and Format Test Forms.
- Step 3: Configure TOP requirements, Perform PCA, and Enter RFIs.
- Step 4: Batch Assign Tasks, Define TOP Packages & Content Requirements.
- Step 5: Develop Job Cards, Schedule JCs and Complete Baseline S-Curves.
- Step 6: Perform Resource loading vs. Workload Requirement Analysis.
- Step 7: Execute Work Packs, Track Punchlist Items and track custody transfer of Subsystems and Systems, Generate "Completions" reporting.

The following list of questions is intended to find out if the database is ready for population and end users ready to use the product. Often circumstances do not allow for this to happen so it is therefore important that these items are acted upon and completed ASAP.

Browser Requirements:

- Do end users have Edge or greater or Chrome installed?
- Do end users have a PDF viewer on their machines?
- Does the project want to use mobile solution?

Database Requirements:

- Where is the database going to be located? Hosted in Data Center or Client Network?
- Who is going to maintain the data?

Access Requirements:

- How many users are going to use the CCMS on the project?
- Are all users located on the same network, or will access the CCMS from different networks?
- Does IS&T block all sites, but specified sites?
- Does data from each company need to only be accessed by that company? Or is information shared among companies?
- Does the project want to implement user profiles or granular role strategy?
- Do you have a list of users and their associated responsibilities?

Project Status and Responsibilities:

- What is the target commissioning and C&SU dates?
- What is the total CAPEX budget for the project?
- Where do they stand % complete in Detailed Design?
- Where do they stand % construction completion?
- Is there a responsibility Matrix developed for the project?

Project Data Requirements:

- Does the project have a Process Breakdown Structure (PBS) - Systemization.?

- Does the project have a Locational Breakdown Structure (LBS)?
- What is the established Work Breakdown Structure (WBS)?
- Is the equipment, instrument/loop, cable, line / valve list available and IFC status or greater?
- Is there a master document list available?
- Does the project want to put the latest approved version of documents into the database (pdf)?
- Does each discipline leads have a "test profile" for tag types (i.e. classes) available?
- Does the project have forms they want to upload into the CCMS? Are they in Word format?
- Does the project want to use paper or digital only approach, or combination thereof?
- Has Punchlist list Categories or Priorities been determined?
- Has the project defined the different handover packages, and content requirements?
- Are vendors going to use the system, and if so, do you have their forms and test profiles?

The typical inputs and outputs of a CCMS are:

Items we typically import into the database are (in .xls, .xlsx, .csv):

- Mechanical Equipment List
- Electrical Equipment List
- Instrument Index
- Cable Schedule
- Piping & Valve List
- I/O list
- Document List

Optional items that can be imported:

- Work Breakdown Structure (WBS)
- Process Breakdown Structure (PBS)
- Location Breakdown Structure (LBS)
- Activity List from the Master Schedule (e.g. P6 or Project Schedule)

The Smart Completions database is an advanced database that has over a 1,000 tables and 10,000's of fields. To illustrate at a high level, diagram below will show how the use of common core data structures can link most information together in Smart Completions. By linking this information it dramatically simplifies usage while improves searching, reporting and handover of information.

Terms & Definitions

Term	Definition
Carry-Over-Work (COW)	Carry-Over-Work (COW) item is work that has not been completed at the fabricator/manufacturer and is the responsibility of that party to complete. Carry-Over-Work items will be recorded and tracked in the CCMS Database, as part of the Punchlist Manager module.
Commissioning	The phase of the project that transfers a facility from a construction site to an operational facility.
Completions and Commissioning Management System (CCMS)	A database system that tracks Mechanical Completion, Pre-Commissioning and Commissioning activities and data, including Punchlisting.

Field Installation Checklist (FIC)	Also known as Mechanical Completion Check Records (MCCRs). FICs are detailed documents that allow essential data to be recorded in a standardized format, providing documentary evidence of mechanical completion activities.
Inspection Test Record (ITR)	ITR is a detailed document that allows essential data to be recorded in a standardized format, providing documentary evidence of pre-commissioning activities.
Job Card	A collection of tasks and / or forms that are combined into a Job Card where they have common attributes, such as system / subsystem boundaries, project phase / stage and associated workgroup requirements.
Job Cards Manager	Designed to manage the assignment and administration of a collection of Job Cards.
Sub-System	The facility systems, as defined below, are further divided into sub-systems, where appropriate, in order to facilitate the Mechanical Completion, Function Testing, Commissioning and Handover of the entire Facility.
System	Process System – a test area or section defined by specific process application, pressure and/or temperature, or by specific hazards.

	Non-Process System – an infrastructure, such as buildings, structures, concreting and electrical and communications equipment.
Task / Planned Task	Individual FICs or ITRs that have been created for each asset that is required to be completed during different phases i.e. Fabrication, Construction, Pre-Commissioning and Commissioning.
Mechanical Completion (MC)	The state of the system when all civil, structural, concrete, piping, electrical, instrumentation and mechanical items have been installed as per the design documents and codes
Project	CAPEX or OPEX Project that is supported with the CCMS
Punchlist 'A'	Punchlist 'A' item prevents the sub-system or system from being Pre-commissioned, Commissioned or energised due to constraints on operability or safety of either PERSONNEL, EQUIPMENT or ENVIRONMENT.
Punchlist 'B'	Punchlist 'B' item can, by agreement, be rolled over to the next phase. 'B' items shall not prevent the safe operation of the equipment &/or system but represents incomplete work.

Punchlist 'C'	Punchlist 'C' item can be repaired and/or completed after handover, but must be done before issuance of the Close-out Certificate (C6).
Pre-commissioning	The phase of the project that involves a set of checks to prove the system functionality and prepares the system for commissioning.
Work Package	A work package comprised of one or more tasks. Each task can identify specific person(s), tools, materials, safety requirements and supportive documentation. A work package is summarized in a simple go or no-go Job Card.
Work Package Manager	A Work Package manager is designed to manage the development, scheduling and execution of Work or Jobs.

Acronyms

Acronym	Description
BOM	Bill of Materials
CAPEX	Capital Expenditure
CBP	Current Best Practice

SC	Smart Completions Plant & Project Lifecycle Software
CCMS	Completions & Commissioning Management System
CI	Cost Index
CII	Construction Industry Institute
CO	Change Order
CPi	Cost Performance Index
CR	Critical Ratio
DCS	Distributive Control System (e.g. soft points I/O)
FEL	Front-End Loading
FIC	Field Installation Checklist
GTS	Group Technical Services
GUI	Graphical User Interface
HOP	Handover Package

HSE	Health, Safety and Environment
HSES	Health, Safety, Environment and Security
iPOAS	integrated Program / Project Oversight and Assessment System
ITR	Inspection and Test Record
JC	Job Card
KPi	Key Performance Indicator
LBS	Location Breakdown Structure
LOPC	Loss of Primary Containment
LTI	Loss Time Injury
MHr	Man-Hour
MOC	Management of Change
MoM	Minutes of Meeting
MTC	Medical Treatment Case

NC	Non-Compliance
NOE	Notice of Energization
OBS	Organizational Breakdown Structure
ODMS	Operability Development Management System
OEM	Original Equipment Manufacturer
OMMS	Operations & Maintenance Management System (OMMS)
OPEX	Operating Expenditure
PBS	Process Breakdown Structure
PCA	Process Criticality Analysis (e.g. performed on equipment)
PCI	Project Cost Items
PCT	Project Control Tasks
PDF	Portable Document Format - Acrobat
PDRI	Project Definition Rating Index

PGM	Project Governance Management
PGMS	Project Governance Management System (PGMS)
PHI	Project Health Indicator
PIN	Personal Identification Number (e.g. used for smart forms)
PIR	Project Independent Review
PL	Punchlist
PLL	Project Lessons Learned
PMD	Project Management Department
PMO	Project Management Operations
PMS	Project Management System
PMT	Performance Measurement Tool
PMT	PMT Weekly Report
PO	Purchase Order

POAS	Project Oversight & Assessment System
PPG	Project Performance Group
PPM	PMT Project Monthly
PPRG	Project Performance, Risk and Governance
PR	Preservation Tasks
PRA	Project Risk Assessment
PSI	Project Status and Involvements
PSM	Project System Management
RFI	Request for Information
RWC	Restricted Work Case
RU	Resource Utilization
SF	Smart Forms (e.g. offline HTML complex test sheets)
SI	Schedule Index

SPi	Schedule Performance Index
SRMS	Safety & Risk Management System
T	Planned Tasks (e.g. FICs, ITRs, Loop Tests, Pack Tests)
TF	Test Form
TM	Task Model
VAA	Value Assurance Activities
WBS	Work Breakdown Structure
WP	Work Package

Configure Smart Completions using Azure Authentication

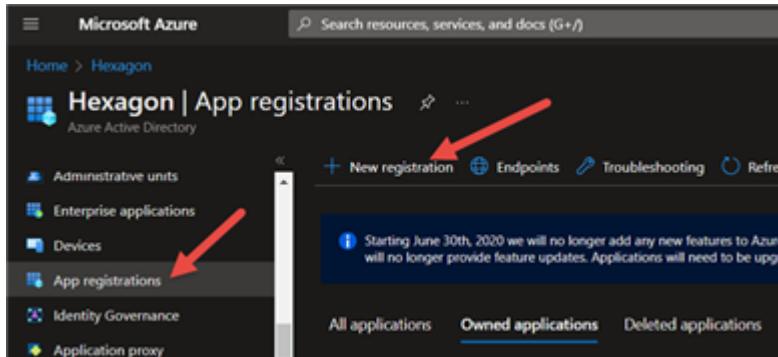
Use the below information to configure Smart APIs by using OAuth 2.0 with Azure Active Directory (AD):

Prerequisites

- Register an application in Azure AD to represent the SaaS application.

Register Smart Completions for SaaS application:

1. Log on to Azure portal with your Microsoft Azure account.
2. Select a relevant Azure active directory.
3. Select **App Registrations > New Registration**.



4. In the **Register an application** page, enter all the required information.

Register an application

* Name

The user-facing display name for this application (this can be changed later).



Supported account types

Who can use this application or access this API?

- Accounts in this organizational directory only (Hexagon only - Single tenant)
- Accounts in any organizational directory (Any Azure AD directory - Multitenant)
- Accounts in any organizational directory (Any Azure AD directory - Multitenant) and personal Microsoft accounts (e.g. Skype, Xbox)
- Personal Microsoft accounts only

[Help me choose...](#)

Redirect URI (optional)

We'll return the authentication response to this URI after successfully authenticating the user. Providing this now is optional and it can be changed later, but a value is required for most authentication scenarios.



Register an app you're working on here. Integrate gallery apps and other apps from outside your organization by adding from [Enterprise applications](#).

By proceeding, you agree to the Microsoft Platform Policies [\[?\]](#)

- a. Add these URLs as Redirect URI - <https://siteURL./SAML/SAMLService.aspx>, <https://siteURL./login.aspx>

Web

Quickstart Docs

Redirect URIs

The URIs we will accept as destinations when returning authentication responses (tokens) after successfully authenticating or signing out users. The redirect URI you send in the request to the login server should match one listed here. Also referred to as reply URLs. [Learn more about Redirect URIs and their restrictions](#)

⚠ This app has implicit grant settings enabled. If you are using any of these URIs in a SPA with MSAL.js 2.0, you should migrate URIs.

https://qaad.cecams.com/SAML/SAMLService.aspx	
https://qaad.cecams.com/login.aspx	
https://www.getpostman.com/oauth2/callback	

Add URI

Once you register to a Smart API application:

1. Open **Expose an API > Application ID URI** and then click **Set**.

Application ID URI Set

Scopes defined by this API

Define custom scopes to restrict access to data and functionality protected by the API. An application that requires access to parts of this API can request that a user or admin consent to one or more of these.

Adding a scope here creates only delegated permissions. If you are looking to create application-only scopes, use 'App roles' and define app roles assignable to application type. [Go to App roles](#).

Scopes	Who can consent	Admin consent display name	User consent display name	State
No scopes have been defined				

Authorized client applications

Authorizing a client application indicates that this API trusts the application and users should not be asked to consent when the client calls this API.

Add a client application

Client Id	Scopes
No client applications have been authorized	

2. Click **+** icon to **Add a Scope**, and enter the required information.

an API ...

Got feedback?

Application ID URI

Scopes defined by this API

Define custom scopes to restrict access to data and functionality protected by the API. An application that requires access to parts of this API can request that a user or admin consent to one or more of these.

Adding a scope here creates only delegated permissions. If you are looking to create application-only scopes, use 'App roles' and define app roles assignable to application type. [Go to App roles](#).

Add a scope

Scopes	Who can consent	Admin consent display name	User consent display name
No scopes have been defined	<input checked="" type="radio"/> Admins and users <input type="radio"/> Admins only	e.g. Read user files	e.g. Allows the app to read the signed-in user's files.

Authorized client applications

Authorizing a client application indicates that this API trusts the application and users should not be asked to consent when the client calls this API.

Add a client application

Client Id	Scopes
No client applications have been authorized	

3. Click **Add Scope**.

4. Get access to the **Application ID**, **Audience API**, and **Scope API** values.

5. Update the delivered **config file** in SaaS application

```

<add key="okta:UserNameClaim" value="preferred_username" />

<add key="okta:Issuer" value="{IssuerURL}" />

<add key="okta:WellKnown" value=".well-known/openid-configuration" />

<add key="okta:Audience" value="{ApplicationID}" />

```

6. Identify the issuer URL using metadata document. Copy the meta document and place it in the browser.

The screenshot shows the Microsoft Azure portal interface for managing app registrations. On the left, there's a sidebar with various settings like branding, authentication, and token configuration. The main area shows an app named 'Completions QA' with its details: Display name, Application (client) ID, Object ID, Directory (tenant) ID, and Supported account types. Below this, a message states that starting June 30th, 2020, no new features will be added to the Azure Active Directory Authentication Library (ADAL) and Azure AD (be upgraded to Microsoft Authentication Library (MSAL) and Microsoft Graph). At the bottom, there's a 'Build your application with' section featuring icons for cloud, database, and mobile services.

Endpoints

- OAuth 2.0 authorization endpoint (v2)
- OAuth 2.0 token endpoint (v2)
- OAuth 2.0 authorization endpoint (v1)
- OAuth 2.0 token endpoint (v1)
- OpenID Connect metadata document
- Microsoft Graph API endpoint
- Federation metadata document
- WS-Federation sign-on endpoint
- SAML 2.0 sign-on endpoint
- SAML 2.0 sign-out endpoint

A red arrow points from the top right towards the 'WS-Federation sign-on endpoint' link, which is highlighted in blue. Another red arrow points from the bottom right towards the same link.

This screenshot shows a web browser window with the URL <https://login.microsoftonline.com/federationmetadata/2007-06/federationmetadata.xml>. The page content is an XML document. A red speech bubble labeled 'Issuer URL' points to the `<entityDescriptor xmlns="urn:oasis:names:tc:SAML:1.0:metadata" ID="e4903d18-ac88-4557-8cd-27f829c5b84" entityId="https://sts.windows.net/b16ab3e-b8f6-4fa3-9f3e-2db7fe549f6a">` element.

```

<entityDescriptor xmlns="urn:oasis:names:tc:SAML:1.0:metadata" ID="e4903d18-ac88-4557-8cd-27f829c5b84" entityId="https://sts.windows.net/b16ab3e-b8f6-4fa3-9f3e-2db7fe549f6a">
  <Signature xmlns="http://www.w3.org/2000/09/xmldsig#">
    <SignedInfo>
      <CanonicalizationMethod Algorithm="http://www.w3.org/2001/10/xml-c14n#"/>
      <SignatureMethod Algorithm="http://www.w3.org/2001/04/xmldsig-more#rsa-sha256"/>
      <Reference URI="#_e4903d18-ac88-4557-8cd-27f829c5b84">
        <Transforms>
          <Transform Algorithm="http://www.w3.org/2000/09/xmldsig-more#signature"/>
          <Transform Algorithm="http://www.w3.org/2001/10/xml-c14n#"/>
        </Transforms>
        <DigestMethod Algorithm="http://www.w3.org/2001/04/xmldsig-more#sha256"/>
        <DigestValue>443C9978d35427297f3bdc208</DigestValue>
      </Reference>
    </SignedInfo>
    <SignatureValue>N3ByQO49Dewv1aqfI+uEP#0TBcLbM4Kkach4XgkCISOpnPdoERtUgB195jy5sew1n0/150/ce794eirbrttdtxdylzF74dhHQELmUrQwf+nKEDAFP=0G7IMLSBpJ2Y16PhLgDXXXCGuQ0Qmuy74RqB251q3Xf5</SignatureValue>
    <KeyInfo>
      <X509Certificate>MIIDBTCCAt2giwBlAgT09QH8kE1eTx7G8A0u27TA4Bgkqhkg109vB4QxFADtHS5ukQ7DvQ0EY7hY2nrdk54c5y5hY2h3c3QjB250ceW5LndpbeRvd3hubvBhBXDTy7tJuP5E4HDYB0voXDT13HTuH5E4HbB0voTEF</X509Certificate>
    </KeyInfo>
  </Signature>

```

7. Update the delivered **saml.config** file:

Service Provider	Name	Audience Restriction from Azure AD
	Description	Describe the service provider
	AssertionConsumerService Url	path to SAMLService (Do not modify)
	LocalCertificatePassword	password to above cert

PartnerIdentityProvider (Values from IDP metadata)	Name	Azure AD Entity ID
	Description	Describe the partner identity provider
	SignAuthnRequest	true
	SingleSignOnServiceUrl	AzureAD Saml SingleSignOnService
	SingleLogoutServiceurl	AzureAD Saml SingleSignOnService
	PartnerCertificateFile	path to IDP cert, download from Azure AD and move SP server

8. Change the IDP value in database with azure **EntityID** value.

Validate your user identity using optional claim

★ **IMPORTANT** Do this if you are using Smart Completions on on-prem setup.

If you need to use a different username claim and to validate your identity appropriately, then update your **appsettings.json** file with the following keys:

```
<appSettings>

<add key="aspnet:RequestQueueLimitPerSession" value="2147483647"/>

<add key="smtpServer" value="localhost"/>

<add key="IDPLevel" value="0"/>

<add key="IDPPassReset" value="" />

<add key="IDPUsers" value="" />
```

```
<add key="Keys:ApplicationInsights:InstrumentationKey" value="542ac607-3d33-  
4258-bb15-6954cc6a9e74"/>  
  
<add key="LogInsights" value="false"/>  
  
<add key="okta:UserNameClaim" value="email">  
  
</appSettings>
```

Check out the new Smart Completions user interface (UI)!

A modern user interface (UI) has been developed to provide a better user experience for you. We kept you, the user, in mind when developing this new modern UI.

How can I access the modern UI?

1. Go to **Help** on the top right corner of the page.
2. Select **Change to Modern UI**.

NOTE To go back to the classic user interface, select **Help > Change to Classic UI**.

Who can access the modern UI?

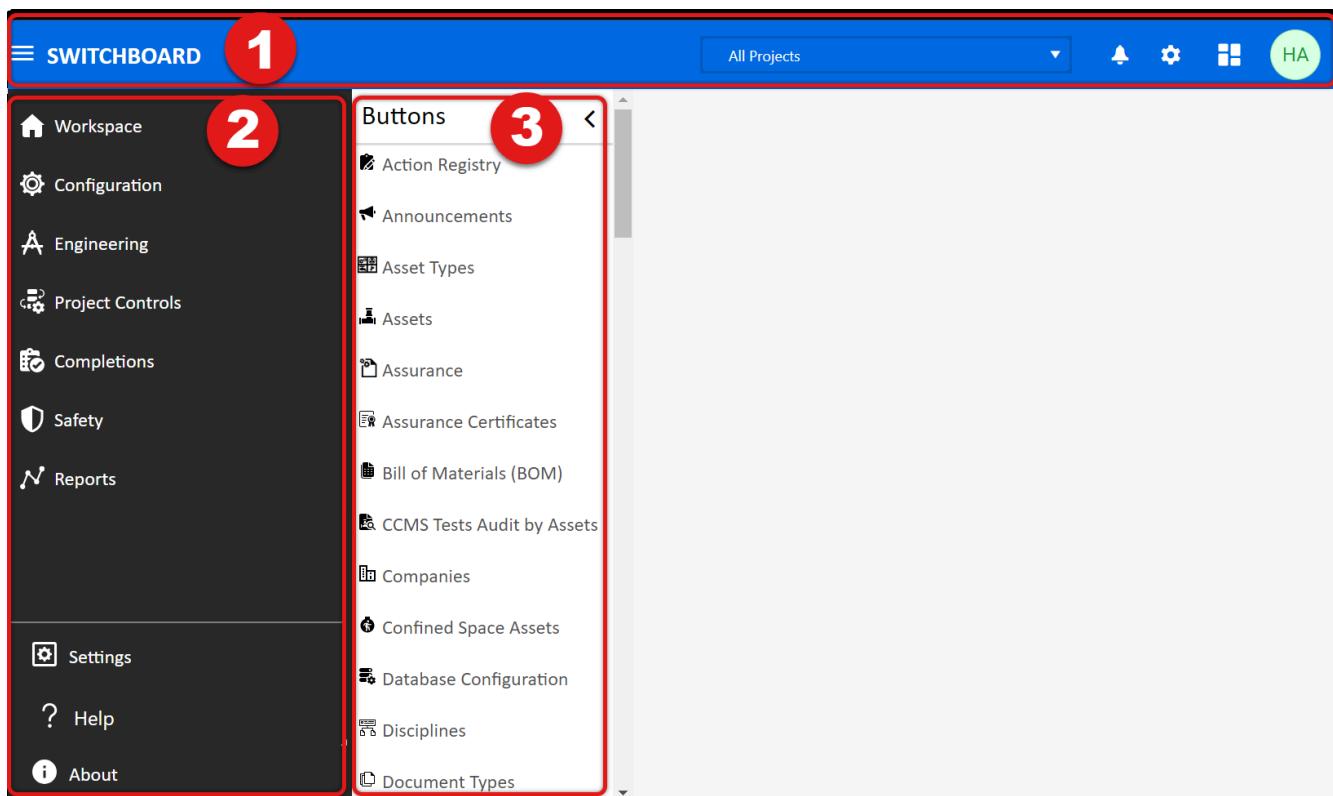
You can use the **Feature Flags Manager** to provide access for the modern UI to users.

1. Select **Settings Panel**.
2. Type **Feature Flags** in the **Open Manager** box.
3. In the **Feature Flags Manager**, search for **MODERN_UX**.
4. Select **MODERN_UX**, and go to **Edit** in the secondary panel.
5. In the **Edit Feature Flag** window, navigate to **General** tab.
6. For **Feature Flag State**, choose **Enabled**.

NOTES

- Navigate to the **Roles** tab to assign access to the modern UI to few selected roles.
- The modern UI option is available to all users when no specific roles are assigned to it.

Home page



1

Header

- Show and hide the left navigation bar using the Menu icon
- View and navigate within your projects
- Manage the user interface settings and manager search
- View and search notifications
- Manage your profile

2

Navigation bar

- View and navigate to the managers
- Manage the Users and Role Profiles

	<ul style="list-style-type: none"> • View User assistance options like Training, Product Help, and Internal Support • Know about your product
3	<p>Buttons panel</p> <ul style="list-style-type: none"> • Customize the Workspace page by dragging frequently used modules from the Buttons panel

NOTE The **Buttons** panel lists modules based on the user's assigned rights, providing easy access to the modules you need frequently.

Profile options

- To view profile options, select the name initials.

Choose from the following:

Theme - Swap between Light and Dark theme.

Change Password - Change your login password.

Set PIN - Generate a unique PIN for executing digital checksheets in the field. This PIN is required to unlock lines on forms or to submit certain forms.

Change E-Signature - Create an E-Signature for specific projects if indicated by your system administrator. E-Signatures are used when rendering PDFs of task models such as CCMS tasks, Preservations, or Certificates.

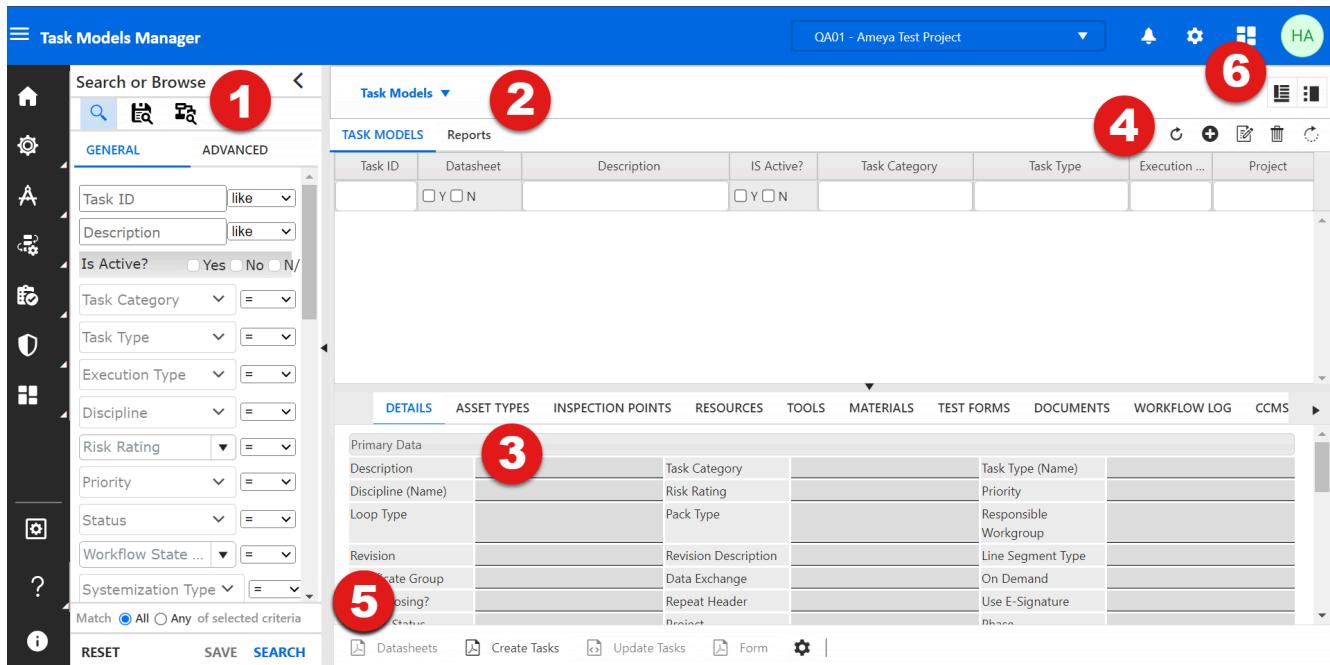
Upload Utility Tool - Download the Bulk Upload utility tool to upload multiple documents to the database.

ISC PowerBI Template - Download a pre-defined template to open in Power BI.

Logout - Log out of the application.

Change to Classic UI / Change to Modern UI - Swap between modern and classic user interfaces.

Module manager page



1

Search panel

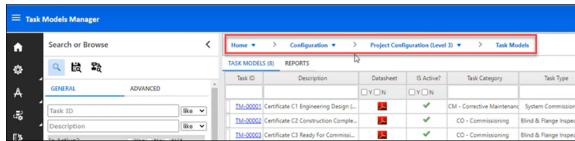
- Appears within the module manager pages.
- Collapsible search panel with specific tabs for different types of search.

2

Primary panel

- Displays the search results specific to the module.
- Standard buttons are on the top right corner of this panel.
- The breadcrumb on the top left corner displays the current page's location

within the navigational hierarchy. Select the dropdown arrow next to a label to navigate to another page.



For more information on breadcrumb navigation, see [How to use the breadcrumb navigation?](#).

3

Secondary panel

- Displays detailed information for the record selected in the primary panel.
- Module specific buttons are on the bottom left corner of this panel.

4

Standard buttons

- Buttons that are common to all the module managers are placed on the primary panel.

5

Module specific buttons

- Buttons that are specific to particular module managers are placed on the secondary panel.

6

View options

- Standard view - Primary panel, Secondary panel, and the Search panel are displayed.

- Simple view - Primary panel with data is only displayed, allowing you to work on the data. Secondary panel and the Search panel is collapsed.

Search panel

The Search function is located on the top left in every Manager within the software. Each Manager's Search panel is unique and tailored to common search terms for it.

1

Search or Browse

GENERAL ADVANCED

Model ID like

Task Description like

Is Active? Yes No N/A

Task Category =

Task Type =

Execution Type =

Task Discipline =

Risk Rating =

Priority =

Current State =

Workflow State Log =

Systemization Type =

Location Type =

Loop Type =

Pack Type =

Match All Any of selected criteria

RESET **SAVE** **SEARCH**

1

Option tabs

- Search tab allows user to search for an item by providing specific properties.

	<ul style="list-style-type: none"> • Saved searches tab displays the searches that are saved by the user. • Browse by WBS tab allows the user to search for items within the project hierarchy by work breakdown, systems, and location of the item.
2	<p>Properties list</p> <ul style="list-style-type: none"> • Displays the list of all the properties related to the items in the manager. • Allows user to provide search terms for one or many properties.
3	<p>Operators</p> <ul style="list-style-type: none"> • Select All to consider all the search conditions to be TRUE. • Select Any to consider any ONE of the search conditions must be TRUE

Save searches

1. Select one or more search filters.
2. Select **Search**.
3. In the **Active search criteria** panel, you can edit or remove the search criteria.

TIP Select  next to **Search and Browse** or **Add Criteria** to navigate to the **Search** pane.

4. Select **Refine Search** to update the search criteria.
5. Select **Save**.
6. Enter a name for the search, and click **Save**.

NOTE Click **Saved Searches**  in the **Search** panel to view the saved searches.

Edit and perform the saved searches

1. In the saved searches list, select a saved search.
2. Select **Search**.
3. You can do the following with the saved searches.
 - Edit the search parameters
 - Select the cross to remove search parameters
 - Select **ADD CRITERIA** to add search parameters

≡ Inspections and Test Forms Completions By A

← Search or Browse

Saved Search : 1100series

Asset Tag

like

Asset Discipline

=

Match All Any of selected criteria

ADD CRITERIA RESET SAVE SEARCH



4. Select **Save** to save the search with modified parameters.

How to use the breadcrumb navigation?

Why am I seeing only a single level in my breadcrumb?

If you have used any of the following methods to navigate to your current page, you would be viewing a single level in your breadcrumb like Home > <Task Manager>

- Used the Settings Panel to navigate to this manager.
- Typed the URL for this manager in the web browser.

Breadcrumbs are an alternate way of navigation that help you understand where you are within the application. In Smart Completions, we will follow the hierarchical structure to display the breadcrumbs.

★IMPORTANT The breadcrumb path is not always fixed and is based on the configurations done in switchboard and menu pages.

This table lists a few possible breadcrumb paths that might appear depending upon the selection made by the users.

If you have navigated to this page	Breadcrumbs would appear as
Using the Switchboard <ul style="list-style-type: none">• Choose Module1 > Group1 > Task Manager1	Home > Module name > Group name > Task Manager name
Using the left menu <ul style="list-style-type: none">• Choose Group1 > Task Manager1	Home > Group name > Task Manager name

<p>Using the breadcrumb</p> <ul style="list-style-type: none"> Pick another task manager name from the task manager list 	<p>Home > Module name > Group name > Task Manager name</p>
---	---

NOTE Click on the dropdown arrow next to the Task manager name to view other related task managers as shown in the **Configuration Manager** window.

Help options

You can navigate to the following pages using the Help option in the left panel.

Select	To
Help > Documentation	Navigate to the Smart Completions documentation home page in Fluid topics
Help > PPM University	Navigate to the Smart Completions training home page
Help > Support Forums	Navigates to the Customer Support and Technical User Forum page
Help > Internal Support	Open the dialog that displays the contact information of the administrator and other contact person

Administration Settings

 **NOTE** You must be an Administrator to access the Administration Settings options.

Manage roles

You can link roles to the Role Profiles and assign access rights to the necessary modules all on a single page.

- Select **Settings > Administrative Settings > Role Management**.

Using the Role Management module you can do the following:

- Edit and manage role profiles for the various modules available in the system.
- Assign roles to role profiles.
- Assign access rights to different modules.

Search for roles

- To search for roles, open the **Role Management** panel, then type your criteria in the search box.

Create a new role

1. In the **Role Management** panel, select **Create New Role** .
2. In the **Role and Description** section, enter the **Name** and **Description** for the role.
3. In the **Instances** section, select the instances that you want to assign to this role.

 **NOTE** The role is assigned to all projects within the chosen instance.

4. In the **Module and Rights** section, select **Add Modules**.
5. In the **Modules** window, select the modules you want to associate with the role.
6. In the **Modules and Rights** section, select the rights against the modules to provide access to this role.

NOTES

- You can select the check boxes on the header to select all the check boxes for that specific right. For example, select the **Approve** check box to select the **Approve** rights for all the listed modules.
- In the **Modules and Rights** section, you can use the **Update Modules** option to add or remove modules for a role.
- Select the **ALL** check box to select all the rights for all the modules listed in the **Modules and Rights** section.
- To create a role from an existing one, select the ellipsis next to the role, and select **Copy Role**.

View and edit an existing role

What information is available in the **Role Management** panel?

This section	Displays
Modules and Rights	List of modules and the rights given for each module.
Instances	List of instances for which the selected role is assigned
Users	List of users assigned to the selected role.
Field Log	List of details on the changes made to this role.

1. In the **Role Management** panel, select a role.
2. Select ellipsis next to the role, select **Edit Role**.

3. In the **Role and Description** section, make changes to the **Name** and **Description** of the role.
4. Navigate to the **Module and Rights** section, to make changes to the rights.
5. Select **Save**.

Delete a role

1. In the **Role Management** panel, select ellipsis next to the role.
2. Select **Delete Role**.
3. In the pop-up window, select **OK**.

NOTES

- We recommend that you do not delete **API Access** or **Mobile View** roles. If you try to delete, you would lose access to the Smart Completions Companion applications and any third party application access which is enabled using the smart APIs.
- If you've deleted a role, contact your administrator to revive the access of that role for your user.

Manage users

You can view, create, and edit users in the User Management pane.

View users

- Select **Settings > Administrative Settings > Users**.

TIP The **User Management** pane displays users associated with the selected instance.

Create new users

1. In the **User Management** pane, select the **Create User** icon.
2. In the **User Creation** dialog, select **Create a Blank User** to create a new user with fresh details.

3. Enter the required details for the new user.

TIP To create a user by duplicating an existing one, select **Create from existing User**.

NOTE You can assign a role profile to the user at the time of creation.

Edit Users

1. Open the **User Management** pane, and select the username hyperlink.
2. Edit user details.

Basic Layout, Functions & Navigation

Smart Completions is an enterprise-level software suite. Understanding the basic layout and navigation of the system is key to using the software efficiently.

ACCESS TO CONFIGURATION MODULES

You can use configuration manager to load the list of configurations associated with the module you are in. You can also use, Seeking drop-down option to search for any configuration module you have the user rights to.

 **NOTE** The configuration items displayed is dependent on your assigned roles. Managers are hidden otherwise.

How to use the Help Menu

The Help list is available at the top-right corner of the page.

Below are the options:

- **Internal Support:** Click here to obtain a list of administrators from your organization to contact for help or support. Ensure to have valid email addresses of the administrators are provided here by your Smart Completions administrator.
- **Training:** This link contains available documentation and training information.
- **Change Password:** Change your login password as and when required.
- **Set PIN:** Use this to generate a unique PIN that is assigned to you. PINs are used when executing digital check-sheets in the field. You can give your pin to unlock a line in a form, You may also need a PIN to submit few forms.
- **Change E-Signature:** E-Signatures are only used on specific projects. If your system administrator has indicated that E-Signatures will be used, you can click here to create one. The E-signatures are used when you select **Yes** for Insert Signature while rendering PDFs of any task model such as CCMS tasks, Preservations, or Certificates.
- **About:** This page will give you information concerning the version of the software you are using, including copyright information, Open-Source Software used in Smart Completions, and policy information.

Login and Logout of Smart Completions

What will happen when you choose any other language other than English?

When you choose any language other than English:

- The dynamic labels are not available, instead it is re-purposed to show other languages.
- Columns in grids are independent and keep the labels that you set by moving columns or renaming them.

Logging in to Smart Completions

The Smart Completions application login allows you to choose from these languages:
English, Chinese, Portuguese, Spanish, French, Japanese, Russian, and German.

1. Select a language of your choice.
2. Enter your login credentials and click **Login**.

Password recommendations

We recommend you to choose a strong password of minimum 8 characters that is a combination of:

- Upper case letters
- Lower case letters
- Numbers
- Special symbols

Also, do not reuse your old passwords.

NOTES

- If a user account is inactive for 30 or more days, an email is generated to acknowledge the same and you are asked to update the password as a mandate and log in within 14 days.

- Failure to update the password and log in will lead to termination of the user account after 60 days. An intimation for this action, will be sent as an email 14 days prior to the final termination of the account.
- Select **Help** to navigate to the product documentation.

Reset Password

1. Select **Reset Password**.
2. In **Reset Password** dialog, enter your user name.
3. Enter the email address on which you want to receive instructions to reset the password.

Reach out to Internal support

1. Select **Internal Support**.
2. In **Internal Support** dialog, select **Send Email** to send an email to internal support within your company. Ensure that a valid email address is provided here.

Use single sign on to log into Smart Completions

1. If the single sign-on configuration is done for logging into the application, select **Login**.
2. Select the instance you want to log into.

Logging into Smart Completions as an Administrator

When a new site is created, the administrator must first log into the software and create accounts for other users. Follow the steps below to login as an Administrator:

★IMPORTANT Contact your support center to get your first-time user credentials.

1. Enter the user credentials, and click **Login**.
2. In the **Login Validation** pop-up, click **Done**.
3. Click **Login**.
4. In the reset password pop-up, enter the new password and your email address.

5. Click **Change** and system logs you in.

You can now login as administrator with access to all modules and all administrator rights using your username and the new password. Make sure that you access the **Edit Resource and User (Admin)** page to update your name, company, and email address details, and then click **Save**.

Logging out of Smart Completions

When you are inactive for more than twenty minutes, your session will automatically log you out.

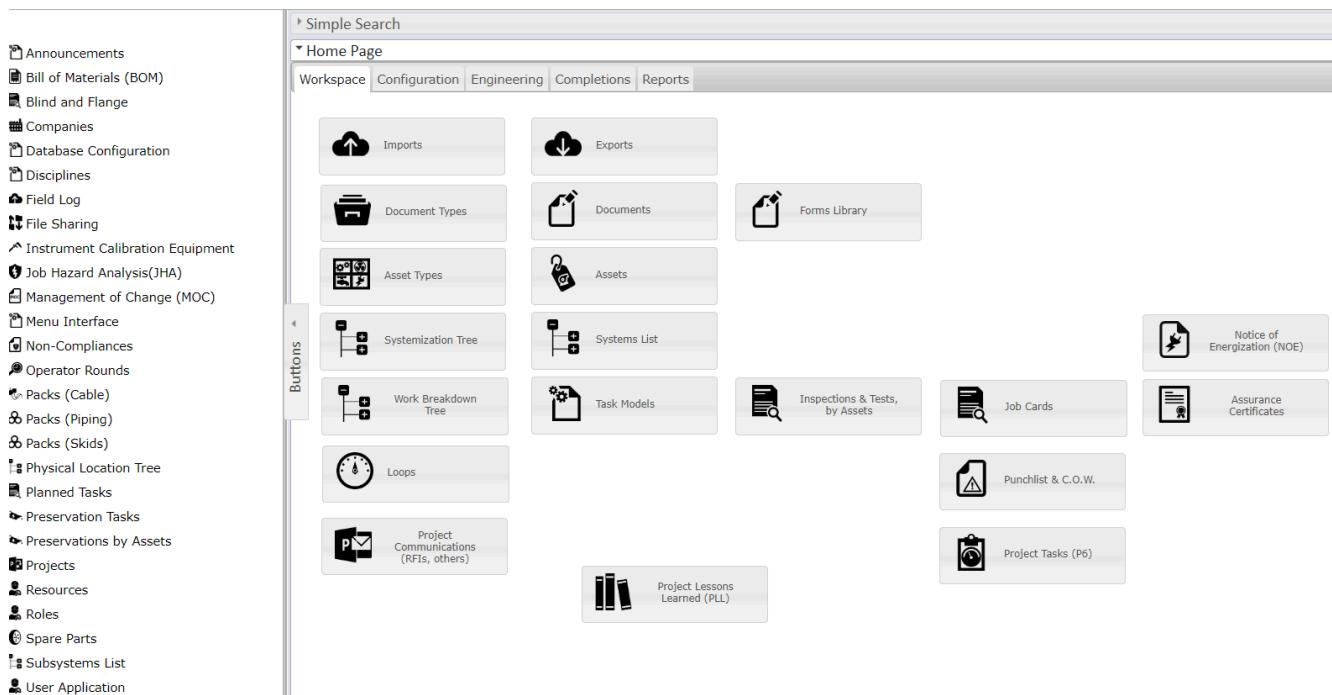
NOTE The auto logout time varies based on client timeout request.

Switch Board Manager

Workspace

The workspace tab is an interface in the switchboard manager. The selection of **Buttons** will expand a panel on the left which will list the modules (based on rights assigned to the user).

You can click and drag the modules you wish to, to the right workspace panel. This provides an ease access to the modules you want to use frequently.



Configuration

Use this to configure projects and business specific rules. The configuration is available in 3 level formats.

Global Configuration (Level 1)

You can manage users and configure database.

Instance Configuration (Level 2)

You can configure new projects based on Asset type, Document types, and Disciplines.

Project Configuration (Level 3)

You can configure projects based on Task Models, Work Breakdown Tree, Physical Location Tree, and Systemization Tree.

Engineering

You can manage engineering registries such as Asset Tags, Control Loops, Asset based Packages, and Documents/Drawings associated with the project. Using this engineering modules you can perform Completions, Safety, and O&M functions.

Engineering information can be imported/exported or loaded via the Data Exchange module. Data Exchange includes automated imports, or OOTB connectors to SDx, Smart P&ID, and other Document Management Systems (DMS).

Project Controls

You can manage information and change requests on a project that could impact scope, schedule and budget items. This module mainly focused on managing supplemental functions for a Completion/Commissioning project, such as Request for Information (RFI), Management of Change (MOC) and Project Control Tasks.

Completions

Using completions you can do Task planning, Execution, Preparation, and Scheduling; tracking transfer of care, custody and control (TCC) of systems/subsystems, or areas/locations of both process and area centric driven completions/commissioning activities. These modules are dependent on engineering and configuration modules for structures.

Safety

You can manage supplemental functions for Safety and Risk management. Also, includes Near miss/Safety Observations, Safety Isolations, Risk Assessments, and Permit to Work (PTW) functions.

Operations & Maintenance

Using O&M, you can develop the Maintenance Strategies (Tasks) for assets. This module is not intended to perform or replace actual Asset Management System (AMS) or Computerized Maintenance Management System (CMMS).

Reports

This module mainly focuses on displaying a user's public and private reports, as well as Report Packages. By using this, you can save significant time in generating reports which are required or accessed in repetitive manner. You can also manage all the accessibility related permissions for the generated reports.

Search or Browse a Manager

Smart Completions offers a variety of ways to sort and search for information within each Manager. There are three ways you can filter which results to see within the primary view panel.

1. **Search** function
2. **Browse** function
3. Typing within the primary view panel

Search Function

The Search function is located on the top left in every Manager within the software. Each Manager's Search panel is unique and tailored to common search terms for it. This is the

recommended method of filtering results if you need to generate a report, as the search criteria entered here will be honored in any reports generated from it. You can also save common search criteria, which is explained below.

Browse Function

The Browse filtering option results in the primary panel according to Location, Systemization or WBS. These results are not honored in any reports generated, but it can quickly identify records for batch editing.

Typing within the Primary View Panel

At the top of each column, you can enter details to filter the results in the primary view panel. While this won't flow to reports, can effectively target all necessary records that are grouped in different ways. For example, if you need to edit all tasks that have been created from a specific task model (rather than the options offered in the browse function), you can enter the Task Model information. The system will sort all tasks associated with that Task Model, and you can batch edit the tasks.

Column Search using prefix wildcards

By default, wildcards (*) are not needed for searching. Any search term you enter will find records containing that term anywhere in the string. To enhance performance when dealing with very large datasets, wildcards are used for grid searches. A configuration option to disable the mandatory use of wildcards for searches within grids can be done using the **WildcardSearch** Configuration Fields.

- Go to **Settings Panel > Configuration**.
- Select **Search**, and then select **WildcardSearch**.
- Select **Edit**.
- In the **Edit** page, select **Configuration Field** as **WildcardSearch** and **Configuration Value** as **True**.
 - **Enabled (True)** - This is the default setting. You can search for any word within a string.
 - **Disabled (False)** - With this option selected, selected searches (without wildcard) will only return results where the entered term matches the beginning of the data

in the column. Otherwise, the search will return nothing.

Wildcard usage	Contains search (Search any word within the string)	Starts with search (Search with only starting words)
Enabled (True)	Yes	Yes
Disabled (False)	No	(starting words)

Save search

Each user can also create save commonly used Searches. This only applies to the Search function; it does not apply to browsing or Typing a term within a column. These saved searches only apply to you who created them. These will not create a new saved search for other users.

After the Search criteria has been entered, click **Save** at the bottom of the Search section. After the Search has been Saved, it can be accessed from the **Saved Searches** section.

▼ Search

The screenshot shows a search interface with the following structure:

- General** (selected tab, highlighted in blue)
- Location and Process**
- Advanced**
- Saved Searches** (expanded section)
- Default Search** (button)
- Save** (button)
- Reset** (button)
- Search** (button)
- AND** (radio button selected)
- OR** (radio button)

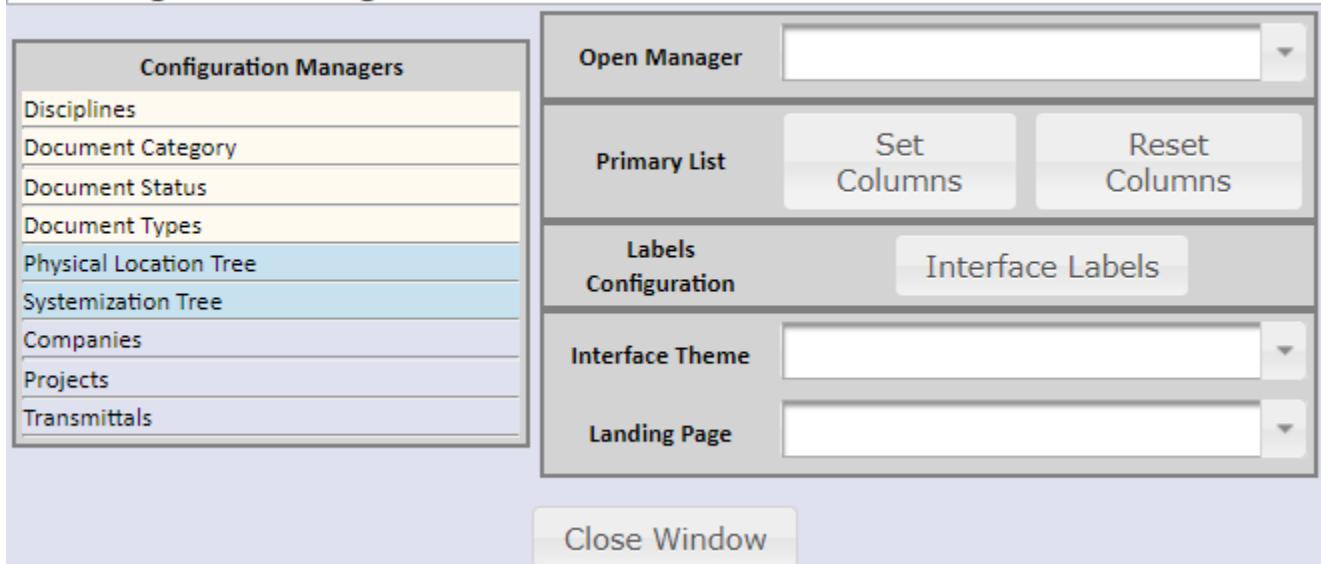
Settings Panel Icon

The settings panel icon is displayed in all modules and intends to provide users with following information:

- Configuration rights
- Other related modules

It is designed to simplify access to inter-related modules

UI Settings and Manager Search



The settings panel pop-up is divided into different sections as explained below:

Configuration managers: Enables you to easily access related modules to the current module the you are in. Click any module to load in the interface.

Open Manager: Access a list of all modules in SC where you can type in text to search for any module, and it queries the appropriate list of modules.

Primary List: It has two options-

- **Set Columns:** This enables you to sort, remove, add or edit columns (related data fields) to the primary list view. We recommend not adding additional columns that have calculated counts (for example, number of associated records like tags), as it will slow down the overall performance of the module. This column adjustment is also the location where a user with view rights can align the re-purposing of column labels to align with changes to field labels in the **Interface Labels** functionally.

NOTE You must have edit rights to delete a field/ column.

- **Reset Columns:** This enables you to reset to default settings which will remove any user defined column configurations. This could be done only by users with edit rights.

NOTE

The configuration of the primary list views is unique per user and is not changed for all users. As a system administer, if you want to copy your configuration to all users of a role profile, see

[Resources and Users](#), and copy settings. It will enable an administrator to copy the settings to a designated set of users. We recommend doing it against a template user (configured to a role profile) so that when new users are created it includes the configuration of primary list view columns across all modules that have been customized.

Interface Labels: The relabeling of interface labels can be done per module, and specifically the edit form in each module. It loads the edit form, where you can re-purpose the public field labels. Press **Exit** to close window and it will automatically save the changes. Re-purposing fields can also be accomplished in **vUserApplications Edit Form** for the module (view).

 **NOTE** Users with View rights can also edit the interface labels.

These changes must synchronize with the iOS mobile application. Any changes made offline in the mobile application, must reflect on that SaaS version when synced.

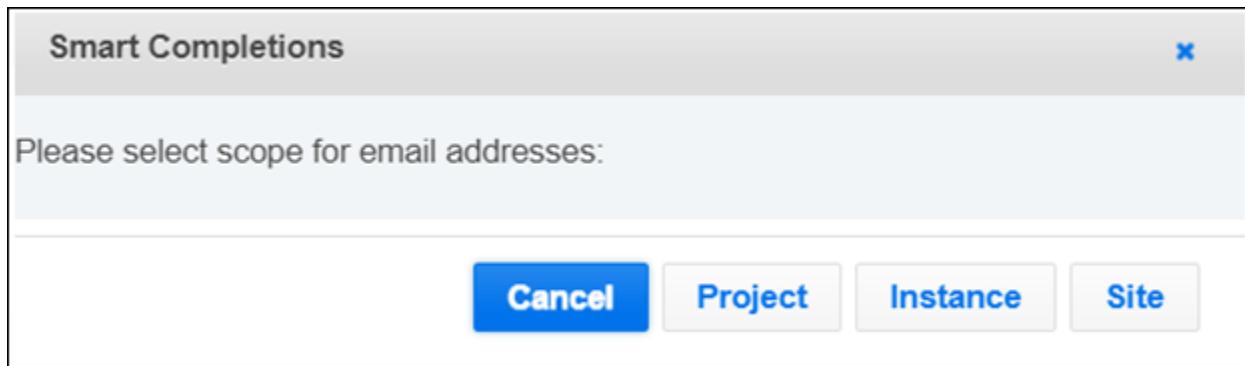
Interface Theme: This feature allows you to change (and save the change) the color theme of the user interface. It will not change for all users, that is set in **dbConfiguration** module under configuration module. It changes only for the user who is editing the theme.

Landing Page: This feature enables you to set the landing page once they log in. For example, if you are always accessing the document module, you can select **Documents** as the landing page, and when the user logs in they will go to the document module.

Notification center

The Notification Center captures all emails and notifications sent to you, according to the rules created by the Administrators. You may receive notifications for Tasks or Punchlists that require attention. Depending on the project configuration, you may receive emails to your Inbox in addition to notifications. As of version 5.3, the notifications will be limited to the project to which you are assigned.

User with manage rights can choose the scope to select the recipients to whom they want to send the notifications.



Select this	To choose recipients within the
Project button	Selected project
Instance button	Instance
Site button	Site

Configure Email notifications

You can now create meaningful emails by adding keywords that are defined in the system. You can use these keywords in the email subject and email body.

You can use the email keywords in all the managers that support the email configuration. The keywords are specific to the managers and if you use a keyword that is not relevant to a manager then the email leaves the parameter corresponding to the keyword blank.

NOTE

- If the Email Body is not edited and only Email Subject is updated, then the Email Body shows default output in the email sent to users.
- Some of the keywords give different outputs depending on their placement in the email.
- @wfstate in Email Subject - Displays current workflow state in the email output
- @wfstate in Email Body - Displays the the workflow history or the current workflow state

- @wfreason in Email Body - Displays the Revoke comment and it only applies to the Email Body.
- @domainlist - displays the full domain name of any email address mentioned in the body of your email. To use it, add your domain names to the **Configuration Value** field for the **@domainlist Configuration Field** in the **Database Configuration** manager. You can separate multiple domain names with commas <abc.com,xyz.com,ele.com>.

NOTE If you are using the following domain names, then they are not required to be enlisted in the configuration values:

- Google.com,
- Hexagon.com, and
- Originenergy.com.

TIP For example, to display email addresses like *john.doe@abc.com* in the email body with the full domain name, add *abc.com* to the **Configuration Value** field. Otherwise, the email address may only show up as *john.doe@*.

List of managers which that support email configuration

vCertificates

vAssets_Preservation

vDocuments

vLEMDocuments

vDocumentForms

vPunchlists

vResources

vRFIs

vTasks_SmartForms

vMOC

List of keywords that can be used in email configuration

@AssetPackName

@AssetPackSummary

@AssetSummary:

@AssetTag

@AssignedPerson

@CertLock

@CertificateComments

@CertificateDescription

@CertificateDiscipline

@CertificateTag

@CheckInOutResource

@CheckInOutResourceID

@CheckedInDate

@CheckedOutDate

@Company

@CompanyInstanceID

@CompletedDate

@CompletionState

@Comments

@ContractName

@ContractName

@ContractSummary

@ContractSummary
@Department
@Description
@Discipline
@DisciplineSummary
@DocumentCategory
@DocumentCategorySummary
@DocumentDisciplineSummary
@DocumentName
@DocumentSummary
@DocumentManufacturer
@DocumentType
@DueDate
@Facility
@Field001
@Field002
@Field003
@Field004
@Field005
@Field006
@Field007
@Field008
@Field009

@Field0010

@Field0011

@Field0012

@Field0013

@Field0014

@Field0015

@Field0016

@Field0017

@Field0018

@Field0019

@Field0020

@FirstName

@IsCheckedOut

@IsCritical

@IsException

@JobCategory

@JobCategorySummary

@LastName

@LoopName

@LoopSummary

@MOCSummary

@MOCTag

@Now

@PDFFFileName
@PDFFFileSize
@PhoneNo
@PhoneNo2
@PhysicalArea
@PhysicalLocation
@PhysicalLocationUp1Summary
@PhysicalLocationUp2Summary
@PhysicalLocationUp3Summary
@PrimaryConsequence
@Priority
@PrioritySequence
@PrioritySummary
@ProcessBreakdown
@ProcessBreakdownUp1Summary
@ProcessBreakdownUp2Summary
@ProcessBreakdownUp3Summary
@PunchlistAltitude
@PunchlistCategory
@PunchlistCategorySummary
@PunchlistComment
@PunchlistDescription
@PunchlistException

@PunchlistException
@PunchlistItem
@PunchlistLatitude
@PunchlistLongitude
@PunchlistSummary
@PunchlistType
@PunchlistTypeSummary
@Revision
@Resource
@RFIComment
@RFIContractID
@RFIContractName
@RFIContractSummary
@RFIDescription
@RFIDiscipline
@RFIDisciplineSummary
@RFIPrioritySummary
@RFIName
@RFISummary
@RecordCreated
@RecordCreatedBy
@RecordCreatedByID
@RecordLastModified

@RecordLastModifiedBy

@RecordLastModifiedByID

@RecordRemovedByID

@RequestorCompanyName

@RequestorCompanySummary

@ResponsibleCompany

@ResponsibleCompanyName

@ResponsibleResource

@ResponsibleResourceEMail

@ScheduledDate

@SignOffDate

@strLogin

@TaskName

@Title

@user

@WorkBreakdown

@WorkBreakdownUp1Summary

@WorkBreakdownUp2Summary

@WorkBreakdownUp3Summary

@WorkGroup

1. Navigate to vUserApplications.

2. Open the record for the Manager for which you want to configure email.

3. Edit the email with keywords by updating the text boxes in the **Email Configuration** section.

★IMPORTANT Keywords are case-sensitive.

User Input	Email Output
<p>Email Subject: @user has sent you an update, this task is now in state: @wfstate</p>	David DeArmon has sent you an update, this task is now in state: Originated
<p>Email Body: Task @TaskName requires your attention: @url Reason for Revoking- @wfreason History - @wfstate Project- @WorkBreakdownUp3Summary Created- @RecordCreated By @RecordCreatedBy Domain list - @domainlist</p>	Task T-00079-0005 requires your attention: LINKTORECORD (http://yoursite/ORMS/Tools/EditForm.aspx?u=true&v=vPunchlist&ID=340) Reason for Revoking- A Good Excuse History - Current State: Originated Originated On: 03-Sep-2016 04:23:06 AM By: John, Doe Project- 100 - My Project Created- 9/3/2016 2:23:06 AM By Jill, Whatshernname Domain list - xyz@abc.com Disclaimer: Make sure to login to the appropriate project to view the information on this form.

Field Log

The Field Log is available in two different methods:

1. **Field Log Manager** (only available for specific system administrators.)
2. The **field log tab** in most managers.

The **Field Log Manager** displays a list of changes to the database records: which field was changed, who changed the field, and when it occurred. The administrator can also restore data from here, either on an individual record or through batch Restore.

Viewing Field Logs

The **Field Log Tabs** are in the secondary view panel in each Manager. It will display changes made to the record selected. For example, if you select an asset in the **Assets Manager**, you can select the field log tab to display data changes for that specific asset. To view field log changes in a manager, follow these steps:

1. Select an item from the primary panel
2. Select the Field log tab on the secondary panel to review the data changes

NOTES

- In most of the modules Filed log changes are displayed as a Secondary tab
- You can delete or restore a selected value by using the **PURGE/RESTORE** tab

Workflows

What is the Workflow Log?

Many managers contain a Workflow log that will track changes made to the workflow of a record. As of version 5.3, this tracks changes made between states of a record and therefore tracks all workflow changes made to each record. To view the workflow log, highlight the record and choose the Workflow Log tab in the secondary view panel.

You can set the work flows for all the applications or managers.

1. Navigate to **Configuration > User Applications**.

2. Select **Yes** under the Work flow tab.

Once the visibility of the work flows is set to yes, all the work flow state transitions can be seen in the managers itself, and while exporting the data from Punch lists, Task models, MOCs, Work packages and RFIs.

Smart Forms

Smart ® Forms (SF) is a web-based technology used in for developing digital forms used both in the cloud as well on mobile applications. The smart forms are only created as “Inspection Points” within a task model. A SF honors specific configuration filled out against the task module, such as recurrence, tools, material and resource allocations to name a few.

Since most completions systems are “forms” centric and SC is “task” centric, where all tasks are an instance of a task model. We first create a list of task models from a list of forms identified on a project. When importing the list of TMs, its important to define that it has “digital” for “execution type”. This will expose the “inspections steps” tab in the task model edit form.

Developing the forms is comprised of three (3) components:

1. Header: section used to define the object (e.g. asset, loop, pack etc.), systemization, phase/stage, and task information. There is a standard header configured as shown above, but users with access to task models will also be able to configure their own task model headers. Clients typically develop their own “Header Types” by discipline so they can extend additional information into the header (e.g. HP, RPM, Voltage). See “Task Model Headers” on how to create headers.
2. Body: section used to recreate the core content of a project form and acts as the “data capture” mechanism for the test form.

NOTE

Weightage: Each inspection step has the ability to apply a Weightage (wt%) so a project can report on “progress” vs. the standard “completion”. Task completion looks at the “completion” state of the tasks workflow and does not take into account inspection steps. Task Progress reviews the completion of each task step, then weighs it against the weighted value.

To report on progress, the inspection steps DO NOT need to be weighted however if they are it will provide more accurate progress report. A few examples:

- If not weighted: If there are 10 steps, with no weightage, and I complete 5 of the 10 steps then progress reporting will reach 50% progress for that task.
- If weighted: if there are 10 steps, where the first 9 steps are weighted at 1%, and the 10th step is weighted at 91% then the majority of the task progress would be based on the 10th step.

3. Footer: This section is used to capture the Submission, Completion and Closure of a task. There are several options available.

The following options are available for Certificates sign-off.

- Certificate Sign-Off - Complete, Close
- Partial Certificate Sign-Off - Complete, Close - Allows you to lock the assets on Partial Completion and progress to the next set of job cards
- Certificate Three Sign-Off - Submit, Complete, Close
- Certificate Four Sign-Off - Submit, Verify, Complete, Close

NOTE

The TASK WORKFLOW IS NOT CONFIGURABLE due to complex inter-relationships with other workflows, statuses, reports and data exchange requirements, and therefore users would need to select from one of the sign-off options.

Import Form Creation: Creating inspection steps through import can be complex for more complex forms, but for simple checklists they can dramatically speed up the build out of your forms. To import steps, go to the IMPORT module and select VIEW “vInspectionPoints”. It will take time to scrub out the text from the source document into the template import file however will save lots of time doing manually via the interface.

List of supported document formats

File Type	File MIME
.docx	application/vnd.openxmlformats-officedocument.wordprocessingml.document
.doc	application/msword
.xlsx	application/vnd.openxmlformats-officedocument.spreadsheetml.sheet
.xls	application/msexcel
.csv	text/csv
.txt	text/plain
.dwg	application/acad
.dgn	image/vnd.dgn
.bmp	image/bmp
.gif	image/gif
.tif	image/tiff
.jpg	image/jpg

.jpeg	image/jpeg
.png	image/x-png
.pdf	application/pdf
.ppt	application/ms-powerpoint
.zip	application/zip
.rpt	application/x-rpt
.svg	image/svg+xml

NOTE When you upload a file, it is checked for both the file type and the file MIME type to make sure they match. This helps to ensure that the file is of the correct type and that it can be opened and processed correctly.

How to change settings of a Manager

Each user can change the order of the columns within a particular manager. For instance, if you would prefer to see the Asset against which a punchlist has been raised in your main view, you can click on the column and drag it to a new position. This change will not affect any other users. It will only apply to your view within the software.

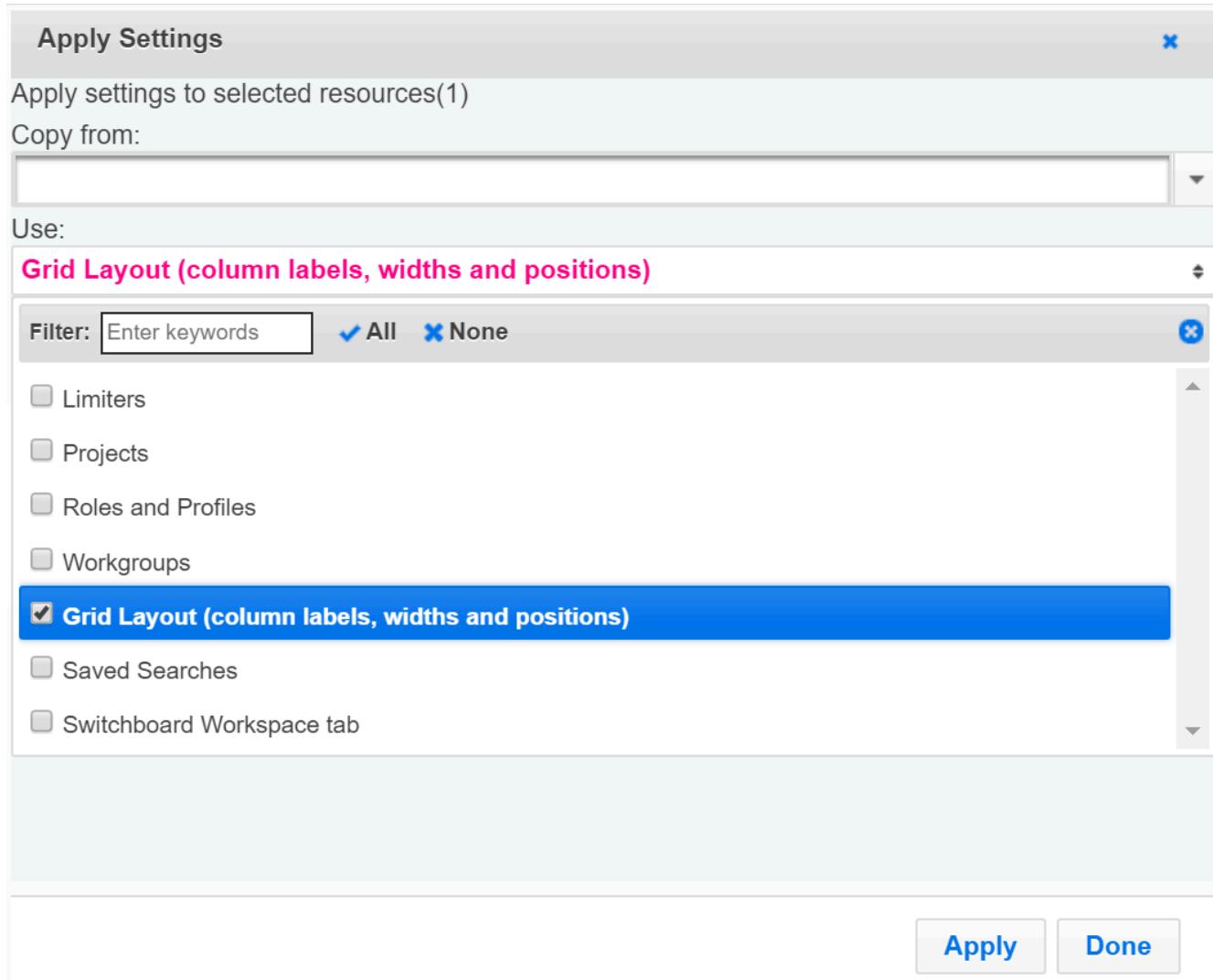
A user's column configuration of columns can be copied from one user to another by a system administrator. To copy settings from one user to another, follow these steps.

1. In **vResources**, search for the user who will receive the copied configuration.
2. Highlight the row of the user without clicking on the hyperlink.
3. Click **Copy Settings** button from the bottom ribbon.

4. In the pop up window, choose the window from which to copy configuration.

5. Under the **Use** drop down, choose **Grid Settings**.

NOTE When a new user is added, the user gets an email in their registered email address with a hyperlink to create their password.



How to Purge/Restore a function

When a record is deleted in Smart Completions, it is not completely removed. It is unassigned from the project, but the record still exists. This is to prevent data loss in case a Batch Delete mistakenly removes many records at once. These records will still appear if you choose the **My Projects** or **All Projects** option from the Projects list.

The Purge or Restore options allows you to either purge these records from the database or to restore them to their assignments before deletion. Only users with the appropriate rights granted can use this feature.

1. On the bottom ribbon of the manager, click **Purge or Restore**
2. Click **Edit List**
3. To load all available records, click **Search**. You can also use the search panel to filter results
4. Individual records can be added by double clicking a row or highlighting a row and clicking the top (right) arrow
5. After clicking **Done**, the records now appear in the primary window. You can choose to either **Restore** or **Purge**

Records (1)	Project	Removed By	Removed On	Description
	Test	Amy Sage	25-Oct-2018 11:01:08 AM	Test

★IMPORTANT You cannot restore a purged file back into the system

Purge/Restore is available in these managers

- vActionRegistry
- vAnnouncements
- vAssetPacksAssets
- vAssetPacksCable
- vAssetPacksLines

- vAssetPackTypes
- vAssets
- vAssetsCableDrums
- vAssetsCriticalitiesByAssets
- vAssetStatus
- vAssetTypes
- vAssetTypesImport
- vAudit_PlannedTasks
- vBOMs
- vCalibrationEquipment
- vCertificates
- vCertificatesSmartForm
- vCompanies
- vCountries
- vDataExchange
- vDIPRs
- vDisciplines
- vDocumentCategories
- vDocumentForms
- vDocuments
- vDocumentTypes
- vDossier
- vEnergyIsolationAssets

- vEnergyIsolationDevices
- vEnergyIsolationProcedures
- vEnergyIsolations
- vEngineeringUnits
- vExports
- vFiles
- vIncidentInvestigations
- vInspectionNonCompliances
- vInspections
- vJHAs
- vJobCategories
- vJobModels
- vJobPackages
- vJobs
- vJobTypes
- vJSM
- vLEMCompanies
- vLEMDocuments
- vLEMResources
- vLoops
- vLoopTypes
- vMaterials
- vMOCs

- vNearMisses
- vNOEs
- vPermitToWork
- vpgContracts
- vpgIssuesRegister
- vpgLessonsLearned
- vpgMeetings
- vpgProjectCostItem
- vpgReportPackages
- vpgProjectStatusInvolvements
- vpgResourceUtilization
- vPhysicalLocations
- vProcessBreakdowns
- vProjectControlTasks
- vProjects
- vPunchlists
- vPunchlistCategories
- vPurchaseOrders
- vReportsManager
- vResources
- vResourcesWBS
- vResourceTypes
- vRFIs

- vRoleGroups
- vRoles
- vSpareParts
- vTaskCategories
- vTaskModels
- vTaskModelsJasper
- vTasks_Preservation
- vTasks_TestsPlanned
- vTaskTypes
- vTitles
- vTools
- vTOPs
- vTOPsMaintenance.xml
- vTransmittals
- vWorkgroups
- vWorkPackages
- vWorkPackageSteps
- vWorkPackagesStepType

Resources and User Management

Companies

This section contains links to information regarding the Companies/Resources functionality within the Configuration Menu in Smart Completions.

Adding and modifying Companies

The **Companies** Manager contains contractors, vendors, supplier, and manufacturer lists that can be populated in reports and assigned responsibilities in Smart Completions. Each company can be allocated to tasks, cost items, contracts, punch items, reports, etc.

The process for creating/editing Companies is outlined below:

From the Switchboard, navigate to the **Configuration** tab.

Select **NEW**

 **NOTE** All mandatory fields will be in red and must be populated to enable saving the record.

- Enter a **Company Name** and - if needed - a Description
- **Company Type** classifies a company as a vendor, supplier, contractor, EPCM, or manufacturer. This classification defines which companies are displayed in various company-centric dropdowns.
- **Disciplines** are typically assigned to a company that is flagged as a Manufacturer, primarily for assets. When an asset is created and designated as Mechanical, the dropdown will list all manufacturers with the Mechanical discipline.
- **Responsibilities** defines whether a company is referenced in specific managers within the software. E.g. If companies are assigned or associated with Punchlist, the dropdown list of Company in the Punchlist module will only show those companies that have this manager assigned.

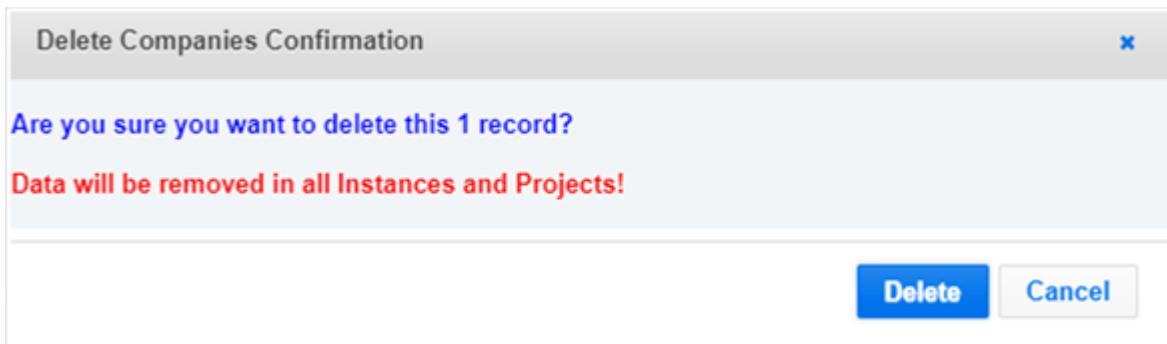
The **Address and Contact** tab allows you to add:

- Company Address

- Mailing Address
- Primary Contact

Delete a company

- A warning message pops-up when you select a Company to be deleted.



Resources and Users

User accounts can be managed in the Resources & Users Manager (vResources).

The **Resources** tab is designed to assign resources (For example, contractors, employees, suppliers, and so on) to the company. When assigning a task or punchlist to a person, the software can filter the results by Company.

Creating a New User Account

Click the **New** button at the bottom of the screen. If you don't see the pop-up window, make sure they are enabled in your browser. You can create a blank Resource, or you can copy from an existing Resource. The latter option allows you to pre-load some of the copied user's details into the new user's account.

- **Create a blank Resource:** The IDs, name, email, status, Projects and Company information is required. You will not be able to navigate to a different tab until completing this information.

When you've finished creating the record, remember to send a notice to the new user. The **Email User** button at the bottom of the pop-up window will generate a system email to the address on record. it will give the new user a temporary password that they must change upon first login.

- **Copy an existing Resource:** You will need to assign a resource ID, a login ID (these are usually the same), the user's name, and the user's email address. In the Options list, select items to copy from the original user. You can select

- Account Limiters
- Projects
- Roles and Profiles
- Workgroups, and
- Layout decisions.

Once completed, select **Finish** to load the new user form.

NOTES

- Previous versions of the software allowed administrators and super-users to reset the passwords of other users. With the new security features, Smart Completions no longer allows any users - even trusted administrators - to create passwords for other users. An administrator can change a user's status or Re-activate a locked-out user, but all password resets are now handled directly by the user in question. On the login screen, a user can request to reset their password. The system will generate a temporary password for the reset.
- When in Smart Completions portal, and you have to add a new user, reset your password, or change a password, you are now redirected to the Smart Cloud portal. Smart Cloud now allows a user to change details of company information, address information, roles, and rights.

Copy user settings while importing

You can copy the user settings of one user to another. You need to configure the import file before you can copy the settings.

[Configure new import fields to the vResources import file](#)

1. In the **Import Types Manager**, select **vResources**.
2. In the bottom bar, select **Imports**.

3. In the **Start** tab of the **Edit Import Wizard** page, enter all information required.
4. From the **Select Browse to File** section, select **Choose File**.
5. Select an import file of your resources list.
6. Select **Next**.
7. Go to **Select** tab and from the **Choose fields to import and behaviors** section, choose all column names that you would want to have on your user settings import file.
8. Select **Finish**.
9. Go to **Import** tab, you see the import validation results.

TIP You can choose the column names with **Settings** Prefix to be added to your import file.

New Column Names	Values
Settings - Source User	<username>
Settings - Limiters	True/False
Settings - Projects	True/False
Settings - Roles and Profiles	True/False
Settings - Workgroups	True/False
Settings - Columns	True/False
Settings - Searches	True/False

Settings - Workspace	True/False
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NOTE Provide the following values to include or exclude the above settings in your import file.

True	The setting is included to your import file.
False	The setting is not included in your import file.

Copy settings of one user to others

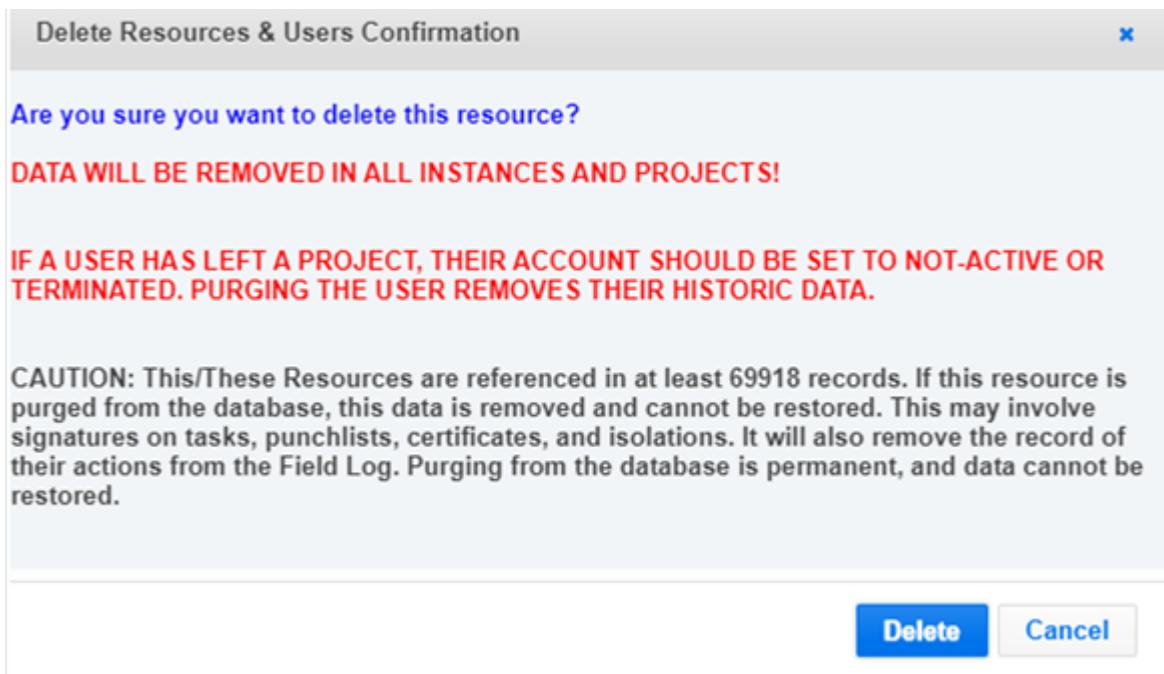
1. In the **Resources and Users Manager**, select one or many users from the list view
2. Select the **Copy Settings** from the bottom bar.
3. In the **Apply Settings** window, choose a user from the **Copy from** field.
- ! TIP** Select the user whose settings you need to copy from.
4. In the **Use** dropdown, select **Select Options** field.
5. Choose all the settings you would want to copy to the selected users.
6. Select **Apply**.

Delete a resource

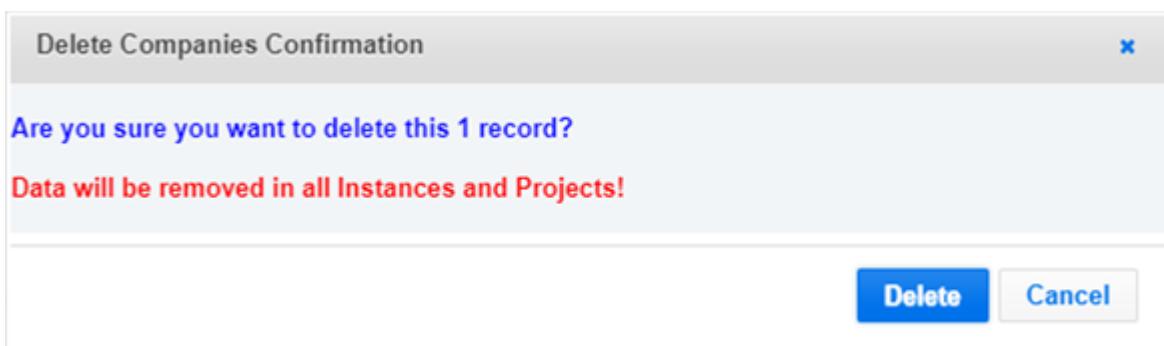
1. Select the resource, and select **Delete**.

NOTES

- When you delete a resource, it may remove or affect all instances users. A warning pop-up is displayed.



- A warning message pops-up when you select a Company to be deleted.



- Before deleting a user, convert the user to a resource if they have edited any record or if a project's historical data needs to be protected.

Resetting user passwords

If you have forgotten your password or need to change it, simply click the **Reset** button on the log-in screen.

The system will email you a temporary password with instructions on changing it.

If you have been locked out of the account due to entering an incorrect password too many times, contact your project's administrator to re-activate your account.

Reinstating a Locked-Out User

The system will lock out a user who attempts to enter the incorrect login details too many times. In these instances, an administrator can reinstate the status. The status of a locked-out user is blank. To reinstate a user, search for them in **vResources**, and change their status to Active. The user can then request a password reset from the login screen.

NOTE User reinstatement can be done in Smart Cloud Portal if SC is deployed in Smart Cloud.

User Logs

Smart Completions User Reports allows the administrators to see the activity levels of users within Smart Completions. You have two reports available to check the Smart Completions usage in different ways. These reports are:

- User Activity Quarterly Report
- User Activity Report

User Log Manager - Reports Tab.

★IMPORTANT Make sure you have selected the correct Project from the list, or you can choose **All Projects**.

1. Go to **Settings Panel > User Log**.

💡TIP Navigate to **vUserLog**.

2. Select **Search** to load all records.

💡TIP You can also use the **General** Tab on the left panel to filter and refine your search results.

3. The reports located on the reports tab are automatically filtered according to your search criteria.
4. Expand the **Summary** section to run and download the reports in pdf or excel versions.

User Activity Report - Reports Tab

The user activity report displays latest login details of all the logged in users. It also provides a delivered function where if you are a system administrator, you can set rules for account deactivation or extension (for 30, 45, 60 and 90 days) depending on the date of last login.

Roles and Role Profiles

Roles, Role Profiles and Rights can be configured within the system. While Smart Completions offers a full suite of roles (and their rights-assignments) against managers, projects can configure their own, specific roles. If you need to configure roles and rights, that you open a Service Request through Smart Support to discuss what you need to create. The role profiles and role configurations are database wide. For this reason, only trusted administrators should be granted access to roles, User Application and Resources.



Impact of new User Interface

With the new user interface for Role Management, we're phasing out role profiles. Here's what we've done to accomplish this:

- Every existing role profile, which is essentially a group of roles, is now represented by a single role that internally comprises all the roles. For instance, the previous role profile "Admin" will now be accessible as a role named "Role Profile: Admin".
- Users will now be associated with multiple roles directly, as opposed to the previous method of using role profiles, which were essentially groups of roles bundled together.

NOTE The role profile is integrated into vRoles, with the role name remaining identical to the existing role profile name, but now prefixed with "Role Profile:".

When defining the Roles, Role Profiles and Rights, the following definitions apply:

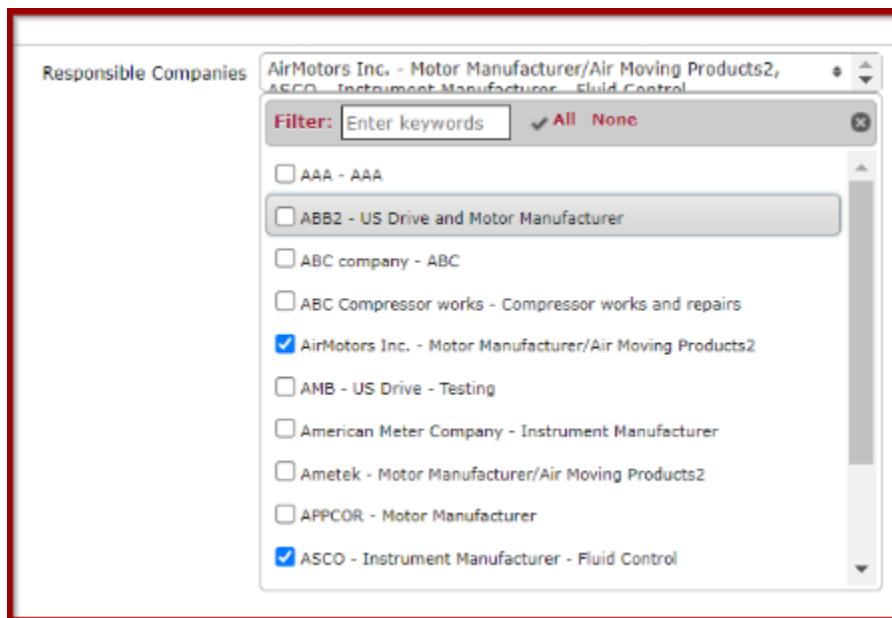
- **System User** = a person or resource
- **Role** = a function which defines access to specific managers
- **Rights** = permissions granted to perform a specific action within a specific manager, by a specific role.

- **Role Profile** = a group of roles defining the ‘authority/access’ levels

Although it's easy to confuse role profiles and rights / permissions sets with roles, both control two very different things. Roles primarily control a user's record-level access permissions against various managers.

NOTE Designating a Role or Role Profile as "Admin" will protect that profile and the rights associated with it. Any user with a role that includes "Manage" rights can assign roles to themselves and other users. If a Role Profile is designated as "Admin," then it is only available to certain administrative users. In this way, you can allow some users to create and assign roles, but limit their capability for high level administrative rights. For instance, one of these users cannot use the Role Profile or Roles manager to grant him/herself additional rights. Only users with these admin roles assigned to them will be able to see these check marked roles in the manager.

Responsible Companies: This feature is for each user to facilitate the working of the same Company. So user with selected companies in the drop down Responsible Companies will restrict the user to work on the records with matching responsible company field for whichever manager the responsible company is enabled.



The enhancements to the rights boundaries are applied using two methods:

1. Limiting of content that a user can see would be done by using **workgroup** and **responsible company** associations. This is done both at the user edit form, and user application module, by module/application. By selecting **YES** to **Use Workgroup** or **Use**

Responsible Company for any application (SC module). This will automatically filter content for the user when the user has the same workgroup and company as the content (e.g. punch records). The user will be able to see only the items that have the same workgroup and company mapping.

The screenshot shows the 'Workflow Settings' step in a configuration wizard. At the top, there are tabs for Step 1 General, Step 2 Roles and Rights, Step 3 Interface Settings, ..., Workflow Settings (which is selected), Step 4 Fields, and Step 5 Grid Columns. Below the tabs, there's a section titled 'Model Data' with a table of records. On the left of the table, there are buttons for Edit, Delete, Up, Down, and To. The table has columns for #, State Status, Locked?, Required Fields, Locked Fields, and Color. The rows represent different states: Originated, Submitted, Accepted, Completed, Closed, and Rejected. The 'Locked?' column contains checkboxes, and the 'Required Fields' column lists specific fields like ActionRequired, DisciplineSummary, PunchlistCategorySummary, and Punch. The 'Locked Fields' column is empty. The 'Color' column lists colors corresponding to each state: White, Yellow, LightGreen, DarkBlue, Black, and LightGrey. Above the table, there are three sets of radio buttons: 'Allow Editing (who/when)' (Yes or No), 'Use WorkGroup' (Yes or No), and 'Use Responsible Company' (Yes or No). The 'Use WorkGroup' and 'Use Responsible Company' groups are highlighted with a red border.

#	State Status	Locked?	Required Fields	Locked Fields	Color
1	Originated	<input type="checkbox"/>	ActionRequired		White
2	Submitted	<input type="checkbox"/>	DisciplineSummary,PunchlistCategorySummary,Punch		Yellow
3	Accepted	<input type="checkbox"/>	ActionTaken		LightGreen
4	Completed	<input type="checkbox"/>			DarkBlue
5	Closed	<input checked="" type="checkbox"/>			Black
6	Rejected	<input type="checkbox"/>			LightGrey

NOTES You will only see what they can edit.

- The system admin will go into **vUserApplications**, filter for desired module, select **Workflow settings** and select either (or both) responsible company and workgroup. This will set the requirement that content to be shown to the user will consider the users assigned workgroup and company.
 - The system admin will assign respective users a **workgroup** and **company**.
2. The Rights Boundaries as defined for a user (optional), will further restrict the content a user will see, and able to edit, based on Areas, Systems, and Stages.

Step 1 General	Step 2 Address and Contact	Step 3 Credentials	Step 4 Position & Workgroups	... Right Boundaries	... Roles	Step 5 POs	Step 6 Comments										
<table border="1"> <tr> <td>Areas</td> <td>Select Options</td> </tr> <tr> <td>Systems</td> <td>Select Options</td> </tr> <tr> <td>Stages</td> <td>Select Options</td> </tr> <tr> <td colspan="2"> Filter: <input type="text" value="Enter keywords"/> <input checked="" type="checkbox"/> All <input type="checkbox"/> None </td> </tr> <tr> <td colspan="2"> <input type="checkbox"/> 0000 - Template Project C0 - C0 Feasibility & Concept C0.1 - Opportunity Appraisal <input type="checkbox"/> 0000 - Template Project C0 - C0 Feasibility & Concept C0.2 - Feasibility Studies <input type="checkbox"/> 0000 - Template Project C0 - C0 Feasibility & Concept C0.3 - Concept Selection <input type="checkbox"/> 0000 - Template Project C0 - C0 Feasibility & Concept C0.4 - Concept Definition <input type="checkbox"/> 0000 - Template Project C1 - C1 Engineering Design (EDAC) C1.1 - Detailed Design <input type="checkbox"/> 0000 - Template Project C1 - C1 Engineering Design (EDAC) C1.2 - Front End Eng. & Design (FEED) <input type="checkbox"/> 0000 - Template Project C1 - C1 Engineering Design (EDAC) C1.3 - Equipment & Vendor Selection <input type="checkbox"/> 0000 - Template Project C2 - C2 Mechanical Completion (MCC) C2.1 - Fabrication <input type="checkbox"/> 0000 - Template Project C2 - C2 Mechanical Completion (MCC) C2.2 - Preservation <input type="checkbox"/> 0000 - Template Project C2 - C2 Mechanical Completion (MCC) C2.3 - Construction <input type="checkbox"/> 0000 - Template Project C2 - C2 Mechanical Completion (MCC) C2.4 - Walkdown Inspection/Punchlisting </td> </tr> </table>								Areas	Select Options	Systems	Select Options	Stages	Select Options	Filter: <input type="text" value="Enter keywords"/> <input checked="" type="checkbox"/> All <input type="checkbox"/> None		<input type="checkbox"/> 0000 - Template Project C0 - C0 Feasibility & Concept C0.1 - Opportunity Appraisal <input type="checkbox"/> 0000 - Template Project C0 - C0 Feasibility & Concept C0.2 - Feasibility Studies <input type="checkbox"/> 0000 - Template Project C0 - C0 Feasibility & Concept C0.3 - Concept Selection <input type="checkbox"/> 0000 - Template Project C0 - C0 Feasibility & Concept C0.4 - Concept Definition <input type="checkbox"/> 0000 - Template Project C1 - C1 Engineering Design (EDAC) C1.1 - Detailed Design <input type="checkbox"/> 0000 - Template Project C1 - C1 Engineering Design (EDAC) C1.2 - Front End Eng. & Design (FEED) <input type="checkbox"/> 0000 - Template Project C1 - C1 Engineering Design (EDAC) C1.3 - Equipment & Vendor Selection <input type="checkbox"/> 0000 - Template Project C2 - C2 Mechanical Completion (MCC) C2.1 - Fabrication <input type="checkbox"/> 0000 - Template Project C2 - C2 Mechanical Completion (MCC) C2.2 - Preservation <input type="checkbox"/> 0000 - Template Project C2 - C2 Mechanical Completion (MCC) C2.3 - Construction <input type="checkbox"/> 0000 - Template Project C2 - C2 Mechanical Completion (MCC) C2.4 - Walkdown Inspection/Punchlisting	
Areas	Select Options																
Systems	Select Options																
Stages	Select Options																
Filter: <input type="text" value="Enter keywords"/> <input checked="" type="checkbox"/> All <input type="checkbox"/> None																	
<input type="checkbox"/> 0000 - Template Project C0 - C0 Feasibility & Concept C0.1 - Opportunity Appraisal <input type="checkbox"/> 0000 - Template Project C0 - C0 Feasibility & Concept C0.2 - Feasibility Studies <input type="checkbox"/> 0000 - Template Project C0 - C0 Feasibility & Concept C0.3 - Concept Selection <input type="checkbox"/> 0000 - Template Project C0 - C0 Feasibility & Concept C0.4 - Concept Definition <input type="checkbox"/> 0000 - Template Project C1 - C1 Engineering Design (EDAC) C1.1 - Detailed Design <input type="checkbox"/> 0000 - Template Project C1 - C1 Engineering Design (EDAC) C1.2 - Front End Eng. & Design (FEED) <input type="checkbox"/> 0000 - Template Project C1 - C1 Engineering Design (EDAC) C1.3 - Equipment & Vendor Selection <input type="checkbox"/> 0000 - Template Project C2 - C2 Mechanical Completion (MCC) C2.1 - Fabrication <input type="checkbox"/> 0000 - Template Project C2 - C2 Mechanical Completion (MCC) C2.2 - Preservation <input type="checkbox"/> 0000 - Template Project C2 - C2 Mechanical Completion (MCC) C2.3 - Construction <input type="checkbox"/> 0000 - Template Project C2 - C2 Mechanical Completion (MCC) C2.4 - Walkdown Inspection/Punchlisting																	

NOTE When ever your positions and responsibilities or rights boundaries are modified, you need to restart your application by logging out and then logging in back. This will ensure your modified access is assigned properly and you can view the application with the newly modified access.

Create a Role

To create a new **Role**, complete these steps:

1. Create **New Role**
2. Select the Role record to view the various managers assigned against it.
3. Select **NEW** button.
4. Assign to **Role Profile**.

Delete a role

1. In the **Role Management** panel, select ellipsis next to the role.

2. Select **Delete Role**.
3. In the pop-up window, select **OK**.

NOTES

- We recommend that you do not delete **API Access** or **Mobile View** roles. If you try to delete, you would lose access to the Smart Completions Companion applications and any third party application access which is enabled using the smart APIs.
- If you've deleted a role, contact your administrator to revive the access of that role for your user.

Create a Role Profile

To help the System Administrator remember which controls what, remember: Roles control Records Permissions/Rights.

1. Select **Role Profiles Manager**
2. From the **Switchboard**, navigate to the **Configuration** tab.
3. Select **Configuration tab > Role Profiles**

Out of Box Profiles.

Smart Completions provides a variety of out-of-box role profiles. These are the most commonly used Role Profiles on projects. If you click on the hyperlink of a given profile, you can check to see which roles are bundled into it.

You can also create new Role Profiles by clicking the "New" button at the bottom of the screen. The popup wizard will allow you to create a Role Profile name, designate it as Admin, and select the Roles to assign to this profile.

Delete a role profile

1. Go to **Role Profiles** manager.
2. Select **Search**.
3. In the list view of role profiles, select a role profile you would want to delete.

NOTES

- a. To batch delete, select the list of role profiles you would want to delete.
 - b. The Batch delete option is enabled.
 - c. Select **Batch delete** option from the bottom ribbon bar, and proceed with step 5.
4. Select **Delete** option from the bottom ribbon bar.

IMPORTANT

- You cannot delete **Guest** or **System Administrator (Advanced)** role profiles or any associated roles to these role profiles. If you try to delete, a statement "No records will be deleted as some records are locked" is displayed in a dialog box.
- In a scenario, that any of the associated roles are deleted or terminated, you would lose access to the Smart Completions application and cannot be revived.

5. In the **Delete Role Profiles Confirmation** dialog box, select **Delete**.

Configuration levels

The Configuration tab allows you to set up the rules of the database, project, and configure the managers needed for your project. Smart Completions can be configured in any form required by a specific project. Depending on the roles and rights granted to you by your administrator, you may not see every button or manager discussed in this topic.

NOTE If your project administrator has renamed a Smart Completions Manager or moved it to a different location in the menu, the buttons displayed on screen may not reflect your project's version of the software.

For further queries, contact your project administrator.

- Global Configuration
 - Announcements
 - Switchboard
 - Menu
 - Reports
 - User Application
- Instance Configuration
 - Projects
 - Disciplines
 - Asset Types
 - Document Types
 - Workgroups
- Project Configuration
 - Task Models
 - Forms Library

- Work Breakdown Tree (WBS)
- Systemization Tree (PBS)
- Location Breakdown Tree (LBS)
- Resource and User Management
 - Companies
 - Resources and Users
 - Roles
 - Role Profiles
 - User Log
- Setup
 - Imports
 - Exports

What managers are available for global configuration?

Managers	Data Allocations
vAnnouncements	Global
vApplicationGroups	Global
vAssuranceSteps	Global
vCertificateClasses	Global
vColors	Global

vCompanies	Global
vCompanyTypes	Global
vConfigurationGridCols	Global
vControlSystemBreakdownTypes	Global
vCountries	Global
vCriticalAnalysisConsequences	Global
vCriticalAnalysisProbabilities	Global
vCriticalAnalysisTypes	Global
vCriticalities	Global
vCurrencies	Global
vDataExchangeTokens	Global
vDocumentCategories	Global
vDocumentDSTemplates	Global
vDocumentManuallcons	Global

vEngineeringUnitClasses	Global
vEngineeringUnits	Global
vEngineeringUnitTypes	Global
vFailureImpacts	Global
vHazardProtectionTechniques	Global
vHazardProtectionTypes	Global
vHazards	Global
vHazardZoneClassifications	Global
vIllnessTypes	Global
vImports	Global
vIncidentLevels	Global
vInjuryTypes	Global
vInspectionTypes	Global
vLockConditions	Global

vPermitClosingTypes	Global
vPermitHazards	Global
vPermitPPE	Global
vPersonalEquipment	Global
vpgCategory	Global
vpgElements	Global
vpgProjectRiskAssessments	Global
vpgRating	Global
vpgStatus	Global
vpgSubmitLog	Global
vpgType	Global
vPhysicalLocationTypes	Global
vPipingSegmentTypes	Global
vPriorityTypes	Global

vProcessBreakdownTypes	Global
vProcessVariable	Global
vProjectCommunicationTypes	Global
vPunchlistsImages	Global
vPurchaseOrderCategories	Global
vPurchaseOrderPaymentTerms	Global
vReportGroups	Global
vReportsManager	Global
vResourceHoursTypes	Global
vResources	Global
vResourceStatus	Global
vResourceTypes	Global
vResponsibilityTools	Global
vRFIStatus	Global

vRiskOccurrences	Global
vRiskScores	Global
vRiskSeverities	Global
vRoleGroups	Global
vRoles	Global
vRolesRights	Global
vScheduleImpacts	Global
vShippingTypes	Global
vSmartFormsPreservationHeaders	Global
vStatus	Global
vStepTypes	Global
vStrategies	Global
vSyncLogFile	Global
vTaskslImages	Global

vTaskStates	Global
vTasksUploadScanned	Global
vTitleTypes	Global
vTranslations	Global
vTranslationsIgnore	Global
vUserApplications	Global
vUserLog	Global
vUserRights	Global
vUsers	Global
vWorkBreakdownTypes	Global
vWorkCenterTypes	Global
vWorkflowTypes	Global
vWorkStepVolumeTypes	Global

What managers are available for instance awareness?

Managers	Configuration Type
vActionRegistry	Instance
vAssetPackAssets	Instance
vAssetPacksCable	Instance
vAssetPacksLines	Instance
vAssetPackTypes	Instance
vAssets	Instance
vAssets_Cable	Instance
vAssets_Electrical	Instance
vAssets_FireAndGas	Instance
vAssets_FMEA	Instance
vAssets_HazardousAreas	Instance
vAssets_Instruments	Instance
vAssets_Maintenance	Instance

vAssets_Mechanical	Instance
vAssets_Motors	Instance
vAssets_MRA	Instance
vAssets_PCA	Instance
vAssets_Piping	Instance
vAssets_PLCDCS	Instance
vAssets_Preservation	Instance
vAssets_Strategies	Instance
vAssets_TestForms	Instance
vAssets_Valves	Instance
vAssets_ValvesControl	Instance
vAssets_ValvesSafety	Instance
vAssetsCableDrums	Instance
vAssetsConfinedSpace	Instance

vAssetsContractorTypes	Instance
vAssetsCriticalities	Instance
vAssetsCriticalitiesByAssets	Instance
vAssetsCriticalityFactors	Instance
vAssetsCriticalityModels	Instance
vAssetsDeleted	Instance
vAssetsElectrical_GroundingReports	Instance
vAssetsElectricalFuseTypes	Instance
vAssetsInstrument_Calibrations	Instance
vAssetsInstrument_CalibrationStandards	Instance
vAssetsLocations	Instance
vAssetsOEMDetails	Instance
vAssetsPLCDCSPrimaryDisplays	Instance
vAssetsPumpTypes	Instance

vAssetStatus	Instance
vAssetsVirtual	Instance
vAssetTasksScheduledPreservation	Instance
vAssetToTestForms	Instance
vAssetTypes	Instance
vAssurance	Instance
vAudit_Assets	Instance
vAudit_PlannedTasks	Instance
vBOMTypes	Instance
vCableClasses	Instance
vCableTypes	Instance
vCalibrationEquipment	Instance
vCertificateCategories	Instance
vCertificates	Instance

vCertificatesSmartForm	Instance
vCertificateTypes	Instance
vChangeOrders	Instance
vCompaniesInteractions	Instance
vCompanyDivisions	Instance
vCompanyInstance	Instance
vCompanyInstances	Instance
vCompletedForms	Instance
vConfiguration	Instance
vControlSystemBreakdowns	Instance
vCriticalAnalysis	Instance
vDashboardReportPackages	Instance
vDataExchange	Instance
vDepartments	Instance

vDisciplines	Instance
vDocumentForms	Instance
vDocumentManuals	Instance
vDocumentProcedures	Instance
vDocuments	Instance
vDocumentStatus	Instance
vDocumentTypes	Instance
vDossier	Instance
vEnergizationTypes	Instance
vEnergyIsolationAssets	Instance
vEnergyIsolationDevices	Instance
vEnergyIsolationPermits	Instance
vEnergyIsolationProcedures	Instance
vEnergyIsolations	Instance

vEnergyIsolationStepModels	Instance
vExports	Instance
vFieldLog	Instance
vFiles	Instance
vFileTypes	Instance
vFlangeCategories	Instance
vFlangeJoints	Instance
vFMEAModels	Instance
vIncidentInvestigations	Instance
vIncidentLevelCategories	Instance
vInspectionNonCompliances	Instance
vInspectionNonCompliancesTypes	Instance
vInspectionPoints_Instance	Instance
vInspectionPurposes	Instance

vInspections	Instance
vInspections_Completion	Instance
vInspectionsByAssets	Instance
vInspectionTasksScheduled	Instance
vInstrumentValveTypes	Instance
vJHAs	Instance
vJobCategories	Instance
vJobModels	Instance
vJobPackages	Instance
vJobs	Instance
vJobTasks	Instance
vJobTypes	Instance
vJSM	Instance
vLocations	Instance

vLocks	Instance
vLockSets	Instance
vLockSetTypes	Instance
vLockSetUse	Instance
vLoopCategories	Instance
vLoops	Instance
vLoopTypes	Instance
vMailMergeLog	Instance
vMaterialCategories	Instance
vMaterials	Instance
vMaterialTypes	Instance
vMenus	Instance
vMOC	Instance
vMOCCategories	Instance

vMOCImpacts	Instance
vMRARiskFactors	Instance
vNearMisses	Instance
vNearMissTypes	Instance
vNOEs	Instance
vPCAs	Instance
vPermitToWork	Instance
vPermitToWorkArchv	Instance
vPermitTypes	Instance
vpgContracts	Instance
vpgIssuesRegister	Instance
vpgLessonsLearned	Instance
vpgMeetings	Instance
vpgProjectCostItem	Instance

vpgProjectDefinitionRatingIndezs	Instance
vpgProjectHealthIndicators	Instance
vPhysicalLocations	Instance
vPhysicalLocationsCustodyLog	Instance
vPipingReadiness	Instance
vPipingTypes	Instance
vPLCIOTypes	Instance
vPriorities	Instance
vProcessBreakdowns	Instance
vProcessBreakdownsCustodyLog	Instance
vProcessBreakdownsSubsyst	Instance
vProcessBreakdownsSyst	Instance
vProjectCommunicationTypesSteps	Instance
vProjectControlTasks	Instance

vProjects	Instance
vProjectTypes	Instance
vPTWPermits	Instance
vPunchlist	Instance
vPunchlistCategories	Instance
vPunchlistTypes	Instance
vPurchaseOrderChangeOrders	Instance
vPurchaseOrders	Instance
vPurchaseOrderTypes	Instance
vResourceActivities	Instance
vResourceCertificates	Instance
vResourceSkills	Instance
vResourcesSchedules	Instance
vResourceTimeSheets	Instance

vRFIDs	Instance
vRFIs	Instance
vRFIsContact	Instance
vRFISteps	Instance
vRiskAssessments	Instance
vRiskAssessmentTypes	Instance
vRiskRatings	Instance
vRiskTypes	Instance
vShipments	Instance
vSmartFormsAssetHeaders	Instance
vSmartFormsCertificateHeaders	Instance
vSmartFormsLoopHeaders	Instance
vSmartFormsPackAssetsHeaders	Instance
vSmartFormsPackCableHeaders	Instance

vSmartFormsPackHeaders	Instance
vSmartFormsTasksHeaders	Instance
vSparePartClasses	Instance
vSpareParts	Instance
vStrategyAnalysis	Instance
vTaskCategories	Instance
vTaskModels	Instance
vTasks	Instance
vTasks_FlangeJoints	Instance
vTasks_FlangeJointsOnDemand	Instance
vTasks_Maintenance	Instance
vTasks_MaintenanceScheduled	Instance
vTasks_Preservation	Instance
vTasks_SmartForms	Instance

vTasks_TestsCompletion	Instance
vTasks_TestsOnDemand	Instance
vTasks_TestsPlanned	Instance
vTasks_TestsPlannedDeleted	Instance
vTasks_TestsScheduled	Instance
vTaskSteps_Instance	Instance
vTaskTypes	Instance
vTestFormPackages	Instance
vTitles	Instance
vToolCategories	Instance
vTools	Instance
vToolTypes	Instance
vTOPs	Instance
vTOPsMaintenance	Instance

vTOPTOC	Instance
vTransmittalReasons	Instance
vTransmittals	Instance
vWeldAreas	Instance
vWeldLog	Instance
vWeldModules	Instance
vWeldSpools	Instance
vWeldTypes	Instance
vWeldUnits	Instance
vWorkBreakdowns	Instance
vWorkCenters	Instance
vWorkGroups	Instance
vWorkGroupsCategories	Instance
vWorkPackages	Instance

vWorkPackagesAudit	Instance
vWorkPackagesSteps	Instance
vWorkPackagesStepType	Instance
vWorkPackageTypes	Instance

Global Configuration

Announcements

This option allows you to add any announcement or message when a user logs in to the Smart Completions System.

Database Configuration

This option allows you to configure your Smart Completions system to start working. It is an out of the box function to customize your portal as per your work requirements.

Reports

This section allows you to create and configure your own reports.

Configure Saved Reports

The Saved Reports function is a powerful feature in most modules. You can filter for content (either using the browse or search panel) and load the filtered data into a specific report template. The combination of the filtered data and template report creates a custom report. A custom report can be generated once, or “Saved” so it can be referenced in the future. It can also be made “public” so that all users have access to the report created, and not just limited to the person who created the custom report.

Why do I need saved reports?

- Create a derivative report from a template (.rpt) and filter criteria

- Define level of detail for the report content
- Apply a highlight color for a detail level
- Define custom name as listed in the report center
- Define custom header and sub header within the report
- Define if report is private or public

How to use the Reports?

A project would like to generate a custom report listing only Punchlist records by a contractor(s) such as only Electrical and Instrumentation companies responsible to complete the punch items. A user would filter by the appropriate disciplines and companies, then select the desired report then save the report as a new report. They would enter in a name (e.g. E&I Punches by Contractor) then determine if they would like to keep private only for the user creating the report, or made public so any user who has access to the punch module would immediately see the new filtered report.

How do I access the saved Reports?

There are two ways to access the saved reports.

- Switchboard Report Center: You can easily filter for the saved reports by using the report name and tool. For example, if you are looking for a new punch report, then enter in “punch” into the tool column header. Upon text entry it will automatically filter any saved report within the punch module. Add additional filter by putting in a descriptor into the “report name” search column.
- Module Report Center: You can filter for any custom report within any module they are working in by applying descriptor text in the report name column. Saved reports can be easily identified by the 2nd column where it will show either a person’s name or public classification.

How to create a Saved Report

A saved report is used when a report must contain specific information and would be accessed in a repetitive manner. To create a saved report, enter filter criteria, select a report and reporting detail level(s), and Press save.

Enter New Report Name: ensure the report name and its associated header/sub header text are very explicit and reflect the report and its content.

Keep Private or Publish Report: If a report is meant to be shared among other users, select the PUBLISH button. This will then take the custom report and enable other users to access from both the switchboard and module report centers.

NOTES

Detail Level is an advanced option for reporting where a user has control over what hierarchy they wish to report at. For example

- If only the Plant and subsystem are selected, the report would only provide summary counts and percentages, and not “index” records
- If Plant, subsystem, details and sub-details are selected then it would still provide summary counts and percentages, but then list specific records

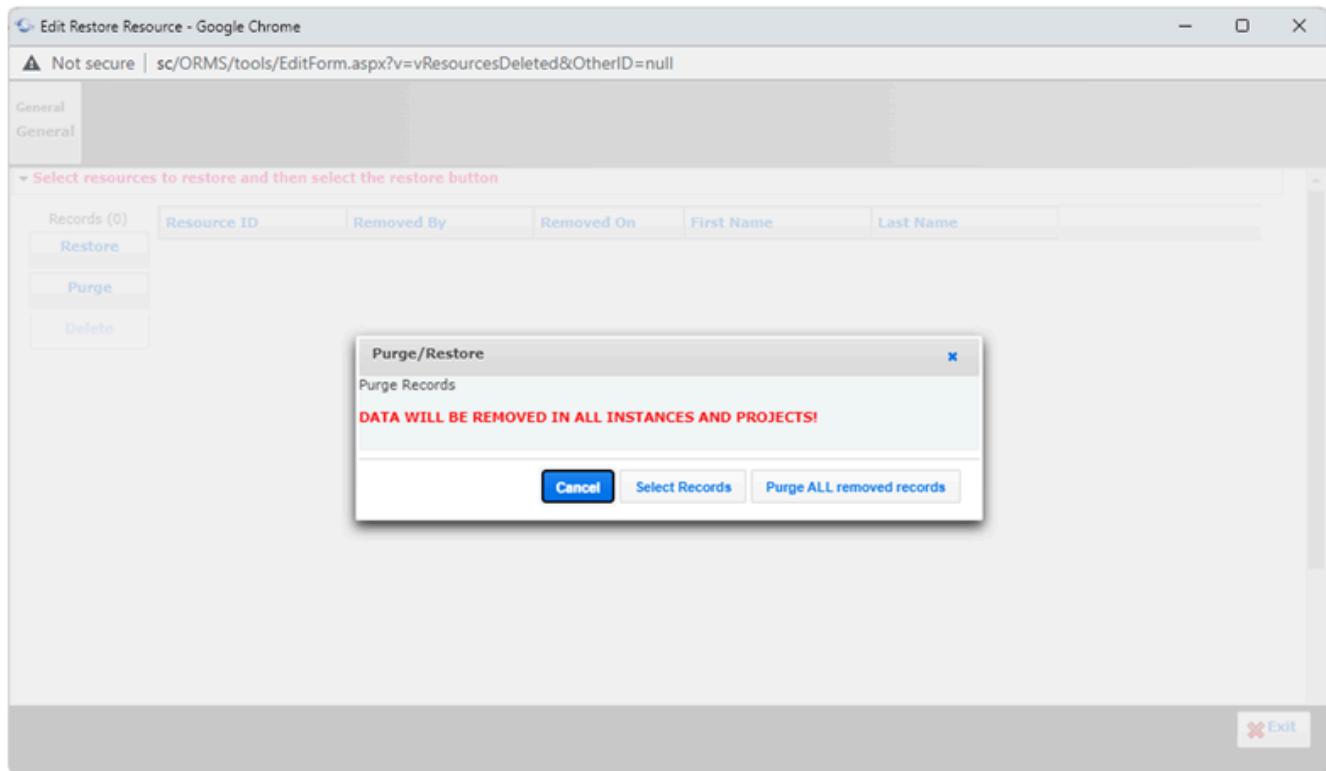
Configure Report Packages

The Report Packages functionality in Smart ® Completions is a powerful feature that enables management to access a set of reports in one (1) PDF file. The packages typically would be looking at a set of information from different modules but within a context. It also eliminates the need for management to learn how to go into all the different modules, apply the same filter criteria to generate a set of distinct reports. The report packages are developed once the project understand what reports they would like into one PDF file and created by a project engineer or system administrator.

User Applications

The User Application Manager allows the System Administrator to make site and Instance level changes to each of the Managers in the software. This includes turning on/off certain Managers, assigning roles and rights to perform actions within a given Manager, and creating custom Workflows (where available). Because changes to this Manager can cause site-wide changes, only high level administrators are granted access.

You can set purge access using the user application to set managers and limit access. You also can find a purge right now at all instances where a remove action is recommended earlier. This allows you to either purge or remove the resource or tag according to the action you intend to. A warning message is displayed as follows:



There are over 400 records listed in User Application, though not all of them are managers. User Application will also dictate rights for actions that are not associated with a Manager. For example, Smart Form rights are determined by vTasks_TestsCompletion. There is not a manager associated with this, but users must have a role with rights assigned here to submit a Smart Form in the Planned Tasks Manager. We offer preconfigured roles out-of-box. If you need to configure custom roles, it is possible to do so. We highly recommend contacting Smart Support for assistance, if you choose to do so.

Navigation: Configuration > User Application > Filter for Manager you need.

General Tab

Most of the fields on the General Tab should not be changed. However, this is where you can turn off a Manager so that it is unavailable to add as a button or to a menu dropdown.

Applications (465)		Reports				
Manager View	Name	Description	Show On Menu	Workflow?	Import V	
vResourcesSchedules	Schedule Types	Configuration: Core Module	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N		
vResourceStatus	Resource Status	Configuration: Core Module	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
vResourcesWBS	Project Resource Assignment	Configuration: Projects Module	<input type="checkbox"/>	<input type="checkbox"/>		
vResourceTimeSheetItems	TimeSheet Items	PG Module: TimeSheet Items	<input type="checkbox"/>	<input type="checkbox"/>		
vResourceTimeSheets	Labor & Timesheets	PG Module: Resource Timesheets	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
vResourceTimeSheetsMH	n/a - no interface		<input type="checkbox"/>	<input type="checkbox"/>		
vResourceTypes	Resource Types	Configuration: Core Module	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
vResponsibilityTools	Responsibilities		<input checked="" type="checkbox"/>	<input type="checkbox"/>		
vRFIDs	RFID Registry	O&M Module: RFID Assignments	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
vRFIs	Project Communications (RFIs, others)	CCMS Module: RFIs	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ivRFIs	
vRFIsContact		CCMS Module: RFIs	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
vRiskAssessments	Risk Assessment (HIRA)	ODMS Module: Risk Assessments	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ivRiskAssessm	

What is Workflow Settings Tab

Depending on the project requirement, the system allows the System Administrator to define and set the appropriate work-flow for every module.

By default, there are set standard workflows to several modules (to name a few) listed below:

- Documents & Drawings Manager
- Forms and Checklist Library Manager
- Punchlist & C.O.W Tracking Manager
- Job Cards and Work Packages Managers
- Resources and Users Manager
- Notice of Energization Manager

You can select the following options for both static (old) and dynamic (new) workflows but you cannot configure the workflow statuses in the old workflows.

- Allow Editing - Allows user to edit the workflows
- Use Workgroup - Allows users of selected workgroup to access the records
- Use Responsible Company - Allows users of selected company to access the records

NOTES

- When both workgroup and responsible company options are selected, then the users who belong to the workgroup and the responsible company will be able to access the records.
- All dynamic workflows can now be exported choosing a .csv or .xlsx formats to include all workflow information inclusive of modified workflows. Select **Yes** in **Include Workflow** options.
- Setting up multiple approvers for approvals is only possible within the NOE module. When setting up Notice of Energization (NOE) that requires **Multiple Sign-Off**, the **Resource Label** field is required. If you leave this field blank, exporting with the **Include Workflow** option will fail.

View the static (old) workflows

strApplication

vCertificates

vEnergyIsolationProcedures

vIncidentInvestigations

vInspectionNonCompliances

vJHAs

vJobModels

vJobPackages

vJobs

vJSM

vPermitToWork

vProjectControlTasks

vTasks_FlangeJoints

vTasks_Preservation

vTasks_TestsPlanned

vTransmittals

View the dynamic (new) workflows

vActionRegistry

vAssets_FMEA

vAssets_MRA

vAssetsCriticalities

vDocumentForms

vDocumentManuals

vDocumentProcedures

vDocuments

vDossier

vEnergyIsolationAssets

vEnergyIsolatons

vMOC

vNOEs

vpgIssuesRegister

vpgLessonsLearned

vpgMeetings

vpgProjectDefinitionRatingIndexes

vpgReportPackages

vPunchlist

vResources

vResourceTimesheets

vRFIs

vRiskAssessments

vTaskModels

vTOPs

vTOPsMaintenance

vWorkPackages

Update Workflows for Smart forms

To update any form in a manager, you need to enter or populate the fields given in the form. For each phase of completion, you can set mandatory fields to the forms.

Follow these steps to set required fields for punchlist:

NOTE To set required fields for any other module, select the module from the user applications list view and then go to workflow settings tab.

1. Go to **User Applications > vPunchlist > Workflow Settings**.
 2. Select **Required Fields** and select the fields to be set mandatory to complete a Punchlist form.
 3. Select **Edit**, on a selected workflow state.
 4. In the **Editing** window, select **Yes** in the **Datasheet?** field to view the workflow state listed in the attached datasheet.
- NOTE** The **Datasheet?** field is applicable only in the Punchlists, RFIs, and MOC managers.
5. Select **Save**.

Edit Application - Google Chrome
 https://test.ceccms.com/ORMS/Tools/EditForm.aspx?ID=88&v=vUserApplications

Step 1 General Step 2 Roles and Rights Step 3 Interface Settings ... Workflow Settings Step 4 Fields Step 5 Grid Columns

Model Data

Allow Editing (who/when)	<input checked="" type="radio"/> Yes <input type="radio"/> No	Use WorkGroup	<input checked="" type="radio"/> Yes <input type="radio"/> No	Use Responsible Company	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Expiration Reminders?	<input checked="" type="radio"/> Yes <input type="radio"/> No					
Records (3)	#	State Status	Locked?	Required Fields	Locked Fields	Color
	1	Accepted	<input type="checkbox"/>	Completion - Action Taken, Description, Discipline (Summary)	AssetSummary	LightGreen
	2	Completed	<input type="checkbox"/>	Filter: Enter keywords <input checked="" type="checkbox"/> All <input type="checkbox"/> None		DarkBlue
	3	Closed	<input type="checkbox"/>	Asset (Summary) Asset Pack (Summary) Assigned To Comment <input checked="" type="checkbox"/> Completion - Action Taken Contract (Summary) <input checked="" type="checkbox"/> Description		Black
	To					

NOTES

- For the significant action steps on the Punchlist creation form (Originated, Accepted, Completed, Approved and Closed) you need to set the mandatory fields (required fields) separately.
 - You cannot use revision in between the workflow states. The application does not respond.
- When a record goes through multiple revisions, you can only have one comment for each state regardless of the number of revisions. For example, when you comment on the Originated state of a workflow initially, and the workflow is revised multiple times and returns to originated state, the newest comment is overwritten on the workflow.
- When a record is reopened from a closed state, the comments from the previous workflow state and the reopen state are merged and separated by a semicolon (;)

- You cannot change the transition states while executing a smart form or any inspection step. The system restricts such actions.
- A warning message is displayed when you try to delete or modify any existing transition state.

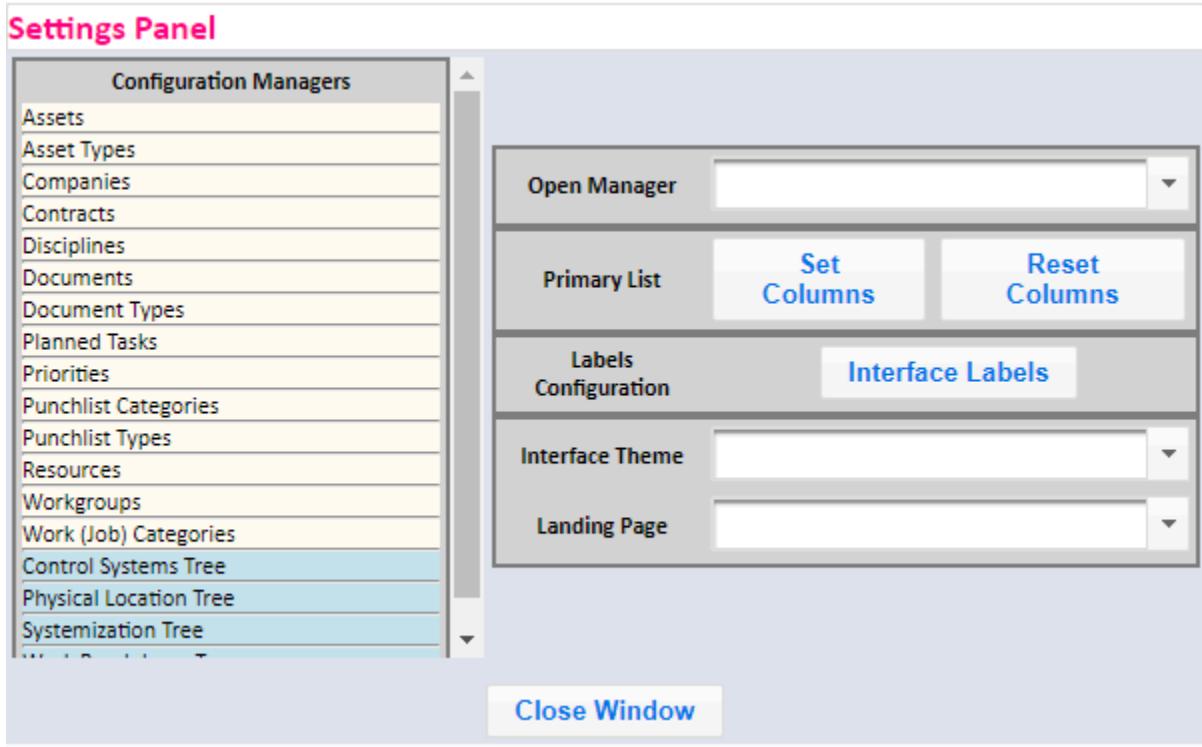
What is Field Settings Tab

The **Fields** tab in the **User Application** enables data fields to be hidden from the manager interface if they are not required. Fields can also be set as Required fields and renamed. The changes made here apply to every workflow within each record. You may prefer to use Workflow Settings to designate required fields according to their workflow state. Additionally, Interface Labels - from the gear icon - can also be used to rename fields.

Step 1 General	Step 2 Roles and Rights	Step 3 Interface Settings	...	Step 4 Fields	Step 5 Grid Columns	
▼ Field Mapping						
		Field Name (Database)	Interface Field Description	Editing?	Search...	
				<input type="checkbox"/>	<input checked="" type="checkbox"/>	
		Asset (Summary)	Asset	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		Asset Pack (Summary)	Asset Pack	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		Assigned To	Assigned To	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		Comment	Comment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		Completion - Action Taken	Action Taken	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		Contract (Summary)	Contract	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		Description	Description	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		Discipline (Summary)	Discipline	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		Exception Reason	Exception Reason	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		Field001 (Custom)	Anything I need	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
		Field002 (Custom)	Field002 (Custom)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		Field003 (Custom)	Field003 (Custom)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		Field004 (Custom)	Field004 (Custom)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		Field005 (Custom)	Field005 (Custom)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		Field006 (Custom)	Field006 (Custom)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

What is Interface Settings Tab

System Administrators can create shortcuts through the Gear Icon to other Managers that are related to a given Manager, For example, in the Punchlists Manager, the gear icon contains links to Assets, Asset Types, Companies, etc.



These are configured on the Interface Settings tab.

The screenshot shows the 'Interface Settings' tab, which is part of a multi-step configuration process. The tabs include Step 1 General, Step 2 Roles and Rights, Step 3 Interface Settings (which is active), Step 4 Workflow Settings, and Step 5 Grid Columns. Under the 'Interface Settings' tab, there is a 'Summary Field' section set to 'PunchlistSummary' and a 'Configuration Applications' section. The 'Configuration Applications' section displays a table of 18 records, with columns for #, Application, and Break. The applications listed are Assets, Asset Types, Companies, Contracts, Disciplines, and others. There are also buttons for Delete, Up, Down, and To.

#	Application	Break
1	Assets	<input type="checkbox"/>
2	Asset Types	<input type="checkbox"/>
3	Companies	<input type="checkbox"/>
4	Contracts	<input type="checkbox"/>
5	Disciplines	<input type="checkbox"/>

What is Roles and Rights Tab

The Roles and Rights tab allows administrators to assign which roles will be able to perform certain actions within each manager. Assigning rights within the system is complex, and changing the configuration can create unintended consequences. If you need to configure unique, project-based roles, please contact Smart Support for assistance.

Role	Right
0.CE: Guest ALL (View Only)	<input type="checkbox"/>
1.ADMN: All Modules (Edit Primary Lists)	<input type="checkbox"/>
1.ADMN: All Modules (Mail Merge)	<input checked="" type="checkbox"/>
4.CCMS: Punchlist(Exceptions)	<input checked="" type="checkbox"/>
Amy Test: Basic Mobile Submit	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/> Right
	<input type="checkbox"/> Approve
	<input checked="" type="checkbox"/> Batch
	<input checked="" type="checkbox"/> Check In/Out
	<input type="checkbox"/> Close
	<input type="checkbox"/> Complete
	<input checked="" type="checkbox"/> Create
	<input checked="" type="checkbox"/> Create Wizard
	<input checked="" type="checkbox"/> Edit
	<input type="checkbox"/> Edit List
	<input type="checkbox"/> Export
	<input type="checkbox"/> Import
	<input type="checkbox"/> Issue
	<input type="checkbox"/> Mail Merge
	<input type="checkbox"/> Manage
	<input type="checkbox"/> Remove
	<input type="checkbox"/> Submit For Verification
	<input type="checkbox"/> Verify
	<input checked="" type="checkbox"/> View

Instance Configuration

This is a very powerful function and is a key differentiator for Smart® Completions. The ability to configure your database into instances enables system administrators to create an instance per project, or an instance containing multiple projects. You can configure it as per your organizational processes.

For example, if you are an:

Engineering Procurement Construction (EPC) : You can setup an instance for each client. Each instance has the taxonomies, equipment lists, test form standards etc., setup for each project they create in that instance.

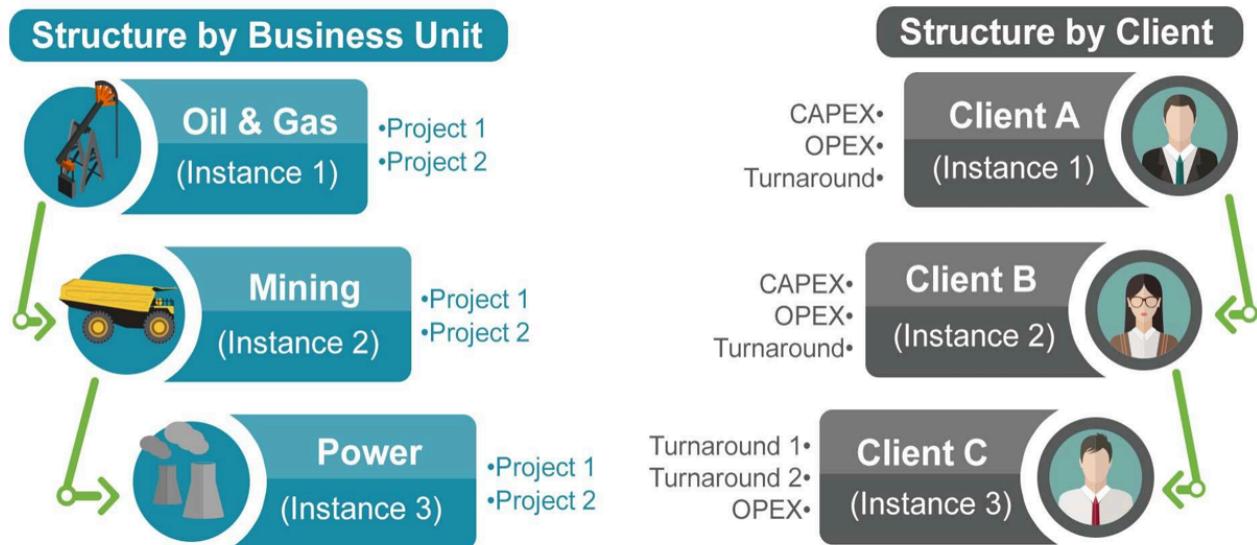
Owner Operator (OO): You can create an instance for production site. This will have a master project containing the full systemization, tags, documents etc. In this case, if you have a shutdown project, you can use the project creation wizard to spin up a new project which would be a subset of the master project/site/systemization, and all of the associated tags,

documentation, systemization etc., would be "assigned" to the new project. This dramatically reduces the efforts in re-importing and focused on "re-use" than "replicate".

It is important to understand that an "instance" is a silo of data in the Smart Completions database. If an administrator configures a set of disciplines etc., then all projects in the instance will use the same discipline configuration and does not change disciplines in other instances.

An example of how instances can be configured are:

Standardize Project Portfolio – Execution & Reporting

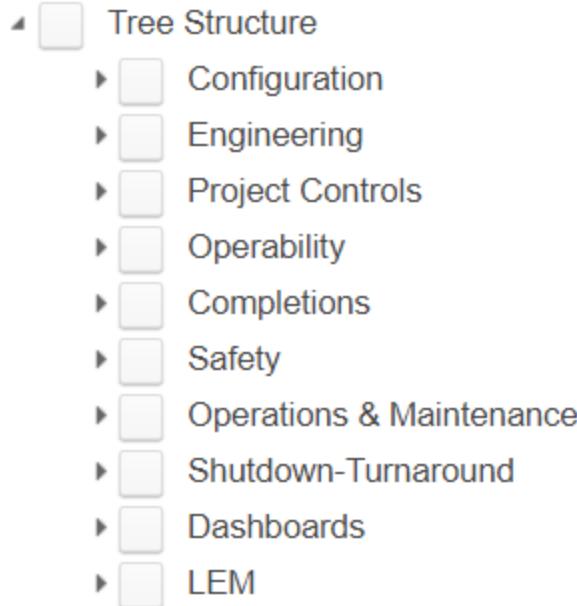


Switchboard Configuration

You can configure your workspace using the switchboard configuration. Here you can choose to opt for all the managers that you need out of all the out of the box options available.

Menu

The Menu option allows you to configure your own menu as per your work requirement. This can be done only by users having manage rights.



Projects

Depending on the project needs, Smart Completions allows System Administrators to create multiple Instances within a site and multiple projects within an Instance. There is no limitation to the number of Instances and Projects you can create. Some configurations and data are shared within Projects that are not shared between Instances, and each customer's specific circumstances will determine the logic employed.

The hierarchy is:

1. **First Level: Site.** Some configuration changes will apply site-wide. These includes changes to the vResources and User Application.
2. **Second Level: Instance.** An Instance is a grouping of projects. For Owner-Operators, this might be plant-based. EPCs might group all projects from a specific client into one Instance.
3. **Third Level: Project.** A Project is defined by the scope of work, systemization, and handover/turnover packages necessary. You can assign the same asset to more than one project within an Instance. We assume assets and documents will be unique within the Instance.

Site-Wide Configurations:

- Resource Manager: Anyone with access can assign users to any project, manage roles, and eliminate limiters. Only administrators should access this manager.
- Projects: Anyone with a role granted the Manage right can assign projects and will be able to access All Projects from the project dropdown.
- Roles and Role Profiles: While users are limited to Projects to which they are assigned, any assigned roles will apply to all of their Projects. It is not possible to have view-only rights in one Project and editing rights in a different Project.
- Companies: similar to the description for Roles and Role Profiles.
- In [What is a User Application](#), adding roles to a manager and configuring rights will result in site-wide changes.

Instance Specific Configurations:

- In [What is a User Application](#), the Workflow Settings tab is Instance-Specific. Changes made here affect all Projects within the Instance. It's important to note: changing the workflow settings in an active Project will cause corruption of existing data.
- Switchboard Configurations.
- Menu Configurations.
- Disciplines apply to all Projects within an Instance.
- Asset Types, Document Types, Punchlist Types, Punchlist Categories, and Table of Contents for handover packages.
- Pack Types, Cable Types, Pipe Types, etc.
- User Dashboard configurations, though users will be limited to data they are authorized to see.
- Interface Labels.

Disciplines

This document contains links to information regarding using the Asset Disciplines functionality within the Engineering Menu in Smart Completions.

Document Types

The **Document Types** module is designed to group documents and drawings. A drawing type is a child object of a drawing category. The category is really meant to be very simple group like, document or drawing. Any document should have a Document Type assigned to it, especially if your operation or project is using the controlled document module.

When editing a Document type, the following fields should be filled out:

1. Type: The primary key. It should be singular, such as "Loop."
2. Description: Should be short, such as Loop Drawing.
3. Abbreviation: This should be 3-4 characters and is not required, but if you configure the drawing tag creator this would be required to use. Abbreviation example for loop is "LO".
4. Category: This is the parent to any document type and should be limited to very few records. IBS recommends use it to classify documents (e.g. procedures) and drawings (e.g. single line drawing).
5. Controlled: A controlled document would automatically have the hard coded workflow (e.g. create, submit, verify, approve, revoked). It will also allow for version control, where Smart Completions will manage a history of revisions for that document record. The files associated with a document will only be archived (locked), when it is approved. Only specific users with verify or approved rights will be able to update these files until it is approved.
6. Lifespan (days): Lifespan is used for those controlled documents that need reviews every "x" days. In this case, it will automatically turn approved documents (if they are controlled) to expire. This is not required.
7. Is this a Procedure Type?: Procedure is used to classify if the document is an e-procedure. In that case the document control module will know which documents are created electronically vs. uploaded.

8. Offline Mobile?: This is used to identify which documents should be referenced on a mobile device. These documents will be automatically downloaded with the checked out assets or tasks. Since files can be large, we limit files to be downloaded to less than 2MB.
9. Included in Line Segment Drawings?: Segment drawings are for piping drawings, specifically isometrics. Any piping drawing that is used to define segments of a line would have this selected as it limits which drawings are listed in the SEGMENT section of the piping edit form.

10. Use Type:

 **NOTE**

An "Instance" will share the same document types, so if several projects are in an instance, any changes to a document type will change for all projects

Asset Types

Smart Completions allows you to add a lot of information. Asset information provides a cornerstone to the system; a complete digital layout of your facility's equipment, with the capability of linking to documents, test forms, work orders, inspections, etc. To enter correct information for all assets, they first must be configured correctly.

The asset type manager identifies what information to keep for any asset assigned to that type. For example, if you create a new asset type and need to capture "grounding reports" then you would select that option. This exposes specific tabs or sections of the Asset record.

In order to apply a standard to asset tags in the database, each tag is assigned an "Asset Type". The Asset Type is assigned a Discipline and configured to require additional information above and beyond the standard disciplinary data.

When editing an asset type, the following fields must be completed:

Configuration Item	Comment
Asset Type	This is an abbreviation, for instance, "PP" to classify an asset type of Pump.

	<p>What makes a unique asset type is the combination of the asset type + description. Smart Completions is designed this way, as there can be several types of pumps, but all are engineered with "PP" in the tag names. Therefore there would be the following asset types:</p> <ul style="list-style-type: none"> • PP – Centrifugal Pump • PP – Vertical Pump • PP – Slurry Pump • PP – Metering Pump
Description	Description should be short and to the point. It would be "Centrifugal Pump" for the example above.
Discipline	Select from available disciplines.

The following fields are customizable (used to expose tags of that type to other modules):

Configuration Item	Comment
Criticality	Can define the criticality of an asset type. For example, safety equipment would be a higher criticality than say a hand valve. Criticality are entered in the criticality configuration module.
Asset Type Model	The model exposes additional data points, and Smart Completions comes with some pre-defined models. If additional models are

	required please contact your system administrator.
Calibration Report	This Boolean is used to flag assets of this type would have the option to add history of calibrations performed on an asset. This is not to be confused with the Calibration Equipment Manager, which manages Calibration Equipment.
Grounding Report	This Boolean is used to flag assets of this type would have the option to enter in grounding reports.
Confined Space	This Boolean is used to flag assets of this type a question on the asset edit form "Is this a confined Space?" when YES is selected, the asset is also shown in the confined space entry module.
Preservation	This Boolean is used to flag assets of this type a question on the asset edit form "Requires Preservation?" when YES is selected, the asset is also shown in the Asset Preservation module.
Cable	This Boolean is used to flag assets of this type to be considered under cable discipline and placed in the cable and cable drum modules.
DCS/PLC	This Boolean is used to flag assets of this type to be considered under the DCS

	discipline and will be displayed in the DCS/Controls module.
Line Association	This Boolean is used to flag tags of this type would have the option in the asset edit form, the ability to assign both Upstream and Downstream Lines to the tag.
Child Association	This Boolean is used to flag tags of this type would have the option in the asset edit form to assign other asset tags to the tag as a "Child" object/tag. This is what enables parent child relationships.
Hazardous Areas	This Boolean is used to flag assets of this type a question on the asset edit form additional fields to collect hazardous energy information. It also places assets of that type in the HA module.
Blind and Flange	This Boolean is used to flag assets of this type that they can be allocated to the blind and flange module.
Control Narrative	This Boolean is used to flag tags of this type would be placed into the SOP module.

The process for configuring Asset Types is outlined below:

Navigation: Configuration tab > Asset Types

Finalize Configuration

- Select the NEW button for a new asset type, populate the mandatory fields that are highlighted in RED i.e. Asset Type, Asset Type Description and Discipline.

The Asset Type can be configured to expose Assets to other modules for capturing additional specifications and information.

Asset Manager – Tabs (this triggers additional tab information for that Asset with this Asset Type)

- Ground Report
- Electrical
- Calibration

Asset Manager – Checkboxes

- Confined Space
- Preservation
- Hazardous Areas
- Blind & Flange
- Control Narrative

Asset Manager – Checklists

- Lines Association

Select SAVE to save record.

NOTE An "Instance" will share the same asset types, so if several projects are in an instance, any changes to an asset type will change for all projects

In the Asset Tag Editor, you will be able to access these additional tabs when the Asset Tag is assigned against that Asset Type.

Example: If the Asset Tag is in a Hazardous Area and requires Preservation, check them within the Asset Tag editor to activate these tabs.

Create/Edit Asset Types

IMPORTANT Prior to creating a Flange Joint, you must create an asset type with **Discipline** as **PIPE - Piping** and **Asset Type Model** as **Flange Joint - Flange Joint Data Model (Pipe)**.

1. Select **NEW** to create a new asset type.
2. To edit an asset type, pick the asset type then select the **EDIT** button.

NOTE Administrators can **Batch Edit** a selection of asset types and would perform this function if a selection of asset types has the same configurations (for example, any asset type that is a control valve would get the control valve data model).

Update Asset Type Model

1. In the **Asset Types** list view, choose any asset you want to modify.
 2. In the **Edit Asset Type <asset ID>** window, for the chosen asset, select an **Asset Type Model** from the list.
 3. Select **Save**.
- TIP** Upon successful saving, a message bulletin appears.
4. Select **Keep Editing Current Record > Update Assets**.

TIP This ensures that the modifications made to the asset type are reflected in its associated assets. Omitting the update assets step may result in loss of data.

Update multiple assets

1. In the **Asset Types** list view, choose the assets you want to modify.
- TIP** This enables the **Batch Edit** option in the bottom ribbon bar.
2. Select **Batch Edit**.
 3. In the **Edit Asset Type <number of assets>** window, for the chosen assets, select the **Asset Type Model** from the list.
 4. Select **Save**.
- TIP** Upon successful saving, a message bulletin appears.
5. Select **Keep Editing Current Record > Update Assets**.
- TIP** This ensures that the modifications made to the asset type are reflected in its associated assets. Omitting the update assets step may result in loss of data.

Alternate option:

1. If you have multiple assets with already updated records, you can select them all and edit at one go.
2. Select **Update Assets** option from the bottom ribbon bar.
3. In the **Update assets from asset type** pop-up, select **Update assets**.

Assets/Documents

This document contains links to information regarding the Assets/Documents functionality within the Configuration Menu in Smart Completions.

Create a new asset status

The Asset Status Manager allows you create different types of 'Asset Status' (e.g. Commissioning, In Operations, Decommissioned, etc.) that can be selected when creating or editing an asset. You can then query against the different statuses to see how a project's assets are grouped and run reports.

The process for creating new Asset Status and assigning them to Assets is outlined below:

1. Click the gear icon and search for "**Asset Statuses**."
2. Click **New** from the Asset Statuses Manager bottom controls ribbon.
3. Enter new Asset Status.
4. Assign **Asset Status Color**.
5. Save and Exit.

Assign status to an asset

1. Open an Asset Edit Form (from creating a new or editing an existing asset).
2. Select the Status dropdown.
3. Select **Asset Status**.
4. Save and Exit.

Workgroups

Work groups can also be termed as departments. You can create various work groups to divide work based on roles. A work group has a custody of a system.

Project Configuration

Project Specific Configurations:

- Assets and Tags. They can be assigned to more than one Project in an Instance, but it refers to the same record in the database.
- Documents. Similar to assets.
- [Task Models](#), though they can be copied between Projects.
- Systemization and Locations, though they can be copied.
- Tasks exist only in a project, and they cannot be copied.
- Certificate Types.

User Specific Configurations:

- The Workspace tab is specific to each user. It can be copied from user to user.
- Any Grid Layouts, changes to size of Columns. These can also be copied.
- Limiters. These can also be copied.
- Saved Searches. These can also be copied.

Using the Project Creation Wizard

The Project Creation Wizard creates new Projects and copies data from one Instance/Project to an existing Project. To access the wizard, click the New button from the bottom ribbon.

You can:

- Create a Blank Project in the current Instance.
- Copy data from an existing Project in the current Instance.

- Copy data from an existing Project in a existing Instance.
- Copy data from an existing Project in a new Instance.
- Copy data from an existing Project to an existing Project.
- Copy data from an existing Instance/Project into an existing Instance/Project.

The final option offers the most data to copy from one Project to another, so it may be worth creating the project first. The data that can be copied includes, but is not limited to the following:

- Disciplines.
- Dashboards.
- Document Types.
- Certificate Types.
- Punchlist Types and Categories.
- Task Models.
- Task Model Headers.
- Table of Content Definitions.
- Systemization Tree.

Task Models

Task Models create any task for an asset, loop, pack, system/subsystem, or certificate. Task Models are used to build digital checksheets (Smart Forms) or to attach a mail merge word document from the Forms Library (Paper-Based solution). It is the template of the form that will be taken into the field and the rules that will govern the tasks. They house both the form and the underlying scope for the tasks that will be created from them.

Task models are critical records that are tracked for version control. A task model has approval workflow. Once approved, it is locked for editing.

NOTE The workflow associated with the Task Model should not be confused with the workflow for an individual task.

The Task Model Edit page has the following tabs to allocate this information:

- General
- Materials and Tools
- Resources
- Forms & Checklist
- Inspection Points
- Safety Audit
- Documents
- Custom and
- Comments

This information is very useful for workforce planning and estimating, but most importantly is used to simplify and streamline work creation and assignments.

A Task Model should be assigned one of the following Execution Types:

1. **Paper Execution:** Tasks performed using QR coded forms generated from Smart Completions. When this execution type is selected, it will automatically hide the **Inspection Steps** tab in the task model edit form.
2. **Digital Execution:** Tasks performed using QR coded forms or digitally using one of the Smart Completions Mobile applications. When selected it will display the **Inspection Steps** tab where you can add steps.

Task Models can be imported or created manually by the **NEW** button from the bottom bar.

 **NOTE** Select **Digital Execution > On Demand**, to create digital tasks for digitally executed task models.

Edit Task Model (TM-00001) - Google Chrome

Step 1 General Step 2 Materials and Tools Step 3 Resources ... Forms & Checklist ... Inspection Points Step 4 Safety Audit Step 5 Documents Step 6 Custom Step 7 Comments Workflow Originated Submitted Verified Approved

Primary Data

Task ID: TM-00001	Description: Certificate C2 Construction Completion (CC)
IS Active? <input checked="" type="radio"/> Yes <input type="radio"/> No	Task Category: Preservation - Pr
Execution Type: Digital Execution	Discipline:
Priority:	Systematization Type:
Loop Type:	Pack Type:
Responsible Workgroup:	Affected Workgroups: Select Options
Revision: 0	Revision Description: Issued for Use
Line Segment Type:	Certificate Group:
On Demand <input type="radio"/> Yes <input checked="" type="radio"/> No	Steps Closing: <input type="radio"/> Yes <input checked="" type="radio"/> No
Use E-Signature: <input type="radio"/> Yes <input checked="" type="radio"/> No	Predecessors: Select Options
Link PL Status: <input type="radio"/> Yes <input checked="" type="radio"/> No	Disclaimer:

Data Exchange: Yes No
Repeat Header: Yes No

WBS Association

Project: 2 - PPM2	Phase:
Stage:	Activity:

Safety & Environmental Requirements

Requires Isolations? <input type="radio"/> Yes <input checked="" type="radio"/> No	Safety Comments:
Has Environmental Risk: <input type="radio"/> Yes <input checked="" type="radio"/> No <input checked="" type="radio"/> Unknown	Environmental Comments:

Scheduling

# of Persons: 3	Duration: 4.00	Recurrence: <input checked="" type="radio"/> Recurrence
Allow Notifications? <input type="radio"/> Yes <input checked="" type="radio"/> No <input checked="" type="radio"/> N/A	Responsible Company:	Supplier:

Buttons

- Submit
- Save
- Exit
- Update Tasks
- Email Task

Create the following reference lists before you create task models:

- Project Systemization
- Disciplines
- Project Work Breakdown Structure
- Task Categories and Types
- Workgroups
- Responsible Companies
- Resource Titles
- Tools and Material Lists
- Test Form Lists (Only the form ID must exist in order to assign)

It is important to add as much information as possible. At a minimum the following should be entered or assigned:

- Task Description
- Task Type
- Revision No.
- Execution Type
- Test Form (if applicable)
- Responsible Work group
- Responsible Company
- Project
- **Is active:** Only Active Task Models can create tasks
- **Task Type:** Used to define what type of task will be created.
- **Execution Type:** Used to define if tasks are paper-based or digital executed. When you select digital execution, only then you can see **On Demand** option to create tasks digitally.
- **Asset Types:** Used to assign specific types of assets in later task creation. If the form will apply to a certain type or types of assets, they can be selected here. If the Discipline is selected, the dropdown will filter the results by that Discipline.
- **Loop Type:** Used when the Task Model will apply to a control loop. This creates a profile or template for certain types of loops. Loop Types must be created before they can be assigned.
- **Pack Type:** Used for specific Cable, Pipe or Asset Packs.
- **Systemization Type:** Used for Systems or Subsystems. Select this dropdown to define if it is Plant, Process, System or Subsystem level. This is used to create Task Models for Certificates or start-up tasks that are not asset-based.
- **WBS Association:** Assigns the Task Model to a specific phase or stage of the Project. When Work Breakdown Structure is assigned, any tasks created from it are

automatically assigned to the correct WBS.

- **Scheduling - Lag or Lead:** Used to specify how the duration relates to dependent planned tasks. **Duration** is the number of days you would want the task to be completed in.
 - **Lag:** Enter the lag duration with negative values. For example, type field value as **-2** to start two days after the predecessor task.
 - **Lead:** Enter a integer value if a task can start before its predecessor is completed. For example, type field value as **3** to start three days before the predecessor.
 - **Lock:** To prevent accidental overwrites when recalculating dates or updating from task models, you can enable a lock control for start and end dates.
- **Setting Recurrences:** If a task model is meant to be performed on a recurring basis, select the Recurrence button and select the most appropriate Recurrence strategy.

TIP To include recurrences in task models, the following field columns must be added to the corresponding import sheet.

Column - Field Name
Recurrence
Recurrence Type
Recurrence - Frequency
Recurrence - Frequency EU
Recurrence - Weekday Flag
Recurrence - Day

Recurrence - Date
Recurrence - Week
Recurrence - Month
Recurrence - Type Option
Recurrence - Occurrences
Recurrence - Days Allowed Ahead of Schedule

TIP The columns **Responsible Work group** and **Responsible Company** can be added from **Set Columns** option. Available columns will be populated to the primary list view so that you can further refine query of Task Models accordingly.

The next three tabs (Materials & Tools, Resources, and Forms & Checklist) all use the "Editable Grid" control, which allows you to select an item (e.g. Material Item) and enter the quantity required. If the tool or material is not in the list, and a user with General Configuration rights can "Add New." The "Add New" function is at the bottom of the dropdown, otherwise select the item and enter in a quantity.

NOTE You can now create Task Models using the **Inspection with 3 (Radio Button) and 1 Input (Alpha Numeric)**, **Inspection with 3 (Radio Button) and 2 Input (Alpha Numeric)**, and **Inspection with 3 (Radio Button) and 3 Input (Alpha Numeric)** step and configure the input type as **Numeric** without encountering disabled **Is N/A** checkboxes. Regardless of the initial selection state (selected or unselected) before saving, you can modify the **Is N/A** checkboxes for all steps when reopening the Task Model for editing.

Copy a Task Model

1. In the **Task Models** manager, select **New** from the bottom bar.
2. In the **Edit Task Model Wizard** window, select **Copy an existing Task Model > Next**.



3. Select **Search** from the left pane, to get the list of Task Models.
4. Select the <task model> you would like to copy, and then select **Finish**.

General	Task ID	Datasheet	Description	IS Active?	Task Category	Task Type	Execution	Project
...	TM-77808		Systemization Type Digital Execution 2608568 Creating Tasks from an Location Type Digital Execution Task	<input type="checkbox"/> Y <input type="checkbox"/> N	C5 - Construction	Installation	Digital	U16 - UAT TEST
...	TM-77809		2608568 Creating Tasks from an Location Type Digital Execution Task	<input type="checkbox"/> Y <input type="checkbox"/> N	C5 - Construction	Installation	Digital	U16 - UAT TEST
...	TM-77810		2608568 Creating Tasks from an Location Type Digital Execution Task	<input type="checkbox"/> Y <input type="checkbox"/> N	C5 - Construction	Installation	Digital	U16 - UAT TEST
...	TM-77811		2607401 Creating Tasks from Pack Type Task Model	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	C5 - Construction	Installation	Digital	U16 - UAT TEST
...	TM-77812		2607401 Creating Tasks from an Local Type Digital Execution Task	<input type="checkbox"/> Y <input type="checkbox"/> N	C5 - Construction	Installation	Digital	U16 - UAT TEST
...	TM-77813		2608568 Creating Tasks from an Systemization Type Digital Execution	<input type="checkbox"/> Y <input type="checkbox"/> N	C5 - Construction	Installation	Digital	U16 - UAT TEST
...	TM-77814		KUB MECH ASSET	<input type="checkbox"/> Y <input type="checkbox"/> N	C5 - Construction	Installation	Digital	U16 - UAT TEST
...	TM-77815		2605051 Creating a new digital execution Task Model	<input type="checkbox"/> Y <input type="checkbox"/> N	C5 - Construction	Installation	Digital	U16 - UAT TEST
...	TM-77820		2608568 Creating Tasks from an Location Type Digital Execution Task	<input type="checkbox"/> Y <input type="checkbox"/> N	C5 - Construction	Installation	Digital	U16 - UAT TEST
...	TM-77821		2946525 Batch edit Task Models to modify General Data, LEM, SF color	<input type="checkbox"/> Y <input type="checkbox"/> N	CO - Commissioning	System Commissioning	Digital	U16 - UAT TEST
...	TM-77822		Oil and Lube	<input type="checkbox"/> Y <input type="checkbox"/> N	PR - Preservation	Preservation	Digital	U16 - UAT TEST
...	TM-77823		TC#2751466, #2888521 - Paper Task of Location Type Testing UAT TOC 1	<input type="checkbox"/> Y <input type="checkbox"/> N	MC - Mechanical Completion	Field Installation Check	Paper Form	U16 - UAT TEST
...	TM-77824		Testing UAT TOC 1	<input type="checkbox"/> Y <input type="checkbox"/> N			Digital	U16 - UAT TEST
...	TM-77825		Testing UAT TOC 1	<input type="checkbox"/> Y <input type="checkbox"/> N			Digital	U16 - UAT TEST
...	TM-77826		Testing UAT TOC 1	<input type="checkbox"/> Y <input type="checkbox"/> N			Digital	U16 - UAT TEST
...	TM-77827		2935936 Validate Rights 1 Sign-Off	<input type="checkbox"/> Y <input type="checkbox"/> N	CO - Commissioning	System Commissioning	Digital	U16 - UAT TEST
...	TM-77828		2935936 PRESERVATION Validate Rights 1 Sign-Off	<input type="checkbox"/> Y <input type="checkbox"/> N	PR - Preservation	Preservation	Digital	U16 - UAT TEST
...	TM-77829		2935936 FLANGE Validate Rights 3 Sign-Off	<input type="checkbox"/> Y <input type="checkbox"/> N	ENG - Engineering	Engineering Certificate	Digital	U16 - UAT TEST
...	TM-77830		test	<input type="checkbox"/> Y <input type="checkbox"/> N			Digital	U16 - UAT TEST
...	TM-77831		97a37941d6f-a7688451 - Paper Task	<input type="checkbox"/> Y <input type="checkbox"/> N	MC - Mechanical Completion	Field Installation Check	Paper Form	U16 - UAT TEST

Buttons at the bottom: Reset, Search, AND/OR, Back, Next, Finish, Exit.

5. In the **Edit Task Model** window, you can check the copied details of the selected Task Model.
6. You can now update any changes to the task model details, and select **Update Tasks**.
 - a. In the **Update Tasks** from the **Task Models** window, select the **Update Forms already Merged**.
 - b. Select the **Interface Tool** from the list.

c. Select **Update <Interface Tool name>**.

7. Select **Email Task** or **Submit** to have the task model details emailed to you.

Test forms for task models

Select the Test Form(s) from the Forms Library: Norm is to have only one form for each task. However, if you need additional forms, select the checkbox next to each form you require as part of the deliverable to complete the task.

TIP You can skip this step for Digital Execution of task models.

NOTES

- To upload executed **PDF** forms to Paper based Planned Tasks through UI, you should have Edit rights to **vTasksTestFormsDocs** manager. The system shows **Missing Rights**, if you do not have the edit rights..
- This right is also required to upload executed forms through the **Utility Tool**.

Manage Inspection Points

The Inspection Points tab will only display if the execution type is set to "Digital Execution." You can create simple and complex digital forms using the Smart Forms technology. Smart Forms were created for digital, offline execution via one of the Smart Completions Mobile Applications. Alternatively, you can render them into a pdf with a unique QR code. Once the form has been completed by hand, the Smart Completions Upload Utility tool will read this QR code and automatically update the task.

Select insert E-signature while selecting the workflow of the task model in digital form. For any CCMS task, Preservations, or Certificates forms, where a task model is set with the insert signature requirement, will compile the PDF form with the respective users signature image. For a signature to be inclusive of the task model, it has to set the signature requirement as Yes or No at the originated state of the task model. A change in the requirement of signature in the mid of the workflow is not honored by the application. For example, when a CCMS task is originally designated as Yes for required e-signature, and then it was changed to No at the later stages of the workflow, the PDF rendered at the end of the task model will honor the initial requirement and prints the saved e-signature on the PDF.

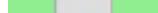
What can you do with Inspection Points/Steps?

With the help of inspection steps, you can

- Display tools, materials and resources in the smart form
- Display tools, materials and resources in the rendered PDF file
- Capture actual man hours and quantities for tools, materials and resources

The Smart Completions management system shows the actual man hours, quantities for tools and other resources used by the contractors. This helps to compare between the planned and actual figures while planning for future tasks.



NOTE Click on the checkbox  to display the actual man hours, tools and quantities in the rendered PDF file.

Add comments in a smart form

1. You can add comments when **reject** or **accept** options does not imply to a particular task.
2. Choose the **N/A** button on the smart form in task manager.
3. Select the call out box under the **Initiate/ Date** column to add comments.

The screenshot displays a 'Smart Form' interface for task management. At the top, there are tabs for 'Step 1 Task Summary' and 'Step 2 Completion'. A green button labeled 'Show In PDF' with a checkbox icon is visible. The task details on the right include:

- Task ID: T-00001-0004
- Description: Test Task Cancellation - Vertical Pump Installation Test
- Location: 1100-AT-9305
CE-FIC-M-103 (100)

The main area shows a table for task details:

Pack Name:	Description:	Systematization?:
System: 1100-103-07 - FIRE / GAS DETECTION - OSBL EAST, REFRIG. SVG.; UTIL. AREA; CCR	Process Area: 1100-103 - DETECTION SYSTEMS	Process Plant: 1000 - TRAINING 1
Location:	Systematization?:	Location:

Below this is a table for inspection steps:

Item No.	Step Action	Accept	Reject	N/A	Initials / Date	PL
1	engine quality	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	BL / 15-May-2020	<input checked="" type="checkbox"/>
Comment: This step does not apply						
+ Add Step						
2	step 2	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	BL / 15-May-2020	<input checked="" type="checkbox"/>

At the bottom, there are buttons for 'Save', 'Exit', and 'Reset'.

4. While you can add a sub step or a dynamic step to the smart form inspection steps, the numbering system of the steps are adjusted by the system to avoid duplicates.

The screenshot shows a 'Smart Form' interface for managing inspection steps. It displays three levels of hierarchy:

- Level 1:** Item No. 1, with a search icon next to it. Below it are sub-items: 1.0.1, 1.0.2, and 1.0.3.
- Level 2:** Item No. 1.1, 1.1.1, and 1.1.2.
- Level 3:** Item No. 1.2, and 1.2.1.

For each item, there are two rows of actions:

- Step Action:** Contains 'Completed' and 'Initials / Date' columns with checkboxes.
- Accept, Reject, N/A:** Contains three columns with radio buttons for selecting 'Accept', 'Reject', or 'N/A'.

At the bottom of the interface are buttons for '+ Add Step' (green), 'Remove Step' (red), 'Save' (blue), 'Exit' (red), and 'Reset Task' (grey).

Configure N/A checkbox for planned or preservation tasks

1. Go to **Task Models** manager.
2. Choose a task model you want to manage N/A checkbox.
3. Select **+ Steps** option, and choose a step which has N/A checkbox option.

💡 TIP This enable or disable N/A option is available only for N/A checkboxes and not for N/A customizable options.

Add Steps

Filter Inspection Types: ✖ ?

From	To	Accept	Reject	N/A	Initials / Date
<input type="radio"/>					

Cable From To

Quantity: 1 + Add

Item No.	Cable	From	To	Accept	Reject	N/A	Initials / Date
				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Cable Installation Records

Quantity: 1 + Add

Item No.	Cable Drum No	Trench type	Out of Trench Start metre mark	Backfill Start metre mark	Backfill End metre mark	Out of Trench End metre mark	N/A	Initials / Date
							<input type="checkbox"/>	

Cable Pair Check

Quantity: 1 + Add

Item No.	Step Action	Pair 1	Pair 2	N/A	Initials / Date
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Calibration Discrete

Quantity: 1 + Add

Item No.	Step Action	On	Off	N/A	Initials / Date
				<input type="checkbox"/>	

Close

4. Select the step configuration options for a single step or multiple steps, and then select **Enable/Disable N/A**.

- **Enable N/A:** Select the option, to enable a N/A checkbox for a step.

The screenshot shows the 'Edit Task Model' application window. The top navigation bar includes tabs for Step 1 (General), Step 2 (Materials and Tools), Step 3 (Resources), Step 4 (Forms & Checklist), Step 5 (Safety Audit), Step 6 (Documents), Step 7 (Comments), Workflow (with status: Originated, Submitted, Completed, Approved), and Steps. The main area is titled 'Task Step Tool Bar' and contains a grid for defining inspection steps. A red box highlights the 'Disable N/A' checkbox located in the bottom-left corner of the step definition area.

- **Disable N/A:** Select the option, to disable a N/A checkbox for a step.

This screenshot is identical to the one above, showing the 'Edit Task Model' interface with the 'Inspection Points' tab selected. The main grid area is visible, and a red box highlights the 'Enable N/A' checkbox located in the bottom-left corner of the step definition area.

5. Select Save.

Limit file types for upload

This feature is active only for digital forms where you have to upload images in the inspection step. When you upload any file to a task model, you are allowed to upload only the acceptable formats such as files with **.png** or **.jpeg** extensions.

NOTE SC application restricts all other files with formats that are not supported by it for example .pdf files.

Configure the client hold point

1. Open the task manager.
2. Select the task where you want to add an inspection hold point on the **Inspection Points** tab.
3. In the smart form, select **Add Step**.
4. Filter for **Client Hold Point** and add this step to the smart form wherever you need it.
5. Once you have added the inspection hold point, you can enable the following options:

Requires Issue Rights	<p>The client hold point inspection step is designed for use with PIN and Issue rights. This ensures users with Issue rights to unlock the inspection steps using the PIN. The PIN strengthens security by restricting access to those who can manage smart forms or access vTasks_TestsCompletions.</p> <ul style="list-style-type: none">• PIN Required: If you enable the PIN option, only users with Issue rights can unlock the inspection step by entering the correct PIN.• No PIN Required: If you disable the PIN option, anyone with Edit rights can complete the inspection step without needing a PIN.
-----------------------	--

Disable Preceding Steps	This prevents the preceding steps of the smart form from being executed after the inspection hold point has been passed.
Disable Succeeding Steps	This prevents the succeeding steps of the smart form from being executed until the inspection hold point has been passed.

6. To ensure that only eligible field executioners can perform an inspection of this step, you can secure the step with the lock feature.
7. Select the checkbox to lock the inspection step.

 **TIP** To unlock the step:

- Select the inspection step that you want to unlock.
- Enter the required **PIN** in the **PIN Code** window.
- Select **Submit > Close**.

8. Once you have unlocked the step, you can see your username details and the date stamp on the step. Edit the details, if required.
9. Once you have executed the inspection hold point, select **Confirm**. All disabled steps will be enabled and you can proceed with the smart form steps execution.

Manage the workflow types

1. In the **Edit Task Model <TM ID>** window, go to the **Inspection Points** tab.
2. Scroll down to find the option **Select Workflow Type**.

3. Select the appropriate option, and the assigned users will follow up with their respective sign-off procedures to close or update the tasks.

Types of workflows available in smart forms

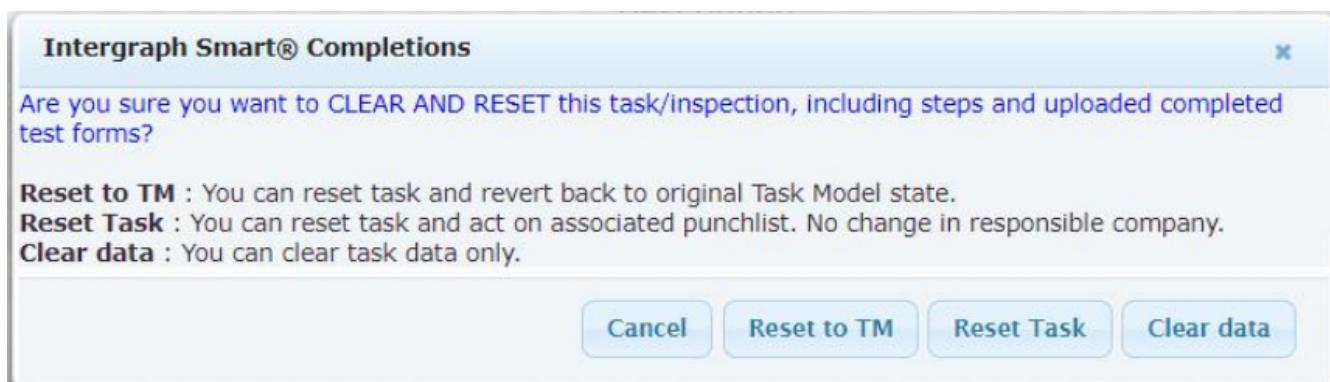
Workflow Type	What does it do
Planned / Preservation Three Sign-Off (Submit/Complete/Close)	For a selected planned task or a preservation task, users need to sign-off their approvals at three different stages of submit, complete, and close of the task.
Planned / Preservation Two Sign-Off (Complete/Close)	For a selected planned task or a preservation task, users need to sign-off their approvals at two different stages of complete, and close of the task.
Planned / Preservation Two Sign-Off (Submit/Complete & Auto Close)	For a selected planned task or a preservation task, users need to sign-off their approvals at two different stages of submit, and complete of the task. Once the approvals are done, the task is closed automatically.
Planned / Preservation Single Sign-Off (Close Only)	For a selected planned task or a preservation task, a user is required to sign-off their approval at the stage of closing the task.
Certificate Two Sign-Off (Complete/Close)	For a selected certificate, users need to sign-off their approvals at two different stages to complete and close the certificate.

Certificate Two Sign-Off (Partial Group - Complete/Close)	For a selected certificate, users need to sign-off their approvals at two different stages to complete and close the certificate.
Certificate Three Sign-Off (Submit/Complete/Close)	For a selected certificate, users need to sign-off their approvals at three different stages of submit, complete, and close of the certificate.
Certificate Four Sign-Off (Submit/Verify/Complete/Close)	For a selected certificate, users need to sign-off their approvals at four different stages of submit, verify, complete, and to close the certificate.
Certificate Two Sign-Off (Submit/Complete & Auto Close)	For a selected certificate, users need to sign-off their approvals at two different stages to submit and complete the certificate. Then the certificate is closed automatically.
Certificate Single Sign-Off (Close Only)	For a selected certificate, a user is required to sign-off their approval at the stage of closing the certificate.

NOTE When exporting certificates that use single sign-off, the submitted and verified statuses are not included in the exported data as these statuses are not applicable to the approval process of single sign-off.

Update Tasks

Use the **Update Tasks** tab to update any task model field for updated tasks. To avoid overriding of data with in task steps, select the option **Responsible Company**. This locks the data that does not need to be updated. Choose the appropriate action in the pop up window to continue with the update.



Add Task Model Headers

1. Navigate to **Task Model Header** using the  icon.
2. Click **Edit** to include the **Task Type**.
3. Select the required **Task Type** (For example, Preservations for Preservation tasks).
4. Navigate to **Task Model> Inspection Step** to add the new task model header.

NOTE When a preservation task type is added in the SaaS application, it must be displayed on the mobile applications as well.

Add Task Model Items to Task Model Export

Follow these steps to add/ attach items to task model export:

1. Navigate to **Task Model** manager window, select a **task model**.
2. Click the **Document** tab on top of the child window.
3. Click **Edit list**, select the documents and fields to be exported.
4. Click **Done**.
5. Open the **Export Manager** and export the required task model.

All the documents that you attached to the corresponding task model will be exported.

NOTE Use the  icon to navigate to any manager windows.

Add a step to a Task Model

NOTE The Steps can be added manually or by import. If importing Inspection Steps, you must already have created the Task Models to which the steps will be assigned, and the Task Model must be set to Digital Execution.

1. Select the **+Step** button.
2. In the popup window, you can choose from the available configurations. These are hard-coded by the Smart Completions Development team. If you cannot find the step you need, contact Customer Support.
3. When you have chosen the Step, select the **+Add** button to add it to the form. You can Select multiple times to add the step more than once. When you are finished adding steps to the form, close the pop-up window.
4. Each Step can be flagged as **Required** or as a **Sub Step** to the previous step. Most steps can be configured to allow the field user to Dynamically Add additional steps. In case there is a predefined pattern of execution with the steps, on selecting the steps on the smart form, you can view all the consecutive steps displayed sequentially while rendering the same.
5. Write any needed instructions. Under the Punch List heading, select the drop down to automatically configure the Punchlist trigger options. For example, if the Field Worker selects "Accept, Reject, N/A" inspection type, the system can automatically create a Punchlist. Typically, the "Reject" answer would be used to trigger a Punchlist for Planned Tasks, or a Non-Compliance for preservation tasks. If you want to complete the step without providing text box inputs, select N/A' option.
6. For below task steps while execution even if N/A radio button is selected, It is mandatory provide alpha/numeric text box inputs to complete a task step.
 - One Input and Three radio buttons(Accept, Reject, N/A)
 - Two Inputs and three radio buttons(Accept, Reject, N/A)
 - Three Inputs and three radio buttons(Accept, Reject, N/A)

If you want to complete the step without providing text box inputs Select **is N/A** option while configuring task steps in task model (Only users with manage rights can configure

this function). When you select either of the radio buttons to close or complete a task, it gets updated with the current date.

NOTE If you select **N/A**, the input fields change to non-editable state and the task status changes to closed or complete.

7. To add a disclaimer to your smart form, add the content to the field **Disclaimer**. You can select the **Repeat Header** option to repeat the headers through out the pages of a smart form.

The screenshot shows the 'Edit Task Model (New Record)' interface. At the top, there are tabs for Step 1 General, Step 2 Materials and Tools, Step 3 Resources, Step 4 Safety Audit, Step 5 Documents, Step 6 Custom, Step 7 Comments, and Workflow (with sub-options Originated, Submitted, Verified, Approved). The main content area is divided into sections: Primary Data, WBS Association, Safety & Environmental Requirements, and Scheduling. The 'Disclaimer' field under Primary Data is highlighted with a red border. At the bottom, there are buttons for Submit, Save, Exit, Update Tasks, and Email Task.

Manage certificates to close a task model

You can view predecessors of certificate types of a selected Task model and its WBS. This information is also displayed for Planned Tasks and imports.

Certificate predecessors have been added to the secondary panel of the Task model managers and imports manager. By clicking on an in progress task model, you can view the relative certificate types shared by other subsystem with in a WBS systemization.

For more information see [Managing Certificate Exceptions](#)

NOTES

- You cannot proceed to complete a task model or a task with pending predecessors unless you have manage rights for the system.
- When you change the Systemization or location in assets, work packages, or loops, the system automatically updates the certificates with auto-assigned certificate type.

Approve and Update a Planned Task

The process for Approving, Updating Planned or Instantiated Tasks is outlined below:

Task Model Approval and Revocation:

We recommend that a Task Model is submitted for approval so that before tasks are scheduled and performed, the task model has been reviewed for its completeness and accuracy, and approved. This locks the version of the task model.

Example: When the workflow buttons are pressed, it will prompt the user if they want to email users who have verification and/or approval rights. If they select **YES** to the email notification, Smart Completions will automatically load a list of possible verifiers, or approvers, depending on the state it is transitioning from.

The email will be attached with who, what, why and when, and also attach a datasheet of the Task Model for quick review, and a hyperlink to the record.

Revoke a current approved version of the task model

Any user with edit rights to the Task Model module will have the ability to revoke a **Task Model**, at which point Smart Completions will prompt the user for revocation comments. The revocation process will remove approval status, and clear out the revision number. In order to re-approve the record a new revision number is required, and it cannot be any revision from prior approvals.

Update Planned Tasks

This function is used when planned tasks have already been created. When any changes are made to a Task Model, the associated tasks do not automatically update as well. For instance, if you find an error in digital tasks, you can update the Inspection Steps on the Task Model. Once you are finished, click Update Tasks to push these changes to all existing, non-started tasks. The system will not update any closed tasks, completed tasks, or tasks that have been started.

You can update the tasks directly from the open Task Model, or you can highlight the row(s) and choose **Update Tasks** from the bottom ribbon of the manager. A popup opens that allows you to decide what fields should be updated in the tasks. We have pre-selected the two most commonly updates: **Basic Task Data / Task Headers** and **Task Steps/Inspection Points**. The latter will update the digital task forms. If you need more information, you can choose to select the following options as well:

- Task Work breakdowns
- Task Comments
- Task Documents
- Task Forms: Test Forms. You will use this if you have updated a test form for a paper-based task
- Task Materials and Tools
- Task Resources
- Task Safety
- Task Predecessors
- Task Custom Fields

You will then choose whether to update CCMS Tasks (those in Planned Tasks) or Recurrent Tasks (Preservations and Inspections).

Configure a Task Rejection Email

If a task gets rejected, you can configure to send a rejection notification email.

Follow these steps to configure the rejection email:

1. In the Home page, select **Settings panel**.
2. Search for Task States and select **Task States**.

The screenshot shows the 'General' tab of a configuration interface. It includes fields for Status (set to 'Submitted'), Description ('Task was Submitted'), Color (set to 'DarkGreen'), and Flow Options (set to 'Both'). Under 'Workflow Settings', there are options for 'Show on Search?' (Yes), 'Rejection Prompt' (Yes selected), 'Notification Type' (Email selected), and 'Notification Options' (3 selected).

3. Select **Yes** for **Rejection Prompt**.

4. Select the **Notification Type**.

NOTE When setting up rejection for a submission, make sure to choose **To Originator** option from the **Notification Options** list to automatically send an email notification to the originator.

5. Select **Save**.

Generate task model reports

The process for generating custom Task Model Reports is outlined below

Generating Task Model reports is a simple process. Unless the search panel is used to query the list of task models, any report selected will load a report with all task models.

There are two options to extract a list of task models from Smart Completions.

1. Generate a PDF report, simply select the PDF icon or Hyperlink (report name with underline).
2. Generate an export into MS Excel format with a flat list of the data found on the desired report.

NOTES The export does not preselect all possible Task Model fields, but you can add additional fields.

The following Reports are available:

- Inspection Test Record Profile (ITR) Report by Asset Type
- Task Model Index Report

- Task Model Index Report (by Asset Type)
- Field Installation Check (FIC) Report (by Asset Type)
- Task Model Summary Report (by Task Type)
- Task Model Summary Report (by Asset Type)

 **NOTE** These reports can be generated on the basis of Systemization as well as location.

Configure QR Code on all pages of the Task

You can configure a Task Model so that all pages of the created Tasks include the top header and QR Code. This was already available for Mail Merged tasks, but can now be applied to tasks that are digitally created and rendered to a printed form.

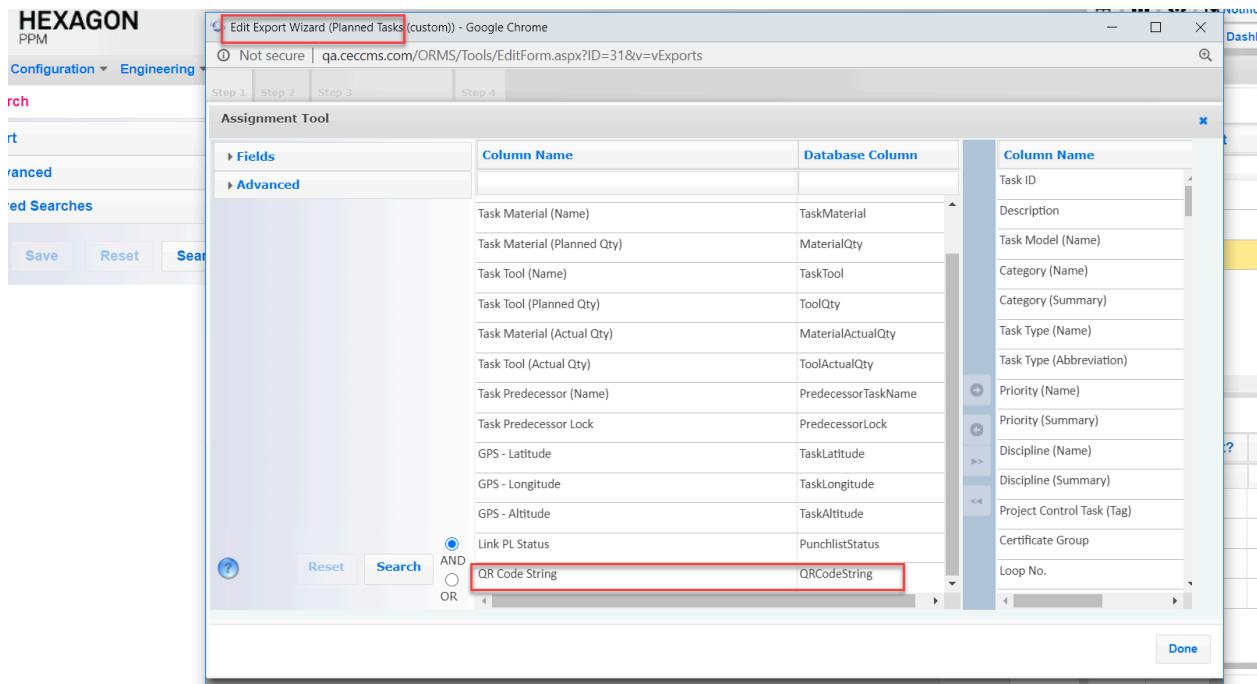
To add the QR code and header to all pages of a Task, follow these steps:

1. On the General tab of the Task Model, choose **Repeat Headers**.
2. Create the tasks or **Update Tasks**.
3. In **Planned Tasks**, highlight the task row(s), and select the **Forms** tab from the bottom ribbon.
4. In the pop up, choose **Planned Smart Forms**.

Allowing export of QR codes as embedded Data

You can have the QR codes embedded to the documents for easy work progress. To configure this facility, follow these steps:

1. Navigate to **Export Wizard Manager**, and select **Edit** to add the new field **QR Code String** from the available list.



2. All these QR code IDs are mentioned and passed to the CCMS through a script file (XLS). So, when a QR code is added to a particular task form, it can be processed with the help of the embedded QR ID.

B	C	D	E	F
1 Category (Summary)	Task ID	Task Model (Name)	Link PL Status	QR Code String
2 PC - Precommissioning	T-00001-0099	TM-00001		{r=2,v:"vTasks_Tests",TaskToTestFormID:46908}
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

Forms and Checklist Library

The Test Forms Library houses all mail merge forms for paper execution. The **Microsoft Mail Merge** functionality allows any "static" form to be populated with a mail merge database field.

Once the form is updated with the appropriate nameplate and process fields, the form can be saved and uploaded into the database. Forms must use the Smart Completions mail merge fields inserted into the MS Word document for successful use in the project. Forms are assigned to task models and task models create tasks.

This module is used to recreate their forms in the Task Models (digital execution type) inspection steps. You can import the forms list generally twice, first as the forms library, and second for task models, so that they can link the form to the task model. As it is task models that are assigned to objects (assets, loops, packs etc.), when they use the forms library the Task Models are of paper execution type, and they would use mail merge functionality for all planned tasks.

A Test Form is considered a control document and therefore requires a revision number in order to save the record. When a form is approved, Smart Completions will automatically archive the approved version so it can be accessed anytime and compared against the latest current version.

NOTES

- The CCMS Mail Merge functionality only works with MS Word documents and not MS Excel sheets.
- If a project is using digital task models, there is no need for creating mail merge MS documents as the digital tasks can be printed with QR codes, same as mail merged forms.
- If there are additional fields that are not in the **Discipline** manager specific Mail Merge templates but are in the Smart Completions interface, please contact your appointed Smart Completions representative to have the field(s) added.

Create a Form Record

1. Go to the Forms Library Manager.
2. Press **NEW**.
3. Forms Library Edit Form.

The "Group Type" is an important assignment and is only used for those forms that have multiple asset tags that will be associated with the form. If the forms are used to list multiple

cables, select the "Cable Pack" Option. If the form is to list multiple lines, select the "Line Packs" option. If the form is designed for a Loop, where it will list child devices, select "Loop" and if the form is intended only for Systemization items (e.g. systems, or subsystems and no assets), then select "Systemization" option.

NOTE If the user presses "Create Associated Task Model" it will create a task model and automatically link to the test form. Perform this step only if task models do not exist.

1. Forms and Checklist Library Save button.
2. Press the **SAVE** button.

Mail Merge Templates and Forms

Depending on project strategy, Smart Completions can use client Microsoft MS Word documents (.doc or .docx) files and use Smart Completions mail merge fields to populate the forms with database content (i.e. asset nameplate data, assigned documents etc.). By default the Smart Completions database does not come with a library of forms. It is the system integrators responsibility to discuss with the client which forms are to be used, and if they are missing specific forms, we will send the integrator a collection of forms that could be reviewed and used on the project.

Each form uploaded into the database must be populated with Smart Completions mail merge forms. You can simply copy (Ctrl+c) and paste (Ctrl+v) a mail merge form from the mail merge field template. You can also press **ALT-F9** to expand the mail merge field. Use this method after you have placed a mail merge field into a MS Word test form to make sure that the cell only includes the required mail merge field.

There are different methods to use forms.

- One (1) form to one (1) asset,
- One (1) form that lists multiple assets. For multiple assets (like pipe packs or loop tests) then the user must select the "Pipe Packs" and "Loops" mail merge templates.
- One (1) form to a System, Subsystem, Area, or Location,
- One (1) form to a Certificate which will list a set of Systems, Areas etc.

NOTE Please be aware that the **Tool** drop down is important to define the context of how the mail merge form is to be used. All completions tasks should be assigned **CCMS tasks**,

preservation tasks assigned **Preservation Tasks**, and Punchlist forms assigned **Punchlist** for example.

Insert Mail Merge Fields into a Form

In order to access the latest Mail Merge Templates press the "Mail Merge Templates" at the bottom of the manager. This will load a ZIP file containing all the specific templates. Its important to select the correct mail merge template when inserting fields into the work document. For example, if the user is developing an electrical check sheet, then the electrical mail merge template should be used, as it will be accessing a specific schema (data set). The other templates are used for generic discipline such as Infrastructure. It contains basic Task, Systemization, Location, WBS and Project information.

The process for inserting mail merge fields onto a form is outlined below:

1. Individual Equipment Tests - Ninety percent (90%) of test forms are assigned to individual equipment and will be assigned the discipline specific mail merge forms.
2. Group Equipment Tests - Ten percent (10%) of test forms are assigned to a group of equipment, specifically "Pipe Packs" and "Loop Tests". For these types of tests use the following mail merge templates:
 - Barcode/ QRcode
 - Project Name & Logos
 - Tag Name
 - Systemization and Location Names
 - Task and Job Names
 - Document List

NOTE A project must have logos (.png format) for both form (left) and form (right) fields, otherwise the form may not render.

Should Have Mail Merge Fields.

- Asset OEM details
- Comments

- Asset Specifications (i.e. range, scale, size, pressures, temps, flow parameters etc.)
- Test Form Document.

 **NOTES** Must have these mail merge fields on a test form.

In order for a Mail Merge Form to be successfully uploaded using the Smart Completions File Upload Utility there are some basic requirements that need to be met. We recommend below requirements to assure that you can upload Mail Merge Forms successfully.

1. The QR Code needs to be square.
2. If there is a border around the QR Code there needs to be white space.
3. The QR Code should be in the top right corner of the document.

Work Breakdown Tree

A Work Breakdown Structure (WBS) - in project management and systems engineering - is a deliverable-oriented decomposition of a project into smaller components. In our software, projects can be assigned Phases, Stages and Activities. The process for developing Project Work Breakdown Structure (WBS) is outlined below:

Navigation: **Configuration > Work Breakdown Tree**

Setting up a project will require at a minimum of a Work Breakdown Structure (WBS) which will contain:

- Phases
- Stages
- Activities (optional)

How to recover a modified project?

When you change a Project's level from project to an Activity, you may not be able to locate it anymore in the Work breakdown tree. To recover the missing or modified project, follow the below process:

1. Go to **Settings Panel > Work Breakdown Tree**.
2. Select **Search** to see the complete list of the Work Breakdown Tree.

3. Select **New** from the bottom bar.

4. Select **See Full List** option.

• TIPS

- Ensure not to select any project, stage or activity from the tree to view **See Full List** option.

- You can also view the orphan projects in this list.

5. Search for the project you are trying to locate and select it.

6. In the **Edit Work Breakdown** page, select **Level > Project**.

• TIP Ensure to remove the parent association first, and then assign the project.

7. Select **Save**.

Physical Location Tree

The Smart Completions database is an advanced database that has over a 1,000 tables and 10,000's of fields. Assigning tags to location provides the end user a simple method to find a tag, or collection of tags without actually knowing what tag they are looking for.

The Physical Location Tree, or Location Breakdown Structure (LBS), is the logical and sequential layout of a plant or project by geographical locations. It is broken into Plant, Process Area, Area and Physical Locations (4 Tiers). It is a location oriented decomposition which is used for Operations and Maintenance perspective. The LBS is used to identify specific "Areas" and "Physical Locations" used for costing against different geographical locations of a project, which is different than systemization where an equipment may be downstream of an equipment, but geographical (location) 10 KM away.

The process for developing Location Breakdown Structure (LBS) is outlined below:

Navigation: **Configuration > Trees/Tasks > Physical Location Tree**

ENTER PLANT:

1. Select the **PROJECT** and press **NEW LEAF**.

2. Enter in Number and Name of **PLANT**. Press **SAVE**.

Location Edit Form - Process Area

ENTER PROCESS AREA:

1. Select the **PLANT** and press **NEW LEAF**.
2. Enter in Number and Name of **PROCESS AREA**. Press **SAVE**.

Repeat the process for **AREA(s)** and **PHYSICAL LOCATION(s)**. Select the system and press **NEW LEAF**, enter Name and Number.

Process Areas are used in the PPM report to report on major areas. Must at least go down to the process area level.

Systemization Tree

The Systemization, or Process Breakdown Structure (PBS), is the logical and sequential layout of a process. The Systemization explains how assets relate to each other.

This is not to be confused with the location relationship of assets. Where an asset physically resides may not also describe its relationship to other assets. For instance, a pipe could be located physically next to a particular tank, but it feeds into a tank that is located in a different area. The Systemization describes how the assets relate to each other in terms of use.

A PBS is broken down into Plant, Process Area, System and Subsystem (4 tiers). It is a process oriented decomposition of up and downstream production systems. Systemization tracks the planned and actual transfer dates between the work groups within a project, specifically the custody of systems/equipment.

The process for creating Process Breakdown Structure (PBS) is outlined below:

Navigation: Configuration > Trees/Tasks > Systemization Tree

ENTER PLANT: Select the PROJECT NAME (top left), then press NEW LEAF (bottom right) to load the TREEVIEW EDITOR. Enter in NUMBER and NAME, press SAVE.

NOTE Since you selected a project, the next "LEAF" to the tree is a PLANT, and is why it is automatically set to PLANT.

Systemization Edit Form - Add Process Area

ENTER PROCESS AREA: Left select the PLANT node then press NEW LEAF (bottom right) to open up the TREEVIEW EDITOR. Enter in NUMBER and NAME.

NOTE When selecting the parent node (left side) to create a LEAF NODE, it will populate the top right side (e.g. Plant) to inform the user which current node they have selected. When pressing NEW LEAF, the Level field will auto-populate in the Edit Form.

Systemization Edit Form - Add System

ENTER SYSTEM: Left Select the PROCESS AREA node then press NEW LEAF (bottom right) to open up the TREEVIEW EDITOR. Enter in NUMBER and NAME.

NOTE Repeat the process for SUBSYSTEM. Select the system and press NEW LEAF, enter Name and Number.

Custom Fields: You can customize up to 6 fields in the systemization tree for inputs which are not dependent on systemization nodes like systems or sub systems. It is applicable for all imports.

Imports

The **Imports** manager bulk uploads engineering, plant and project information. The Imports Manager contains a list of pre-defined Import Types. They are identified by the **Manager View**, **Name**, and Description of the relevant Manager. An Import Log houses all import activity and associated files. Therefore, users can ensure

If Smart Completions is being used to manage multiple projects, make sure to add the project name as additional column. A project name must have {Project Name} – {Description} such as "1000 – Concentrator Expansion" and that project must already exist in the database.

Import file must meet the following criteria:

- First row is the column headers
- There is only one tab/ worksheet that contains data
- Every asset tag should be given a discipline
- Cells that have merged value + engineering unit (eu) must be separated into 2 separate columns
- Cells that have multiple drawing numbers (i.e. 100-pid-100, 100-pid-101) must be comma separated when a list is requested
- Save as (.xls) file not 2010 (.xlsx). The newer version hides cell formatting that can stop an import. Non-XML based excel files (.xls) are more importable

NOTES

- Importing with Microsoft Excel (.xls, .xlsx) format. We recommend using **values only**. Formulas and formatting can cause import errors.
- Some fields require a **Summary Field**, which is the combination of a field name and description.
- While you can remove an asset pack while importing data, the field log does not log the removal of the record during the import process.

Check the field log post import, to see that there is no remove record of an asset pack, or so on.

- For importing data in amy manager, ensure each ID is alphanumeric with at least 7 characters. The format is **<letters>-<5-numbers>**, for example, **<ABC-12345>**. Use the same format for auto-populating tags, otherwise manual imports might be necessary. Ensure not to use any special characters other than hyphen (-).
- You can now import data containing alphabetic characters, numbers, or a combination of both for these fields. This allows for more accurate and efficient data import, especially for bulk updates. Data types for the following fields have been updated to accept alphanumeric values:
 - Asset - Name/Tag
 - CableNumConductors
 - ElectricalMotorJBoxLocationID
 - InstrumentJBoxLocation
 - ElectricalVoltageRatingLine
- Importing WBS data into a Multiple Assignment Type Certificate will no longer automatically assign tasks. Users must now manually assign tasks using the **Reset Tasks** icon.
- When importing certificates, any association of tasks or punches with existing closed certificates will be disregarded. To certify tasks or punches not included in the original closed certificate, users will need to create a new certificate.
- The Task Model Renaming Import functionality has been enhanced to prevent assigning the same new ID to multiple Task Models within a single import. If you have Task Models **TM-00001** and **TM-00002**, you cannot import a spreadsheet that assigns the same new ID **TM-INST-00012** to both models, the system would stop you from importing the data.

Switchboard Navigation: Configuration > Imports

Column Name	Field Name	Collision	Lookup Behavior	Type	Size
Process Breakdown Number	Process Breakdown Number			string	50
Process Breakdown Name (Description)	Process Breakdown Name (Description)			string	250
Process Breakdown Type	Process Breakdown Name (Description) Process Breakdown Level Process Breakdown Parent (Summary)	Preserve			
Process Breakdown Parent (Summary)	Process Breakdown Name (Description)			string	303
Projects (Summary)	Process Breakdown Level Process Breakdown Parent (Summary) Systemization - Subsystem Priority Emergency Number Process Breakdown Code Current Custody	Preserve		int	

Determine Collision behavior:

Collision behavior determines what will occur for records that previously exist in the database.

1. **Preserve:** Inserts data into empty database fields and leaves existing data unchanged.

- It inserts database field only if field is empty and spreadsheet cell contains data.
- It does not update if spreadsheet cell data matches database field.
- It removes a record if the import view contains "date removed" and database field is empty.
- It does not get updated if the database triggers created data including inserts.

2. **Overwrite:** Inserts data into empty database fields and updates existing data.

- It does not update database field if spreadsheet cell is empty (must have NULL to remove existing data) Updates database field if there is spreadsheet data (empty cells are NULLs and are ignored).
- It does not update if imported spreadsheet cell data matches database field.
- It clears data only if NULL is typed in a cell (empty cells are rejected).

- It removes a record if the import view contains "date removed" and database field is empty. If field is populated it will only update date removed.
- Data that is created in the database by triggers can be overwritten, such as work flow state date and persons.

3. Concatenate: Appends the existing data.

- This option is not available for the majority of fields, you can use it for comments.
- If you need to add additional statements to a comment field, **Concatenate** will leave the existing data and add the new comments after a comma.

4. Numbers with Engineering Units (EU)

- Numbers (data type) are expected.
- If number and EU are included in cell, they are split and a new column gets added automatically.
- NULL string clears numbers if collision behavior is **Overwrite**.

Process Breakdown Type	Process Breakdown Level		string	50
Process Breakdown Parent (Summary)	Process Breakdown Parent (Summary)		string	303
Projects (Summary)	Projects (Summary)	<div style="border: 1px solid #ccc; padding: 2px; display: inline-block;"> Preserve ▼ </div>	int	

(Select one of
3 records)
 Concatenate
 Overwrite

Lookup Behavior

A select checkbox is presented for the column names for which **Lookup Behavior** is applicable. Select the checkbox of a column to have the import result prioritize the column as first column when you import the data.

Step 1 Start **Step 2 Select** **Step 3 Pre-Import Analysis** **Step 4 Import**

▼ Messaging

- Import is limited to 255 columns
- If Lookup behavior is checked then data can be inserted in the lookup table; otherwise the lookup data needs to match pre-existing values.
- Assignments can be semi-colon separated (;
- Revision collision should be kept as Preserve.
- Key fields are: Asset - Name/Tag

▼ Defaults to Apply

Collision Type

▼ Choose fields to import and behaviors

Records	Column Name	Field Name	Collision	Lookup Behavior	Type	Size	
Asset - Name/Tag	Asset - Name/Tag				string	250	
Asset - Discipline	Asset - Discipline		Preserve		string	250	
Asset - Asset Type (Summary)	Asset - Asset Type (Summary)		Preserve		string	303	
Asset - Asset Type (Name)			Preserve				
Asset - Description	Asset - Description		Preserve		string	500	
Asset - Service	Asset - Service		Preserve		string	500	
Asset - Status	Asset - Status		Preserve	✓	string	250	
Asset - Priority	Asset - Priority		Preserve	□	string	250	

Finish the Import:

If you have chosen to Validate the Data, an additional tab appears. It provides a file and a brief overview of the data to be imported. Red fields will fail to import. Purple fields indicate a database column that expects differently structured data. For instance, if a date field is expected when the files contains only text, the field shows as purple.

Clicking **Finish** begins the import. The size of the file and the complexity of the fields importing will determine the processing time. If it is a large file, and other users are active in the system, it will take longer to import. The system will provide an overview of what was imported. If all **Affected Roles: 0** (as below), then the import has failed. Remember that some rows may show different totals, when there are empty fields included in the import.

Step 1	Step 2	Step 3	Step 4	
Start	Select	Pre-Import Analysis	Import	

Import Log

```

Start Import: 02:23:26.027 PM
Inserting field AssetPriority into View vPriorities
Start SQL: 02:23:26.168 PM
Running SQL: INSERT INTO [vPriorities] ([Priority], RecordCreatedByID , CompanyInstanceID) SELECT t.[Asset - Priority],19,2 FROM ( SELECT [Asset - Priority],2 AS CompanyInstanceID FROM TempImport19ivAssets with(nolock) WHERE (LEN([Asset - Priority]) >= 1) GROUP BY [Asset - Priority]) AS t LEFT OUTER JOIN [tblPriorities] targetView with(nolock) ON t.[Asset - Priority] = targetView.[strPriority] AND targetView.IdxCompanyInstanceID=2 WHERE (targetView.[strPriority] IS NULL) AND (len(t.[Asset - Priority])>0)
End SQL: 02:23:26.183 PM
Affected Rows: 0

Inserting field AssetStatus into View vAssetStatus
Start SQL: 02:23:26.199 PM
Running SQL: INSERT INTO [vAssetStatus] ([AssetStatus], RecordCreatedByID , CompanyInstanceID) SELECT t.[Asset - Status],19,2 FROM ( SELECT [Asset - Status],2 AS CompanyInstanceID FROM TempImport19ivAssets with(nolock) WHERE (LEN([Asset - Status]) >= 1) GROUP BY [Asset - Status]) AS t LEFT OUTER JOIN [tblAssetStatus] targetView with(nolock) ON t.[Asset - Status] = targetView.[strAssetStatus] AND targetView.IdxCompanyInstanceID=2 WHERE (targetView.[strAssetStatus] IS NULL) AND (len(t.[Asset - Status])>0)
End SQL: 02:23:26.199 PM
Affected Rows: 0

Inserting field Name into View ivAssets
Start SQL: 02:23:26.308 PM
Running SQL: INSERT INTO [ivAssets] ([Name], RecordCreatedByID , CompanyInstanceID) SELECT t.[Asset - Name/Tag],19,2 FROM ( SELECT [Asset - Name/Tag],2 AS CompanyInstanceID FROM TempImport19ivAssets with(nolock) WHERE (LEN([Asset - Name/Tag]) >= 1) GROUP BY [Asset - Name/Tag]) AS t LEFT OUTER JOIN [tblAssets] targetView with(nolock) ON t.[Asset - Name/Tag] = targetView.[strAssetTag] AND targetView.IdxCompanyInstanceID=2 WHERE (targetView.[strAssetTag] IS NULL) AND (len(t.[Asset - Name/Tag])>0)
End SQL: 02:23:26.465 PM
Affected Rows: 0

Updating lookup field [DisciplineID] in View ivAssets
Start SQL: 02:23:26.574 PM
Running SQL: UPDATE [vAssetsBasic] SET RecordLastModified = '08/07/2023 02:23:26.558 PM', RecordLastModifiedByID = 19,[DisciplineID]=[vDisciplines].ID FROM TempImport19ivAssets t INNER JOIN [vAssetsBasic] ON [vAssetsBasic].[Name] = t.[Asset - Name/Tag] AND [vAssetsBasic].CompanyInstanceID = 2 LEFT OUTER JOIN [vDisciplines] iLookup with(nolock) ON [vAssetsBasic].[DisciplineID] = iLookup.ID INNER JOIN [vDisciplines] with(nolock) ON t.[Asset - Discipline] = [vDisciplines].[Discipline] AND [vDisciplines].CompanyInstanceID = 2 WHERE t.[Asset - Discipline] IS NOT NULL AND (iLookup.[Discipline] IS NULL OR t.blnIsInsert = 1)
End SQL: 02:23:26.840 PM
Affected Rows: 0

```

[Back](#) [Next](#) [Finish](#) [Exit](#)

Validation

In the validation report of the import:

Green	Indicates the successful import of the tags.
Red	Indicates the failed to import tags, including multiple occurrences of the same tag or potential errors during the import process.

Map a file to the database columns

1. In **Imports**, search for the appropriate manager.
2. Highlight the row. Do not click the hyperlink.
3. From the bottom ribbon, click the **Imports** button.

4. Choose whether to **Validate Data**. This will provide a pre-import analysis and can flag issues with the imported file before attempting to import it.
5. Choose a file to import.
6. Map the column in the database to the column within the spreadsheet. Each field is a dropdown.

NOTE If you have a different column header name in your import file, then you must update the column names to match the column header in your import file in the **Edit Import Type > Fields Translation** tab.

How to import an Asset List

The process for importing an **Asset List** is outlined below:

1. When importing asset tags, make sure you have the Discipline associated with each tag, or import the tab in the discipline specific import (e.g. vAssets_Instruments, or vAssets_Mechanical).
2. The user would typically create the list of asset types prior to importing the tags. An asset type should have an abbreviation and description (e.g. PP in one column, and Pump in another column).
3. The user would add a column in the asset list to assign the asset type to each tag. The column would include a summary field, which is the name + description. For the example above, it would be PP – Centrifugal Pump. Smart Completions uses the combination of an asset type name and description as that makes each tag type unique, as many tags could use "PP" in their tag name, but there are differences in pumps, like a metering pump and a vertical pump.

IMPORTANT You must have Hexagon Support rights to overwrite custom fields while importing asset data.

NOTE To import Flange Joints as an asset, the **Asset - Discipline** column value should be **Pipe** and the **Asset - Asset Type (Summary)** column value should be **Flange Joint** in the input file.

How to import a Document List

1. The Documents List should be imported after the **Document Types**.
2. Each record should be assigned a **Project**, **Document Type**, and **Document Category**.
3. The Document Upload Tool can be used to assign the pdfs to each document on the list.

How to import a Loop List

Importing loops can be done with either a distinct loop list or the loop drawing number for the **loop ID**. By using this information it is easier to link all tags (e.g. instruments, valves) to that loop.

NOTE

1. When importing Loop Tags we recommend that the user opens up the **Loop Edit** Form to review the data points that can be linked to the loop record(s).
2. The Loop Devices (Assets) will be added through a separate import.

How to import Loop Devices (Assets)

Loop devices can be imported after the loop list has already been imported. We recommend that the all the child devices (asset tags) are already imported, and this import is used to link devices already created in the system.

This particular import is very simple as it has two (2) basic fields to map:

- **Loop Tag**
- **Asset Tag**

NOTES

1. Make sure the Loop List is already created and assigned to the project.
2. Make sure the Asset Tags are already imported and assigned to the project.

How to import Project Control Tasks (PCTs)

Project Control Tasks (PCTs) align the CCMS with the master schedule for a project that is generated from either a Primavera P6 or Microsoft Project schedule. The CCMS has the ability to link CCMS planned tasks to any P6 activity so that when the CCMS planned tasks are completed, it will automatically update the % complete of the activity. This enables projects to configure an export that generates itself on a weekly basis with updated completions % for any P6 activity that is linked to completions tasks.

NOTES

1. A responsible company assigned to the PCT task must first be imported and available for assignment and the company must be assigned a responsibility of "Project Control Tasks".
2. The responsible company is just the name, not a summary field.

How to import Systemization (PBS)

Importing Systemization can speed up the process of creating and updating the systemization structure (process breakdown as it is a hierachal structure of process streams).

Ensure to have the following columns in the systemization XLS file:

- Project Summary (project number – project description)
- Process Breakdown Number
- Process Breakdown Description
- Process Breakdown Level (Type)
- Process Breakdown Parent Summary (systemization no – systemization description)

NOTES

- Smart Completions provides a template import file that you can cut and paste your plants, process areas, systems and subsystems into this template. If you use it, the fields will map automatically. **Type=Level**.
- The Process Breakdown Parent (Summary) column is required in the XLS file you are importing. If the column doesn't exist the Microsoft DLLs will get confused and not

import the parent nodes like Plant.

- It is suggested that the Process Breakdown Number is unique for each node. The reason we require the Parent column to be a summary is for the fact that some projects require the re-use of the Process Breakdown Number and what makes it a unique node is the combination of the Number – Description.
- In the case the project requires renaming of existing systemization nodes, use the different import view (see Process Breakdown Renaming)
- You can edit up to 6 custom fields to your import. You can view these custom fields in the secondary panel, edit form, and import forms.
- Select **Yes** or **No** to **Re-index tables?** while importing data. This speeds up the import process.

How to import Work Breakdown Structure (WBS)

Importing a Work Breakdown Structure (WBS) for a Project can expedite the creation and updating of the WBS items (a.k.a. phases, stages). Since WBS items are much less than systemization structures, we recommend that the interface is used to develop the structure. If there is a lengthy list of WBS items (say > 15) then importing the WBS phases, stages and activities can reduce time to create.

It is important the systemization XLS file have the following columns:

- Project Summary (project ID – project description)
- Work Breakdown Number
- Work Breakdown Description
- Work Breakdown Level (Type)
- Work Breakdown Parent (Summary/Project added in import)

NOTES

1. Smart Completions has a template import file that can be found in the Import module for the Process Breakdown Import. A user can cut and past their plants, process areas, systems and subsystems into this template. By doing this mapping fields will be automatic.

2. The Process Breakdown Parent (Summary) column is mandatory in the XLS file you are importing. If the column does not exist the Microsoft DLLs will get confused and not import the parent nodes like Plant.
3. It is suggested that the Process Breakdown Number is unique for each node. The reason we require the Parent column to be a summary is for the fact that some projects require the re-use of the Process Breakdown Number and what makes it a unique node is the combination of the Number – Description.
4. In the case the project requires renaming of existing systemization nodes, use the different import view (see Process Breakdown Renaming)

How to import Project Communications

Project communications manager is used to manage communications within the project and with the Customers. Request for Information (RFI), Technical Query (TQ), and Site Instructions are used to raise queries and share instructions within the project.

You can import different types of project communications, and you can also attach them to tasks using the Project communications import.

[Download the Project Communications template file](#)

1. Go to **Configuration > Imports**.
2. In the **Import Types Manager**, type **rfi** in the **Manager View** column.
3. Select **vRFIs** and select **Excel** icon in the **Template** column to download the template file named ovRFIs.xlsx.

[Import the Project Communications into the database](#)

1. Open the **ovRFIs.xlsx** file and add the project communication information to it.

NOTE Comm ID and Communication Type values are required in the template file to create a valid Project Communications record.

2. Go to **Configuration > Imports**.
3. In the **Import Types Manager**, type **rfi** in the **Manager View** column.
4. Select **vRFIs** and select **Import** from the secondary panel.

5. In the **Edit Import Wizard**, select **Choose File** on the **Start** tab.
6. In the **Edit Import Wizard**, map the columns of the template file with the database on the **Select** tab.
7. Select **Finish** to upload the records in the template file.

NOTE Import the template file with "X" value in the **Comm ID** column to automatically generate the next sequence number of the **Comm ID** based on the communication type of the record. For example, if the last **Comm ID** in the database is **RFI-00007**, you can import an RFI file with the **Comm ID** as "X" and the **Communication Type** as RFI, **Comm ID** of the newly created record in the database is **RFI-00008**.

Associate RFIs to Tasks

1. Open the **ovRFIs.xlsx** file and add a new column named **Task Name** to the file.
2. Enter Task IDs in the **Task Name** column.

NOTE already existing in the database
3. Import the template file with the Task IDs to associate the Project Communication records to their respective tasks.
4. In the **Edit Import Wizard**, map the **Task Name** column of the template file with the **Task - (List Name)** field of the database on the **Select** tab.
5. Navigate to the **Project Communications Manager** and search for the Project Communications record associated with the Task ID.

TIP To view the tasks associated with the Project Communication records select the record in the primary panel and then navigate to the **Tasks** tab in the secondary panel.

How to view the import logs

The process for viewing an Import Log is outlined below:

1. Select **IMPORT TYPE** and highlight the row (do not select hyperlink).
2. In the **secondary panel**, the Import Log displays all previously imported files. It also includes the name and timestamp of the person who imported each file.

What are Import Companies

Importing Companies can expedite the creation and updating of the manufacturers, vendors, consultants and suppliers. When importing a company list, it is important that each company is assigned a **Type** such as manufacturer, vendor, supplier, owner/operator. We assign a type to a company as when Smart Completions populates a Manufacturers list, we query all companies that have that type assigned.

Companies are grouped into the following types (but not limited to):

- Manufacturer
- Vendor
- Supplier

The following columns should be in the Excel file:

- Company Name
- Company Description
- Company Type(s) List (types separated by a ",")
- Project Summary List (types separated by a ",")
-

NOTES

1. The items below can be **BATCH EDITED** through the user interface and is likely the fastest simplest way to add information to the respective companies imported.
2. A Company can have multiple TYPES associated with it. For example, a company could be a vendor and supplier so in the Company Type column, the cell should have a "Vendor, Supplier" so that when imported the company will show up in the vendor and supplier dropdowns.
3. If the Company is a vendor that services instrument and electrical equipment, the XLS file should have "INST, ELEC" in the DISCIPLINES, and "Vendor" in the Company Type column.

Add Task ID to Import Types

1. Create a spread sheet with Task (List Name) Field and its details, that you want to import to the Work package Manager.

The screenshot shows a Microsoft Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H
1	Work Package ID	Plan WTV	Budget MH	EV MH	Progress Method	Actual WTV	Task (List Name)	
2	WP-000002	0	18	25		1	0	T-00044-0005
3	WP-000003	+	0	18	25	1	0	T-00044-0005
4								
5								
6								
7								
8								
9								

2. Select the **Gear Icon** and Type **Imports**.
3. Search by Work Packages in the Name column.
4. Select the work package with Manager View as **vWorkPackages** and select **Imports** button.
5. Select **Choose file** and upload the above file.
6. Select the **Task (List Name)** from the drop down list under the **FieldName** Column.

The screenshot shows the 'Step 2 Select' screen of an import wizard. At the top, tabs for Step 1 Start, Step 2 Select, Step 3 Pre-Import Analysis, and Step 4 Import are visible. The 'Select' tab is active. Below the tabs, a 'Defaults to Apply' section includes a 'Collision Type' dropdown set to 'Preserve' and an 'Apply Settings' button. The main area is titled 'Choose fields to import and behaviors' and contains a table for mapping columns. The table has columns for 'Column Name', 'Field Name', 'Collision', 'Lookup Behavior', 'Type', and 'Size'. Several rows are listed, including 'Work Package ID', 'Plan WTV', 'Budget MH', 'EV MH', 'Progress Method', 'Actual WTV', and 'Task (List Name)'. The 'Task (List Name)' row is currently selected, and a dropdown menu is open over it, showing options like 'CWP', 'EWP', 'Document - (List Name)', 'Punchlist Item - (List)', 'Removed By', 'Date Removed', and 'Task (List Name)'. The 'Task (List Name)' option is highlighted at the bottom of the list. At the bottom of the screen, there's a 'Messaging' bar with 'Back', 'Next', 'Finish', and 'Exit' buttons.

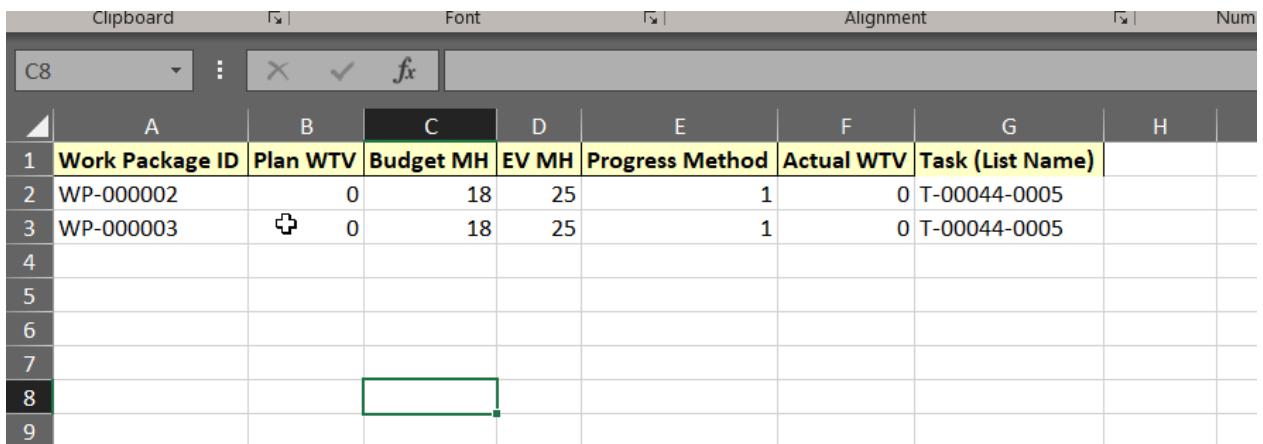
7. Select **Finish**.

NOTES

- After importing the data, the tasks get assigned to the corresponding work packages. If you want to add it as a work step, you need to add it manually.
- You can import planned tasks even if WBS and Systemization do not match with the Work package.

Add Task IDs to Work Packages

1. Create a spread sheet with Task (List Name) Field and its details, that you want to import to the Work package Manager.



	A	B	C	D	E	F	G	H
1	Work Package ID	Plan WTV	Budget MH	EV MH	Progress Method	Actual WTV	Task (List Name)	
2	WP-000002	0	18	25	1	0	T-00044-0005	
3	WP-000003	+	0	18	25	1	0	T-00044-0005
4								
5								
6								
7								
8								
9								

2. Select the **Gear Icon** and Type **Imports**.
3. Search by Work Packages in the Name column.
4. Select the work package with Manager View as **vWorkPackages** and select **Imports** button.
5. Select **Choose file** and upload the above file.
6. Select the **Task (List Name)** from the drop down list under the **FieldName** Column.

Column Name	Field Name	Collision	Lookup Behavior	Type	Size
Work Package ID	Work Package ID			string	250
Plan WTV		Preserve			
Budget MH		Preserve			
EV MH		Preserve			
Progress Method		Preserve			
Actual WTV		Preserve			
Task (List Name)	Task (List Name)	Preserve		int	
	CWP				
	EWP				
	Document - (List Name)				
	Punchlist Item - (List)				
	Removed By				
	Date Removed				
	Task (List Name)				

7. Select **Finish**.

NOTES

- After importing the data, the tasks get assigned to the corresponding work packages. If you want to add it as a work step, you need to add it manually.
- You can import planned tasks even if WBS and Systemization do not match with the Work package.

Assign/Unassign predecessor tasks to planned tasks

1. Go to **Settings Panel > Import Types**.
2. Select **Search**.
3. In the **Manager View** column, search for **vTasksPredecessors**.

TIP Use the vTasksPredecessors import type to assign or unassign a task as a predecessor to a planned task.

4. Select **Imports** from the bottom bar.
 5. In the **Edit Import Wizard**, select **Choose File** to upload.
 6. Select the import file from your local system.
- 💡 TIP** The file should contain Task ID and Task Predecessor (Name) fields for a successful import.
7. In the **Step 2 Select** tab, choose the **Field Name** to match the **Column Name**, and then select **Finish**.

Unassign the predecessor task

1. Ensure the file to import has the following fields:
 - Task ID
 - Task Predecessor (Name)
 - Date Removed
2. Repeat the step 6 to 7 to upload the file.

☞ NOTE To ensure unassigned tasks remain unassigned, enable the **Update Lock** option when updating tasks through the task model.

View the assigned or unassigned predecessor task

1. Go to **Settings Panel > Planned Tasks**.
2. Select **Search**, and then choose a planned task to which you have assigned or unassigned the predecessor to.

💡 TIP View the task Status on the task stating as Predecessors Pending for assigned predecessors.
3. In the Secondary Panel, go to **Predecessors** tab to view the assigned/unassigned predecessor tasks.

Adding Flange Joint ID to Assets

★ **IMPORTANT** Before you map the flange joint ID to assets, create a spread sheet with asset and flange joint ID details that you want to import to the assets manager.

1. Click Gear .
2. Type Imports in the **Open Manager** box, and select the **Imports** manager from the list.
3. In the **Import Types** page, click **Search**.
4. In the **Import Types** tab, select the **vAssets**, and then click **Imports**  from the bottom bar.
5. In the **Edit Import Wizard** window, click **Choose File** and upload the spreadsheet with flange joint id and details you have created.
6. Map the **Column Name** with the **Field Name**, and then click **Finish**.

💡 **TIP** For a **Flange Joint ID** column name, select the respective **Flange Joint ID** field name from its list.

☞ **NOTE** You can also add Flange Joint IDs to assets using **vFlangeJoints > Imports**.

What are the best practices for Import Templates

Smart Completions offers Import Templates for commonly imported managers. When provided, templates are delivered under a column in the primary view panel.

The screenshot shows the 'Import Types Manager' interface. At the top, it displays 'Project: 1000 - TRAINING PROJECT' and '(Instance: Amy - Amy Testing) User: Amy Sage'. The top right features standard navigation icons: Notifications (with a checkmark), Logout, and links to '1000 - TRA...', 'Dashboards', and 'Help'. Below the header, a navigation bar includes 'Tools', 'Completions', 'Operability', 'Safety', 'Operations & Maintenance', 'Shutdown-Turnaround', and 'LEM'. The main content area is titled 'Import Types (3)' and contains a table with the following data:

Name	Description	Import View	Key Field	View Type	Template
Systemization Tree	naming Systemization	ivProcessBreakdowns_Rena...	SummaryOld,Number,Name	Systemization & Custod...	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Systemization Tree	Configuration: Core Module	ivProcessBreakdowns	Number,Name,ParentSum...	Systemization & Custod...	
Systemization Custody Log		ivProcessBreakdownsCusto...	ProcessBreakdown,Custody...	Systemization & Custod...	

Splitting big spreadsheets into smaller chunks

Breaking import data into smaller files allow for higher accuracy and efficiency, but it also increases the number of files needed. For instance, there are over 1,000 available fields for assets. It may be helpful to import asset IDs and OEM data, then run a separate import for child/parent relationships.

Allowing the system to assign IDs

For certain managers, we recommend allowing the system to assign IDs. This does not apply to certain modules such as Assets and Documents, which have unique IDs assigned to the project. However, task IDs and punchlists could possibly already contain a record with an ID assigned in the spreadsheet. Importing against an existing record will either fail to update/import the data, or will overwrite it when chosen through collision behavior.

Before Importing any Data

Ensure that the project has been created. Define all Disciplines. The Disciplines link and sort dropdowns in the software for greater ease of use. While it is possible to add disciplines to project data afterwards, project configuration will be much faster if every spreadsheet assigns the discipline to the records. The same applies to Project data. If assets are imported without a project, this can be fixed through batch editing. It is much faster and easier, though, to simply add the Project Summary to each spreadsheet.

Efficient Order of Imports

The order in which data is imported can also help to streamline the process. Each Asset must be assigned an asset type. Importing the asset types first will save time and eliminate batch editing. We recommend the following:

1. Define Disciplines, create project. Ensure images have been added to the project.

2. Import Systemization tree (PBS)
3. Import Work Breakdown Tree (WBS)
4. Import Location Tree, if using (LBS)
5. Import Asset Types
6. Import Document Types
 - a. If you include a column with Document Categories in the spreadsheet, the system will automatically create those Categories in the Manager.
7. Import Companies and Resources
8. Import Document List and details (make sure to include their Asset Types)
9. Import Assets
 - a. Import a list of Asset tags with project, systemization, asset type, and OEM data
 - b. Import Asset parent/child data
 - c. Import the asset list to assign documents
10. Import Loops and Packs
11. Import Loop Devices and Pack Assets
12. Import Task Models
13. Import Inspection Steps

Renaming Assets

Names and IDs are required fields in Imports. Therefore, any new IDs imported will be treated as a new record. We've added a number of separate imports in the event an ID must be renamed. For instance, if an asset tag must be changed from one name to a different one, you would choose the "Assets Renaming" import. List the current tag in the database against the new tag to overwrite it.

Removing Data in a Field

To eliminate errors that erase needed data, Imports will not overwrite a field with an empty value, even if the Collision behavior is set to overwrite. If you need to remove data from a field, the imported field should include "null," to tell the system to set the field to zero.

Troubleshooting - Imports

Record not Showing

When the database is used to manage multiple projects, make sure the records are bound to the project.

Asset not showing

It may be because it is requiring a project ID or that the asset tag record did not have a discipline allocated to it in the XLS file.

Asset Type is not linked to the asset tag

When importing a tag, it is important to make sure the tag links to existing asset types in the database. The XLS should have a column for asset type that is a summary field (e.g. PP – Pump), not just the asset type abbreviation.

Document not showing

It may be because it is requiring a project ID if the database is used to manage multiple projects.

If the document is a controlled document (see document type training), the document should have a document type summary column. The reason is that when importing a document it needs to know if the document is a controlled document or not. The document type should be a summary field (e.g. P&ID – Piping and Instrument Diagram).

Column with multiple Drawings

When importing drawings it is important to make sure the drawings are split into separate columns. If you receive an XLS file that has a column called drawings and it has P&IDs, Single Lines, you will be required to separate those into separate columns. Each column should have distinct column.

Column with value + Engineering Unit (EU)

It is important when mapping data into Smart Completions, that the administrator review where they are going to import the data. The columns of data that are targeted for importing must map to the correct data type format, for example:

Field not updated in Smart Completions

Make sure that the "overwrite" collision behavior is selected. Make sure the XLS source data can be imported into target field and format.

Asset list is not imported with vBOM import

When using vAssets import, BOM should be linked to the asset. Import BOM from the Assets import.

Exports

The Exports manager the bulk export digital data out of the database. Each view that can be imported can be exported, such as equipment lists, planned tasks, punchlists, etc.

The export function in Smart Completions allows you to define the data to export, apply filters, set a frequency of export, and choose where to export (sFTP site or locally on the client browser). The export will default to Microsoft Excel format (.xlsx), but you can choose to export to Comma Separated Variable (.csv) instead. You can also choose to create a saved export, so that you only need to define the filter criteria once.

NOTES

- Documents and drawings can be exported from the Document and Drawings manager or in the Handover Packages (Turnover Packages) manager. The export module is designed to export raw data in spreadsheets.
- All dynamic workflows can now be exported choosing a .csv or .xlsx formats to include all workflow information inclusive of modified workflows. Select **Yes** in **Include Workflow** options.
- An issues log file is generated during an export, this file will have information on any issues/errors/information about the data exported. When no issues are logged, the file will display a message stating **No issues detected**.
- To enhance export performance, the **TaskStatus** column field from the excel sheet has been replaced with **TaskState** during planned tasks and preservation tasks export.
- When you map the Work Package Name column while exporting planned tasks and punchlists, the tasks included as work steps and the punchlists created for those tasks are exported accordingly.

Creating a new export

The process for creating an Export is outlined below:

1. Go to **Configuration > Exports**.
2. Select **New > Export type**.

3. Choose the Manager from which you wish to Export in the next tab. For more details see [Using the Criteria tab](#).
4. **Label Type:** If you have added custom labels through Interface Labels, then select **User Labels**. The system defaults to **Standard Import Labels**.
5. Select **Edit List** and **Search** to load the available database information. These will determine the columns on the spreadsheet.
 - a. You can double-click a row, and it will move to the right-hand of the screen. Only the columns added to the right side will be exported.
 - b. You can highlight several rows and use the bold arrows (top) to move several columns at once.

NOTE You can move only one of the list columns to the database columns of the export for certain managers. To view the list of managers where you can only have one list column added to the export list see the table below.

List of managers restricted to have more than one column to the export file

Managers	Database Column Name (Dynamic Column Name)
Assurance Certificates	Cert Tasks (Task - Name List)
	Cert Punchlists (Punchlists - Name List)
	CertMOCs (MOC - Name List)
	CertRFIs (Comm - Name List)
	CertRAs (HIRA - Name List)
Companies	CompaniesResponsibilites (Company Responsibility - List)

	CompanyDisciplines (Company - Disciplines (List))
	CompanyTypes (Company Types - List)
Documents	ProcessBreakdownUp1s (Systemization - System (Summary List))
	ProcessBreakdowns (Systemization - Subsystem (Summary List))
	PhysicalLocationUp1s (Physical Location - Area (Summary List))
	PhysicalLocations (Physical Location - Location (Summary List))
Resources	ResourcesWorkGroups (Resource WorkGroups - List)
	UserRoles (User Direct Roles - List)
	ResourcesCertificates (Resources Certificates - List)
	ResourcesSkills (Resources Skills - List)
	ResourcesTitles (Resources Titles - List)
	UserRoleProfiles (User Role Profiles - List)
RFI	Document Name (Document - List Name)
	Asset Tag (Asset - List Name)

	Task Name (Task - List Name)
Flange Tasks	TaskDocumentName (Document - Name List)
	DocumentName (Test Forms - Name List)
	TaskTitle (Tasks Titles - Name List)
	TaskMaterial (Tasks Materials - Name List)
	TaskTool (Tasks Tools - Name List)
Job Cards	JobDisciplines (Job Disciplines - List Names)
	JobDocuments (Document - List Name)
	TaskName (Task ID)

- a. You can select one row, then select the double arrows icon to move all columns.
6. Select **Done** to return to the previous screen, and then select **Next** to progress to the **Criteria** tab.

NOTES

- You can select the **Work Package Steps** option from the **Export Type** list to export the work package steps information along with the work package information.
- If you know another program will import this file, and the other program uses a different label than Smart Completions, you can enter an **Alias** next to the column. The exported column will be overwritten with the label you enter here.

- You can select the **Flange Joints** option from the **Export Type** list to export flange joint information.
- When exporting certificates that use single sign-off, the submitted and verified statuses are not included in the exported data as these statuses are not applicable to the approval process of single sign-off.

Using Date Time Shift

For the ease of users spread across time zones, the Date Time Shift option allows you to set a standard date- time stamp from the given options. The system provides you these options:

- GMT/ UTC - No conversion
- Local (without Daylight Saving Time) or Project offset
- USA/ Canada (Daylight Saving Time- 2nd Sunday in March through 1st Sunday in November) or Project offset
- Australia (Daylight Saving Time)- 1st Sunday in October through 1st Sunday in April) or Project offset
- Chile (Daylight Saving Time)- 1st Sunday in September through 1st Sunday in April) or Project offset
- Mexico (Daylight Saving Time)- 1st Sunday in April through last Sunday in October) or Project offset

This format parses through all the managers wherever required and can be retrieved while exporting any punchlist, MOC, assets and documents related reports.

Step 1 Start	Step 2 Criteria	Step 3 Location & Scheduling	Step 4 Export
-----------------	--------------------	--	------------------

Set Location

File type CSV (Text File) XLSX (Data type kept)

Include Workflow? Yes No

Date Time Shift?

Export data to

(Select one)
 GMT/UTC - No Conversion
 Local (Without Daylight Saving Time) OR Project offset
 USA/Canada (Daylight Saving Time: 2nd Sunday in March thru 1st Sunday in November) OR Project offset
 Australia (Daylight Saving Time: 1st Sunday in October thru 1st Sunday in April) OR Project offset
 Chile (Daylight Saving Time: 1st Sunday in September thru 1st Sunday in April) OR Project offset
 Mexico (Daylight Saving Time: 1st Sunday in April thru last Sunday in October) OR Project offset

Set Schedule

Scheduling

Saved Export

Add as new export?

Exporting Workflows

You can export work flows along with punch list, RFI, MOC, assets and document reports.

While exporting RFI data, you can export **Responsible Company** as a field. This is an optional feature that helps you to record the transitions within any of the mentioned managers



only if it is exported into an Excel sheet. When you export any report to this screen appears.

Columns to Export

Include Workflow?

Yes No

NOTE If you export the report to CSV format, system doesn't ask for the work flow inclusion.

Using the Criteria tab

The Criteria tab allows you to apply filters to the exported data.

1. These filters will typically match the Search panels for any manager (or example: Assurance Certificates, Flange joint, etc) from which you are exporting under the **General Tab**.
2. Enter the search criteria, click the **Search** button to apply it. If no filters are added, the software will export every record in the database.

3. Press **Next**.

NOTE Depending on the size of the project and the data, filtering may be necessary to prevent the system from timing out and the export to fail.

Using the Location and Scheduling Tab

These settings will define the type of file exported, where it is delivered, and whether you want to save it within Smart Completions.

1. The system defaults to .xlsx files. You can choose to export a .csv.
2. **Include Workflow?** will add additional columns with the workflow information, including submitted by through closed by, along with the dates.

NOTE All dynamic workflows can now be exported choosing a .csv or .xlsx formats to include all workflow information inclusive of modified workflows.

3. The **Date Time Shift** allows you to control what time zone is applied to any dates. All times are recorded in the database at UTC (Coordinated Universal Time); however, timestamps that show within the system are displayed at the local machine's time. You can choose UTC, your local machine or the designated project time zone. You can also choose daylight savings in either USA/Canada, Australia, Chile, or Mexico.
4. You can choose whether the export is delivered to your computer's download folder or an **sFTP** folder.

NOTE You can use a private key for secure sFTP connections. To change your sFTP password or private key for an existing export configuration, select **Set Client Secret > Update** in the **Location & Scheduling** tab of any saved export.

5. **Recurrence** determines whether a saved report will run automatically on designated schedule. Many projects require reports to be run daily or weekly. This can be time-consuming, and a large number of exports can slow the software for other users. If a report is set to run automatically on a recurrence schedule, Smart Completions will schedule these exports during off-hours. Therefore, you can simply click the **Saved Export** icon to generate the most recently run export.
6. **Add as New Export?** determines whether the export is saved within the software or simply processed as a one-time export. If you choose to save it, a new field will allow you to name it.

Limitations to Exports

★ **IMPORTANT** A maximum number of rows allowed for export is now limited to 1 million rows. If your selection exceeds this limit, you will be notified and prompted to filter your data further.

1. If using csv exports, you can choose to compress the file into a ZIP archive upon completion. Select this option in export manager before starting the process.
2. To prevent overloading of the system, running multiple exports at a time or in a short time frame is not recommended.
3. When you run a saved export, you might be accessing filters set by the primary user. You can generate a new export after the set wait minutes with your preferred criteria. You can configure the wait time to generate a new export using the **ExportWait** key of the **web.config** file.

Export is running or ran recently

(ovTasks_TestsPlanned.xlsx)

Please open a Saved Report from Exports manager as it is much faster to access and download.

[The export is already pre-generated and ready to download on this link.](#)

The saved export you're accessing might contain filters or specific criteria applied by the previous user, consider generating a new export after 2 minutes with your preferred criteria.

Data Exchange

The Data Exchange Manager allows you to access any third party applications or sub applications required to process Smart Completions work procedures.

Currently, Smart Completions is integrated with **SDx**, **S3** and **SPID**.

For information on Smart Completions Smart APIs:

- Intergraph Smart Completions Smart API Installation and Configuration
- Intergraph Smart Completions Smart API - Getting Started

SDx/SPO Connector

Smart Completions has an Out-of-Box connector with SDx Operations. The Data Exchange Manager allows you to pull documents directly from SDx Projects into Smart Completions projects. This way you can ensure the latest controlled documents are pulled into Smart Completions when needed.

The screenshot shows a web-based application interface for managing documents and drawings. On the left, there is a table titled 'Documents & Drawings (242)' with columns for State, Status, Document ID, Datasheet, Description, Native File, PDF File, URL, Procedure, Discipline, Category, Type, Controlled?, Rev., # Assets, and # MOCs. A red arrow points from the 'Procedure' column towards the 'Info Map' window on the right.

The 'Info Map' window displays a hierarchical tree structure of document versions and changes. Key nodes include:

- Document v...** (1111-ENG-PI...)
- Change R...** (3)
- CHG-13**
- CHG-10**
- CHG-8**
- Discipli...** (PX)
- Owning G...** (ADMIN)
- All Vers...** (1111-ENG-PI...)
- Areas** (11)
- All Revi...** (2)
- All R...** (1111-ENG-PI...)
- All R...** (1111-ENG-PI...)

To set up the connection with SDx, complete the following steps:

Opening the Data Exchange Manager:

1. Click the gear icon.
2. Search for **Data Exchange** and open the manager.

Step 1: Set up a new connection:

1. Click **New** and enter the **Name** and **Description** in the popup window.
2. In the **Data Source** dropdown contains our currently supported platforms. In this instance, choose SDx.
3. In the SC Base Manager, you will choose which Manager the connection will pull from. Because SDx is a document manager system (DMS), you will choose vDocuments/vAssets.

NOTE If you have already imported documents from HxGN SDx and you are now importing tags into the Smart Completions system, then you can use the **Asset To**

Documents Relationship section to create relationships for the tags that will get imported with documents existing in the system.

4. In the URL/Connection Path field, you will enter the external API or connection information.
5. The End Point is the API data source. Smart API customers can configure their own endpoints.
6. The Access Token and Refresh Token fields are only necessary when the login uses an alternative to the Username/Password of the system. If SDx requires multi-factor authentication, for instance, then these fields will be used. Otherwise they are not required.
7. The InfoMap Path is optional. If you add the InfoMap path URL here, then users will be able to click a link in the document manager to load the InfoMap for that document. Please see the second image below.
8. Default User Name and Default Password will come from the user account that was created for the API Authorization.
9. Client ID, Client Secret, Scope, and Service: SC will use these credentials from the configuration of Smart API. Consult the Smart API documentation for these fields.
10. In some instances, the authentication server may be different from the application server. The Pre Auth Type (N/A or SiteMinder) and Pre Auth URL can also be added. If no authentication server is used, you may leave these blank.
11. Save the record at this point and choose to continue editing the form.
12. Source Project is the project within SDx from which SC will pull data. This field is not editable. To populate this field, click the Get Source Project button and choose the correct project. Note that the URL/Connection Path must be entered before selecting the project. If you have not saved the record, then this list of projects will not be available. If the Projects are not loading, and you have saved the record, then the above steps have not been configured correctly.
13. The Last Sync Date serves as a filter, so that SC will only pull new information from this date. If you are making configuration changes, then you should clear this date.

14. The Exchange Type will determine the flow of information between SDx and SC. Currently, it is only possible to Pull from SDx. Pull means that Smart Completions will update with new information that originated in SDx. In the future, Push will allow information that has been entered in Smart Completions to be sent to update SDx, and Push/Pull will allow new information to flow back and forth between the two. If something new is added in Smart Completions, the software will update SDx (Push). And if something new is added in SDx, Smart Completions will automatically update with it (Pull). Push and Push/Pull are not currently available.
15. The Schedule dropdown allows you to determine whether data exchange will be regularly scheduled (Recurrence) or whether you only want the data exchange to occur when you tell it to by clicking a button (Manual).
16. Data Propagation: Right now, the only supported type is Automatic. A data staging phase will be coming in a future release. This will mean that if any key fields have been changed, they will be placed into a "staging" area for further analysis and collision rather than automatically updating SC.
17. If you selected Recurrence as a schedule, then a Recurrence button appears that allows you to determine how frequently the data exchange occurs.
18. If you are importing tags, you can select **Yes** for **Do you want to import the tag to document relationships?** option to relate the tags with the documents that already exist in the system.

★IMPORTANT If you have selected **Yes** for **Do you want to import the tag to document relationships?** option, then you must specify the name of the custom relationship expansions in the **Tag to Document Navigation Property** box.

The screenshot shows the SDx Data Exchange configuration interface. The top navigation bar has three tabs: Step 1 General, Step 2 Field Mappings, and Step 3 Data Restrictions. The Step 1 General tab is currently selected.

Data Exchange Details

- Name: SDx Tags
- Projects: 1 selected
- Description: (empty)
- Data Source: SDX
- CE Base Manager: Assets

Connection Configuration Details

- URL / Connection Path: <https://sdxdemo.devdemo.hexagonppm.com/SDxDemoServer/api/v2/SDA/>
- End Point: Tags
- InfoMap Path: <https://sdxdemo.devdemo.hexagonppm.com/sdx/#/infomap-viewer/>
- Default User Name: kmenis
- Client ID: SDXAPI
- Scope: Ingr.api
- Resource: FABB0ED8-C142-4FFA-B5F4-DB35F43E0B64
- Pre Auth Type: N/A
- Source Project: PDA-PO
- Last Sync Date: 09-Aug-2023 12:00 AM
- Get Source Project button
- Default Password: Set Password
- Client Secret: Set Client Secret
- Service: (empty)
- Acr Values: (empty)
- Pre Auth URL: <https://sdxdemo.devdemo.hexagonppm.com/sam/oauth/connect/t>

Data Exchange Plan

- Exchange Type: Pull
- Schedule: Manual
- Data Propagation: Automatic

Asset To Documents Relationship

Do you want to import the tag to document relationships? Yes No

Step 2: Field Mapping

On the second tab, you will determine the fields in the SDx Database that map to the Smart Completions Fields. The fields displayed in SC Fields are determined by the manager you selected on the first tab in SC Base Manager. In this instance, therefore, we will see fields available from vDocuments/ vAssets.

1. In SDx, each Project can be configured differently. For instance, required fields may be different depending on the project. Click the Get Schema button to pull this data from the SDx Project you selected in Step 1.
2. There are four default look up fields that are mappable for data restrictions when pulling in data (Discipline, Category, Type and Status). Checking the lookup check box will also sync the possible lookup values with SC and allows you to select these values for restrictions (discussed later).
3. Once you have started the process, the **Clear Schema** button will remove your current selections and start a new one.

Step 3: Data Restrictions

This tab allows you to set restrictions on the data you wish to pull. For instance, if you only want documents that are from the Electrical discipline, you can create a filter here. The Get Lookups button will fetch these datapoints from SDx and save them in Smart Completions. However, only lookups that have been configured in Step 2 will be populated. Additionally, there is a default filter on Document Status, so that only the current revision can be pulled. Click Save to proceed.

From the Data Exchange Manager, you can now highlight the row and click **Fetch Data** to run the operation.

A sync history is available for each Data Exchange configuration, and can be seen in the **Secondary** panel, that will show the number of records modified. Once you have done this, the **Last Sync Date** will be populated on the Step 1 tab. Remember that Smart Completions will only pull new data from the time of the last sync. If you need to change the filters, then this means the connection could miss any documents that were edited or changed before this date. Therefore, if you change the filters (Step 3), then you will need to clear the **Last Sync Date** before fetching new data.

NOTE If you are going to import the tag to document relationships by using the **Last Sync Date** option, you must do the following configurations in the SmartPlant Foundation Desktop Client to only pull the new relationships from the time of the last sync.

- **Edit column set items to include the LastUpdatedDate column set**
 1. In the Desktop Client, search for the entry point **FDWTagEntryPoint**.
 2. Select **FDWTagEntryPoint**, and select **Show Column Set**.
 3. Select the **FDWTag** column set, and select **Manage Column Items**.
 4. Move the **LastUpdatedDate** column item to the left pane, and select **OK**.
- **Update the Document revision tags relationship definition**
 1. In the Desktop Client, search for the relationship definition **FDWDocRevTag**.
 2. Select **FDWDocRevTag**, and select **Update**.
 3. In the **Update Document revision tags** window, Select the **End 2 owns this relationship** check box.
 4. Select **Finish**.

Sync History

A sync history is available for each Data Exchange configuration and can be seen in the Secondary panel. The **Sync History** tab displays a record for each time the configuration is used to fetch data into Smart completions.

Each record displays the date and time when this configuration was used to fetch data into the Smart Completions system, and the total number of records that were modified, updated, and inserted.

- Select a sync history record to view the details.

NOTE If you have already imported documents from HxGN SDx and you are now importing tags into the Smart Completions system, then the **Asset To Document** tab displays all the asset-to-document relationships that get created for the tags that will get imported with documents existing in the system.

Pull Asset Tags and Documents from SDx/SPO

You can map (add/ modify) Assets from SDx into Smart Completions and track changes in field log to know if there is a failure while transferring a record. You can customize an asset from the SDx (if the same tag is missing in SC) to SC using Data Exchange manager.

1. Get started with the SDx using details as provided in [SDx/SPO Connector](#).
2. In **Field Mapping** section, map the SDx field names to the corresponding fieldname under **SC FieldName** section.

NOTE For any fields that are not present with SC and you wish to use data restrictions, then you can use that field as a custom field by using **SelectName** feature.

3. Provide the corresponding Select List for the corresponding field wherever applicable. Select **isLookup** for the Lookup fields in SC.

These steps ensure that the information pertaining to assets in SDx are mapped to Asset types in SC. You can view this information in **Data Restrictions** tab.

The screenshot shows the 'Data Restrictions' tab of the Data Exchange Manager. At the top, there are three tabs: 'Step 1 General', 'Step 2 Field Mappings', and 'Step 3 Data Restrictions'. The 'Step 3 Data Restrictions' tab is active. Below the tabs, there is a section titled 'Asset Data Restrictions' with two buttons: 'Get Asset LookUps' and 'Get Asset Source LookUps'. The 'Get Asset Source LookUps' button is highlighted. Below these buttons is a table with five rows, each representing a field type: Asset Type, Asset Discipline, Asset Status, Asset Priority, and Custom. Each row has a 'Select Options' button.

Get Asset LookUps: Getting or populating Asset Lookups from Smart Completions

Get Asset Source Lookups: Getting or populating Asset Lookups from SDx

The Custom dropdown populates the SelectList for the field where **z** was selected.

Asset Renaming : If an asset that was already mapped from SDx into SC has been renamed, then on re establishing the Data Exchange, the asset tag gets overridden or auto updated with the new asset tag.

This module also records Field Logs. Any change made to the Data Exchange manager is

recorded here. When you sync the data using  , it is recorded in the secondary Tab under the Sync Date column. You can view the details of the changes made by navigating to **Sync Date> General**. Also, under the **Look Up log** tab, the fields that have been customized and synced are displayed.

Step 1 General	Step 2 Look Up Log	Step 3 Log
▼ Look Up Log		
Records (19)		
Look Up View		
vAssetTypes	BK	
vAssetTypes	Brewery Tags	
vAssetTypes	BRL	
vAssetTypes	equipment class	
vAssetTypes	F	
vAssetTypes	flow instrument	
vAssetTypes	HLT	
vAssetTypes	Hose	
vAssetTypes	instrument equipment	
vAssetTypes	mechanical equipment class	

NOTE Any error if occurred during a Data Exchange is recorded and displayed in **Sync Date> Log**.

SDx Work Package Connector

Smart Completions has an out-of-the-box connector with HxGN SDx, streamlining your Work Package (WP) management from scoping and planning to execution. This connector simplifies the data exchange process, ensuring teams in both applications have access to the most up-to-date information.

The SDx Work Package Connector automatically pulls general WP information and associated assets and documents directly from SDx into Smart Completions.

Key Features

- Synchronize WPs between SDx and Smart Completions, keeping both platforms in sync.
- Select only the WPs relevant to Smart Completions projects. The connector allows you to filter by a customizable field indicating **Completions** or **Execution** status.
- Only WPs flagged for the chosen filter are automatically created within the corresponding project in Smart Completions.

- The connector pulls a comprehensive set of WP data, including:
 - **Work Package ID**
 - **Work Package Description**
 - **Work Package Type**
 - **Work Package Discipline**
 - **Assigned Plant (ISC Instance)**
 - **Work Package Scheduling (if available)**
 - **Work Package Relationships (Linked Assets and Documents)**
- Link associated assets and documents from SDx to the corresponding WP in Smart Completions, providing a centralized location for all project information.
- identify the source of each WP (SDx, SPC, iConstruct, ISC) through a field exposed within the WP record.
- The connector automatically sends email notifications when data discrepancies occur during synchronization. This ensures you're aware of any missing tags or access issues, allowing for prompt resolution.

NOTE SDx does not manage work steps. All work steps will be created and managed within Smart Completions.

Setting Up the SDx Work Package Connector

The SDx Work Package Connector is configured within Smart Completions. Follow these steps to establish the connection:

1. Select the **Settings Panel > Data Exchange**.
2. Select Create a New Connection.
3. Select **New** and enter **Name** and **Description** for the connection.
4. Configure the Connection Details:
 - **Data Source:** Choose **SDx** from the available platforms.

- **URL/Connection Path:** Enter the relevant SDx API or connection information.
- **Authentication:** Provide any necessary credentials for accessing the SDx API (Username/Password, Access Token, so on)

5. Define the specific field used for filtering WPs based on **Completions** or **Execution** status.
6. Determine the data exchange frequency (Manual or Recurring).
7. Save the connection configuration and perform a test connection to ensure successful communication with SDx.

For more information, see [SDx/SPO Connector](#).

Smart Plant P&ID Connector

Smart Completions has an out of the box connector with SPID Operations. The Data Exchange Manager allows you to pull documents directly from SPID Projects into Smart Completions projects. This way you can ensure the latest controlled documents are pulled into Smart Completions when needed.

★IMPORTANT Before setting up connection, make sure the **GenerateCommonMetadata** parameter is set to **True** in the **Smart Plant P&ID Web.Config** file. For more information, see Configure Smart P&ID Web API to generate common metadata.

Opening the Data Exchange Manager

1. In the Smart Completions setup, select the  icon.
2. Search for Data Exchange and open the manager.

Setting up New Connection

1. Select **New** and enter the Name and Description in the pop-up window.
2. The **Data Source** list contains our currently supported platforms. In this instance, choose **SPID**.
3. The **SC Base Manager**, choose which Manager the connection will pull from. In this example, we show **vDocuments**.

4. In the URL/Connection Path field, enter the external API or connection information.
5. The **End Point** is the API data source. Smart API customers can configure their own endpoints.
6. The Access Token and Refresh Token fields are only necessary when the login uses an alternative to the Username/Password of the system. If SPID requires multi-factor authentication, for instance, then these fields will be used. Otherwise they are not required.
7. The **InfoMap Path** is optional. If you add the InfoMap path URL here, then users will be able to select a link in the document manager to load the InfoMap for that document.
8. Default User Name and Default Password will come from the user account that was created for the API Authorization. Client ID, Client Secret, Scope, and Service: SC will use these credentials from the configuration of Smart API. Consult the Smart API documentation for these fields.
9. In some instances, the authentication server may be different from the application server.
10. The Pre Auth Type (N/A or SiteMinder) and Pre Auth URL can also be added. If no authentication server is used, you may leave these blank.
11. Save the record at this point and choose to continue editing the form.
12. **Source Project** is the project within SPID from which SC will pull data. This field is not editable. To populate this field, select the Get Source Project button and choose the correct project. Note that the URL/Connection Path must be entered before selecting the project. If you have not saved the record, then this list of projects will not be available. If the Projects are not loading, and you have saved the record, then the above steps have not been configured correctly.
13. The **Last Sync Date** serves as a filter, so that SC will only pull new information from this date. If you are making configuration changes, then you should clear this date. However, you can leave it blank for now.
14. The **Exchange Type** determines the flow of information between SPID and SC. Currently, it is only possible to Pull from SPID. Pull means that Smart Completions will update with new information that originated in SPID. In the future, Push will allow information that has been entered in Smart Completions to be sent to update SPID, and

Push/Pull will allow new information to flow back and forth between the two. If something new is added in Smart Completions, the software will update SPID (Push). And if something new is added in SPID, Smart Completions will automatically update with it (Pull). Push and Push/Pull are not currently available.

15. The Schedule dropdown allows you to determine whether data exchange will be regularly scheduled (Recurrence) or whether you only want the data exchange to occur when you tell it to by selecting a button (Manual).
16. **Data Propagation:** The only supported type is **Automatic**. A data staging phase will be coming in a future release. This will mean that if any key fields have been changed, they will be placed into a “staging” area for further analysis and collision rather than automatically updating SC.
17. If you selected **Recurrence** as a schedule, then a Recurrence button appears that allows you to determine how frequently the data exchange occurs.

Field Mapping

On the second tab, you will determine the fields in the SPID Database that map to the Smart Completions Fields. The fields displayed in SC Fields are determined by the manager you selected on the first tab in SC Base Manager. In this instance, therefore, we will see fields

available from vDocuments. On creating display set within SPID (commissioning system display set), it is a 1 display set per drawing, and the display set should be same as the document name.

1. In SPID, each Project can be configured differently. For instance, required fields may be different depending on the project. Select the **Get Schema** button to pull this data from the SPID Project you selected in Step 1.
2. There are four default look up fields that are mappable for data restrictions when pulling in data (Discipline, Category, Type and Status). Checking the lookup check box will also sync the possible lookup values with SC and allows you to select these values for restrictions (discussed later).
3. Once you have started the process, the **Clear Schema** button will remove your current selections and start a new one.

SDx Field Name	Data type	SC Field Name	Is Lookup?
DateCreated	Edm.String		<input type="checkbox"/>
Depth	Edm.String		<input type="checkbox"/>
Description	Edm.String	Description	<input type="checkbox"/>
DocumentCategory	Edm.String	DocumentCategory	<input checked="" type="checkbox"/>
DocumentType	Edm.String	DocumentType	<input checked="" type="checkbox"/>
DrawingNumber	Edm.String	DocumentFileName	<input type="checkbox"/>
ItemStatus	Edm.String	DocumentStatus	<input checked="" type="checkbox"/>
LastArchiveTime	Edm.String		<input type="checkbox"/>
LastPublishTime	Edm.String		<input type="checkbox"/>
Name	Edm.String	DocumentName	<input type="checkbox"/>
ParentType	Edm.String		<input type="checkbox"/>
Path	Edm.String		<input type="checkbox"/>
PDA_ApprovedBy	Edm.String		<input type="checkbox"/>
PDA_ApprovedByDate	Edm.String		<input type="checkbox"/>
PDA_CheckedBy	Edm.String		<input type="checkbox"/>
PDA_CheckedByDate	Edm.String		<input type="checkbox"/>
PDA_DesignedBy	Edm.String		<input type="checkbox"/>

Data Restrictions

This tab allows you to set restrictions on the data you wish to pull. For instance, if you only want documents that are from the Electrical discipline, you can create a filter here. The **Get Lookups** button will fetch these datapoints from SPID and save them in Smart Completions. However, only lookups that have been configured in Step 2 will be populated. Additionally,

there is a default filter on **Document Status**, so that only the current revision can be pulled. Remember to Save.

The screenshot shows the 'Data Restrictions' tab of the Data Exchange Manager. At the top, there are three tabs: 'Step 1 General', 'Step 2 Field Mappings', and 'Step 3 Data Restrictions'. The 'Step 3 Data Restrictions' tab is active. Below the tabs, there is a section titled 'Data Restrictions' with a 'Get Lookups' button. Underneath are three dropdown menus: 'Document Category' (labeled 'Select Options'), 'Document Type' (labeled 'Select Options'), and 'Document Discipline' (labeled 'Select Options'). At the bottom right of the main area are 'Save' and 'Exit' buttons.

From the Data Exchange Manager, you can now highlight the row and select



to run the operation. A sync history is available, and can be seen in the View Panel, that will show the number of records modified. Once you have done this, the Last Sync Date will be populated on the Step 1 tab. Remember that Smart Completions will only pull new data from the time of the last sync. If you need to change the filters, then this means the connection could miss any documents that were edited or changed before this date. Therefore, if you change the filters (Step 3), then you will need to clear the Last Sync Date before fetching new data.

Using the Aconex Connector

The Aconex integration is designed to simplify the end user experience and access the latest approved revisions of critical documents and drawings within Intergraph Smart ® Completions (ISC). Using the Aconex API and Out of the Box (OOTB) “Aconex Connector” in ISC, clients will be able to update the document register and access the latest documents, in PDF format, within the ISC User Interface (UI) and Smart ® Completions Companion (SCC) mobile application to support field execution.

Part of the setup is the ability to pull “lookup” table content (e.g., project list, document types etc.) so that pre-filtering can be configured per project to tailor which documents are required for a project.

This integration is unidirectional from Aconex to ISC.

The current connector is designed to:

- Authenticate
- Extract Project List
- Extract Document Schema and Map Fields
- Extract Document Disciplines, Status, Categories, Types and Map
- Extract Document Registry (for only selected types) with revisional info
- Extract Document PDF files

Clarification	Recommendation
Who is generally is configuring the interface?	Client personnel with credentials and understanding of field mapping can perform this action.
What does the infrastructure look like, where are the machines typically located and who has access?	Aconex is primarily a SaaS product hosted by the OEM; however, it is installed on an intranet as needed. Access to the system via APIs is performed by personnel with

	knowledge in integrating 3rd party systems and in extracting info and documents. These personnel would configure ISC to connect to Aconex.
Any technical information about how the machine to machine works? Or how the Web API is performing authentication (e.g. OData with certain authorization flow)?	<p>Authentication is dependent on how Aconex is setup. It can be either Basic Authentication or Token based if a 3rd party identity provider is used. Our most common approach currently is Basic Authentication.</p> <p>Authentication Methods:</p> <ul style="list-style-type: none"> • Basic authentication – Aconex username & password • Token Based – Aconex serves a token and refresh token that SC uses for its service account.

Pre-requisites

Customer provided Aconex API key. The API key is required for ISC to connect and request data from Aconex.

There are two (2) ways to authenticate against Aconex: the first is using basic authentication (e.g., username and password) and the second using access and refresh tokens. If the customer has enabled Multi-Factor Authentication (MFA) in Aconex, then the second method is required.

It is also recommended that part of the setup the client first configures the “Aconex Connector” in ISC using a test site for both ISC and Aconex. Once a User Acceptance Test (UAT) activity has been performed then replicate the same configurations for the production site and targeted project(s) within ISC.

The following questions should be answered before setting up the OOTB connector:

- Authentication Method

- Targeted project(s) in Aconex
- Targeted document categories and types identified
- Usage of any additional custom fields for pre-filtering documents

Username / Password:

The screenshot shows a configuration form for a connection. It includes fields for 'URL / Connection Path' (set to <https://us1.aconex.com/api>), 'API Key' (redacted), 'Client ID' (08), and 'Client Secret' (redacted). There is also a 'Smart Completions' dropdown menu.

Access Tokens:

The screenshot shows a 'Smart Completions' window with two text input fields: 'Access Token:' and 'Refresh Token:', both currently empty. At the bottom are three buttons: 'Update', 'Clear', and 'Close'.

Setup Instructions

The instructions will provide a step-by-step configuration of ISC Aconex connector and will also review with different fields captured in the DE module so that it is explicit how to configure the connector.

Enter Connector Information

First, to configure the connector, target the project, enter credentials, and set recurrence. Selecting “get source projects” will test the authentication so it should be tested before any further configuration is made.

Edit Data Exchange - Google Chrome

Step 1 Step 2 Step 3

General

Name: Aconex Projects: 1 selected

Description: Aconex

Data Source: Aconex SC Data Source: Documents

Connection Configuration Details

URL / Connection Path: Sm@rtCompletions Use Super Search API? Yes No

Use Token Manager? Yes No Token Manager

Client ID: Client Secret/Password: Set Password

Source Project: Training & Practice

Last Sync Date: 11-Jul-2023 02:29 PM Get Source Project

Data Exchange Plan

Exchange Type: Pull Schedule: Manual Data Propagation: Automatic

Save Exit

Field	Comment
Name	Suggest using project reference (e.g., number) in the name and Aconex so that it is explicit for those reviewing which project the connector is for (e.g., ACNX-Project 1)
Description	Description of Connector purpose
Projects	Select ISC project to populate document list
Data Source	Select Aconex OOTB connector

SC Data Source	Select Document module since you will be populating the document list
URL / Path	Path to Aconex system
Use Super Search API?	<p>To retrieve all data, including special characters (like parentheses or other symbols), select:</p> <ul style="list-style-type: none"> • Yes: Fetch all data, even if it contains special characters. • No: Filter the data and remove any special characters before fetching. Special characters like parentheses, brackets, or other symbols in the data can cause errors with this option.
API Key	Aconex Key to access API
Use Token Manager?	<p>Select the following option:</p> <ul style="list-style-type: none"> • Yes: To select one of the Token Manager from the list which consists of the access and refresh tokens. • No: To enter the Client ID and Client Secret.
Client ID	Aconex Username
Client Secret	Aconex Username password
Source Project	Aconex target project
Last Sync Date	Can be used to trigger a new sync

Get Project	Fetch Aconex project list
Exchange Type	Push / Pull (in this case Pull will be required)
Schedule	Manual or Recurrence (suggest setting up daily recurrence)
Data Propagation	This will set to overwrite specific meta data as mapped on “field mappings” tab
Scheduling	Set rules to frequency of “fetch” data update (same concept as Microsoft Outlook calendar)
Sequence	Used to sequence exports to lessen impact on server or apply logic to importing data (.xls files)

Map Fields between Aconex and ISC schemas

Second, map the schemas (fields) between Aconex and ISC. Before the connector can be run, the ISC admin would need to GET SCHEMA to pull the list of fields in Aconex, then map those to ISC document view fields.

At a minimum, the following fields must be mapped:

- Aconex TrackingId to ISC AconexTrackingId
- Aconex Document Number to ISC DocumentName
- Aconex Date Modified to ISC RecordLastModified

Step 1 General Step 2 Field Mappings Step 3 Data Restrictions

Aconex Import Fields Mapping

Records (68)	Aconex Field Name	Data type	SC Field Name	Is Lookup?
	Get Schema			
	Clear Schema			
	Project Field 2	String		<input type="checkbox"/>
	Project Field 3	String		<input type="checkbox"/>
	Description	String		<input type="checkbox"/>
	Review Source	String		<input type="checkbox"/>
	Review Status	String		<input type="checkbox"/>
	Revision	String	Revision	<input checked="" type="checkbox"/>
	Revision Date	String	RecordLastModifiedBy	<input type="checkbox"/>
	Scale	String	RecordRemovedBy	<input type="checkbox"/>
	Edificio	String	Revision	<input checked="" type="checkbox"/>
	To SP	String	RevisionDescription	<input type="checkbox"/>
	Project Phase	String	SelectName	<input type="checkbox"/>
	Originator code	String	Status	<input type="checkbox"/>
	Select List 4	String	SubmittedBy	<input type="checkbox"/>
	Select List 5	String		<input type="checkbox"/>
	Select List 6	String		<input type="checkbox"/>

Save Exit Update Tokens

Apply Filters

Third, apply pre-filtering of content requested from Aconex. Before mapping can be performed, select GET LOOKUPS, this will fetch from the API a list of document categories, types (subset of category), discipline, status, and custom fields. Use any one of these check box lists to select the desired content. If nothing is selected in a dropdown, it is equivalent to “get all”. We suggest starting with being very selective in what is required of Aconex and expanding as required.

Step 1 General Step 2 Field Mappings Step 3 Data Restrictions

Document Data Restrictions

Get Lookups

Document Category	Select Options
Document Type	Select Options
Document Discipline	
Document Status	
Custom	

Filter: Enter keywords All None

- Contract
- Drawing
- Image
- Manual
- Method Statement
- Model
- Plan
- Policy

Save Exit Update Tokens

Test Connector and Fetch Data

Fourth, test the configuration after all configuration has been saved. To test the configuration, it is important to test the connector by selecting “fetch data”, which will load the document list into the ISC document module.

The screenshot shows the 'Data Exchange Configurations' screen with 17 entries. The first entry, 'Aconex Documents', is highlighted with a red box. Below the table, there is a 'Sync History' section with two entries. At the bottom of the page, there is a toolbar with various buttons, and the 'Fetch Data' button is highlighted with a red box and an arrow pointing to it from the selected row in the table.

Name	Description	Data Source	CE Base Manager
Aconex Documents	Aconex Documents Import	Aconex	Documents
S3 Exports	S3 Documents Exports	sFTP / s3	Systemization Tree
sC Import		sFTP / s3	Punchlist & C.O.W.

Sync History (2)	Field Log				
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N					
Aconex Documents	17-Mar-2021 11:46:49 PM	<input checked="" type="checkbox"/>	9	9	0
Aconex Documents	17-Mar-2021 10:07:29 AM	<input checked="" type="checkbox"/>	9	0	9

Buttons: Reset, Search, New, Edit, Delete, Purge/Restore, Imports, Fetch Data, Settings.

Reviewing Sync Logs

The sync logs are the first iteration shown each time the connector is run. It will display the total records pulled during that sync occurrence, and out of those records how many records were inserted (new) or updated (modified). The hyperlink in the Sync Date column will load the edit form, listing specific records that were affected (inserted or updated).

The file, log and details columns are not pertinent for the Aconex connector.

Name	Description	Revision	Insert/Update
ACVTPB5_IncAR-SD-00001	.pdf	1	Update
ACVTPB5_IncAR-SD-00002	testing doc uploaded	1	Update
T-00013-0012	T-00013-0012	1	Update
T-02485-0001_31x52p18	T-02485-0001 - CEP Y 1841 E - INSPECTION OF FIELD CABLE INSTALLATION	1	Update
T-02485-0002_31x52p18	T-02485-0002 - CEP Y 1841 E - INSPECTION OF FIELD CABLE INSTALLATION	1	Update
T-62170-0001_06506-A-106007	T-62170-0001 - Test for Acnex	1	Update
T-62170-0002_06506-B-106008	T-62170-0002 - Test for Acnex	1	Update
			<input type="button" value="Save"/> <input type="button" value="Exit"/>

Teambinder Connector

By enabling this data exchange, you can propagate the HOP details from team binder to Smart Completions. You can fetch these details from the Teambinder lots to SC HOP:

- **HOP ID**
- **Status**
- **Description**
- **Package Type**

By providing the data as shown below, you can enable the connection between Teambinder lots and Smart Completions.

NOTES In order to pull in Look ups:

1. The Data restriction values for look up are pulled from Smart Completions

- To get all the HOP status lookup values for the data exchange, you must do a full sync for the first time.

Pull Documents from Team Binder

You can add or modify documents from Team binder to Smart Completions and track changes in sync log to know if there is a failure while transferring a record.

- Get started with the Team binder using details as provided in [Teambinder Connector](#).
- In **Field Mapping** section, map the team binder field names to the corresponding field name under **SC FieldName** section.
- NOTE** For any fields that are not present with SC and you wish to use data restrictions, then you can use that field as a custom field by using **SelectName** feature.
- Provide the corresponding **Select List** for the field wherever applicable. Select **IsLookup** for the Lookup fields in SC.

The screenshot shows a user interface for managing data restrictions. At the top, there are three tabs: Step 1 General, Step 2 Field Mappings, and Step 3 Data Restrictions. The Step 3 tab is selected and highlighted in orange. Below the tabs, a section titled "TeamBinder Data Restrictions" is expanded. Inside this section, there is a button labeled "Get TeamBinder LookUps". To the right of this button, there are five dropdown menus, each labeled with a field name and a "Select Options" button. The fields are: Document Category, Document Type, Document Discipline, Document Status, and Custom. The "Custom" dropdown is currently selected.

NOTE The Custom drop-down populates the **SelectList** for the fields selected.

This module also records **Sync Logs**. Any change made to the Data Exchange manager is recorded here. When you sync the data using  **Fetch Data**, it is recorded in the secondary tab under the **Sync Date** column. You can view the details of the changes made by navigating to **Sync Date > General**. Also, under the **Look Up log** tab, the fields that have been customized and synced are displayed.

Step 1 General	Step 2 Look Up Log	Step 3 Log	
▼ Primary Data			
▼ Document Data			
Records (30)			
Name	Description	Revision	Insert/Update
04042024UPLOAD3	ABCDEF	A	Insert
3071_MAT_SPEC	3071 spec	A	Insert
ABC-12345	BlueBeam Testing No. 1	E	Insert
ABC-12347	BlueBeam Testing No. 3	E	Insert
ABC-12348	BlueBeam Testing No. 4	E	Insert
BRISBANE-RIVER-2020	Brisbane river 2020	04	Insert
BUSHFIRE1230	bushfire test 11:58	F	Insert
-CANCELLED-CRRTSD-000-0902-DRG-RBGT-1490-200140 CM-0002	Roma St Cover Sheet	C	Insert
CM-0004	CM Test 0002	02	Insert
CM-TEST-0004	TEST 0004	D	Insert
CM-TEST-0003	CM-TEST-0003	B	Insert
CM-TEST-0004	CM-TEST-0004	A	Insert
CRRTSD-000-0902-DRG-RBGT-1490-200140	Roma St Cover Sheet	B	Insert
FELIX_TEST_1_DOCUMENT_DOCX	FELIX_TEST_1_DOCUMENT_DOCX	E	Insert
FELIX_TEST_29012020	FELIX_TEST_29012020	B	Insert
GLU-VCA-PWD-PWD-MPL-XSE-NAP-X0005	configuration	A	Insert
NL3-CPB-000-EL-RP-139	Electrical Report	00	Insert
XXXXX-AR-DR-0200-02	Blah Testing 02	E	Insert

NOTE Any error if occurred during a Data Exchange is recorded and displayed in **Sync Date > Log**.

AWS S3 Bucket for File Exchange

Creating a Data Exchange record to point to S3 bucket

1. Set the exchange name. This name will be used in the document import for linking.
2. Set the **Data Source** to **sFTP / s3**.
3. The **bucket path** is the location where the documents will be uploaded and retrieved.
4. Set **username** as provided
5. **Exchange Type** should be set to **Pull and Manual**.

NOTE None of the other inputs are required for this configuration.

Edit Data Exchange - Google Chrome

qa.ceccms.com/ORMS/Tools/EditForm.aspx?ID=6&v=vDataExchange

Step 1 Step 2 Step 3

General Field Mappings Data Restrictions

Data Exchange Details

Name: Document Reop
Projects: 1 selected

Description: Project Documents from s3 bucket

Data Source: sFTP / s3
CE Base Manager: Documents

Connection Configuration Details

Folder / Bucket Path: clientBucket/dataexchange/documents

End Point / File Name:

Access Token:

Refresh Token:

Default User Name: s3-userName
Default Password:

Source Project:

Last Sync Date:

Data Exchange Plan

Exchange Type: Pull
Schedule: Manual
Data Propagation: Automatic

Save Exit

Meta data import

1. Import all base fields which map from third party to Completions **Documents** module.
2. Required fields for S3 Data Exchange are **External ID** and **DataExchange Name**.

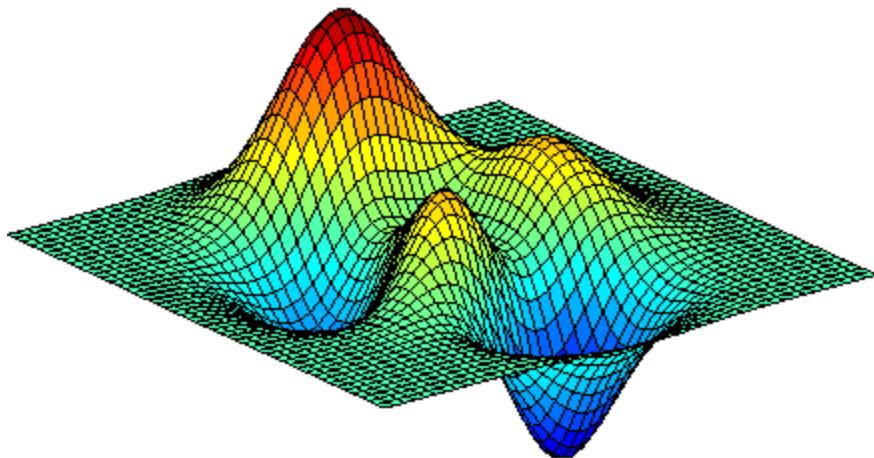
Handling revisions

Documents associated with PDFs are one to one in Smart Completions. For every change in revision and when a new document is required the **External ID** field needs to be updated in the document meta data.

1. Upload new revision to the S3 bucket.
2. Import updated meta data to link to the new revision.

Engineering

This document contains links to information regarding the use of Engineering Modules in Smart Completions.



Documents and Drawings

The Documents & Drawings Manager contains an index of Documents. The term "**Document**" is applied to any type of document, drawing, procedure, or illustration. Each document can be assigned to any Asset, providing you with a complete set of supportive Asset documentation.

Depending on the configuration of Smart Completions, certain document types can be set as "Controlled Documents". Controlled Documents have workflow that allows Approvers to access the Native files (like AutoCAD, Visio, PPT, etc.). All other users (who are non-approvers) can access only the PDF version of documents. This process controls access to the source document so no changes are made outside of the controlled environment.

Using the Documents & Drawings Manager as a Controlled Document system, means:

- Users have limited access to files

- Controlled Documents have version control
- Controlled Documents have expirations strategies
- Controlled Documents have revocation and workflow, meaning the document must go through submittal and approval on any and all changes to content.

How to Create Controlled Document Types

Certain document types can be flagged as controlled documents, so that all documents of that type have the workflow process. This is configured in the "Document Types" manager. When a document editing form is opened in this manager, approved editors have the ability to select whether a document will be controlled or not. This form also allows users to assign if the document type will require "Task Steps" and "Procedures". By simply selecting the YES bubble and saving the document type, it is flagged as a Controlled Document, and initiates the workflow tab in each document created in this type.

What is a Document Workflow

Once a Document has been created, and the Document Type has been selected as a "Controlled Document", users can utilize the workflow tab to track documents. From the originated stage to the approved stage, users are able to track the status and progression of each Controlled Document.

From this tab you can see who created, submitted, verified, and approved the document, and on which date each task was performed. Additionally a "Change Log" is included for users to track changes to the documents.

From the Document & Drawing Manager homepage, users can quickly identify the status of controlled documents by viewing the colored bubble located to the left of the document name. They can also hover with mouse over the bubble to see current status.

- No Color means Uncontrolled Documents or newly Created Controlled Documents will have not color.
- Yellow means the Controlled Document is Submitted.
- Light Blue means the Document is Verified.
- Green means the Controlled Document is Approved.
- Grey means the document has been Rejected or Revoked.

The Documents & Drawings Manager tutorial gives you more information on roles and responsibilities within the Controlled Document environment.

How to generate reports

The quickest way to generate a report is to search for the documents from the "Dates and People" drop down. By selecting who created the document and when, Smart Completions efficiently narrows a large number of documents to a much smaller number.

After the search has compiled recently created documents, click the **Report** Tab. It opens a list of reports to generate. You can select reports from the list, or use the "Report Name" search field at the top of the page to narrow down your search. Click the PDF or Excel Icon next to the specific report to open.

Document Types Configuration

Why do you need Document Configuration?

When adding new documents to the system, Smart Completions allows you to add a lot of specific information. Document information provides a cornerstone to the system; it is a complete digital library of your facility's or project's vital files, with the capability of linking to assets and locations. To enter correct information for all documents, they first must be configured correctly. Much of this information exists as a default in the system, but it's important to know where this information comes from and how to edit and add if necessary.

Most Document Lists will be imported, and the actual document files will be added through the Document Upload Tool. Before you add the list of Documents, make sure to configure the Document Types. Also ensure you have imported or created the document list before importing your list of assets/tags.

Configure a document type

System Administrator can assign the Document Type to a specific category, for example, Drawing, Documents, Spreadsheet, or Test Forms.

Booleans for the Document Type allows additional functionality of the document type:

- Is it a Procedure?
- Can it be available offline on a mobile device?

- Is it a Controlled Document?
- Include In-Line Segment Drawings?

Select **Save** to save record.

■ NOTES

1. Smart Completions mobile solution will automatically pull down any document that is under 2-3MB, and has the "Offline Mobile" is set to yes.
2. If Controlled is set to yes, then any document of that type will now be treated as a control document and have workflow, version control and be limited on who can edit. Only select this if Smart Completions is going to be used as document control solution for a project.

Add a new document type

Document type can be added in either of the three ways:

- Importing document type during project creation.
- Importing document type through excel utility.
- New document type creation through document type manager.
 - a. From the **Switchboard**, navigate to the **Configuration** tab.
 - b. Select **Document Types**.
 - c. Select **Configuration tab > Document Types**
 - d. Select **Create** on Document Type
 - e. Select **NEW** button to create a new document type.

■ NOTE To edit a document type, select the *<document type>* > **EDIT**.

How to create new Documents

While you will add most documents through imports, you can also create individual documents manually within the software. You can create a blank document, or copy an

existing document. The last is not used frequently, as most documents are provided from a different system.

When creating a blank document, these fields are provided:

- Document ID is required.
- We recommend a description.
- Revision is required.
- Category. If you use Categories, you must have already created them when importing.
- **Type:** Please configure these before importing or creating any Document records. If you are manually creating a Document, you can create the Document Type by clicking on the dropdown.
- **Discipline:** These should also be defined before creating any Documents, Assets, etc. The Disciplines create links between records, enable searching and better reporting. If disciplines are not defined, please do so before creating Documents.
- **Project:** Every Document must be assigned to any Projects that will use it. This assignment determines whether it will appear in dropdowns and searches in other managers within a project.
- **Native File:** upload non-pdfs here. Be aware that users without access to some programs will not be able to access these files. For instance, if you upload an AutoCad file, only users with AutoCad installed will be able to open the file. It will be housed in the database regardless of access, though.
- **PDF file:** upload pdfs of any line drawings, P&IDs, Installation Instructions (etc.) here.
- **URL:** If you use a different program to house your Documents, you can upload the URL to each, specific document into this field. Within the Document manager, users can click this to fetch the latest Document from your system. Be aware that all users will generally need login credentials to the external site to be able to access the Document.
- **Location/Systemization toggle:** If the Document has been assigned Systemization or Location data, enter it here.

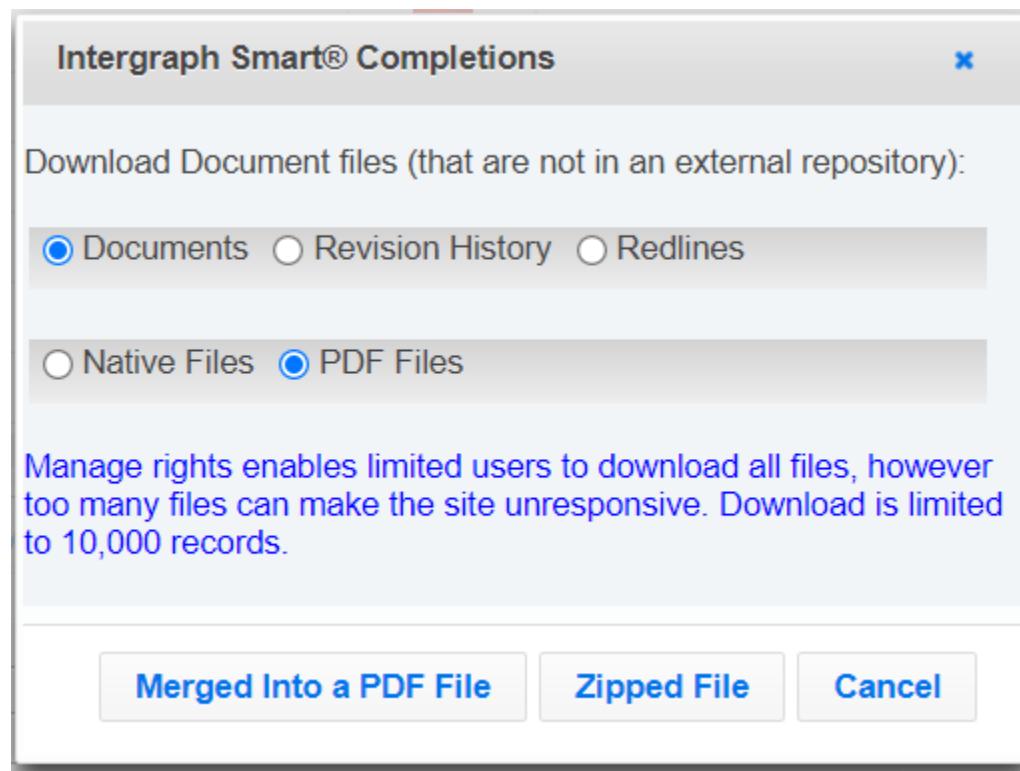
Downloading Documents

While creating a new document, you can attach or import a **Native file** and/ or a **PDF file**.

Click  **Files** to download any selected file. Only users with manage rights can perform this action.

NOTES

1. Users without manage rights have to select the document and then download the related files.
2. Users with manage rights, can download up to 10,000 Records without any document selection in the primary panel.



The document files could be of three categories:

Documents : The selected document which contains the native files or pdf files.

Revision History: Once the document is selected in the primary tab, select **Revision History** in the secondary tab and choose a row to download the document on the basis of Revision History. The downloaded files have Document Revision number as suffix.

Redlines: Once the document is selected in the primary tab, select **Document Redlines** in the secondary tab and choose a row to download the document on the basis of Redlines.

When you choose the Redline option, the Native or PDF options are disabled as the documents are already available in pdf format. The downloaded files have Redline Revision number as suffix.

What are the standards to name and maintain versions of a document?

Every organization must use a standardized naming convention for controlled documents. Using a naming convention allows for unique identification, traceability and alleviates duplication.

- Each Document must have a unique ID.

You can assign a Document to more than one Project. You cannot, however, assign two documents with identical IDs that represent different native files. If you have two projects - and they use the same ID for different (actual) documents - you must distinguish between them through a project prefix or suffix. These unique identifiers can be eliminated in exports/Handover/Turnover packages later in the project lifespan.

Documents fall under five basic categories:

- General related Documents,
- Equipment related Documents,
- Isometrics including Steam Tracing Isometrics,
- Electric Heat Tracing Isometrics and

Instrument Segment Diagrams. Most organizations organize their document naming using specific category codes for each type of document. Please see your facilities Standard Operating Procedure on Document Naming for more specific information.

Assign assets to documents

Smart Completions allows you to attach any number of assets to one document. This is located on the Assets tab of the Document record, and can be viewed in the Secondary View panel within the manager. If Documents have been assigned, you will see them on the corresponding Documents tab within the Asset in question. These assignments are typically performed through a specific import.

Execute documents from mobile applications

What does For Mobile icon refer to?

The **For Mobile** icon will serve as a flag to indicate that a document can be downloaded to a mobile device. Multiple users can flag a document for mobile download without affecting the document's availability to others.

1. In the **Documents and Drawings** manager, go to the document you want to download to a mobile device.
2. Select the **For Mobile** icon from the bottom row.
3. In the Mobile pop-up window, select the users who need documents for mobile offline.

 **TIP** The document will be flagged for download to the specified user.

 **NOTE** Multiple users can flag the same document for mobile download.

What is the file sharing tool

File Sharing is a powerful and intuitive tool that allows system users to share large files with each other. These files are typically too large to send via regular e-mail or transferred physically (i.e. zip drive).

For instance, an Engineer might need to show 60 large piping and instrument drawings to another group within the project. The tool uploads one document at a time (up to 100MB total size).

If you have multiple documents, zip them into one compressed file. All typical file types (PDF, .DOC, .CSV, etc.) are accepted.

The screenshot shows a software interface for managing files. At the top, there are two tabs: "Step 1 General" (highlighted in orange) and "Step 2 Comments". Below the tabs, there are two sections: "File Information" and "Upload File", each with a collapse/expand arrow. The "File Information" section contains fields for "File Name" (with a text input field), "Description" (with a text input field), and "File Type" (with a dropdown menu). The "Upload File" section contains a "File" label and a "Choose File" button with the placeholder text "No file chosen".

How to access the file sharing tool

The first step to sharing files is finding the tool.

You can access the File Library Manager in the Engineering tab of Smart Completions, unless your administrator has moved it. If you can't find it, click the gear icon to search for it.

NOTE

You must fill out File Information, including uploading a file, before you can email it to recipients.

How to create a new record in File Library

In order to share a file with another system user, click the **Email** button.

Assets and Tags

Filtering IO type to Assets

You can multi select the PLC-I/O type for Assets, Instrument Assets, DCS/PLC Assets, Assets Audit and Planned Tasks Managers. This helps you to view all the Assets that have been tagged as PLC- I/O type.

NOTE Flange joint tags are now asset tags: Flange joint tags are now converted to asset tags with the "Flange Joint" data model. When an interface label is changed between flanges or assets, the data is synchronized for those respective labels in both flanges and assets.

The screenshot shows the 'Assets & Tags Manager' interface for the 'HTP01 - Hexagon Test Project - I' project. The left sidebar has sections for DCS/PLC, Primary Display, Power Supply, Power Supplied By, PLC, and I/O Type. Under I/O Type, there is a 'Filter' section with a dropdown set to 'All'. Below it is a list of checkboxes for A/D, AI, AO, DI, and DO. The main area is titled 'Assets & Tags' and contains a table with columns: Tag ID, Image, Image 2, Datas..., Ext. URL, Description, and Service. At the bottom of the main area, there are tabs for Details, Child Assets, Documents, BOM, MOC, RFI/TQ, and Field Log. A message at the bottom states 'Unable to show details because no assets are selected'.

Setting new column for PLC I/O type

To add new Search grid column **PLC - I/O Type** that will display the I/O Type follow these instructions

1. Go to the **gear icon** > **Set Columns**.
2. Under the list, look for **PLC- I/O Type** and click **Ok**.
3. On the **Assets and Tags Manager** click search to view the newly added column.

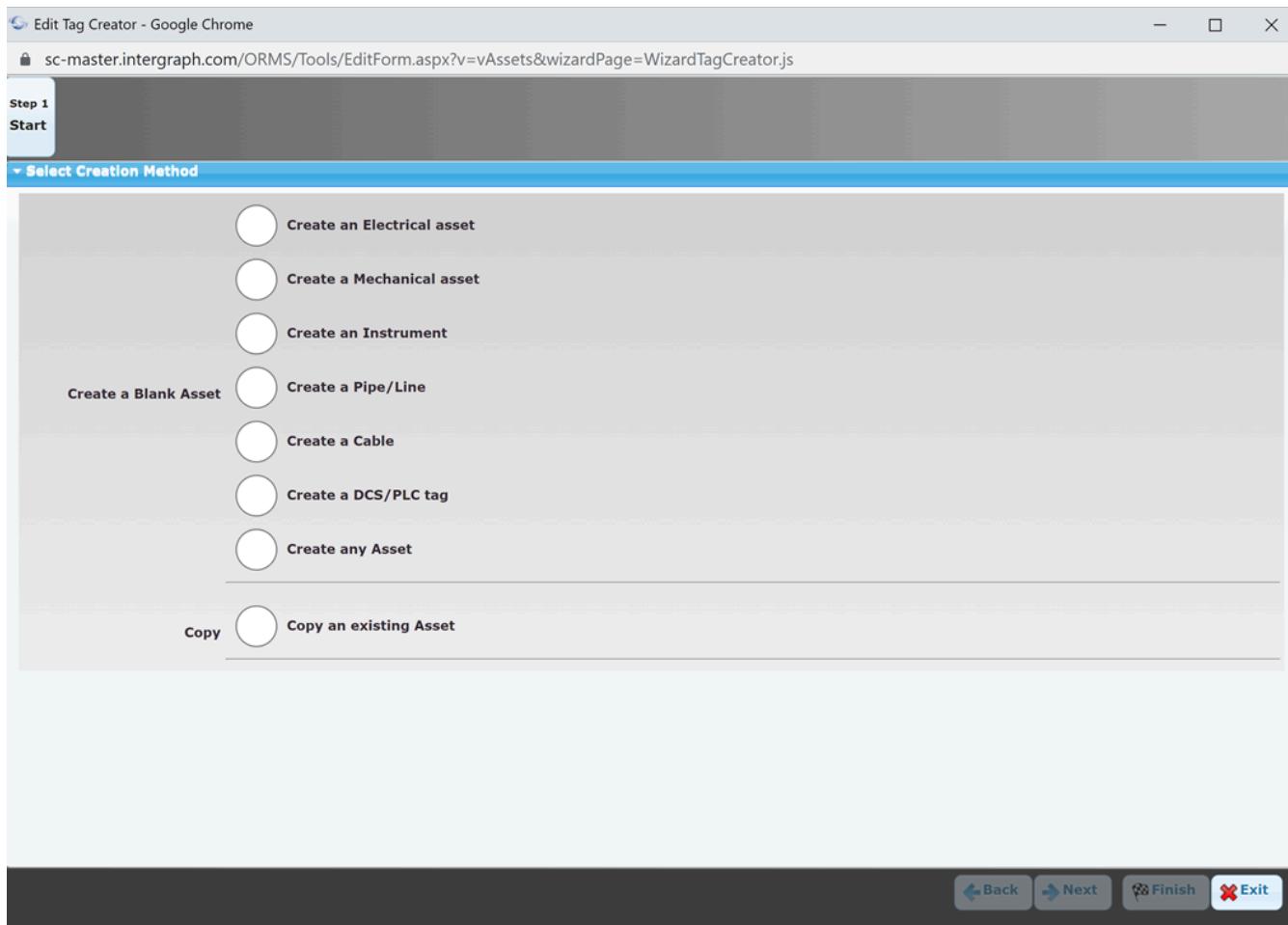
The screenshot shows the 'Assets & Tags Manager' interface. At the top, it displays the project name 'HTP01 - Hexagon Test Project - I' and the user 'Pratik Kumar'. The main area is titled 'Assets & Tags Manager' and contains a table with 48 rows of asset data. The columns include Tag ID, Image, Image 2, Datas..., Ext. URL, Description, Service, Tag Dis..., I/O Type, Asset Type, and Cr. The data includes various assets like 'EW/SS INS WORKSHOP WHSE BLDG', 'FLOW SWITCH HIGH', and 'INST AI FSH - Flow Switch High'. On the left, there's a sidebar with navigation links for Cable/Conduit, Piping, Valve Details, and DCS/PLC. A filter panel is open, showing dropdowns for 'Filter' (Enter keywords), 'A/D', 'AGND', 'AI', 'AO', 'DI', and 'DO'. The 'A/D' option is selected.

NOTE This feature applies to Instrument Assets, DCS/PLC Assets.

Create an Asset

Asset and Tag records create a foundation of data in your System. When entering a new asset tag, there are a few ways to perform this function. Depending on the Smart Completions configuration, you can do the following:

- **Create a Blank Asset**
 - **Create an Electrical asset**
 - **Create a Mechanical asset**
 - **Create an Instrument**
 - **Create a Pipe/Line**
 - **Create a Cable**
 - **Create a DCS/PLC tag**
 - **Create any Asset**
- **Copy**
 - **Copy an Existing Asset**



Smart Completions is populated with imported Engineering Data.

TIP While creating an asset, you can add up to 125 fields under **Custom** tab.

What is Dashboards tab?

You can add a name and URL for a dashboard.

- In the **Edit Application > General** tab, select **Show** for the **External Dashboards** option to view this tab.

The External Dashboards tab is visible for the selected user application as shown below.

The screenshot shows the 'Assets & Tags Manager' application. On the left is a sidebar with icons for Home, Settings, and Assets. The main area has a search bar at the top labeled 'Search or Browse' with filters for 'GENERAL', 'STRUCTURES', and 'ADVANCED'. Below the search bar is a search form with fields for 'Name/Tag' and 'Description', both set to 'like' mode. The central part of the screen displays a table titled 'Assets & Tags (Master List)' with tabs for 'ASSETS & TAGS', 'Reports', 'Dashboards', and 'External Dashboards' (which is selected). The table has columns for 'Pages' and 'asset'. A single row is visible with the value 'asset' in the 'asset' column.

Learn about Master Tag List (vAssets)

The Master Tag List (vAssets), is the primary Tag Registry in Smart Completions that manages tags and assets of all disciplines. It includes parent/child relationships, technical specifications, document and drawing associations, and OEM information. The Assets can be queried by systemization, location, and control system structures. It also contains general and advanced searching capabilities where "like" can be queried, and you can edit the results individually or through batch editing.

The Master Tag List can be populated using the import manager, where over 500+ fields can be imported. This module is used to track all changes (by every field) to each tag, identifying who, when and what value was the field changed to. The "Tag" is the most important record in the database, as everything links or flows from this record. Each Asset is assigned a Discipline and Asset Type.

Smart Completions tracks all physical assets, soft points, and also fictitious tags such as buildings, structures, areas, systems, or subsystems. These "Tags" are used to assign project and plant personnel to identify something in the field or on an engineering document.

Asset content managed in Smart Completions includes (but not limited to):

- OEM and Design/Operating specifications
- Associated engineering, vendor or supplier documentation
- Parent/Child Relationships and control associations (e.g. loop)
- Location and Systemization (e.g. gas compression, compressor 1 subsystem)
- Location association (e.g. building, area, line, or cubical)
- Tracking of inspections, grounding reports, calibrations, non-compliances

- Package Tags (e.g. cable drums, cable packages, pipe packages)

If an asset has been assigned specific asset types, additional tabs will appear in the record. For example, an asset assigned to the Instrument Asset Type will display a tab with additional fields that are common to Instruments.

When using spare parts manager associated with an asset tag, if you add or use a part, the usage log is updated with the asset tag, time stamp, work order, user name, purchase order, and quantity details.

The screenshot shows the Spare Parts Manager interface. At the top, there are tabs for 'Spare Parts (12)' and 'Reports'. Below this is a grid of parts with columns for 'Critic...', 'Criti...', 'On-Hand Status', 'Spare Part Name', 'Datasheet', 'Description 1', 'Description 2', and 'Description 3'. A legend indicates colors for status: red for 'Below Minimum Threshold' (one row), green for 'Stock Available' (one row), and grey for 'In Stock' (several rows). Below the grid is a table titled 'Usage Log (4)' with columns: Asset Tag, Part Used Date, Used By, Work Order, Part Added Date, Added By, Purchase Order, and Quantity. The table contains four rows of usage data.

Asset Tag	Part Used Date	Used By	Work Order	Part Added Date	Added By	Purchase Order	Quantity
0.5"-BS-3310-032-CS1	(from) 31-Oct-2022 05:05:52 PM	Bhargavi Balakulla	Test	(from) 31-Oct-2022 05:05:14 PM	Bhargavi Balakulla	345	1
				31-Oct-2022 03:05:41 PM	Bhargavi Balakulla	12345	2
0.5"-BS-3310-032-CS1	31-Oct-2022 03:05:13 PM	Bhargavi Balakulla	Test				1

Assign Documents to Assets

When creating or editing an Asset record, you can assign documentation it. These links can be viewed from the Documents tab of the record, or in the secondary view panel in the manager.

Most projects import the document/asset associations. You will need to import the document record list and run a second import to link the assets to those document records.

NOTE

A fast way to assign documents to assets, is through a Batch Editing. For example, if a P&ID was provided and all the asset tags were already in the database, a user can batch query and edit a collection of tags on the drawing and assign to the drawing in one step.

Assign criticality rating for an asset

Production criticality analysis is a process of determining the importance of an asset to the overall production of a facility. This is assured by analyzing the asset's impact on production, the likelihood of failure, and the consequences of failure. Assets are given a criticality rating based on their production criticality. This rating is used to determine the level of inspection/test that is required. Critical assets are typically subject to more rigorous inspection/testing than standard or duty spare assets. Failure of a critical asset will have a significant impact on commissioning, startup, and operational processes. For this reason, it is important to prioritize critical assets and ensure that they are properly installed, tested, and maintained.

Criticality ratings can be used to track the performance of maintenance programs. By monitoring the criticality ratings of assets over time, maintenance teams can ensure the effectiveness in reducing the risk of failures.

1. Open **Settings Panel > Production Criticality Analysis (PCA) manager**.
2. Select search to load the assets list.
3. Select an asset and then select the **Analysis** tab from the bottom ribbon bar.
4. In the **Edit Production Criticality Analysis (PCA)** page, choose and answer your options in the **PCA Workflow and Analysis** section.

The screenshot shows a web-based application for editing production criticality analysis. At the top, there are tabs for 'Step 1' and 'Step 2'. The 'Main Data' tab is selected, showing asset details: Asset Tag 1000-AC-109, Service SR#556565, Asset Type AC - Air Compressor / Air Conditioning, and Subsystem. Below this, the 'Asset Information' section displays the description as 'Induction Air Compressor - 009', Discipline as 'MECH', and Location. The 'PCA Workflow and Analysis' section contains several questions with radio button options:

- Safety/Environmental Impact? (Yes or No)
- Is there redundant capacity? (Yes or No)
- Does asset have a direct effect on the system output? (Yes or No)
- If this function was lost, would the operating model be satisfied? (Yes or No)
- If this functioned partially, would the operating model be satisfied? (Yes or No)

The 'PCA Strategy' section shows a criticality rating of 'A'. At the bottom right, there are 'Save' and 'Exit' buttons.

💡 TIP You are directed to your next question only when you answer the preceding question from the questionnaire.

5. Based on your choice of your answers, a criticality rating is suggested by the system.

💡 NOTE You can customize the rating option names and the color codes for each rating. For example, you can opt to have your rating as follows:

Criticality Rating	Rating Colour
A / High / Severe	Red
B / Medium / Moderate	Orange
C / Low / Safe	Yellow

6. You can see the suggested criticality rating assigned in the **Criticality Rating** column of the list view of Assets in PCA manager.

💡 TIP You can see the **Criticality Rating** of an asset from the column in the list view of assets in the **Assets & Tag** manager view.

Control Loops

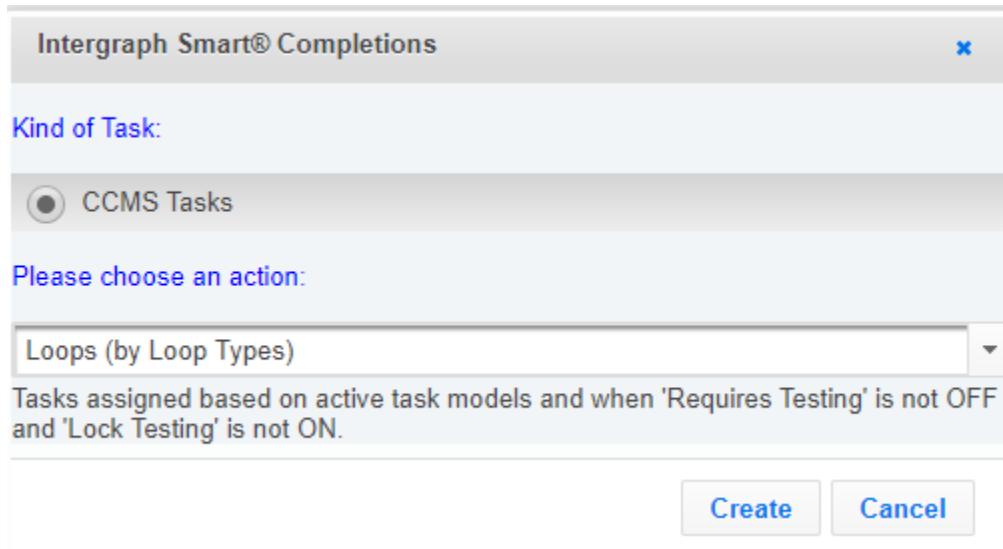
You can create Loop Tasks in the “Tasks, by Loops” manager. This manager will list all the control loops on the project. Just as you create a “Test profile” for an asset type, you would create a Test profile (or collection of task models) for a type of loop. If you want to keep it simple, you create only one type of loop and create a single task model called Loop Functional Test.

Loop tasks are created in the same way as assets.

💡 NOTE A loop has two (2) critical pre-requisites:

1. All loop devices are assigned to the loop.
2. All individual loop instruments have been installed and tested.

From the Task Model manager, highlight the row of the Task Model and click Create Tasks. The pop up defaults to Asset Tasks. In the dropdown, you will choose: Loops (by Loop Types).



What are Loops

The loop manager is designed to manage all the control loops for a facility or project. The loop records are named with a unique ID. Loop checking and field instruments are usually the last piece to test to ensure the process component is operating correctly before the project starts commissioning. It is time-consuming process and depends on how accurate the status reporting is on the completion of the other loop components (child objects) like instrument devices, elements, piping, electrical equipment, and control valves.

The loop module can be accessed from the switchboard under **ENGINEERING > CONTROL LOOPS** or you can find it through the Gear Icon.

The Loop module allows a user to enter in all the pertinent loop information, such as unique Loop ID, Description, Process Variable (what it's measuring), and the system or subsystem it is associated with. It also will allow a user to batch assign tags to the loop typically based on the process variable (e.g. P for pressure) and the unique ID (2501).

The child devices (or asset tags) can have multiple disciplines assigned to the loop, such as control valves, instruments, and even Inputs/Outputs (I/O). See Import Loops and Import Loop Devices for a more efficient way of importing loops.

NOTE The loop module is the same loop module that is used in the CCMS as it allows for CCMS Planned Task assignment. See Task Model configuration to better understand how to

develop a task model for a loop and use the "auto-assignment" function to assign CCMS tasks to loops.

There are a myriad of reports available for reporting on loops and their devices. The most frequently used report to determine if a loop is READY or NO, select the Loop Readiness Report. This report will show each loop and their child tags (e.g. instruments) and their individual QA/QC checks. If there are pending tasks for the child devices then the loop will not be ready.

Asset Packages

This document contains links to information regarding using the Asset Packages functionality within the Engineering Menu in Smart Completions.

Asset Packages

Information Page Links

Packs (Cable)

Packs are a group of assets performing a task.

You can view/edit task information and also execute tasks offline in mobile applications.

How to download child assets and documents with packs

The Cable Pack module is designed to track tasks against “packages” of Cable tags. They are typically used for a more efficient method of performing installation checks etc. A Cable Pack will list all cables and each cable is listed as an object in the paper or digital form. The Cable Test Pack (CTP) is a made-up package that is typically imported, as well as the linking of cables to the CTP.

The following action buttons enable user to:

Assignment: Assign CTP Task(s)

Purge/Restore: Purge deleted CTPs permanently or Restore prior deleted CTPs

Create Form: Generate the CTP test forms (e.g. non-started smart form, mail merge form etc)

Scanned Forms: Download the uploaded/completed CTP forms

Package: Download the CTP package into PDF format (for printing), such as forms, datasheets, docs etc.

Import: Loads the import view where user would browse to file, map fields, and import

Check-In/Out: Select CTP tasks (in secondary panel), then checkout to user

In order to perform CTP task(s) the following actions must be performed:

- Create Pack Type(s)
- Create a Task Model(s) configured for Cable Packs
- Import list of CTPs Items, linked to Cables
- Assign Tasks

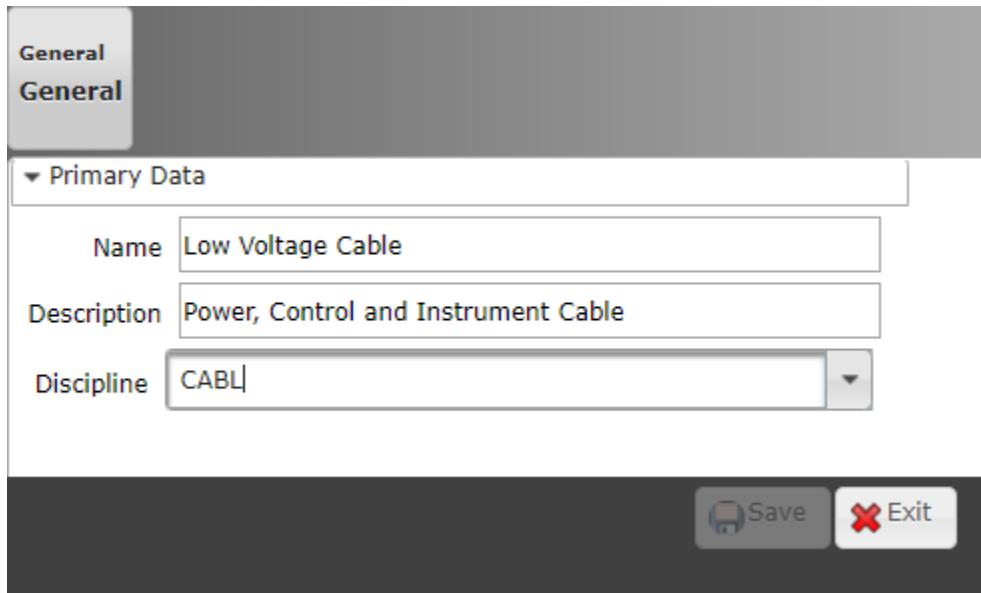
Creating Cable Pack Types:

A project can define different type of CTPs if needed. This would be configured by selecting the Gear Icon at the bottom of the module, where one or more pack types (of Cable discipline) can be created.

UI Settings and Manager Search

The screenshot shows the 'UI Settings and Manager Search' window. On the left, there is a sidebar titled 'Configuration Managers' with a list of items. The item 'Pack Types' is highlighted with a red circle. Other items listed include Assets, Asset Types, Companies, Documents, Document Types, Piping, Piping Readiness, Piping Segments Types, Piping Types, Projects, Resources, Task Models, Physical Location Tree, Systemization Tree, and Work Breakdown Tree. To the right of the sidebar, there are several configuration panels: 'Open Manager' (with a dropdown menu), 'Primary List' (with 'Set Columns' and 'Reset Columns' buttons), 'Labels Configuration' (with 'Interface Labels' button), 'Interface Theme' (with a dropdown menu), and 'Landing Page' (with a dropdown menu). At the bottom right is a 'Close Window' button.

The “Pack Type” module is used for all three (3) pack modules; Cable, Cable and Vendor packs. To create a new cable pack type, select New and ensure it has a unique pack type name and is associated to the appropriate discipline (e.g. Cable).



Creating Cable Pack Task Model:

Configuring a Task Model for a CTP, make sure CABLE Discipline and pack type (for cable packs) are selected. This will inform SC the task model is only associated with cable packages.

Step 1 General Step 2 Materials and Tools Step 3 Resources ... Forms & Checklist ... Inspection Points Step 4 Documents Step 5 Custom Step 6 Comments Workflow Originated Submitted Verified Approved

Primary Data

Task ID	TM-01071	Description	CABLE INSTALLATION CARD
IS Active?	<input checked="" type="radio"/> Yes <input type="radio"/> No	Task Category	CS - Construction
Execution Type	Digital Execution	Discipline	CABL - Cable/Conduit
Priority	2: Medium	Systemization Type	
Loop Type		Pack Type	Low Voltage Cable - Power, Control and Instrument Cable
Responsible Workgroup	Construction	Affected Workgroups	Foundation
Revision	0	Revision Description	Instrument Data Collection
Line Segment Type		Certificate Group	Low Voltage Cable - Power, Control and Instrument Cable
On Demand	<input type="radio"/> Yes <input checked="" type="radio"/> No	Steps Closing?	Module - Modules
Predecessors	Select Options		Motor Signals - Motor Signals
WBS Association			
Project	2016-01 - LNG Production Site	Phase	
Stage		Activity	
Safety & Environmental Requirements			
Requires Permits?	<input type="radio"/> Yes <input checked="" type="radio"/> No	Requires Isolations?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Safety Comments			
Has Environmental Risk	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	Environmental Comments	
Scheduling			
# of Persons	2	Duration	4.00
Allow Notifications?	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A	Responsible Company	Hexagon - Hexagon
Supplier		Recurrence <input type="radio"/> Recurrence	
<input type="button" value="Submit"/> <input type="button" value="Save"/> <input type="button" value="Exit"/> <input type="button" value="Update Tasks"/> <input type="button" value="Email Task"/>			

Once a TM is configured for a Pack, then there are additional options for the inspection steps configured in the smart form. Almost any inspection step can be used for a Pack, however there is a specific Cable pack inspection step(s) that will automatically list each cable in the pack. Once any of these inspection steps are assigned to the Task Model, a user can configure the inspection step to show “show Children” which will automatically list each cable associated to the CTP.

Add Steps

Filter Inspection Types: CABLE X ?

Cable From To Quantity: 1 + Add

Item No.	Cable	From	To	Accept	Reject	N/A	Initials / Date
				<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Cable Installation Records Quantity: 1 + Add

Item No.	Cable Drum No	Trench type	Out of Trench Start metre mark	Backfill Start metre mark	Backfill End metre mark	Out of Trench End metre mark	N/A	Initials / Date
							<input type="checkbox"/>	

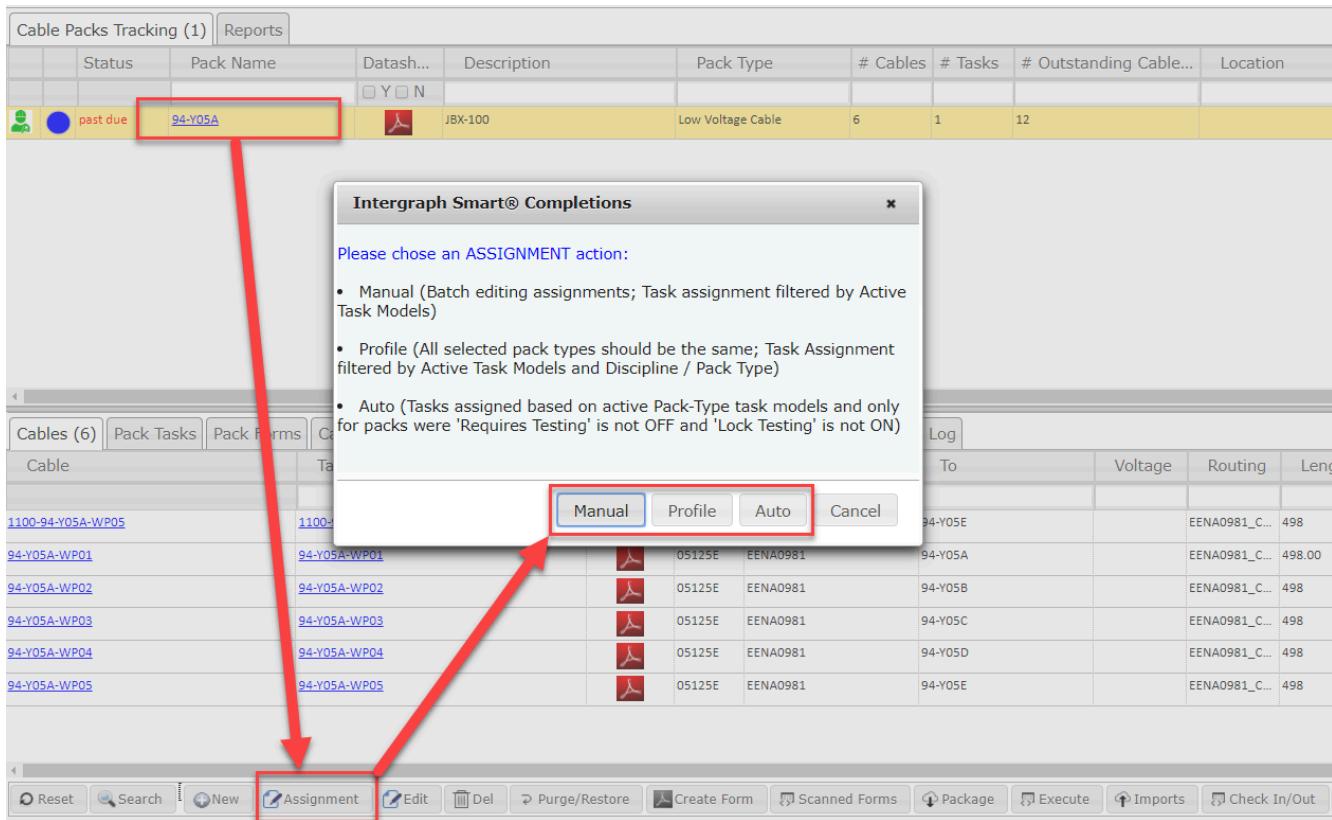
Cable Pair Check Quantity: 1 + Add

Item No.	Step Action	Pair 1	Pair 2	N/A	Initials / Date
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Importing Cable Packs: Importing Cable Packs can be simplified by using the import template found in the import module and can be provided by your administrator. The XLS file will require a unique PTP Number, associated Lines, and reference to the system or subsystem the PTP is assigned to.

Import Types (18)		Reports			
Manager View	Name	Description	Import View	Key Field	Templa...
PACK					<input type="checkbox"/> Y <input type="checkbox"/> N
vAssetPacksCable	Packs (Cable)	CCMS Module: Ca...	ivAssetPacksCable	AssetPackName	

Assigning Tasks to Cable Packs: Assigning CTP tasks can be performed from the Task Model module, where all CTPs can have a TM assigned in one go. They can also be assigned within the CTP module where specific CTPs can be filtered and assigned on an as-needed basis.



Using the **Assignment** button a user can assign tasks using three (3) methods:

- **Manual** loads CTP edit form, and provides user ability to assign any task model(s)
- **Profile** loads CTP edit form and automatically queries for the task models that are "active" and are configured for CTPs. User selects TMs they wish to assign.
- **Auto** loads the task "assignment wizard" which will list "cable pack types" and counts, then selects the pack types, which will then list ALL of the Cable Test Packs, and user can then select, all or some of the CTPs to assign tasks. A CTP will be shown twice if there are two (2) task models configured for the same cable test pack type. Auto is quickest and most used method as it standardizes planning and execution.

Assigning Parent Task Dependencies to a Loop

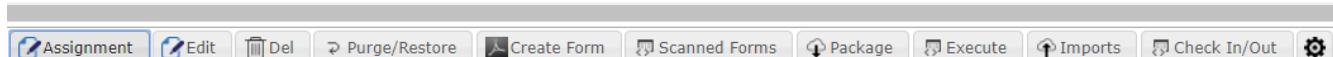
There can be any number of child tasks associated with a Loop. These child tasks can be viewed in the secondary panel. You can bulk assign the predecessors to all the child tasks by clicking **Link Predecessors**. Once the predecessors are tagged, the system will not allow you to close or complete a Loop task, until all the child tasks are completed or closed.

Packs (Piping)

The Pipe Pack module is designed to track tasks against “packages” of pipe tags. They are typically used for hydrostatic testing, re-instatements of a collection of piping or spools. A Pipe Test Pack (PTP) is a made-up package that is typically imported, as well as the linking of lines to PTP.

The following action buttons enable user to:

Assignment	Assign PTP tasks
Purge/Restore	Purge deleted PTPs permanenely or restore prior deleted PTPs
Create Form	Generate the PTP test forms (for example, non-started smart form, mail merge form, and so on)
Scanned Forms	Download the uploaded or completed PTP forms
Package	Download the PTP package into PDF format (for printing), such as forms, datasheets, documents, and so on.
Import	Loads the import view where you can browse to file, map fields, and import.
Check-In/Out	Select PTP tasks (in secondary panel), and then checkout to user.



NOTES

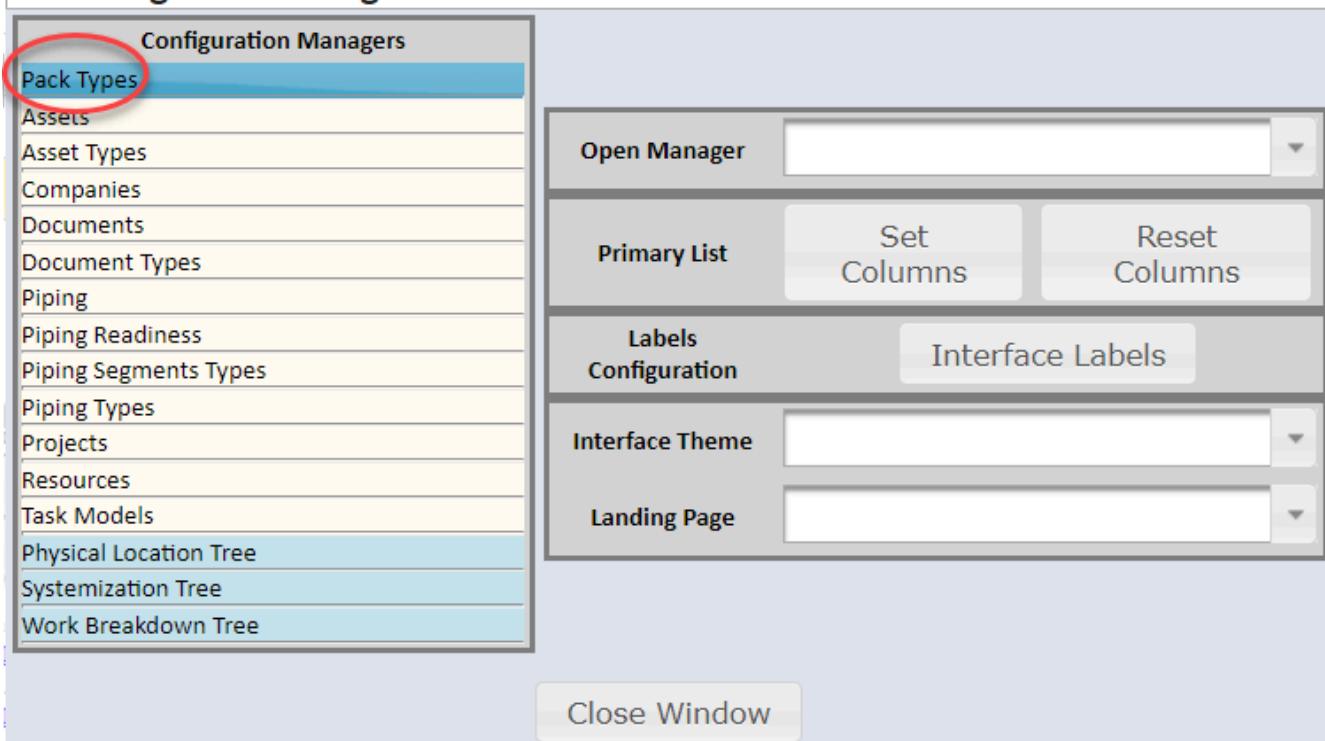
In order to perform PTP tasks the following actions must be performed:

- Create Pack Type(s)
- Create a Task Model(s) configured for Pipe Packs
- Import list of PTP Items, linked to lines
- Assign Tasks

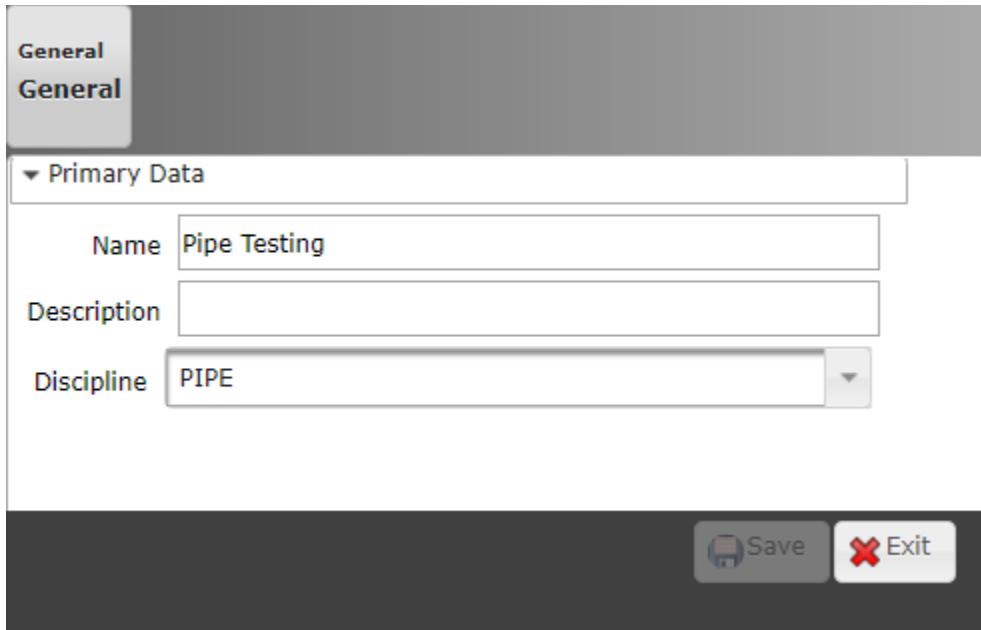
How to Create Pack Types

A project can define different type of PTPs if needed. This would be configured by selecting the **Gear Icon** at the bottom of the module, where one or more pack types (of pipe discipline) can be created.

UI Settings and Manager Search



The “Pack Type” module is used for all three (3) pack modules; Pipe, Cable and Vendor packs. To create a new pack type, select New and ensure it has a unique pack type name and is associated to the appropriate discipline (e.g. Pipe). Cable is for Cable Pack, Pipe for Pipe Packs, and Multi for Vendor Packs.



Create a pipe pack task model

1. In the **Task Model** configuration, choose PTP.
2. Choose **PIPE** as Discipline.
3. If the PTP represents a pipe pack, choose the **Pack Type**. This associates the task model with pipe packs.

The screenshot shows a software interface for managing inspection tasks. At the top, there's a navigation bar with tabs for Step 1 General, Step 2 Materials and Tools, Step 3 Resources, etc. On the right, there's a 'Workflow' section with status indicators: Originated (green), Submitted (red, currently selected), Verified (blue), and Approved (green). Below the navigation, there are several input fields and dropdown menus. The 'Task Category' is set to 'CS - Construction' and the 'Discipline' is set to 'PIPE - Piping'. A red box highlights the 'Discipline' dropdown. A dropdown menu for 'Pack Type' is open, showing various categories like 'Pipe Testing', 'Motor Signals - Motor Signals', 'Pipe Painting - Pipe Painting', 'Pipe Spools', and 'Structural Steel - Structural Steel Pipe Supports'. The 'Pipe Testing' option is selected and highlighted with a blue background. Other options like 'Motor Signals - Motor Signals' and 'Pipe Painting - Pipe Painting' are also visible in the list. The interface includes sections for WBS Association, Safety & Environmental Requirements, and Scheduling, each with its own set of input fields and dropdowns.

4. Define inspection steps within the smart form.

TIP The inspection steps are defined for single lines and pipe packs.

5. Select **Pipe Pack Inspection Step** to automatically list each line within the pack to display **Drawing**, **To/From** locations, and **Type**.

NOTE See **Document Types** on how to configure certain document types as Isometric (ISO), Piping & Instrument Diagram (P&ID) etc.

Import pipe packs

Obtain the Import Template

1. Get the pipe pack import template from your administrator. It is an XLS file.

Prepare the Template:

1. Open the XLS template.
2. Ensure the following information is included for each pipe pack:

Unique PTP Number	Assign a unique identifier for each pipe pack.
Associated Lines	List the individual lines that comprise the pipe pack.
System or Subsystem Reference	Specify the system or sub system the pipe pack is associated with.

3. Import the template using the **Imports** module.

Assign tasks to pipe packs

Methods

Using Task Model

1. Go to Task Models.
2. Assign a task model to all PTPs using bulk option.

Using PTP

1. Go to Pipe Tasks.
2. Using filtering options, assign tasks to individual PTPs as needed when the tasks requirements for pipe packs are unique.

Using Assignment Button

You can assign tasks using the below three (3) methods:

- **Manual:** loads PTP edit form, and provides user ability to assign any task model(s)
- **Profile:** loads PTP edit form and automatically queries for the task models that are “active” and are configured for PTPs. User selects TMs they wish to assign.
- **Auto:** loads the task “assignment wizard” which will list “pipe pack types” and counts, then selects the pack types, which will then list ALL of the Pipe Test Packs, and user can

then select, all or some of the PTPs to assign tasks. A PTP will be shown twice if there are two (2) task models configured for the same pipe test pack type. Auto is quickest and most used method as it standardizes planning and execution.

Assign parent task dependencies to a pipe

1. Select **Link Predecessors** to identify and tag specific tasks as predecessors to a parent task.

NOTE After the predecessors are tagged, you are not allowed to close or complete the parent tasks until all the child tasks (predecessors) are either completed or closed.

Project Control

This module contains links to information regarding the Project Control functionality within the Project Governance Menu in Smart Completions.

Project Control Information Page Links:

- Documents
- Project Control Tasks (PCT)
- Management of Change (MOC)
- Project Cost Item (PCI)
- Project Communications (RFIs, others)
- Resource Utilization (RU)
- Transmittals
- Contact Manager
- Minutes of the Meeting
- Timesheets

Management of Change (MOC)

This document contains links to information regarding using and controlling (editing) change within Smart Completions.

Management of Change (MOC)

Information Page Links

What is Management of Change?

Smart Completions has a comprehensive Management of Change (or MOC) tool that assists in guiding the transition of a proposed change to its desired future state. The process includes

planning, requesting, determining risk acceptability, accepting, completing, evaluating, then closing the change record.

Using the MOC Manager means:

- Users have a controlled environment to track changes.
- Vital system data is more accurate and updated.
- Notifications at every step make communication required among all controlling partners.
- Revocation and Approval through workflow means all changes must be systematically reviewed.

How to configure MOC

When change order creators build an MOC, they must provide important information to assist reviewers and approvers in assessing the feasibility of accomplishing that change. Smart Completions allows MOC administrators the ability to customize these key options of a change order, including the workflow. You can assign assets, documents and RFIs to an MOC. You can also generate a Smart Form Questionnaire.

MOC Categories

Before creating an MOC, it is necessary to define the Categories, such as Environmental Impacts or Documentation.

Management of Change Categories Manager

Project: 001 - Example Project

(Instance:Default Instance - Live Projects) User: Amy Sage

ools ▾ Completions ▾ Operations & Maintenance ▾ Shutdown-Turnaround ▾ LEM ▾

Management of Change Categories (23)

Reports

Category	Description
Customer Service & Relations	Customer Service Change
Documentation	Document or Drawing Change
E&C Management	Engineering & Construction Change
Engineering	Engineering Change
Environmental	Environmental Impact Change
Feasibility Studies	Feasibility & Research Change
Financial & Controls	Financial, Administration & Controls Changes

Within each of these categories, you can create a Smart Form Questionnaire. The process is similar to creating task model Inspection Steps.

test.ceccms.com/ORMS/Tools/EditForm.aspx?ID=4&v=vMOCCategories

Step 1 General Step 2 Questions

Category Questions

Task Step Tool Bar

?

Select All

Select None

Steps Up

Steps Down

Show Headers

Show Labels

+ Steps

- Steps

Select Header Type: CE Standard Header

Select Headers Color: LightGrey

Item No.	Sub Step	Required	Step Action	Inspection Answer	N/A	Weight %
1			Enter in the estimated cost and include % and value of Rough Order Magnitude (ROM)?			
Item No.	Sub Step	Required	Step Action	Inspection Answer	N/A	Weight %
2			Is the document change going to impact other documents or drawings?			
Item No.	Sub Step	Required	Step Action	Yes	No	N/A
3			Is an RFI required from a 3rd party in order to implement the change?			PL
Item No.	Sub Step	Required	Step Action	Yes	No	N/A
4			Resource Allocation			PL

How to create MOC

Before Creating a new Management of Change (MOC) record, make sure that you've configured the MOC Categories, including the Smart Form Questionnaire.

NOTE If you need to assign a custom workflow to all MOCs, search for vMOC in User Application.

To create a Management of Change (MOC), complete these steps:

1. Select **Settings**.
2. Search for MOC, or navigate to **Project Controls > Management of Change (MOC)**.
3. Click **New**.
4. The **Category** is required. Priority and Impact can also be added. These options are managed in the Priorities and MOC Impact Levels managers, respectively.

5. The system will default to a permanent change, but you can change the designation to temporary.
6. The **Proposed Change** and **Reason for Change** fields are not required out-of-box, but you can configure them as required in the User Application manager, if necessary.
7. You can attach files for reference or as-found/as-left.
8. Selecting yes for **Assets?** or **Documents?** will cause additional tabs to appear on the record.
9. Remember to Save.
10. If you've pre-configured a Smart Form for the MOC Category, then click the **Generate Form** at the bottom of the record to add the tab.

The screenshot shows the Management of Change (MOC) record creation interface. At the top, there are tabs for Step 1 General, Step 2 Details, ..., Step 3 Assets, Step 4 Documents, Step 5 Custom, and Step 5 Comments. A Workflow section indicates the status is "Originated".

MOC ID: 2: Medium

Category: Documentation

PSM/OSHA/MSHA Reference: Yes

Impact: Level 3 - Low Impact - High Risk Prob

Temporary Change? Permanent

Proposed Change: From this

Reason For Change: t

Project: 001 - Example Project

Schedule Impact: Impact Cost: [] Impact Days: []

As-Found Image: Choose File (No file chosen)

As-Left Image: Choose File (No file chosen)

Image Ref1: Choose File (No file chosen)

Image Ref2: Choose File (No file chosen)

Location Associations:

- Systemization?: Process (selected)
- Process Plant: 1000 - GAS PLANT
- Process Area: 1100 - GAS TURBINES
- System: 01-02 - HO DISTRIBUTION - UP TO HEATERS INLET
- Subsystem: 01-02-0002 - William Subsystems

Scheduling Data:

- Responsible Company: Manufacturer
- Responsible Person: Sage, Amy
- Due Date: 18-Sep-2019

Associations:

- Assets?: Yes (selected)
- Documents?: Yes (selected)

Buttons at the bottom: **Submit**, **Save**, **Exit**, **Generate Form**, **Email Management of Change**.

NOTE When MOC category is created, ensure that you have added the correct project logo. When you generate the smart form, it should show the correct logo for the project associated with the MOC across the Smart Completions application.

Other Tabs

The **Assets** and **Documents** tabs will only appear if you choose them on the General Tab. The Smart Form tab will only appear if you have added an MOC Category with a pre-configured questionnaire and you have clicked the **Generate Form** button on the MOC. Any RFIs can be added to the record from the Comments tab.

How to use the MOC workflow

Every MOC record is guided by a Workflow. This workflow manages the creation, approval and completion of change orders. These workflows can be configured in the [What is a User Application](#)

You can export or import MOC steps or MOC category steps as per the need while creating a new MOC record.

Exporting MOC categories

1. Navigate to **Export Wizard Manager**.
2. Select **New** and select **MOC category** from the dropdown.
3. You can view the steps and add the steps needed for a particular MOC Category.
4. You can view the exported fields in the **Export Log**.

Importing MOC Categories

To import MOC categories in to MOC record follow these steps:

1. Prepare the worksheet to import.
2. Navigate to the **Imports Manager**, select **MOC Categories** and click **Imports**.
3. Click **Choose File** and select the worksheet from step1.
4. Click **Finish**.

You can view the imported data in the **MOC categories Manager**.

Using Custom properties in MOC

This feature allows you to add customized information to your MOC datasheet.



1. Using the icon, navigate to **MOC manager**.

2. Select an MOC record and click **Edit**.

3. Select the **Custom** tab and fill in the details against the required field names. Click **Save**.



4. On the **MOC manager**, click on the icon to check if the added field information is visible.

Step 1 General	Step 2 Details	...	Impact Questionnaire	Step 4 Custom	Step 5 Comms	Step 6 Comments	Workflow	Originated	Submitted	Accepted	Completed	Closed
Custom Fields												
Field001 (Custom)	Updated MOC			Field002 (Custom)								
Field003 (Custom)				Field004 (Custom)	Smart Completions							
Field005 (Custom)				Field006 (Custom)								
Field007 (Custom)				Field008 (Custom)								
Field009 (Custom)				Field010 (Custom)								
Field011 (Custom)				Field012 (Custom)								
Field013 (Custom)				Field014 (Custom)								
Field015 (Custom)				Field016 (Custom)								



Example Company

Management of Change (MOC) DataSheet

MOC Details			
MOC ID:	Facility	Area	Location
MOC-00000001			
Priority	Category	Impact	Workflow State
	Engineering		Accepted
Project		Schedule Impact	Impact Cost/Days
PRF01 - Performance Test			
Responsible Company		Responsible Person	Due Date
Hexagon PPM		Kumar, Pratik	
Reference #		Temporary Change	Assets Documents
		<input checked="" type="checkbox"/>	0 0
Proposed Change			
Expose additional API fields for ovTasks_TestsPlanned			
Reason For Change			
MOC Questionnaire-Import and Export of Category Steps / Instances			
Technical Basis For Change		Communication/Training Plans	
Consequences		Comments	
Field001 (Custom)		Field002 (Custom)	
Updated MOC			
Field003 (Custom)		Field004 (Custom)	
		Smart Completions	
Associated Documents			
Document ID	Description	Category	Type
Associated Assets			
Asset	Description	Type	

How to generate MOC Reports

All Smart Completions System Managers provide a variety of reports, from list (Index) reports, and Summary (count) reports. Users must use the search panel to refine the list for what is loaded into a report.

The following reports are available:

1. MOC Status by Location
2. MOC Status by Systemization
3. MOC Impact by Project & Category
4. MOC Status by Category

5. MOC Status Summary by Category

Project Communications (RFIs, TQs)

The Project Communication Manager is your all-in-one tool for streamlining all your project-related communication needs. It is easy to customize to fit different types of project communications, and helps you stay connected and informed every step of the way. Some of the key functions are:

- **Request for Information:** Request and obtain information.
- **Change Request:** Manage change requests with clear communication and approvals.
- **Inspection Call/ Notice:** Information about schedule and response to inspections.
- **Site Queries:** The construction crew can raise the queries at the site and get the responses for them.
- **Deviations:** Vendors, Contractors, Subcontractors can record and track the deviations and their acceptance into the system.

Project Communication manager helps in seamless communication between stakeholders and quick consolidation of different attributes such as tasks/assets with easy data retrieval. Using the project communications manager, analyzing the data and identifying the recurring issues can be done easier and thereby resulting in improving delivery.

Request for Information (RFIs)

Request for Information (RFI) is typically used when a company requires more information than provided in project documentation in order to proceed with a scope of work. In Smart Completions, RFIs are issued and answered within the Project Communications Manager. You can create custom workflows for how your RFIs proceed through the project.

When an RFI has been created and closed, subsequently opening the RFI will automatically lock or check-out the RFI to that user. This is to ensure that multiple people are not working within an RFI at the same time, which results in loss of data. To release an RFI automatically after finishing work, you must click the **Exit** button from within the software. RFIs that have been checked-out to a specific user can also be released by an administrator.

Every RFI has its unique RFI ID which is known to be its **Comm ID**. A Comm ID is auto generated only if the **Auto Tag** is selected to **Yes**. If you select **No**, you will have to provide a

Comm ID manually. The Comm ID is a system generated ID and does not get changed even if any changes are made to other mandatory fields such as **Communication Type**.

Request or Reply

RFIs have a Request/Reply tab found in the RFI edit form. Here you can fill out the request and reply, company, contacted person and date information.

Attachments

RFIs have an attachments tab similar to how uploading photos work with Punchlists. The user fills out a Caption, specifies a type (Request, Reply, Attachment) and then uploads a file (Data restrictions apply)

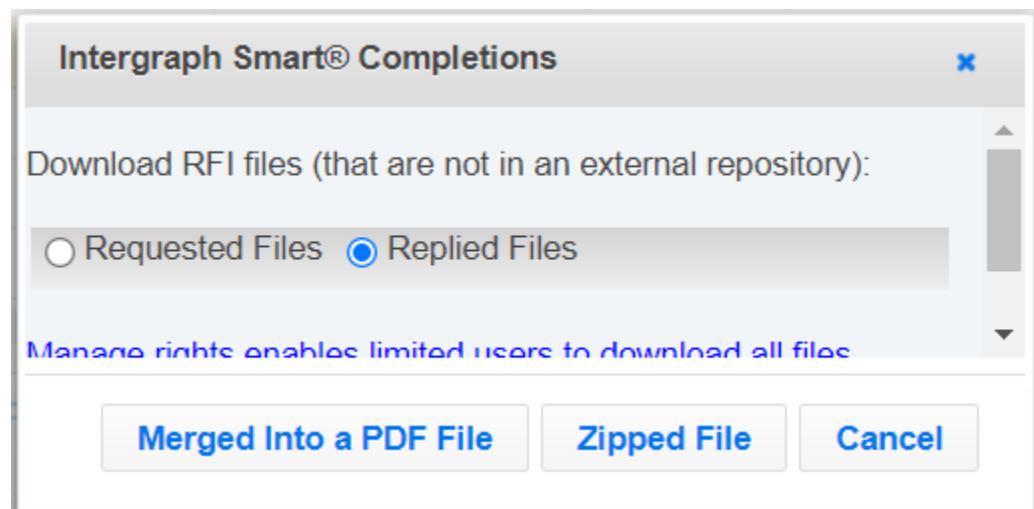
Questionnaire

RFIs include a Questionnaire tab that allows users to fill out steps related to the RFI

Review

RFIs include a Review tab that allows users to fill out steps related to the RFI. Review is optional and can be included in the RFI through the Communication Type by selecting Yes on the Include Review field.

By clicking  tab, you can download the RFI documents in a zipped file. On clicking this button, a window appears requesting you to choose Requesting files or Replied files. The **Zipped File** will download any type of file uploaded into Requested/ Replied Files whereas **Merged in to a PDF File** will only work for PDF document.



To rename a Comm ID you need to access the **Import manager** through **ivRFI_Renaming** manager view. You can export the RFI data to change the variables in a spreadsheet manually and import it to the system. This reflects the changed **Field name** after you have mapped it in the **Import manager**. You can add as many fields as per the project requirement. Total number of custom fields in RFIs that can be tagged are 20, which can be searched across reports, secondary panel exports and datasheets.

NOTES

- RFIs can be linked to multiple assets within the system. In turn, these RFIs can be pulled into task headers (from the asset link), Work Packages and Handover/ Turnover Packages.
- A new drop down requires new rights in RFI status.
- You can import a manual tag with at least 5 alphanumeric characters to generate an auto tag.

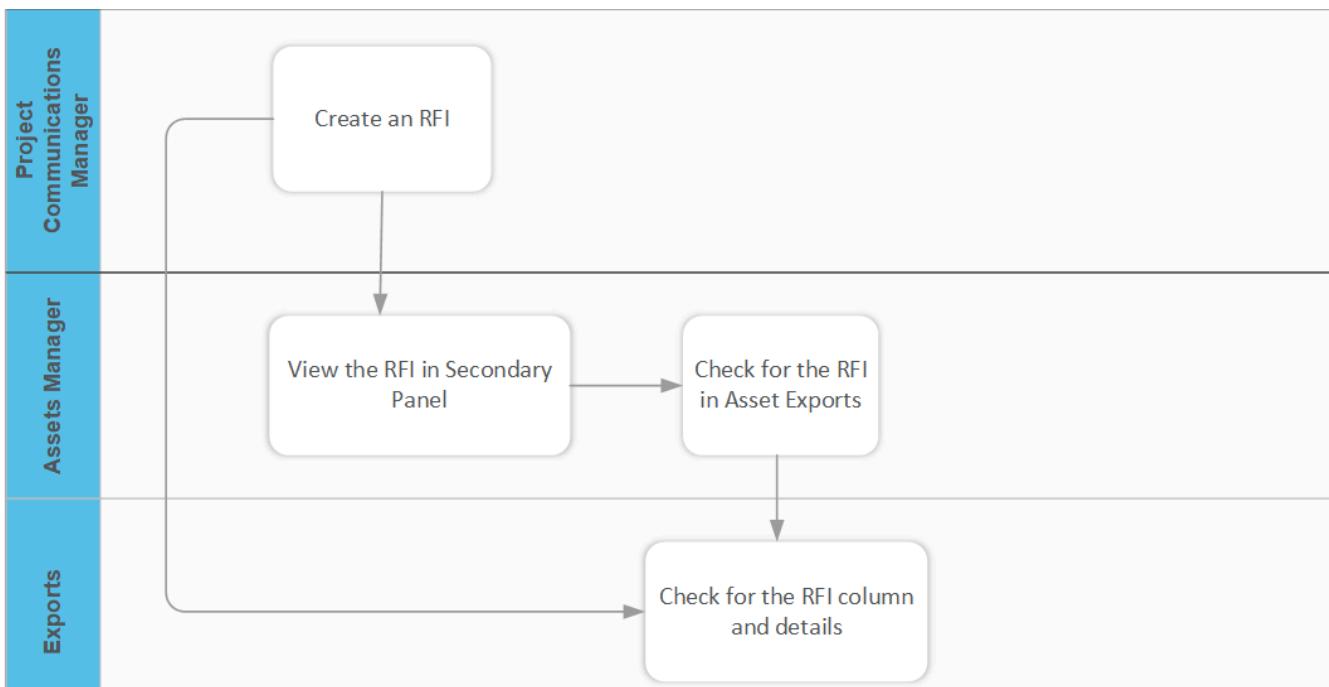
Create an RFI

Create an RFI

1. Navigate to **Project Communications** manager and click **New**.
2. Enter the mandatory details and link them to the required **Assets or Documents**.
3. Click **Save**.

NOTE

When an Asset is tagged with an RFI, you can view the RFI details in Asset Manager under its secondary panel. Also, on exporting this Asset, you can now find a new column RFI that displays the RFI ID associated with it.



Check out an RFI

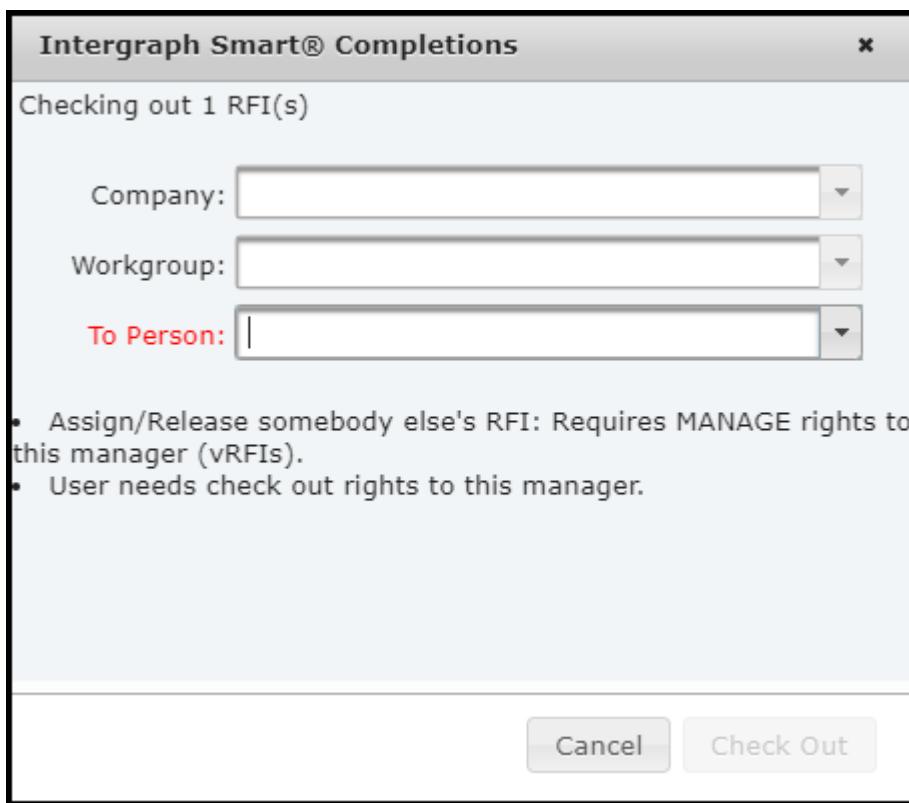
1. Go to **Project Communications > Search**.
2. Select the record you want to checkout.
3. Select the **Check Out** button.

The screenshot shows the Project Communications Manager interface with the following details:

- Search Bar:** Includes fields for General, Location and Process, Advanced, and Saved Searches. Buttons for Save, Reset, Search, AND/OR, and OR are present.
- Table View:** Titled "Project Communications (17) Reports". It lists 17 records with columns: Due, Comm Status, Comm ID, Data..., Questionnai..., Priority, Title, Communicat..., MOC Tag, Responsible Comp..., Responsible Workg..., Physical Area, System, Requestor Co... . The records include various status icons (Green, Yellow, Red) and titles like "RFI-000007", "RFI-000008", etc.
- Details View:** Shows a detailed view of a selected RFI record. Fields include: Details, Documents, Assets, Tasks, Contact Info, Workflow Log, Files, Field Log. Under Details, fields include: Comm Status (Request for Information), Priority (Low), Title (test), Contract Name (test), MOC (Request for info), Discipline (Request for info), Purchase Order (Tag) (Request for info), Responsible Company (test), Responsible Workgroup (test), External Revision (test). Other sections like Work Association, Location and Association, Physical Area, Subsystems, Request Information, and Contractual Details are also visible.
- Action Bar:** At the bottom, there are buttons for: Reset, Search, New, Edit, Delete, Purge/Restore, Datasheets, Files, Check Out (highlighted in red), Imports, Render Forms, Notify, and Help.

- a. Choose the intended **Company** and **Workgroup** lists to filter users.

b. Choose the intended user from the list.



4. Select **Check Out** to complete the checkout.

TIP Checked out records are locked for editing for any other user other than the assigned.

Initiate a Request For Information (RFI)

1. Go to **Project Communications Manager**.
2. Click **New** at the bottom ribbon.
3. A pop up window named **Edit Project Communication** is displayed showing all the steps associated with RFI.
4. Enter the details associated with each step.

Workflow missing required fields: Communication Status, Communication Type

Request Save Exit Generate Forms Email Project Communication

NOTE All of the mandatory fields are indicated by the text appearing in red type.

5. Click **Generate Forms** at bottom of RFI form to enable **Questionnaire** and **Review**.

NOTE User can assign **Questionnaire** and **Review** to RFI only if it is configured in **Communication Type Manager**.

6. Click **Request** to initiate the RFI.

RFI is created and a pop-up is generated displaying a message to trigger email.

7. Click **Yes** to issue RFI email.

Respond to RFI

To respond to RFI:

1. Go to **Project Communications Manager**.

Select the RFI to be responded to (Contacted person can directly navigate to RFI using the link received through mail).

2. Click **Edit** at the bottom ribbon.

NOTE The user can also edit these objects directly by clicking on the **Comm ID** hyperlink.

3. Go to the **Request/ Reply** tab.

The screenshot shows a software interface for managing requests. At the top, there is a ribbon with tabs: Step 1 General, Step 2 Request/Reply (which is selected), Step 3 Custom, Step 4 Assets, Step 5 Tasks, Step 6 Documents, Step 7 Attachments, Step 8 Questionnaire, ..., Step 9 Comments. To the right of the tabs is a 'Workflow' section with a color-coded status bar: 'Originated' (red), 'Requested' (yellow), 'Accepted' (green), 'Completed' (blue), and 'Closed' (black). Below the tabs, there are two expandable sections: 'Request' and 'Reply'. The 'Request' section contains fields for 'Requestor Company' (dropdown), 'Contacted Company' (dropdown), 'Contacted Person' (dropdown), and 'Due Date' (dropdown). The 'Reply' section contains fields for 'Reply Date' (dropdown) and 'Replied By' (dropdown). At the bottom of the screen is a dark grey footer bar with four buttons: 'Request' (hand icon), 'Save' (disk icon), 'Exit' (cross icon), and 'Email Project Communication' (envelope icon).

4. Enter the response details. For additional information, the user can navigate to **Assets**, **Tasks**, **Documents**, and **Attachments** tabs to information provider.

5. Click **Save**.

See the following tabular data for more information on responding to RFI.

Tab	Field	Description
Request/Reply	Reply	Responding user to provide the response on RFI.

Request/Reply	Reply Date	Select the date of response.
Request/Reply	Replied by	Select the responding user name.
Questionnaire	Communication specific questions	Communication-specific questions are available (if defined and generated by requesting user). Responding users can reply to the questions.
Review	Communication specific review	Communication-specific review checkpoints are available (if defined and generated by requesting user). The responding user or RFI approver can reply to review checkpoints (RFI issue rights required).

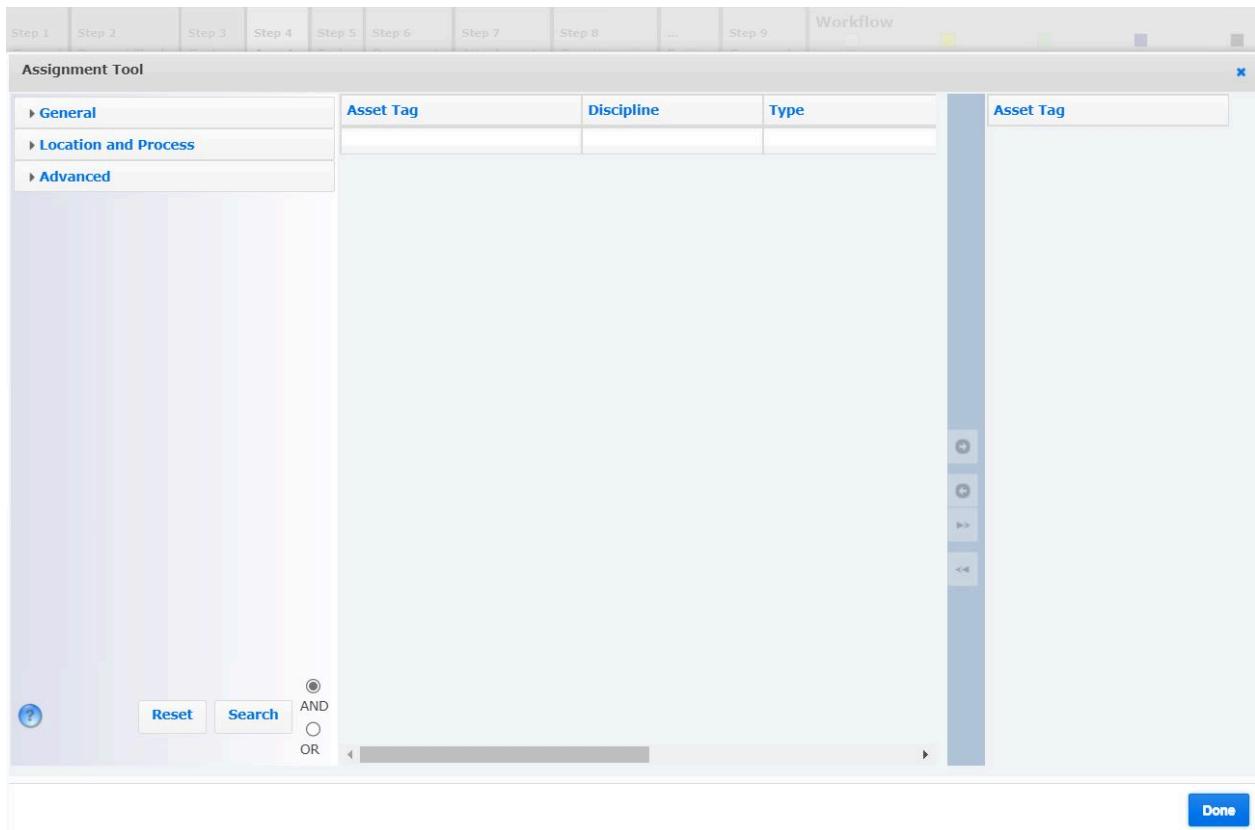
Associate Information to RFI

Using Tasks, Assets, Documents and Attachments tabs, users can provide additional information associated with RFI.

Associate Assets to RFI

1. Go to **Assets** tab.
2. Click **Edit List**.

A pop-up window named **Assignment Tool** is displayed.



3. Click **Search**. (User can define the search criteria to filter the asset results)
4. Select the applicable assets and move them to the right pane named **Asset Tag**.
5. Click **Done**.
6. Click **Save**.

Associate Tasks to RFI

1. Go to **Tasks** tab.
2. Click **Edit List**.
A pop-up window named **Assignment Tool** is displayed.
3. Click **Search**. (User can define the search criteria to filter the task results)
4. Select the applicable tasks and move them to the right pane named **Task Name**.
5. Click **Done**.
6. Click **Save**.

Associate Documents to RFI

1. Go to **Documents** tab.

2. Click **Edit List**.

A pop-up window named **Assignment Tool** is displayed.

3. Click **Search**. (User can define the search criteria to filter the document results)

4. Select the applicable documents and move them to the right pane named **Document ID**.

5. Click **Done**.

6. Click **Save**.

NOTE To create a new document for association, Click **New**. For more information, See [How to create new Documents](#).

Associate Attachments to RFI

1. Go to **Attachments** tab.

The screenshot shows a software application interface for managing attachments. At the top, there's a navigation bar with tabs for Step 1 General, Step 2 Request/Reply, Step 3 Custom, Step 4 Assets, Step 5 Tasks, Step 6 Documents, Step 7 Attachments (which is the active tab), Step 8 Questionnaire, ..., Review, Step 9 Comments, and Workflow. The Workflow section includes status indicators for Originated (yellow), Requested (green), Accepted (blue), Completed (dark blue), and Closed (black). Below the navigation is a toolbar with buttons for Delete, Up, Down, To, and Edit File. The main area contains a grid table with columns: #, Caption, Number, Revision, Pages, Type, and Files. A single row is present in the grid, with the 'Type' column currently selected. A context menu is open over this column, listing four options: '(Select one)', 'Requested File' (which is highlighted in blue), 'Replied File', and 'Attached File'. At the bottom of the screen is a dark footer bar with several buttons: Request, Save, Exit, Check In, and Email Project Communication.

2. Click the header to enter the below mentioned details.
 - a. **Caption:** Caption for attachment.
 - b. **Number:** Attachment number.
 - c. **Revision:** Attachment revision
 - d. **Pages:** Attachment pages, if applicable.
 - e. **Type:** Select the type of attachment from the drop-down **Requested file / Replied file / Attached file.**
3. Click Upload icon in the **Files** header.
4. Navigate to the file and Click **Upload File**.
5. Click **Save**.

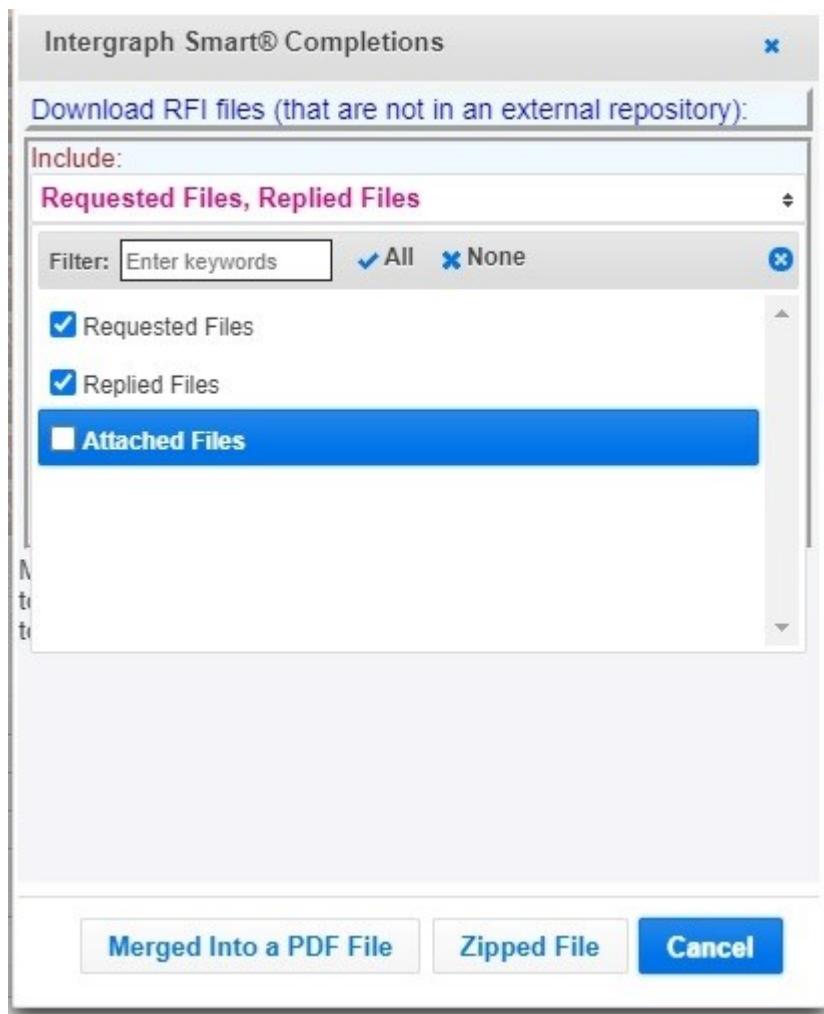
NOTES

- User must save RFI before attaching files.

- User can replace files in the attachments by clicking **Edit files**.
- No limitations in the number of attachments.

Download the RFI file:

1. Click **Files** icon at bottom ribbon.



2. In the **Download RFI Files** dialog, select the type of files to be downloaded.
3. Click **Merged Into a PDF file** or **Zipped File** as per preference.

Description of Key Attributes in Initiating RFI.

Tab	Field	Description
-----	-------	-------------

General	Auto tagging	Auto-tagging defines if the communication ID is to be auto-generated or manually defined. If selected auto-tagging as Yes, then the system generates an auto number with Communication type abbreviation as prefix. For example, RFI-00001.
General	Comm ID	If Auto-tagging is selected as manual, then text box is visible and the user can assign the user-defined communication ID.
General	Priority	<p>Users to select the predefined Communication Priority.</p> <p>Priorities can be added during RFI creation or predefined in Priorities Manager for the Project Communication module.</p>
General	Title	Users to enter the RFI title.
General	Communication Type	<p>Users to select the predefined Communication Type.</p> <p>Communication Type can be added during RFI creation or predefined in Communication Type Manager for Project Communication module.</p>
General	Comm Status	<p>Users to select the predefined Communication Status.</p> <p>Communication Status can be added during RFI creation or predefined in Status Manager for Project Communication module.</p>

General	MOC	<p>Users to select the applicable MOC to be linked to RFI.</p> <p>Users can also create the MOC during RFI creation. See How to create MOC for more information.</p>
General	Contract ID	<p>User to select the applicable Contract ID to be linked to RFI</p> <p>User can also create the Contract during RFI creation. Refer xxx for Contract creation.</p>
General	Disturbance No	Reserved for Future. User can re-purpose and assign for custom attribute for RFI.
General	Discipline	Users to select applicable RFI discipline.
General	Purchase Order	Users to select applicable purchase order number to be linked to RFI.
General	Responsible Company	<p>User to select the responsible company.</p> <p>This attribute restricts access of RFI to the users who are from selected responsible company.</p> <p>Other company users cannot access the data.</p>
General	Responsible Workgroup	<p>Users to select the responsible workgroup.</p> <p>This attribute restricts access of RFI to the users who are from selected Workgroup. Other workgroup users cannot access the data.</p>

General	External Revision	Not Applicable
General	Work Association	Users to select the Work (WBS) association.
General	Location or Process Association	Users to select Location (LBS) or Process (PBS) Association.
Request/Reply	Request	Requesting user to describe the RFI details and required information.
Request/Reply	Requester Company	Users to select the RFI issuing company.
Request/Reply	Contacted Company	Users to select the company to which RFI is being issued.
Request/Reply	Contacted Person	Users to select the person to whom RFI is directed and is responsible for replying RFI (Field only shows list of person of contacted company).
Request/Reply	Due Date	Users to specify due date for RFI response.

Split an RFI

You can split an RFI when you accept/not specify, cancel, or reject the RFI. In case, when you reject a task or an asset associated to a RFI, and select split option; a new RFI is created with the same number as the original RFI but with a suffix -R. The rejected tasks or assets are now associated to the newly created RFI-R. Instead of rejecting an entire RFI, you can navigate to the assets or tasks tabs and reject or cancel the individual tasks or assets.

You can select **Auto-Close of Child RFI** in the **Project Comm. Type**. If **Auto-Close** is set to **Yes**, then when splitting an RFI, the child RFIs are automatically moved to **Closed/Final**.

State of the RFI workflow setting. The child RFI will get the **Closed By** and **Date** details from the final state of the parent RFI during the split.

For example, If a RFI-123 is rejected and selected for split option, the newly created RFI number is RFI-123-R. The suffix used for cancel RFI is -C. In the first split, the workflow and workflow log of the parent RFI are copied to the child RFI. However, in subsequent splits, any changes to the parent RFI's workflow are not carried down to the child RFIs. Only the tags and tasks are assigned to the child RFIs.

RFI	RFI when split option is used while	New RFI Created
RFI-123	accept	RFI-123
RFI-123	not specify	RFI-123
RFI-123	cancel	RFI-123-C
RFI-123	reject	RFI-123-R

Respond to an RFI

1. Go to **Project Communications Manager** and select the RFI to be responded to.

TIP Contacted person can directly navigate to RFI using the link received through mail.

2. Select **Edit** at the bottom ribbon.

NOTE The user can also edit these objects directly by selecting on the **Comm ID** hyperlink.

3. Go to the **Request/ Reply** tab.

The screenshot shows a software interface for managing requests. At the top, there is a navigation bar with tabs labeled Step 1 General, Step 2 Request/Reply (which is selected), Step 3 Custom, Step 4 Assets, Step 5 Tasks, Step 6 Documents, Step 7 Attachments, Step 8 Questionnaire, ..., Step 9 Comments, and Workflow. The Workflow section includes status indicators for Originated (red), Requested (yellow), Accepted (green), Completed (blue), and Closed (black). Below the navigation bar, there are two sections: 'Request' and 'Reply'. The 'Request' section contains fields for Requestor Company, Due Date, Contacted Company, Contacted Person, and a large text area for the request message. The 'Reply' section contains fields for Reply Date, Replied By, and a large text area for the reply message. At the bottom right of the form, there are buttons for Request, Save, Exit, and Email Project Communication.

4. Enter the response details. For additional information, the user can navigate to **Assets**, **Tasks**, **Documents**, and **Attachments** tabs to information provider.

5. Select **Save**.

See the following tabular data for more information on responding to RFI.

Tab	Field	Description
Request/Reply	Reply	Responding user to provide the response on RFI.
Request/Reply	Reply Date	Select the date of response.
Request/Reply	Replied by	Select the responding user name.

Questionnaire	Communication specific questions	Communication-specific questions are available (if defined and generated by requesting user). Responding users can reply to the questions.
Review	Communication specific review	Communication-specific review checkpoints are available (if defined and generated by requesting user). The responding user or RFI approver can reply to review checkpoints (RFI issue rights required).

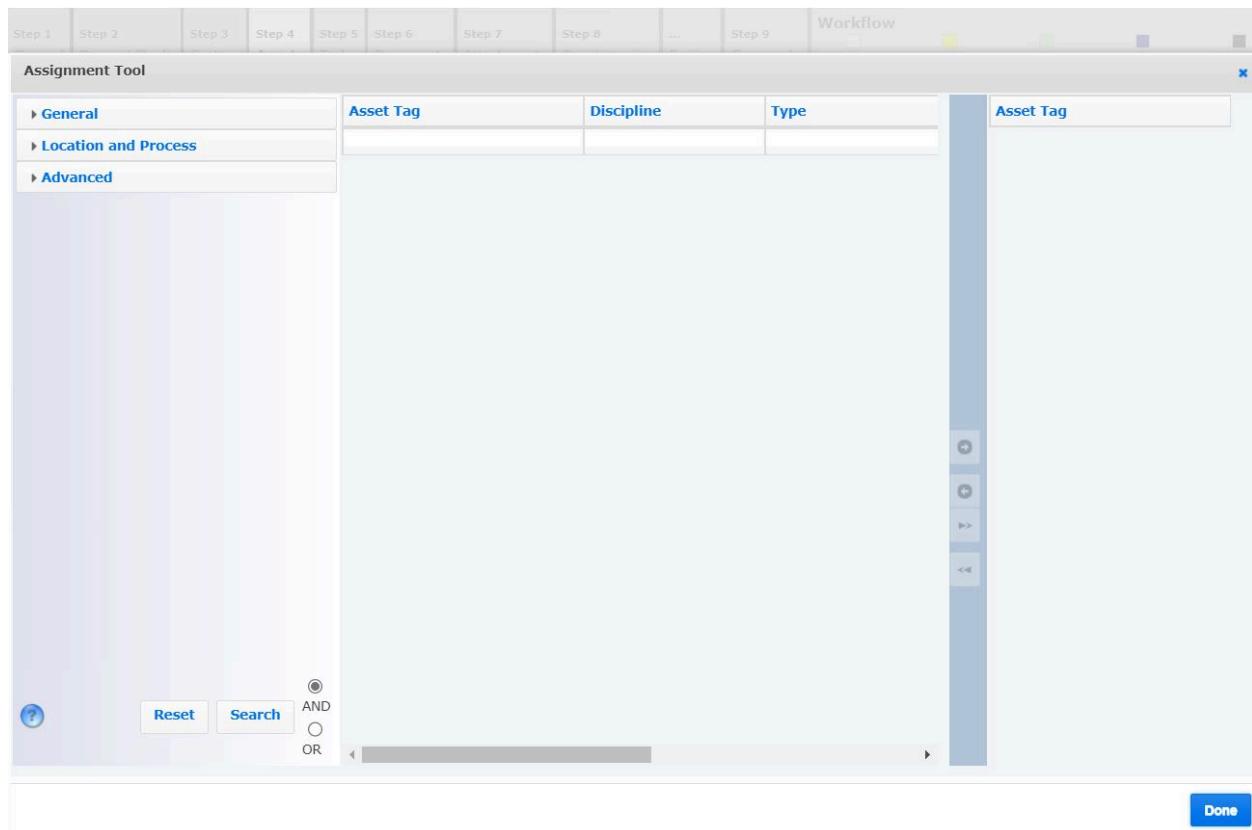
Associate Information to an RFI

Using Tasks, Assets, Documents and Attachments tabs, users can provide additional information associated with RFI.

Associate assets to an RFI

- 1. Go to **Assets** tab.
- 2. Click **Edit List**.

A pop-up window named **Assignment Tool** is displayed.



3. Click **Search**. (User can define the search criteria to filter the asset results)
4. Select the applicable assets and move them to the right pane named **Asset Tag**.
5. Click **Done**.
6. Click **Save**.

Associate tasks to an RFI

1. Go to **Tasks** tab.
2. Click **Edit List**.
A pop-up window named **Assignment Tool** is displayed.
3. Click **Search**. (User can define the search criteria to filter the task results)
4. Select the applicable tasks and move them to the right pane named **Task Name**.
5. Click **Done**.

6. Click **Save**.

Associate documents to an RFI

1. Go to **Documents** tab.

2. Click **Edit List**.

A pop-up window named **Assignment Tool** is displayed.

3. Click **Search**. (User can define the search criteria to filter the document results)

4. Select the applicable documents and move them to the right pane named **Document ID**.

5. Click **Done**.

6. Click **Save**.

 **NOTE** To create a new document for association, Click **New**. For more information, See [How to create new Documents](#).

Associate Attachments to RFI

1. Go to **Attachments** tab.

The screenshot shows a software application window with a header containing nine steps: Step 1 General, Step 2 Request/Reply, Step 3 Custom, Step 4 Assets, Step 5 Tasks, Step 6 Documents, Step 7 Attachments (selected), Step 8 Questionnaire, ..., Step 9 Comments. To the right of the steps is a 'Workflow' section with status indicators: Originated (yellow), Requested (green), Accepted (blue), Completed (dark blue), and Closed (black). Below the header is a table with columns: #, Caption, Number, Revision, Pages, Type, and Files. A context menu is open over the 'Type' column for the first row, which has a value of 'Requested File'. The menu also includes 'Replied File' and 'Attached File'. At the bottom of the screen are several buttons: Request, Save, Exit, Check In, and Email Project Communication.

2. Click the header to enter the below mentioned details.
 - a. **Caption:** Caption for attachment.
 - b. **Number:** Attachment number.
 - c. **Revision:** Attachment revision
 - d. **Pages:** Attachment pages, if applicable.
 - e. **Type:** Select the type of attachment from the drop-down **Requested file / Replied file / Attached file.**
3. Click Upload icon in the **Files** header.
4. Navigate to the file and Click **Upload File**.
5. Click **Save**.

NOTES

- User must save RFI before attaching files.

- User can replace files in the attachments by clicking **Edit files**.
- No limitations in the number of attachments.

Viewing workflow status

To view work status details in the export data, follow the given steps:

1. On the **Project Communications Manager** window, select a task and click **Edit**.
2. Click **Documents** tab, to add documents to the task.
3. Click **Edit List** to add documents to the task.
4. Open **Export Wizard Manager** and open the corresponding task to be exported.
5. Click **Done** and export the data.

NOTE You can view the work status of all the documents in a task by navigating to the **Workflow-Status** column.

Project Activities (P6)

Smart Completions allows you to establish a link between your planned tasks within the CCMS and any corresponding activity in your P6 schedule. As you complete planned tasks in the CCMS, the percentage completion of the linked P6 activity automatically updates. This ensures your master schedule reflects real-time progress on the ground. Configure automated weekly exports that deliver updated completion percentages for all P6 activities linked to completions tasks.

Configure Activity Category

1. Go to **Settings panel > Activity Categories**.
2. Select **Search**.
3. In the bottom bar of the secondary panel, select **New**.
4. In the **Edit Activity Category** page, enter **Category** and **Abbreviation**.
5. Choose the **Configuration** (System/Area/Asset).

6. Choose Transfer of Custody:

- GT - Green Tag/Construction Complete
- BT - Blue Tag/Commissioning Complete
- OAT - Owner Acceptance

7. Select **Save.**

Configure Milestones

1. Go to **Settings Panel > Milestones**.

2. In the **Milestones** manager, select **New**.

3. Enter the Required Information.

4. Select **Save**.

Create a Project Activity

1. Go to **Settings Panel > Project Activities**.

2. Select **Search > New**.

3. In the **Edit Project Activities** page, choose **Activity Category** and **Milestone Level**.

4. Enter required information.

5. In the **Predecessors** tab, select other **Project Activity record(s)** to assign as predecessors.

6. In the **Estimating** tab, enter the required information.

7. In the **Planned Tasks** tab, you can assign a task or more.

8. Select **Push Schedule**, to update the assigned tasks with the **Project Activity Scheduling Data**.

How is the date calculated for the project activity tasks?

★IMPORTANT Ensure to have a **Lag/Lead** set on the task models of the associated planned tasks.

Selecting the **Push Schedule** initiates the calculation process for the project milestones.

The calculation process occurs for each task based on its data:

- **Tasks with lead/lag values only:** Planned end date is calculated using the milestone date and lead/lag. The planned end dates are calculated based on the project activity end date plus the lag/lead days for each task.
- **Tasks with scheduled duration values only:** Planned start date is calculated by subtracting the duration from the milestone date. The planned start dates are calculated based on the project activity end date plus the scheduled duration for each task.

In a pop-up window, you can notice the calculation process explained and suggesting two options to either Update or Overwrite:

- Using **Update** option, will update all the associated tasks for which the planned start date is empty.
- Using **Overwrite** option, will update all the associated tasks.

A new pop-up window opens displaying the progress of:

- List of activities being processed sequentially along with IDs.
- Number of processed tasks for each activity.

Assign tasks to a project activity

1. In the **Project Activities (P6)** manager, select **Search**.
2. In the list view, select a Project Activity.
3. Select **Assign Tasks** from the bottom bar of the secondary panel.
4. In the **Edit Task Assignments** window, you can select any of the two options:

Select this	To do this
Assign Tasks by WBS, Systemizations/Locations, Company	Assigns tasks based on work breakdowns, systemizations, locations, and/or responsible company.
Assign Tasks to Milestone by Activity Category, Tag Associations and Task Restrictions	Assigns tasks to milestone by activity category, tag associations, and task restrictions.

5. In the **Selections** tab, choose your required options.

💡 TIPS

- If the Project Activity you selected is based on an asset, then an additional selection of asset is required.
- You can choose to have same or different systemization, location, WBS, responsible company, contract ID, and an overwrite ccms assignment.

6. Select **Next** to preview the list of tasks. Choose the tasks you wish to assign to the project activity.

7. Select **Finish**.

Import or export the project activity predecessor tasks

Project Activities are configured as milestones, and both activities and milestones can have predecessor dependencies. Predecessors are tasks that need to be completed before the parent activity or the milestone.

The following entries have been added to Project Activity import and export excel sheets:

Entry Name	Description
Is SSM (True/False)	Identifies if the activity is part of the Startup, Shutdown, or Mobilization (SSM) phase of the project.
Activity Category	Lists out the category types.
Milestone Level	Lists out the milestone level within project hierarchy.
Activity Predecessor	Define predecessor dependencies for activities and milestones. The tags that are to be completed before the activity or milestone is completed.
Asset Tag	Associate an asset tag with the project activity.
System Summary	Include a summary of the system involved in the project activity.
Subsystem Summary	Include a summary of the subsystem involved in the project activity.

NOTE For more information on how to import or export, see [Imports](#) or [Exports](#).

For importing or exporting the predecessors

There are two options for predecessor dependencies:

- One row per predecessor (predecessor ID): Each predecessor is listed on a separate row, identified by its unique ID.

- List of predecessors per activity (predecessor list): A single row can define a list of predecessors for an activity, separated by semicolons (;). This list is automatically split into individual predecessors during import or export.

NOTES

- Single row (comma separated list): All predecessor IDs for an activity/milestone will be listed in one row, separated by commas (,).
- Multiple rows per activity/milestone: Each predecessor will be exported on a separate row, allowing for easier visualization of dependencies.
- To improve performance on importing or exporting multiple predecessors, it is recommended to use the above prescribed methods than to use a single cell.

Completions

Project Breakdown Structure

Systemization Tree

The Systemization, or Process Breakdown Structure (PBS), is the logical and sequential layout of a process. The Systemization explains how assets relate to each other.

This is not to be confused with the location relationship of assets. Where an asset physically resides may not also describe its relationship to other assets. For instance, a pipe could be located physically next to a particular tank, but it feeds into a tank that is located in a different area. The Systemization describes how the assets relate to each other in terms of use.

A PBS is broken down into Plant, Process Area, System and Subsystem (4 tiers). It is a process oriented decomposition of up and downstream production systems. Systemization tracks the planned and actual transfer dates between the work groups within a project, specifically the custody of systems/equipment.

The process for creating Process Breakdown Structure (PBS) is outlined below:

Navigation: Configuration > Trees/Tasks > Systemization Tree

ENTER PLANT: Select the PROJECT NAME (top left), then press NEW LEAF (bottom right) to load the TREEVIEW EDITOR. Enter in NUMBER and NAME, press SAVE.

NOTE Since you selected a project, the next "LEAF" to the tree is a PLANT, and is why it is automatically set to PLANT.

Systemization Edit Form - Add Process Area

ENTER PROCESS AREA: Left select the PLANT node then press NEW LEAF (bottom right) to open up the TREEVIEW EDITOR. Enter in NUMBER and NAME.

NOTE When selecting the parent node (left side) to create a LEAF NODE, it will populate the top right side (e.g. Plant) to inform the user which current node they have selected. When pressing NEW LEAF, the Level field will auto-populate in the Edit Form.

Systemization Edit Form - Add System

ENTER SYSTEM: Left Select the PROCESS AREA node then press NEW LEAF (bottom right) to open up the TREEVIEW EDITOR. Enter in NUMBER and NAME.

NOTE Repeat the process for SUBSYSTEM. Select the system and press NEW LEAF, enter Name and Number.

Custom Fields: You can customize up to 6 fields in the systemization tree for inputs which are not dependent on systemization nodes like systems or sub systems. It is applicable for all imports.

Physical Location Tree

The Smart Completions database is an advanced database that has over a 1,000 tables and 10,000's of fields. Assigning tags to location provides the end user a simple method to find a tag, or collection of tags without actually knowing what tag they are looking for.

The Physical Location Tree, or Location Breakdown Structure (LBS), is the logical and sequential layout of a plant or project by geographical locations. It is broken into Plant, Process Area, Area and Physical Locations (4 Tiers). It is a location oriented decomposition which is used for Operations and Maintenance perspective. The LBS is used to identify specific "Areas" and "Physical Locations" used for costing against different geographical locations of a project, which is different than systemization where an equipment may be downstream of an equipment, but geographical (location) 10 KM away.

The process for developing Location Breakdown Structure (LBS) is outlined below:

Navigation: **Configuration > Trees/Tasks > Physical Location Tree**

ENTER PLANT:

1. Select the **PROJECT** and press **NEW LEAF**.
2. Enter in Number and Name of **PLANT**. Press **SAVE**.

Location Edit Form - Process Area

ENTER PROCESS AREA:

1. Select the **PLANT** and press **NEW LEAF**.
2. Enter in Number and Name of **PROCESS AREA**. Press **SAVE**.

Repeat the process for **AREA(s)** and **PHYSICAL LOCATION(s)**. Select the system and press **NEW LEAF**, enter Name and Number.

Process Areas are used in the PPM report to report on major areas. Must at least go down to the process area level.

Work Breakdown Tree

A Work Breakdown Structure (WBS) - in project management and systems engineering - is a deliverable-oriented decomposition of a project into smaller components. In our software, projects can be assigned Phases, Stages and Activities. The process for developing Project Work Breakdown Structure (WBS) is outlined below:

Navigation: **Configuration > Work Breakdown Tree**

Setting up a project will require at a minimum of a Work Breakdown Structure (WBS) which will contain:

- Phases
- Stages
- Activities (optional)

How to recover a modified project?

When you change a Project's level from project to an Activity, you may not be able to locate it anymore in the Work breakdown tree. To recover the missing or modified project, follow the below process:

1. Go to **Settings Panel > Work Breakdown Tree**.
2. Select **Search** to see the complete list of the Work Breakdown Tree.
3. Select **New** from the bottom bar.
4. Select **See Full List** option.

💡 TIPS

- Ensure not to select any project, stage or activity from the tree to view **See Full List** option.

- You can also view the orphan projects in this list.
5. Search for the project you are trying to locate and select it.
 6. In the **Edit Work Breakdown** page, select **Level > Project**.
 **TIP** Ensure to remove the parent association first, and then assign the project.
 7. Select **Save**.

Forms and Checklist Library

The Test Forms Library houses all mail merge forms for paper execution. The **Microsoft Mail Merge** functionality allows any "static" form to be populated with a mail merge database field. Once the form is updated with the appropriate nameplate and process fields, the form can be saved and uploaded into the database. Forms must use the Smart Completions mail merge fields inserted into the MS Word document for successful use in the project. Forms are assigned to task models and task models create tasks.

This module is used to recreate their forms in the Task Models (digital execution type) inspection steps. You can import the forms list generally twice, first as the forms library, and second for task models, so that they can link the form to the task model. As it is task models that are assigned to objects (assets, loops, packs etc.), when they use the forms library the Task Models are of paper execution type, and they would use mail merge functionality for all planned tasks.

A Test Form is considered a control document and therefore requires a revision number in order to save the record. When a form is approved, Smart Completions will automatically archive the approved version so it can be accessed anytime and compared against the latest current version.

NOTES

- The CCMS Mail Merge functionality only works with MS Word documents and not MS Excel sheets.
- If a project is using digital task models, there is no need for creating mail merge MS documents as the digital tasks can be printed with QR codes, same as mail merged forms.

- If there are additional fields that are not in the **Discipline** manager specific Mail Merge templates but are in the Smart Completions interface, please contact your appointed Smart Completions representative to have the field(s) added.

Mail Merge Templates and Forms

Depending on project strategy, Smart Completions can use client Microsoft MS Word documents (.doc or .docx) files and use Smart Completions mail merge fields to populate the forms with database content (i.e. asset nameplate data, assigned documents etc.). By default the Smart Completions database does not come with a library of forms. It is the system integrators responsibility to discuss with the client which forms are to be used, and if they are missing specific forms, we will send the integrator a collection of forms that could be reviewed and used on the project.

Each form uploaded into the database must be populated with Smart Completions mail merge forms. You can simply copy (Ctrl+c) and paste (Ctrl+v) a mail merge form from the mail merge field template. You can also press **ALT-F9** to expand the mail merge field. Use this method after you have placed a mail merge field into a MS Word test form to make sure that the cell only includes the required mail merge field.

There are different methods to use forms.

- One (1) form to one (1) asset,
- One (1) form that lists multiple assets. For multiple assets (like pipe packs or loop tests) then the user must select the "Pipe Packs" and "Loops" mail merge templates.
- One (1) form to a System, Subsystem, Area, or Location,
- One (1) form to a Certificate which will list a set of Systems, Areas etc.

 **NOTE** Please be aware that the **Tool** drop down is important to define the context of how the mail merge form is to be used. All completions tasks should be assigned **CCMS tasks**, preservation tasks assigned **Preservation Tasks**, and Punchlist forms assigned **Punchlist** for example.

Preservations

Preservations, by Tasks

The **Preservations, by Tasks** Manager is a Task-centric view of preservations. It is designed to assign, schedule and execute "preservation plans". A preservation plan is a collection of preservation tasks to be performed on a piece of equipment either during its shipment and/or storage on-site prior to its installation. The intent is to ensure equipment warranties are being met and are not voided. The preservation manager provides traceability and provides reporting on who and when each preservation task was performed.

A preservation plan is comprised of a collection of preservation tasks. Each task has a collection of preservation steps/actions, start/end dates, frequency and assignment to specific company and workgroup. When you execute a preservation task, you are executing an **instance** of the preservation task. During the execution of the task, you will identify if there are any items that are not compliant with the preservation task requirements. In this case, non-compliance is created and immediately routed to appointed personnel, whereby they will take remedial action.

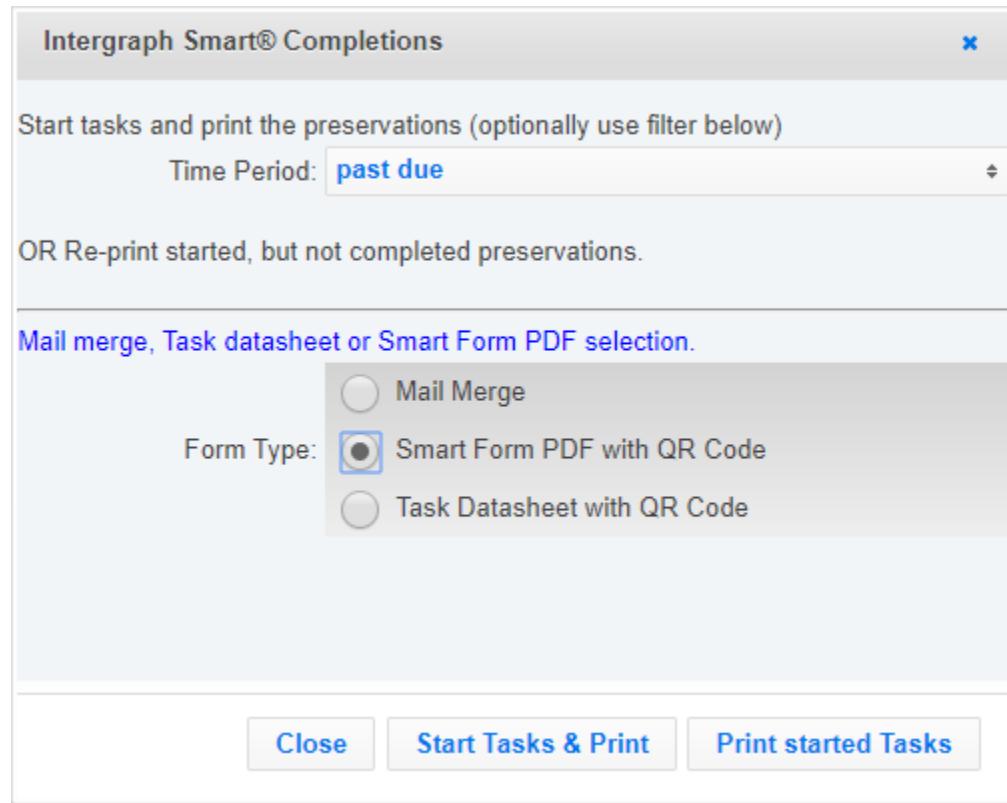
A preservation task is best created as a task model for a particular asset type as recommended by the equipment vendor. You can create a preservation task model identifying the steps, tools, materials and frequency of the task. You would assign the task model(s) to equipment. It is common that the equipment vendor will require two (2) different preservation tasks, one designed to preserve the equipment during shipment and the other to maintain its integrity during storage. In this case, the two tasks would be staggered. The shipment preservation task would have a start and end date, whereas the storage start date would be the end date of the shipping preservation task.

NOTES

- You require only **Complete** rights to be assigned to you to complete the preservation tasks.
- You will require **Approve** rights to **vTasks_Preservations** manager to use **Reset Started Tasks** and **Purge** rights to use **Remove History** options. A field log is created when **Remove History** option is used.

Preservation tasks can be completed digitally through the Windows or iOS applications. You can print preservation tasks for execution in this manager in the same manner as in the Asset Preservation Plans Manager. Highlight the rows of preservations and select **Print for Execution** from the bottom ribbon. A dialog box allows you to enter the **Time Period (Past**

Due, Today, This Week or Next Week). You can also choose whether to print a **Mail Merge**, **Smart Form pdf with QR code**, or **Task Datasheet with QR code**. Then select whether you'd only like to print started tasks, or whether the software should automatically start all tasks before printing.



- Select **Print started Tasks** to print all the tasks under a preservation task that are in **Started** state.
- Select **Start Tasks & Print** for starting all the selected tasks and then print.

NOTE These print options are available only for **Planned preservation tasks** and **Preservation Tasks**.

Assigning Asset Preservation Tasks

The Preservation Module is designed to track recurring tasks against an equipment. It is not used against packs, loops, or any non-asset-based tag. The preservation requirement is created using a Task Model where the task category is typically called "Preservation" and has a recurrence. Just as a completions task model, a user would define which discipline and asset type(s) that would have this preservation model assigned.

Task ID TM-00125 Description Routine Preservation - Transformer

IS Active? Yes No

Execution Type Digital Execution

Priority 3: Low

Loop Type

Responsible Workgroup Construction

Revision 1

Line Segment Type

On Demand Yes No

Predecessors Select Options

WBS Association

Safety & Environmental Requirements

Scheduling

of Persons 1 Duration 3.00 Recurrence

Allow Notifications? Yes No N/A Responsible Company Supplier

Clear Set Cancel

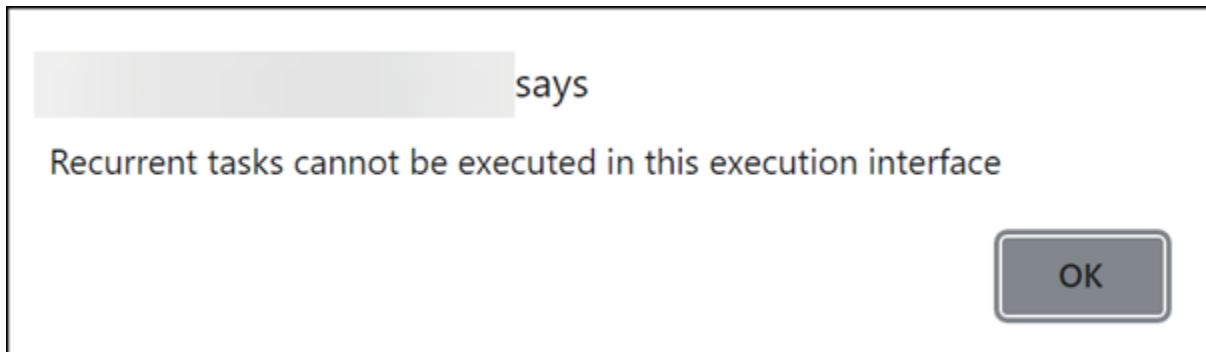
Recurrence (Daily): Daily

Submit Save Exit Update Tasks Email Task

Assigning Preservation tasks can be performed from:

- Task Models
- Preservation Tasks, by Assets

NOTE Prevent task data loss by executing preservation tasks from the corresponding managers. If a preservation task is initiated from an incompatible manager, an error message will appear.



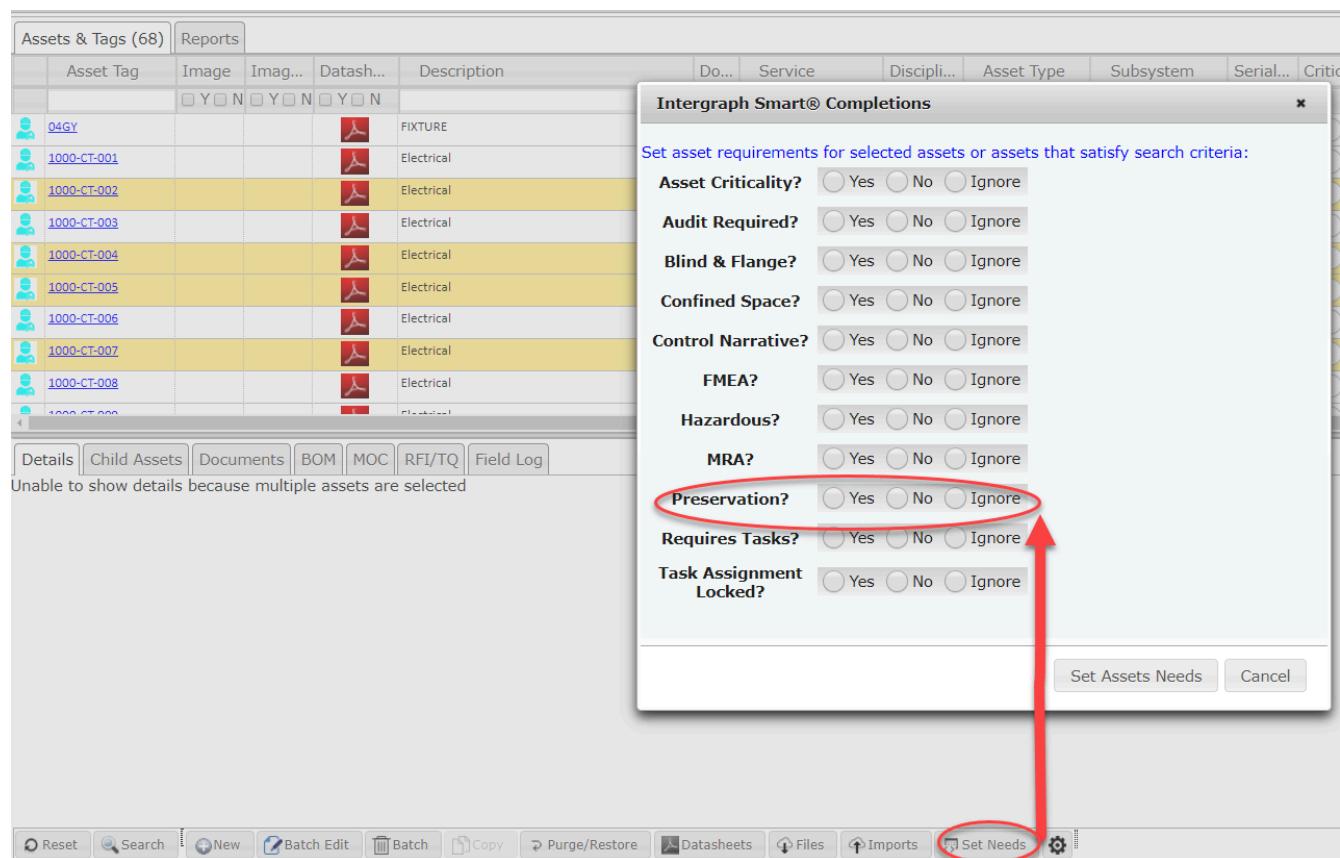
Although Smart Completions can assign preservation tasks on an as-needed basis, if the project is aware of what equipment requires preservation either point of origin, or in

warehouse/laydown yard, specific equipment can be filtered (e.g. by discipline and associated asset type(s)) in the asset module and then “Set Needs” to define they require preservation. This will automatically list all equipment with that Boolean set in the “Preservation, by Assets” module.

Closing paper based preservation tasks that has assets associated with it will have a separate process. You need to upload and update documents related to all the assets associated with the preservation task that needs to be completed.

NOTE

Performing preservation tasks are very “location” centric as when assets arrive onsite, they are not yet connected in the system or system, but in a physical location either in the warehouse or lay down yard. For this reason, we recommend using the Physical Location Breakdown (PBS) to break out the locations where equipment is stored.



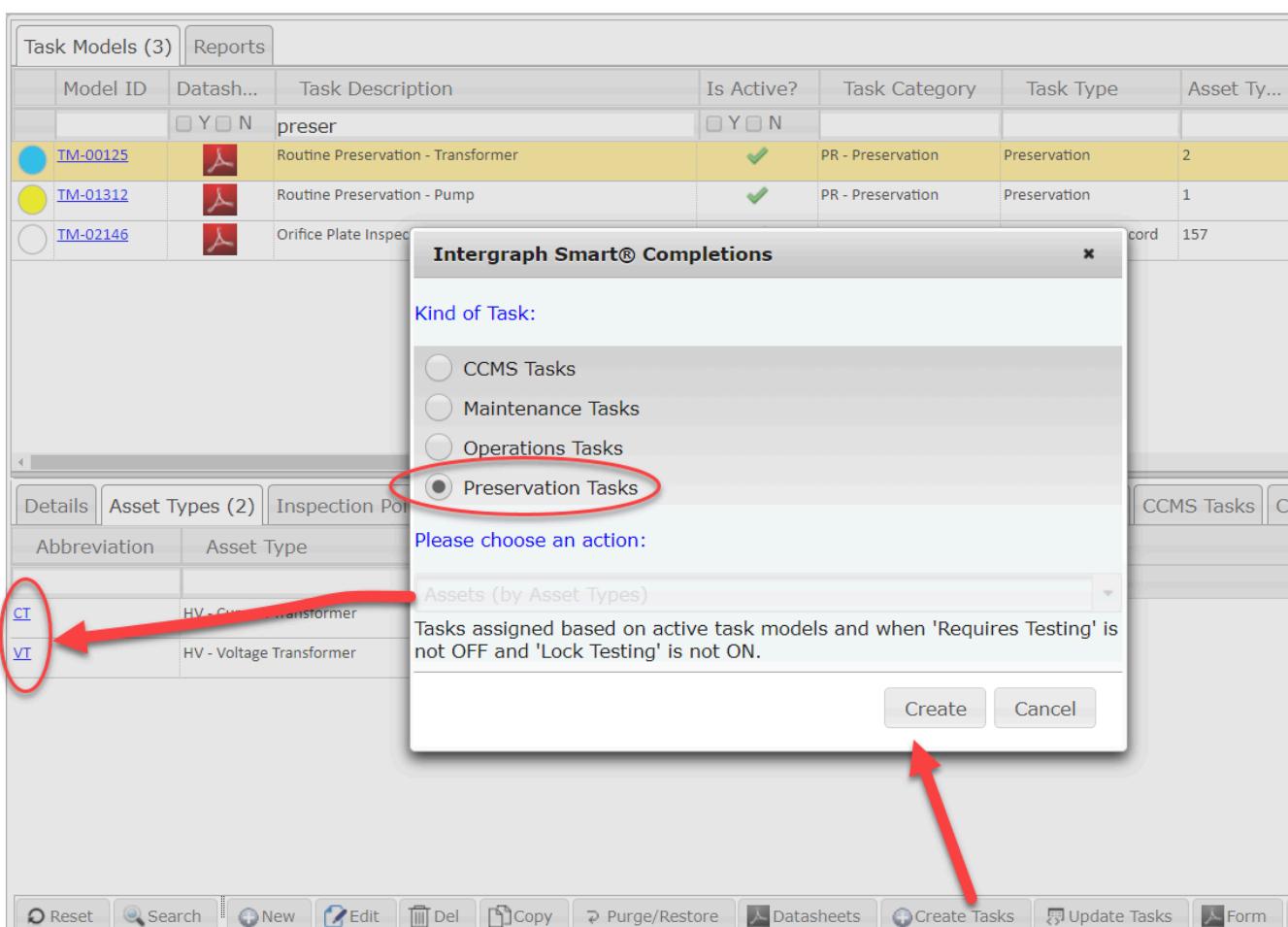
NOTE

Assigning Tasks will automatically set the “Requires Preservation” Boolean.

Assigning Recursive Tasks using Task Model module:

Using the “Task Creation” method available in the Task Model module is quick way to create preservation requirements but assigning PR tasks is not like completions tasks where all assets of a type would get a task. If majority of assets of a type require preservation, follow these instructions.

- Select Preservation Task Model Row
- Press Create Tasks
- Select Preservation Task option
- Press “Create”



NOTE The asset type dropdown is disabled as the assignment creation wizard will query all assets of the associated TM asset types, and then list the assets that are available for assignment.

Select Asset Type(s) – Select all or single asset type you wish to select assets from.

- Select the asset(s) from the list that require preservation and press Finish. Not all assets of that type will require preservation so please make sure you are being selective.

This will automatically create the PR tasks against the selected assets. Go to the “Preservation by Assets” module to review the assigned tasks.

The Preservation, by Assets module can be used to query all assets that require preservation but do not have any assigned tasks (e.g. select show preservation items = yes, assigned tasks = no). Also, when a new PR task is assigned it will automatically assign the day that the PR task was created as the first instance. Upon completion of the first “instance” of the PR task, it will automatically schedule the next recurring PR task at the recurrence frequency. To review all completed PR tasks, select the “Task History” tab where it will display date, and person completed the PR task, and if any Non-Compliance (NC) was created.

Note: Assets with a RED bubble allow the user to see which asset has a pending NC that was created independently of a PR task or associated with any PR task.

Changing the Start Date for the first PR instance

To change the first scheduled instance of the PR task,

1. Select the associated asset(s) and press **Assignment** button. This will load the edit form.
2. Press **Preservation Planned Tasks** to select the PR task.
3. Select the new start date and press **Save**.

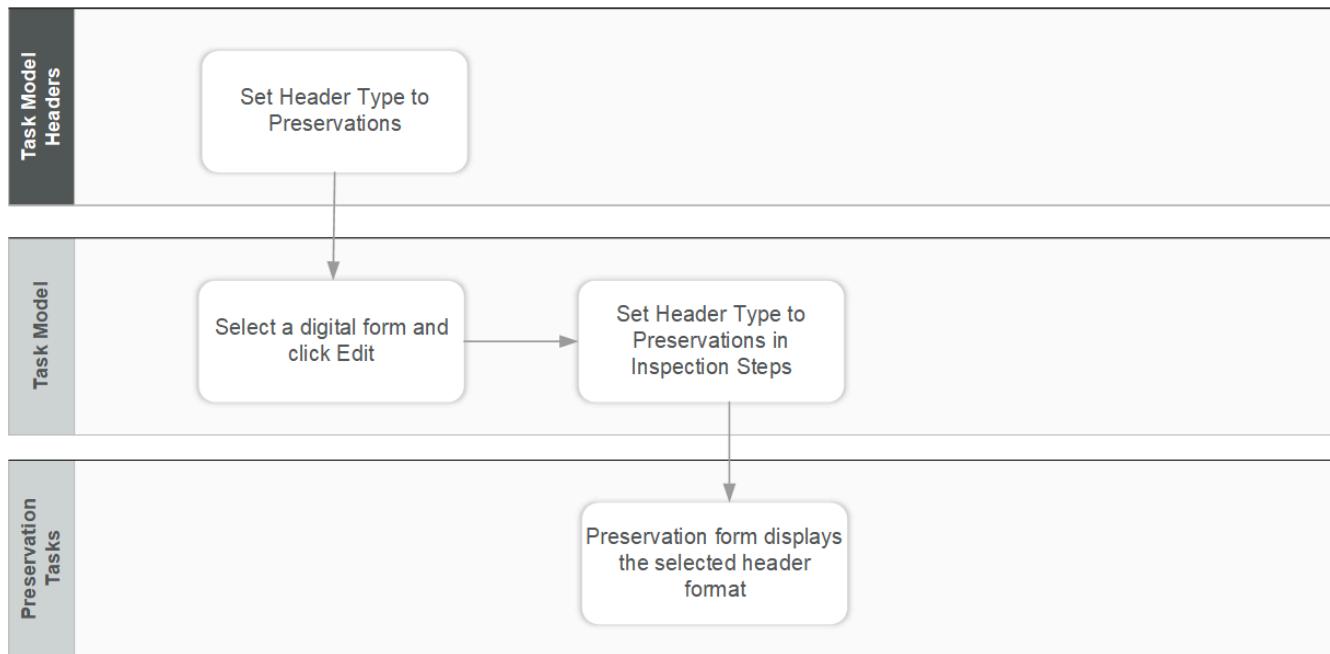
Upon saving the New Scheduled instance is now adjusted as desired. In addition, you will notice that the Task ID is not yet created until you start the PR task. The next message in its place is also informing the user (As configured in the TM) that a user cannot execute the PR task that is scheduled for next week as it does not meet the “allowed time frame” requirement, which a Task Model can be configured to allow users to perform the task “x” days ahead of planned scheduled date. It is intended to ensure field personnel do not deviate far from the planned preservation strategies.

NOTE If a user selects multiple assets and wants to adjust the start dates, when it loads the Planned Preservation Tasks tab, instead of show the distinct PR Task ID, it will show the

common Task Model ID (e.g. TM-0001 vs. PR-0003). A user can still proceed to change the scheduled start date.

Assigning Preservations as Task Model Header:

You can add customized header for preservation tasks. To do so, some settings must be made in Tasks Model Header. Please see Adding Task Model Headers (see [Add Task Model Headers](#)) for more information.



Assigning Recursive Tasks using Preservation, by Assets Module:

When it comes to assigning preservation tasks, majority of users will assign PR tasks using this module, as they would typically query for a collection of assets that are about to arrive onsite, and by discipline, then asset type. They would then select the desired equipment (maybe 5 of the 20 pumps listed), and press Assignment.

To Assign PR task:

1. Use Search Panel to filter for assets requiring preservation tasks, press Search
2. Press Assignment to load the edit form
3. Select Preservation Planned Tasks tab
4. Press Edit List to load list of Task Models

5. Filter for the PR task(s), press Right Arrow ">" to assign, press Save

6. Press Save in the primary Preservation Edit Form

7. Press Save in the primary Preservation Edit Form to instantiate the first Scheduled PR task

The screenshot shows the Asset Preservation Plans interface. On the left, there is a search panel with various filters. Two specific filters are highlighted with red circles: 'Asset tag' set to 'ELEC - Electrical' and 'Description' set to 'CT - HV - Current Transformer'. Below these filters, the 'Search' button is also circled in red. In the center, a list of 'Asset Preservation Plans (17)' is shown, with one item ('1000-CT-006') highlighted in yellow. To the right, a detailed view of 'Step 4 Preservation Planned Tasks' is displayed. This view includes a table with columns: Task Name, Task Type, Task Description, Recurrence, and Start Date. A red arrow points from the 'Assignment' button in the search bar of the main interface to the 'Assignment' button in the top bar of the detailed view. A callout box contains the text: 'FILTER FOR ASSETS THAT REQUIRE PRESERVATION, PRESS "ASSIGNMENT" SO USER CAN ASSIGNED REQUIRED PR TASKS.' The bottom right of the detailed view shows 'Save' and 'Exit' buttons.

This screenshot shows the 'Step 4 Preservation Planned Tasks' detail view. At the top, it displays the tabs: Step 1 Main Data, Step 2 Receiving, Step 3 Vendor Requirements, Step 4 Preservation Planned Tasks (which is active and bolded), Step 5 Asset Documents, and Step 6 Asset Comments. Below the tabs, a table lists a single record: TM-00125, Preservation, Routine Preservation - Transformer, Daily. On the left side of the table, there are buttons for Edit List, Edit, New, and Delete. At the bottom right, there are 'Save' and 'Exit' buttons.

Print Preservation Tasks for Execution

Execution of Preservation Tasks can be performed using either the "Preservation, by Assets" or "Preservation, by Tasks" module, the only difference is the "task" module is a list of PR

tasks by scheduled date, where the "asset" centric module is showing the assets first, then secondary panel with all the preservation, no-compliance details. The "Preservation, by Assets" module is the most used.

Execution of Preservation Tasks can be compiled into paper-based sheets or checked out to a mobile user. Most of all global users perform digital/mobile approach as PR tasks are commonly very simple checklists, with ability to take pictures of the asset at the time of inspection.

The screenshot displays the 'Asset Preservation Plans (6)' interface. At the top, there are two tabs: 'Asset Preservation Plans (6)' and 'Reports'. Below the tabs is a table with columns: Asset tag, Description, Data..., Discipli..., Type, Service AAA, Status, Planned Tas..., Active N..., Do..., and Location. The table lists six assets, each with a unique ID, description, discipline (ELEC), type (CT), service (Test, HV TRANSFORMER, HV SUPPLY), status (Construction), and location (10-10-1-1 - Loca...).

Below the table is another section titled 'Next Scheduled Tasks (1)'. It shows a single task: Task ID PR-0145, Task Description Routine Preservation - Transformer, Recurrence Daily, Duration 3, Scheduled Date 20-May-2020, and Asset Tag 1000-CT-002.

At the bottom of the interface is a toolbar with various buttons: Reset, Search, New, Assignment, Edit Asset, Asset, Print for Execution (highlighted with a red box and arrow), Reset Started Tasks, End Scheduling, Remove History, Check In/Out, and a gear icon.

A red box highlights the 'Print for Execution' button, and a red arrow points from it to a callout box containing the text: 'ACTION BUTTONS DESIGNED FOR SUPPORTING EXECUTION, OR MANAGEMENT OF SCHEDULING.'

The Action Buttons are designed to:

Print for Execution: A user can select the time period for what PR check sheets they want to print (e.g. past due, today, this week etc.), and format of PDF file. We suggest selecting the "Smart Form" option as clients typically develop the digital form, however it still allows to be printed out with QR code to provide flexibility to projects. They can do either mobile or paper.

Intergraph Smart® Completions

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Start tasks and print the preservations (optionally use filter below)

Time Period: Select Options

OR Re-print started, but not completed preservations.

Mail merge, Task datasheet or Smart Form PDF selection.

Mail Merge

Form Type: Smart Form PDF with QR Code

Task Datasheet with QR Code

[Close](#)

[Start Tasks & Print](#)

[Print started Tasks](#)

Reset Started Tasks: This is designed to allow an administrator to query for a set of assets that have Started Task that have never been completed. Tasks that are started will prevent an administrator applying a "bulk update" of the PR task model to all tasks. Any task started will not be updated through the "push update" method performed from the task model module.

End Scheduling: This feature is designed to allow an administrator to find those assets with scheduled PR tasks and enable them to "batch" a "planned end date" for selected next instance of PR tasks. Select the assets in the primary list view, in the secondary panel select the PR tasks no longer required then press "End Scheduling" button and it will stop remove the current scheduled (non-started) PR task. This is a very useful feature to simplify turning off PR tasks and ensure that they are no longer included in the forecast reporting.

Remove History: This feature is designed to end scheduling, where an administrator can the assets in the primary list view, then select "Task History" tab, select the completed PR task instances, then press "Remove History" button. This will delete any historical PR tasks. This is useful for clean-up of cancelled PR tasks, or PR tasks that were used for testing and ensures

these items are not included as part of Turnover Packages or are included in historical reports.

Check In/Out: This feature is designed for "Mobile Execution" and enables a preservation administrator to select the desired PR tasks (by selecting asset rows in primary list, then scheduled PR tasks in secondary list) and "batch checkout" the PR tasks to a particular user. The end user does not need to come into the cloud to fetch the PR tasks, they just need to log into the mobile device and sync down their assigned work. The "Check-in" function is used in those conditions where a field technician may have task(s) checked out to them, but they have left the project, they can check in the task and release it from the device it was previously checked out to.

Allowing export of QR codes as embedded Data

You can have the QR codes embedded to the documents for easy work progress. To configure this facility, follow these steps:

1. Navigate to **Export Wizard Manager** and click **Edit** to add the new field **QR Code String** from the available list.

The screenshot shows the 'Edit Export Wizard (Planned Tasks (custom)) - Google Chrome' window. On the left, there's a sidebar with 'HEXAGON PPM' logo, 'Configuration', 'Engineering', and 'Search' tabs. Below these are 'Advanced Searches' and buttons for 'Save', 'Reset', and 'Search'. The main area is titled 'Assignment Tool' and contains two tabs: 'Fields' and 'Advanced'. Under 'Fields', a table lists various task-related fields like 'Task Material (Name)', 'Task Tool (Name)', etc., with their corresponding 'Database Column'. A vertical scroll bar is visible on the right side of the table. On the far right, a large list of 'Column Name' options is displayed, such as 'Task ID', 'Description', 'Task Model (Name)', etc. At the bottom of the table, there are buttons for 'Reset', 'Search', and 'Done'. A red box highlights the 'Search' button and the 'QR Code String' entry in the table. Another red box highlights the 'QR Code String' entry in the list of column names.

2. All these QR code IDs are mentioned and passed to the CCMS through a script file (XLS). So, when a QR code is added to a particular task form, it can be processed with the help of the embedded QR ID.

B	C	D	E	F
1 Category (Summary)	Task ID	Task Model (Name)	Link PL Status	QR Code String
2 PC - Precommissioning	T-00001-0099	TM-00001		{r=2,v:vTasks_Tests",TaskToTestFormID:46908}
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

NOTE You can now export the work breakdown project name associated with the Preservation task while exporting Preservation Tasks and Preservation Task Logs.

Updating/ Closing a paper based preservation Task

Any paper based preservation task can be completed/closed based on the pre-configured sign-off only after all the documents related to the same task are uploaded. You can close a paper based preservation task by clicking the Upload button in the secondary panel and uploading the checklist document/forms in PDF format.

User can also complete/close paper preservation tasks using the **Upload Utility Tool** to upload the required QR coded document/forms.

An **Upload attachment** button is available in the action panel at the bottom to upload attachment/reference documents to preservation tasks.

Setting up Next Scheduled Task in Preservations

You can also display the next scheduled task and date tagged to a preservation task.

1. In **Export Wizard manager**, select **Preservation task** from the available export type list and click **Edit**.
2. Select '**Next Task**' and '**Next Schedule Date**' from the **New Column** list and add it to the right pane.

The next scheduled preservation tasks in the export log matches the one displayed as per recurring data.

The screenshot shows two main windows. The top window is titled 'SK Data' and displays a table with columns: Checked..., Asset Tag, Datasheet, Task ID, Datasheet, Discipl..., Task Category, Task Type, and Task Description. A row is selected with the asset tag '2200-UT-97208-E', task ID 'PR-0045', discipline 'INST', category 'PR - Preservation', type 'Preservation', and description 'Preservation - Instrument'. Below this is an 'Advanced' search section with 'Save', 'Reset', 'Search', and 'OR' buttons. The bottom window is titled 'Next Scheduled Tasks (1)' and shows a table with columns: Due, Checked Out, Task ID, Datasheet, Task Description, Recurrence, Durat..., Scheduled, and Comp. One row is listed with the task ID 'PR-0045-0002', description 'Preservation - Instrument', recurrence 'Every 3 weeks on Wednesday', duration '3', and scheduled date '15-Apr-2020'. A red arrow points from the 'Scheduled' column in the bottom table to the 'Scheduled' field in the 'Assignment Tool' window. Another red arrow points from the 'PR-0045-0003' task ID in the bottom table to the 'PR-0045-0003' entry in the 'Assignment Tool' window. A callout box with red text states: 'New field for "next scheduled Task-Date" along with upcoming ID&date to be available for export'.

NOTE Another way to set the next scheduled task is to navigate to **Preservation Tasks** and Click **Advanced Search**. You can provide the scheduled date for Next task.

A search interface titled 'Next Task - Scheduled Date' with two dropdown fields labeled '(from)' and '(to)'.

Preservations, by Assets

The Asset Preservation Plan Manager is designed to assign, schedule and track "preservation plans". A preservation plan is a collection of preservation tasks to be performed on a piece of equipment either during its shipment and/or storage on site prior to its installation. The intent is to ensure equipment warranties are being met and are not voided. The preservation module provides traceability and provides reporting on who and when each preservation task was performed.

A preservation plan is comprised of a collection of preservation tasks. Each task has a collection of preservation steps/actions, start/end dates, frequency and assignment to specific company and work group. When a user executes a preservation task, they are executing an "instance" of the preservation task. During the execution of the task, the user will identify if there are any items that are not compliant with the preservation task requirements. In this case, non-compliance is created and immediately routed to appointed personnel so that they can take action.

A preservation task is best created as a task model for a particular asset type as recommended by the equipment vendor. You can create a preservation task model identifying the steps, tools, materials and frequency of the task. You would assign the task model(s) to equipment. It is common that the equipment vendor will require two (2) different preservation tasks, one designed to preserve the equipment during shipment and the other to maintain its integrity during storage. In this case, the two tasks would be staggered. The shipment preservation task would have a start and end date, whereas the storage start date would be the end date of the shipping preservation task.

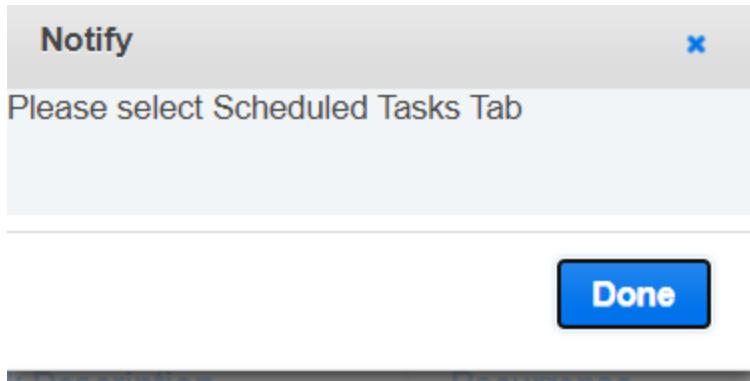
Using Search by Status for Preservation Tasks

The search tab on the left part of the screen allows you to search or filter tasks by the task **Status**. This search results in the list of preservation tasks that meet the search criteria or have at least one of the tasks under task history (secondary panel) that meets the search criteria. You can export these tasks with their status (can be seen in the edit list) through the **Export Manager**.

NOTE You can also filter the subtasks in secondary panel by entering the required task status.

Using the Notify Tab

This tab is displayed in the secondary action panel. This tab is active only when you select scheduled tasks (in secondary panel) for a corresponding planned preservation task from the primary panel. **Notify** tab is used to inform users about any changes or modifications made to the tasks. To send this information, click the tab and select an email address from the email addresses list. Click **Create Email** to send an email. You can use this option only when the **Next Scheduled Tasks** tab is selected. If any other tab in the secondary panel is selected and you try to access the **Notify** option, this message is displayed.



continuumedgenotification.us.ppm@hexagon.com

Wed 9/16/2020 10:43 PM

To: [REDACTED] Sumanth, CONNECT! Sumanth.Rakesh



This email is not from Hexagon's Office 365 instance. Please be careful while clicking links, opening attachments, or replying to this email.

Task selected

Task T-01330-0001 (I09-A - CV/SDV/BDV INSTALLATION & CALIBRATION) : [open](#)

[Reply](#) | [Reply all](#) | [Forward](#)

NOTE This feature is available only for **Planned Preservation Task Manager** and **Asset Preservation Plans Manager**.

Using Imports Button

An Import button is available in the bottom Action panel. It can be used to import **Planned Preservation Tasks** using a file. To import a file click the Import button and click the upload button to upload the import file. Click **Next** to proceed to field mapping and importing the Preservation Tasks.

To setup recurrences of preservation tasks, the following field columns must be added to the corresponding import sheet.

Column - Field Name

Recurrence

Recurrence Type
Recurrence - Frequency
Recurrence - Frequency EU
Recurrence - Weekday Flag
Recurrence - Day
Recurrence - Date
Recurrence - Week
Recurrence - Month
Recurrence - Type Option
Recurrence - Occurrences
Recurrence - Days Allowed Ahead of Schedule

Non-Compliances

Non-Compliances are to Preservations Tasks as Punchlists are to CCMS Tasks. Like punchlists, non-compliances can be created during the course of completing a preservation task. For example, the task model for the preservation can be configured to automatically trigger the creation of a non-compliance when the answer to a question equals "Reject." You can also create a non-compliance independently of a task.

Navigation: Completions > Non-Compliances

Description of fields:

- Description: If the non-compliance was created from a task, this line will be pre-populated. This field is required.
- Type: These can be configured in the Non-Compliance Type manager.
- Discipline
- Work Category
- Workgroup
- Responsible Company
- Responsible Person
- Priority: This can be configured in the Priority Types manager.
- Action Required
- Systemization/Location information
- Action Taken
- Scheduling Data: Start Date and Due Date

On additional tabs, you can link Documents, add images or make use of our custom fields.

NOTES

- In previous versions of this software, you could only add two images (As-Found and As-Left), and these were located on the General tab of the non-compliance. Smart Completions now allows you to add as many images as necessary, and it has been moved to a separate tab.
- You can now update non-compliance export and import, as it now includes dynamic workflows. For more information on how to customize workflows, see [Update Workflows for Smart forms](#).
- Select on the field to expose an upload option for the Images column.

The screenshot shows a software interface for managing non-compliance. At the top, there's a navigation bar with tabs: Step 1 General, Step 2 Documents, Step 3 Images (which is highlighted with a red box), Step 4 Custom, and Step 5 Comments. To the right of these tabs is a 'Workflow' section with status indicators: Originated (red), Submit (yellow), Accept (green), Completed (blue), and Closed (black). Below the tabs is a section titled 'Images' with a sub-section 'Records (0)'. A table has three columns: '#', 'Image Caption', and 'Type'. The 'Type' column contains a red box around the word 'Images'. To the right of the table is a button labeled 'Click here to upload an image from the non-compliance manager in the web application.' At the bottom of the screen are several buttons: 'Submit' (blue), 'Save' (grey), 'Exit' (red), and 'Email Non Compliance' (blue).

- Users cannot edit any fields or the images attached to a Non-compliance with statuses which have selected **Yes** for the **Locked?** option; however, a user with manage rights can make the changes to the non-compliance.

Tasks and Inspections

The Planned Tasks manager houses all CCMS tasks and provides a variety of filters, such as tasks of a particular discipline and type. The tasks are automatically allocated to the appropriate handover package based on the WBS and PBS/LBS assignments. In this manager, you can check in/out tasks for completion in the field, execute tasks directly, upload paper-based forms, and approve and close tasks. Tasks will also display the executed pdfs that will be included in the handover/turnover packages.

NOTE Flange Joint tasks created in the Flange Joint Tasks Manager will now be accessible in the Planned Tasks Manager as well. So, you will see a significant increase in planned tasks in Planned Tasks Manager. The Flange Joint tasks ID remains unchanged in the Planned Tasks Manager.

In the secondary ribbon, you can easily see any punchlists created from the task along with test forms, inspection points (if digitally executed), task details, Documents and predecessors. Administrators can batch edit tasks.

- **Planned tasks for flange joints:** Include the flange joint tasks in work packages and certifications just as planned tasks.

- **Direct punchlist creation:** Rejected flange joint tasks now automatically create punchlist items.

For example, you can create tasks and add the schedule or start date later. Project Leads can batch checkout tasks to different users. In many areas of Smart Completions, the hyperlink next to a record will open the editing form. In Planned Tasks, the hyperlink will open task execution form. To open the editing form, highlight the row and click **Edit** from the bottom ribbon.

NOTE The **Documents** tab displays the documents associated with the planned task and the documents associated to the assets, loops, and packs that are associated with the task. If a document is related to the task and the asset, loops, or packs; it is included only once instead of being listed twice.

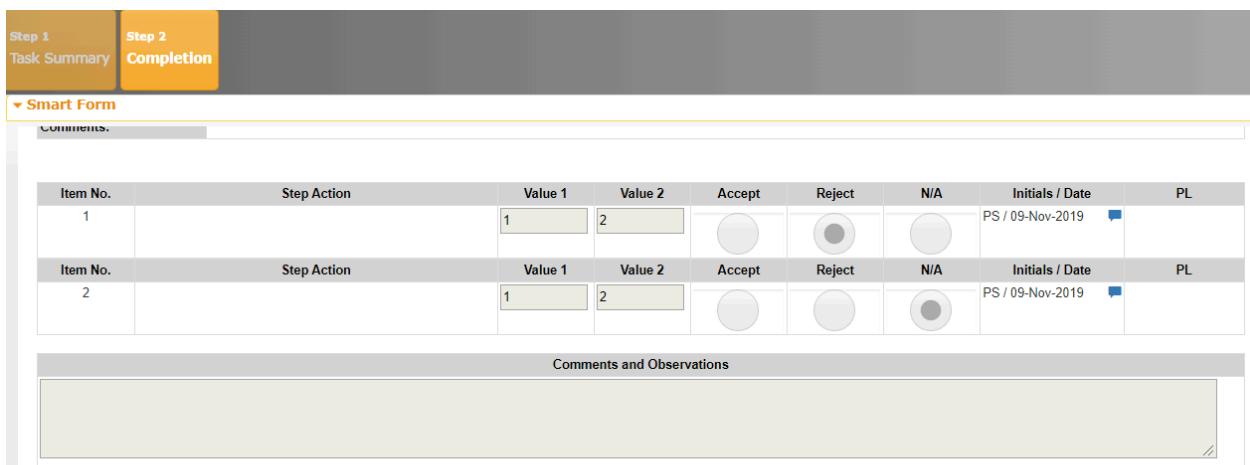
Each Task will have a status that would be one of the following

- Past Due** status means that the task has not been started but and the current date is past the scheduled start date,
- Completed** means the task is completed with no pending punchlists,
- Checked Out** means the task has been checked out by a Smart Completions user.
- Partial** means the task has been completed, but has a non-critical pending punchlist that needs completion,

- e. **Rejected** means that the task has been completed, but has a pending "Critical" punchlist that needs completion, and
- f. **Closed** means the task has been completed and reviewed by a supervisor.

NOTES

- As an administrator, you can reset a planned task. Remember that resetting a task shall clear all progress on a task.
- You can not edit the **Comments and Observations** section with in the smart form if the status of the planned task is **Closed**. In another scenario, where a task is **rejected** yet accepted at all the sign off levels, the **Comments and Observations** section is non-editable.



The screenshot shows a 'Smart Form' interface for task management. At the top, there are two tabs: 'Step 1 Task Summary' and 'Step 2 Completion'. The 'Step 2 Completion' tab is selected. Below the tabs, a section titled 'Comments' is visible. The main area contains a table for sign-offs:

Item No.	Step Action	Value 1	Value 2	Accept	Reject	N/A	Initials / Date	PL
1		1	2	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	PS / 09-Nov-2019 <input checked="" type="checkbox"/>	
2		1	2	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	PS / 09-Nov-2019 <input checked="" type="checkbox"/>	

Below the table is a large text area labeled 'Comments and Observations'.

At the bottom, there is a summary section titled 'Completed' with fields for 'Contractor Representative (Supervisor/Superintendent)' and 'Contractor Representative (Engineer/Quality Assurance)'. It includes fields for Name, Title, Company, and Date. A red 'Reject' button is located at the bottom right of this section.

- You require only **Complete** rights to be assigned to you to complete the planned tasks.
- The planned monthly task counts by status (Open, Completed, Closed) are now available for you to review in the table located in the report. This table provides an accurate picture of the planned distribution of tasks across each month. The graph is discontinued due to some inconsistencies.

Task Predecessors

If the task has a pending predecessor, it will be indicated in the status. A Predecessor task must be executed before the task in question. For example, an administrator may prefer to create all tasks at the beginning of a project and assign A-Sheets as predecessors to B-sheets. If a user attempts to check out a task with a pending predecessor, the web application will display a pop-up warning that the predecessors must be checked out in order to release the task. In the mobile applications, these tasks cannot be checked out.

NOTES

- If a user is assigned a role with the Manage right, they can check out tasks in the iOS application even if there are pending predecessors.
- Uploading and overwriting of a Completed form for a Closed task is allowed only if you have Manage Rights to **vTasks_TestsPlanned**.
- You need rights to On-Demand managers to create an on-demand **Planned task** or **Flange task**. To create planned tasks and on-demand tasks you should have create rights to **vTasks_TestsPlanned** and **vTasks_TestsOnDemand**. If you have the rights to create an on-demand task, you will also need edit rights for on-demand tasks and view rights to Task Models. In addition to this, you can add edit rights for Task Models to load the description for an on-demand task. An Admin user can restrict the users from editing other tasks by not giving edit rights to **vTasks_TestsPlanned**.
- Previously, users with **Close** rights could also reopen tasks and certificates. Now, reopening requires the **Revoke** rights set to planned tasks, preservation tasks, and certificates, which is assigned to administrators or supervisors. Users with the existing **Close** rights can still mark tasks and certificates as closed, but they won't be able to reopen them for further edits. You'll need the Revoke rights for the following managers:

Tag type	Revoke rights are required for the following	
	Digital forms	Paper based forms
Planned tasks	vTasks_TestsCompletion	vTasks_SmartForms

Preservations	vAssetTasksScheduledPreservation	vTasks_SmartForms
Certificates	vCertificates	vCertificatesSmartForm

Task Rejection Comments

Task Workflow states – and all Smart Form workflows – are hard-coded. However, you can now configure when Rejection comments are added and emailed to the necessary users. A task that is rejected from the Submitted, Completed and Closed states can be configured so that the person rejecting receives a popup window asking for comments. Administrators can also determine whether an email is sent, and what rules govern these emails.

If you don't want to make any changes, the current workflows will be applied.

NOTE: This function is available in the web application and the latest Windows application on the Microsoft store. It is added to the iOS application in version 5.03. Additionally, the configuration changes made in Task States are site-wide changes. You cannot currently implement different Task Rejection configurations in different Instances.

If you'd like to add Rejection Comments to an additional workflow state, complete the following steps:

1. Click the Gear icon and search for Task States Manager.
2. Click Search to load the options.
3. Click the hyperlink for the state you'd like to configure (Completed shown below).
4. Click Yes next to Rejection Prompt.

Edit Task State (New Record) - Google Chrome

test.ceccms.com/ORMS/Tools/EditForm.aspx?ID=4&v=vTaskStates

General

Status: Completed Description: Task is Completed

Show on Search? Yes Color: DarkBlue

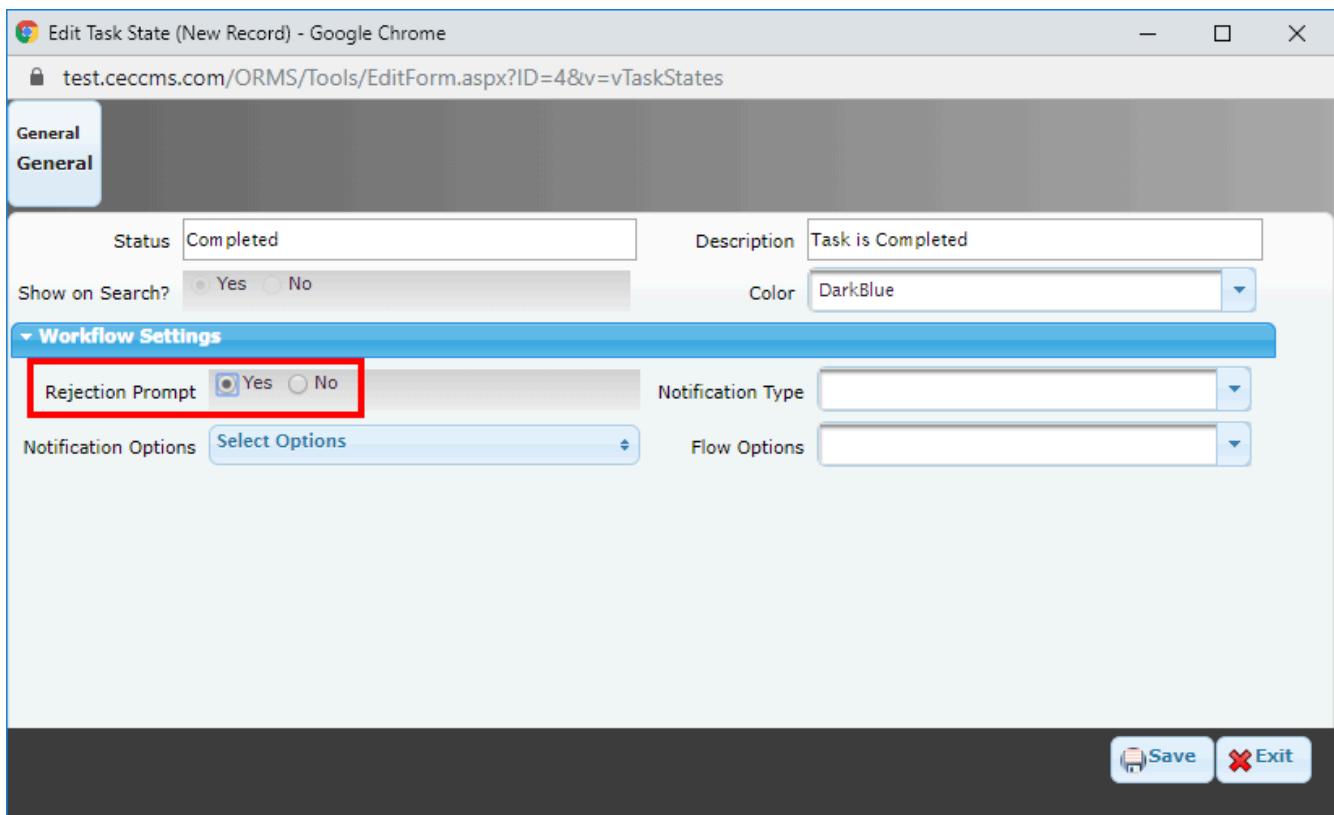
Workflow Settings

Rejection Prompt: Yes No

Notification Type:

Notification Options: Select Options Flow Options:

Save Exit



You can also choose to send Notifications and emails to users. As of version 5.3, these are limited to the Project.

If you'd like to add Email notifications to the Rejection, complete the following steps:

1. Under Notification Type, choose among the following:
 - a. Email (no selections): This will open an address book for the end user. No names or email addresses are pre-selected, and the user can choose who should receive the email.
 - b. Email (people selected): This will open an address book for the end user. Names/email addresses for users will be preselected. You can determine who these are from the Notification Dropdown discussed below. The user can choose to add or remove any pre-selected names.
 - c. Auto Send Email: An email will be sent according to the Notification Options below without opening the address book.
 - d. Notification Center (no sels): No email will be sent, but the address book that opens will govern who receives notice in the Notifications Center. No one is

selected.

- e. Notification Center (sels): No email will be sent, but the address book will have pre-selected users to receive notice in the Notification Center.
 - f. Notification Center (Auto): No email will be sent, but designated users outlined in Notification Option will be notified in Notifications.
2. Under Notification Option, you can choose which types of users are pre-selected to receive emails or notifications. You may choose as many as necessary:
- a. CC Originator
 - b. CC Sender
 - c. CC Submitter
 - d. On Company: all users in the company in question will receive a notification.
 - e. On Location Areas (Rights Boundaries).
 - f. On rights (following next state)
 - g. On rights (next state)
 - h. On Systems (Rights Boundaries)
 - i. On Workgroup.
3. Under Flow Options, you can determine whether to capture comments only on Rejection (demote), on Approval/Completion (Promote) or both.

NOTE In the mobile applications, emails will auto-send upon syncing the task to the database.

Upload files to Planned Tasks

1. In the **Planned Tasks** Manager, select a task of any state.
2. In the **Edit Task Completion** window, select **Files** tab.
3. In the **Files** tab, fill the information of your upload in the **Caption** section.

#	Caption	Offline Mobile?	Files
1	Task file #1	<input type="checkbox"/>	
2	Task file #2	<input checked="" type="checkbox"/>	
3	Task file #3	<input type="checkbox"/>	
4	Task file #4	<input type="checkbox"/>	

Tasks Completion saved successfully

Save Exit Reset Task

4. Select **Offline Mobile**.

TIP This enables the file attachment to download using the mobile application.

5. Select **Upload** icon, and browse and select the required file to attach using the **Choose File** option.

TIP A warning message is displayed, If the File Size is more than 3MB you cannot download the file using mobile application.

6. Click **OK**. The files are uploaded successfully.

To verify the uploaded files, select the **Files** tab from the secondary panel, this will show all the attachments of the selected task. To search the planned tasks which have attachments, select **Task Attachments > Yes** from the side search panel, and click **Search**. This returns the results with all tasks with attachments. To view the attached files for **Tests Audit By Tasks Manager**, you can use the before mentioned steps.

Using the **Files** tab, you can now upload any number of attachments.

When a task is originated, submitted, or completed, you can upload files to the tasks only if you have the **Edit** rights to **vTasks_TestCompletion**. In addition, if a task is moved to closed state, you will need the **Manage** rights to **vTasks_TestCompletion** and **vTasks_TestsPlanned**. Without the appropriate rights, you cannot upload any files to the tasks.

Master Planned, Task List

Smart Completions is Task-based software. The work is planned, created and executed according to Tasks. A task includes the check sheet, the asset(s) to which it is assigned, and the scheduling and systemization. If you are using a paper-based solution, the Task is the check sheet that a specific worker will use to complete work on a specific asset/pack/loop.

The Planned Task manager houses all tasks that have been created in the project. You can create paper-based or digitally executed tasks. The latter will be executed from a tablet device, using either iOS or Windows applications (which are delivered separately). Every task is created from a Task Model.

NOTE A task ID can only be assigned to one asset/loop/pack tag once and cannot be assigned to other tags. It is a 1:1 relationship.

In the Planned Tasks Manager you can search, check in/out, execute and upload tasks. These actions are completed using the lower control ribbon.

NOTES

- You cannot check out a completed record.
- If you have the check out and edit rights on a record, you can edit the record checked out by some other user and save the changes.
- In the **Planned Task Manager**, when you search for tasks using **Work Package** search criteria, the results only display tasks that are included as work steps within the select work packages.

Each TASK will have a status that would be one of the following:

- a. **Past Due** status means that the task has not been started but and the current date is past the scheduled start date,
- b. **Completed** means the task is completed with no pending punchlists,

- c. **Checked Out** means the task has been checked out by a Smart Completions user.
- d. **Partial** means the task has been completed, but has a non-critical pending punchlist that needs completion,
- e. **Rejected** means that the task has been completed, but has a pending **Critical** punchlist that needs completion, and
- f. **Closed** means the task has been completed and reviewed by a supervisor.

Planned tasks can be executed through its phases by different roles with different manage rights.

- When a paper based task needs to be rejected, you can opt the reject option and add comments for rejection in the pop up window. This action would be logged and displayed in the change log section and an acknowledgment for the same is triggered. After a task is rejected, the task will be in rejected state and you can either **Reset** it or **Complete** it.
- Only if you have manage rights, you can undo submission, completion or closing of your own tasks. Otherwise you would have to reject or revoke tasks.
- As Smart Completions administrators, you can now separate **Reset** and **Close** permission for field users, restricting them to close tasks only.

NOTE You can not edit the **Comments and Observations** section with in the smart form if the status of the planned task is **Closed**. In another scenario, where a task is **rejected** yet accepted at all the sign off levels, the **Comments and Observations** section is non-editable.

Step 1 Task Summary Step 2 Completion

Smart Form

Comments:

Item No.	Step Action	Value 1	Value 2	Accept	Reject	N/A	Initials / Date	PL
1		1	2	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	PS / 09-Nov-2019	<input checked="" type="checkbox"/>
Item No.	Step Action	Value 1	Value 2	Accept	Reject	N/A	Initials / Date	PL
2		1	2	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	PS / 09-Nov-2019	<input checked="" type="checkbox"/>

Comments and Observations

Completed

I hereby confirm the work has been completed in accordance with contract specified drawings, specifications & standards.

Contractor Representative (Supervisor/Superintendent)		Contractor Representative (Engineer/Quality Assurance)	
Name:	Submitter, PL	Name:	Lannoye, Brian
Title:	IS&T - Developer	Title:	Projects - Administrator
Company:	Industrial Business Solutions (IBS)	Company:	Industrial Business Solutions (IBS)
Date:	09-Nov-2019 03:03	Date:	14-Nov-2019 04:56
			Reject

Create Planned Tasks

Task are set of inspection steps or inspection record created and maintained for all planned activities. Task based completion ensures safe, qualitative and timely completion of activities in the project.

The Smart completions provides the flexibility to create task as per the clients requirement. Task can be created based on how we plan to perform the inspection of activity. It can be for each asset or group of assets, based on systemization, based on physical location or On-Demand task.

Tasks can be created using Task model manager or Task manager.

Create Task using Task Model Manager

1. Select **Create task** on bottom ribbon.
2. In the **Kind of task** pop up, Select **CCMS task**.
3. Select the task creation method and select **Finish**.
4. Select **Assignment Tool** from the bottom bar.

5. A pop up window will open for task assignment:

a. For Asset type, Pack, Loop:

i. Select **Search**.

• **TIP** This will list-out Asset/ Pack and Loop types based on task creation method.

ii. Select the option and select **Next**.

iii. Select the assets/ packs or loops for task creation.

iv. Select **Finish**.

b. For Systems and Location type:

i. Select the **Task Model** from the list.

ii. Select systems/ locations to create task.

iii. Select **Finish**.

When you unassign tasks associated with **Assets, Loops, Vendor Packs, Pipe Packs, and Cable Packs**, the tasks are unassigned by the Task Model. The respective tasks are moved to the **Purge/Restore** section of the **Tasks** manager. To recover an unassigned task, use the **Purge/Restore** button within the task manager. For instance, if you unassign a task from the **vAssets_TestForms** manager, you'll find it in the **vTasks_TestsPlanned** manager's **Purge/Restore** section. This window allows you to either restore the task or permanently remove it from the system.

When you use the assignment tool to unassign a task, all tasks associated with that specific task model will also be unassigned. This applies even if you only intended to unassign the selected task within the assignment tool. This is a result of assignment tool rules work on a task model level and not individual tasks.

Create Task using Task Manager

1. Select **New** on bottom ribbon.

2. Select the task creation method and select **Finish**.

3. A pop up window will open for task assignment:

a. For Asset type, Pack, Loop:

i. Select **Search**.

💡 **TIP** This will list-out Asset/ Pack and Loop types based on task creation method.

ii. Select the option and select **Next**.

iii. Select the assets/ packs or loops for task creation.

iv. Select **Finish**.

b. For Systems and Location type:

i. Select the **Task Model** from the list.

ii. Select systems/locations to create task.

iii. Select **Finish**.

c. To Create an **On-Demand** task:

📝 **NOTE** The activities which cannot be planned in advance or required to be completed on go can be better managed by On-Demand Task (For example, Welding logs, Flange torquing).

The inspection steps are defined in On-Demand task model. During field execution, you can create On-Demand task and execute the task by filling out the location and process details.

i. Select **Create an On-Demand task**.

ii. A Task Model list will appear in the secondary panel, select the required On-Demand task model from the list.

iii. Select **Finish**.

iv. Select the **Asset Tag** for the task and fill the required details to execute the task.

- v. Select **Save**.

Create Preservation (Recursive) Tasks

Setting recurrence in task model makes the task model as preservation task model. Once the task model is created for preservation task, task can be created from Task Model Manager, Planned Preservation Task Manager or Asset Preservation Plan Manager.

Create Task using Task Model Manager

1. Select the task model for which the task to be created.
2. Select **Create task** on bottom ribbon.
3. In the **Kind of task** pop up window, select **Preservation task**.
4. Select **Finish**.

Create task using Planned Preservation Task Manager

1. Select **New** on bottom ribbon.
2. A pop up window will open for **Task assignment by assets**, select **Search** to list-out all asset types.
3. Select the asset type and select **Next**.
4. Select the asset tag for task creation.
5. Select **Finish**.

Assign Asset Preservation Plans Manager

1. Select the task model for which the task to be created.
2. Select **Create task** on bottom ribbon.
3. A pop up window will open for **Asset Preservation Plan**, select **Preservation Planned Task**.
4. Select **Search** to list-out all asset types.
5. Select the appropriate task model.

6. Select **Save**.

NOTE Before creating the preservation task, ensure recurrence is defined in preservation task model.

Updating Task Instances from Task Model

CCMS task can be updated from task model active window or task model manager.

To update the changes/attributes in task module data, changes needs to be propagated through planned tasks.

Update the task

1. Select **Update Tasks** on bottom ribbon of Task model Manager.
2. Select **CCMS task** as interface tool from the list view.
3. Select the details/headers required to be updated in tasks.
4. Select **Update CCMS Task**.

NOTES

- Tasks can also be updated by selecting **Update tasks** from the bottom ribbon bar of active task model window.
- Task once started cannot be updated.

Rework a task

Rework tab placed on the secondary action panel, allows you to check out a planned task and make changes as requested. You can re-open a task endlessly for any changes that have to be made to the inspection steps. You can identify the latest changed document with the help of their naming convention.

For example: Originally, a planned task is named: T- 02158-0037. For the first rework it will be shown as R1- 02158-0037, for the second iteration, R2- 02158-0037 and so on.

Inspections and Test Forms Completions By Tasks (Planned Tests) (6312)				
Status	Task ID Number	Datasheet	Description	
		<input type="checkbox"/> Y <input type="checkbox"/> N		
			(Show and Hide) - 7	
Created	R2-02158-0002		(Rework) Instrument Data Reco	
			(Show and Hide) - 7	
Created	R2-02158-0037		(Rework) Instrument Data Reco	
			(Show and Hide) - 7	
Created	R3-02158-0037		(Rework) Instrument Data Reco	
			(Show and Hide) - 7	
Created	R4-02158-0037		(Rework) Instrument Data Reco	
			(Show and Hide) - 7	

Control Loops

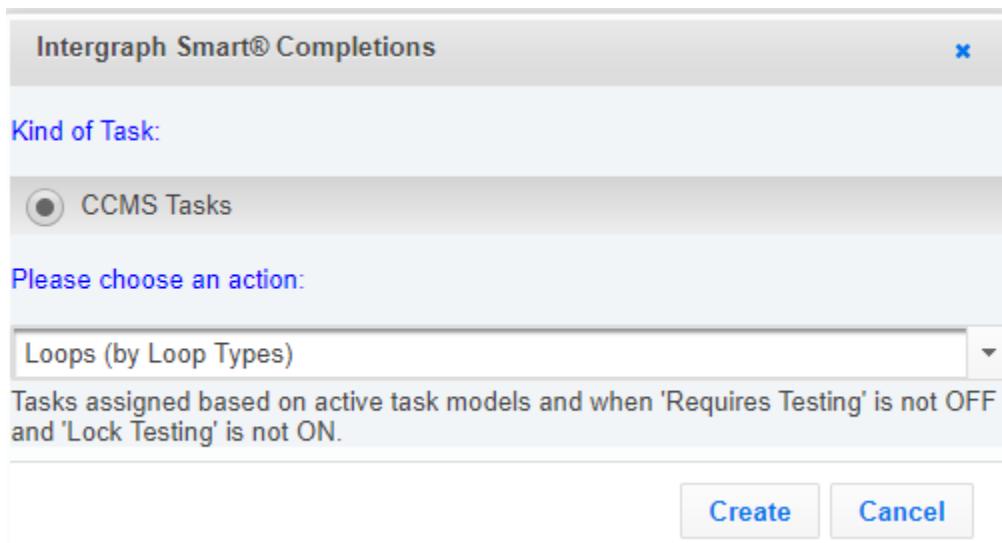
You can create Loop Tasks in the “Tasks, by Loops” manager. This manager will list all the control loops on the project. Just as you create a “Test profile” for an asset type, you would create a Test profile (or collection of task models) for a type of loop. If you want to keep it simple, you create only one type of loop and create a single task model called Loop Functional Test.

Loop tasks are created in the same way as assets.

NOTE A loop has two (2) critical pre-requisites:

1. All loop devices are assigned to the loop.
2. All individual loop instruments have been installed and tested.

From the Task Model manager, highlight the row of the Task Model and click Create Tasks. The pop up defaults to Asset Tasks. In the dropdown, you will choose: Loops (by Loop Types).



Tasks, by Assets

Tasks, by Assets Manager houses all of the tasks included in the Planned Tasks manager, but they are grouped and searched by Asset instead of task ID. It contains features where task creation can be performed using a batch editing. Batch editing can be used to schedule the planned tasks, but we recommend the scheduling function be performed using the Job Cards manager, so see those instructions too.

An Asset Status uses the following conditions:

Each ASSET will have a status that would be one of the following:

- "No Color/White" means No Status for the tasks
- "RED" means that none of the assigned tasks are completed,
- "Orange" means that some of the assigned tasks are completed,
- "Dark Blue" means that all assigned tasks are completed, but none of them are closed,
- "Black" means that all assigned tasks are completed and closed

A Task Status utilizes the following conditions:

Each TASK will have a status that would be one of the following:

- Past Due status means that the task has not been started but and the current date is past the scheduled start date,

- "Completed" means the task is completed with no pending punchlists,
- "Partial" means the task has been completed, but has a non-critical pending punchlist that needs completion,
- "Reject" means that the task has been completed, but has a pending "Critical" punchlist that needs completion, and
- "closed" means the task has been completed and reviewed by a supervisor.

Task Assignment, By Assets

This manager is Asset centric. It is used with the filtering capability to find all assets of a particular discipline and type, then assign a collection of task models to create planned tasks, one planned task per asset, per task model. The tasks are automatically allocated to the appropriate handover package based on the WBS and PBS/LBS assignments.

The creation of planned tasks - the assignment of tasks models to asset tags - can be performed using the batch assignment (editing) process, or it can be created using the vPlannedTasks import.

The MS Excel spreadsheet needs the asset tags in the first column, then a column for each task model that is to be assigned. For Example, if there were three (3) tasks to assign to all centrifugal pumps, the .xls file would have four (4) columns, the first column would be the asset tag the remaining three (3) columns would be the different task models.

When importing systemization or physical location to an asset/pack/loop based tasks, the systemization or physical location is not updated to the asset/pack/loop task. A message is displayed stating "**Tasks with assets/packs/loops will take the tag systemization/location while updating the tag and will ignore any systemization/location columns**" while importing.

Edit Import Wizard - Google Chrome
 qa.ceccms.com/ORMS/Tools/EditForm.aspx?v=vConfiguration&wizardPage=ImportWizard.js&importType=205&importView=ivTasks_TestsPlanned&K...

Step 1 Start	Step 2 Select	Step 3 Pre-Import Analysis	Step 4 Import
--------------	---------------	----------------------------	---------------

Import Log

Start Import: 10:42:21.685 AM
 Inserting field TaskName into View ivTasks_TestsPlanned
 New records will always pull data from the Task model; choose overwrite to insert data from the spreadsheet.

Tasks with assets/packs/loops will take the tag systemization/location while updating the tag and will ignore any systemization/location columns.

Start SQL: 10:42:26.730 AM
 Running SQL: DECLARE @Inserted_records TABLE (ID INT, TaskName nvarchar(100), TaskModelID INT, TagID INT) INSERT INTO [ivTasks_TestsPlanned] ([TaskName], RecordCreatedByID, JntTempID, TaskModelID, CompanyInstanceID, WorkBreakdownUp3ID) OUTPUT INSERTED.ID, INSERTED.TaskName, INSERTED.TaskModelID, INSERTED.AssetID INTO @Inserted_records SELECT (CASE WHEN LEN(t.[Task ID])<5 THEN NULL ELSE t.[Task ID] END),286,t.intImportSeqID,tmView.TaskID,2,264 FROM t SELECT [Task ID],intImportSeqID,[Task Model]) t INNER JOIN ivTaskModels tmView with(nolock) ON t.[Task Model] = tmView.[TaskName] AND tmView.CompanyInstanceID = 2 LEFT OUTER JOIN [ivTasks_TestsPlanned] targetView with(nolock) ON tmView.ID = targetView.TaskModelID AND targetView.CompanyInstanceID = targetView.CompanyInstanceID WHERE (targetView.[TaskName] IS NULL) AND (len(t.[Task ID])>0) AND (len(t.[Task ID])<5) UPDATE t SET idxTaskTypeID=-1, idxToolID = 10, idxTemplateID = inserted.TaskModelID FROM tbTasks t INNER JOIN @Inserted_records inserted ON t.idxTaskID = inserted.ID;
 End SQL: 10:42:27.092 AM
Affected Rows: 0

Start SQL: 10:42:27.218 AM
 Running SQL: DECLARE @Inserted_records TABLE (ID INT, TaskName nvarchar(100), TaskModelID INT, TagID INT) INSERT INTO [ivTasks_TestsPlanned] ([TaskName], RecordCreatedByID , CompanyInstanceID, WorkBreakdownUp3ID,TaskModelID) OUTPUT INSERTED.ID, INSERTED.TaskName, INSERTED.TaskModelID, INSERTED.AssetID INTO @Inserted_records SELECT t.[Task ID],286,2,264,tmView.TaskID FROM (SELECT IntImportSeqID,[Task ID],2 AS CompanyInstanceID,[Task Model] FROM TempImport286ivTasks_TestsPlanned with(nolock) WHERE (LEN([Task ID]) >= 1) GROUP BY IntImportSeqID,[Task ID],[Task Model]) AS t LEFT OUTER JOIN [tblTasks] targetView with(nolock) ON t.[Task ID] = targetView.[strTask] AND targetView.idxCompanyInstanceID=2 INNER JOIN ivTaskModels tmView with(nolock) ON t.[Task Model] = tmView.[TaskName] AND tmView.CompanyInstanceID = 2 WHERE (targetView.[strTask] IS NULL) AND (len(t.[Task ID])>5) UPDATE t SET idxTaskTypeID=-1, idxToolID = 10, idxTemplateID = inserted.TaskModelID FROM tbTasks t INNER JOIN @Inserted_records inserted ON t.idxTaskID = inserted.ID;
 End SQL: 10:42:27.433 AM
Affected Rows: 0

Auto generated tag IDs:
 Updating field TaskDescription in View ivTasks_TestsPlanned
 Start SQL: 10:42:27.901 AM
 Running SQL: UPDATE [ivTasks_TestsPlanned] SET RecordLastModified = '01/27/2023 10:42:27.895 AM', RecordLastModifiedByID = 286,[TaskDescription] = LTRIM(RTRIM(t.[Description])) FROM TempImport286ivTasks_TestsPlanned t INNER JOIN [ivTasks_TestsPlanned] with(nolock) ON [ivTasks_TestsPlanned].[TaskName] = t.[Task ID] AND ivTasks_TestsPlanned.CompanyInstanceID = 2 AND ivTasks_TestsPlanned.WorkBreakdownUp3ID = 264 AND ((LEN([ivTasks_TestsPlanned].[TaskDescription]))=0 or [ivTasks_TestsPlanned].[TaskDescription] is null) AND LEN(t.[Description])>0 OR t.blnIsInsert = 1
 End SQL: 10:42:28.193 AM
Affected Rows: 0

Updating lookup field [ProcessBreakdownUp1ID] in View ivTasks_TestsPlanned
 Start SQL: 10:42:28.204 AM
 Running SQL: UPDATE [ivTasks_TestsPlanned] SET RecordLastModified = '01/27/2023 10:42:28.193 AM', RecordLastModifiedByID = 286,[ProcessBreakdownUp1ID]= [vProcessBreakdown1].ID FROM TempImport286ivTasks_TestsPlanned t INNER JOIN [ivTasks_TestsPlanned] with(nolock) ON [ivTasks_TestsPlanned].[TaskName] = t.[Task ID] AND vProcessBreakdown1.blnIsInsert = 1

Back Next Finish Exit

NOTE You can **batch edit** the planned tasks, with the help of the **Overall Complete** option only if you have the manage rights to the system.

Switchboard: Completions > Tasks, By Assets

Task Assignment, By Loops

The loop manager is designed to house analog and discrete loop testing tasks. A loop is comprised of several instruments that work together to control a process control loop. Analog loops are typically comprised of elements, transmitters, controllers and alarms. Discrete loops are typically comprised of switches that are run in an on-off state. Most Planned Tasks assign a specific checksheet to a specific asset. Loops, by definition, are a collection of devices/assets. Therefore, you must create the loops and assign devices to them before creating the Loop Tasks. The tasks will appear in the Planned Task Manager. They are also accessible from the **Tasks by Loops** manager.

Most Loops will be imported in two separate files. First, the loop Names/IDs and project data will be imported. A second import will assign devices to the existing Loops. You may also manually create Loops.

Device	Type	Discipline	On Field?	Loop Check?	Control Syst...	Calibration?	Asset Description
1000-AE-9037	ABC						batch Edit
1000-AP-9037							updating through API5
1000-XTR-100		ELEC					batch Edit

The secondary panel in the Manager displays any tasks assigned to a given loop, any Forms attached, Devices/Assets, Punchlists, and Documents. You can also view the associated punchlists of the child tags of the loops or packs in the secondary panel.

Loop Tests Tracking (2)		Reports													
Name	Datash...	Description	Category	Process Vari...	# Devi...	# Outstanding Asset...	Location	System	Subsystem	Plann...	Execu...				
Example Loop	<input type="checkbox"/> Y <input type="checkbox"/> N	Example Loop	Discrete	3	2					<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N				
Mechanical Loop	<input type="checkbox"/> Y <input type="checkbox"/> N	Loop for Mechanicals	Analog	A - Analysis (Analyzer/1)	1		1 - Moon			<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N				
<hr/>															
Loop Tasks (0)		Loop Forms	Devices	Device Tasks	Punchlists (2)	Documents	Details	Field Log							
Status	Punchlis...	Description	Datash...	Cat	Priority	Is Exception?	Punchlist Ty...	Action Required	Work Categ...	Asset Pack	Loop	Asset (Name/Tag)	Disciplin...	Mailmer...	Uploaded F...
<input type="radio"/> past due / Originated	PL-00001	Example Punchlist	<input type="checkbox"/> Y <input type="checkbox"/> N		1	A-High	<input type="checkbox"/>	Item Incomplete	Do Punchlist things			Example Loop	CABL	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
<input type="radio"/> next week / Originated	PL-00003	Mechanical Punchlist	<input type="checkbox"/> Y <input type="checkbox"/> N		1	A-High	<input type="checkbox"/>	Missing Parts	Add the part	ExJob - Example J...		Mechanical Example Asset	MECH		

For example, in the above screenshot, you can view the PL-00001 is assigned to the loop but PL-00003 is not assigned to the loop but associated to the Mechanical Example Asset, which is associated to the example loop.

The purpose of the colored bubbles is to provide a quick status on the "readiness" and "completion" of a loop.

Loops with a RED status bubble means that either the loop is not completed, or that one of the components within the loop does not have their individual checklist or test forms completed. All individual tests must be completed before the loop can be tested. When the loop has a GREEN status bubble, it means the Loop is READY to test. When the loop has a DARK BLUE status bubble it means the loop is completed and has no pending Punch list items

Task Assignment through Import

The  tab helps to tag task any related document to a planned task. Once you have specified or mapped the data as these mandatory Field Names: **Task ID** and **Task Model (Name)** you can look up for the import log under the **Pre-Import Analysis** tab.

Step 1 Start Step 2 Select Step 3 Pre-Import Analysis Step 4 Import

▼ Pre-Import Summary

Pre-Import Summary (3 fields affected)

Fields copied from task models will need overwrite if wanted to modify using spreadsheet.

Action	View	Field	Count
Insert	ivTasks_TestsPlanned	TaskName	2
Lookup Failure	ivTasks_TestsPlanned	TaskType	2
pre-import list.xlsx			

■ **NOTE** Select the **Validate Data** option to Yes.

Step 1 Start Step 2 Select Step 3 Pre-Import Analysis Step 4 Import

▼ Select Import Type and then Browse to File

Import Type: Renaming Assets

Show Queries? Yes No

Validate Data? Yes No

Label Type: Standard Import Labels User Labels

Date Time Shift?

Use Field Log? Yes No

▼ Select Browse to File (255 columns max)

File: Choose File Data.xlsx

clear view

The **File upload utility** should only be provided to those with manage rights to **vTasks_TestsFormsDocs** and are responsible for either periodically uploading the latest documents or uploading completed scanned forms. To check for your existing rights navigate to Resources & Users and ensure the user has File Upload Utility as one of their roles. Then navigate to User Applications Manager, search for **vTasks_TestsFormsDocs** and check if the application has File Upload Utility and the **Edit** option is selected.

Also make sure no other role in **vTasks_TestsFormsDocs** has the right to Edit.

Records (3)	
Role	
Edit List	0.CE: Guest ALL (View Only)
Edit	1.ADMIN: All Modules (Edit Primary Lists)
Delete	File Upload Utility

Test Form Package, Paper Forms

Test form packages are a bundle of paper form tasks in a single package. These are similar to job cards or work packages. When you merge two tasks, a test form package is created. This ensures that when you complete any one of the tasks of the test form package, the other tasks are also completed. For example, when you upload an executed form to any one of the tasks of a test form package, the attached file is now part of all the tasks of the test form package and the task status of all tasks will be changes to completed.

★IMPORTANT The test form packages are only available in paper form executions.

1. Select the test forms you would want to merge, and select **Form** from the bottom row.
2. Select the watermark of your choice.
3. Select **Merge Forms**.
4. In the **Merge Forms** dialog box, select **Yes**.

💡TIP Select **No**, if you do not wish to merge the forms.

A test form package is created successfully and link is provided for the test form package. When you click on the link, the test form package is displayed along with all the test forms in it.

Delete a Test Form Package

1. Select a task package, and select **Delete** from the bottom row.
2. In the Delete Task Packages Confirmation dialog box, select Delete.

NOTES

- If a Task package has any associated tasks, a prompt is displayed stating "Are you sure you want to delete the selected task package(s)? This action will unassign all the associated <number> of tasks. The selected task package(s) will be permanently deleted."
- If a task package does not have any associated tasks, a prompt is displayed stating "Are you sure you want to delete the selected task package(s)?"

Using Right Boundaries in Planned Tasks

The enhancements to the rights boundaries are applied using two methods.

1. Limit content that a user can see would be done by using workgroup and responsible company associations. This is done both at the user edit form, and user application module, by module/application. By selecting **YES** to **Use Workgroup** or **Use Responsible Company** for an application (SC module), it will automatically filter content for the user when the user has the same work group and company as the

content (e.g. punch records). You can only view items that have the same workgroup and company mapping. You will only see what you can edit. You need to configure these at your end:

- The system admin navigates to vUserApplications, filter for desired module, select Workflow settings and select either (or both) responsible company and workgroup. This sets the requirement that content to be shown to the user will consider the users assigned workgroup and company.
 - system admin assigns respective users a workgroup and company.
2. The right boundaries as defined for a user (optional), will further restrict the content the user would view, and edit based on area, systems and stages.

NOTE You need rights to OnDemand managers to create an on-demand **Planned task** or **Flange task**.

Calibration Equipment

Using the calibration/test equipment manager you can manage the testing equipment. It allows you to track your equipment with details such as make, model, serial number, range, calibration date, and calibration expiry date. You can even attach calibration certificates for easy access to records.

Generate reports based on various criteria such as calibration equipment, expired equipment, certifier-specific expiry of the equipment, and so on.

Using this manager for test equipment enables you to select required test equipment during task execution (digital) and include calibration equipment details on inspection forms for record of inspection. Additionally, if required, calibration expired test equipment can be restricted(hidden) from selection during inspection or shown in red to indicate the need for calibration renewal for test equipment.

With a calibration/test equipment manager, you can ensure your equipment is up-to-date and maintain compliance with inspection requirements.

Calibration Equipments

The Calibration Equipment Manager, has each record that can include a certificate of calibration. You can copy their calibration equipment from one project or instance into multiple other projects within the site.

The screenshot shows the 'Edit Project Wizard (New Record)' interface in Google Chrome. The title bar indicates 'Edit Project Wizard (New Record) - Google Chrome' and the URL 'https://qa.ceccms.com/ORMS/Tools/EditForm.aspx?v=vProjects&map=google&wizardPage=ProjectWizardNew.js'. The navigation bar at the top has tabs for 'Step 1 Start', 'Step 3 Project Data Selection', and 'Step 11 Calib Eq'. A dropdown menu 'Copy or Assign Calibration Certificate' is open, showing three options: 'Copy from source to target project including PDF file' (selected), 'Copy from source to target project and no PDF file', and 'Assign to project OR Copy if different instance (no PDF file)'. Below this, a section titled 'Calibration Equipment' contains a table with two records:

Records (2)	Equipment	Description	Model	Part No.	Serial number
Air Pressure Gauge	Instrument to measure air PSI in tanks, oilline, tires	PSI 3000	PS-56281	5843442	
Piping Test Instrument 1	Piping Test Instrument 1	123456789abcde	IN_456714	987654321edcba	

At the bottom of the page are buttons for 'Back', 'Next', 'Finish' (highlighted in blue), and 'Exit'.

In the Calibration Equipment Manager/ Test Equipment manager, Click New to add the instance/ project and equipment details along with the tagged assets. You can also attach the

Calibration Certificate

No file chosen

related documents for reference using option in the **New** section.

Edit Test Equipment (New Record) - Google Chrome
 sandbox.ceccms.com/ORMS/tools/EditForm.aspx?v=vCalibrationEquipment

Step 1 General **Step 2 Documents**

General

Equipment	Description
Manufacturer	Model
Part Number	Serial Number
Disciplines	Select Options
Calibration Range Low	

Workbreakdown Structure

Projects	1 selected	Phase
Stage		Activity

Certification

Certifier	Date Certified
Expiration Date	Calibration Certificate Choose File No file chosen clear view
Hide Expired? <input type="radio"/> Yes <input checked="" type="radio"/> No	

This selection applies filters when we see calibration equipments in tasks.
 Smart form only shows based criteria meeting calibration equipment assignment

The following fields are required before saving is enabled:
 Equipment, Disciplines

[Save](#) [Exit](#)

The equipment list can be pulled into tasks, so that the field technician can choose the actual equipment used during task execution. In the Task Model, select **Digital Execution Method** to expose the **Inspection Steps** tab, typically this is the first step (or control) on a digital form. Select **Record Test Equipment** inspection step to insert into the form. When this step is added to a subsequently created task, the field user can choose the specific equipment they used to complete the task. Clicking the Search icon next to the step will query for a list of available equipment. The user can search by **Equipment ID, Make, Model, or Serial Number**. The record will also contain the **Calibrated Range** and **Expiry Date**.

Edit Task Completion (T-01704-0006) - Google Chrome
https://test.ceccms.com/ORMS/Tools/EditForm.aspx?ID=391687&v=vTasks_TestsCompletion

Step 1 Task Summary	Step 2 Completion
------------------------	----------------------

Smart Form

Tag No:	1100-AE-112331	Work Scope:	
Tag Type:	AE - Analyzer Element	Tech Specs:	
Tag Description:	BWRO TRNS 1 & 2 FEED WETRK SMPL CONDUCTIVITY ELMNT		
Drawing No:			
Comments:	INSTR_SYS: NA, INSTR_LOC: SKID		

Record Test Equipment

Item No.	Search	Equipment	Make	Model	Serial No.
1	<input style="outline: none; border: 1px solid red; padding: 2px;" type="button" value="Search"/>	Test		1234abcd	123456789
			Range	0.05 / 5.00 %	Calibration Expiry 31-May-2019
					<input style="outline: none; border: 1px solid black; padding: 2px;" type="button" value="Edit"/>
		Filter equipment list: Equipment, Make, Model, Serial No.			
	<input style="outline: none; border: 1px solid green; padding: 2px;" type="button" value="Add"/>	Test	1234abcd	0.05 / 5.00 %	31-May-2019
	<input style="outline: none; border: 1px solid green; padding: 2px;" type="button" value="Add"/>	New Calibration Equip			15-May-2019

Comments and Observations

NOTE It can however be used as a log of calibration equipment and their certifications even if you chose to print out forms, write in test equipment into paper forms.

Import Calibration Equipment

The Instrument Calibration Equipment Manager houses all Calibration equipment and associated documents. In addition to equipment data, the Certification data is also added.

Calibration equipment can be imported.

Job Cards

The Job Cards Manager is designed to manage the assignment and administration of a collection of tasks. It is not a required manager, and your project may not use it; however, it can simplify the administration of tasks. Job Cards are comprised of tasks that have common attributes, such as System/Subsystems, Phase/Stage, Discipline or assigned workgroups.

NOTE: The JC filters tasks by Systemization, Location and WBS. These are AND filters, meaning that tasks may not appear if there are no tasks assigned to a particular subsystem at the exact stage of the project.

You can group tasks into Job Cards in whatever manner works best for your project. A few common examples are:

Example 1: You may choose to create a job card for each subsystem and discipline on the project. This means a Discipline Lead has one distinct Job Card for each subsystem on the project. In each of those Job Cards, he can check the status of all tasks assigned to that Subsystem, all punchlists raised in that discipline within that subsystem, all permits and Isolations. He can check out tasks and punchlists to field workers directly from the Job Cards Manager. He can even add a scheduling date to the subsystem and push that schedule to all existing tasks.

Example 2: You may choose to create job cards that comprise all work to be performed by each contractor. If the vendor is using a paper-based approach, then a package can be batch printed to contain all planned tasks, task documents and asset documents for field completion.

The screenshot shows the 'Job Cards Manager' application interface. At the top, it displays the project name 'Project: 001 - Example Project' and the user 'User: Amy Sage'. The main area is titled 'Job Cards (11)' and contains a table with columns: Status, Job ID, Description, Work Categ..., Card, Work Type, Job Pa..., # Tasks, # Out..., and Planned. Below this, there is a detailed view for the first four job cards, showing tasks, actions, and documents. The bottom ribbon features various buttons for managing the data.

	Status	Job ID	Description	Work Categ...	Card	Work Type	Job Pa...	# Tasks	# Out...	Planned
		JC-000016	1100-01 - HO SURGE DRUM, PUMPS, ...		<input type="checkbox"/> Y <input type="checkbox"/> N			4	2	503
		JC-000017	1100-01 - HO SURGE DRUM, PUMPS, ...		<input type="checkbox"/> Y <input type="checkbox"/> N			3	3	501.5
		JC-000027	1100-06 - HO DRAINS/SUMP/SUMP P...		<input type="checkbox"/> Y <input type="checkbox"/> N			2	2	
		JC-000028	01-02 - HO DISTRIBUTION - UP TO HFA		<input type="checkbox"/> Y <input type="checkbox"/> N			0	0	

Details	Tasks (4)	Permits	Isolations	Materials	Tools	Pending Punchlist (1)	Documents	Field Log	
	Status	Actions	Task ID	Datasheet	Description	Exec Type	Task Dis...	Task Type	Planned
				<input type="checkbox"/> Y <input type="checkbox"/> N					<input type="checkbox"/> Y <input type="checkbox"/> N
	Completed	Close	T-00029-0002		Instrument Test (by contract)	Digital Execu...	MECH	Inspection Test Record	
	past due	Check Out	T-00033-0003		Instrument Data Record	Digital Execu...	INST	Preservation	
	Checked Out by	Ryan Hodgson	T-00030-0002		Mechanical Test (by contract)	Digital Execu...	MECH	Inspection Test Record	

Reset
 Search
 New
 Edit
 Del
 Purge/Restore
 Create Form
 Package
 Check In/Out
 Imports
 Exports
 Settings

The buttons on the bottom ribbon:

- **New** will open the Job Card Creation Wizard
- **Edit** to edit an individual Job Card. If multiple rows are selected, it will change to Batch Edit if the user has rights.
- **Del** to remove a Job Card. This will not delete any tasks or punchlists.
- **Create Form** provides options to render mail/merge or Planned Smart Forms
- **Package** will compile a zip or merged pdf with test forms, datasheets and documents.
- **Check in/Out** allows you to check tasks out to field workers. It is only active when tasks have been selected above.
- **Imports** enables you to import a list of Job Cards or update scheduling information.

NOTES

- While importing if you have to add manual tags to Job cards, Work packages, and Contracts, you need to add a column named auto tag with value as 0 in the import file. The Tag ID should consist at least 5 alphanumeric characters. To automate the generation of an Tag ID, the value should be either empty or an alphanumeric value with less than 5 characters.
- While importing the Job cards, you can now import the Job Package IDs and associate the Job Cards with them.
- **Exports** allows you to export directly from this manager.

NOTE The **Pending Punchlist** tab includes all Punchlists that have been assigned to the Job Card irrespective to the Punchlist state. This ensures that all punchlists are viewed and marked completed before a job card has to be closed.

Update Task Scheduling from a Job Card

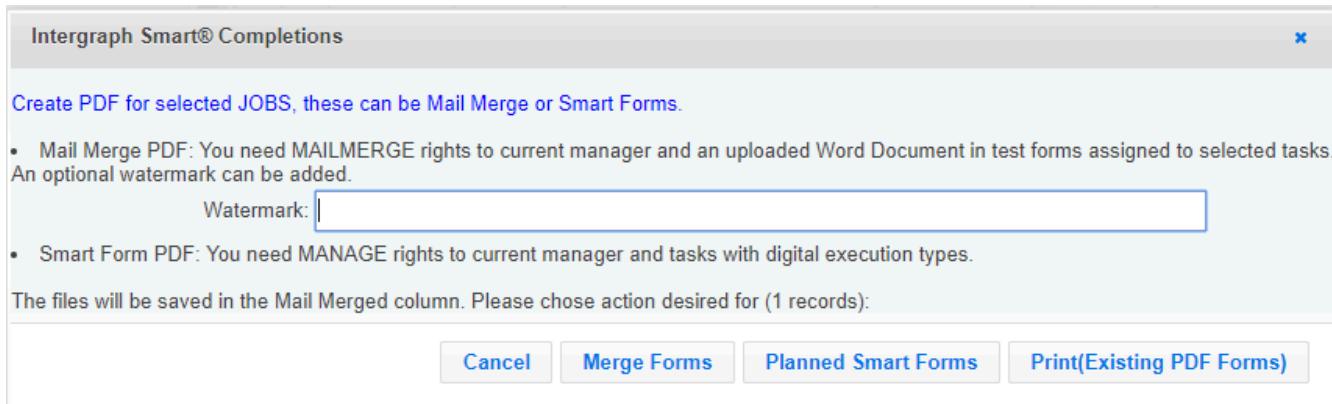
You can update the task scheduling for every task associated with a Job Card. If Batch Editing Multiple Job Cards, you can update the task schedules with the click of one button. To batch edit, highlight the rows of the Job Cards before clicking the Edit button.

On the General Tab of the Job Card, add the scheduling dates, then click **Push Schedule**.

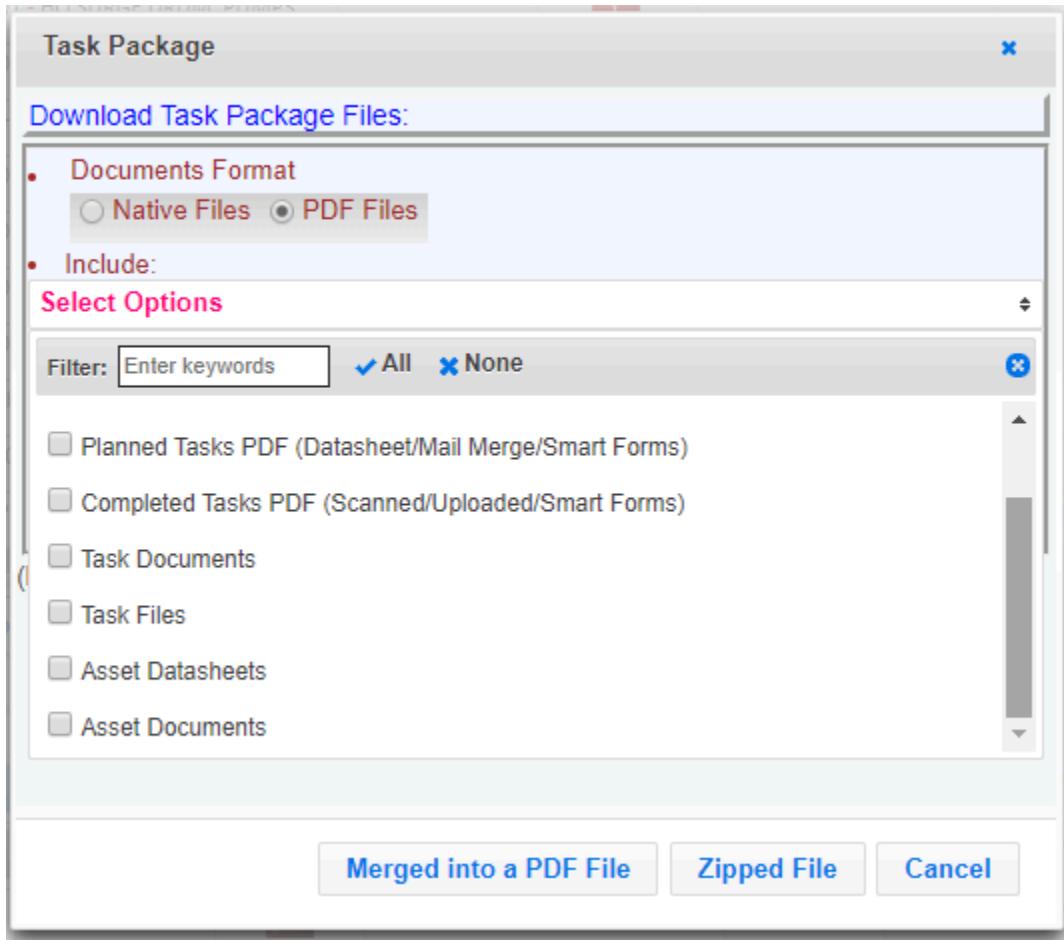
Compile Paper Job Card Packages

For paper-based project execution, Job Cards can be compiled into packages for printing and field completion of tasks. Before compiling these packages, make sure that all tasks have either a rendered Planned Form or a Mail Merged pdf. Any tasks without a pdf form will be missing from the package.

To render all Planned forms from the Job Card Manager, highlight the Job Card and click **Create Form**. In the popup window, choose **Planned Smart Forms** or **Merge Forms** (to mail merge).



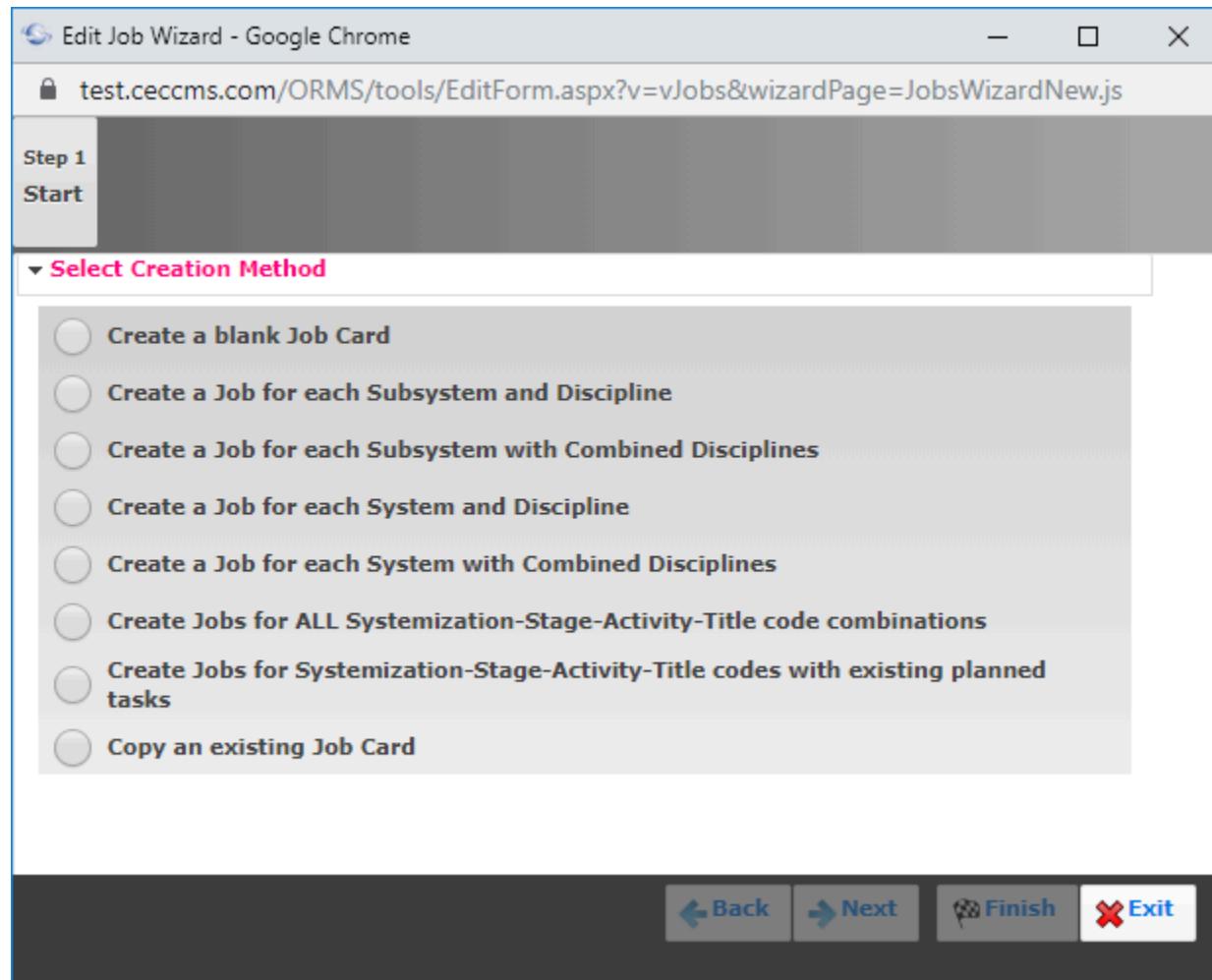
To compile a package, click the Package button on the bottom ribbon. The popup contains options to include all Planned Task pdfs, Asset Documents, etc.



Job Cards creation wizard

Clicking New will open the Job Card Creation Wizard. The Wizard allows you to create a large number of job cards at the click of a few buttons. If you choose one of the auto-creation

options, the Wizard will load additional tabs. In this example, we'll create a Job Card for each System and Discipline.



General Tab

- **Task Assignment:** Most Job Cards will choose only unassigned tasks that fulfill the filter criteria. This means that if a task is already assigned to another Job Card, it will not be assigned to this one. There might be situations, however, in which transferring tasks from one Job Card to another is desired. For instance, if remaining work has been assigned to a different workgroup or contractor, you may assign all non-started or non-completed tasks that already belong to another job.
- **Job Creation:**
 - Create Only when tasks can be assigned: if a particular subsystem does not have any existing tasks created and assigned to it, then no Job Card will be created. Only Systems/subsystems (etc) with existing tasks will generate a Job Card.

- **Create always:** In some situations, the Job Cards may be created before all project tasks have been created. It's possible to create place-holder job cards for tasks that will be created in the future. Some of the Job Cards will be empty, if this option is chosen.
- **Job Card ID Generation:** Choose your own ID or let Smart Completions auto-create one.
- **Job Data and Task Filtering:** The software will automatically filter by Discipline, Systemization and WBS. You can add optional filtering by Responsible Company, Contract ID and Task Type.

The screenshot shows the 'Edit Job Wizard' interface in Google Chrome. The URL is test.ceccms.com/ORMS/tools/EditForm.aspx?v=vJobs&wizardPage=JobsWizardNew.js. The wizard is currently at Step 1, specifically the 'General' tab under 'Select Systemization'. The main content area is titled 'Business Rules' and contains three sections: 'Task Assignment', 'Job Creation', and 'Job Card ID generation'. Under 'Task Assignment', the radio button 'Only unassigned tasks that fulfill wizard criteria' is selected. Under 'Job Creation', the radio button 'Create ONLY when tasks can be assigned' is selected. Under 'Job Card ID generation', the radio button 'Auto-generate (JC-XXXXX)' is selected. Below these sections is a 'Job Data' group with dropdown menus for 'Work Category', 'Work Type', 'Job Package ID', 'Responsible Company', 'Disciplines' (with a 'Select Options' button), and 'Contract ID'. At the bottom is a 'Task Filtering' section with a note about filtering by Discipline, System/Subsystem, and WBS, and optional filters for Responsible Company, Contract ID, and Task Type. The bottom navigation bar includes 'Back', 'Next', 'Finish', and 'Exit' buttons.

Select Systemization

You can further filter the criteria to create Job Cards for only select Systems/Subsystems. Because this example chose to create a Job Card for each System and Discipline, only the Systems are required in the below example. If subsystem was chosen, it would also be a required field.

Edit Job Wizard - Google Chrome

test.ceccms.com/ORMS/tools/EditForm.aspx?v=vJobs&wizardPage=JobsWizardNew.js

Step 1 Select Systemization

Work Breakdown Association

Project: 001 - Example Project Phase:

Stage: Activity:

Location Associations

Process Plant: Process Area:

System: Select Options

System Back Next Finish Exit

The screenshot shows a web-based application window titled 'Edit Job Wizard - Google Chrome'. At the top, there's a URL bar with the address 'test.ceccms.com/ORMS/tools/EditForm.aspx?v=vJobs&wizardPage=JobsWizardNew.js'. Below the title bar, a navigation bar has tabs labeled 'Step 1', '...', '...', and 'Select Systemization'. The main content area is divided into sections: 'Work Breakdown Association' and 'Location Associations'. Under 'Work Breakdown Association', there are dropdown menus for 'Project' (set to '001 - Example Project') and 'Phase'. Under 'Location Associations', there are dropdown menus for 'Process Plant' and 'Process Area'. A 'System' button with a dropdown menu labeled 'Select Options' is also present. At the bottom of the page is a dark footer bar with buttons for 'System', 'Back', 'Next', 'Finish', and 'Exit'.

Job Card Reports

The following reports are available from the Job Card Manager:

1. Job Completions Status by Systemization.
2. Job Materials by Systemization.
3. Job Tools by Systemization.

NOTE Reports will honor the user search criteria

Commissioning Readiness Reports

The new feature allows you to modify the column name within the readiness reports as per your requirement.

1. Go to Certificates Class Manager and select the field name you want to rename.
2. Type the required name and click Save.

The new column names are reflected in the reports.

HEXAGON PPM

Certificate Classes Manager
Project: 100 - Greg Adcock
(Instance:Default Instance - Test) User: David Dearmon

Logout Configuration ▾ Engineering ▾ Completions ▾ Safety ▾ Dashboards ▾

Search

- General
- Advanced
- Saved Searches

Save Reset Search AND OR

Certificate Classes (7)		Reports
Name	Description	
ATO	Agreement to Operate Assurance Cer...	
CSCC	Commissioning Safety Clearance Certi...	
CVC	Construction Verification Certificate	
EDC	Engineering Design Assurance Certific...	
FAT	Factory Acceptance Test Certificate	
RLC	Ready for Load Commissioning Assura...	
WDR	Walkdown Attendance Register	

Field Log (0)

Date	By	View	Record Name	Record Value	Field	Value
(from) ▾	(to) ▾					



Example Company
Commissioning Readiness (System Centric)



Overall complete: 28.6%	No Load Commissioning Readiness					Load Commissioning Readiness			Operations Readiness				
	Construction Tasks	WDR Status	Cat A Punchlist Complete / Plan	CVC Status	NOE Status	CSCC Status	No Load Task Complete / Plan	Cat B Punchlist Complete / Plan	RFLC Status	Cat C Punchlist Complete / Plan	Cat D Punchlist Complete / Plan	Load Tasks Complete / Plan	ATO Status
Plant: 30-641-0PP - FortHills Plant		0/1 0%		0/1 0%	0/1 0%	0/1 0%			0/1 0%				0/1 0%
Process Area: 30-641-02-OPP - FortHills Process Area		0/1 0%		0/1 0%	0/1 0%	0/1 0%			0/1 0%				0/1 0%
System: 30-641-03-OPP - FortHills System		0/1 0%		0/1 0%	0/1 0%	0/1 0%			0/1 0%				0/1 0%
Subsystem: 30-641-04-OPP - FortHills SubSystem		Not Created		Not Created	Not Created	Not Created			Not Created				Not Created
Plant: CC06 - Clermont Solar Farm	2/4 50%	0/1 0%		0/1 0%	0/1 0%	0/1 0%			0/1 0%				0/1 0%
Process Area: 90 - Substation	2/4 50%	0/1 0%		0/1 0%	0/1 0%	0/1 0%			0/1 0%				0/1 0%
System: 90-70 - SCADA	2/4 50%	0/1 0%		0/1 0%	0/1 0%	0/1 0%			0/1 0%				0/1 0%
Subsystem: 60-10-1-1 - Subsys1	2/4 50%	Not Created		25-Feb-2019 Open	Not Created	Not Created			30-Jan-2019 Open				21-Nov-2018 Open
Totals:	2/4 50%	0/2 0%		0/2 0%	0/2 0%	0/2 0%			0/2 0%				0/2 0%

Work Packages

The Work Packages Manager is designed to manage the development, scheduling and execution of Project completion. Work Packages compile all tasks, their associated documents, punch lists, and other data for assets/loops/packs. These associated loops and loop tasks are displayed under **work steps** tab in secondary panel. They can be compiled ad hoc, or determined by systemization or physical location.

Work steps comprise each item of work to be completed in a work package. They can be task-centric or volume-centric. Volume-centric steps are measurements that are not associated with an already created task. For example, if the step simply requires the field user to document the amount of concrete that has been poured, then a task model is not required. A configuration in the Work Step Type Manager will be used instead. Volume-centric steps are

hard-coded and must be imported into the system. See **Work Step Volume Types** for more information on mapping and importing.

NOTE Configuring Work Steps for volume-centric steps can be complex and will require in-depth training. Please contact your designated support representative to discuss your project and needs.

A Task step links an existing Task as a step in the Work Package. To create these, you must create a Task Model and a Task within the system. This work package can either be compiled into a paper package to complete in the field, or the tasks can be completed digitally on the iOS application.

A work package includes:

- WP ID, Work Description, Category
- Steps, which can be Volume-Centric or Task-Centric
- Punchlists
- Tasks / Checklist
- Tools / Materials
- Loops and Packs
- Workgroup and Resources
- Documents
- Work Package Smart Form

Edit Work Package (WP-000018) - Google Chrome
<https://sc.ceccms.com/ORMS/Tools/EditForm.aspx?ID=781&v=vWorkPackages>

Step 1 General	Step 2 Planned Tasks	Step 3 Punchlists	Step 4 Documents	... Resources	... Equipment	... Materials	... Package Checklist	Step 5 Work Package Steps	Step 6 Comments	Workflow
Originated	Approved	Issued	Completed	Closed						

▼ Work Steps Smartform

Item Tag	Item Class	Step Action	Task ID	Completed	Initials / Date
1200-VSV-76002-D - UNIT 24 PRESSURE RELIEF VALVES	VSV - Pressure/Vacuum Safety Valve	Completion Inspection	T-01309-0003	<input type="checkbox"/>	
1200-VSV-76002-F - UNIT 24 PRESSURE RELIEF VALVES	VSV - Pressure/Vacuum Safety Valve	Completion Inspection	T-01309-0004	<input type="checkbox"/>	
1200-VSV-40109 - V-1209 OVER PRESSURE PROTECTION	VSV - Pressure/Vacuum Safety Valve	Completion Inspection	T-01309-0005	<input type="checkbox"/>	
1200-VSV-76002-A - UNIT 24 PRESSURE RELIEF VALVES	VSV - Pressure/Vacuum Safety Valve	Completion Inspection	T-01309-0006	<input type="checkbox"/>	
1200-VSV-76002-B - UNIT 24 PRESSURE RELIEF VALVES	VSV - Pressure/Vacuum Safety Valve	Completion Inspection	T-01309-0007	<input type="checkbox"/>	
1200-VSV-49202 - PK-1501 OVER PRESSURE PROTECTION	VSV - Pressure/Vacuum Safety Valve	Completion Inspection	T-01309-0008	<input type="checkbox"/>	
1100-LI-106029-A - HOT OIL DRUM TK-3401	LI - Level Indicator	Completion Inspection	T-01359-0001	<input type="checkbox"/>	
1100-LI-109109 - OIL LEVEL	LI - Level Indicator	Completion Inspection	T-01359-0002	<input type="checkbox"/>	
Item Tag	Item Class	Step Action	Task ID	Completed	Initials / Date

NOTE While importing if you have to add manual tags to Job cards, Work packages, and Contracts, you need to add a column named auto tag with value as 0 in the import file. The Tag ID should consist at least 5 alphanumeric characters. To automate the generation of an Tag ID, the value should be either empty or an alphanumeric value with less than 5 characters.

Create Work Packages

IMPORTANT If you need assistance in creating Work Packages with Volume-Centric Steps, contact your designated support representative to discuss your project requirements.

1. Go to **Settings Panel > Work Packages**.
2. Select **New** from the secondary panel.
3. In the **Edit Work Package Wizard > Create a Work Package**.

Edit Work Package Wizard - Google Chrome
<https://sc.ceccms.com/ORMS/tools/EditForm.aspx?v=vWorkPackages&wizardPage=WPWizardNew.js>

Step 1 Start

Select Creation Method

Create Blank Create a blank Work Package

One for each Subsystem and each Discipline

One for each System and each Discipline

by Subsystems, one for each Discipline

by Systems, one for each Discipline

One for each Location and each Discipline

One for each Area and each Discipline

by Locations, one for each Discipline

by Areas, one for each Discipline

Systemization

Location

Create Single Work Packages (Filtered) Existing Work Package Filtered Out

Copy Copy an existing Work Package

Back Next Finish Exit

NOTES

- The work package IDs are created in the standardized format of <**WP Type Abbreviation**>-<**Discipline Name**>-<**Unique ID**>. Each work package will have a unique identifier within its respective type and discipline. For example, Consider an Installation Work Package (IWP) for Electrical Discipline (ELEC). The Work package ID generate would be IWP-ELEC-000001.

Work Packages (29)		Reports				
	Status	Work Package ID	Work Package Description	Card	Checklist	
				<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	
		PCIP-CIVIL-000001	WP Disc. Combined Systemization and Disciplines			
		PCIP-CIVIL-000002	Combined Systemization and Disciplines			
	past due	PCIP-CIVIL-000003	Combined Systemization and Disciplines			
		WP-000001	Combined Systemization and Disciplines			
		WP-000002	Combined Systemization and Disciplines			

- For construction work packages, you can create installation work package, planned or unplanned carry over work packages as child entities. When any of these work packages are created, the work package IDs are created in the standardized format of IWP, PCOW, or UCOW prefix added to the regular WP ID format of <WP Type Abbreviation>-<Discipline Name>-<Unique ID>. For example, see the below image:

Work Packages (7)		Reports		
	Status	Work Package ID	Work Package Description	Card
		CWP-COMM-000001	CWP WP	<input type="checkbox"/> Y <input type="checkbox"/> N
		IWP-CWP-COMM-000001-001	IWP CWP WP	
		PCOW-CWP-COMM-000001-002	COW CWP WP	
		UCOW-CWP-COMM-000001-003	COW CWP WP	

- The work package ID sequence is fixed and cannot be customized.
- The maximum length of a work package ID is 250 characters.

4. Select **Add Work Steps for Tasks** to add task-centric steps to the Smart Form.

TIP The **Planned Tasks** tab will automatically display relevant tasks based on the **Systemization** and **WBS** specified in the **General** tab.

5. You can add **Loop ID** and **Pack ID** to a work package.

NOTE These details can be accessed in the secondary panel after choosing a specific work package in the list view.

6. When creating a work package, you can identify the associated **task ID** of a planned task linked to it within the **Planned Task** tab. For more information, see [Add Task ID to Import Type Manager](#).

Step 1 Start Step 2 Select Step 3 Pre-Import Analysis Step 4 Import

▼ Defaults to Apply
Collision Type Apply Settings

▼ Choose fields to import and behaviors
Records

Column Name	Field Name	Collision	Lookup Behavior	Type	Size
Work Package ID	Work Package ID			string	250
Plan WTV		Preserve			
Budget MH		Preserve			
EV MH		Preserve			
Progress Method		Preserve			
Actual WTV		Preserve			
Task (List Name)	Task (List Name)	Preserve		int	

▼ Messaging
Back Next Finish Exit

Step 1 General Step 2 Planned Tasks Step 3 Punchlists Step 4 Documents Step 5 Work Package Steps Step 6 Comments Workflow
 Originated Approved Issued Completed Closed

Records (1)
Filter

<input checked="" type="checkbox"/>	Task Name	Asset	Asset Pack	Loop	Task Type	Task Description	Task Discipli...	D
<input checked="" type="checkbox"/>	T-02390-0001	Test Asset			Cable	Test Task Model	CABL	0

Approve Save Exit Add Work Steps for Tasks Email Work Package

7. When editing a work pack step, you can only edit the assigned planned task ID.

TIP This will automatically import the associated task along with its corresponding task ID. Upon exporting, you can view the task ID and description fields within the exported output.

The screenshot shows a software interface titled "Work Steps Smartform". At the top, there is a navigation bar with tabs: Step 1 General, Step 2 Planned Tasks, Step 3 Punchlists, Step 4 Documents, Step 5 Work Package Steps (which is selected), Step 6 Custom, Step 7 Comments, and a Workflow section with status indicators: Originated (red), Approved (green), Issued (blue), Completed (dark blue), and Closed (black). Below the navigation bar is a search bar with placeholder text "Filter IWP work steps by Tag". To the right of the search bar are buttons for "Distinct" (checkbox), "Inspection Filter" (dropdown menu), "Clear" (button), "Show All" (button), and "Sort By Group" (button). The main content area displays a table with columns: Item Tag, Item Class, Step Action, Task ID, and two buttons for status (Closed and Initials / Date). There are five rows of data:

Item Tag	Item Class	Step Action	Task ID	Closed	Initials / Date
103103-A-103063	Discrete	Completion Inspection	T-00531-0001	<input type="checkbox"/>	
1100-AE-9063 - FG-21 ON TOP OF LNG LOADING PLATFORM	AE - Analyzer Element	Completion Inspection	T-03097-0001	<input type="checkbox"/>	
1100-HS-9934 - MAC ON OUTSIDE A-4009 INLET ANALYZER SHELTER	HS - Hand Switch	Completion Inspection	T-03097-0002	<input type="checkbox"/>	
INST - 002	ITA - Instruments Pack	Completion Inspection	T-03098-0001	<input type="checkbox"/>	
1100-UA-9218-A - FA-16 ON LNG LOADING PLATFORM	UA - Multi-variable Analyzer	Completion Inspection	T-03099-0001	<input type="checkbox"/>	

Manage Work Packages

1. In the **Work Pack Step** tab, select **Inspection Filter** list.

NOTE You can filter and manage all loops, devices, and their corresponding devices associated with a work package.

2. Select a device link, to view or edit its details.
3. You can add unlimited number of steps to a work package.
4. To view the work steps in a sequential order, use Sequence column in the import sheet.
5. Select **Work Package Steps** tab, to view the associated work steps in a sequential order.

NOTES

- This applies to IWP and COW work packages.
- This feature can be viewed in both the mobile applications (iOS and Windows).

Check out a work package

1. In the work package list view, select a work package.
2. Select **Check In/Out**.
3. View the tasks associated to the Work Package. When you select a work package with:
 - **Volume Centric Tasks**: the pop-up window displays only the Asset IDs associated with the completed task.
 - **Task Centric Steps**: the pop-up window displays the Task IDs and associated Asset IDs that are already in a completed state.
 - **Volume Centric Steps**: the pop-up window displays Step ID/Asset ID for the completed steps.

NOTE The Completed step is shown as the concatenation of **Cell ID** or **Step ID** (if available) + **Task** (if available) + **Tag** (Asset/Pack or Loop - if available) + **Step sequence** (if available). This applies to both task centric and Volume centric work pack steps.

Check Out

X

Checking out 2 record(s)

The following 10 records could not be checked out:

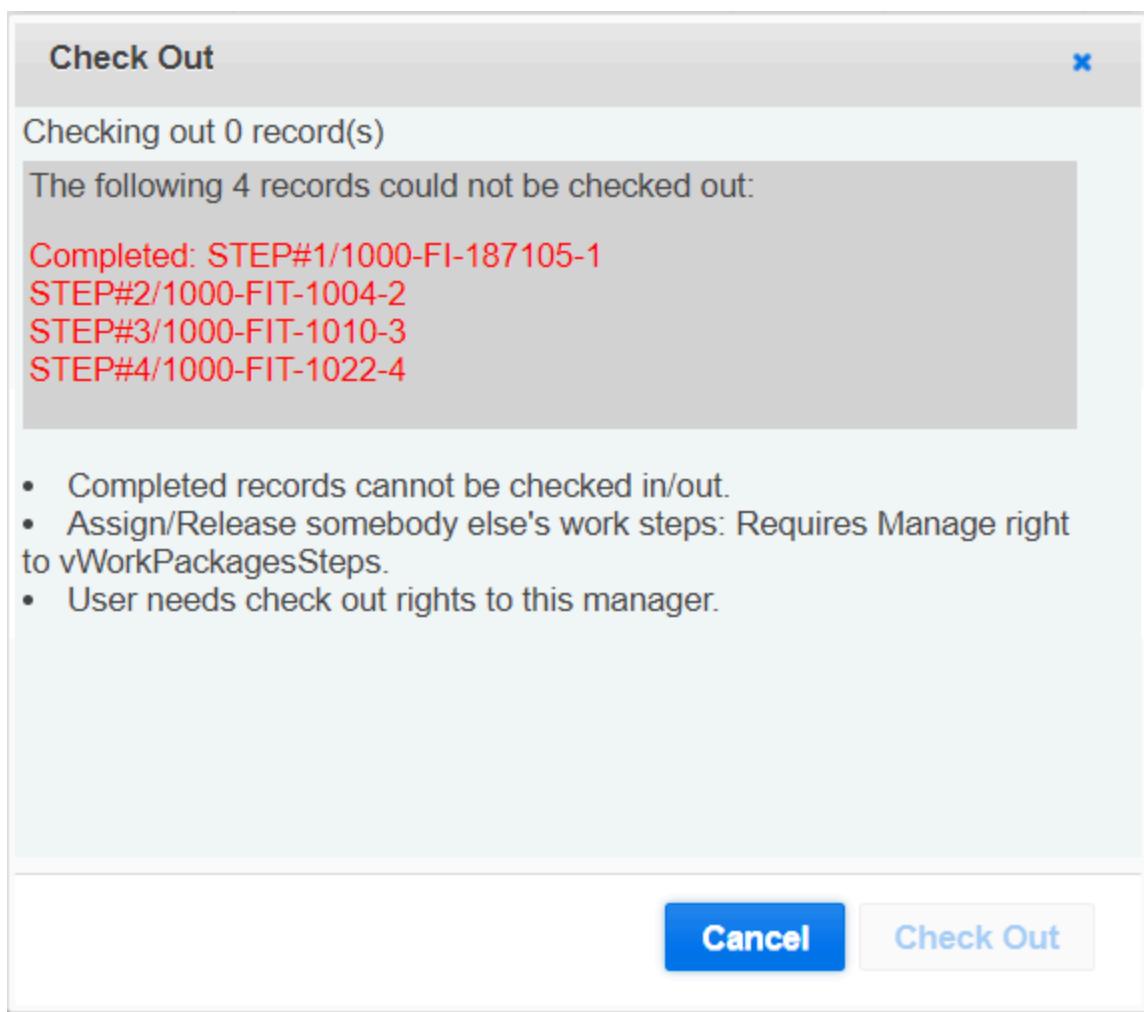
Completed: T-02811-0001/4850-HT-EPCPP-SH-003
T-02811-0002/4850-GD-237
T-02811-0003/4850-HT-EPCPP-TW-004
T-02811-0004/4850-GD-236
T-02812-0001/4850-HT-EPCPP-SH-003
T-02812-0002/4850-GD-237
T-02812-0003/4850-HT-EPCPP-TW-004
T-02812-0006/4850-HT-EPCPP-VA-011
T-02812-0007/4850-GD-236
T-02812-0008/4850-HT-EPCPP-VA-010

Company: |

Workgroup: |

Cancel

Check Out



Create a HIRA for Planned Tasks

1. In the work packages manager, select a work package.
2. In the **Edit Work Package** page, and go to **Planned Tasks** tab.

The screenshot shows a web-based application for managing work packages. The top navigation bar includes tabs for General, Step 2 (Planned Tasks), Step 3 (Punchlists), Step 4 (Documents), Step 5 (Work Package Steps), Step 6 (Custom), Step 7 (Comments), and Workflow. The Workflow section displays a status bar with colored squares corresponding to the steps: Originated (red), Approved (green), Issued (blue), Completed (dark blue), and Closed (black). Below the tabs, a table titled 'Records (4)' lists four planned tasks. The columns are: Task Name, Asset, Asset Pack, Loop, HIRA ID, Task Type, and Task Description. The first task, T-00012-0001, is highlighted with a yellow background and has HIRA-00003 listed under the HIRA ID column. The other three tasks have empty HIRA ID fields. At the bottom of the screen, there are several buttons: Approve, Save, Exit, Add Work Steps for Tasks, and Email Work Package.

Task Name	Asset	Asset Pack	Loop	HIRA ID	Task Type	Task Description
T-00012-0001	101-VSDC-114			HIRA-00003	Field Installation Check	Coupling Alignment
T-00012-0002	101-VSDC-115				Field Installation Check	Coupling Alignment
T-00012-0003	101-VSDC-116				Field Installation Check	Coupling Alignment
T-00012-0004	101-VSDC-117				Field Installation Check	Coupling Alignment

3. In the **Planned Tasks** tab, select a task for which HIRA is not associated.

💡 TIP A planned task can be associated only with a single HIRA.

4. In the **Edit Planned task** page, select **Create HIRA** from the **Safety and Environmental Inspections** section.

Edit Inspections and Test Forms Completions By Task (Planned Test) (T-00010-0006) - Google Chrome
 ORMS/Tools/EditForm.aspx?ID=9248&v=vTasks_TestsPlanned

Step 1 General	Step 2 Materials and Tools	Step 3 Resource Utilization	Step 4 Forms & Checklist	Step 5 Inspection Steps	Step 6 Task Documents	Step 7 Task Predecessors	Step 8 Custom	Step 9 Files	Step 10 Task Comments	Step 11 Overall Completion
Task ID T-00010-0006 Category MC - Mechanical Completion Discipline CABL - Cable/Conduit Priority 1: High Contract ID Created Date 13-Feb-2023 06:55 PM Repeat Header <input checked="" type="radio"/> Yes <input type="radio"/> No Link PL Status <input checked="" type="radio"/> Yes <input type="radio"/> No Description Instrument Cable Test Task Type FIC - Field Installation Check Execution Type Digital Execution Certificate Group Responsible Workgroup PCT Risk Rating Job Card Created By User One, Hexagon Update Lock? <input type="radio"/> Yes <input checked="" type="radio"/> No Use E-Signature <input type="radio"/> Yes <input checked="" type="radio"/> No Is Exception? <input type="radio"/> Yes <input checked="" type="radio"/> No Disclaimer Safety & Environmental Requirements Requires Permits? <input type="radio"/> Yes <input checked="" type="radio"/> No Requires Isolations? <input type="radio"/> Yes <input checked="" type="radio"/> No Create HIRA Safety Comments Has Environmental Risk <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Unknown Environmental Comments Scheduling Schedule Start Date (Start) (End) # of Persons Task Duration Allow Notifications? <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A Responsible Company Supplier Company Work Breakdown Association Project FTP01 - FEATURE TEST PROJECT Phase FTP01 C4 - C4 Wet Commissioning & Pre-Start Safety Review Save Exit										

NOTE A HIRA is created by the system for the planned task.

5. Go to **Planned tasks** tab of the Work Packages, and you can view the HIRA task in the **Safety & Environmental Requirements** section of the form. You can edit the HIRA by selecting on the HIRA link from the **Edit Planned task** page.

Edit Inspections and Test Forms Completions By Task (Planned Test) (T-00010-0001) - Google Chrome
 /ORMS/Tools/EditForm.aspx?ID=9243&v=vTasks_TestsPlanned

Step 1 General	Step 2 Materials and Tools	Step 3 Resource Utilization	Step 4 Forms & Checklist	Step 5 Inspection Steps	Step 6 Task Documents	Step 7 Task Predecessors	Step 8 Custom	Step 9 Files	Step 10 Task Comments	Step 11 Overall Completion
Task ID T-00010-0001	Description Instrument Cable Test	Category MC - Mechanical Completion	Task Type FIC - Field Installation Check	Execution Type Digital Execution						
Discipline CABL - Cable/Conduit	Certificate Group	Risk Rating								
Priority 1: High	Responsible Workgroup	Job Card								
Contract ID	PCT	Created By User One, Hexagon								
Created Date 13-Feb-2023 06:55 PM	Update Lock? <input type="radio"/> Yes <input type="radio"/> No	Is Exception? <input type="radio"/> Yes <input type="radio"/> No								
Repeat Header <input checked="" type="radio"/> Yes <input type="radio"/> No	Use E-Signature <input type="radio"/> Yes <input checked="" type="radio"/> No	Disclaimer								
Link PL Status <input checked="" type="radio"/> Yes <input type="radio"/> No										
Safety & Environmental Requirements										
Requires Permits? <input type="radio"/> Yes <input checked="" type="radio"/> No	Requires Isolations? <input type="radio"/> Yes <input checked="" type="radio"/> No	Create HIRA								
HIRA ID: HIRA-00001	Safety Comments									
Has Environmental Risk <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Unknown	Environmental Comments									
Scheduling										
Schedule Start Date (Start)	(End)	# of Persons	Task Duration							
Allow Notifications? <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A	Responsible Company	Supplier Company								
Work Breakdown Association										
Project FTP01 - FEATURE TEST PROJECT	Phase FTP01 C4 - C4 Wet Commissioning & Pre-Start Safety Review									

View HIRA Details

1. In the Work Packages manager, select **Search**.
2. In the list view, select a Work Package ID.
3. In the secondary panel, go to **HIRA** tab to view the associated HIRA tasks.

Work Packages Manager
 Project: FTP01 - FEATURE TEST PROJECT
 (Instance:FTI01 - FEATURE TEST INSTANCE) User: Hexagon PPM Administrator

Work Packages (3) Reports																																																																																																																					
Status	Work Package ID	Work Package Description	Card	Checklist	Comple...	Work Categ...	Area	System	Responsible Comp...	Sch...																																																																																																											
<input type="radio"/>	WP-000001	Combined Systemization and Disciplines		<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N			1100-124-27 - INIT AIR CHILLER																																																																																																												
<input checked="" type="radio"/>	WP-000002	Combined Systemization and Disciplines		<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N																																																																																																															
<table border="1"> <thead> <tr> <th>Details</th> <th>Work Steps</th> <th>Assets</th> <th>Asset Documents</th> <th>Documents</th> <th>Tasks</th> <th>HIRA (5)</th> <th>LEM Files</th> <th>Punchlists (1)</th> <th>Workflow Log</th> <th>Field Log</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>HIRA ID</td> <td>Datasheet</td> <td>Asset Tag</td> <td>Risk Category</td> <td>Task ID</td> <td>Punchlist ID</td> <td>Initial Risk</td> <td>Post Risk</td> <td>Expiring Date</td> <td>Approved</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="checkbox"/> HIRA-00001</td> <td></td> <td>100-PC-001</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input checked="" type="checkbox"/> HIRA-00004</td> <td></td> <td>100-PC-002</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="radio"/> HIRA-00005</td> <td></td> <td>100-PC-003</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="radio"/> HIRA-00006</td> <td></td> <td>100-PC-004</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input type="radio"/> HIRA-00007</td> <td></td> <td>100-PC-005</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>											Details	Work Steps	Assets	Asset Documents	Documents	Tasks	HIRA (5)	LEM Files	Punchlists (1)	Workflow Log	Field Log							HIRA ID	Datasheet	Asset Tag	Risk Category	Task ID	Punchlist ID	Initial Risk	Post Risk	Expiring Date	Approved							<input type="checkbox"/> HIRA-00001		100-PC-001														<input checked="" type="checkbox"/> HIRA-00004		100-PC-002														<input type="radio"/> HIRA-00005		100-PC-003														<input type="radio"/> HIRA-00006		100-PC-004														<input type="radio"/> HIRA-00007		100-PC-005							
Details	Work Steps	Assets	Asset Documents	Documents	Tasks	HIRA (5)	LEM Files	Punchlists (1)	Workflow Log	Field Log																																																																																																											
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						<input checked="" type="checkbox"/> HIRA-00004		100-PC-002																																																																																																													
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						<input type="radio"/> HIRA-00007		100-PC-005																																																																																																													

TIP You can also filter the list of work packages by selecting the **HIRA ID** filter option from the **General** section of the **Search** panel.



[Logout](#) Configuration ▾ Engineering ▾ Project

▼ Search

General

Work Package ID like ▾

Work Package Description like ▾

Work Step ID like ▾

FIWP like ▾

Due Date Period = ▾

HIRA ID = ▾

Work Category = ▾

Discipline = ▾

Work Package Type = ▾

Priority = ▾

Inspection Type = ▾

Progress Method = ▾

▶ Location and Process

▶ Advanced

▶ Saved Searches



Save

Reset

Search

AND

OR

▶ Browse by Location

▶ Browse by Systemization

▶ Browse by WBS

Generate Paper Work Packages

For paper-based execution, all work packages can be compiled into printable documents. You can choose to create one large pdf, or you can download a zipped folder with each section of the work package split into different files/folders. The structure of the latter is similar to Handover/Turnover packages.

NOTE All Tasks included must have their Planned Smart Forms generated. If a task does not contain a rendered Planned Form, then the task data sheet will be inserted instead.

Calculate Progress

Firstly, add the work completion percentage in the newly added column (% completion) in the Work Package main panel. A new tab **Calculate progress** has been added to monitor the efficiency and work progress using Man hours (MH), WTV as base. You can find this tab on the bottom right corner of the work package steps window. This feature can also be used to track progress for Hand over package and is displayed on the smart forms pertaining to the work package progress or completion.

Adding Calculate Progress Tab to WP editor

The Calculate progress tab helps you to find the overall work package progress. This can be computed using the % Man Hours and % WTV hours. Also, you can customize up to 20 fields to add to your work package.

① Not secure | qa.ceccms.com/ORMS/Tools/EditForm.aspx?ID=8477&v=vWorkPackages#

Step 1 General	Step 2 Planned Tasks	Step 3 Punchlists	Step 4 Documents	Step 5 Work Package Steps	Step 6 Comments	Workflow	Originated	Approved	Issued	Completed	Closed		
----------------	----------------------	-------------------	------------------	---------------------------	-----------------	----------	------------	----------	--------	-----------	--------	--	--

Work Steps Smartform




WP.000011
IUNST

Project:	UAT 5.0 - Test	Phase:			
Stage:		Activity:			
Area:		Location:			
System:	1100-103-01 - FIRE WATER DRUMS	Sub-System:			
Category:		Type:	IUNST		
Description:	1100-103-01 - FIRE WATER DRUMS, ELEC	Responsible:			
Comments:		Budget MH:	2.00	EV MH:	1.20

Item Tag	Item Class	Step Action	MH	Task ID	Closed	Initials / Date
Lucky Loop	Analog Input	Completion Inspection	1.2 2	T-02175-0001	<input checked="" type="checkbox"/>	BB / 07-May-2020

NOTE

This feature is displayed on the mobile applications (both Windows and iOS).

Work Package Datasheet

The work package datasheet contains the following details:

- Work package summary
- HIRA details
- Work package details
- Resource and Man Hours information
- Work Package Step Index (Planned Tasks or Volume based steps)
- Task Based - Hazard Identification & Risk Assessments (HIRA)

- Reference Document list
- Safety Audit details
- Associated Hazards and Precautions
- Required Personal Protective Equipment (PPE)
- Required Permit-to-Work (PTW) Permits
- Associated Project Communications Records (e.g. RFIs, TQs)
- Approval and Completions Information

Configure work permits

NOTE The work package module includes a variety of safety requirements at both the work package and work step levels, including the following:

- **Work package level:** Safety audit (a series of checklists)
- **Work step level:** Permits and Hazard Identifications and Risk Assessments (HIRAs)

1. In the **Work Packages** manager, select the work package that you want to associate the permits with.

2. Go to the **Permits** tab.

3. Select a new row to create a permit type for the work package step.

TIP You can also select a work package step from the work packages list view to create a permit type.

4. In the new row, enter the following information:

Step ID	The ID of the work package step that you want to associate the safety audit with.
Source	The source of the work package step (ISC or j5).

Permit Type	The type of permit that you want to associate with the work package step.
Pre-requisites	Any prerequisites that must be met before the permit can be issued.

5. Select **Save**.

NOTES

- If a permit is associated with ISC, it will only be visible in the work steps or work package edit forms and will not show up in the permit module.
- If a permit is set as a prerequisite, the user will not be able to check out or start a task until the prerequisite option is unselected.
- If a permit is associated with j5 (or any non-ISC permit), it will require integration with another software package to inform of the permit requirement and retrieve the permit ID and status. This feature is currently under development.

View permits associated with a task

1. In the **Planned Tasks** manager, select the task that you want to view the permits for.
2. In the secondary panel, go to the **Work Permits** tab.

Filter work packages or tasks using Permit IDs or Source Type

1. In the **Work Steps** manager, go to the search panel.
2. Go to the **Advanced** section.
3. In the **Permits** section, use the following filters to narrow down your search results:
 - **Permit type:** The type of permit that you are looking for.
 - **Source type:** The source file the permit is associated with.

Punchlist and Carry over Packages (COW)

The Smart Completions-CCMS Punchlists Manager module is used to manage the administration of a collection of punchlist and carry-over-work items that need to be performed throughout a Project's Stages i.e. Factory Acceptance Tests (FAT), Mechanical Completion, Pre-Commissioning, Commissioning and Start-up/Handover.

Smart Completions-CCMS Punchlists Manager is the interface used to track, record, control and report punchlist and carry-over-work items that includes rectifying incomplete work, damage, non-conformances, non-performance, incomplete equipment, sub-systems and systems.

The punchlist is an itemized account of outstanding items that require correction in order to meet the conditions of a contract. A Punch or COW item can be created independently (stand-alone) or generated during execution of an existing task, such as a field installation check (FIC), or inspection test record (ITR). Each punch or COW item is created, submitted for approval, approved, completed (meaning issue has been resolved/fixed) and then closed (verified by approver).

A punch or COW item will include the following items, to give detailed information about the punch or COW item and responsibility of that punch or COW item:

- Description
- Discipline
- Priority (which will set the due date)
- Assigned company and workgroup, a responsible person may also be assigned
- If needed, the user can upload a punch item image

A single punch or COW item can be generated on a "punch item datasheet" or multiple punch or COW items can be shown on index (list), summary (counts) and forecast (due date) reports.

NOTE In the **Punchlists Manager**, when you search for tasks using work package search criteria, the results only display the punchlists created for tasks included as work steps within the work package.

The process for accessing the Punchlists Manager is outlined below:

1. To access the Smart Completions-CCMS, open your company's website (e.g. [http\(s\)://projectURL.com](http://projectURL.com)).

Login using the credentials given by your System Administrator.

2. From the Menu select Completions > Punchlist & C.O.W. Tracking.

The Punchlists Manager opens.

3. To display the list of Punchlist or COW items, click on the Search button.

The Punchlists Manager loads all Punchlist and COW records.

4. The Punchlists Manager Interface allows several filter options. The punch or COW items can be filtered accordingly, as per the filter functions listed below:

a. Location and Process

i. By Physical Location

ii. By Process Area Systemization

b. General

i. On Hold Punchlists

ii. Punchlist ID, Description, Discipline, Work Category (Phases), Priority

iii. Punchlist workflow statuses

iv. Asset related to punchlist

v. Tasks related to punchlist

c. Documents

i. Document Name, Description

d. Work Dates and People

i. Responsible Company, Person

ii. Created/Originated, Completed, Closed By.

iii. Created/Originated, Start, Due, Completed, Closed Dates

For example, to show a list of Discipline - Mechanical Punchlist items created for Plant (By Process) that need to be completed by Responsible Company, select filter options as shown and then select the Search button:

Punchlists meeting the filtered criteria will be loaded in the Punchlists Manager.

5. The View Panels allow a user to see information such as:

a. As Found/As Left Images.

b. Punchlist ID

c. Datasheet

d. Task

e. Asset Pack

f. Loop

g. Asset

h. Etc.

6. Select the required punchlist or COW item by clicking on the row in which it is displayed.

This will populate the punchlist or COW item details.

The Details tab within the Punchlist details pane displays/provides information such as:

a. Action Required to complete the punchlist or COW item.

b. Location by Process or Physical of the punchlist or COW item.

c. Action Taken completing the punchlist or COW item.

d. Responsible and scheduling information ie. Company and Person, Due and Completed dates.

e. Close/Verified information of the completed punchlist or COW item.

View Workflow State by Colored Bubble Icon.

7. The Coloured Bubble Icon assigned against each of the punchlist or COW item indicates its Workflow Status. A legend indicating the workflow status color is displayed by hovering the mouse pointer over the bubble icon.

Additional Search/Filter options.

8. Additional Search/Filter options allow a user to search for Punchlist or COW items by:

- Pending Closing
- Were on Hold
- Still on Hold

NOTE The flange joints tasks are now integrated as planned tasks. Associated non-compliances with flange joints using the integrated Flange Joint data model through **vAssets_Piping** and are listed in Punchlists.

Creating Punchlist or Carry Over Work (COW) Items

Punchlist or COW items can be created within Smart Completions-CCMS in two ways:

- Independently via the Punchlists Manager, OR
- While the user is executing an electronic task

New Punchlist or COW item via Punchlists Manager

IMPORTANT Ensure you have the appropriate rights on your user role to create a punchlist from the punchlist manager.

The process for creating a new Punchlist or COW item via the Punchlists Manager is outlined below:

1. In the Punchlists Manager interface, select **New**.
2. In the **Edit Punchlist** form, details of the punchlist or COW item are entered. Details mentioned are:

As-Found Data:

- a. Punchlist ID - this is generated automatically when a punchlist or COW item is created and saved.
- b. Description - description of the punchlist or COW item.
- c. Punchlist Category - the category the punchlist or COW item falls into.
- d. Punchlist Type - the type of punchlist or COW item.
- e. Work Category - stages of the project i.e. Carry-Over-Work, Construction, Pre-Commissioning, Commissioning, etc.
- f. Discipline - discipline assignment against the punchlist or COW item.
- g. Priority - punchlist or COW item category i.e. A - High, B – Low, C – Very Low.
- h. Action Required - what is the required rectification work to remedy the punchlist item or outstanding COW item that needs completion.
- i. As-found images - Images/photos can be uploaded or assigned against the punchlist or COW item.

 **NOTE** You require **Edit** rights for **vPunchlists** manager to associate images with punchlists during update or modification of punchlists.

Work Breakdown Association:

- a. Project - what project the punchlist or COW item belongs to.
- b. Phase - what phase of the project the punchlist or COW item belongs to.
- c. Stage - what stage of the project the punchlist or COW item belongs to.
- d. Activity - what activity of the project the punchlist or COW item belongs to.

Location Association:

- a. Process/Physical Location (i.e. Plant, Process Area, Physical Area , Physical Location) - assigned against a punchlist or COW item.
- b. Asset Tag - asset associated with punchlist or COW item.
- c. Task ID - task associated with punchlist or COW item.

As-Left Data:

- a. Action Taken - Description of remedial actions that were undertaken to rectify the punchlist or COW item.
- b. As-Left Images - Images/photos can be uploaded or assigned against the completed punchlist or COW item for more information.

 **NOTE** You require **Edit** rights for **vPunchlists** manager to associate images with punchlists during update or modification of punchlists.

Scheduling Data:

- a. Responsible Workgroup - workgroup responsible for punchlist or COW item.
- b. Responsible Company - company responsible for punchlist or COW item.
- c. Responsible Person - person responsible for punchlist or COW item.
- d. On Hold - can select if the punchlist or COW item is on hold.
- e. Start Date - date punchlist or COW item was started.
- f. Due Date - date punchlist of COW item is to be completed.

 **NOTE** Required items are flagged in RED text.

It is important to enter in as much information as possible about a punchlist or COW item. As a minimum the following items should be entered:

- a. Description
 - b. Work Category
 - c. Priority / Criticality (will set the Due Date)
 - d. Location Association (down to the asset tag if applicable)
 - e. Responsible Company
3. Save and/or Submit Punchlist or COW item.
4. After the Edit Punchlist Form is completed you can now Save and/or Submit the punchlist or COW item.

NOTE If you do not want to submit the punchlist or COW item you can Save it and submit later.

1. To Save a punchlist or COW item:

- a. Select **Save**.
- b. You now have the option to **Close Form**, **Enter New Record** or **Keep Editing Current Record**.

2. To Submit a punchlist or COW item:

- a. Select **Submit**.
- b. An E-Mail Notification dialog box appears.
 - i. This allows the punchlist or COW item creator/originator to notify the punchlist or COW item approver via e-mail.
 - ii. A list of client representative approvers associated to the selected project will appear for selection.
 - iii. Select the approver(s) by checking the boxes, then select Create E-Mail button.
- c. An E-Mail Notification window will appear notifying you that the e-mail was sent to the punchlist or COW item approver.
- d. The punchlist or COW item approver will receive an e-mail notification.

New Punchlist or COW item via Electronic Task Executing

IMPORTANT Ensure you have the appropriate rights on your user role to create a punchlist.

A punchlist or COW item can also be created while executing a task electronically.

The process for creating a new Punchlist or COW item via Electronic Task Execution is outlined below:

1. In the Task Execution Interface/Model, the user can create punchlist or COW items while completing inspection steps/points. Generally, the only data required to enter/answer in the inspection steps/points is to select one (1) of the three (3) possible

answers such as ACCEPT, REJECT, or NA. Only one (1) of those answers will trigger the creation of a punchlist or COW item. It is typically a REJECT (or a NA) answer.

Rejecting an inspection step/point.

2. If a REJECT answer is selected against one of the inspection steps/points, it will trigger a punchlist or COW item creation. This will load a Create Punchlist popup window. You can create a punchlist or COW item and complete punchlist edit form with the ability to populate or edit all fields.
3. If response is changed, a **PL/NC Alert** window opens, asking to remove the punchlist already created for the step completion.



- a. Select **Yes**, the associated punchlist is removed from the steps completion. You can view the punchlist in the purge/restore lists of punchlists.
- b. Select **Cancel**, the associated punchlist is attached to the steps completion.

Create a Simple punchlist or COW item

1. Select the **Create Simple** from the **Create Punchlist** window.
2. The simple **Punchlist Edit Form** will load.
3. Populate/edit available fields.

NOTE Certain fields in the edit punchlist form will auto-populate based on the attributes of the task/asset, e.g.:

- a. **Description** – from the inspection point/step that triggered the punchlist creation.

- b. **Discipline** – from asset discipline attribute.
- c. **Priority / Criticality** – default to ‘B-Low’. User can change to the required Priority / Criticality.
- d. **Location Association** – from asset attributes i.e. Asset, Subsystem and Physical Location.
 - i. Auto-populated fields (e.g. Description field) may be edited to provide more clarity or better define the punchlist or COW item, as the auto-populated Description may not always give an accurate or informative description.

4. Select **Create**.

5. A new punchlist or COW item has now been created and the assigned Punchlist ID is displayed for the inspection step/point.

Create a Standard Punchlist or COW item

1. Select the **Create Standard** from the **Create Punchlist** window.
2. The standard Punchlist Edit Form will load.
3. Populate/edit fields.

NOTE Certain fields in the edit punchlist form will auto-populate based on the attributes of the task/asset, e.g.:

- a. **Description** – from the inspection point/step that triggered the punchlist creation.
 - b. **Discipline** – from asset discipline attribute.
 - c. **Priority / Criticality** – default to ‘B-Low’. User can change to the required Priority / Criticality.
 - d. **Location Association** – from asset attributes i.e. Asset, Subsystem and Physical Location.
4. Auto-populated fields (e.g. Description field) may be edited to provide more clarity or better define the punchlist or COW item, as the auto-populated Description may not always give an accurate or informative description.
5. Select **Submit**.

6. An **E-Mail Notification Selection** window will appear. Follow the process as described in 'Step 3' of the New Punchlist or COW item via Punchlists Manager training.
7. Exit the **Punchlist Edit Form**.
8. A new punchlist or COW item has now been created and the assigned Punchlist ID is displayed for the inspection step/point.
9. The user can then continue with the Electronic Task Completion of the remaining inspection points/steps.
10. Viewing Punchlist or COW items created from Electronic Task Completion.
11. The punchlist or COW item(s) generated from the Electronic Task Completion will now appear in the Punchlists Manager.

Viewing HIRA in Secondary Tab

To view the **HIRA** added to any task model or punch list items, go to **HIRA** tab on the secondary panel.

NOTE This tab has been added as an enhancement to view all the task models and punch list items that have been flagged under risk assessment.

Approving Punchlist or COW Items

Approving of punchlist or COW items is done within the Punchlists Manager. Make use of the available filter/search options to identify punchlist or COW items that require approval in addition to the other filter/search criteria (i.e. Location, Subsystems, Disciplines, Responsible Company/Person, etc.).

The process for approving Punchlist or COW items is outlined below:

1. Once the required punchlist or COW item(s) requiring approval is identified, select/highlight the punchlist or COW item and click on Edit, or click on the Punchlist ID hyperlink. This will open the Punchlist Edit Form.
2. Accept or Reject punchlist or COW item.

In the Punchlist Edit Form, make any necessary changes on the punchlist or COW item. Select either the REJECT or ACCEPT button to either reject or approve the punchlist or

COW item.

E-Mail Notification.

3. If either of the REJECT or ACCEPT button is selected, an E-Mail Notification dialog box appears.
4. If an E-Mail Notification is required, click Create E-Mail.
 - a. This allows the punchlist or COW item approver to notify affected personnel (i.e. procurement department) via e-mail.
 - b. A list of client representatives will appear for selection.
 - i. If the individual is not listed in the E-Mail dropdown list you can select the Show Address Book checkbox to load all users in the Smart Completions database.
 - ii. Select the user(s) you want by checking the boxes, then select Create E-Mail button.

Completing Approved Punchlist or COW Items

Completion of approved punchlist or COW items is done within the Punchlists Manager. Make use of the available filter/search options available to identify approved punchlist or COW items that need to be actioned and rectified in addition to the other filter/search criteria (i.e. Location, Subsystems, Disciplines, Responsible Company/Person, etc.).

The process for completing approved Punchlist or COW items is outlined below:

1. Once the required punchlist or COW item(s) requiring approval is identified, select/highlight the punchlist or COW item and click on Edit, or click on the Punchlist ID hyperlink. This will open the Punchlist Edit Form.

Complete Punchlist or COW item.

2. In the Punchlist Edit Form, update the 'Action Taken' field with remedial actions that were undertaken to rectify/complete the punchlist or COW item.

Attach an image (if applicable) in the 'As-Left Image to justify/document completion of the punchlist or COW item.

Select the COMPLETE button to update the status of the punchlist or COW item.

E-Mail Notification.

3. If the Complete button is selected, an E-Mail Notification dialog box appears.
4. If an E-Mail Notification is required, click Create E-Mail.
 - a. This allows the punchlist or COW item approver to notify affected personnel (i.e. punchlist or COW item originator) via e-mail that the punchlist or COW item has been completed.
 - b. A list of client representatives will appear for selection.
 - i. If the individual is not listed in the E-Mail dropdown list you can select the Show Address Book checkbox to load all users in the Smart Completions database.
 - ii. Select the user(s) you want by checking the boxes, then select Create E-Mail button.

Closing Completed Punchlist or COW Items

Closing of completed punchlist or COW items is done within the Punchlists Manager. Make use of the available filter/search options available to identify approved punchlist or COW items that need to be closed in addition to the other filter/search criteria (i.e. Location, Subsystems, Disciplines, Responsible Company/Person, etc.).

The process for closing completed Punchlist or COW items is outlined below:

1. Once the required punchlist or COW item(s) requiring closing is identified, select/highlight the punchlist or COW item and click on Edit, or click on the Punchlist ID hyperlink. This will open the Punchlist Edit Form.

Close punchlist or COW item.
2. In the Punchlist Edit Form, review the Action Taken field populated with remedial actions that were undertaken to rectify the punchlist or COW item. Select the CLOSE or CANCEL COMPLETION button to update the status of the punchlist or COW item.

NOTE Users cannot edit any fields or the images attached to a Punchlist with statuses which have selected Yes for the Locked? option; however, a user with manage rights can

make the changes to the punchlist.

E-Mail Notification

1. If either the Cancel Completion or Complete button is selected, an E-Mail Notification dialog box appears.
2. If an E-Mail Notification is required, click Create E-Mail.
 - a. This allows the punchlist or COW item closer to notify affected personnel (i.e. punchlist or COW item originator) via e-mail that the punchlist or COW item has been closed.
 - b. A list of client representatives will appear for selection.
 - i. If the individual is not listed in the E-Mail dropdown list you can select the Show Address Book checkbox to load all users in the Smart Completions database.
 - ii. Select the user(s) you want by checking the boxes, then select Create E-Mail button.

Link PL Status

This is an out of the box feature added to provide smooth closure of punch lists. When a punchlist has some tasks (rejected or in PL state) as per their risk assessment there could be two scenarios:

NOTE

The default status is set as **No**

Step 1 General	Step 2 Materials and Tools	Step 3 Resources	...	Step 4 Forms & Checklist	Step 5 Documents	Step 6 Custom	Comments	Workflow	Originated	Submitted	Verified	Approved																																																																																																																														
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1. If you set **Link PL Status** to **Yes**, The status of the critical punch list would differ from the task status. They would show their as is status.
2. If you set **Link PL Status** to **No**, The status of both the critical punchlist as well as the associated task will display the same status.

Punchlist & COW Email Notifications within Workflow State

All punchlist and COW items have an established workflow associated with them. There are two ways a user can see at what point in the workflow the punchlist or COW item is in:

- The Coloured Bubble Icon assigned against each of the punchlist or COW item indicates its Workflow Status. A legend indicating the workflow status color is displayed by hovering the mouse pointer over the bubble icon.
- Open the desired punchlist or COW item and look at the 'Workflow' tab in the top ribbon of the Punchlist Edit Form. The current workflow state is displayed in red, italicized and underlined text.

Smart Completions-CCMS Punchlists Manager provides the capability of E-Mail notifications within each punchlist or COW items workflow state. The list below identifies who will receive the e-mail notifications at each workflow/status of a punch or COW item:

- Create Punchlist or COW item

The system user that creates (Creator/Originator) the punchlist or COW item will send an e-mail notification to selected client representative approver. The Creator/Originator will select the Approver to approve the punchlist or COW item.

- Approving/Rejecting Punchlist or COW item

If the Approver APPROVES, an e-mail notification is generated to the Creator/Originator and the assigned Responsible Person.

If the Approver REJECTS, an e-mail notification is generated to the Creator/Originator.

- Completing Punchlist or COW item

The responsible person completes the punchlist or COW item, an e-mail notification is generated to the Approver.

- Closing Punchlist or COW item

If the Approver selects CLOSE, an e-mail notification is generated to the Originator and Responsible Person.

If the Approver selects CANCEL COMPLETION, an e-mail notification is generated to the Responsible Person. The punchlist or COW item will reopen at the Approved status.

Generating Punchlist or COW Reports

★IMPORTANT Ensure you have the appropriate rights on your user role to create a punchlist from the punchlist manager.

Generating Punchlist or Carry Over Work (COW) Reports can be performed by accessing the 'Reports' tab in the Punchlists Manager.

There are a six (6) Punchlist or Carry Over Work (COW) Reports; two (2) Index by Systemization and four (4) Index/Status. All reports honor any filtered search criteria, which is used to restrict or refine the content shown in the selected report.

The Punchlist or Carry Over Work (COW) Reports are:

- Master Punchlist Index (by Systemization with Comments)
- Punchlist Summary (by Systemization; Scorecard)
- Punchlist Forecast (by Past Due and Today)
- Master Punchlist Index (by Responsible Company and Opened Items)
- Master Punchlist Index (by Responsible Company and Closed Items)
- Punchlist Forecast (by Due Dates)

There are three (3) types of Punchlist or Carry Over Work (COW) Reports:

- Index Reports

List each punchlist item, with dates, companies, persons and completion data.

- Summary Reports

Breaks out punchlist items by responsible company, providing counts.

List each punchlist item, with dates, companies, persons and completion data.

- Scorecard Reports

NOTE Beginning update 14, a punchlist report will indicate the number of accepted or rejected punchlists in the rejected column of the scorecard report. For example, if the report has a value 10 / 2, it indicates that 10 punchlists are accepted and 2 are in rejected states respectively.

Displays where punchlist items (By system) are in their life-cycle/workflow.

The process for generating Punchlist or Carry Over Work (COW) Reports is outlined below:

1. Expand the Report Category headers by selecting the + button.

This will list all available reports for the category selected.

Report Thumbnail Image.

2. A user can view an image (content) of any report they wish to see without having to run the actual report. Select the thumbnail of the report you wish to view and an image of the report will open in a new window/tab.

Report Generation.

3. The user has the ability to view reports in two (2) ways:

4. PDF Report

- a. Select the PDF icon to run the report.
 - b. The report will open in a new window/tab.

5. Export to Excel

- a. Select the Excel icon to export the report data.
 - b. Select the data you wish to export (certain data points are auto-populated for your convenience).
 - c. Select the 'Export' button to generate the spreadsheet.
 - d. The user can Open or Save the spreadsheet
 - e. The spreadsheet can now be viewed.

Notice of Energization (NOE)

The Smart Completions-CCMS Notice of Energizations Manager module is used to manage the administration of NOE's and associated documentation e.g. exclusion zones, marked-up drawings etc, which will support the safe start up of equipment once Mechanical Completion has been finalized.

Configure NOE Type Abbreviations

1. Navigate to the **Energization Types** manager.
2. Select **New** from the bottom ribbon bar.
3. In the **Edit Energization Types** window, type the **Name** and **Abbreviation**.

NOTES The abbreviation must be:

- Format <10 characters-5 numbers>. For example, abcdefghij-12345, is the maximum character length for the abbreviation.
- Unique within the list of NOE types.

4. Select **Save**, and then **Exit**.

Create a Notice of Energization (NOE)

1. In the NOE list view, select **New** from the secondary panel.
2. In the **Edit Notice of Energization** window, in the **General** tab, enter all information required.
3. Select the **Energization Type**.
4. Select the latest certificate available in CCMS. A valid C2 must be available to raise an NOE.
5. In the **Location Association** section of the **General** tab, select the **Systemization** and/or **Location** data from the list.
6. In the **What Needs to be Energized** tab, enter the information for the **What needs to be energized?** section.

💡 TIP The equipment data you see in the **What Needs to be Energized** tab is filtered according to the systemization or location filters you selected in the **General** tab.

7. Select the **Assets**.
8. In the **Documents** tab, select the **Documents**.
9. In the **Required Approvers** tab, select the **Required Approvers**.

☞ NOTE You can map the multi-sign-off of the approvers available in the user applications to the required approvers of NOE. When there is no sequence assigned, the default sequence of approvers is applicable.

10. In the **Comments** tab, add your comments if required, then select **Save**. CCMS will automatically assign your NOE with a unique NOE ID.

Locate Notice of Energization

1. Locate and select the NOE that was just created.
2. To attach the marked up drawing(s), select the **Energisation Limit Drawing** button.
 - a. Select and upload the drawing(s).

TIP Systemized single line drawings are used to define the boundaries between different energization systems or subsystems. These drawings are typically stored in the document module of a project, or they are loaded as a reference file in a turnover package.
 - b. Save and close edit form.
3. The drawing(s) is now available for reference in the **Scanned** column of the Primary Panel.

Generate a Smart Form

1. In the **Edit Form of the NOE**, select **Generate Form**.
2. In the **Questionnaire** tab, select the steps to accept, reject, or not applicable.
 - Select **Accept** > to accept the step.
 - Select **Reject** > to create a punchlist for the rejected step.
 - Select **Not Applicable** for no action on the step.
3. Select **Submit** to close the smart form.

For Dynamic Workflow of Notice of Energization

1. Go to **User Applications > NOE**.
2. In the **vNOEs** list, select the required NOE.
3. In the **Edit Form**, go to the **Workflow Settings** tab.
4. Select **Edit** in the Workflow settings tab.
5. You can now select a workflow step to add to Datasheets by selecting **Yes** or **No** in the **Datasheet?** field. This will apply to all NOE datasheets.

 **NOTE** For more information on dynamic workflow, see [What is Workflow Settings Tab.](#)

Create a NOE with user defined ID

1. Navigate to the **Completions > Notice of Energization**.
2. Select **New** from the bottom ribbon bar.
3. In the **Edit Notice of Energization (New Record)** page, type the required information.
4. Select the desired **Energization Type** from the list.
5. Select **Save > Close Form**.

NOTES

- The newly created NOE ID is of the following format: configured abbreviation for the selected NOE type, followed by a hyphen (-), and ending with an unique numerical sequence (For example, NOE-P-00001).
- The system will automatically generate a sequential number after the abbreviation and hyphen in the NOE ID, ensuring uniqueness.
- The associated datasheets of the NOE will also have the NOE ID as configured with your defined ID.
- When you import a list of NOEs, you can create the NOEs along with the abbreviations using **vImports**.
- User defined NOE IDs are for newly created NOE records. Existing NOE IDs will remain unchanged.

Submitting a Notice of Energization (NOE)

The process for Submitting a Notice of Energization (NOE) is outlined below:

1. Once you have checked the NOE details, ensured that the correct certificates are in place, the required task have been completed and attached all the required documentation, select **Submit**. Note that the person that submits the NOE is the Applicant. Email Notification is enabled.

2. In the **Email Notification** page, select the individuals you wish to send the NOE to for approval.
3. Select **Create E-Mail**.

Approving a Notice of Energization (NOE)

NOTE You'll receive both an in-system notification and an email to your address on file that the Notice of Energization (NOE) requires approval. Both of these notifications will have the datasheet, certificate and energization limit drawings attached.

1. To open the electronic NOE, click on link.
2. Once you are satisfied that all the necessary documentation is attached and the physical work has been completed, select **Approve**.

NOTE The NOE datasheet file in workflow log will appear only when it is approved by all the four Approvers. The same datasheet is associated with all the four approver logs of the NOE.

Email Notification

The system may prompt you to create an email. These options are configured by a System Administrator, and can even pre-select the Address book recipients by workgroup or company (among other options). If the system does not prompt you to send a notification, you can always create one by selecting the Email Notice of Energization button.

1. Select the individuals you wish to send the NOE Approval notification.
2. Select Create E-Mail.

Notice of Energization Workflow

1. Select Workflow tab to see if the approval process has been completed. The NOE datasheet will now appear without a watermark.
2. Email the completed Notice of Energization
3. Once the NOE has been approved by all parties, forward an email for circulation of the NOE to other relevant parties.

Closing a Notice of Energization (NOE) with Punchlist exceptions

Once the energization and associated work has been completed, the NOE should be closed.

1. Select **Close > OK**. Only Workflow changes will save as the form is locked for changes.

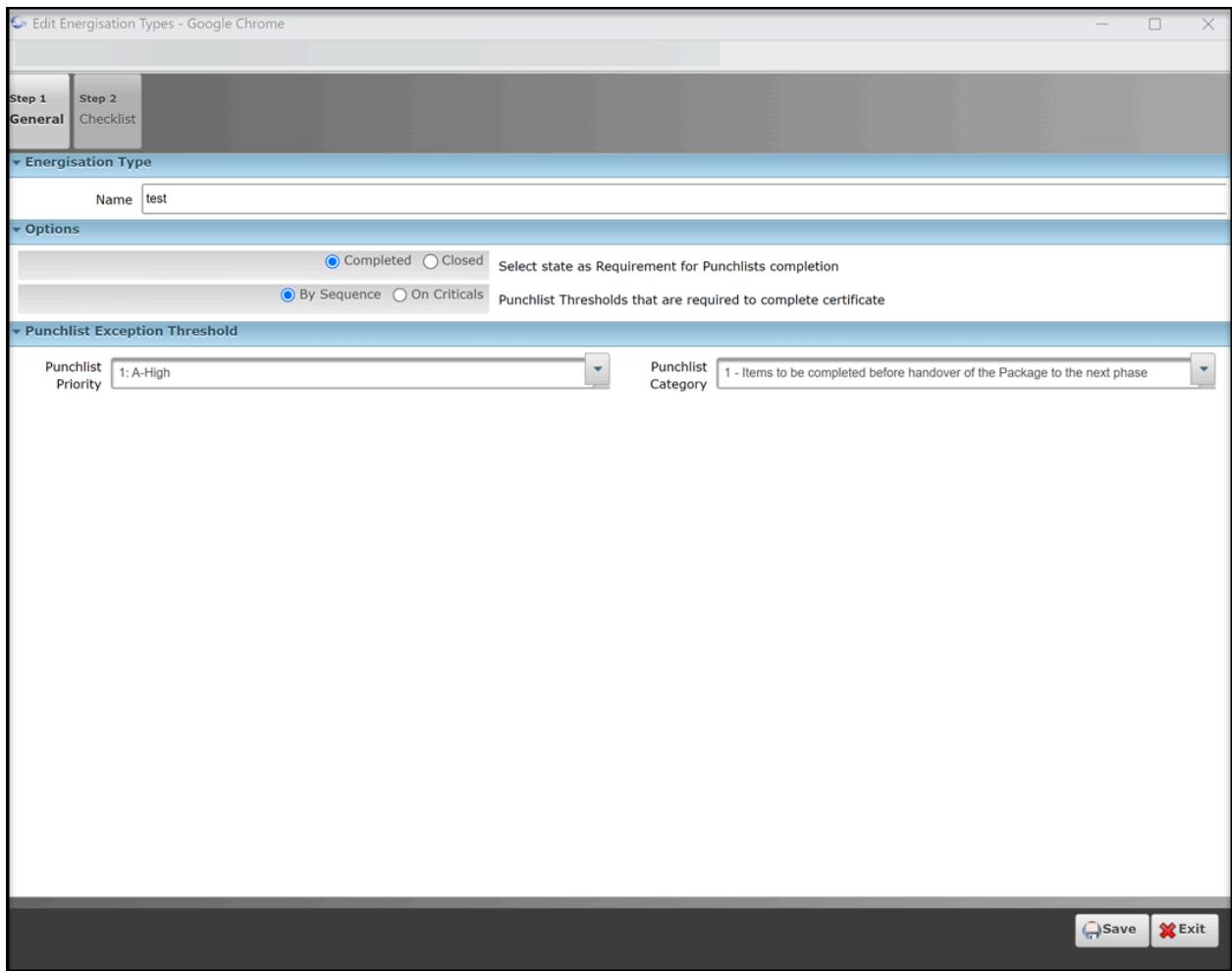
A Notice of Energization (NOE) cannot be closed or completed until the punchlist items of critical or sequence are marked completed. This is because the punchlist threshold is set to **Criticality or Sequence**. The purpose of this threshold is to ensure that all critical or sequenced punchlist items are completed according to the set punchlist threshold before energization takes place.

The punchlist threshold is for critical safety and operational control. By ensuring that all critical punchlist items are completed before energization, the risk of accidents and equipment failures can be significantly reduced.

Only users that have the Punch list (Exceptions) role will have the ability to override the completion of an NOE by flagging exceptions.

[Set punchlist frequency](#)

1. Go to the list of NOEs.
2. Select the Energization Type on a NOE to open the **Edit Energization Type** window.



3. In the **General** tab, select **Completed** or **Closed** from the **Options** section as the state required for Punchlists completion.
4. Select **By Sequence** or **On Criticality** as the Punchlist Threshold required to complete the Punchlist.
5. If you select:
 - **By Sequence** - Set the **Punchlist Exception Threshold**.
 - Select **Punchlist Priority** - Set it to **High/Low** or create a new priority.
 - Select **Punchlist Category** from the list.
 - **On Criticality** - sets the criticality on related punchlists of the NOE.
6. Select **Save**.

Assurance Certificates

The process for accessing the Assurance Certificates Manager is outlined below:

1. Assurance Certificates (Switchboard Menu):

Navigation: **Completions > Management > Assurance Certificates**

2. Select the Assurance Certificates icon.

3. Assurance Certificates (Standard Menu):

Navigation: **Completions > Work and Job Completion s> Assurance Certificates**

- **NOTE** Previously, users with **Close** rights could also reopen tasks and certificates. Now, reopening requires the **Revoke** rights set to planned tasks, preservation tasks, and certificates, which is assigned to administrators or supervisors. Users with the existing **Close** rights can still mark tasks and certificates as closed, but they won't be able to reopen them for further edits. You'll need the Revoke rights for the following managers:

Tag type	Revoke rights are required for the following	
	Digital forms	Paper based forms
Planned tasks	vTasks_TestsCompletion	vTasks_SmartForms
Preservations	vAssetTasksScheduledPreservation	vTasks_SmartForms
Certificates	vCertificates	vCertificatesSmartForm

NOTE On both mobile and web, you can now checkout only a maximum of 100 pending tasks or punchlists combined to work offline.

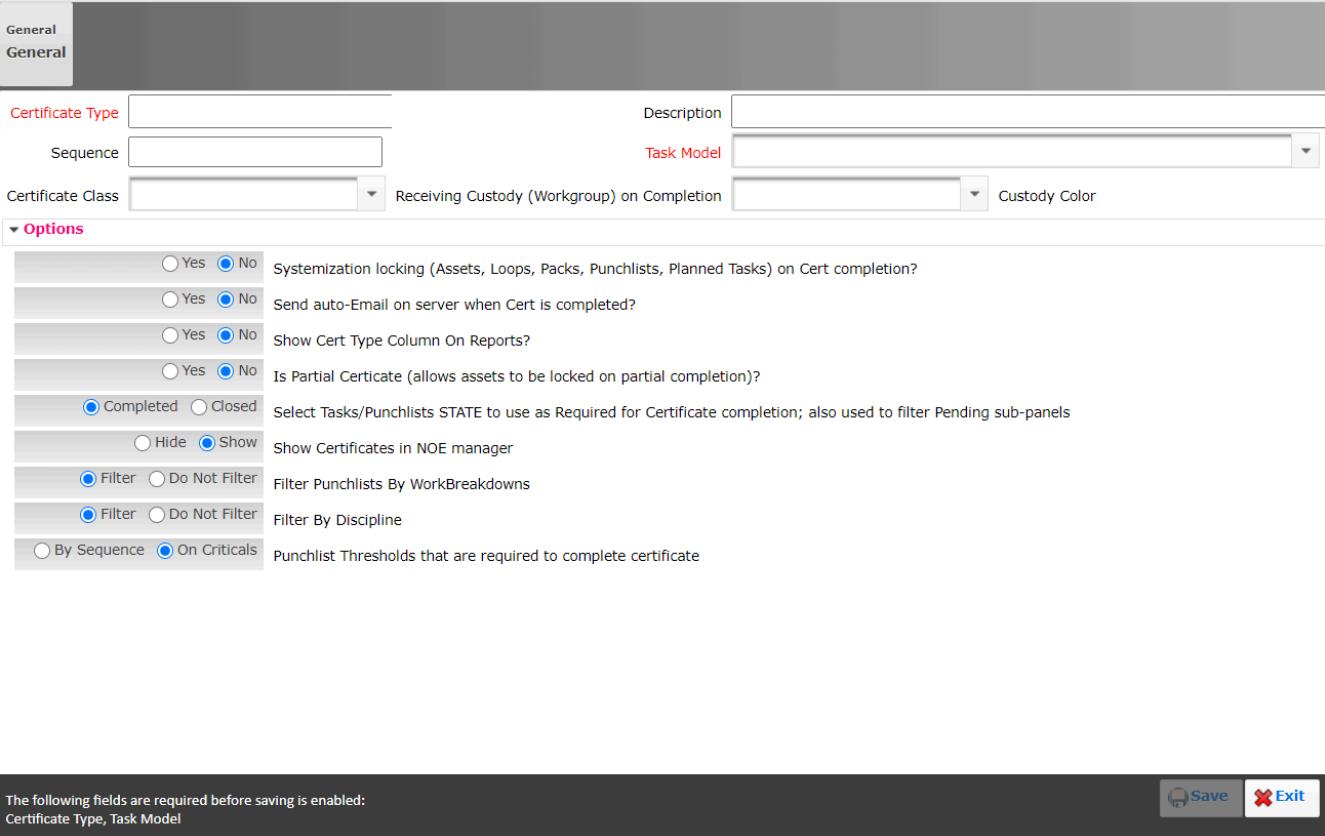
Certificate Creation Wizard

What are Certificates?

To improve and standardize certificate assignment the **Certificate Creation Wizard** is developed. The Certificate Creation Wizard can simplify certificate assignment by creating **Certificate Types**. By using the **Certificate Creation Wizard** to batch create certificate (by type) and have certificates assigned to the associated selected systemization (for example, systems) or location (for example, areas) associations. There are several methods can be created, from "blank" where a user fills out all the pertinent details, or using the wizard to auto-create as described above. In order to create a standard certification process across all projects, the system administrator using the "Project Creation Wizard" can copy all the required certificate types from one "instance or project" to another. Before Certificates can be created, Certificate Types must be created and configured.

Certificates can be created by either configuring all details from scratch or by copying from an existing instance (certificate). Initiate the process by creating a **Certificate Type**. Navigate to

Certificate Types Manager using the  icon and click **New**. You can also tag a task model while creating the certificate type itself.



The following fields are required before saving is enabled:
Certificate Type, Task Model

Save Exit

In the **Options** section, you can customize the visibility of a certificate as per requirement. You could also, set exceptions for incomplete tasks.

1. **CertType** - this is the abbreviated text (e.g. MCC, PSSR, DAC)
2. **Sequence** - some reports only include up to 4 certificate types, sequence certificates 1-4 where on a report certificate with sequence will show far left, and 4 far right
3. **Task Model** - required so that a certificate can be created and either linked to a mail merge or smart form centric certificate
4. **Receiving Custody** - skyline box (e.g. systems) color will change to work group color based when the certificate is completed

5. Options

- Systemization Locking - upon certificate completion, the asset/tag systemization or location cannot be edited
- Auto-Email - system will automatically send emails to users when a certificate is completed
- Show on Reports - not all certs need to be on reports, and therefore admins are enabled to determine which certs to display on reports
- Partial Certificate - This is going to be revised in upcoming release.
- State Used - In order to complete a certificate an admin can determine child object states (e.g. all tasks and punches must be closed in order to complete a certificate)
- Filter Punchlist by WBS - certificate will filter for only those punches directly assigned to cert systemization AND selected phase/stage
- Filter by Discipline - this is specifically designed for Discipline Acceptance Certificates (DAC)
- Punch Threshold - admins can provide flexibility where a punch category (and below) will not be treated as exceptions if not completed, when trying to complete a certificate.

NOTES

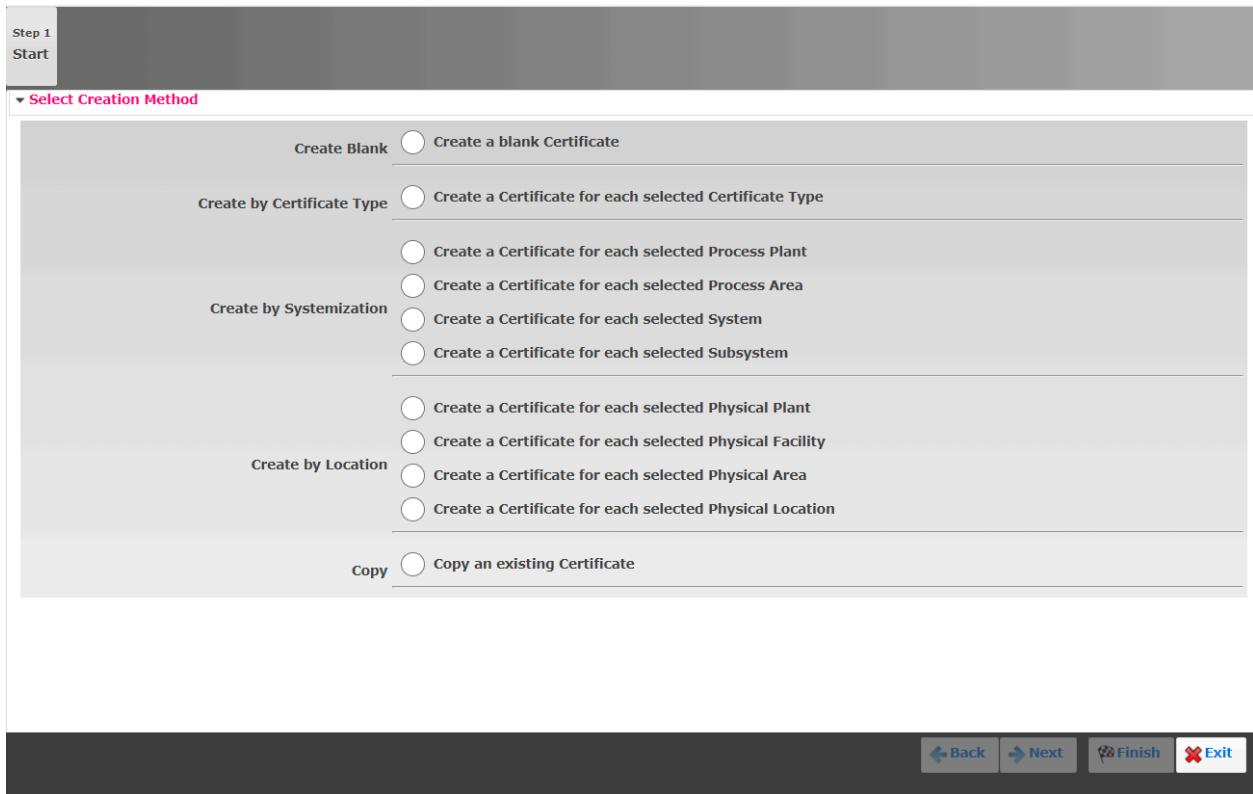
- You can list up to four certificates in a report.
- For more information on Certificate Sign-Off options, see [Smart Forms](#).

Create a Task Model

1. To create a certificate, you need a Task Model, of which **Task Type** is a <*Certificate*>.
2. Select the **Execution Type** of the Task Model.
3. From the **Inspection Points** tab, add the inspection steps needed to execute the task model.
4. Click **Submit**.

Create a Certificate

1. In the Home page, click **Settings Panel**  > **Certificate Types Manager**.
2. Click **New**, from the bottom bar of options.
3. In the **Edit Certificate Type (New Record)** pop-up window, assign the task model you created earlier.
4. Type the required information and select the options as required, and then click **Save**.
5. Go to the **Certificates** tab, click **New**.
6. In the **Edit Certificate Wizard**, you could choose from the options provided that caters to your requirement, and then select **Next**.



7. In the **Certificate Types** tab, select the **Certificate Type** from the list, and then click **Next**.

- If you have selected a **Paper Certificate**, you can execute it using the **generate Form** and **Upload Form** options from the bottom bar.
- When you upload the form, the smart form is assigned to the certificate, and you can continue to execute the certificate similar to other certificate types. Uploading the form, does not complete the workflow of the certificate.

8. In the **Select Associations** tab, select the **Work Breakdown Association**, **Location Associations**, **Other Associations**, and **Auto Assignment**.

9. In the **Auto Assignment** section, you can select the associated **Tasks**, **Punchlists**, **MOC**, **RFI**, and **HIRA** for **Assign** list.

NOTE The tasks, punchlists, MOC, RFI, and HIRA are all associated to the Certificate based on your System selection.

10. Click **Finish**.

Execute Certificates

1. Go to the **Certificate Types** tab, click on the created Certificate.
2. Click **Edit**, from the bottom bar of options.
3. In the **Edit Certificate <CERT number>** pop-up window, you can verify the auto assigned tasks, punchlists, MOC, RFI, and HIRA details.
4. Click on the tabs to check for Pending Tasks, Punchlists, or Predecessors, and so on.
5. In the **Completions** tab, you can choose to **Accept**, **Reject**, or **NA** to the assigned inspection steps according to the requirement on the smart form.
6. You can select to **Submit**, **Verify**, **Complete**, and **Close** according to the role assigned to you.
7. In the **Smart Completions** window, you are shown the exceptions for pending tasks or punchlists if any.
8. Select **Complete**.

NOTE The **Documents** tab displays the documents associated with the certificate and the documents associated to the assets, loops, and packs that are associated with the certificate. If a document is related to the certificate and the asset, loops, or packs; it is included only once instead of being listed twice.

Edit a Certificate received from email

1. Click on the edit link from the email received.
2. If you are already in an active session of Smart Completions:
 - a. You are directed to the Edit form of the certificate.
 - b. Edit the required details.
 - c. Select **Save** and then **Exit** from the form.
3. If you are not logged in to Smart Completions:
 - a. You are directed to the log in page of Smart Completions.

b. Once logged in, you can edit the required details of the Certificate.

c. Select **Save**.

NOTE When directed from an email notification to Smart Completions, you cannot exit from the form, but can save all the edited information and close the browser window. This is applicable to all manager edit forms.

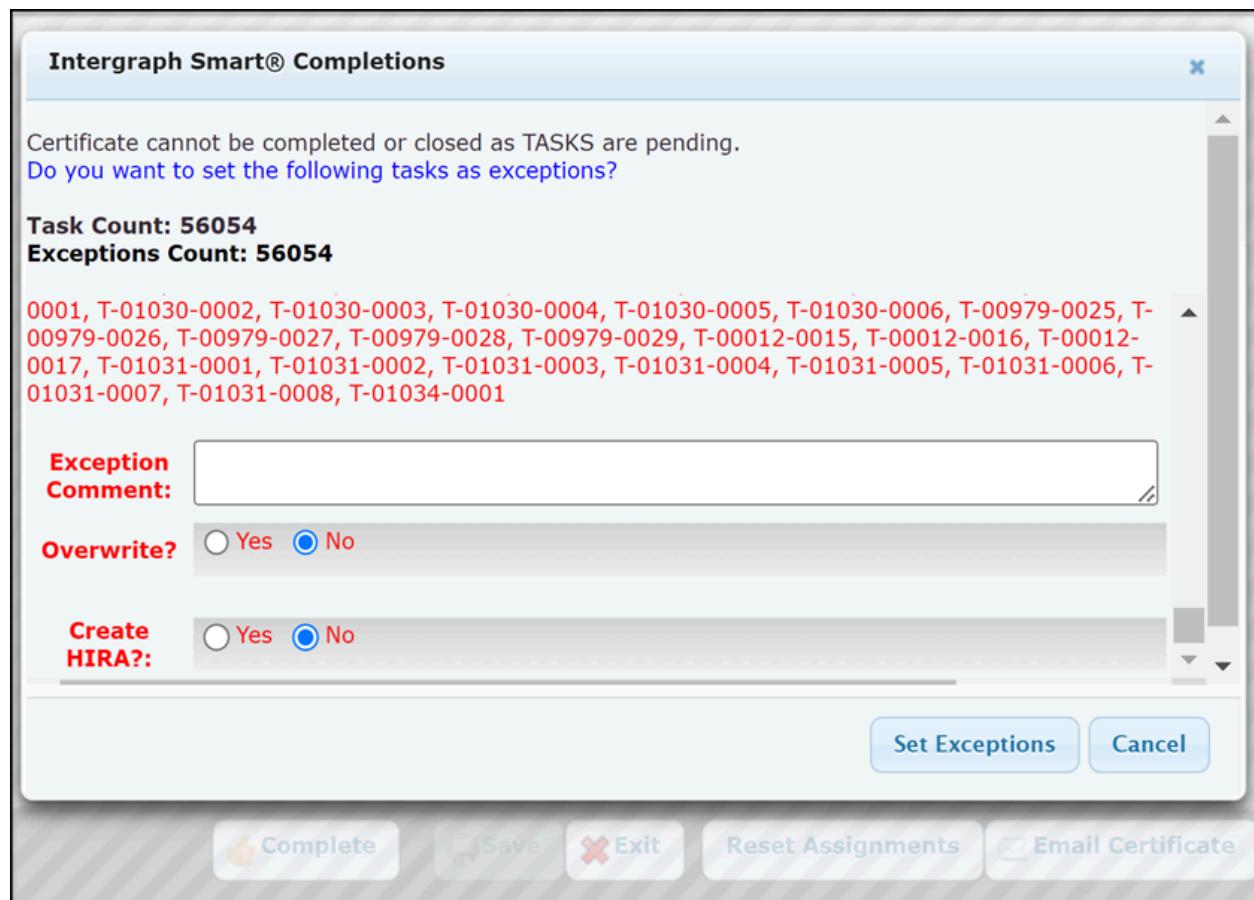
Managing Certificate Exceptions

You can set a task model as complete only if all the job cards are cleared. In case of any exceptional pending tasks or punch lists, you can set exceptions to skip the task and complete it. This can be done by navigating to the **Certificates Manager**.

Set task exceptions

1. Select **Complete** and the **Set Exceptions** window appears.

NOTE If any pending tasks with exceptions set to it, a message is displayed on your screen.



2. Enter **Exceptions Reason** for the pending Tasks.
3. If HIRA is required to be created for the Tasks in Exception, select **Create HIRA?** option to **Yes**.
4. Select **Set Exceptions**.

NOTE Exceptions for punch lists can be declared only after task exceptions are set. To set exceptions for **punch lists**:

5. Enter remarks for the set of punch lists that come under exceptions.
6. If HIRA is required to be created for the Punchlists in Exception, select **Create HIRA?** option to **Yes**
7. Select **Set Exceptions**.
8. After the above steps are followed, you can complete a task by selecting **Complete**.
9. Once Certificate is closed, user can modify HIRA and add Risk Assessment steps for pending Tasks by navigating to the **Planned Tasks Manager**.

Modify HIRA and Risk Assessment steps for Tasks:

1. Search the Task that was an Exception for the certificate, select the Task and select **Edit**.
2. Select the **HIRA ID** hyperlink for the under the **Scheduling Data** section to load the **Hazard Identification and Risk Assessment Edit** window
3. Navigate to the **Risk Assessment** tab.
4. Add the required **Risk Assessment steps/data**.
5. Select **Save**.

NOTE User can modify **HIRA** and add Risk Assessment steps for pending Punchlist Items by navigating to the **Punchlist & C.O.W Manager**.

Modify HIRA and Risk Assessment steps for Punchlist:

1. Search the Punchlist that was an Exception for the certificate, select the **Punchlist** and select **Edit**.
2. Select the **HIRA ID** hyperlink for the under the **Scheduling Data** section to load the **Hazard Identification and Risk Assessment Edit** window.
3. Navigate to the **Risk Assessment** tab.
4. Add the required **Risk Assessment steps/data**.
5. Select **Save**.

Viewing Tasks associated with Certificate Type

Each certificate can have 1 or more tasks associated with it.

1. To view the tasks that are assigned to any certificates, navigate to the **Assign Tasks** tab, click **Filter** and set **Certificate Type = Any**.
2. To view the tasks that are not assigned to any certificates, navigate to the **Assign Tasks** tab, click Filter and set **Certificate Type = None**.

NOTE When you assign any value from the given list to filter, once the results are viewed, the variable gets back to its default value. For instance, **Certificate Type** by default takes the value **=**, when we change the option to **Any**, after it shows the apt results, for the next search, you can see that the **Certificate Type** holds back the default value **=**.

Assurance Certificates Types

1. In the Certificates manager, select **Configuration** icon from the bottom bar.
2. In the Configurations Manager > **Certificate Types**.
3. In the **Certificate Types** Manager, select **Search**.
4. Choose a certificate type and then select **Edit**.
5. In the **Edit Certificate Type** page, select **Receiving Custody (Workgroup) on Completion**.
 - **Completed** - To transfer systemization custody on smart form.

- **Closed** - To transfer systemization custody on smart form close upon completion.

6. Select **Certificate Locking > Yes**.

7. In the **Options** section, choose the options based on your requirement.

8. Select **Save**.

NOTE The **Certificate Completions Details by Type and Systemization** report displays the tasks and punchlists grouped by systemization. This report also includes the exception details and the exception percentage for tasks and punchlists.

Configure the pending punchlists

1. In the **Certificate Types** manager, select an existing Certificate Type or create a new one.
2. In the **Certificate Type Edit** page, select **Options > Additional States to be Excluded from Pending Punchlists**.

Select this	To do this
Rejected	Only punchlists marked as Rejected will be excluded from the pending punchlists count of the smart form.
Revoked	Only punchlists marked as Revoked will be excluded from the pending punchlists count of the smart form.
Rejected and Revoked	Only punchlists marked as Rejected and Revoked will be excluded from the pending punchlists count of the smart form.

None (Default)	All punchlists are included in the pending punchlists count.
----------------	--

3. Select **Save**.

Assurance Certificates Completion

The process for Certificate Completion is outlined below:

1. If a task or job card is incomplete and yet needs to be transferred to next work group, select **Closed**. This creates a partial certificate and locks the assets.
2. Once a certificate is **Completed** Certificate Locking is enabled.

Work Breakdown & Location Associations.

NOTES

- In order for Certificate Locking to work the 'Work Breakdown Association' and 'Location Associations' section of the Certificate **Edit** Form must be filled out.
- You require **complete** and **approve** rights to be assigned to you to complete the certificate.

Assurance Certificates Locking

Certificate Locking affects the following:

- Assets
- Loops
- Packs (Cable, Piping)
- Tasks (By Assets, Planned Task & Scheduled Task)
- Punchlists

Certificate Locking prevents the creation, deletion and reassignment of Location Association / Work Breakdown Association for Assets, Loops, Packs, Tasks and Punch lists.

The process for Certificate Locking is outlined below:

1. Assets, Loops and Packs: If a user tries to create an Asset, Loop or Pack and assign it to a 'Location Association' that is locked via Certificate Locking they cannot as the location is not available for selection.

Delete Function.

2. If a user tries to delete an Asset, Loop or Pack they cannot.

Location Association Locked.

3. A user can edit Asset, Loop or Pack information excluding 'Location Association' as it is locked and displayed only as a label.

Tasks and Punch lists.

4. Tasks and Punch lists: If a user tries to create a Task or Punch list and assign it to a 'Work Breakdown Association' and 'Location Association' that is locked via Certificate Locking they cannot as the location is not available for selection.

NOTE The 'Work Breakdown Association' and 'Location Association' have to be an exact match with the completed certificate in order for the Certificate Locking to be enforced.

Delete Function.

5. If a user tries to delete a Task or Punch list they cannot.

Work Breakdown and Location Association Locked.

6. A user can edit Task and Punch list, excluding 'Work Breakdown Association' and 'Location Association' as it is locked and displayed only as a label.

Partial Certificates

The system allows you to lock the assets on Partial Completion and progress to the next set of job cards.

In Smart Completions, there is a transition of work groups as per the tasks involved. This transition (custody transfer) happens only after a certificate is generated and passed on by the existing work group to the next work group where the next set of tasks need to be carried

out. Partial Certificates are created when you have certain tasks,(any completions-based task - e.g. for assets, loops, packs, systems, areas etc.) that are not completed and still provides the project the ability to transfer some of the assets/loops/packs to the receiving workgroup, thereby enabling the project to continue with partial handover while the remaining tasks can be addressed separately. So, this functionality provides great flexibility for a project to perform partial handover while maintaining original functionality to "auto-assign" tasks to a certificate based on systemization, discipline, WBS etc.

For instance, let us take an example of a Job Card (JC-01) that has to get started with work group type- **Engineering** and then continued by work group type- **Commissioning**. So, initially in the Engineering phase, all the assets that are put to work are tagged and on completion of phase-1, a certificate gets issued for the custody transfer to Commissioning work group. Here, you have a choice to generate a partial certificate based on the completion state of the job card at engineering level. A raw water system is meant to be handed over from construction to commissioning, however only the tanks and associated upstream equipment have been full verified for installation and testing, however the downstream Equipment is pending final QA/QC checks. Partial certificates will now enable a project to select the associated completions tasks / punches, for the upstream equipment and tanks to be transferred as part of the Mechanical Completion Certificate (MCC). This enables the commissioning group to prepare for commissioning activities to stay on project schedule while the construction group finishes up all QA/QC inspections for downstream system equipment. It provides a project the flexibility to provide all tasks/punches in a system all at once, or just a subset of associated equipment in an incremental fashion.

General																																	
<table border="0"> <tr> <td>Certificate Type</td> <td>DAC</td> <td>Description</td> <td>Discipline Acceptance Certificate</td> </tr> <tr> <td>Sequence</td> <td>2</td> <td>Task Model</td> <td>TM-00004 - Certificate C2 Mechanical Completion (MCC)</td> </tr> <tr> <td>Certificate Class</td> <td></td> <td>Receiving Custody (Workgroup) on Completion</td> <td>Custody Color</td> </tr> </table>				Certificate Type	DAC	Description	Discipline Acceptance Certificate	Sequence	2	Task Model	TM-00004 - Certificate C2 Mechanical Completion (MCC)	Certificate Class		Receiving Custody (Workgroup) on Completion	Custody Color																		
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Sequence	2	Task Model	TM-00004 - Certificate C2 Mechanical Completion (MCC)																														
Certificate Class		Receiving Custody (Workgroup) on Completion	Custody Color																														
Options <table border="0"> <tr> <td><input checked="" type="radio"/> Completed</td> <td><input type="radio"/> Close</td> <td>Select state for custody transfer?</td> </tr> <tr> <td><input type="radio"/> Yes</td> <td><input checked="" type="radio"/> No</td> <td>Systemization locking (Assets, Loops, Packs, Punchlists, Planned Tasks) on Cert completion?</td> </tr> <tr> <td><input checked="" type="radio"/> Yes</td> <td><input type="radio"/> No</td> <td>Send auto-Email on server when Cert is completed?</td> </tr> <tr> <td><input checked="" type="radio"/> Yes</td> <td><input type="radio"/> No</td> <td>Show Cert Type Column On Reports?</td> </tr> <tr> <td><input type="radio"/> Yes</td> <td><input checked="" type="radio"/> No</td> <td>Is Partial Certificate (allows assets to be locked on partial completion)?</td> </tr> <tr> <td><input checked="" type="radio"/> Completed</td> <td><input type="radio"/> Closed</td> <td>Select state as Requirement for Certificate completion (Tasks/Punchlists)</td> </tr> <tr> <td><input type="radio"/> Hide</td> <td><input checked="" type="radio"/> Show</td> <td>Show Certificates in NOE manager</td> </tr> <tr> <td><input type="radio"/> Filter</td> <td><input checked="" type="radio"/> Do Not Filter</td> <td>Filter By Discipline</td> </tr> <tr> <td><input checked="" type="radio"/> Auto (old filtering)</td> <td><input type="radio"/> Multiple Assignments</td> <td>Assignment of Certificate Items (Tasks, Punchlists, etc)</td> </tr> <tr> <td><input type="radio"/> By Sequence</td> <td><input checked="" type="radio"/> On Criticals</td> <td>Punchlist Thresholds that are required to complete certificate</td> </tr> </table>				<input checked="" type="radio"/> Completed	<input type="radio"/> Close	Select state for custody transfer?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	Systemization locking (Assets, Loops, Packs, Punchlists, Planned Tasks) on Cert completion?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Send auto-Email on server when Cert is completed?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Show Cert Type Column On Reports?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	Is Partial Certificate (allows assets to be locked on partial completion)?	<input checked="" type="radio"/> Completed	<input type="radio"/> Closed	Select state as Requirement for Certificate completion (Tasks/Punchlists)	<input type="radio"/> Hide	<input checked="" type="radio"/> Show	Show Certificates in NOE manager	<input type="radio"/> Filter	<input checked="" type="radio"/> Do Not Filter	Filter By Discipline	<input checked="" type="radio"/> Auto (old filtering)	<input type="radio"/> Multiple Assignments	Assignment of Certificate Items (Tasks, Punchlists, etc)	<input type="radio"/> By Sequence	<input checked="" type="radio"/> On Criticals	Punchlist Thresholds that are required to complete certificate
<input checked="" type="radio"/> Completed	<input type="radio"/> Close	Select state for custody transfer?																															
<input type="radio"/> Yes	<input checked="" type="radio"/> No	Systemization locking (Assets, Loops, Packs, Punchlists, Planned Tasks) on Cert completion?																															
<input checked="" type="radio"/> Yes	<input type="radio"/> No	Send auto-Email on server when Cert is completed?																															
<input checked="" type="radio"/> Yes	<input type="radio"/> No	Show Cert Type Column On Reports?																															
<input type="radio"/> Yes	<input checked="" type="radio"/> No	Is Partial Certificate (allows assets to be locked on partial completion)?																															
<input checked="" type="radio"/> Completed	<input type="radio"/> Closed	Select state as Requirement for Certificate completion (Tasks/Punchlists)																															
<input type="radio"/> Hide	<input checked="" type="radio"/> Show	Show Certificates in NOE manager																															
<input type="radio"/> Filter	<input checked="" type="radio"/> Do Not Filter	Filter By Discipline																															
<input checked="" type="radio"/> Auto (old filtering)	<input type="radio"/> Multiple Assignments	Assignment of Certificate Items (Tasks, Punchlists, etc)																															
<input type="radio"/> By Sequence	<input checked="" type="radio"/> On Criticals	Punchlist Thresholds that are required to complete certificate																															

As shown in the figure above, these are the features while assigning certificate type:

You can select the state (Complete/ Closed) to generate the certificate (Partial or Complete) for custody transfer of the job card.

An interesting feature here is that you can add or assign the certificate items (assets- tasks, punchlists, MOC, HIRA etc) through three options:

- Auto assignment - Automatically picks the latest state of the assets.
- Multiple Assignment - You can manually assign the assets to different certificates.
- Single Assignment - You can assign single asset or task to a particular Certificate item.

NOTE This custody transfer or change in work group type can be monitored in the skyline report.

Certificate Completion with Punchlist Exceptions

What are certificate exceptions?

Certificate exceptions allow users to complete a certificate even if there are outstanding punchlist items, provided they meet specific criteria. This is particularly useful when dealing

with critical or non-critical punchlist items that may not necessarily prevent the safe completion of the certificate.

NOTES

- Critical Punchlist Items: Automatically flagged as exceptions. This cannot be configured.
- Non-Critical Punchlist Items: Can be flagged as exceptions based on a configurable "Punchlist Threshold."
- Punchlist Threshold: Defines the priority level of non-critical punchlist items that will be automatically flagged as exceptions. For example, if you select "B" as the threshold, all punchlist items with priority B and above will be flagged as exceptions.
- Punchlist (Exceptions) Role: Grants users the ability to override the completion of a certificate by flagging exceptions.

Define Punchlist Priorities

1. As an admin user, navigate to the Priorities table.
2. Query for any priority associated with the punchlist module.
3. Sequence the priorities, ensuring the threshold level is above the desired exception priority.

Enable Punchlist Thresholds

1. Open the **Certificate Types** edit form.
2. Select **YES** for the **Punchlist Thresholds** option.

Using Certificate Exceptions

For example, Subsystem SS1 has 3 completed tasks and 3 pending punchlist items:

- 1 Critical (Priority A)
- 1 Non-Critical (Priority B)
- 1 Non-Critical (Priority C)

You want to complete the certificate by flagging the Priority A and B punchlist items as exceptions.

1. In the **Edit Certificate** page, review the pending punchlist items.

2. Select **COMPLETE**.

 **TIP** A dialogue box appears for exception acceptance.

3. Select the Priority A and B for punchlist items.

4. Enter appropriate comments for each exception.

5. Select **Accept**.

 **TIP** A dialogue box confirms the flagged exceptions.

6. In the **Edit Punchlist** page, users with the **Exceptions** role can edit the exception comments for individual punchlist items later.

7. Select **Cancel** to return to the pending punchlist tab for further completion or review.

8. Go to the **Completions** tab of the smart form.

9. In the **Certificates Dependencies Status** section of the Smart form, you can view the number of critical and non-critical punchlists along with the exceptions defined for any of the critical punchlists.

 **TIP** A thumbs-up icon will be displayed when there are zero critical pending punchlists. Otherwise, a thumbs-down icon will be shown if there are critical pending punchlists and no exception for closing the certificate exists.

NOTES

- The exceptions are displayed on the certificate datasheet.
- Users can access and edit the exception comments for individual punchlist items through the Punchlist Edit form.

Add documents to Certificates

You can attach documents to a certificate using the **Files** tab.

1. In the **Edit Certificate** window, select **Files** tab.
2. In the **Files** tab, fill the information of your upload in the **Caption** section.

Records (#)	#	Caption	Offline Mobile?	Files
<input type="button" value="Delete"/>	1	Certificate completion file #1	<input type="checkbox"/>	
<input type="button" value="Up"/>	2	Certificate completion file #2	<input type="checkbox"/>	
<input type="button" value="Down"/>	3	Certificate completion file #3	<input checked="" type="checkbox"/>	
	4	Certificate completion file #4	<input type="checkbox"/>	

3. Select **Offline Mobile**.

TIP This enables the file attachment to download using the mobile application.

4. Select **Upload** icon, and browse and select the required file to attach using the **Choose File** option.

TIP A warning message is displayed, If the File Size is more than 3MB you cannot download the file using mobile application.

5. Click **OK**. The files are uploaded successfully.

To verify the uploaded files, select the **Files** tab from the secondary panel, this will show all the attachments of the selected task. To search the flange joint tasks which have attachments, select **Task Attachments > Yes** from the side search panel, and click **Search**. This returns the results with all tasks with attachments.

Using the **Files** tab, you can now upload any number of attachments.

Click on **Edit List** to add documents to the selected certificate.

This benefits the import section as well. When you import a spreadsheet (XLS) that has fields, you can configure the field name to **Documents (Name List)**.

1. Open **Imports** manager.
2. Select **vCertificates**, and click **Import**.
3. Add the required spread sheet and click on the **Select** tab.
4. All the fields present in the imported file are parsed and displayed on screen.
5. Under the **Field Name** column, select the required option from the list available.
6. For the column that contains document name, select **Documents (Name List)**.

The screenshot shows the 'Imports' manager interface with the 'Select' tab selected. The 'Step 1 Start', 'Step 2 Select', and 'Step 4 Import' buttons are visible at the top. Below them is a 'Defaults to Apply' section with a 'Collision Type' dropdown and an 'Apply Settings' button. The main area is titled 'Choose fields to import and behaviors' and contains a table with columns: Column Name, Field Name, Collision, Lookup Behavior, Type, and Size. The 'Field Name' column is highlighted with a yellow background, and the 'Collision' column shows 'Preserve' for most rows. A dropdown menu is open over the 'Field Name' column, showing options like 'Field001 (Custom)', 'Field002 (Custom)', etc., and 'Documents (Name List)' is highlighted with a yellow background. The 'Column Name' column lists various fields such as FWC ID, CWP No#, Plant Item Tag, FWC No, FWC Description, ITR Form Name, FWV Name, FWV Budget of Plant Item, WV UoM, FWSCode, FWS Description, and Work Volume Input Type.

Column Name	Field Name	Collision	Lookup Behavior	Type	Size
FWC ID	Field001 (Custom)	Preserve			
CWP No#	Field002 (Custom)	Preserve			
Plant Item Tag	Field003 (Custom)	Preserve			
FWC No	Field004 (Custom)	Preserve			
FWC Description	Field005 (Custom)	Preserve			
ITR Form Name	Task Predecessors (Name List)	Preserve			
FWV Name	Documents (Name List)	Preserve			
FWV Budget of Plant Item		Preserve			
WV UoM		Preserve			
FWSCode		Preserve			
FWS Description		Preserve			
Work Volume Input Type		Preserve			

Check In/Check Out Certificates

1. Go to the **Certificates** manager.
2. Select **Search**, to get the list view of all certificates.
3. Choose a certificate you want to **CheckIn/Out**.
4. Select the **CheckIn/Out** option from the bottom ribbon bar.
5. When checking out a certificate, you will be prompted to select the associated
 - a. No pending tasks or punchlists: The certificate smart form is included.
 - b. Pending Tasks
 - The pending tasks are checked out along with the certificate to the assigned user.
 - For any pending tasks that are already check out, you will be prompted to select if you would like to have a **View only** mode of the tasks.
 - The assigned user would require **Manage** rights to **vTasks_testsCompletion** or **Issue** rights to **vTasks_SmartForms**.
 - c. Pending Punchlists
 - The pending punchlists are checked out along with the certificate to the assigned user.
 - For any pending punchlists that are already check out, you will be prompted to select if you would like to have a **View only** mode of the punchlists.
 - The assigned user would require **Manage** or **Issue** rights to **vPunchlist**.
 - d. Tags (Assets, loops, packs)
 - Any associated tasks of the tasks and punchlists shall also be checked out accordingly.
 - You can only edit them if you have the necessary rights assigned.
 - e. Documents

- Any associated documents with the tasks or punchlists shall be checked out.

NOTE When a certificate is checked out, it is locked for other users and cannot be modified by any one else other than the assigned user.

6. In the **Check Out** dialog box, you will find information of the certificate and its associated records:

- a. Select the required details of yourself or any other user you would like to check out the certificate under.
 - Choose the **Company** from the list.
 - Choose the **Workgroup**.
 - Choose a user for **To Person** field.
- b. Select **Check Out**.

7. Once checked out, the assigned user can work on the field and come back and edit the required details for the particular checked out certificate.

NOTE You would require **Manage** rights to **vCertificates** manager to **CheckIn/Out** on behalf of other users.

Check In a Certificate

1. Go to **Certificates** manager.
2. Select search, and from the list view of certificates, open the Certificate you would like to Check In.
3. Select **Check In** option.
4. Type any comments about the changes you made to the certificate, and select **OK**.

Handover and Turnover Packages

The Handover/Turnover Package is the culmination of the project. It identifies what documents are to be handed from Construction to Commissioning and Commissioning to Operations. It is very important that the "Systemization" breakdown is approved by the client first, as all HOPs/TOPs will be handed over at the System level and Mechanical Completion

Packages at the Subsystem level. All tests & related documentation, by law, must be handed over to the client upon satisfactory completion. It is essential that all documents are legible and included.

Before testing & inspection commences, an organized system should be implemented to ensure that all forms are completed, returned and filed correctly. All parties must cooperate with this system. Therefore, we recommend that you implement it as soon as possible (including setting up filing trays to receive tests and folders). If you require any guidance or assistance, please contact your support team through Smart Support.

NOTE You can now list up to a maximum of 100 systems and sub systems each in the Systemization section of the data sheet associated with the Handover Package. Also, you can list up to a maximum of 30 phases and stages each in the breakdown section of the data sheet.

Creating a TOP and Assign TOP Content Requirements

The **Turnover Package (TOP)** or **Handover Packages (HOP)** module is designed to compile data, documents and images. These are done in a manner that simplifies the recipient to go through all the information and store either into a file server, SharePoint or Document Management System (DMS).

A TOP contains several TOCs and configured for all projects within the same instance. They typically include:

1. Systemization
 - Systemization Hierarchy Report
2. Engineering Lists
 - Equipment lists
 - Instrument Lists
 - Pipe and Valve Lists
 - Documents and Drawing List
3. Completions Deliverables
 - Preservation Task Report without Completed Forms

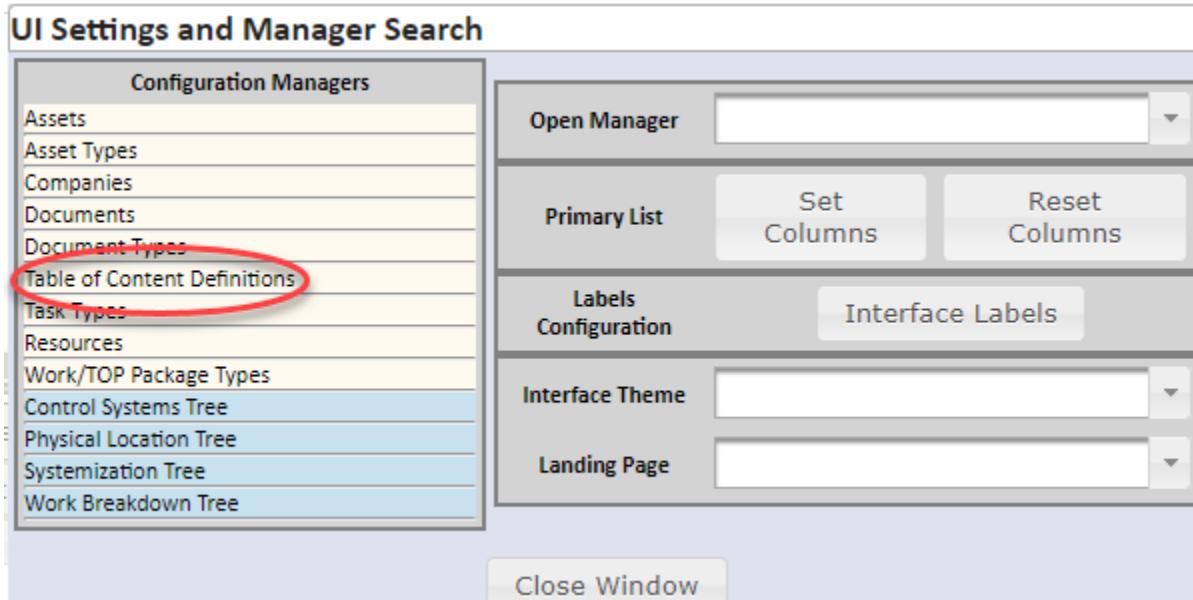
- Preservation Non-Compliance Report
- Completions and Commissioning Task Report w/ Completed Forms
- Punchlist Report
- Notice of Energization Report without Completed NOEs
- Assurance Certificate Report without Completed Certificates

Before a TOP can be created an administrator must first define the content, Table of Content (TOC) items.

To create or edit TOCs:

1. Select **Settings** icon at the bottom of any open module and enter **Table of Content** text within the **Open Manager** field.
2. Select and load the filtered module.

NOTE If within the **TOP** module, select **Settings** icon and it will be an available configuration module.



With every release of Smart Completions there is a default PPM project, which includes a template of Turnover Package Types (e.g. Mechanical Completion, Turnover Package), which will also be pre-configured with TOCs as listed above.

Within the TOC module you can filter all TOCs by the package they are assigned to. A TOC can be assigned to multiple TOPs. The instructions below will cover the following TOCs:

1. Tag list
2. Punchlist
3. Completions Task
4. Documents



HEXAGON

PPM

[Logout](#) Configuration ▾ Engineering ▾

▼ Search

▼ General

Description

Mechanical Completion Package

Filter: Enter keywords All None

Construction Work Package

Dry Commissioning

Engineering Work Pack

Mechanical Completion Package

Rotating Equipment

Turnover Package

Merge Forms

Yes No

Table of Content Definitions (10)		Reports	Show...	Report Name	Report View	Show Excel?	Export View	#TOCs	Include Exec...	Include Plat...	Merge Form...
Certificate Assurance	<input checked="" type="checkbox"/>	Certificate Summary By Systemization	<input type="checkbox"/> Y <input type="checkbox"/> N	rvCertificates		<input checked="" type="checkbox"/>	ovCertificates	26	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Documentation	<input checked="" type="checkbox"/>	Document Index with Manufacturer	<input type="checkbox"/> Y <input type="checkbox"/> N	rvDocuments		<input checked="" type="checkbox"/>	ovDocuments	22	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Electrical Equipment List	<input checked="" type="checkbox"/>	Electrical - Electrical Index by Subsystem	<input type="checkbox"/> Y <input type="checkbox"/> N	rvAssets_Electrical		<input checked="" type="checkbox"/>	ovAssets_Electrical	22	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Instrument Equipment List	<input checked="" type="checkbox"/>	Instruments - Instrument Index by Subsystem	<input type="checkbox"/> Y <input type="checkbox"/> N	rvAssets_Instruments		<input checked="" type="checkbox"/>	ovAssets_Instruments	22	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Logos Index	<input checked="" type="checkbox"/>	Loop Test Index Report By Systemization	<input type="checkbox"/> Y <input type="checkbox"/> N	rvLoops		<input checked="" type="checkbox"/>	rvLoops	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mechanical Tag List	<input checked="" type="checkbox"/>	Mechanical - Mechanical Index	<input type="checkbox"/> Y <input type="checkbox"/> N	rvAssets_Mechanical		<input checked="" type="checkbox"/>	ovAssets_Mechanical	26	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pipe List	<input checked="" type="checkbox"/>	Pipe - Piping Index by Subsystem	<input type="checkbox"/> Y <input type="checkbox"/> N	rvAssets_Piping		<input checked="" type="checkbox"/>	ovAssets_Piping	22	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Punchlist Index	<input checked="" type="checkbox"/>	Punchlist Index w Comments	<input type="checkbox"/> Y <input type="checkbox"/> N	rvPunchlist		<input checked="" type="checkbox"/>	ovPunchlist	26	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Systemization	<input checked="" type="checkbox"/>	Asset - Systemization Breakdown Report	<input type="checkbox"/> Y <input type="checkbox"/> N	rvProcessBreakdownHierarchy		<input checked="" type="checkbox"/>	ovProcessBreakdowns	26	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Task Completions Report & Test Forms	<input checked="" type="checkbox"/>	Test Completions Status By Systemization- Planned Tests	<input type="checkbox"/> Y <input type="checkbox"/> N	rvTaskCompletions		<input checked="" type="checkbox"/>	vTasks_TestsPlannedDetails	26	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Compile the Table of Contents (TOC)

Table of Content Setup

1. Select **Settings Panel > Handover Packages (digital) manager.**
2. In the TOP manager, select the **UI settings and Manager Search** from the bottom bar of the secondary panel.
3. Select **Table of Content Definitions** from the **Configurations Manager** list.
4. Select the **Description** you would like to set the TOC for. For example, if you have selected **Task Completions Report & Test Forms**.

The screenshot shows the 'Edit Table of Content Definition' window for 'Task Completions Report & Test Forms'. The window has a tab-based interface with three tabs: Step 1 General, Step 2 Export Column Fields, and Step 3 Criteria. The Step 1 General tab is currently selected. It contains several configuration sections:

- Table of Content Setup:** Description is set to 'Task Completions Report & Test Forms'. Package Type is '1 selected'. Show TOC options are 'Unknown' (radio button), 'Show' (radio button, selected), and 'Hide'.
- Report Setup:** Manager is 'vTasks_TestsPlanned - Completions I'. Responsible By is empty. Report Name is 'Task Completion Status By Systemiz...'. Report View is 'rvTaskCompletions'. Show Level is 'Select Options'. Show Excel? is 'Yes' (radio button selected). Filter by Responsible Company? options are 'Yes' and 'No'.
- Test Form Options (On Test Report):** Include Executed Forms (scanned forms, smart forms; completed datasheets on missing forms?) is 'Yes' (radio button selected). Include Planned Forms (mail merged, smart forms?) is 'No' (radio button selected). Sorting Rules is 'Task Description-Tag-Task'.
- Include Files:** Include files (Tasks, Punchlists, NOE reports) is 'Yes' (radio button selected). Grouping Options is 'None'. Merge Forms? is 'No' (radio button selected). Document Files is 'No' (radio button selected).

At the bottom right of the window are 'Save' and 'Exit' buttons.

Report Setup

1. In the **Edit Table of Content Definitions** windows, select the **General > Report Setup** section.

💡 TIP You can select the **Report Name** for the reports associated with the selected manager only.

2. The **Report View** is selected based on the selection of the **Report Name**.
3. To view the **Test Form Options**, make sure that you select the managers which consist of any forms attached to that manager.

Test Form Options

1. If you select **Include Executed Forms** as:
 - **Yes**: The TOC includes the forms of all executed tasks alone.
 - **No**: It includes all tasks associated forms
 2. If you select **Include Planned forms (mail merged, smart forms)** as:
 - **Yes**: Includes the mail merged or smart forms alone.
 - **No**: It includes all planned forms.
- 💡 TIP** The planned forms are only available for Tasks.
3. **Sorting Rules**: Select the sorting type from the list. This creates a sorting in the TOC based on the selected sorting rule.

Understand the Sorting Rules

When sorting rules are applied, it is applied only for files and not for folders. Folders are merged into PDFs The contents in the PDFs are sorted according to the sorting rule applied.

Screenshot of a software interface titled "Inspections and Test Forms Completions By Tasks (Planned Tests) (7) Reports". The left sidebar shows navigation options: Search, Browse by Location, Browse by Systemization (with categories 2500 - Compression (7), 2600 - Compression (0), and Unassigned Plant (219)), and Browse by WBS. The main area displays a table of task completions:

Status	Actions	Task ID	Datasheet	Description	Execution...	Executed Form	Tag
Completed	Close	I-00029-0001		Test6	Digital Execution		1100-A-12409
Closed		I-00037-0001		Test1	Digital Execution		1100-A-12409
Completed	Close	I-00593-0001		Test2	Digital Execution		1100-A-12409
Completed	Close	I-00610-0010		Test	Digital Execution		0.5"-OX-3400-043-SSB
Closed		I-00611-0002		Test3	Digital Execution		0.5"-OX-3400-046-SSB
Completed	Close	I-00611-0004		Test4	Digital Execution		1100-A-12409
Created	Check Out	I-00611-0203		Test5	Digital Execution		0.5"-OX-3400-044-SSB

Below the table, there are tabs for Test Forms (6), Inspection Points, Punchlist Items, Details, Documents (3), Predecessors, RFIs, Work Permits, Files (2), and Field Log. A preview pane shows a single document entry:

#	Caption	Image
1	test	

On the basis of above example, below are some cases explained:

Case	Merge Forms	Sorting Rules	Grouping	Description	Images
1	No	Task - Task Description - Tag	None	Default sorting	
2	No	Tag - Task - Task Description	None	Sorts by tag	
3	No	Task Description - Tag - Task	None	Sorts by task description	
4	No	(Tag Folder) - Task - Task Description	None	Groups by tag folder	
5	No	Task - Task Description - Tag	Record	Groups by record	

6	No	Task - Task Description - Tag	Tag	Groups by tag	
7	No	Task - Task Description - Tag	System	Groups by system	
8	Yes	Task - Task Description - Tag	None	Sorts all forms in PDF, merges tasks and reference files.	
9	Yes	Task - Task Description - Tag	Record	Sorts PDFs by task, merges tasks and reference files.	
10	Yes	Task - Task Description - Tag	Tag	Sorts PDFs by tag, merges tasks and reference files.	
11	Yes	Task - Task Description - Tag	System	Sorts within PDF by system, merges tasks and reference files.	

Include Files

- Select **Include Files?** For example, the files can be datasheets, images, and so on.
 - **Yes:** It includes all the associated files such as documents, datasheets, images, and so on.

- **No:** It does not include any associated file of the tag.
- **Grouping:** The grouping of the TOC is done on the basis of your selection from the below list with or without the reference files which is based on your selection for **Include Files**. You can group the TOC by:
 - **Record:** Forms the TOC for individual record.
 - **Tag:** Forms the TOC with asset, pack, or loop if available.
 - **System:** All files in TOC are organized based on system.
 - **Subsystem:** All files in TOC are organized based on sub-system.
 - **None:** Forms the TOC in a single folder or file based on your selection for **Merge Files** option.
- **Merge Files:**
 - Select **Yes:** To create a single PDF file based on grouping.
 - Select **No:** To create a folder for each record based on defined grouping.
- **Document Files:**
 - Select **Yes:** To include documents for specific tasks if required.

NOTE If the document type has a reference file selected, it will be included with a task through the **Task Documents** tab, regardless of the **Document Files** selection.

 - Select **No:** Default selection is No, to exclude the reference file document type from tasks. This will ensure to not append the task documents to renditions or in the TOC.

Create a tag list TOC

Create a Tag List TOC

TOC for tag lists is created, if you combine all tags (for all disciplines) into one TOC or break out into specific disciplines. In the example below we will create a mechanical equipment list as a TOC, and you can follow the same concept for any other tag list by different disciplines.

Edit Table of Content Definition (Task Completions Report & Test Forms) - Google Chrome

Step 1 General Step 2 Export Column Fields Step 3 Criteria

Table of Content Setup

Description: Task Completions Report & Test Forms

Package Type: 1 selected Show TOC: Unknown Show Hide

Report Setup

Manager: vTasks_TestsPlanned - Completions I Responsible By: [dropdown] Report Name: Task Completion Status By Systemiz...
 Yes No

Report View: rvTaskCompletions Show Level: Select Options Show Excel?: Yes No

Export View: vTasks_TestsPlannedDetails Filter by Responsible Company?: Yes No

Test Form Options (On Test Report)

Include Executed Forms (scanned forms, smart forms; completed datasheets on missing forms)?: Yes No

Include Planned Forms (mail merged, smart forms)?: Yes No

Sorting Rules: Task Description-Tag-Task

Include Files

Include files (Tasks, Punchlists, NOE reports)?: Yes No

Grouping Options: None

Merge Forms?: Yes No

Document Files: Yes No

Save  Exit 

General: The primary configuration item is to select the view (e.g. vAssets_Mechanical) you want to extract information from as part of a TOP.

Required:

- Description
- Manager (view / module)
- Report name (will be filtered down to that modules reports)
- Show TOC (a TOC can be configured but hidden from selection)

Optional:

- Package Type (ability to define which package types it is assoc. with)
- Responsible Company (used if you know a specific company is responsible)

- Show Excel? (ability to define data to dump into XLS file)
- Include Files? (ability to dump out asset images)
- Include Document Files (includes docs uploaded manually against this TOC). This helps you to have a record of the red lined documents and revision history.

Not Applicable: Associated with completions data and documentation

- Executed Forms
- Planned Forms

Export Columns:

1. Select and order, the fields to be exported.
2. When developing the configured export, you can sequence the fields, top to bottom, which would be left to right in the XLS file once exported.
3. In addition, you can change the export column name using the **Alias** column. For example, if the destination system does not have Asset – Name/Tag then add an **Alias** name called **Equipment No** so when the destination database consumes the .xls file it will map to their schema/table configuration.

Step 1 General **Step 2 Export Column Fields** **Step 3 Criteria**

▼ Export Column Fields

Records (200)	#	Column Name	Database Column	Alias
Edit List	1	Asset - Name/Tag	Name	
Delete	2	BOM	BOMSummary	
Up	3	Asset - Discipline	Discipline	
Down	4	Asset - Asset Type (Summary)	AssetTypeSummary	
To	5		AssetType	
	6		Description	
	7		Service	
	8		AssetStatus	
	9		AssetPriority	
	10	Technical Specs	TechSpecs	

Save Exit

Criteria: If you wish to restrict the list of data to specific records, use the **Criteria** tab to apply a **saved** filter. The search panel displayed is the exact same search panel as shown for the selected module/view. In this case, it will show the mechanical search panel as in the example above, we have selected the **vAssets_Mechanical** view. A user could develop TOCs for specific type of mechanical equipment, such as Rotating Motors, where they would apply a filter for any **asset type** that is rotating such as compressors, pumps etc. You can use the TOP module to configure load sheets for Maintenance Systems, where they do not consume data by system, but by specific equipment types.

Create a Punchlist TOC

Creating a Punchlist TOC

To create a TOC for punch list, we recommend using the template TOC from the PPM Template project. It includes a standard configuration for dumping out the Punchlist reports, Datasheets, and Images. You can do this by going to the **Project Wizard** and selecting the option to pull content from one project to another project, and TOP/TOC configuration is selected at the instance level.

Creating a TOC for punch, you would select **vPunchlist** view, select the report you wish to include as part of the TOP package compilation. Then make sure you select the **Include Files** as it will include all punch images, and all image files will reference the punch list ID with a suffix

The punch list datasheets will be compiled into one (1) PDF, along with reference images. Each image will reference the punch ID.

Box > DEMO > Example TOP > TOP-00013 > 3 Completions Handover > 3.3 Punchlist > Punchlist Files

Name	Date	Type	Size
PL Datasheets	9/12/2019 8:00 AM	Adobe Acrobat D...	7,881 KB
PL-00016 (1) Browser Capture or Conversion	10/25/2016 9:33 PM	PNG File	135 KB
PL-00016 (2) Browser Capture or Conversion	10/25/2016 9:33 PM	PNG File	135 KB
PL-00031 (1) Browser Capture or Conversion	1/8/2019 1:30 PM	JPEG File	104 KB
PL-00031 (2) Browser Capture or Conversion	1/8/2019 1:30 PM	JPEG File	104 KB
PL-00052 (1) Browser Capture or Conversion	12/8/2016 11:39 AM	PNG File	192 KB
PL-00052 (2) Browser Capture or Conversion	12/8/2016 11:39 AM	PNG File	192 KB
PL-00055 (1) Browser Capture or Conversion	12/16/2016 1:37 PM	PNG File	55 KB
PL-00055 (2) Browser Capture or Conversion	12/16/2016 1:37 PM	PNG File	55 KB

Create a Completions Task TOC

Creating Completions Task TOC

When creating a TOC for completions and commissioning tasks, it is important that you utilize the **Test Forms** section as it will enable the project to define the taxonomy of the exported completed files. The view that must be selected is **vTasks_TestsPlanned** where it will allow for exporting/dumping of all completed test forms across asset, loop, pack, system-based modules.

Edit Table of Content Definition (Task Completions Report & Test Forms) - Google Chrome

Step 1 General

Step 2 Export Column Fields

Step 3 Criteria

Table of Content Setup

Description: Task Completions Report & Test Forms

Package Type: 1 selected

Show TOC: Unknown Show Hide

Report Setup

Manager: vTasks_TestsPlanned - Completions I

Responsible By: [dropdown]

Report Name: Task Completion Status By Systemization

Report View: rvTaskCompletions

Show Level: Select Options

Show Excel?: Yes No

Export View: vTasks_TestsPlannedDetails

Filter by Responsible Company? Yes No

Test Form Options (On Test Report)

Include Executed Forms (scanned forms, smart forms; completed datasheets on missing forms)? Yes No

Include Planned Forms (mail merged, smart forms)? Yes No

Sorting Rules: Task Description-Tag-Task

Include Files

Include files (Tasks, Punchlists, NOE reports)? Yes No

Grouping Options: None

Merge Forms? Yes No

Document Files Yes No

Buttons

Save Exit

We recommend that the "task completion by systemization" is used as it will show tasks for a system/subsystem for all modules (e.g. asset, loop, pack etc.). To export all the completed forms an administrator must select YES to the "Include Executed Forms". Including Planned Forms is only needed if the project wants to include the PDFs of the non-started tasks. When exporting the files, there are several options to the naming convention, it is suggested that the circled option is used, so that all A, B, C check sheets are sequentially in order. Select Yes to "Include Files" if the project has uploaded reference documents for the planned tasks completed. It will include the reference files with the same taxonomy as the planned tasks.

Name	Date modified	Type	Size
33112-P -112016 - T-00004-1366 - Loop Functional Test	9/12/2019 8:00 AM	Adobe Acrobat D...	
33112-L -112013 - T-00004-1346 - Loop Functional Test	9/12/2019 8:00 AM	Adobe Acrobat D...	
1100-XZ-112019 - T-00002-10494 - Instrument Test Record	9/12/2019 8:00 AM	Adobe Acrobat D...	
1100-XZ-112014 - T-00002-10493 - Instrument Test Record	9/12/2019 8:00 AM	Adobe Acrobat D...	
1100-XY-112019 - T-00002-10376 - Instrument Test Record	9/12/2019 8:00 AM	Adobe Acrobat D...	
1100-XY-112014 - T-00002-10375 - Instrument Test Record	9/12/2019 8:00 AM	Adobe Acrobat D...	

The Completed test forms will be exported into its respective folder, and each file will have a name as configured in the TOC.

Assign TOCs to a package type

When the TOCs are created, the Package Type module can be used to pre-define which TOCs are assigned to the different TOPs. Selecting a Work Package Type will automatically configure your TOCs. This configuration will expedite the creation of TOPs (of a particular type).

Once a user selects from the list of TOCs configured, they then can be sequenced and nested by selecting child. Where the Child selection would be made is when you want to create a set of TOCs in a parent grouping such as creating a content label called “Engineering Lists” then make the equipment, line, instrument lists as “Child” sections. In this case, to just have a parent grouping for Engineering Lists you do not need to select a TOC from the dropdown, just put in a Description, then add in TOCs below and make those as child’s as shown below

Edit Work/TOP Package Type (Turnover Package) - Google Chrome

Step 1 Step 2 TOCs

TOP Template - Table of Contents

Records (7)	#	Child	Seq...	Content	Description	Responsible Company
		<input type="checkbox"/>	null	Planned Tasks	Planned Tasks	
		<input type="checkbox"/>	null	TOPTOC log	TOPTOC log	
	1	<input type="checkbox"/>	1	Task Completions Report & Test Forms	Tasks	
	4	<input type="checkbox"/>	2	Punchlist Index	Punchlists	
	5	<input type="checkbox"/>	3	Certificate Assurance	Assurance	
	6	<input checked="" type="checkbox"/>	3.1	Cable Schedule	Cable Schedule	
	7	<input checked="" type="checkbox"/>	3.2	Electrical Equipment - Spares List	Engineering Data	

Work/TOP Package Types saved successfully

Save Exit Replace Handover Content

Box > DEMO > Example TOP > TOP-00013 > 2 Engineering Data >

Name	Date modified
2.1 Mechanical	3/25/2020 10:53 AM
2.2 Electrical	3/25/2020 10:54 AM
2.3 Instrumentation	3/25/2020 10:54 AM
2.4 Piping	3/25/2020 10:55 AM
2.5 Documentation	3/25/2020 10:54 AM



★ IMPORTANT

- When arranging TOCs for a TOP package, ensure that the main (parent) folder TOC description field is maintained empty. This ensures that the TOC of the zipped TOP package remains intact after download, and follows the hierarchy of parent and child topics of the TOP package.
- Your TOC zipped file description has a character limit of 100 alphanumerics including spaces. A file description with more than 100 characters will be cut short to be within the limit so that it is downloaded.

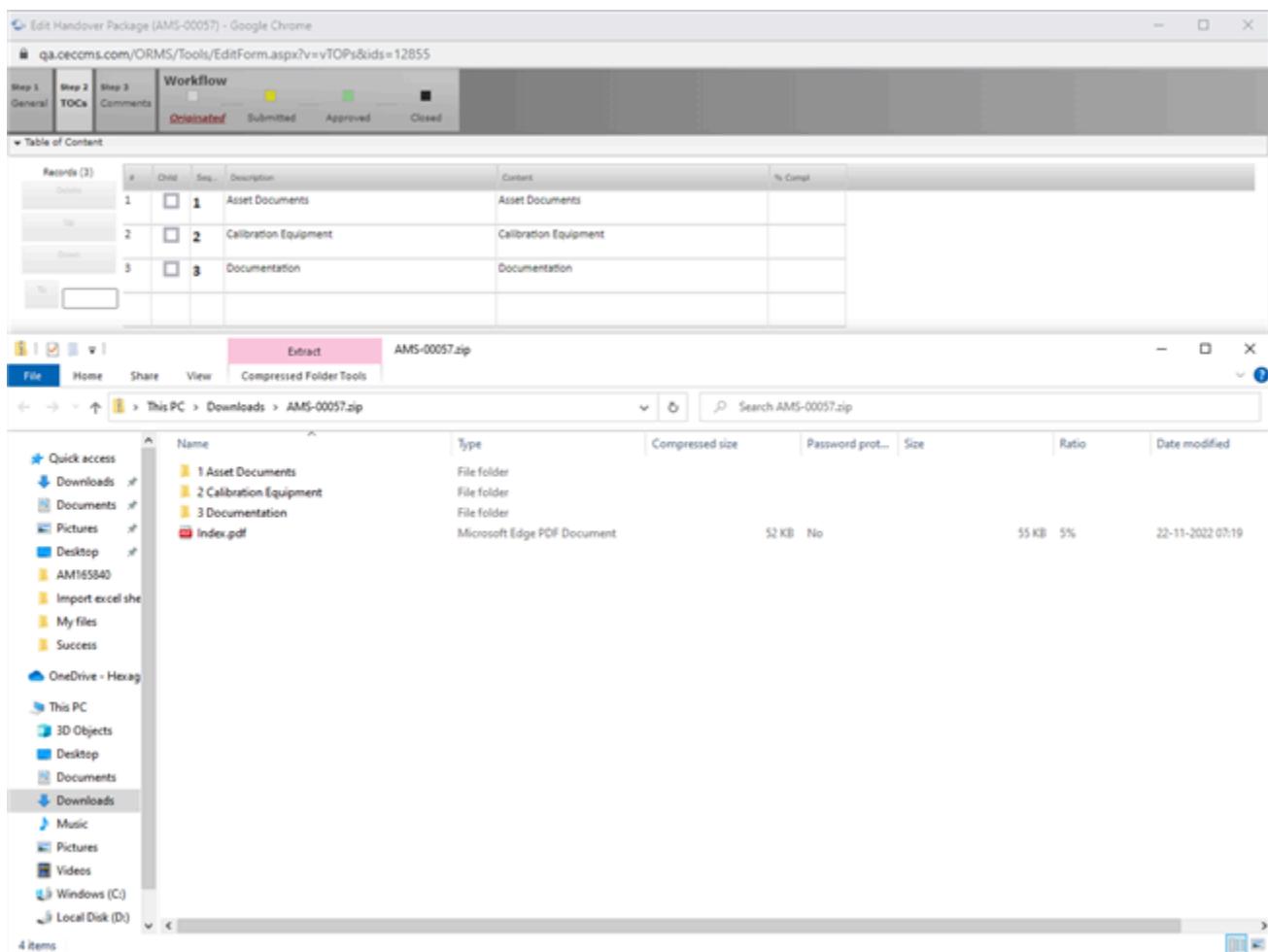
- You can now assign or remove the **Responsible Company** designation for specific entities directly from the TOC. Clearing the designation at the TOC level will automatically disassociate the Responsible Company from the corresponding HOP/Work Pack Type.

Create a Handover Package

1. Click  to add a new HOP.
2. Provide the package description and details.
3. Under **Select Systemization/ Location/ Company, Project, Plant and Responsible company** are mandatory fields.
4. Click **Finish**.

NOTE Separate HOP is created for each Responsible Company, if you select multiple options within the **Responsible Company** list. Individual Company will have its own Tasks, Punchlists and Certificates associated with it.

While creating the Hand over Package (HOP), this function also provides the option to import all the calibration documents associated to a particular loop and further export it.



Downloading redline information in TOPs (Documents)

Every Hand over package/ TOP will have a revision history log or red line document associated with it. You can access red lined and the revision history related document reports by selecting **Yes** against the **Include document files** option.

1. Select a package and click

Email on Completion

2. On the pop- up window select

3. All the red lined and revision history logs will be shared through email in a compressed format.

NOTE The downloaded files have Document Revision number as suffix. The downloaded Redlined files have Redline Revision number as suffix.

Edit a TOC

Sorting a TOC

You can set rules for sorting TOCs by predefined name convention formats.

The screenshot shows the 'Edit Table of Content Definition' dialog box. At the top, there are three tabs: Step 1 General, Step 2 Export Column Fields, and Step 3 Criteria. The Step 1 General tab is selected. Below the tabs, there are sections for 'Table of Content Setup' and 'Report Setup'. In the 'Report Setup' section, under 'Sorting Rules', the value 'Task Description-Tag-Task' is selected. Other settings in 'Report Setup' include Manager (vTasks_TestsPlanned - Completions), Report View (rvTaskCompletions), Export View (vTasks_TestsPlannedDetails), Responsible By (empty), Show Level (Select Options), Filter by Responsible Company? (Yes), Report Name (Task Completion Status By Systemiz), and Show Excel? (Yes). In the 'Test Form Options (On Test Report)' section, 'Include Executed Forms' is set to Yes and 'Include Planned Forms' is set to No. The 'Include Files' section has 'Include files (Tasks, Punchlists, NOE reports)?' set to Yes, Grouping Options set to None, Merge Forms? set to No, and Document Files set to No. At the bottom right, there are 'Save' and 'Exit' buttons.

The available formats are:

- **Task-Task Description-Tag**
- **Task- Tag**
- **Tag-Task-Task Description**
- **Tag-Task**
- **(Tag Folder)Task/Task Description**

- **Task Description-Tag**

For example: When you set the template as **Task Description-Tag**, on downloading the files

will be named as **Pressure Guage Inspection - (1100-PI-121203)**, where **Pressure Guage Inspection** is the Task Description and **1100-PI-121203** is the Tag.

Create a TOC

To download document revisions, create a TOC with report view as **rvDocumentRedlinesDetails**. For Document reports history use report view as **rvDocumentRevisionHistoryDetails**, this will download the historical revisions of the document.

The screenshot shows the configuration of a Table of Content Definition. Key settings include:

- Description:** toc for document redlines
- Report View:** rvDocumentRedlinesDetails
- Show TOC:** Show (radio button selected)
- Manager:** [dropdown]
- Responsible By:** [dropdown]
- Report Name:** [dropdown]
- Show Excel?**: Yes (radio button selected)
- Test Form Options (On Test Report):**
 - Include Executed Forms (scanned forms, smart forms; completed datasheets on missing forms)?: Yes (radio button selected)
 - Include Planned Forms (mail merged, smart forms)?: Yes (radio button selected)
- Include Files:**
 - Document Files: Yes (radio button selected)

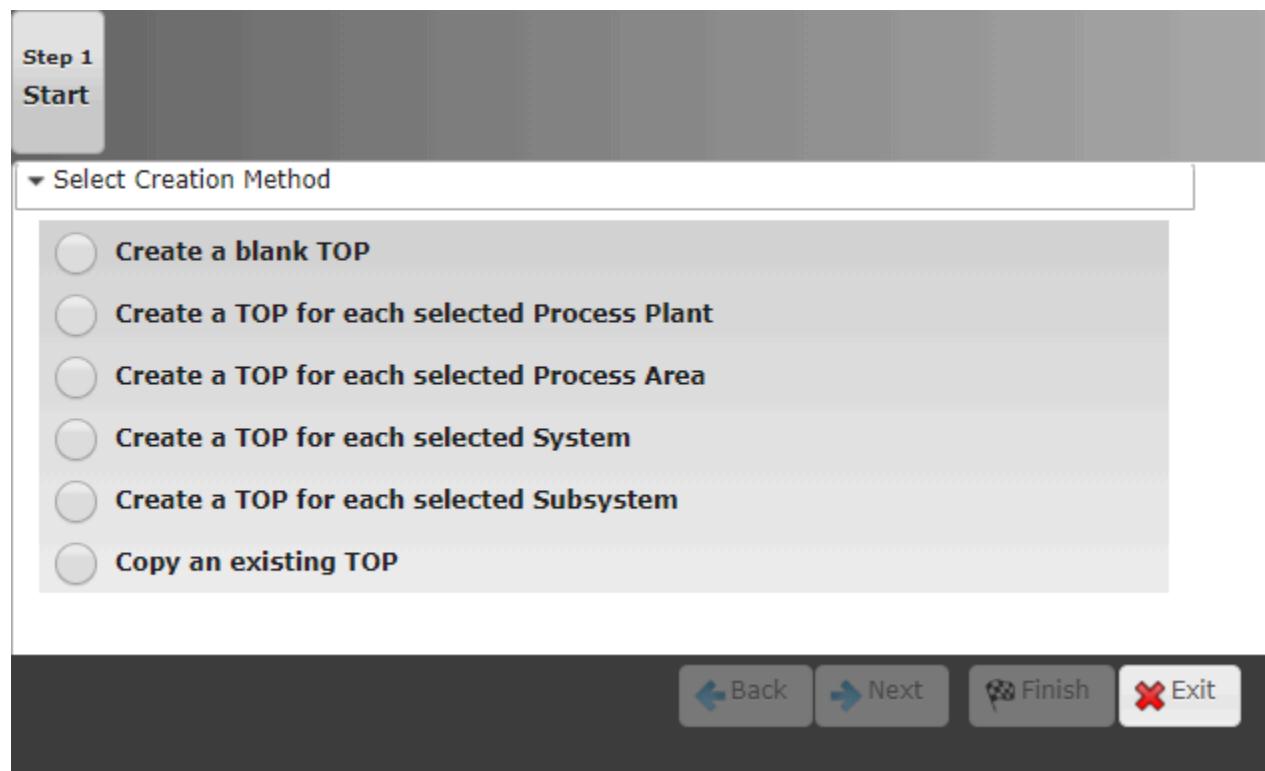
Creating and Updating a TOP Transmittal

Creating TOPs can be automated using the TOP “creation wizard” where an advanced user can create a TOP for each system or subsystem. Traditionally, a project would create a Mechanical Completion Package (MCP) that would be assigned to every subsystem that

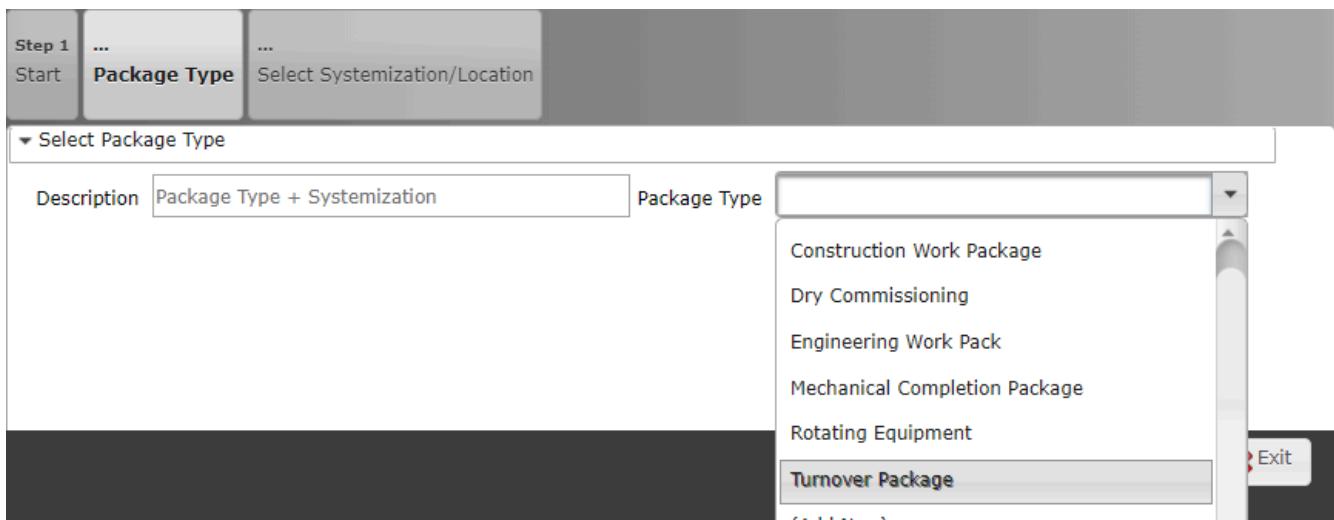
hand overs content from construction to commissioning, and the commissioning group would develop Turnover Packages (TOP), at the system level, as a final turnover, including as-built red-lined drawings to Operations.

Creating TOPs can be performed using various methods, the most common is to use the “creation wizard” and creating packages all at once at different systemization levels and phases/stages of a project. We recommend that you develop a TOP for a system or subsystem and not process area, or plant as the amount of data and documents can be very intensive for large projects.

In the example below, we will create a TOP for each system:



Select the **TOP type**, so when TOPs are created it also creates all the pre-configured TOCs



Select the specific systems to create TOPs for. Each TOP will be automatically created and pre-filtered for content (e.g. tasks, punches, certificates, assets, docs etc.) based on the phase and/or stage selected and its associated system.

Once the TOP(s) are created they will have all the configurations as defined in the TOP type.

Step 1 ... Package Type ... Select Systemization/Location

Work Breakdown Association

Project: 2016-01 - LNG Production Site

Phase: Select Options

Stage: Select Options

Activity: Select Options

Location Associations

Show: Process Physical Location

Plants(By Process): Select Options

Process Areas: Select Options

Systems: 824 selected

Filter: Enter keywords All None

- 1100-103-01 - FIRE WATER DRUMS
- 1100-103-02 - FIRE WATER DIESEL

Back Next Finish Exit

Updating TOPs

It is as simple as updating the TOP type and pressing “Replace Handover Content” which will ONLY UPDATE those TOPs of that Type, that are not Approved, nor Closed. The following options are available:

- Override All: Update every TOP (of that type) with the pre-configured TOCs.
- Override All that have not been Started: Update every TOP that has not been approved.
- Update All Projects: Update every TOP in all projects within the same instance.
- Update Only Current Project TOCs: Update every TOPs in current project.

Responsible Company

Adding a Responsible Company to an HOP helps to create different packages for each company, with same Systemization and WBS.

The screenshot shows the 'Step 1 General' tab selected in the top navigation bar. A 'Workflow' section indicates the status is 'Originated'. Below the tabs, there are sections for 'Primary Data' and 'Work Breakdown Association'.

Primary Data:

- Create TOP ID? Yes No
- HOP ID: TEST-00001
- Description: Regression testing of the TOP
- Package Type: Asset Management - Electrical Equipment Test
- Current Custody: Cables Dept.

Work Breakdown Association:

- Project: TS01 - Test Project
- Stages: Select Options
- Phases: 7 selected
- Activities: Select Options

Location / Systemization Associations:

- Show: Process Physical Location
- Process Plant: Select Options
- Systems: Select Options
- Process Area: Select Options
- Subsystems: Select Options

Scheduling:

- Due Date: Select Options
- Responsible Company: Select Options

Generate Handover Packages Reports

Once the TOPs are created, both management and lead personnel can access the TOP module to both download all the data and documents as configured. To download the TOP a user can select a single (suggested due to time to download packages) or multiple, and press TOP Package. This will automatically start a session with the web server to package up the TOP in the pre-configured folder structure and compile reports, Excel (.xls), and associated files.

The screenshot shows the TOP module interface. At the top, there are two tabs: "Handover Packages (24)" and "Reports". Below them is a table titled "Handover Packages (24)" with columns for Status, HOP ID, Datas..., Description, Package Type, Custody, Pending T..., Pending PLs, TOCs, TOCs Do..., and #P. The table lists several packages, including "1100-103-01-03" (Turnover Package), "CWP-00001" (Construction Work Package), and multiple "Mechanical Completion Package" entries. A red arrow points from the bottom of the table down to the toolbar at the bottom of the screen.

Below the table is another table titled "Contents (5)" with columns for Details, Contents (5), Transmittals, Planned Tasks, Test Forms, Certificates, Punchlist, TOC Addtl Docs, Assets, Asset Docs, Workflow, and Field Log. This table lists five items: "Systemization", "Mechanical Tag List", "Task Completions Report & Test Forms", "Punchlist Index", and "Certificate Assurance".

At the bottom of the screen is a toolbar with various buttons: Reset, Search, New, Edit, Del, Purge/Restore, Create Transmittal, Planned Form Files, Executed Forms, Documents, TOP Package (which is highlighted with a red arrow), and Completion Calc.

The primary functions of the TOP module are:

1. Provide user quick review of system or subsystem content
2. Provide simple review of tasks, punches, certificates, asset and documents
3. Compile TOP packages and download
4. Compile Completed (Executed) Tasks into single PDF file, or ZIP file with individual files
5. Download TOP associated documents (must select TOP docs, or documents tab only)
6. Completion Calculation which will only update % complete for those TOCs associated with tasks, or punch lists

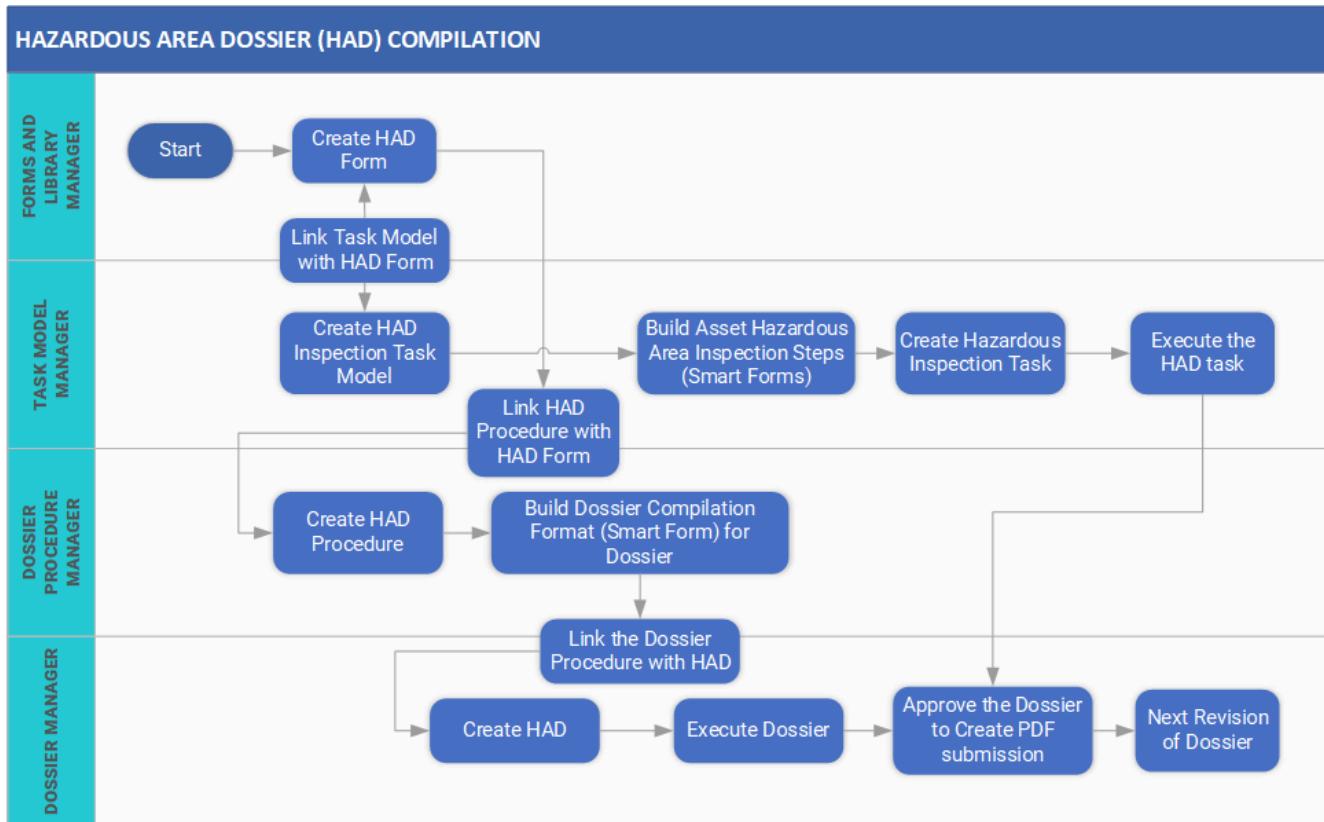
NOTES

- In order to reduce size of content downloaded, the TOP is compressed into a single WinZIP (.zip) file. The file when extracted is structured as configured for the TOP type. Any file greater than 40 MB will be compiled on the web server and the user will receive an email with hyperlink to download the file once completed.

- If you attempt to start a TOP download with the same name as one already running, the new execution will be blocked. You will be notified stating "TOP is already running for: <TOP ID>
- Datasheets are no longer listed as available report options. This ensures you choose the intended report format for your needs.

Hazardous Area Dossier

Hazardous Area Dossier is the hazardous area equipment's history from installation till date and its maintenance throughout the equipment lifecycle along with revision control. It is a compliance requirement and shall include the record of upgrades, modifications, changes to the equipment, and records of periodic equipment inspection. Hazardous Area Dossiers can be prepared according to the compliance requirements specified by regulatory/statutory/compliance organizations. Smart Completions facilitates attaining compliance specified by regulatory/statutory bodies effectively.



Benefits of the Hazardous Area Dossier in Smart Completions

- Proper record of test reports

- Inspection of observation tracking and closures
- Flexibility to develop reports for specific disciplines, systems/subsystems, and any specific work
- Digital lesson-learned repository of typical observations that are specific to an area, asset, or system for identifying improvement areas
- Mobile execution facilitates seamless submission/review/approval of HAD tasks
- Easy and quick retrieval of reports
- Test reports no longer need to be stored as physical copies, eliminating the need for storage space
- No physical copies mean no risk of misplacing reports
- Quick and easy compilation of HAD report
- Revision control and comprehensive history availability
- No missing information, ensuring quality and safety

Dossier Procedure Manager

The Dossier Procedure manager allows you to add a new dossier tag along with its description. You can associate forms and checklists and work steps while creating a dossier procedure.

Dossier Certificates Manager

The dossier certificate manager helps you to add new certificates for a hazardous area dossier.

Create a Hazardous Area Dossier

To create a hazardous area dossier, follow the steps below:

1. Create a Hazardous Area Dossier (HAD) form in **Forms and Checklist Library Manager**.

NOTE While creating the Hazardous Area Dossier, the system checks the task linked to the form and includes the discipline specific to the task in the dossier.

2. Open the HAD form saved in the previous step to create the task model for **Hazardous Area Inspection**.

3. In the **Task Model Manager**, select **Create**.

NOTE Creating the task model through **Forms and Checklist Library Manager** links the task model to the HAD form. Alternatively, you can create and link the task model to the HAD form from **Task Model Manager**.

4. Configure the task model.

NOTES

- Configure the WBS to meet the dossier requirements. Digital execution is preferred as tasks can be completed in the field using a mobile utility.
- Hexagon best practice forms (OOTB Smart Forms) are available for quick configuration to meet region-specific compliance requirements.

5. Create the Hazardous inspection task in **Task Models Manager**. Refer to [Create Task using Task Model Manager](#) for task creation instructions.

NOTE Once the task is created, you can start the HAD inspections in the field.

6. Create a dossier procedure in the **Dossier Procedure Manager**.

7. Create a dossier in the **Dossier Manager**.

8. Fill out the hazardous area dossier data in the **Dossier Manager**.

9. Generate the dossier completion document in the **Dossier Manager**.

10. Perform periodic dossier compilation and revision control in the **Dossier Manager**.

Dossier Manager

[Create the Dossier in Dossier Manager](#)

1. In the **Dossier Manager**, select **Create new record**.

2. Enter the required fields.

3. Attach the applicable dossier procedure.

4. Configure the work breakdown structure (WBS) and process breakdown structure (PBS).

5. Save the dossier.

NOTE The Hazardous Area Dossier Form will filter the discipline (selected in HAD form), WBS (defined in the task model for task creation), and PBS (associated with Asset) to include associated assets/tasks in the compliance dossier.

6. Fill out the hazardous area dossier data in Dossier Manager

7. Select **Edit** link in the HAD record to open the HAD Dossier form.

8. Enter the required details.

9. Associate the relevant tasks/assets.

10. Select **Save**.

NOTES

- Completed tasks display with a green icon. You can only add completed tasks to the dossier.
- If any task is pending, PDF archives cannot be created.

[**Generate the Dossier Completion Document in Dossier Manager**](#)

1. Select a dossier and select **Edit selected rows**.

2. Approve the dossier to initiate the PDF archive creation of the dossier completion document.

NOTE You must ensure the dossier is prepared and reviewed before granting approval.

[**Periodic Dossier Compilation and Revision Control in Dossier Manager**](#)

You can access all HAD dossier PDF archives with past revisions in the secondary panel under the **Revision** tab.

1. Generate a new revision of the dossier and follow steps 2 and 3.

NOTE The new revision dossier will fetch new task sheets while existing task sheets will remain unchanged in the dossier.

Configuring Hazardous Area Equipment audit step

In order to collect equipment information related to hazardous area classification, protection, and drawings for reporting purposes, add a hazardous area equipment step in the hazardous area dossier procedure. This step pulls data based on the mapping of the task model step, using the Wt% field in the task model.

The screenshot illustrates the configuration of a task model step and its mapping to an equipment list. The top part shows a table with four rows, each representing a task model step. The columns include Item No., Sub Step, Required, Step Action, Inspection Answer, N/A, wt%, and cfg. The bottom part shows an equipment list with columns for Revision, Equipment Number, Description, Service, Area Classification & P&I Drawing Number, Area Class., Manufacturer, Model No., Serial No., Protection Technique, Gas Group, Temp. Class, IP Rating, IECEx Certificate Number, and Issue No. Red arrows point from the 'wt%' column in the task model table to the 'Area Class.' and 'IECEx Certificate Number' columns in the equipment list table, indicating the mapping of these fields.

Item No.	Sub Step	Required	Step Action	Inspection Answer	N/A	wt%	cfg
1			Zone	1 1		-1	
2			Gas Group	2 2		-2	
3			Temp. Class	3 3		-3	
4			IECEx Certificate Number	4 4		-4	

Get FIC Equipment List	Equipment List Filter: Equipment Number, Service, Location													④
Revision	Equipment Number	Description	Service	Area Classification & P&I Drawing Number	Area Class.	Manufacturer	Model No.	Serial No.	Protection Technique	Gas Group	Temp. Class	IP Rating	IECEx Certificate Number	Issue No.
0	+ ABC API Asset 15	STRUCTURE COLUMN FOUNDATION		14	1.2.3	9	10	11	6	8	7	12	4	5
0	+ ABC API Asset 17	Analyser			..									
0	+ ABC API Asset 79	Analyser			..									

Refer to the following table and snapshot for mapping task model field data to the equipment step in the hazardous area procedure.

Wt% value for task model step	Mapped column in Hazardous Area Equipment Step
-1	
-2	Area Class (Concatenation of 3 task step)
-3	
-4	IEC Ex Certificate Number

-5	Issue No.
-6	Protection Technique
-7	Temp. class
-8	Gas group
-9	Manufacturer
-10	Model No.
-11	Serial No.
-12	IP Rating
-13	??
-14	Area Classification & P&ID Number

Safety

Safety Isolations Overview

A Safety Isolation Procedure (also called Lockout/Tagout) is a critical safety document required for the control of hazardous energy and substances while servicing and/or accessing machinery and equipment. This manual is intended to provide a guideline on how the de-energization of a system is approached and will also help identify proper isolation points. In addition, this manual discusses how the pre-defined isolation points are entered into Safety Isolation Manager (SIM) and how the SIM manages a variety of aspects to ensure only accurate and up-to-date Safety Isolation Procedures are accessed for use.

CATEGORIES OF ENERGY

There are three broad categories of energy that pertain to the safe isolation of equipment or systems; active energy, stored energy and process energy. Further breakdowns of these categories are listed below:

Active Energy Sources

- Electrical
- Mechanical
- Pneumatic
- Thermal
- Hydraulic

Stored Energy Sources

- Capacitors
- Springs
- Compressed gas, air, steam, water etc.
- Elevated machine members (potential energy)
- Rotating flywheels

- Hydraulic systems

Process Energy Sources

- Chemical drains
- Oxygen, nitrogen, hydrogen
- Hydrocarbons or other flammable substances
- Caustics, acids or other corrosives
- Toxic vapors, fumes, liquids, gas, or dust
- Radiation sources

ANALYSIS OF SYSTEM DE-ENERGIZATION

There are 5 fundamental steps for proper de-energization of a system:

- Understand the system.
- Stop the system.
- Remove or isolate hazardous substances.
- De-energize the system.
- Verify zero energy state.

Safety Isolations Navigation

The process for Safety Isolations Navigation is outlined below:

1. Searching for Isolation Procedures can be achieved using two (2) methods, both accessed by the SIM accordions, located at left of the SIM main page.
2. The first and most effective search method is achieved by using the "Search" panel. This panel provides a collection of fields to search by and is the quickest way to find an isolation procedure.
 - a. Search Method 1: Search Panel
- Isolation Status

- Asset Tagname
 - Asset Description
 - Isolation Change History
 - Etc.
 - a. Search Method 2: Browse Panel
1. The second method is the "Browse" panel. The browse method allows personnel to perform a less targeted search by reviewing plant Areas, their equipment and assigned isolation procedures. This method is commonly used when personnel or contractors do not know specific equipment numbers but know generally where the equipment is located.
- a. Search Method 2: Browse Panel (4 level Tree view)
- Plant
 - Process/Facility
 - Area
 - Physical Location

Using the Browse method, a user would begin a search by selecting the top "Node" (on the Tree View), which is equivalent to an operating plant. When selected, it will expand a list of Process and/or facilities assigned to the plant. As they drill down further, eventually selecting a single physical location, a list of equipment will be listed. To see an isolation procedure, the user must select the desired equipment and upon selection it will list all isolations, regardless of their approval status.

View/Print Isolation Work Instructions and Lockout Forms.

1. After the desired equipment and isolation procedure is selected, the user will select the 'Work Instructions' and/or the 'Lockout Form' buttons located in the bottom ribbon of the Safety Isolations Manager. Make sure an isolation is selected or the buttons WILL NOT be enabled.

Enter Search Criteria (Step 1)

- Asset
- Asset Description
- Asset Type
- Isolation Status

Select Asset Record (Step 2)

Select Isolation Record (Step 3)

Select Form to Display (Step 4)

1. The selected form will open up a new web page or tab in Adobe Acrobat PDF viewer.

The user will then be able to view, save or print the document. When documents are generated with a "watermark" it is crucial that the isolation is NOT used.

Isolations with the "Unapproved" watermark MUST NOT be used. These isolations remain in the development stage or have been manually revoked due to plant changes.

Isolations with the "Expired" watermark MUST NOT be used. Expired isolations were once approved and past their expiration date. Expired isolations must be re-approved before they can be used.

2. Work Instructions.

The 'Work Instructions' button will generate the following:

An instructional procedure that identifies the primary equipment to be locked out, isolation task, a list of isolation points, each requiring isolation devices, permits, actions and verification procedures.

3. Lockout Forms. The 'Lockout Form' button will generate the following:

A list of Isolation step information which is typically inserted into the lockout board/box. This form is used to track specific locks, personnel initials, and date/time each lock is placed, or removed from the lockout box or energy source.

Safety Isolations Development

The process for Safety Isolations Development is outlined below:

1. The Safety Isolation software is a stand-alone program used to develop and maintain Safety Isolation Procedures and Lockout Forms. All isolations are managed using a controlled change management process.

All isolations follow an isolation lifecycle of:

- a. Created
- b. Submit for Verification
- c. Verification/Walk-down
- d. Approval
- e. Expiration

Isolations can be assigned an expiration date. If a user decides to add an expiration date the default is three (3) years from the isolation creation date. It is important that the default expiration date (duration of approval state) is discussed, approved and set up in the SIM Configuration Manager prior to isolation development. It is also important that Standard Procedures are developed and approved prior to isolation development.

NOTE You can use an alternate form option to use Mongolian language supported Lockout form.

The screenshot shows the 'General' tab of the SIM Configuration Manager for a 'Safety Isolation Lockout' report. The configuration details include:

- Display Name: Safety Isolation Lockout
- Internal Name: Isolation Lockout Form
- Description: (empty)
- Report Data Source: rvEnergy/IsolationLockout
- Report Header: Safety Isolation Lockout Form
- Report Secondary Header: (empty)
- Chart: Select Options
- Calculation Method: (empty)
- Context (Application): vEnergyIsolations
- MIME Type: application/octet-stream
- Version: 0.10
- Can be Run as Batch Report: No
- Show On Interface: Show Hide
- View Type: Isolations
- Warning threshold: (empty)
- Group: (empty)
- Tree Type: (empty)
- Export/Report: Export Report Both
- Export Fields: 36 selected

A 'Report File' section is expanded, showing the 'Report Template' dropdown which lists:

- Default - Safety Isolation Lockout Form
- Custom
- Alternate - Safety Isolation Lockout Form Mongolia (highlighted with a red border)
- Default - Safety Isolation Lockout Form

2. Create and Approve Standard Procedures.

Isolation Standard Procedures provide plant personnel a standardized and approved method to perform specific (high risk) actions. Standard Procedures (e.g. verification

procedures) are used to perform specific actions required to isolate a hazardous source (mass or energy). The procedure will provide personnel a step-by-step process to ensure proper isolation of an isolation point (e.g. nuclear device) and restoration back into operations. This tool also provides a good way to reference specific Client Safety Standards such as Confined Space and Fall Protection standards.

To access the Isolation Standard Procedures Manager follow the steps below:

3. Select the 'Configuration' icon in the bottom ribbon.
4. Select 'Isolation Standard Procedures' from the Configuration Managers window.

The Isolation Procedures Manager will open.

5. Edit Isolation Procedures.

To Edit an existing Isolation Procedure follow the steps below:

- Use Search panel to find desired procedure.
- Select procedure to be edited.
- Select Edit button from bottom ribbon.

1. Isolation Procedure Edit Form.

An Isolation Procedure Edit Form will open. You can then edit the Primary Data and Actions sections. When editing is completed select the Save button.

Work Instructions.

2. Only "approved" Standard Procedures are able to be referenced in an Isolation Procedure. Standard Procedures follow a similar change management process as an Isolation Procedure. Each Standard Procedure must be:

- a. Created
- b. Submitted for approval
- c. Approved

After a Standard Procedure and associated step actions are created, the user will press the "Submit for Approval" button. Doing this will generate an email list of "Approvers".

Select the 'Create E-Mail' button to notify them of the requested action to approve the procedure, and if necessary state the reason.

The generated email will contain Procedure Number, Description, required Action and a link to the procedure in need of approval for the Approvers group.

When the "Approver" pulls up the Procedure requiring approval will prompt them to either "Accept Changes" or "Reject Changes". If the approver accepts changes, it will automatically make the procedure available to isolation development. If the user rejects changes, it will put the procedure back to its creation state.

3. Create and Edit Isolation Step Models.

Isolation Step Models provide a standardized method to assign step requirements, specifically "Devices", "Permits" and "Standard Procedures". This tool allows the user to define general activities used to create steps in an isolation procedure. For example, a step in isolating a pump will be to "Open Circuit Breaker, Lock and Tagout". This step could be used in multiple procedures. The goal is to create general steps that can be used across various types of equipment and the creation of these steps should be limited to the Approvers group.

To access the Isolation Step Models Manager follow the steps below:

- a. Select the 'Configuration' icon in the bottom ribbon.
- b. Select 'Isolation Step Models' from the Configuration Managers window.

The Isolation Procedures Manager will open.

Edit Isolation Step Models.

4. To Edit an existing Isolation Step Model follow the steps below:

- a. Use Search panel to find desired step model.
- b. Select step model to be edited.
- c. Select Edit button from bottom ribbon.

Isolation Step Models Edit Form.

5. An Isolation Step Models Edit Form will open. You can then edit the General, Devices, Permits & Procedures tabs. When editing is completed select the Save button.

Develop and Maintain Isolation Procedures.

6. The training example covered in this document is designed to develop a Safety Isolation Procedure to support a maintenance task for an inspection of an agitator blade for wear.

The first step is to identify if there are any existing Isolation Procedures for the desired asset. To trigger a search the Author would enter the asset tagname and press SEARCH to populate the asset tag list. Select the asset from the asset tag list to view associated isolations; these isolations are displayed in the secondary view panel. In this case, there are no isolations created or approved. To create a new isolation the Author would select the 'New Iso' button to load the Isolation Wizard.

NOTE In this section two (2) different steps are referenced:

1. Dev. Step #: Steps taken while developing the instruction document
2. Isolation Step #: Steps that are taken when actually isolating the equipment or system.

Isolation Wizard.

After the Author has selected the equipment and pressed the New Iso button it will load the Isolation Wizard. The wizard will provide three (3) options to create an isolation.

The three options include:

1. Create a blank Isolation – Creates a blank isolation from scratch.
2. Create a blank Isolation from a Task Model – Creates a blank isolation but populates task information from a task model.
3. Copy an existing Isolation – Creates a new isolation by copying from an existing isolation. All content from the existing isolation will be copied into the new isolation; which includes, task information and assigned isolation points, devices, permits, step procedures and special comments.

Create a Blank Isolation

For our example we will use Option 1. Once you have selected the desired option select the 'Finish' button at the bottom of the Edit Isolation Window. The Isolation Edit Form will then

load and allow you to enter a new isolation.

Populate all relevant data on the General tab. Before assigning Isolation Steps there are two items that **SHOULD** be entered, they are:

- Reference Number: The reference number is used to link a Safety Isolation Procedure to a maintenance task, or a standard operating or maintenance procedure. The naming convention should be identified prior to any isolation development.
- Special Instructions: Describe the unique environment or special conditions that need to be met in order to execute the isolation procedure.

Create a Blank Isolation - Isolation Steps

The next development step is to assign Isolation Steps (e.g. Equipment Isolation Point) and order them in the appropriate Lockout sequence. For the purpose of training, the first isolation step will demonstrate both the automatic and manual process of assigning the required safety controls to an isolation point. An action model will expedite and standardize isolation development.

 **NOTE** When possible electrical equipment should be isolated first.

Safety Assurance

Safety Assurance section basically caters to facilitate the final quality checks before final certification.

You can edit the **Description** section at every stage before completing the Certificate. The editable area would turn gray, and can not be edited further after the task is closed.

Step 1 ...
General Digital Form

Smartform

QA-00004
Type 1
Overall Score: 0

Company Reviewed:	Industrial Business Solutions (IBS)	Supervisor:	
Location:	1	Work Team:	
Description:	Testing Create Assurance offline.		

Date Reviewed	Description
20-Jan-2020	Testing Create Assurance offline.

Completed
I hereby confirm the work has been completed in accordance with contract specified drawings, specifications & standards.

Reviewed By	Reviewed By
Name: User U	Name: User U
Title:	Title:
Date: 1/20/2020 7:07:29 AM	Date: 1/20/2020 7:07:32 AM
 Revoke	 Revoke
Reviewed By	Reviewed By
Name: User U	Name: User U
Title:	Title:
Date: 1/20/2020 7:07:29 AM	Date: 1/20/2020 7:07:32 AM

Recommended Completions Reports

Generating Task Completions and Progress Reports

Most Common Completions Reports:

- MH Report
- Progress Report
- Completions Summary Report
- Status Index

The process for generating Task Completions and Progress Reports is outlined below:

1. Navigation: Completions > Work and Job Completions > Inspections & Tests, by Assets > Reports
2. Report PDF Icon.
3. Select the PDF icon to run the selected report.
4. Project Completion Summary (By Location) Report.
5. Tasks Completion Summary (By Location) Report.

 **NOTE** Reports will honor the user search criteria

Generate Loop Tests Reports

The following reports are available:

1. Project Completion Summary (by Location)
2. Loop Readiness and Device Completion
3. Loop Test Index by Systemization
4. Loop Completion System Readiness
5. Loop Test Summary by Systemization

6. Project Completions Summary (FIC & ITR) by Systemization and Discipline

7. Project Completion Summary (Task Phase) by Systemization and Discipline

 **NOTE** Reports will honor the user search criteria

How to access Asset Reports

Each module in Smart Completions has a "Reports" tab which will expose all the available reports. Each report can be printed in Adobe PDF format, or can be exported using the Microsoft Excel (.xls). Only user with the export right will have the ability to export, where they can select the desired fields they wish to export. If they do not have these rights, then the XLS icon will either be disabled, or hidden from the interface.

When you wish to generate a report, there are a variety of reports available. There are typically index reports, which list content in a very flat manner. There are status and summary reports, which are more complex reports, that have count sections with %'s and then sub-reports that list content below the summary section.

The following reports are available in the Assets Manager:

- Assets by Systemization w/ Priority
- Electrical Equipment Grounding by Systemization
- Asset & Tag Index
- Asset & Tag Index (Created)
- Asset & Tag Index (Deleted)
- Asset & Tag Index (Modified)
- Asset Tags to Asset Type Assignment Index
- Asset Tags to Asset Type Summary
- Electrical Equipment Grounding by Location
- Cable Index
- Document Assignment Index

- Electrical Equipment Grounding Index
- Electrical Equipment Index
- Electrical Motor Index
- Electrical Motor Index with MCC
- Instrument Calibration Index
- Instrument Index
- MCC Source Index
- MCC to Equipment Power Source
- Mechanical Equipment Index
- Asset Assignment by Location
- Piping & Line Index
- Piping w/ Associated Valves & Instruments Index
- DCL/PLC Index by Location
- DCS/PLC Index by Subsystem
- Location Breakdown Structure - Areas
- Process Breakdown Structure - Systemization
- Asset Summary by Location and Discipline
- Asset Summary by Systemization and Discipline

Generate Asset Preservation Tasks Reports

Both the Preservation, by Assets, and Preservation, by Tasks module utilize the exact same reports. Both modules have the same layout and what goes into the report is up to the user generating the report(s). By default, it will include all preservation tasks.

All the reports are “templates” which have a standard layout and require specific content to be displayed. If the project wishes to tailor the content for the report(s), please use the search

panel before generating the report. If the report (with the filtering requirements) needed on a recurring basis, apply the search criteria, then press “saved search” or create a “saved report”.

Reports include:

Forecast Report – this is most used report for an executing project as it will group the upcoming scheduled PR task by “past due”, “today”, “this week” and will reference the specific PR task, asset assignment, and System / Location etc.

Asset Preservation Index Report – this report is very similar to the forecast report where it still groups by due date, then asset and associated PR tasks.

Preservation Progress – To-Date – report provides summary counts broken out by the primary disciplines (e.g. mechanical, electrical, instrumentation) and provide total preservation tasks assigned and completed. It also distinguishes between initial preservation inspection vs. routine preservation tasks.

Preservation Daily Report – report provides a list of preservation tasks (PRs) by scheduled date, and grouped based on past due, today, this week, next week, future.

Preservation History Log – report provides a list of all completed preservation tasks with completion details. The list of preservation tasks references the asset and are all grouped based on Physical Location Tree view, down to the location level.

Form Tab

You can render the pending preservation tasks into smart forms using  tab. With this option you can select multiple preservation tasks and render them at the same time.

Smart Form PDF Rendering

Create Smartform PDF for selected tasks

- You need MANAGE rights to vTasks_Preservation manager and tasks with digital execution types.

Completed Paper Based tasks will not be overwritten.

Please chose action desired for 2 record(s).

Task ID	Executed F...	Status	Completed	Completed By	# of N/C				
PR-0010-0003	<input type="checkbox"/> Y <input type="checkbox"/> N	Open	09-Jun-2020	Sarzalejo, Williams	0				
PR-0010-0004	<input type="checkbox"/> Y <input type="checkbox"/> N	Preservation - Instrument	Every week day	3	22-Nov-2019 PR-0010-0004	Closed	09-Jun-2020	Sarzalejo, Williams	0
PR-0010-0005	<input type="checkbox"/> Y <input type="checkbox"/> N	Preservation - Instrument	Every week day	3	25-Nov-2019 PR-0010-0005	Closed	09-Jun-2020	Sarzalejo, Williams	0
PR-0010-0006	<input type="checkbox"/> Y <input type="checkbox"/> N	Preservation - Instrument	Every week day	3	26-Nov-2019 PR-0010-0006	Closed	15-Jun-2020	Lannoye, Brian	0
PR-0010-0007	<input type="checkbox"/> Y <input type="checkbox"/> N	Preservation - Instrument	Every week day	3	27-Nov-2019 PR-0010-0007	Closed	08-Jul-2020	Sarzalejo, Williams	0
PR-0010-0008	<input type="checkbox"/> Y <input type="checkbox"/> N	Preservation - Instrument	Every week day	3	28-Nov-2019 PR-0010-0008	Closed	08-Jul-2020	Sarzalejo, Williams	0
PR-0010-0009	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Preservation - Instrument	Every week day	3	29-Nov-2019 PR-0010-0009	Closed	08-Jul-2020	Sarzalejo, Williams	0
PR-0010-0010	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Preservation - Instrument	Every week day	3	02-Dec-2019 PR-0010-0010	Closed	18-Jul-2020	Sarzalejo, Williams	0

NOTE

Only users with manage rights can access this option.

Generate Work Pack Report

The report section on the Work Package manager generates reports and also provides an option to select the Detail level of the report. You can select the level of details in a report from the options in the list.

Work Packages (21)		Reports	
Group	Owner	Show	Report Name
		<input type="checkbox"/> Y <input type="checkbox"/> N	

Index by Systemization (3 items)

Index by Systemization	Public	Detail Level	Report Name
Index by Systemization	Public	<input checked="" type="checkbox"/> All <input type="checkbox"/> None	Work Completions Status by Systemization and Tasks Work Completions Status By Systemization Work Construction Progress By Systemization
Index by Systemization	Public	<input type="checkbox"/> Plant <input type="checkbox"/> Process Area <input type="checkbox"/> System	
Index by Systemization	Public	<input type="checkbox"/> Subsystem <input type="checkbox"/> Details	

In a work package report you can view the construction progress by system, work package, and also work package steps level. You can view these columns in a report:

1. Work Package ID (WP ID)
2. Description
3. Plan WTV
4. Budget MH
5. Actual WTV
6. Earned MH
7. Cost based WTV % Progress
8. MH Base (MH) % Progress



Work Package Construction Progress By Systemization						
Details		Plan WTV	Budget MH	Actual WTV	Earned MH	Cost Base (WTV) % Progress
Plant: 1000 - TRAINING 1		32.00	319.25	58.86	157.25	183.94%
Process Area: 1100-103 - DETECTION SYSTEMS			147.25		45.25	30.73%
System: 1100-103-01 - FIRE WATER DRUMS						
Unassigned Subsystem						
WP ID	Description	Responsible				
WP-000006	test wp					
WP-000009	Test work package for UAT And test for change in header for UAT U2					
WP-006847	1100-103 - DETECTION SYSTEMS; CABL					
WP-006861	test wp (wizard)					
WP-007131	XYZ					
System: 1100-103-02 - FIRE WATER DIESEL PUMPS						
Unassigned Subsystem						

How to generate document reports

All Smart Completions System Managers provide a variety of reports, from list (Index) reports, and Summary (count) reports. Users must use the search panel to refine the list for what is loaded into a report.

How to generate Test Forms Index Report

To generate a list of project forms, you can generate a complete list (do not use search panel) or a specific list of forms using the search panel. For example, if a user wants to see only the

mechanical forms and checklists, the user would select mechanical check box in the disciplines check box list located in the search panel. Either a PDF report or MS Excel file can be generated. The Excel file will only be displayed if the user has Export rights.

The data set is usually queried by:

- Form characteristics
- Asset Type Associations
- Project and Manufacturer

The process for generating a Test Forms Index Report is outlined below:

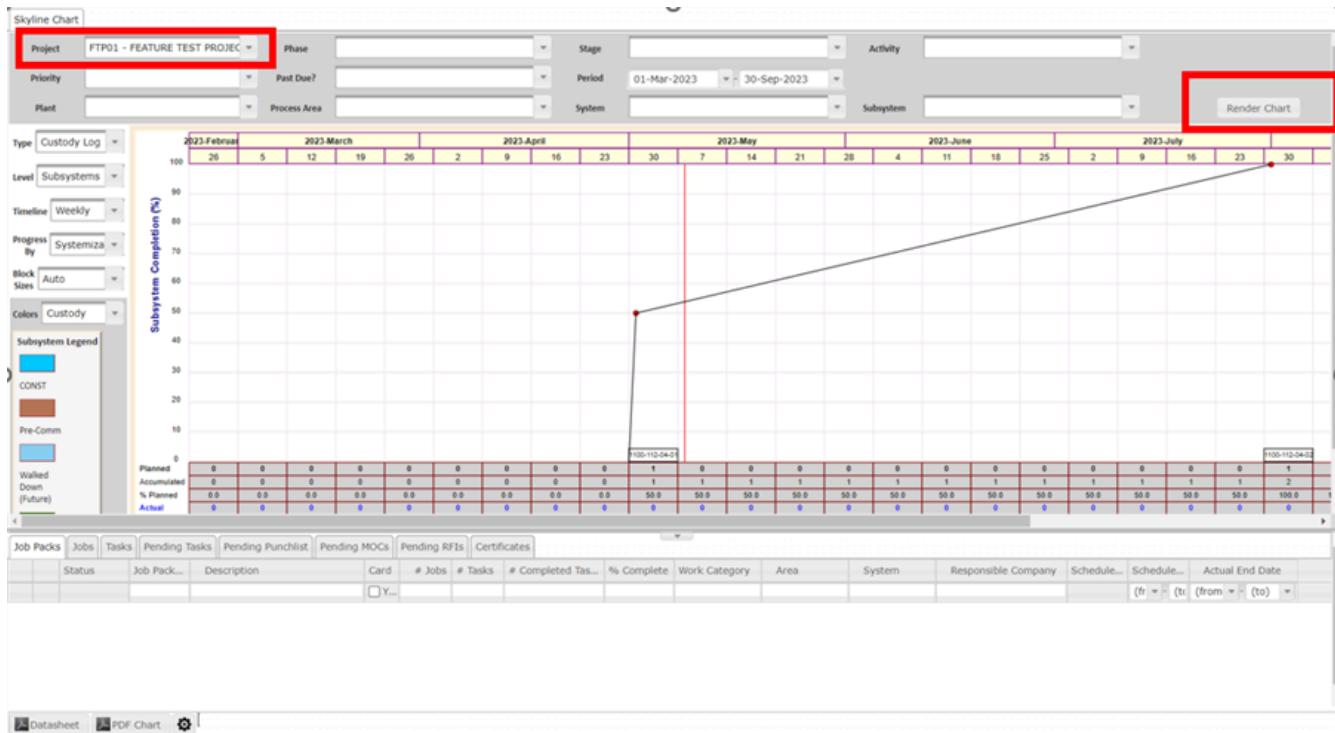
1. Select **PDF** icon to run report.
2. Test Forms Index Report opens.

Dashboards

Completions Skyline

Skyline Dashboard

You are in the project you are assigned to by default. To render a chart, select the filters you want to apply and then select Render chart. This will result in a skyline chart according to the selected filters.



Import Systems Custody Log

The purpose of importing custody skyline is to visualize the handover of subsystems and systems from Party A (construction) to Party B (commissioning) and Party C (Operations) all within one graphical dashboard and report. The skyline stacks the systems or subsystems into a histogram where each box represents the system or subsystem (on y-axis) and places the box in the appropriate time frame (on x-axis). Each box will have a progress bar that displays the % complete of all tasks associated with system or subsystem. The progress bar can be adjusted (as well as the overall histogram) if a user selects phase/stage further refining the specific tasks required to handover for the select system or subsystem.

NOTE It takes time to load the skyline as it is performing a large query listing systems, subsystems, and calculating their progress against 1000's, and 10,000's of tasks, punchlists, assets, docs, and so on, while compiling the interface colored based on custody state, as well as rendering the Systems Completion S-Curve which includes both planned vs. actual status.



Importing of the skyline can be performed in two (2) ways:

1. Develop Skyline Export: If systemization is already imported, specifically systems and/or sub systems, it is much easier to generate an export from the export module for the custody skyline as it will automatically list out the summary fields for your systemization. Then all that is required is to populate:

- Custody – WBS Phase: populate this column with the summary (phase name – description) in which you plan to handover the system or subsystem, then populate the four (4) transfer dates.
- Custody – WBS Stage: only use this column if the project wants to plan and track the transfer of subsystems or systems down to the stage level, if phase is sufficient then its not needed and the column can be deleted prior to importing.
- Custody – Dates: populate the four (4) typical dates that would be tracked against each system or subsystem.

- Custody - Contract Date: Date as defined in contract for a system or subsystem
- Custody - Planned Date: Planned date for turnover as per commissioning schedule
- Custody - Walked-Down Date: Date of agreed tri-party walk down to ensure all equipment has been installed/inspected according to project specification and any deficiencies are recorded in the CCMS punchlist, prior to transfer of care, custody and control.
- Custody - Actual Date: Date of actual transfer
- Custody: this column is for importing who has “current custody” of the system or subsystem.
- Some clients will import that, so the skyline coloring of the boxes will change when transfer of custody goes from one work group (e.g. construction) to another (e.g. commissioning). It also is automatically populated (most common approach) when the related certificate is completed against the system or subsystem for the particular phase or stage. See “Certificate Type Configuration” for more information on defining “receiving custody” work group and color configuration.
- It will also populate the “actual date” based on the completion date of the certificate. See Certificate Types configuration to define (receiving custody)

A	B	C	D	E	F	G	H	I	J
Process Breakdown (Summary)	Custody	Custody - WBS Project	Custody - WBS Phase	Custody - WBS Stage	Custody - Activity	Custody - Contract Date	Custody - Planned Date	Custody - Walked-Down Date	Custody - Actual Date
1100-103-01 - FIRE WATER TANKS		2016-01 - LNG Production Site	C3.1 - Pre-Commissioning			11/15/2018	11/15/2018	11/5/2018	11/18/2018
1100-103-01 - FIRE WATER TANKS		2016-01 - LNG Production Site	C4.2 - System Commissioning			2/23/2019	2/23/2019	2/26/2019	3/1/2019

2. Populate Skyline Import File: by a lead administrator in the vImport (import) module, or also done by an administrator or project engineer in the systemization module. There is an “import custody” button which will prompt the user to select the source XLS file and will map the columns to the fields.

NOTE You cannot re-purpose these fields or change their names as there is internal logic to the skyline that is looking at the particular date classifications.

You can filter the report on the basis of **Type**, **Level**, **Time line**, **Progress** and **Block sizes**.

NOTES

- On selecting option **Daily**, from **Time line** list the field **Period** is restricted to 2 months only. This restriction does not apply for any other time line option.
- When selecting a **date** from **Time line** list for **Weekly** option, the field is automatically driven to chose the start date of the week. Similarly, when selecting **Monthly** as an option, the skyline chart opts to choose the start date of the month irrespective of what date you have chosen.

Managing Skyline for Location/ Area

A skyline is a combination of a bar graph and a linear graph. It displays the details of effort put to a task model with in a month or any period. Follow these steps to view the Skyline chart for Location.

1. Select **Project** (the project you are assigned to is the default selection).
2. Select **Level (location/area)** from the drop down.
3. Select **Timeline** (weekly/monthly/yearly).
4. Check legends for work progress.

The skyline follows a color coding system to specify the work progress.

★IMPORTANT To view the work status of the physical location in addition to the work breakdown, select the **Area** and the **Location** from the dropdown.

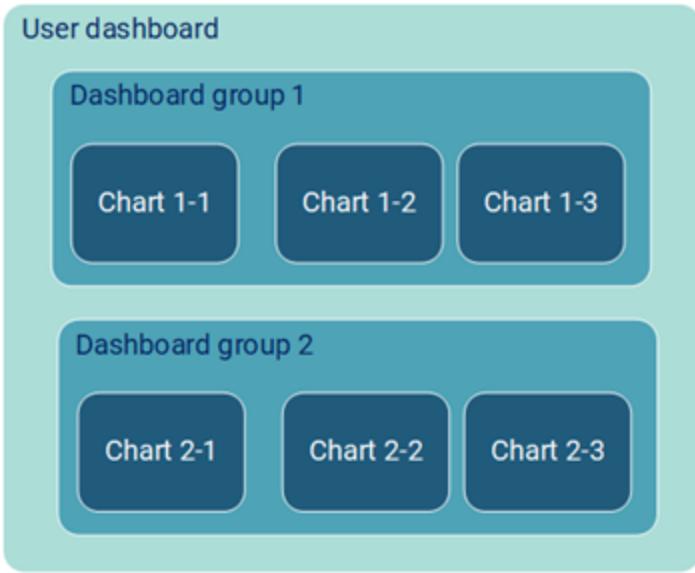
User Dashboard

The dashboard module can be used to create charts to visually compare the related data sets.

★IMPORTANT As Administrator, while creating a new project you should select the **Dashboards** check box in the **Completions Related?** box of the **Edit Project Wizard > Instance Data Selection** page.

Using the User Dashboards

The dashboard module allows you to create charts and also allows you to group the charts under dashboard groups.



Configure Dashboard Groups

Why should I create a Dashboard Group?

To create a collection of charts and data sets that provide specific insights relevant to a particular manager. For example, to develop a group of dashboards showcasing punchlist data and charts, you can create a dashboard group by the name *I-Punchlist* to indicate its association with the punchlist manager and pull date to create various sets of charts specific to punchlist data such as punchlist category, punchlist priority, and so on.

1. Select **Settings Panel** and type **Dashboard** in the **Open Manager** box.
2. Select **Dashboard Groups**.
3. Select **New** at the bottom of the page.
4. In the **Edit Dashboard Chart** window, select **Create a blank Dashboard Group** to create a new dashboard group.
5. Select **Finish**.
6. In the **General** tab, you can provide the following details:
 - **Group Name** - Name for the group.
 - **Application** - Select an user application name from the list.

- **Cells By Row** - Specify the number of charts you want to view in one row.
- **Active** - Specify if the dashboard group is active.

7. In the **Dashboards** section, enter the following information

- **Schema View** - Enter the name of the view that you want to generate the chart for.
- **Search View** - Enter the search view name.
- **Dashboard Title** - Specify the dashboard title.
- **Default Chart Type** - Select the default chart type.
- Specify whether you need report, filter, data type, and chart type options available on the chart.
- **Active?** - Specify if this chart is active by selecting the **Active** check box.

8. Select **Save**.

Linking the Dashboard Group to a Module

This process involves configuring two separate modules:

1. **Using User Applications**
2. **Configure Dashboard Groups**

★ **IMPORTANT** A single dashboard group can only be linked to one module at a time.

Using User Applications Module

1. Select **Settings Panel > User Applications**.
2. Enter the specific manager name in the **Manager View** column search for the Dashboard Group you configured earlier. For example, Assets. For information on how to configure dashboard groups, see [Configure Dashboard Groups](#).
3. Select an asset to open the **Edit Application** page.
4. In the **General** tab, Select **Show Dashboard > Show**.

5. Select **Save**.

[View the Dashboard Charts](#)

1. Go to **Dashboard Groups** manager, ensure it is set to **Active**.
2. Select the **Application** dropdown to map the dashboard group to a module (for example, application). For more information, see [Configure Dashboard Groups](#).
3. Select **Save**.

Set up an external dashboard

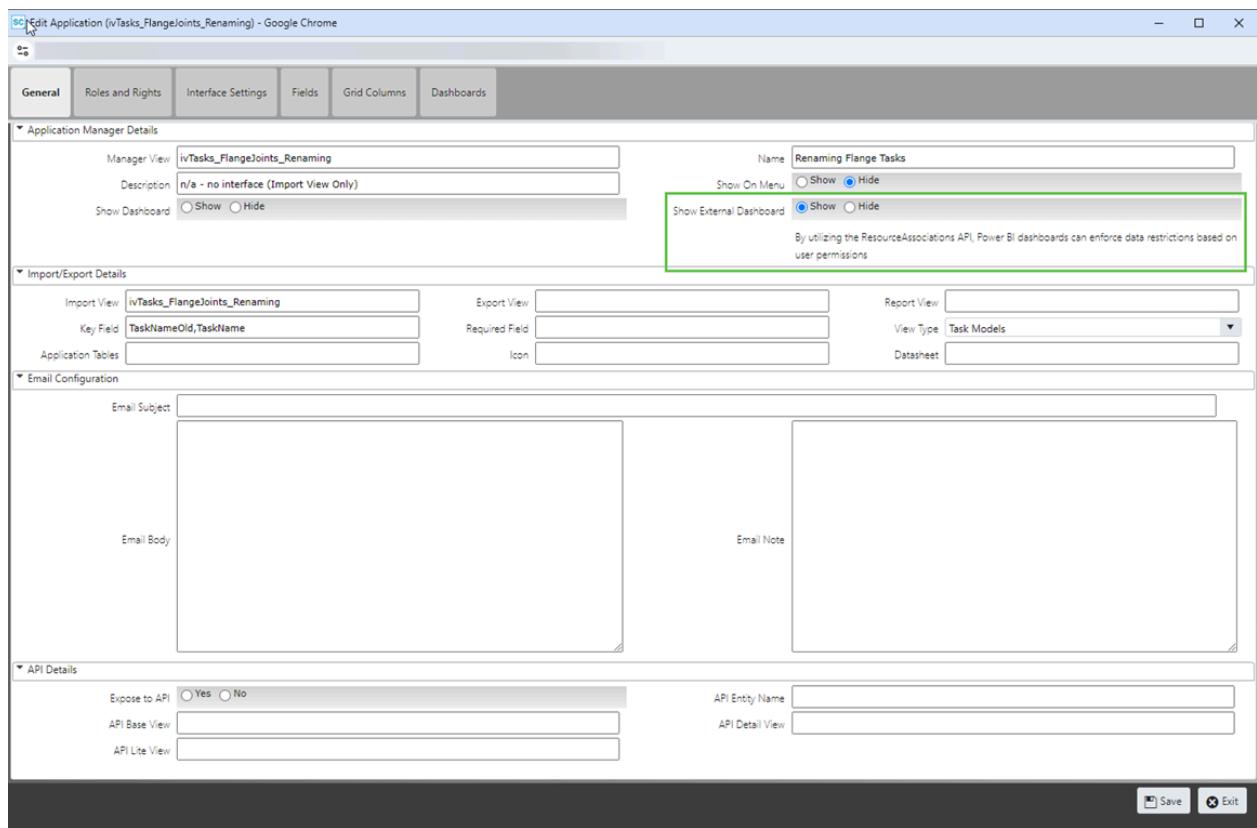
Download a pre-built Power BI template file and visualize your project data. This template provides customizable data graphs and visualizations. Customers with a Power BI license can integrate Smart API to gain deeper insights into their data.

Configure an external dashboard

This process involves configuring in **User Applications**.

[Using User Applications Module](#)

1. Select **Settings Panel > User Applications**.
2. Select an asset to open the **Edit Application** page.
3. In the **Application Manager Details** section of the **General** tab, Select **Show External Dashboard > Show**.

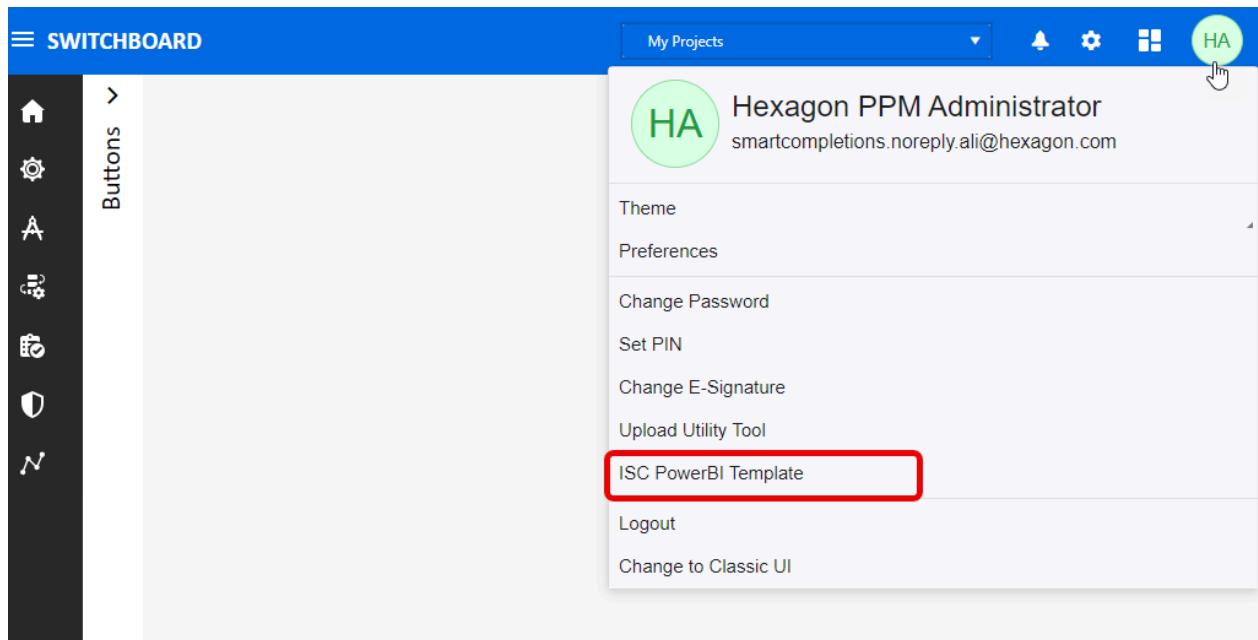


NOTE The **ResourceAssociations** API is essential for ensuring your data's security against unauthorized access. For more information, see [Resource Associations](#).

4. Select **Save**.

Download the Power BI template file

1. In the **Header** bar, select **Profile** icon.



2. Select **ISC Power BI Template**.

3. Save it in your local directory.

Customize the data

The downloaded Power BI template allows you to customize the visualizations to your specific data filters.

Find your project and instance numbers

1. In the Smart Completions site, go to **Instances - Parent to projects**.
2. Select **Search** and choose the Instance you would want the data from.
3. Select **Edit**.

TIP The instance number can be found within the URL displayed in your browser's address bar.

sc Edit SC Instance (Default Instance) - Google Chrome

sandbox.ceccms.com/ISC/Tools/EditForm.aspx?ID=1&v=vCompanyInstances

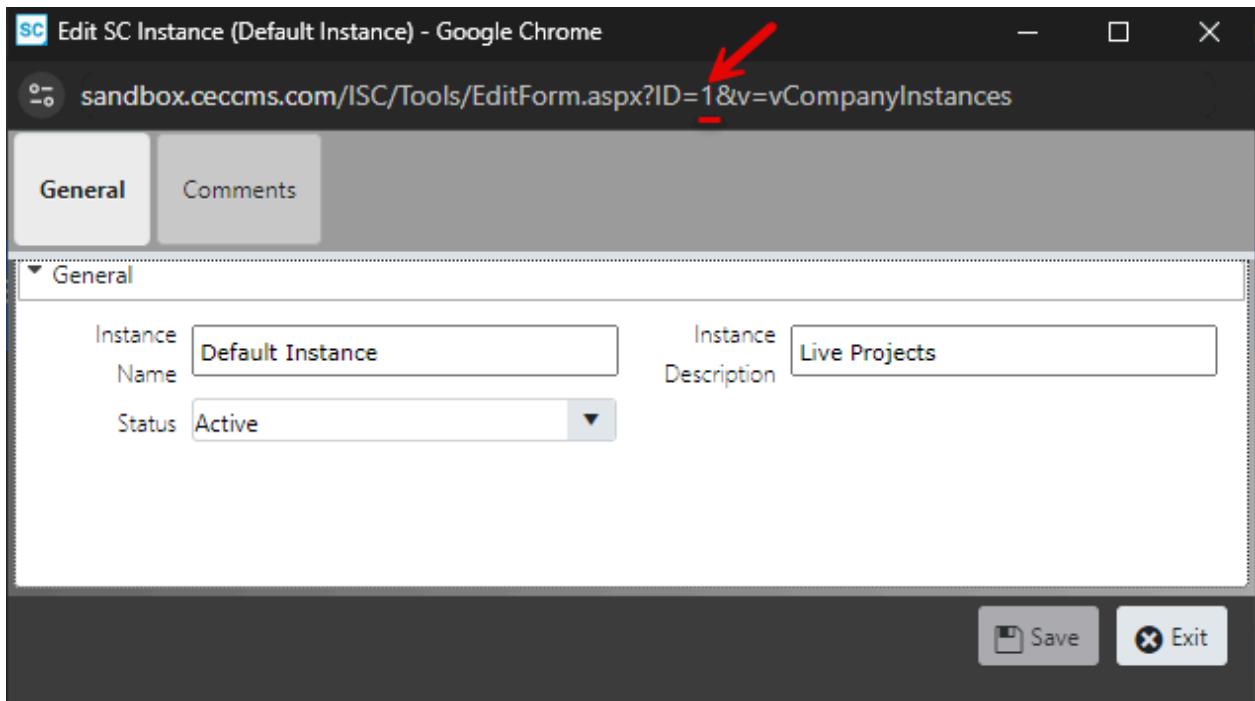
General Comments

General

Instance Name: Default Instance Instance Description: Live Projects

Status: Active

Save Exit



4. Navigate back to the Instance list and select your project to edit from the secondary panel.

TIP The project number can be found within the URL displayed in your browser's address bar.

sc Edit Project (001) - Google Chrome

sandbox.ceccms.com/ISC/Tools/EditForm.aspx?ID=262&v=vProjects&map=google

General Project Governance Systemization Locations Controls Resources Companies

Project Data

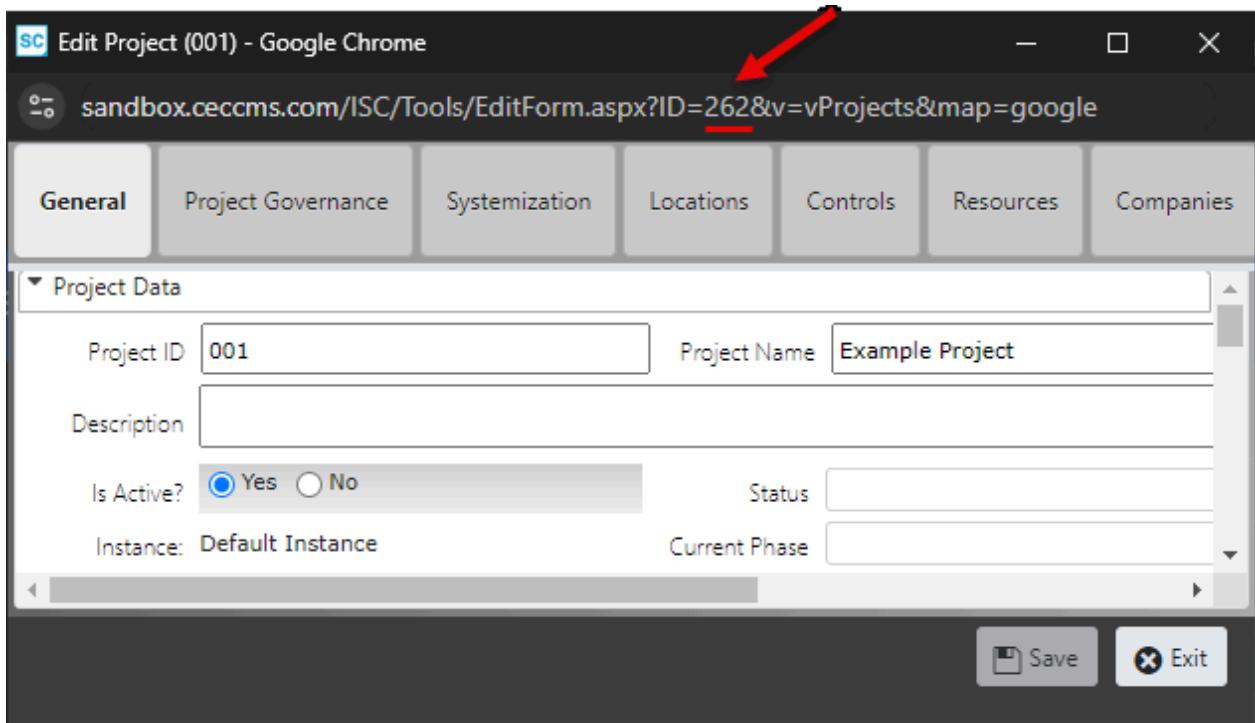
Project ID: 001 Project Name: Example Project

Description:

Is Active? Yes No Status:

Instance: Default Instance Current Phase:

Save Exit



Load your data

1. Open Power BI application.
2. In the header ribbon, go to **Transform Data > Edit Parameters**.
3. In the **Edit Parameters** window, enter the required information.

Parameter Name	Description
Project No.	The unique ID for your project. you can find this number within the URL of the project edit screen in Smart Completions application.
Instance No.	The unique ID for the instance associated with your project. You can find this number within the URL of the instance edit screen in Smart Completions application.
Site	Enter the site URL of your Smart Completions server.
UserName	Your username for accessing the SC application. ★ IMPORTANT The user must have API access rights.
Password	Your password.

4. Select **OK**.
5. Select **Apply Changes**.

NOTES

- The Power BI is now connected to your Smart Completions server and retrieve the relevant project data. The visualizations within the template will automatically update to reflect your project's specific data.
- The ISC template is ready to be plugged into the AWS site. If the site is on Hexagon Smart Cloud, the user can modify the GetToken() query in the advanced editor using client credentials. (Client credentials can be created from the portal by a user with portal admin rights.)
- Dashboards can be published in the service, and auto-refresh can be scheduled in Power BI service. The user can share the dashboard with others, depending on their license.

IMPORTANT

- Power BI dashboards will display records to all users who have the dashboard link, based on the user credentials configured in the parameters.
- The PBIX file contains the username and password, so be cautious when sharing the PBIX file with others.

Embed the Power BI template file

[Load the template](#)

 **IMPORTANT** Before using the Power BI template, make sure the Power BI application is installed on your computer. Additionally, ensure the Smart API license is enabled for your site before connecting to the Power BI dashboards.

1. From your local directory, double-click on the downloaded **ISC Power BI Template.pbix** file.

 **TIP** A set of pre-built dashboards containing customizable data visualizations are shown.
2. Prepare your Power BI file with required data to view your data visualizations.
3. Select **File > Publish**, to publish the visualization chart to your team.

4. In the Publishing to Power BI window, select the **Open 'Your Power BI Chart Name' in Power BI** link.

TIP The link is opened in your default web browser.

5. From the browser window, select **File > Embed report > Website or portal**.

The screenshot shows the Power BI desktop application with the 'Task Closed History' report loaded. The 'File' menu is open, and the 'Embed report' option is selected, with a sub-menu showing 'Website or portal' highlighted. The report itself displays various charts and tables related to task closure data.

6. In the **Securely embed this report in a website or portal** pop-up, select and copy the link under **Here's a link you can use to embed this content**.

Securely embed this report in a website or portal

Here's a link you can use to embed this content.

<https://app.powerbi.com/reportEmbed?reportId=c8415388-e028-4f4d-8cae-3b9a06a474d!>

HTML you can paste into a website

```
<iframe title="ISC_PowerBI Template" width="1140" height="541.25" src="https://app.pow
```

[Explore more embedding options in our Power BI embedded analytics playground](#)

Close

Link the Power BI report to Smart Completions Manager

1. In the Smart Completions application, go to **Settings Panel > User Applications**.
2. Select the **Manager View** you opted earlier while configuring an external dashboard.
For more information, see [Configure an external dashboard](#).
3. Go to **Dashboards** tab, enter the details for **Dashboard Name** and **Dashboard URL**.

The screenshot shows a web-based application window titled "Edit Application (vTasks_TestsPlanned) - Google Chrome". The top navigation bar includes tabs for General, Roles and Rights, Interface Settings, Workflow Settings, Fields, Grid Columns, and Dashboards. The Dashboards tab is selected. Below the tabs is a table titled "Dashboards" with one record. The table has columns for #, Dashboard Name, and Dashboard URL. The "Dashboard Name" column contains "Task Summary", and the "Dashboard URL" column contains a long URL starting with "https://app.powerbi.com/reportEmbed?reportId=c8415388-e028-4f4d-8cae-3b9a06a474d9&autoAu...". The entire "Dashboard URL" cell is highlighted with a red box. On the left side of the table, there are buttons for Delete, Up, Down, and To. At the bottom right of the application window are "Save" and "Exit" buttons.

NOTE The URL you have copied from **Step 6 of Load the template** section has to be entered in the Dashboard URL.

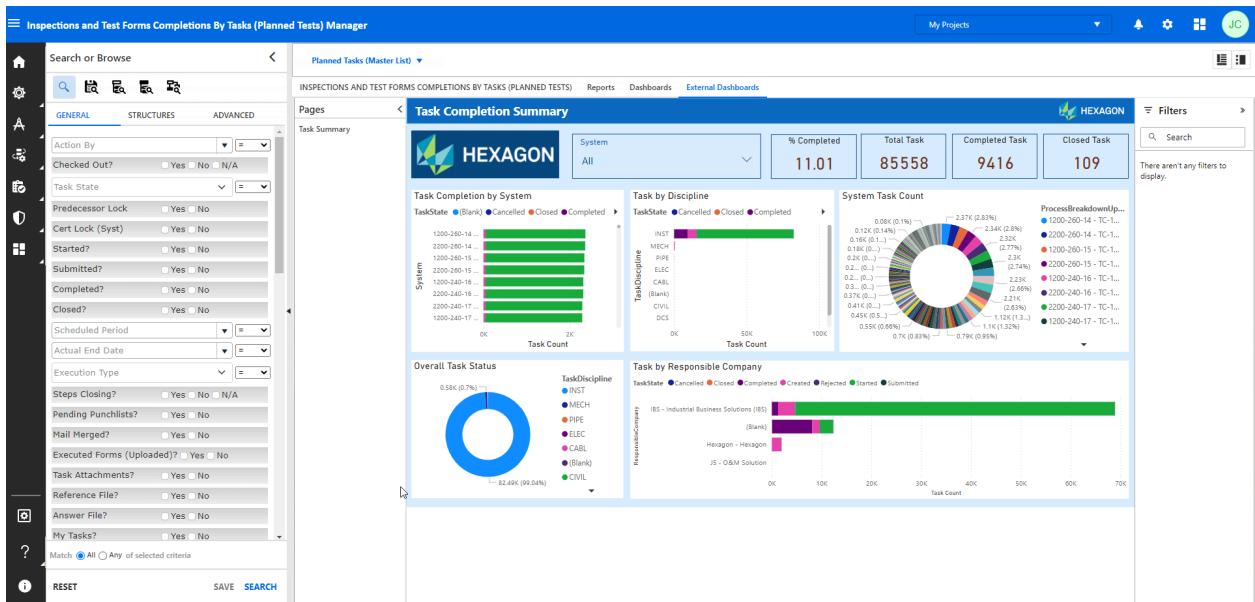
4. Select **Save**.
5. When you have multiple sections of the report, then you can update the Dashboard URL by specifying **Report ID** and **Report Section** details into the dashboard URL.

View the Dashboard

1. Go to **Settings Panel > Manager**.

TIP In this instance, **Planned Tasks**.

2. Select External Dashboards tab.



Configure Dashboard Charts

1. Select an item in the **Dashboard Groups** tab, and then click **Edit** in the bottom of the page.
2. In the **Edit Dashboard Group** window, select an item in the **Dashboards** section.
3. Click **Edit** on the left of the **Dashboards** pane.
4. In the **Editing** window, you can make changes to the different charts listed in the **Charts** section.

Bulk Upload Utility

Smart Completions has the ability to bulk upload electronic documentation into the database against the Document IDs (or records) in the database. The Smart Completions bulk upload utility is designed to upload both NATIVE and PDF formats. The upload utility is only provided to those appointed personnel responsible for either periodically uploading the latest documents or uploading completed scanned forms.

NOTE You must have edit rights to **vTasks_TestsFormsDocs**, to be able to execute the bulk upload utility function.

Accessing Upload Utility Tool

1. Login to Smart Completions website and navigate to **Help**



2. Click **Help** and select **Upload Utility Tool** on the drop down list

The upload utility tool gets downloaded to your local system.

Executing Upload Utility Application

To run the upload utility application on your system, follow any of these steps:

1. Unzip application using 7-Zip software, it is free and open source.

2. Add download URL to trusted sites list in **Internet Explorer -> Tools Menu -> Internet Options -> Security Tab -> Trusted Sites**. Then download the application and unzip it using default windows extractor.

3. Unzip application using default windows extractor. Provide the below settings in config file.

```
<configuration>
  <runtime>
    <loadFromRemoteSources enabled="true"/>
  </runtime>
</configuration>
```

Uploading Electronic Documentation

Smart Completions can bulk upload electronic files into the database against their associated document ID. We can bulk upload PDF files, MS Office files, and even ACAD files with XREF data, if required. We have uploaded over 27,000 files in a little over 3 days before for clients that use Smart Completions for document control.

Uploading Paper Based Forms

Smart Completions utilizes QR Codes for all test forms and our utility reads the QR code and matches the form to the task in the database, completes the task, uploads the file into the database and allocates the scanned form into the appropriate turnover package automatically.

Smart Completions includes advanced Batch Editing features that allow an advanced user to mass change project information such as batch editing assets into subsystem, entering in OEM information, or assigning tasks to equipment.

Search Options for upload tool

The Smart Completions Upload tool provides different search options. Initially, the tool does not support these special characters in file names: -, _, /, ., <space>. The search option **Exact Match** allows these characters and helps upload the right file. For example, there are 2 files named abc123 and abc-123. With the **Exact Match** scenario, If the user tries to find for a file abc, the search results would show both the files abc123 and abc-123. If user hasn't selected the **Exact Match** check box, the search result would override the file having '-' and show up a single file abc123.

Add Virus Scan to Imports/ Uploads

Deploying Metadefender/ClamAV with Client Environment

★ **IMPORTANT** In cases where Metadefender is not available, you can use ClamAV scans in AWS environment. ClamAV is introduced as part of Smart API.

You can use MetaDefender to scan all uploaded files in the Smart Completions. The scans inspect for any virus vulnerable content in the uploaded files.

To configure the metadefender virus scans to smart completions application:

1. Configure the **<BaseURI>** tag with the Metadefender/ClamAV machine details in the Configuration file.

☞ **NOTE** The configuration file is available at: ...\\Frontend\\bin\\config.xml

2. When the tag **<ScanUsingMetaDefender>** / **<ScanUsingClamAV>** is set to **No**, the uploaded files are not scanned.
3. When the tag **<ScanUsingMetaDefender>** / **<ScanUsingClamAV>** is set to **Yes**, the uploaded files are scanned.

- For **MetaDefender** follow the below file scan settings:

```
<FileScanSettings>

<ScanUsingMetaDefender>Yes</ScanUsingMetaDefender>

<BaseURI>https://yourhostmachinedetails/file</BaseURI>

</FileScanSettings>
```

- For **ClamAV** follow the below file scan settings:

```
<FileScanSettings>

<ScanUsingClamAV>Yes</ScanUsingClamAV>

<BaseURI>https://yourhostmachinedetails/file</BaseURI>

</FileScanSettings>
```

Deploying Metadefender with Smart Cloud Environment

If you are using Smart Completions hosted in **Smart Cloud** environment, the files are automatically scanned by **Metadefender**. In the Smart Cloud environment, the Metadefender scanning should be already integrated.

File Name	File	File(MB)
	<input type="checkbox"/> Y <input type="checkbox"/> N	
samplePPT		0.01
sampleTF		0.09
SimpleDoc		0.03
SimpleDocbmp		0.01
SimpleDocx		0.02
SimpleJPEG		
SimpleJPG		0.00
SimpleXls		0.01
SimpleXlsx		0.01
SimpleZip		0.48

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