



Welcome to the CARA v5 Configuration Course – July 2022

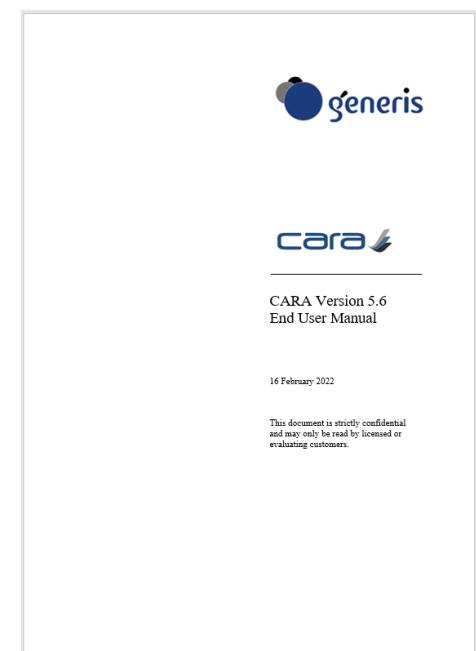
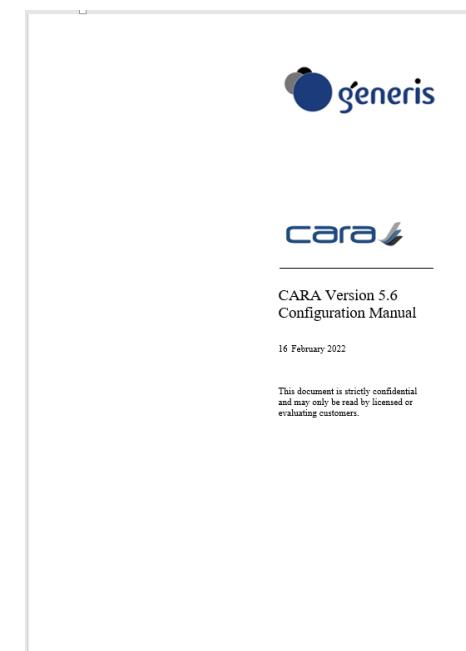
Barry Prince – Head of Training and Curriculum



Objectives

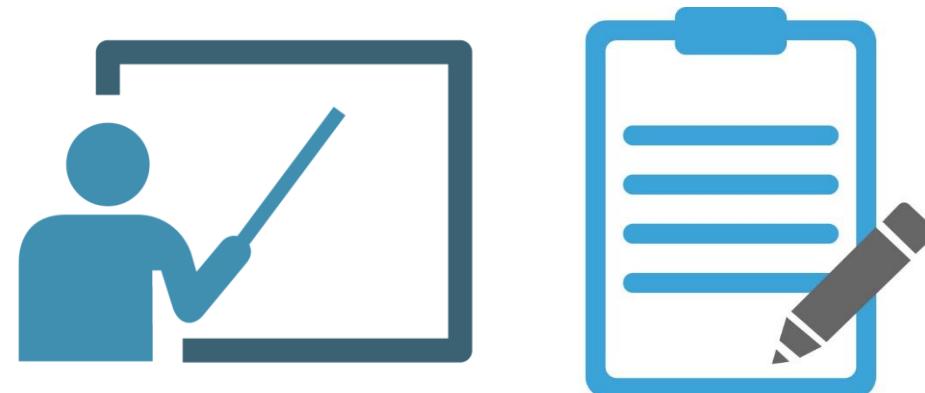
- Demonstrate end user functionality.
- Explore and detail the core configuration options of CARA v5.
- Create a complete configuration from new in the recommended order.
- Identify required and optional configuration elements.
- This training includes lab exercises, not a formal exam. A certificate of attendance will be provided at course completion for those who complete the labs.

This training is based on topics from the **CARA v5 Configuration manual** and the CARA v5 End User manual, which I can provide. These manuals are comprehensive, with detailed instructions and are your primary reference documents for this training and in general when working with CARA v5.



Introductions

- It is not necessary to have previous experience of CARA. End user and configuration overviews are available on our Learning Management System: <http://generis.talentlms.com>
- Please introduce yourselves: name, location and current knowledge of CARA are a good start!
- If you don't want to use a microphone please feel free to send chat messages instead.
- Myself: Working in teaching and IT training since leaving university. 8 years at EMC as the EMEA Training Team Leader for Documentum, delivering installation, administration and end user training. Led the roll out of D2 eTMF Lifesciences solution training. Located just outside London. Joined Generis in May 2017. I manage, create and deliver CARA training courses and write the CARA product manuals.



Agenda

Day1

- End user demonstration.
- Core configuration including:
 - Users and groups
 - Dictionaries and taxonomies
 - Type definitions
- Lab part 1

Day 2

- Additional configuration including:
 - Workflow templates
 - Reports
 - Configuration import and export
- Lab part 2

The screenshot shows the cara TMF Author View interface. The main area displays a search results grid with columns for Name, Modified, and Version label. The results show several documents, some with attachments like eForms and PDFs. To the left is a navigation tree with sections like My Desk, Tags, and All Items. On the right, there are several configuration panels: Widgets, Attributes, Lifecycle name, Lifecycle state, Content/Renditions, Locations, and Versions. The Locations panel shows a path to /TMF/Regulatory/General. The Versions panel shows a table with columns for Version label and Creator.

End User Demonstration

- Demonstrate main end user functions including GUI navigation, document creation, editing, and workflow.
- CARA is browser based, supporting the main browsers.
- CARA file manager simplifies upload and download of files when viewing and editing. User guide walks through the install.

The screenshot shows the CARA application interface. At the top, there is a navigation bar with links for Control Panel, Analytics, Utilities, and BP. Below the navigation bar is a toolbar with buttons for TMF Reader, TMF Author View, Inbox, and Admin. The main area has tabs for TMF Reports, Create Regulatory Doc, Create, Duplicate, Edit, Check-In, Quick Check-In, Check-Out, and Cancel Check-Out. A search bar displays "Search For..." and "Advanced Search". A message indicates "Found 101 documents in 18ms". On the left is a Navigation Tree with sections like My Desk, Subscriptions, In Collaboration, Trash, Favourites, Tags, My Documents, My Locked Documents, Priority Docs, Training Docs, All Items, Folders, and Dimensions. The central part of the screen shows a "Search Results" table with columns for Name, Modified, and Version label. The table lists several documents, including "tr2001a", "tr2101b", "0802d updated from queue", "test 0203a", "tr0203c", "tr0203e", "tr2103a", "test 0203b", "tr1402c updated from queue", "tr1402b updated", and "tr1402a updated". To the right of the search results are several "Widgets" panels: Attributes, Content/Renditions, Locations, and Versions. A separate window titled "CARA File Manager" is open, showing the "CARA File Manager installation for Windows" message, download link for "CARA File Manager v5.0.12", and system requirements information (.NET Framework 4.7.2 or newer). A "Close" button is at the bottom right of the file manager window.

Quick Tour of the Control Panel

- This is where we will spend most of the 2 days.
- Note that a significant amount of configuration is type specific.

Control Panel - TMF Studentx (tmf_studentx)

Search

Taxonomies

General

- ACL Templates
- Capabilities
- Collaboration Services
- Connectors
- Custom Actions
- Dashboards
- eForms
- Lifecycles
- Notification Channels
- Notification Templates
- Queues Consumers
- Relation Types
- Reports
- Script Libraries
- Sequences
- Signing Services
- Workflow Templates
- Workspaces

Maintenance

- Configuration Export
- Configuration Import
- Configuration Tags

Type Configuration

- Data Type1 (data_type1)
- TMF Studentx (tmf_studentx) **Selected**
- Type V56 Simple Versioning (...)
- V56 Manual Folders (v56_ma...)

Search

Add Edit Import Export Delete Edit Type

Configuration Type	Version	Updated	Updated By	Tags
Type Capabilities	14	2/15/22 2:29 PM	Barry Prince	
Form	15	2/8/22 10:37 AM	Barry Prince	
View (TMF Author View) - Default	67	3/21/22 2:06 PM	Barry Prince	
View (Admin)	2	2/9/22 11:31 AM	Barry Prince	
View (TMF Reader)	10	2/9/22 11:31 AM	Barry Prince	
Initialization (3 Items)				
Classification Definition	3	9/22/21 12:20 PM	Barry Prince	
Lifecycle Assignment	3	3/24/21 6:34 PM	Barry Prince	UAT_Co...
Template Assignment	4	9/22/21 12:21 PM	Barry Prince	
Processing (10 Items)				
Auditing	4	10/21/21 8:23 PM	Barry Prince	
Auto-Values	9	9/22/21 12:20 PM	Barry Prince	
Change Notifications	3	2/3/22 9:00 AM	Barry Prince	
Content Access	3	2/7/22 9:01 AM	Barry Prince	
Date Based Notifications	2	2/3/22 3:18 PM	Barry Prince	
Legal Hold Items	1	2/3/22 3:23 PM	Barry Prince	

Displaying 1 - 18 of 18

Close

Core Configuration Summary and Checklist

1. Users and groups.
2. Set system capabilities.
3. Define at least 1 type.
4. Create dictionaries and taxonomies for the main classification.
5. Set type capabilities.
6. Update the properties form.
7. Configure the default view.
8. Add the view to a workspace.
9. Classification definition, point to your taxonomy.
10. Set template assignment and import templates.
11. Add linking rules (unless folders are manual).
12. Set type security.
13. Create and assign lifecycles.
14. Create workflows.
15. Export configuration.

The screenshot shows the Control Panel interface for TMF Studentx (tmf_studentx). On the left, a sidebar titled 'Taxonomies' lists various configuration categories: General, ACL Templates, Capabilities, Collaboration Services, Connectors, Custom Actions, Dashboards, eForms, Lifecycles, Notification Channels, Notification Templates, Queues Consumers, Relation Types, Reports, Script Libraries, Sequences, Signing Services, Workflow Templates, Workspaces, Maintenance, Configuration Export, Configuration Import, Configuration Tags, Type Configuration, Data Type1 (data_type1), TMF Studentx (tmf_studentx) (selected), Type V56 Simple Versioning (...), and V56 Manual Folders (v56_ma...). On the right, a main pane titled 'Control Panel - TMF Studentx (tmf_studentx)' displays a table of 'Configuration Type' items. The table has columns for Configuration Type, Version, Updated, Updated By, and Tags. The data is organized into sections: General (5 items), Initialization (3 items), Processing (10 items), and a footer note 'Displaying 1 - 18 of 18'. The 'Edit Type' button is located in the top right corner of the table header.

Configuration Type	Version	Updated	Updated By	Tags
General (5 Items)				
Type Capabilities	14	2/15/22 2:29 PM	Barry Prince	
Form	15	2/8/22 10:37 AM	Barry Prince	
View (TMF Author View) - Default	67	3/21/22 2:06 PM	Barry Prince	
View (Admin)	2	2/9/22 11:31 AM	Barry Prince	
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Processing (10 Items)				
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Auto-Values	9	9/22/21 12:20 PM	Barry Prince	
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Content Access	3	2/7/22 9:01 AM	Barry Prince	
Date Based Notifications	2	2/3/22 3:18 PM	Barry Prince	
Legal Hold Items	1	2/3/22 3:23 PM	Barry Prince	
C				
Displaying 1 - 18 of 18				
Close				

Users

- Created manually or imported via LDAP.
- System users are prefixed with an underscore and cannot be deleted, for example _renderer.
- **Inactive** users are grey.
- **Locked** users have a strikethrough.
- User's **Audit Trail Report** and **Recent Activity** are available from the right-click menu.
- Users are granted general **System Capabilities** and specific **Type Capabilities** in other configuration windows.
- Users can be renamed, both their username and login name.

The screenshot shows the 'Control Panel - Users' window. On the left is a navigation tree with sections like Administration, Data, and General, with 'Users' currently selected. The main area is a table listing users:

User Name	Login Name	Email	Source	Last Login
_D	_docsecure	_docsecure	System	2/17/22 3:03 PM
_G	_guest	_guest	System	
_I	_indexer	_indexer	System	3/21/22 1:59 PM
_!	_initializer	_initializer	System	4/7/21 10:46 AM
_R	_renderer	_renderer	System	3/21/22 1:59 PM
_S	_scheduler	_scheduler	System	4/7/21 10:49 AM
_W	_worker	_worker	System	4/7/21 10:49 AM
BP	Barry Prince	bprince	barry.prince@generiscorp.com	Inline 3/29/22 3:37 PM
CA	cadmin	cadmin		Inline 1/11/22 9:57 AM
EM	emilie	emilie	emilie.blich@generiscorp.com	Inline
JS	John Smith	jsmith	barry.prince@generiscorp.com	Inline 2/9/22 11:17 AM

User Properties

- **Active:** Allowed to login.
- **Locked:** When the number of password attempts has been exceeded. Default is 5 attempts.
- **User Name & Login Name** must both be unique.
- **Source:**
 - Inline - encrypted password stored within CARA. High password complexity is required.
 - LDAP - network password.
 - System - no manual login, uses authentication token.
 - External. Single sign-on on using SAML or OIDC.
 - OKTA – Single sign-on on using OKTA authentication services.
- **Email Address.** Used for notifications. Must be a valid email format.
- **Photo/Image File.** Optional. Drag and drop or browse.
- **Membership: Groups:** Membership can be viewed and set.
- **Notifications: Channel & Locale.** Can be set by users.
- **Settings:** Additional properties set by script only.

The screenshot shows the 'User Properties' interface for a user named 'John Smith'. The top navigation bar includes tabs for General, Membership, Notifications, Settings, and Authentication. The General tab is selected. On the left, there is a placeholder for a profile photo with the letters 'JS' and a 'Drop your photo here or browse your computer' button. The right side contains various input fields and checkboxes:

- Status: Active (checked), Locked (unchecked)
- User Name: John Smith
- Login Name: jsmith
- First Name: (empty field)
- Last Name: (empty field)
- Display Name: (empty field)
- Source: Inline (selected)
- Password: (empty field) with eye icon
- Repeat Password: (empty field) with eye icon
- Email Address: (empty field) with asterisk (*)

At the bottom, there are 'View Membership', 'Save' (with a disk icon), and 'Cancel' buttons.



Multi-Factor Authentication (MFA)

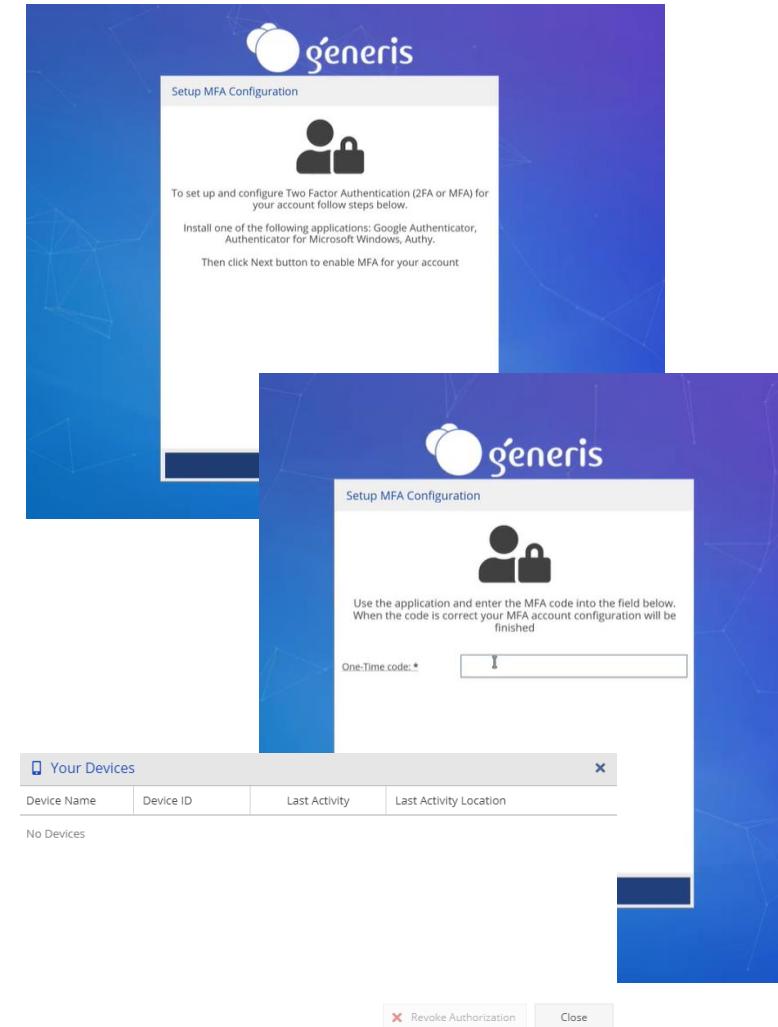
- **MFA** is supported for both user login and e-signatures on tasks and other events.
- Users add a device after initial login. CARA provides a setup code for entry into the users choice of authentication application, such as Google Authenticator. Subsequently the user enters a OTC (One Time Code) when logging in or signing a task or event.
- Users can reset and remove their device in CARA under Your Devices.
- Full instructions are provided in the user and configuration manuals.
- MFA is enabled on the CARA server in the **application-dev.yml file**.

There are 3 settings in the **authentication** section of the file:

mfa_enabled. True or False. Applies to login.

user_signature_method. OTC or password. Applies to e-signatures.

exclusions. Users entered here are not required to use MFA.



User Sessions

- Current user sessions are visible in a separate window within the control panel.
- Sessions can be killed via the right click menu.
- Includes Last Activity and Login Date.
- Details can be exported.
- Last Login is also available from the main users window.

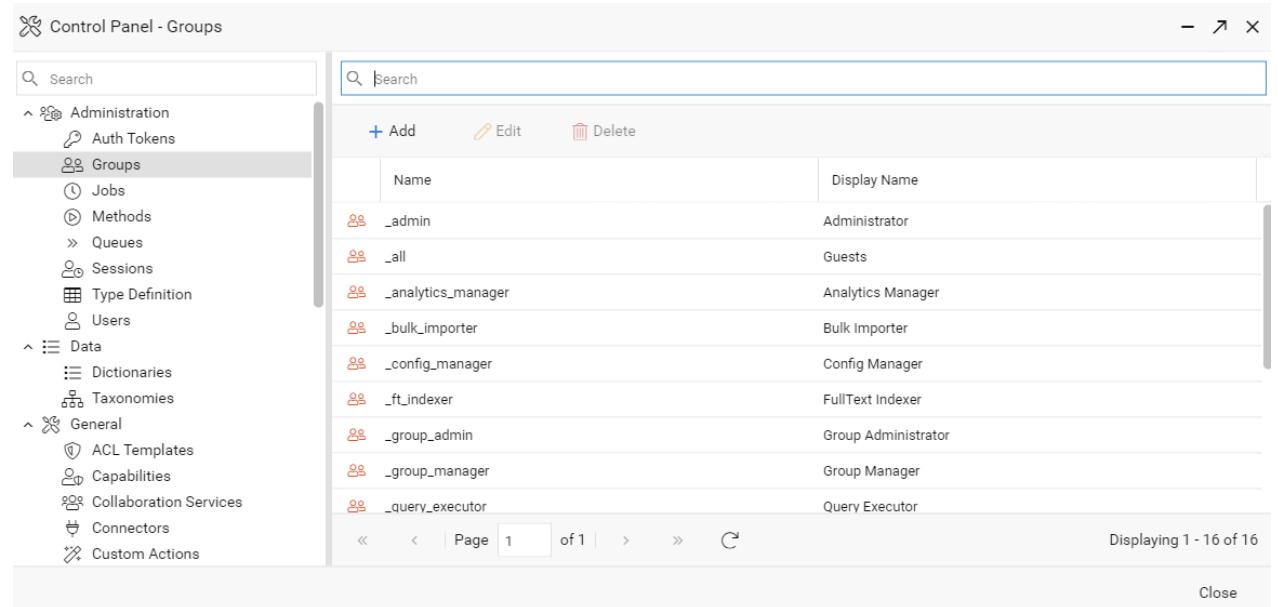
The screenshot shows the 'Control Panel - Sessions' window. On the left is a navigation sidebar with sections like Administration, Sessions (which is selected and highlighted in grey), and General. The main pane displays a table with one row of data:

Session ID	Login Name	User Name	Auth Method	Last Activity
229655ca-0205-4ec6-81a3-98116e619f27	bprince	Barry Prince	Password	3/29/22 3:45 PM

At the top of the main pane, there are buttons for 'Kill Selected' and 'Export to Excel'. At the bottom, it says 'Displaying 1 - 2 of 2' and has a 'Close' button.

Groups

- Groups are used extensively throughout CARA to determine what users can see and do, for example ACL's, capabilities and view access.
- Created manually or via LDAP, which is indicated by the **Source** field. Group membership can be populated via LDAP (uses a job and config file `ldap-admin-authentication.yml`).
- System groups are those with an underscore prefix and displayed in red, these cannot be removed. System groups have Source set to System.
- A group's **Audit Trail Report** is available from the right-click menu. It shows changes to the group such as members being added or removed.



The screenshot shows the 'Control Panel - Groups' interface. On the left, there is a sidebar with a tree view of administration categories: Administration (Auth Tokens, Groups, Jobs, Methods, Queues, Sessions, Type Definition, Users), Data (Dictionaries, Taxonomies), and General (ACL Templates, Capabilities, Collaboration Services, Connectors, Custom Actions). The 'Groups' node under 'Administration' is selected and highlighted in grey. To the right is a main panel titled 'Search' containing a table of groups. The table has two columns: 'Name' and 'Display Name'. The groups listed are: _admin (Administrator), _all (Guests), _analytics_manager (Analytics Manager), _bulk_importer (Bulk Importer), _config_manager (Config Manager), _ft_indexer (FullText Indexer), _group_admin (Group Administrator), _group_manager (Group Manager), and _query_executor (Query Executor). Below the table are navigation buttons for pages, and at the bottom right, it says 'Displaying 1 - 16 of 16' and 'Close'.

Name	Display Name
_admin	Administrator
_all	Guests
_analytics_manager	Analytics Manager
_bulk_importer	Bulk Importer
_config_manager	Config Manager
_ft_indexer	FullText Indexer
_group_admin	Group Administrator
_group_manager	Group Manager
_query_executor	Query Executor

Group Properties

- **Group Name** can only contain lowercase letters, numbers and underscores. It cannot be changed once saved.
- Source = Inline, LDAP or System. For manually created groups Source = Inline.
- Groups can be nested within other groups (Group Members).
- **Group Administrators** can add and remove members.

_config_manager - Groups

Group Name:	_config_manager
Display Name:	Config Manager
Source:	System
User Members:	<ul style="list-style-type: none">System Administrator (cadmin) XBarry Prince Xstudent1 Xstudent2 Xstudent3 Xstudent4 Xstudent5 Xstudent6 Xtoshiaki Xstudent7 Xstudent8 Xstudent9 Xstudent10 Xstudent11 Xluisa Xstudent12 Xstudent13 Xstudent14 Xstuartc Xnaomi Xemilie Xkaror X
Group Members:	
Administrators:	

Save **Cancel**

System Groups

_super_admin. Members have access to user sessions, logs, clear cache, authentication tokens, type definitions and queues. It is the only group that can modify system group access.

_admin. Members have access to users, groups, jobs and methods. They cannot modify system group access.

_config_manager. Provides members with access to the control panel. Access within is determined by other group membership.

_analytics_manager. Provides members with access to the analytics window.

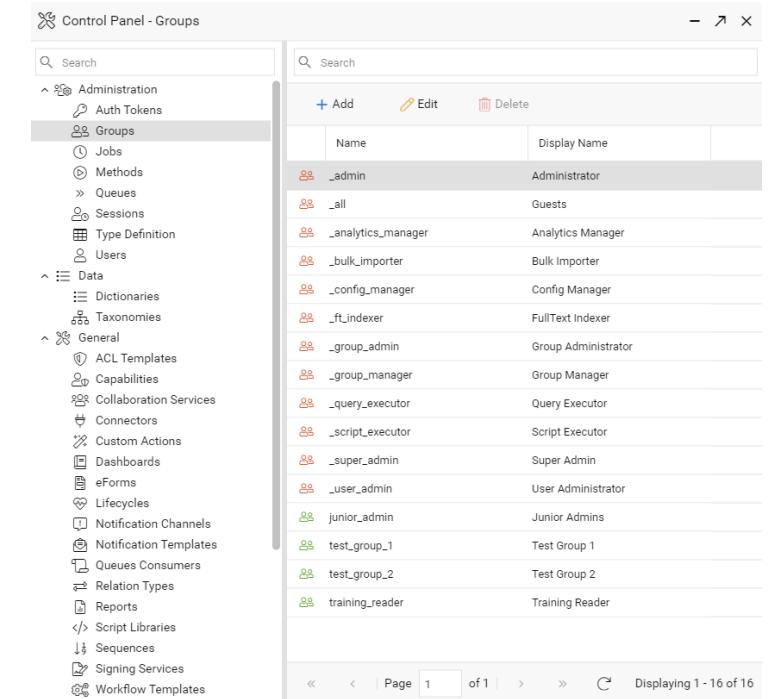
_query_executor. Provides members with access to the query editor.

_script_executor. Provides members with access to the script editor.

_user_admin. Members have access to the users section of the control panel. Members can add and edit users, however they cannot provide or modify user access to system groups.

_group_admin. Members have access to the groups section. Members can delete non-system groups. They can also create new groups and can change non-system group membership.

_group_manager. Members have access to the groups section. Members cannot delete any groups. They can create new groups and can change non-system group membership.



The screenshot shows the 'Control Panel - Groups' interface. On the left is a navigation tree with categories like Administration, Data, General, and others. The 'Groups' node under Administration is selected. To the right is a table listing 16 system groups. The columns are 'Name' and 'Display Name'. The groups listed are: _admin (Administrator), _all (Guests), _analytics_manager (Analytics Manager), _bulk_importer (Bulk Importer), _config_manager (Config Manager), _ft_indexer (FullText Indexer), _group_admin (Group Administrator), _group_manager (Group Manager), _query_executor (Query Executor), _script_executor (Script Executor), _super_admin (Super Admin), _user_admin (User Administrator), junior_admin (Junior Admins), test_group_1 (Test Group 1), test_group_2 (Test Group 2), and training_reader (Training Reader). The table includes standard CRUD buttons (+ Add, Edit, Delete) at the top and a search bar. At the bottom, there are pagination controls showing 'Page 1 of 1' and 'Displaying 1 - 16 of 16'.

Name	Display Name
_admin	Administrator
_all	Guests
_analytics_manager	Analytics Manager
_bulk_importer	Bulk Importer
_config_manager	Config Manager
_ft_indexer	FullText Indexer
_group_admin	Group Administrator
_group_manager	Group Manager
_query_executor	Query Executor
_script_executor	Script Executor
_super_admin	Super Admin
_user_admin	User Administrator
junior_admin	Junior Admins
test_group_1	Test Group 1
test_group_2	Test Group 2
training_reader	Training Reader

Groups Audit Trail Report

- A group's **Audit Trail Report** displays changes to the group, such as members being added or removed.
- Click **View** to see the changes made in a separate window.
- The Audit Trail Report can be filtered by user and date.

The screenshot shows the Control Panel - Groups interface. On the left, there is a sidebar with a search bar and a navigation tree. The 'Administration' section is expanded, showing 'Auth Tokens', 'Groups', 'Jobs', 'Methods', 'Queues', 'Sessions', 'Type Definition', 'Users', and 'Data' sections. Under 'Data', 'Dictionaries' and 'Taxonomies' are listed. The main area shows a table with columns 'Name' and 'Display Name'. There are four rows: '_admin' (Administrator), 'Guests' (Analytics Manager, Bulk Importer, Config Manager, FullText Indexer). Below the table are buttons for '+ Add', 'Edit', and 'Delete'. A context menu is open over the '_admin' row, with options '+ Add', 'Edit', 'Delete', and 'AuditTrail Report'. The 'AuditTrail Report' option is highlighted with a blue background.

The screenshot shows the 'Audit Trail Report - _admin' dialog box. It has a search bar at the top. Below it are several filter sections: 'Countries' (United Kingdom), 'Events' (System: Update, System: Create), 'Modified Attribute' (None), and 'Types' (Group). At the bottom are 'Apply' and 'Reset' buttons, and a page navigation bar ('Page 1 of 2'). To the right of the main report area is a 'Audit Trail - Details' panel. This panel has tabs for 'General' and 'Properties Change', with 'Properties Change' selected. It shows a table with columns 'Event', 'User Name', 'Time Stamp', and 'Reason'. The table contains several entries, with the last two visible:

Event	User Name	Time Stamp	Reason
System: Update	Barry Prince	2/9/22 11:16 AM	
System: Update	Barry Prince	2/8/22 10:53 AM	

System Capabilities

- Enable **system wide functions** such as control panel access or sending and receiving workflow tasks. **Separate from the type specific capabilities.**
- The **_admin** and **_config_manager** system groups have all system capabilities enabled by default, these should not be changed. Add other groups as appropriate.
- **Default** cannot be removed but its capabilities can be changed.
- **Default** only applies when the user belongs to no other listed groups.
- Apart from the Default group, capabilities are **cumulative**.

The screenshot shows the 'Control Panel - Capabilities' interface. On the left, there is a sidebar with a search bar and a tree view of system categories: Administration, Data, General, and Capabilities. The 'Capabilities' category is selected. On the right, there is a main table with a header row for 'Capability', 'Default', '_admin', '_config_manager', and 'training_reader'. Below the header, there are several rows of capabilities, each with checkboxes for the four roles. Most checkboxes are checked for the '_admin' role, while others are checked for '_config_manager' and 'training_reader'.

Capability	Default	_admin	_config_manager	training_reader
Copy Cell Content to Clipboard	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Copy Row Content to Clipboard	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Signing Requests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tasks - Inbox & Completed Tasks	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Tasks - Inbox - Multiple Tasks Processing	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Tasks - Related Workflows	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tasks - Send Workflow	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tasks - Workflow Reporting	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Configuration Editing, Export and Import

- As with other configuration elements, capabilities can be imported and exported to a .yml file or the editor. They can also be imported from a .yml file either directly or into the editor for updating.

The screenshot shows the Control Panel - Capabilities interface. On the left, there's a sidebar with various administrative and general settings. The main area displays a list of capabilities, including 'Tasks - Inbox & Completed Tasks', 'Tasks - Related Workflows', and 'Tasks - Workflow Reporting'. A modal window titled 'Export' is open, with 'Export to File' selected. This modal contains three tabs: '_admin', '_config_manager', and 'training_reader'. Under each tab, checkboxes are present for each capability listed. The '_admin' tab has checkboxes checked for all three capabilities. The '_config_manager' tab has checkboxes checked for 'Tasks - Inbox & Completed Tasks', 'Tasks - Related Workflows', and 'Tasks - Workflow Reporting'. The 'training_reader' tab has checkboxes checked for 'Tasks - Inbox & Completed Tasks' and 'Tasks - Related Workflows'. To the right of the modal, a separate window titled 'Export Config' displays the generated YAML code:

```
active: true
config_type: "capabilities"
id: "capabilities"
role_capabilities:
- capabilities:
  - "TASKS_INBOX"
  - "TASKS_MULTIPLE_TASKS_PROCESSING"
  role_name: "Default"
- capabilities:
  - "COPY_CELL"
  - "COPY_ROW"
  - "TASKS_INBOX"
  - "TASKS_MULTIPLE_TASKS_PROCESSING"
  - "TASKS_RELATED_WORKFLOWS"
  - "TASKS_SEND"
  - "TASKS_WORKFLOW_REPORTING"
  role_name: "_admin"
- capabilities:
  - "COPY_CELL"
  - "COPY_ROW"
  - "TASKS_INBOX"
  - "TASKS_MULTIPLE_TASKS_PROCESSING"
  - "TASKS_RELATED_WORKFLOWS"
  - "TASKS_SEND"
  - "TASKS_WORKFLOW_REPORTING"
  role_name: "_config_manager"
- capabilities:
  - "TASKS_INBOX"
  - "TASKS_MULTIPLE_TASKS_PROCESSING"
  role_name: "training_reader"
```

At the bottom of the 'Export Config' window, there are 'Copy to Clipboard' and 'Close' buttons.

Type Definition Introduction

- **Define the document/object types that users will work with.** Typically documents which are versioned, with content, but there are other options.
- Could have one or many types. A type per organisation or department etc..
- Define attributes, versioning, content storage etc..
- A large proportion of subsequent CARA config is type specific e.g. views, folder rules, security, auto-values.

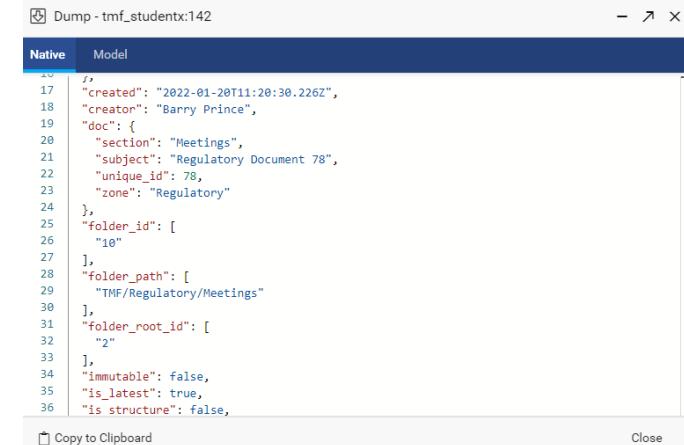
The screenshot shows the 'Control Panel - Type Definition' interface. On the left is a sidebar with a search bar and a list of categories: Sessions, Type Definition (selected), Users, Data (with Dictionary and Taxonomies), General (with ACL Templates, Capabilities, Collaboration Services, Connectors, Custom Actions, Dashboards, eForms, Lifecycles, and Notification Channels). The main area has a search bar and a toolbar with Add, Edit, Import, Export, and Delete buttons. A table lists four type definitions:

Name	Display Name	Object Count	Content?	Connector	Versioning?	Updated
data_type1 (v1)	Data Type1	16	✓	_file_system	✓	9/21/21 1:20 PM
tmf_studentx (v1)	TMF Studentx	154	✓	_file_system	✓	1/18/22 10:15 AM
type_v56 (v1)	Type V56 Simple Versioning	5	✓	_file_system	✓	1/18/22 3:11 PM
v56_manual_folders (v1)	V56 Manual Folders	4	✓	_file_system	✓	1/20/22 3:42 PM

At the bottom, it says 'Displaying 1 - 4 of 4' and has a Close button.

The Elasticsearch Platform & Object Data Storage

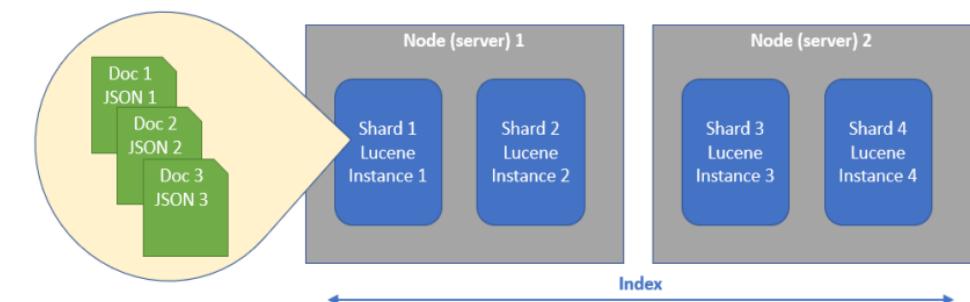
- CARA v5 uses the **Elasticsearch** platform.
- The Elasticsearch platform is **JSON-based** web server built on top of **Lucene**. Lucene is an open source search engine written in Java.
- It is not a relational database and therefore SQL/DQL is not applicable, however we do use a simple query language (CQL) in some configuration.
- There is a set of core properties available to all types such as object_name, creator, created. See the configuration manual for the list of core properties.
- Each document or object is stored within Elasticsearch as a JSON file (JavaScript Object Notation).
- The JSON file contains default attributes, type specific attributes and full-text.
- Each object can be uniquely identified by a combination of its type and ID, for example clinical_document (type) number (ID) 34.
- The **dump** operation displays all of the properties from the JSON file, except for the full-text which is hidden for convenience (as full-text can be very large).



A screenshot of a terminal window titled "Dump - tmf_studentx:142". The window shows a JSON document with the following content:

```
Native Model
10
11
12
13
14
15
16
17 "created": "2022-01-20T11:20:30.226Z",
18 "creator": "Barry Prince",
19 "doc": {
20   "section": "Meetings",
21   "subject": "Regulatory Document 78",
22   "unique_id": 78,
23   "zone": "Regulatory"
24 },
25 "folder_id": [
26   "10"
27 ],
28 "folder_path": [
29   "TMF/Regulatory/Meetings"
30 ],
31 "folder_root_id": [
32   "2"
33 ],
34   "immutable": false,
35   "is_latest": true,
36   "is_structured": false,
```

Buttons at the bottom include "Copy to Clipboard" and "Close".



Type Definition General Options

- **Type Name** must be unique. Type names can only contain letters, numbers and underscores. They must start with a letter.
- **Purpose.** Data or Documents. Data objects are those such as forms which contain only metadata.
- **Content Storage.** Select the connector for content storage. Could be cloud-based such as Amazon S3, file system, Box etc.. The connectors are configured in a .yml file on the server.
- **Content Processing.** Indexing and rendering to pdf are usually set to automatic.
- **Versioning.** Advanced versioning provides minor version numbers such as 0.1, 0.2 with labels. If not selected, major version numbers only (simple versioning).
- **Set Non-Latest Versions to Immutable.** Objects cannot be edited or deleted.
- **Folders. Automatic Vs Manual.** Documents are usually placed within a folder hierarchy automatically. If manual linking is selected, users can create and delete folders.

New Type Definition

General Attributes Sizing

Type Name:

Display Name:

Icon:

Purpose: Data (objects without a content file)
 Documents (objects with a content file)

Content Storage:

Content Processing: Indexed for Search Render PDF automatically
 Simple Automatic Versioning
 Advanced Versioning with Lifecycle (on check-in only, minor and major versions)
 Set Non-Latest Versions to Immutable

Versioning:

Folders:
 Disabled
 Automatic Folder Linking Based on Rules
 Manual Folder Linking

Recommendation: Most options **cannot** be changed later. Leave the defaults (enabled) if unsure of linking and lifecycles requirements.

Data Object Type Notes

- Data object types do not have content.
- They are **versionable**, even though they do not have any content. Check-in and check-out do not apply to them, instead when the properties of a data object are updated and saved, a new version of the object is automatically created.

The screenshot shows the cara software interface. The top navigation bar includes File, Edit, Tasks, Tools, Settings, Help, Control Panel, Analytics, Utilities, and BP. The current tab is "Data Type1". The left sidebar has a "Navigation Tree" with sections like My Desk, Favourites, Tags, and All items. The main area displays a table titled "All Items" with columns: Name ↑, Version label, Created, and Created By. It lists three items: "tr0206b updated" (Version 0.6, LATEST, Draft, created 10/20/21 4:20 PM by Barry Prince), "tr2307a" (Version 0.4, LATEST, Draft, created 7/23/21 4:13 PM by Barry Prince), and "Training Object tr0206a" (Version 0.6, LATEST, created 8/11/21 10:40 AM by Barry Prince). To the right of the table are "Widgets", "Attributes", and "Versions" sections.

The screenshot shows a "Form: Training Object tr0206a" dialog box. It contains fields for Name (Training Object tr0206a), Version label (0.6 LATEST), Authors (bob), and Subject (Test of object updating). At the bottom are buttons for Configure..., Dump, Save (highlighted in blue), and Cancel.

Name:	Training Object tr0206a
Version label:	0.6 LATEST
Authors:	bob
Subject:	Test of object updating

Type Attributes

- Define the properties/attributes for the type.
- There are a set of core/default attributes that are always available such as object_name, creator and created.
- Type specific attributes are prefixed with doc. in subsequent config windows, for example **doc.product_name**
- Attribute types include string, Boolean, integer, decimal, date, date and time and are detailed in the configuration manual.
- Object type attributes are those with sub-attributes, for example substance with dosage amount and unit, see the next slide.
- Attributes can be single or multi-value (repeating).

tmf_studentx - Edit Type

General Attributes Sizing Indexes

Search

Attribute Name ↑	Display Name	Type	Multi-V...
article_url	Article URL	String	
attachment	Attachment	ID	✓
core_document	Core Document	Boolean	
section	Section	String	
site_location	Site Location	GeoPoint	
subject	Subject	String	
➤ substances	Substances	Object	✓
unique_id	Unique ID	Integer	
zone	Zone	String	

+ Add + Add Sub-Attribute Edit Delete

Save Cancel

New Attribute

Name:*

Display Name:*

Data Type:*

Multi-Value

Save Cancel

Special Attribute Data Types

- **Geopoint** is used for mapping. Required for the map function. Takes of latitude and longitude coordinates.
- **ID (Object Reference)**. Used to display the properties of other objects. Must be tied to an object type.
- **Object** is one attribute that has its own sub-attributes, for example substance having sub-attributes dosage amount and dosage unit. These are placed on a **grid** in the properties form, see the example below:

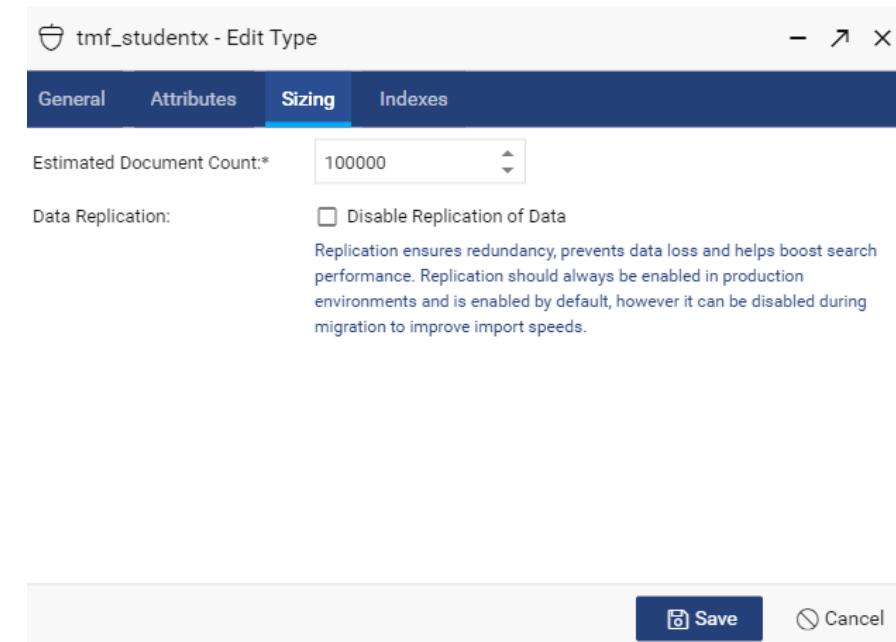
The image shows two overlapping application windows. The top window is titled "TMF Document Form: tr2001a" and displays "General Properties" and "System Properties" tabs. It contains fields for "Document Name" (tr2001a), "Subject" (Regulatory Document 78), and a checkbox for "Core Document". Below these are tables for "Substances" and "Attachments". The "Substances" table includes columns for "Substance Name", "Dosage Amount", and "Dosage Unit", showing entries for Noraline (5 mg) and Talium (10 mg). The "Attachments" table includes columns for "Attribute Name", "Display Name", and "Site Location", showing entries like "article_url" (Article URL) and "attachment" (Attachment). The bottom window is titled "tmf_studentx - Edit Type" and displays "General", "Attributes", "Sizing", and "Indexes" tabs. The "Attributes" tab is selected, showing a grid of attributes with their display names and data types. Notable entries include "subject" (String), "substances" (Object, expanded to show "dosage_amount" (Integer), "dosage_unit" (String), "substance_name" (String), "unique_id" (Integer), and "zone" (String)). Buttons for "Add", "Edit", "Import from Excel", and "Remove" are visible at the bottom of the grid. A "Save" and "Cancel" button are located at the bottom right of the "tmf_studentx" window.

Substance Name	Dosage Amount	Dosage Unit
Noraline	5	mg
Taliun	10	mg

Attribute Name ↑	Display Name	Site Location:
article_url	Article URL	
attachment	Attachment	Configure... Dump
core_document	Core Document	Boolean
section	Section	String
site_location	Site Location	GeoPoint
subject	Subject	String
substances	Substances	Object
dosage_amount	Dosage Amount	Integer
dosage_unit	Dosage Unit	String
substance_name	Substance Name	String
unique_id	Unique ID	Integer
zone	Zone	String

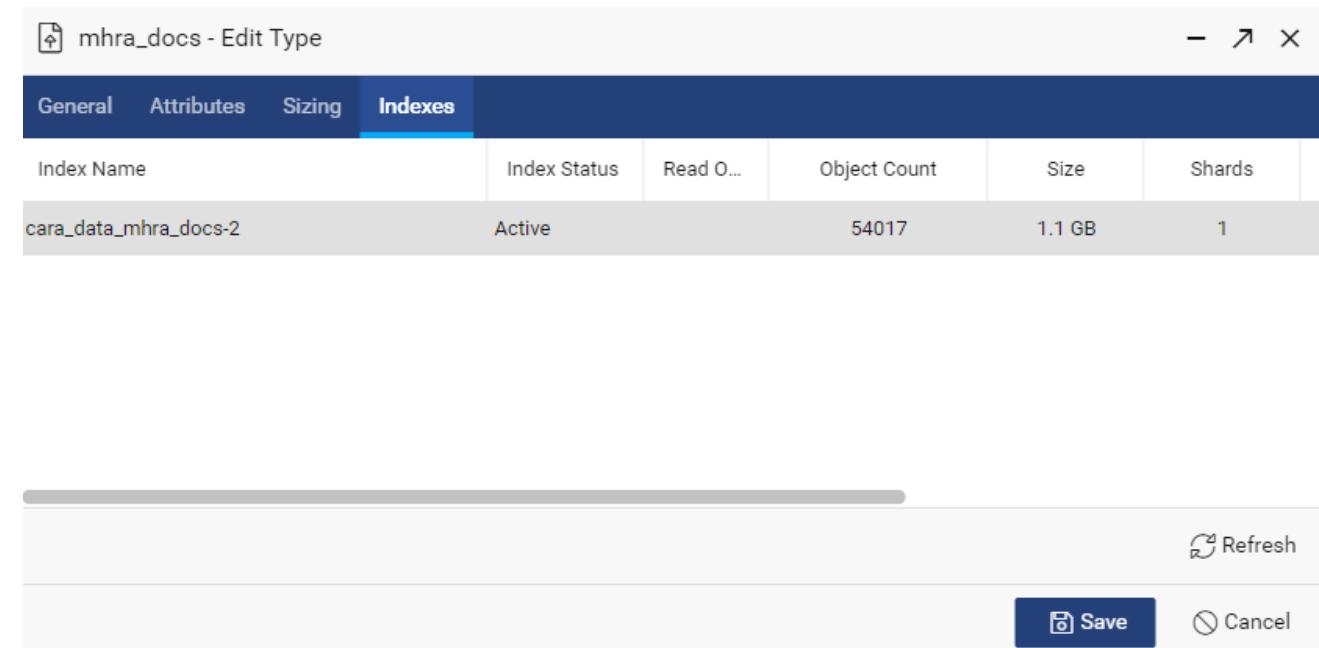
Type Sizing

- **Estimated Document Count.** Shards are stand-alone instances of a Lucene database. Shards can be primary or replicas (backups).
- The number of shards created for a type is based on the estimated document count. Types with an estimated document (object) count of less than 100,000 will have one primary shard and one replica.
- When a cluster has multiple nodes, types with an estimated document (object) count of greater than 100,000 will have as many shards as nodes and one replica
- **Data Replication.** Replication should always be enabled in production environments and is enabled by default, however it can be disabled during migration to improve import speeds



Type Indexes

- **Elasticsearch** automatically creates an index for a type when it is defined. The index arranges the distribution of data for the type across available nodes and their shards within a named cluster. It also creates the search index of terms (words), their frequency and the ID's of the documents they appear within.
- The **Indexes** tab is only visible after the type has been initially saved.



The screenshot shows the 'Edit Type' interface for the 'mhra_docs' type. The 'Indexes' tab is selected, displaying a table with the following data:

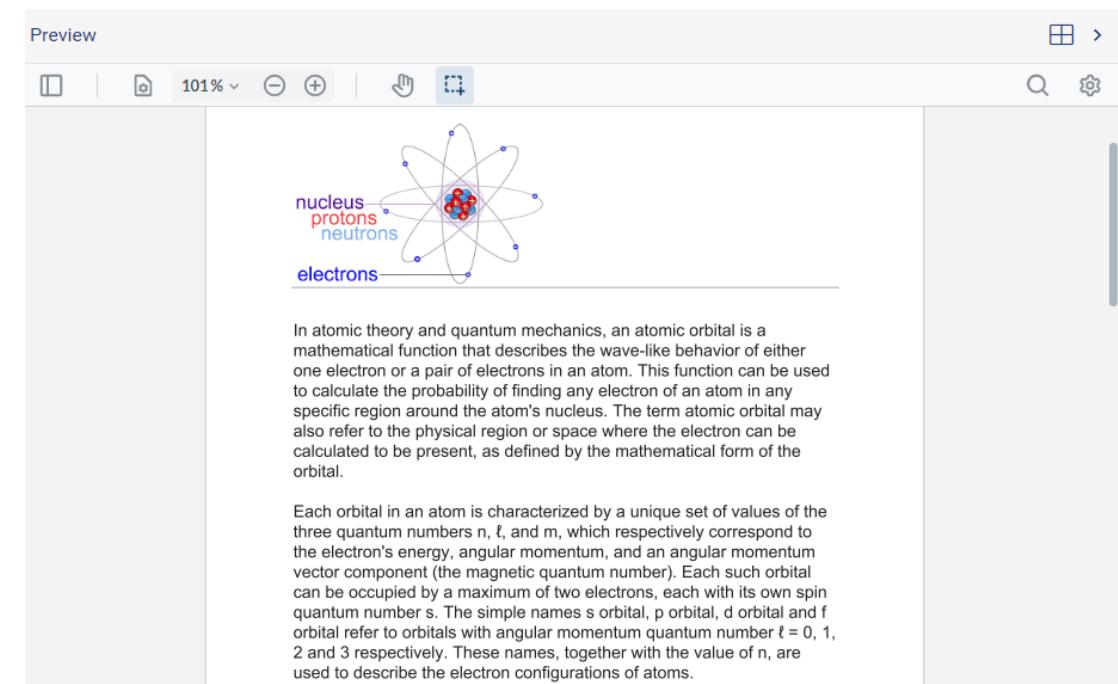
Index Name	Index Status	Read O...	Object Count	Size	Shards
cara_data_mhra_docs-2	Active		54017	1.1 GB	1

At the bottom right are 'Refresh', 'Save', and 'Cancel' buttons.

Rendition Formats

The following file formats are supported for rendering to PDF

- MS Word formats: doc, docx, dot, dotm, dotx, rtf, odt, docm, mht, html, htm, txt, xml, csv
- MS Excel formats: xls, xlsx, xlsm, xlt, xltx, xltm, xlsb, ods
- MS PowerPoint formats: ppt, pptx, pot, potx, pps, ppsx, pptm, odp
- Email formats: msg, eml
- Visio formats: vsd, vsdx, vsdm, vssx, vssm, vstx, vstm, vdx, vsx, vtx
- MS Project formats: mpp, mpt, mpx
- Image formats: jpg, jpeg, gif, png, bmp, tif, tiff
- CAD formats: dwg, dxf



Dictionaries

- Dictionaries provide a list of **drop-down values** for users to choose from, such as on a properties form.
- Can contain **aliases** for different language labels.
- Dictionaries are **versioned** each time they are updated.
- There are default **system dictionaries** such as `_display_labels` and `_audit_events`. System dictionaries can be updated.
- Dictionaries can be **managed externally** by using the Export and Import options, which use `.yml` format. This includes complete dictionary properties, unlike exporting just the values to Excel, which is also an option.

ID ↑	Display Name	Version	Updated
<code>_audit_events</code>	Audit Events	3	1/10/22 2:06 PM
<code>_countries</code>	Countries by code	1	3/19/21 1:09 PM
<code>_display_labels</code>	Display Labels	1	3/19/21 1:09 PM
<code>_notification_events</code>	Notification Events	2	1/10/22 2:06 PM
<code>country</code>	Country	7	1/19/22 12:05 PM
<code>region</code>	Region	7	1/19/22 12:05 PM
<code>studentx_section</code>	Studentx Section	2	3/19/21 1:42 PM
<code>studentx_zone</code>	Studentx Zone	4	1/24/22 1:55 PM

The screenshot shows two tabs for managing the 'country' dictionary:

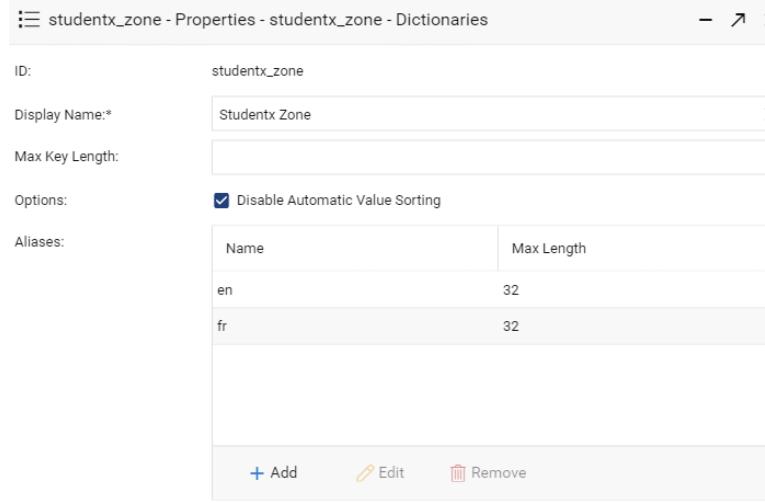
- Properties Tab:** Shows the dictionary's ID as 'country', display name as 'Country', max key length as '32', and a checked checkbox for 'Disable Automatic Value Sorting'. It also lists the names and max lengths for aliases: 'en' (32), 'fr' (32), and 'de' (32). Buttons for '+ Add', 'Edit', and 'Remove' are available, along with 'Save' and 'Cancel' buttons at the bottom.
- Values Tab:** Shows a table of active keys and their corresponding values:

Active?	Key	Value
<input checked="" type="checkbox"/>	uk	United Kingdom
<input checked="" type="checkbox"/>	france	France
<input checked="" type="checkbox"/>	germany	Germany
<input checked="" type="checkbox"/>	usa	USA
<input checked="" type="checkbox"/>	canada	Canada
<input checked="" type="checkbox"/>	japan	Japan

Buttons for '+ Add', 'Edit', and 'Remove' are available, along with 'Save' and 'Cancel' buttons at the bottom.

Dictionary Properties

- When creating a new dictionary provide an **ID** and **Description**. ID cannot contain spaces (UI doesn't allow entering them), can contain upper case letters. Description can contain spaces.
- **Max Key Length** is not required. Limits number of characters that can be entered.
- **Disable Automatic Value Sorting** effects how items in the list are sorted, they can be displayed alphabetically or as they were entered.



The screenshot shows the 'studentx_zone - Properties - studentx_zone - Dictionaries' dialog. It includes fields for ID (studentx_zone), Display Name (Studentx Zone), Max Key Length (empty), and a checked option for Disable Automatic Value Sorting. Below these are alias settings for 'en' and 'fr' with a max length of 32. At the bottom are buttons for Add, Edit, Remove, Save, and Cancel.

tx_zone - Dictionaries	
Active?	Key
<input checked="" type="checkbox"/>	Regulatory
<input checked="" type="checkbox"/>	Site Management
<input checked="" type="checkbox"/>	Trial Management

At the bottom are buttons for Add, Edit, Delete, Export to Excel, Import from Excel, Save, and Cancel.

Dictionaries, Adding Values

- Once the dictionary has been created, click **Edit** to open the **Values** window.
- + **Add** the values. If aliases are not being used, simply enter each **Key** value. Key values can contain spaces and upper case letters.
- If aliases are being used, for each value enter the **Key** and the alias/language specific **Labels**. If a label is missing, the Key or 1st label will be used.
- Values can be **inactive** (hidden from users), often preferable to deleting them.
- Deleting** values from a dictionary does not delete those values from existing documents.
- The values within a dictionary can be managed externally by **Export** and **Import** to Excel

A screenshot of a software interface titled "studentx_zone - Values - studentx_zone - Dictionaries". It shows a table with columns "Active?", "Key", "en", and "fr". Three rows are listed:

Active?	Key	en	fr
<input checked="" type="checkbox"/>	Regulatory	Regulatory	
<input checked="" type="checkbox"/>	Site Management	Site Management	
<input checked="" type="checkbox"/>	Trial Management	Trial Management	

At the bottom are buttons for "+ Add", "Edit", "Delete", "Export to Excel", "Import from Excel", "Save", and "Cancel".

A screenshot of a "New Value" dialog box. It has a checkbox "Active?" which is checked. Below it are four input fields: "Key:" (empty), "en:" (empty), and "fr:" (empty). At the bottom are "Save" and "Cancel" buttons.

A screenshot of an Excel spreadsheet titled "studentx_zone - Values - studentx_zone - Dictionaries". It shows a table with columns "A", "B", and "C". The data is as follows:

A	B	C
1	Active?	Key
2	true	Manager
3	true	Coordinator
4	true	Approver
5	true	Logistics
6	true	Manufacturing
7	true	Quality

The _display_labels Dictionary

The _display_labels dictionary is intended to provide a list of values which can be selected when configuring user friendly labels in type and other view configuration. By using the display labels dictionary labels should be consistent.

_display_labels - Properties - _display_labels - Dictionaries

ID:	_display_labels				
Display Name:*	<input type="text" value="Display Labels"/>				
Max Key Length:	<input type="text" value="255"/>				
Options:	<input type="checkbox"/> Disable Automatic Value Sorting				
Aliases:	<table border="1"><thead><tr><th>Name</th><th>Max Length</th></tr></thead><tbody><tr><td>en</td><td></td></tr></tbody></table>	Name	Max Length	en	
Name	Max Length				
en					
+ Add Edit Remove					
Save Cancel					

Taxonomies

- Taxonomies relate dictionaries together, the choice made from a parent dictionary determines the choices available in a child dictionary. They form the classification choices when creating and importing documents.
- A classic example would be **Region and Country** dictionaries, the selection of region determines the available choice of countries.
- Taxonomies are optional, apart from having one for the **main classification**. There are no system taxonomies.
- Up to **7 levels** of dictionaries can be placed in a taxonomy
- Taxonomies are **versioned** when updated
- Taxonomies can also be **managed externally** by export in a .yml (inc. properties) or Excel (values only) format

The top screenshot shows a 'Create' dialog for a new taxonomy. It includes fields for 'Classification' (Zone: Regulatory, Section: General), 'Creation Method' (Placeholder selected), and buttons for 'Next' and 'Cancel'.

The bottom screenshot shows a 'Properties' dialog for an existing taxonomy named 'studentx_main_classification'. It includes fields for 'Display Name' (Studentx Main Classification), 'Level 1' (Studentx Zone), and dropdowns for 'Level 2' (Studentx Section), 'Level 3', 'Level 4', 'Level 5', 'Level 6', and 'Level 7'. It also includes buttons for 'Save' and 'Cancel'.

Taxonomy Creation

- **ID** is required. Cannot contain spaces, UI prevents their entry. Upper case letters are allowed.
- **Description** is required. Can contain spaces.
- Select which dictionaries are linked together at each **Level**. Dictionaries to be used must already be present.
- Up to 7 dictionaries can be linked.

region_country - Properties - region_country - Taxonomies

ID:	region_country
Display Name:*	Region and Country
Level 1:*	Region (region)
Level 2:	Country (country)
Level 3:	
Level 4:	
Level 5:	
Level 6:	
Level 7:	

Taxonomies, Adding Items and Sub-Items

- Select **Edit** (not Properties) from the Taxonomies window.
- Click **+ Add Item** and add values (usually all values) to be available from the Level 1 dictionary.
- For each values from level 1, select the value, click **+ Add Sub-Item** and choose the applicable sub-choices for that value. Repeat for each item at each level.
- Like dictionaries, entries can be marked as **inactive** and so hidden from users.
- Taxonomies items can be managed externally via **Export and Import to Excel**.

The screenshot shows a software interface for managing taxonomies. At the top, it says "region_country - Values - region_country - Taxonomies". Below is a search bar and a "Node ↑" column. The main tree structure is as follows:

- asia
 - japan
- emea
 - france
 - germany
 - uk
- usa
 - canada
 - usa

Each node has a checkbox next to it labeled "Active?". Below the tree is a toolbar with buttons: "+ Add Item", "+ Add Sub-item", "Delete", "Export to Excel", "Import from Excel", "Save", and "Cancel".

The screenshot shows an Excel spreadsheet with the title "cara_export-2.xlsx - Read-Only". The data is organized into five columns labeled "taxlevel1" through "taxlevel5".

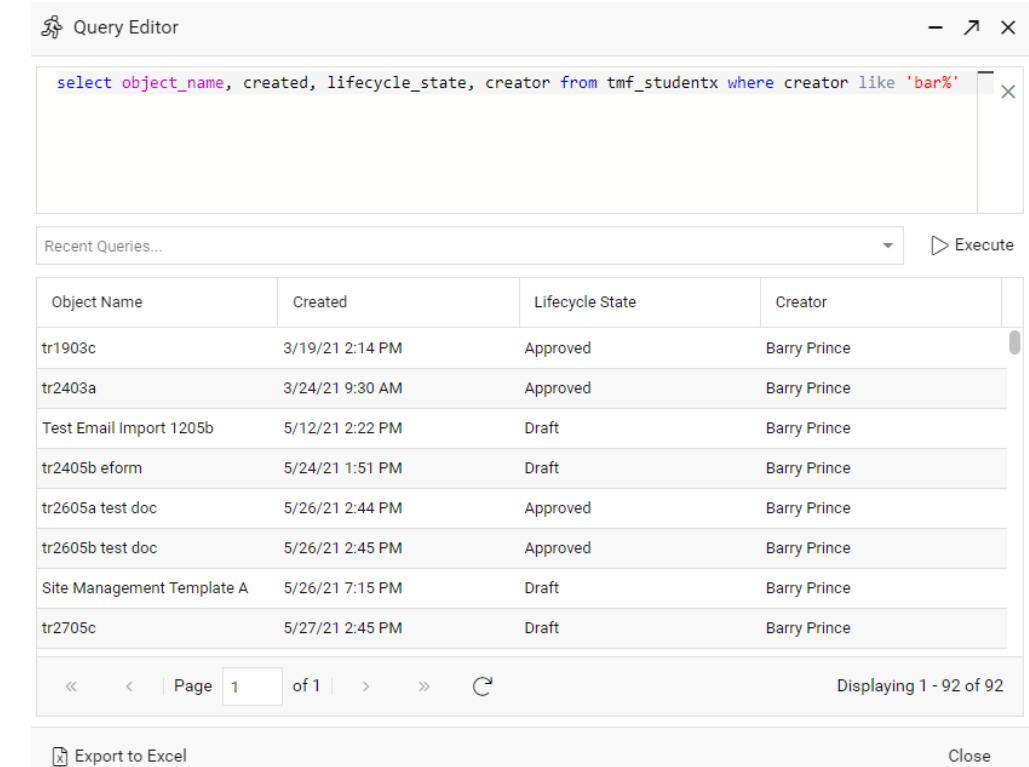
A	B	C	D	E
1	taxlevel1	taxlevel2	taxlevel3	taxlevel4
2	Analytique	Commercial	Méthode	Spécifique
3	Analytique	Commercial	Méthode	Spécifique
4	Analytique	Commercial	Méthode	Spécifique
5	Analytique	Commercial	Méthode	Spécifique
6	Analytique	Commercial	Méthode	Spécifique
7	Analytique	Commercial	Testing Standard	Article de Conditionnement
8	Analytique	Commercial	Testing Standard	Autres
9	Analytique	Commercial	Testing Standard	Matières Premières
10	Analytique	Commercial	Testing Standard	Produits Finis
11	Analytique	Développement		
12	Filiales	Belgique		
13	Filiales	France		
14	Filiales	Italie		
15	Filiales	Suisse		
16	Formation			
17	GED	Achats		
18	GED	Assurance Qualité	AQ Produit	
19	GED	Assurance Qualité	Amélioration de la qu	
20	GED	Assurance Qualité	Audits	

CQL CARA Query Language

- **CQL** (CARA Query Language) is a simple query language that can be used to create **configuration conditions** within CARA, for example lifecycle_state = Approved.
- It is much simpler than SQL/DQL, it is only needed for defining conditions and reports.
- There is a dedicated CARA query editor available to administrators.
- Currently it supports **select** and **execute** statements.
- It will be familiar to anyone with any SQL or DQL knowledge
- **Recommendation.** Please refer to the CQL chapter in the configuration manual. There are comprehensive examples of using CQL.

A basic query takes the form of **select** (attributes) **from** (type) **where** (some condition). Example:

select object_name, creator from sales_doc where lifecycle_status ='Approved'



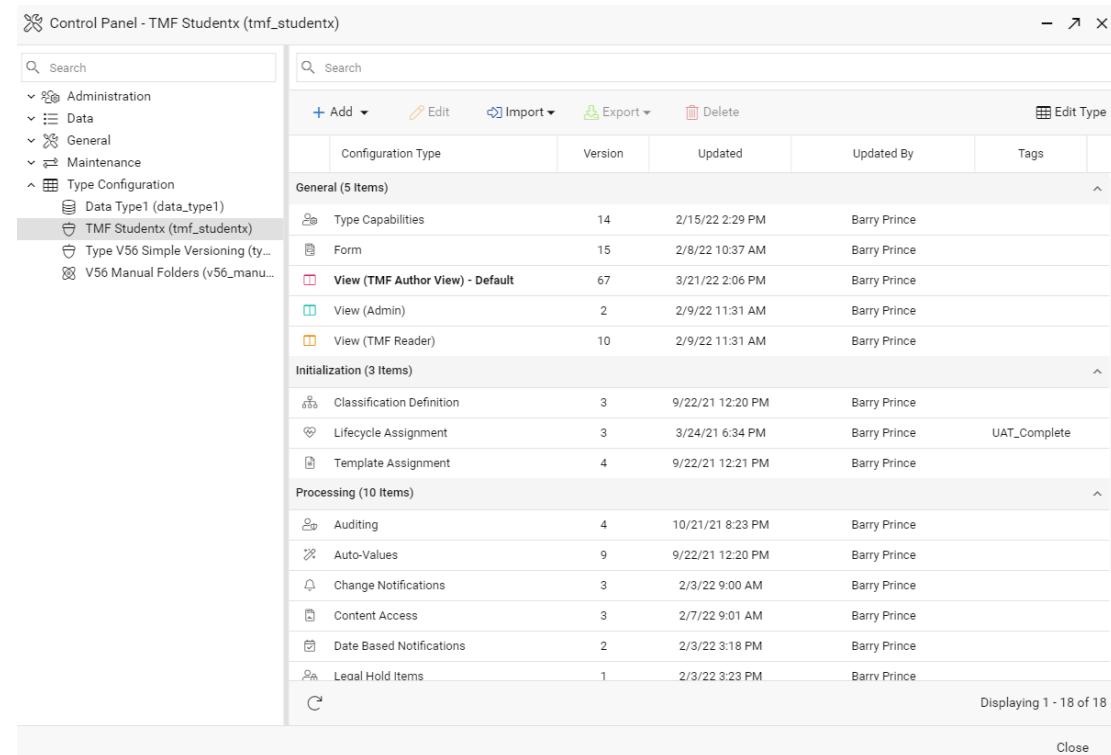
The screenshot shows the 'Query Editor' window with the following details:

- Query Editor** title bar.
- Query text: `select object_name, created, lifecycle_state, creator from tmf_studentx where creator like 'bar%'`.
- Recent Queries dropdown.
- Execute button.
- Result table:

Object Name	Created	Lifecycle State	Creator
tr1903c	3/19/21 2:14 PM	Approved	Barry Prince
tr2403a	3/24/21 9:30 AM	Approved	Barry Prince
Test Email Import 1205b	5/12/21 2:22 PM	Draft	Barry Prince
tr2405b eform	5/24/21 1:51 PM	Draft	Barry Prince
tr2605a test doc	5/26/21 2:44 PM	Approved	Barry Prince
tr2605b test doc	5/26/21 2:45 PM	Approved	Barry Prince
Site Management Template A	5/26/21 7:15 PM	Draft	Barry Prince
tr2705c	5/27/21 2:45 PM	Draft	Barry Prince
- Page navigation: <<, <, Page 1, of 1, >, >>, Close.
- Message: Displaying 1 - 92 of 92.
- Export to Excel button.

Type Configuration Overview

- A large proportion of the configuration within CARA is configured specifically for each type, for example GUI view layout, security, folders, property form, auto-values etc..
- Type configuration is divided into General, Initialization and Processing categories.
- There is a default View and default Type Capabilities config, other elements need to be created.
- Configuration elements are versioned when updated.



The screenshot shows the 'Control Panel - TMF Studentx (tmf_studentx)' window. On the left is a navigation tree with categories like Administration, Data, General, Maintenance, and Type Configuration. The Type Configuration category is expanded, showing sub-items such as Data Type1 (data_type1), TMF Studentx (tmf_studentx), Type V56 Simple Versioning (ty...), and V56 Manual Folders (v56_manu...). The main pane displays a table of configuration items, grouped into General (5 items), Initialization (3 items), and Processing (10 items). The columns in the table are Configuration Type, Version, Updated, Updated By, and Tags. The table shows various items like Type Capabilities, Form, View (TMF Author View) - Default, View (Admin), View (TMF Reader), Classification Definition, Lifecycle Assignment, Template Assignment, Auditing, Auto-Values, Change Notifications, Content Access, Date Based Notifications, and Legal Hold Items. Most items were last updated on 2/15/22 or 2/8/22 by Barry Prince, except for Classification Definition and Lifecycle Assignment which were updated on 9/22/21. The 'Initialization' section includes Lifecycle Assignment and Template Assignment, both marked as UAT Complete. The 'Processing' section includes Auditing, Auto-Values, Change Notifications, Content Access, Date Based Notifications, and Legal Hold Items. The bottom right of the table area says 'Displaying 1 - 18 of 18' and has a 'Close' button.

Configuration Type	Version	Updated	Updated By	Tags
General (5 items)				
Type Capabilities	14	2/15/22 2:29 PM	Barry Prince	
Form	15	2/8/22 10:37 AM	Barry Prince	
View (TMF Author View) - Default	67	3/21/22 2:06 PM	Barry Prince	
View (Admin)	2	2/9/22 11:31 AM	Barry Prince	
View (TMF Reader)	10	2/9/22 11:31 AM	Barry Prince	
Initialization (3 items)				
Classification Definition	3	9/22/21 12:20 PM	Barry Prince	
Lifecycle Assignment	3	3/24/21 6:34 PM	Barry Prince	UAT_Complete
Template Assignment	4	9/22/21 12:21 PM	Barry Prince	
Processing (10 items)				
Auditing	4	10/21/21 8:23 PM	Barry Prince	
Auto-Values	9	9/22/21 12:20 PM	Barry Prince	
Change Notifications	3	2/3/22 9:01 AM	Barry Prince	
Content Access	3	2/7/22 9:01 AM	Barry Prince	
Date Based Notifications	2	2/3/22 3:18 PM	Barry Prince	
Legal Hold Items	1	2/3/22 3:23 PM	Barry Prince	

Type Configuration – Minimum Configuration

At minimum, once a type has been defined, the following are considered to be fundamental:

- **Type Capabilities.** This details the available document functions for users, such as create and view.
- **Form.** Design the properties form.
- **View.** Update the default GUI view and create additional views as needed.
- **Classification Definition.** Requires a taxonomy.
- **Template Assignment.** Without it no content templates are available.
- **Linking.** Place documents within a folder structure based on rules. Not needed if folder linking is manual
- **Security.** Link the type to an ACL template. ACL templates are created elsewhere.
- **Auditing.** There is a default audit trail.

Control Panel - TMF Studentx (tmf_studentx)				
Search				
Add ▾		Edit	Import ▾	Export ▾
		Delete	Edit Type	
Configuration Type	Version	Updated	Updated By	Tags
General (5 Items)				
Type Capabilities	14	2/15/22 2:29 PM	Barry Prince	
Form	15	2/8/22 10:37 AM	Barry Prince	
View (TMF Author View) - Default	67	3/21/22 2:06 PM	Barry Prince	
View (Admin)	2	2/9/22 11:31 AM	Barry Prince	
View (TMF Reader)	10	2/9/22 11:31 AM	Barry Prince	
Initialization (3 Items)				
Classification Definition	3	9/22/21 12:20 PM	Barry Prince	
Lifecycle Assignment	3	3/24/21 6:34 PM	Barry Prince	UAT_Complete
Template Assignment	4	9/22/21 12:21 PM	Barry Prince	
Processing (10 Items)				
Auditing	4	10/21/21 8:23 PM	Barry Prince	
Auto-Values	9	9/22/21 12:20 PM	Barry Prince	
Change Notifications	3	2/3/22 9:00 AM	Barry Prince	
Content Access	3	2/7/22 9:01 AM	Barry Prince	
Date Based Notifications	2	2/3/22 3:18 PM	Barry Prince	
Legal Hold Items	1	2/3/22 3:23 PM	Barry Prince	
Displaying 1 - 18 of 18				
Close				

Type Capabilities for Users

- Type Capabilities determine what functions are available to groups (roles) of users.
- Documents - Create from Template, View, Edit, Export are examples of type capabilities.
- There is a Default type capability already created, add other groups (roles) as appropriate.
- Separate from the system wide Capabilities such as Control Panel access and Tasks Inbox detailed previously.

The screenshot shows a software interface titled "Type Capabilities - TMF Studentx". On the left is a list of capabilities: Add Relationship, Add Rendition, Annotate, Audit Trail Report, Check-in, Check-out, Collaborate, Copy ID, Copy URL, Create From eForm, Create From Template, and Create Object (Placeholder). To the right of the list are two columns: "Default" and "training_reader". Under each capability, there is a checkbox in the "Default" column and another checkbox in the "training_reader" column. Most checkboxes in the "Default" column are checked, while most in the "training_reader" column are unchecked. At the bottom of the interface are buttons for "+ Add Role", "Remove Role", and "Save".

Capability	Default	training_reader
Add Relationship	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Add Rendition	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Annotate	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Audit Trail Report	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Check-in	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Check-out	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Collaborate	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Copy ID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Copy URL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Create From eForm	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Create From Template	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Create Object (Placeholder)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Form (Properties Form)

- Design the properties form that will be presented to users when they create new documents and look at the properties of existing documents.
- The form builder window is divided into **Structure** (left side) and **Preview** (right side) panels.
- One form per type, created automatically when the new type is created. Needs to be configured appropriately, adding fields and tab etc..
- Tabs and fields can be conditional, that is hidden when not appropriate.
- Typically start with a tab bar, then add tabs and place individual fields within. Field Sets and Columns can also be used to group together related fields.

The screenshot shows the 'Form - TMF Studentx' builder window. The left panel, titled 'Structure', displays a hierarchical tree of form elements. It includes a 'Search' bar, a 'Form' node with a 'Tabs: tab bar 1' child, and several other nodes like 'Tab: General', 'Grid: Substances', and 'Tab: System'. The right panel, titled 'TMF Document Form', shows the 'General Properties' tab selected. It contains fields for 'Document Name*', 'Subject', 'Title', and a 'Core Document' checkbox. Below these are sections for 'Substances' (with a table for substance names, dosage amounts, and units), 'Site Location', and 'Article URL'. At the bottom are buttons for '+ Add', 'Edit', 'Import from Excel', 'Remove', 'Save', and 'Cancel'.

Form Control Types

Form controls are appropriate to the field type, for example checkboxes are only used for Boolean fields

- **Text** field for string attributes.
- **Multitext** field for repeating string attributes.
- **Number** fields can display integers or decimals.
- For **Objects**, add a **Grid**. The object is usually defined as a repeating attribute. Then add the sub-attributes to the Grid.
- **Combo boxes** are used for drop-down lists and other value assistance.
- **Object lists** allow a report to be run where another document can be selected and its properties copied/mapped to the current document. The report needs to be defined separately.

Each form control type has its own specific configuration options which are detailed in the configuration manual.

The screenshot shows a software interface for managing form structures. At the top, there's a search bar labeled "Search". Below it, a tree view shows the structure of a "Form". The "Form" node has two children: "Tabs: tab bar 1" and "Tab: General". "Tabs: tab bar 1" has one child: "Tab: System". "Tab: General" has several children, each represented by a small icon and a label:

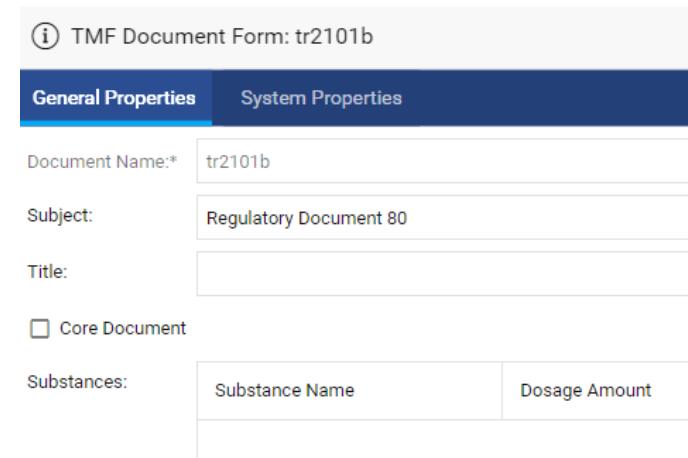
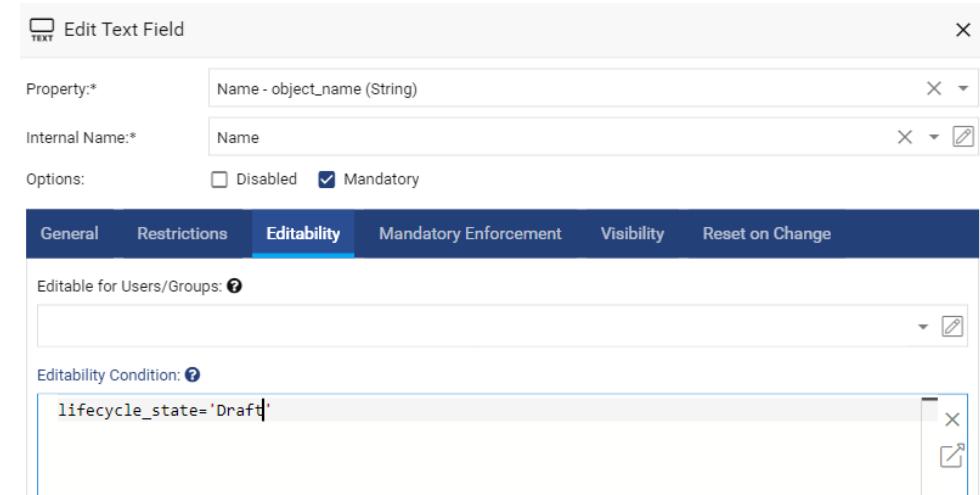
- Text Field: Name *
- Text Field: Subject
- Text Field: Title
- Checkbox: Core Document
- Grid: Substances
 - Text Field: Substance Name
 - Number Field: Dosage Amount
 - Text Field: Dosage Unit
 - Geolocation Field: Site Location
 - Text Field: Article URL
 - Object List: Attachment
- Date-Time Field: Created
- Text Field: Creator

At the bottom of the interface, there are three buttons: "+ Add", "Edit", and "Delete".

Form Control Conditions

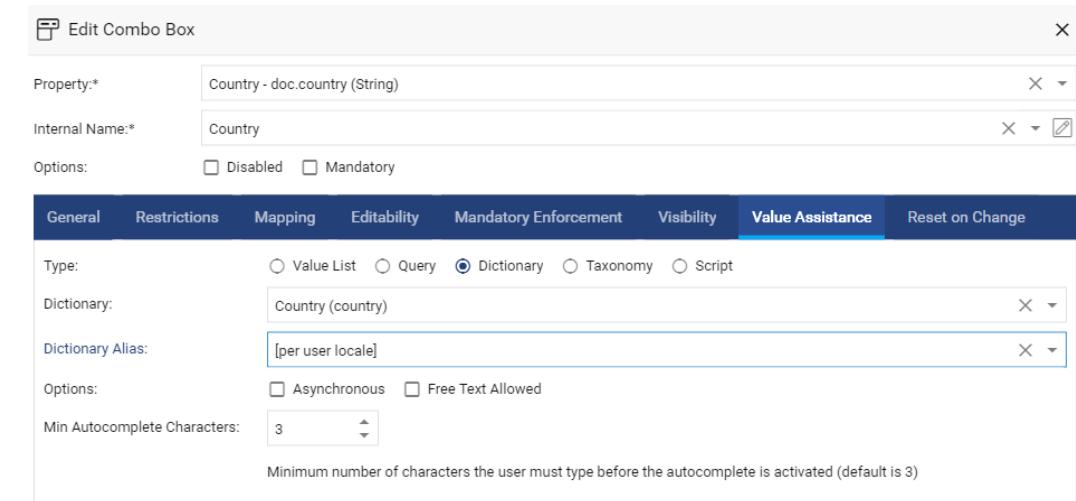
Various aspects of a form control can be conditional including:

- **Visibility.**
- **Mandatory** (a required field).
- **Editability/Disabled** (is it read-only).
- Pattern matching via regular expressions such as for email addresses or phone numbers.
- Maximum length can be specified.
- Ranges for numeric and date fields.
- Reset on Change allows subsequent fields to be cleared.



Combo Boxes and Value Assistance

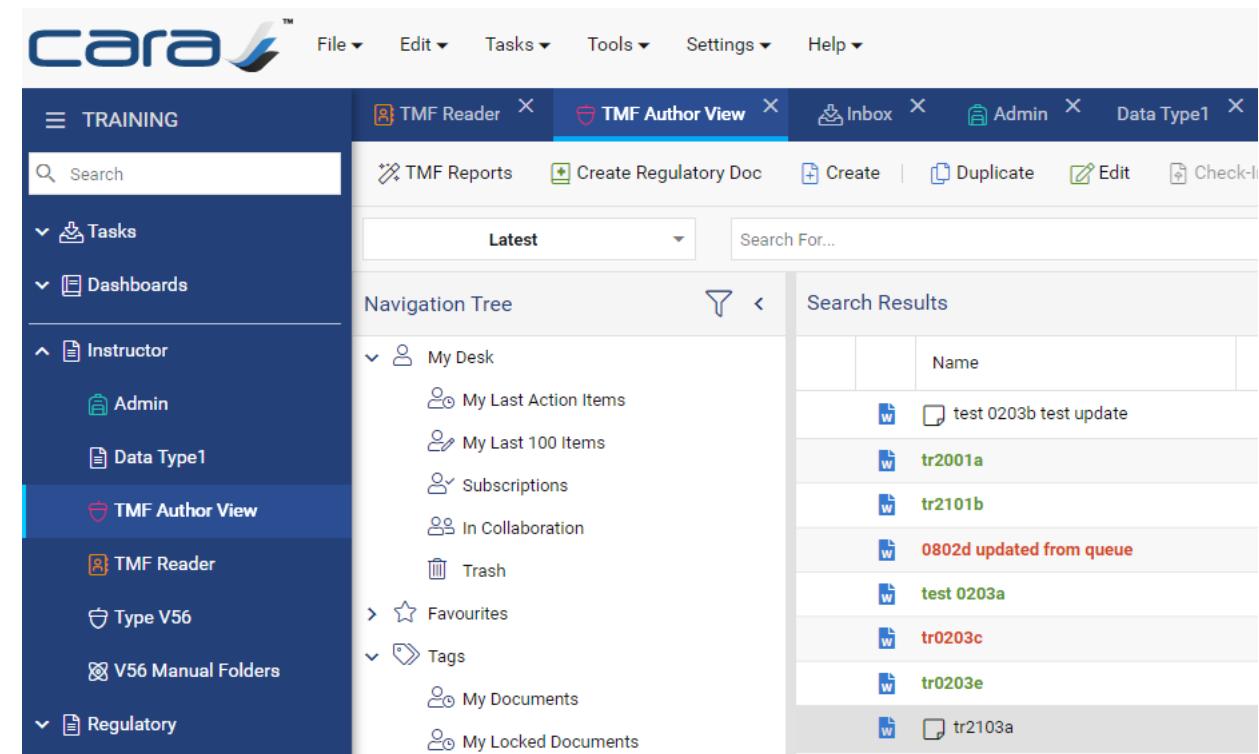
- Combo boxes can be used to provide a drop-down list for users to choose from.
- Value Assistance refers to where the drop-down list values are coming from, they could be from a Dictionary, Taxonomy, simple Value List defined for the field, a Query (CQL) or Script (Groovy style Java).



The screenshot shows the 'TMF Document Form: tr2103a' interface. The 'General Properties' tab is active. In the 'Country:' field, the value 'United Kingdom' is selected, and a dropdown menu is open, listing other options: United Kingdom, France, Germany, USA, Canada, and Japan. Other visible fields include 'Document Name:' (tr2103a), 'Subject:' (Regulatory Document 105), and a checkbox for 'Core Document' which is unchecked. The 'Substances:' field is empty.

Views

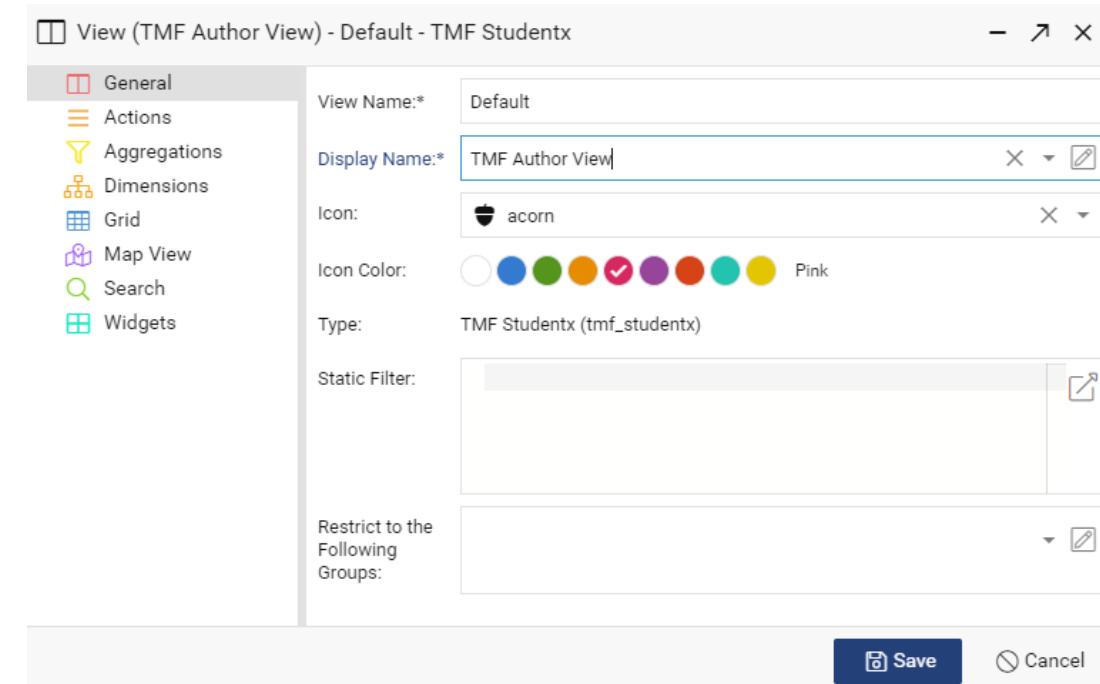
- Views determine the layout and options available within the GUI.
- Views are type specific.
- Each type can have one or more views.
- A default view is automatically created when the type is defined.
- Multiple views are grouped together into a workspace.
- Each view is displayed as a tab.
- Different groups of users can have different workspaces available. Each view can appear in multiple workspaces.
- Users can close and reopen views as needed.



View Configuration Overview

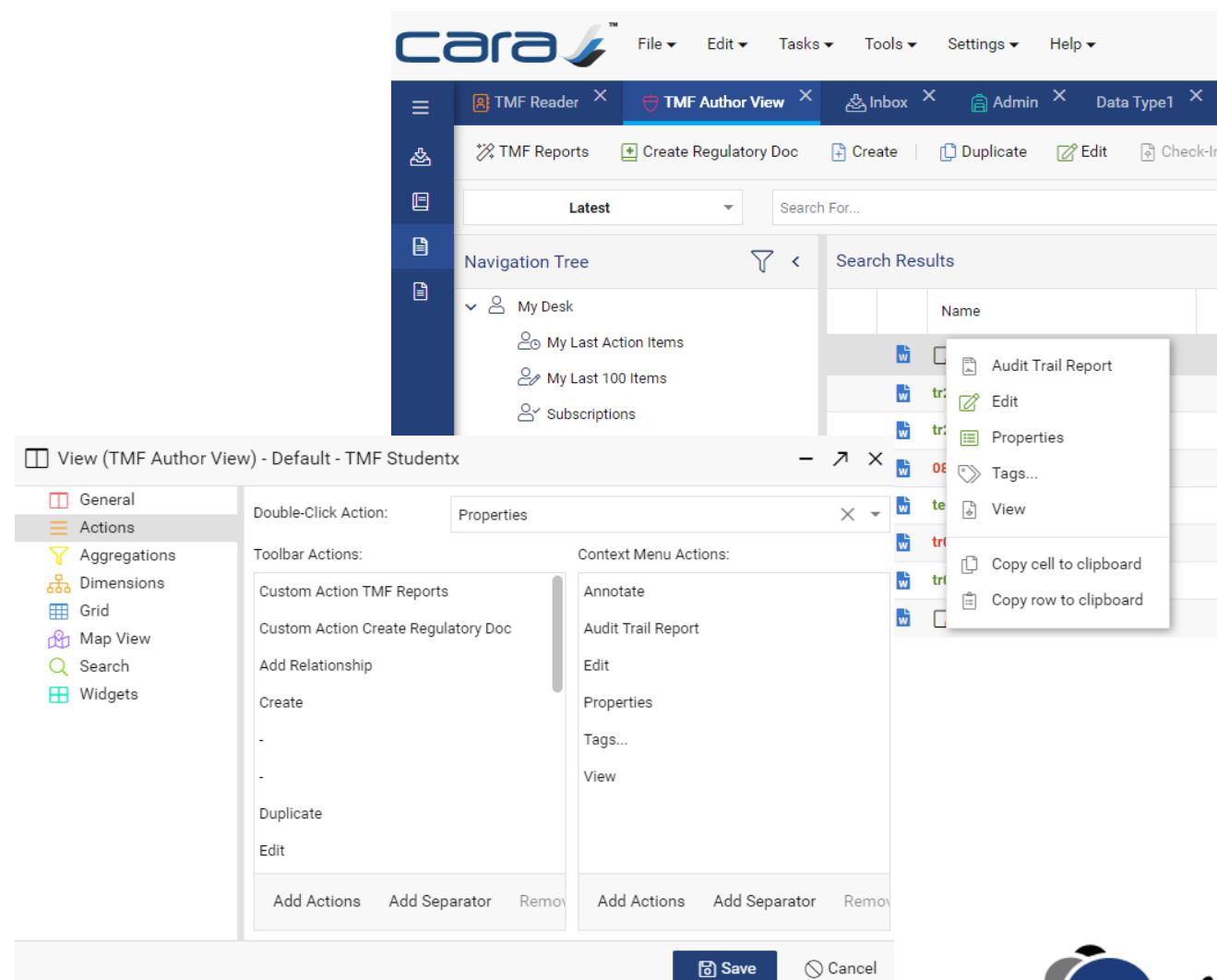
Views have multiple configuration options.

- **General.** Name, icon, static filters & view security. *Static filters* can be used to *only display documents matching a CQL query*.
- **Actions** = toolbar and menu buttons.
- **Aggregations** = attribute filters.
- **Dimensions** = alternative folder hierarchy.
- **Grid** = main column layout. Also row styles and row icons.
- **Map View.** Based on location attribute.
- **Search** = search fields and behaviour. Also version filters, tags, and maps.
- **Widgets** = information displayed in the right-hand panel.



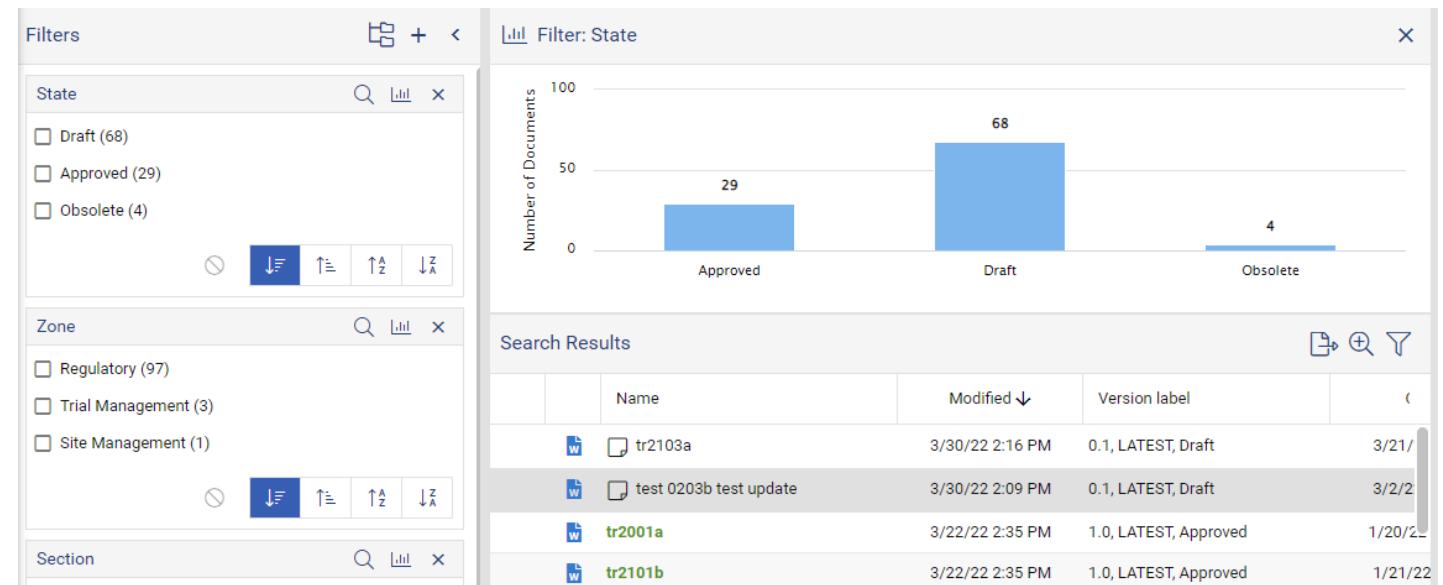
View Actions

- Select the **Toolbar** and **Context** menu (right-click) buttons.
- Choose the **Double-Click Action**.
- Can include **custom actions**. They are grouped together at the bottom of the actions list.
- **Separators** can be added.
- Change the order of actions via click and drag.



View Aggregations

- User selectable attribute filters which narrow down the list of documents in the main view panel.
- Select which attributes become filters/aggregations.
- CARA automatically groups and counts the displayed documents by filter.
- Aggregations can also display a graph of the selected filter



Creating Aggregation Filters

- **Type.** Select either Terms or Date Histogram.
- **Select the Attribute.**
- **Aggregation Order.** List values by Count (number of) or Key (alphabetically by value name).
- **Date Histogram** specify the Interval and Format, for example group created date by month and display as MM-yyyy (simple Java format).
- Add a user friendly **Header**.
- **Integer** fields have an additional option, **Metric** as either Document Count or Sum of Attribute Values.
- **The graph** option is automatically available and does not need to be configured.

The screenshot shows the TMF Author View interface with the following details:

Main View (Top): A table titled "View (TMF Author View) - Default - TMF Studentx" listing aggregation configurations:

Type	Attribute Name	Header
Terms	Zone (doc.zone)	Zone
Terms	Section (doc.section)	Section
DateHistogram	Created (created)	Month Created
Terms	Lifecycle state (lifecycle_state)	State

Left Sidebar: A navigation menu with icons and labels: General, Actions, Aggregations (selected), Dimensions, Grid, Map View, Search, and Widgets.

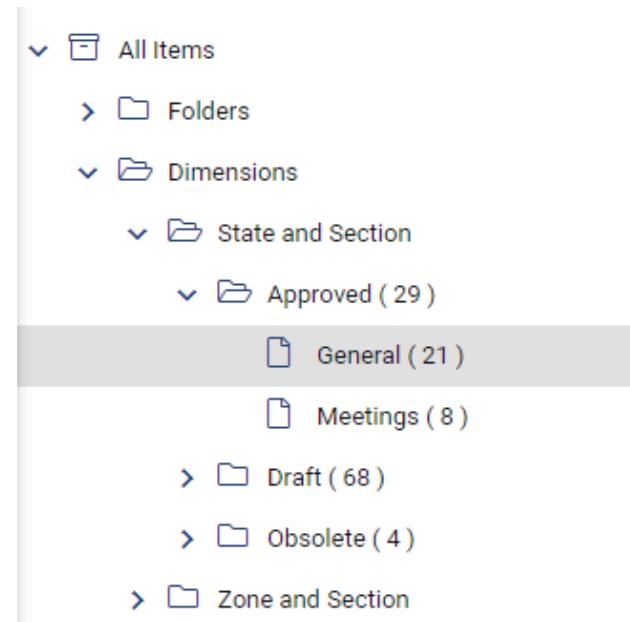
Modal Dialog (Bottom): "Edit Aggregation: lifecycle_state" dialog with the following settings:

- Type: Terms
- Attribute: Lifecycle state - lifecycle_state (String)
- Header: State
- Aggregation Order: Key (radio button selected)
- Aggregation Size: 100
- Metric: Document Count (radio button selected)
- Metric Label: (empty input field)
- Display Size: 5
- Display Order: Amount Down (radio button selected)

Buttons at the bottom right of the modal: Save (blue) and Cancel.

View Dimensions

- Regroup documents into folder hierarchies based on the attributes which are most useful for users to browse by.
- For example the folder structure might be based on region and country but users want to browse by product and status.
- Dimensions are displayed beneath the main folder hierarchy in the Navigation Tree
- The number in brackets is the number of documents within.
- **Unlike folder hierarchies, dimensions show all documents within and beneath when a folder is selected**



Edit: stateandsection

ID:	stateandsection
Display Name:	State and Section
Level 1:*	lifecycle_state
Level 2:	doc.section
Level 3:	
Level 4:	
Level 5:	
Level 6:	
Level 7:	
Level 8:	
Level 9:	
Level 10:	

Save Cancel

Creating View Dimensions

In the **Available** tab:

- **Enable Dimension** and select which attributes can be used.
- For date fields select the **Interval** and **Format**.

In the **Dimension Sets** tab:

- Provide an **ID** and **Display Name**
- Select the attributes for each level, up to 5 levels deep.

The screenshots illustrate the configuration of view dimensions in the TMF Author View. The top window shows the 'Available' tab where attributes are selected for use. The bottom window shows the 'Dimension Sets' tab where dimension sets are defined by ID, display name, and the attributes they encompass across levels.

Available Tab Data:

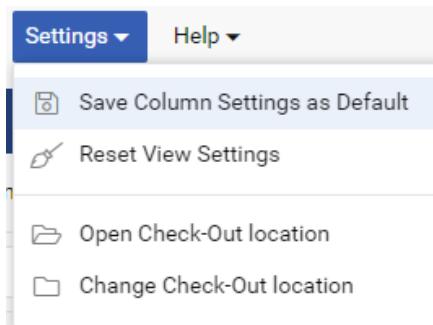
Attribute	Dictionary	Interval, Format
Zone (doc.zone)		
Section (doc.section)		
Lifecycle state (lifecycle_state)		

Dimension Sets Tab Data:

ID	Display Name	Levels
stateandsection	State and Section	lifecycle_state, doc.section
zoneandsection	Zone and Section	doc.zone, doc.section

View Grid

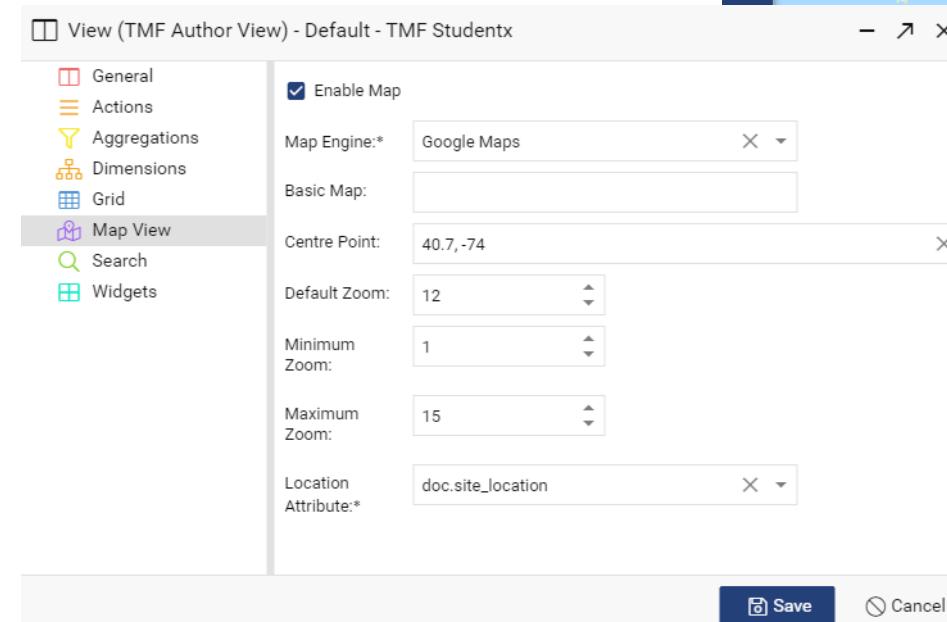
- Decide which attributes will be displayed as columns in the main view panel.
- Multiple columns can be added in one action.
- Select the order, labels, sortable etc..
- Can customise the row and individual cell colours with a CQL condition. **Can also have per cell icons with custom actions based on a CQL condition per cell.**
- Settings > **Save Column Settings as Default** can be used by admins to quickly adjust the grid layout.



The top screenshot shows the 'Columns' tab of the configuration interface. It displays a table with columns: Attribute, Label, Alignment, Width, Visible?, Sortable?, Cell Styles, and Cell Actions. The table lists various attributes like Name, Modified, Version label, Created, Creator, Modifier, and Content Type, each with specific settings for alignment, width, visibility, and sorting. The bottom screenshot shows the 'Cell Styles & Actions' tab. It has two main sections: 'Cell Styles' and 'Cell Actions'. In 'Cell Styles', there are entries for 'lifecycle_state=Approved' (Color: Green, Bold: checked) and 'lifecycle_state=Obsolete' (Color: Red, Bold: checked). In 'Cell Actions', there is an entry for 'lifecycle_state=Draft' with an 'On-click Action' labeled 'Properties'.

View - Map View

- Show the location of documents on a map filter.
- A Geolocation attribute provides the location, in the format of longitude and latitude.
- Map functionality can be provided by Google Maps or ArcGIS.
- Users have the option to select a click a location on a map to generate the geolocation value.



The screenshot shows the 'TMF Author View' interface. At the top, there are tabs for 'TMF Reader', 'TMF Author View' (which is active and highlighted in blue), 'Inbox', 'Admin', and 'Data Type1'. Below the tabs is a toolbar with icons for 'Create Regulatory Doc', 'Create', 'Duplicate', 'Edit', 'Check-In', 'Quick Check-In', 'Check-Out', and 'Cancel Check-Out'. The main area has a 'Latest' dropdown and a search bar. To the right is a table titled 'All Items' with columns for 'Name', 'Modified', and 'Version label'. The table lists four items:

Name	Modified	Version label
tr2303a	2/9/22 12:56 PM	0.2, LATEST, Draft
tr010222a	2/9/22 9:16 AM	1.0, LATEST, Draft
tr010222b	2/9/22 9:14 AM	1.0, LATEST, Draft
tr2101d	2/8/22 12:55 PM	1.0, LATEST, Approve

On the left, there is a map of Europe with several red location markers. The map includes labels for the United Kingdom, Ireland, France, Germany, and other countries. The bottom right corner of the interface shows the text 'Displaying 1 - 4 of 4'.

View - Search

- Several view options are grouped together under the View - Search heading:
Quick Search.
Advanced Search.
Version Filters.
Tags.
- These options are individually detailed in the following slides.

The image displays three screenshots of a document management interface, likely cara, showing search and filtering capabilities.

- Top Screenshot:** A search results window titled "atomic". It includes a search bar with "atomic", a "Highlights" checkbox, and a "Search in Content" checkbox. Below the search bar are three search options: "Search for 'atomic' in Name", "Search for 'atomic' in Subject", and "Search for 'atomic' in ID". A "Recent Searches" section shows a recent search for "atomic". At the bottom, there is a list of documents with columns for "Creator", "Created", and "Version". The first document in the list is "tr2101b" created on 3/22/22 at 2:35 PM, version 1.0, LATEST, Approved.
- Middle Left Screenshot:** The main document list interface. The title bar says "cara". It shows two open tabs: "TMF Reader" and "TMF Author View". Below the tabs is a navigation bar with icons for "TMF Reports" and "Create Regulatory". A dropdown menu is open, showing filter options: "Latest" (selected), "All Documents", "Draft", and "Approved". Other visible items include "My Documents", "My Locked Documents", "Priority Docs", and "Training Docs".
- Middle Right Screenshot:** An "Advanced Search" dialog box. It has a search bar with "Search:" and checkboxes for "Highlights" and "Search in Content". Below that is a "Version Filter:" dropdown set to "Latest". There are sections for "Classification", "Zone", and "Section". Under "Location", it says "No folder currently selected". The main area is a table for defining search criteria:

Property	Operator	Value
Subject	contains	training
Created	within	Range 12/14/21 12:00 AM - 2/8/22 8:46 AM

At the bottom are "Load...", "Save As...", "Search", and "Cancel" buttons.

View - Search - Quick Search Attributes

- Select which attributes (system and type specific) are included in the quick search.
- By default object name and ID are included, add others as appropriate. Users can select a specific attribute from the drop-down list.
- In the Quick Search Attributes tab add the attributes to be included. Recall that type specific attributes are prefixed with .doc
- Name (object_name) is included in the default view
- **Important: add content.data for full text searching**

The screenshot displays two windows related to search configuration:

Search Results Window: A modal dialog titled "atomic" shows search results for the term "atomic". It includes sections for "Highlights" and "Search in Content". The results list includes:

- Search for "atomic" in Name
- Search for "atomic" in Subject
- Search for "atomic" in ID
- Recent Searches:
 - atomic (tr2605a test doc, 5/26/21 2:45 PM, 1.0, LATEST, Approved)
 - Content (tr2, 5/26/21 2:45 PM, 1.0, LATEST, Approved)
 - Atomic Orbital Dsasad Sadasd Asdsad Sadas Das In atomic theory and quantum mechanics, an atomic orbital
 - The term atomic orbital may also refer to the physical region or space where the electron can be calculated
 - Atomic orbitals are the basic building blocks of the atomic orbital model (alternatively known as the
 - In addition, atomic orbitals do not closely resemble a planet's elliptical path in ordinary atoms.
 - Atomic orbitals exactly describe the shape of this "atmosphere" only when a single electron is present
 - tr1105a (5/27/21 4:05 PM, 0.3, LATEST, Draft)
 - tr2705g (5/27/21 3:59 PM, 1.0, LATEST, Approved)

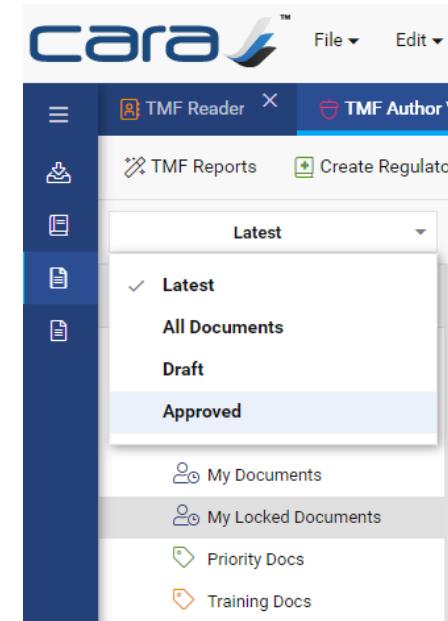
View - Search - Advanced Search

- Select which attributes and their operators are available in the advanced search.
- None are included by default.
- Select each attribute and the operator, there can be multiple operators for 1 attribute.
- As for quick search, add content.data for full text searching.
- Note folders can be searched by default, provided a folder is selected when the user opens advanced search.

The image contains two screenshots of a search interface. The top screenshot is a 'Advanced Search' dialog box with fields for 'Search', 'Version Filter' (set to 'Latest'), 'Classification', 'Zone', and 'Section'. Below these are dropdowns for 'Location' ('No folder currently selected') and a table for defining search criteria. The table has columns for 'Property', 'Operator', and 'Value'. It shows two rows: one for 'Subject' with 'contains' operator and value 'training', and another for 'Created' with 'within' operator and a date range from '12/14/21 12:00 AM' to '2/8/22 8:46 AM'. At the bottom are 'Load...', 'Save As...', 'Search', and 'Cancel' buttons. The bottom screenshot is a 'View (TMF Author View) - Default - TMF Studentx' window. It has a sidebar with icons for General, Actions, Aggregations, Dimensions, Grid, Map View, Search (which is selected), and Widgets. The main area has tabs for 'Quick Search Attributes', 'Advanced Search Attributes' (which is active and highlighted in blue), 'Version Filters', and 'Tags'. Under 'Advanced Search Attributes', there is a table with columns for 'Attribute' and 'Operators'. It lists four attributes: 'Name (object_name)' with operators 'contains, is, begins with'; 'Content (content.data)' with operator 'contains'; 'Subject (doc.subject)' with operator 'contains, is'; and 'Created - created (DateTime)' with operators 'is, after, before, within'. At the bottom are 'Update' and 'Cancel' buttons.

View - Search - Version Filters

- Only applies to the version label attribute, which is a repeating value attribute and often includes descriptive labels such as Draft, Approved, Obsolete.
- Latest and All version filters are present by default. Add other **version label** filters as appropriate.
- For each version filter specify the **ID**, **Display Name**, **Version Labels** and optionally **Restricted To** group.
- Place filters in the order they should be listed in for users.



□ View (TMF Author View) - Default - TMF Studentx

Version Filters			
ID	Display Name	Version Labels	Restricted To
LATEST	Latest	LATEST	
ALL	All Documents		
Draft	Draft	Draft	
Approved	Approved	Approved	

Update Cancel

View - Search - Tags

- Tags are predefined filters, providing users with a quick selection of frequently accessed documents. Users can also create their own tags.
- Tags are displayed in a dedicated node in the navigation panel.
- To create a Tag, enter an **ID**, **Display Name** and **CQL Condition**.
- No tags are present by default.

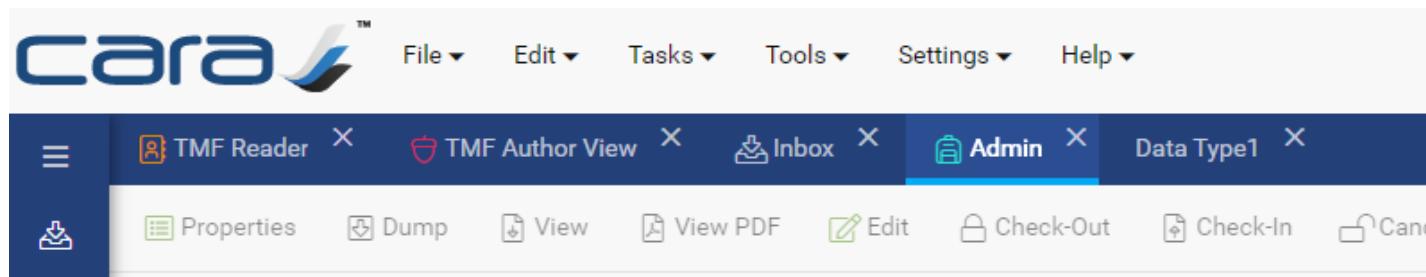
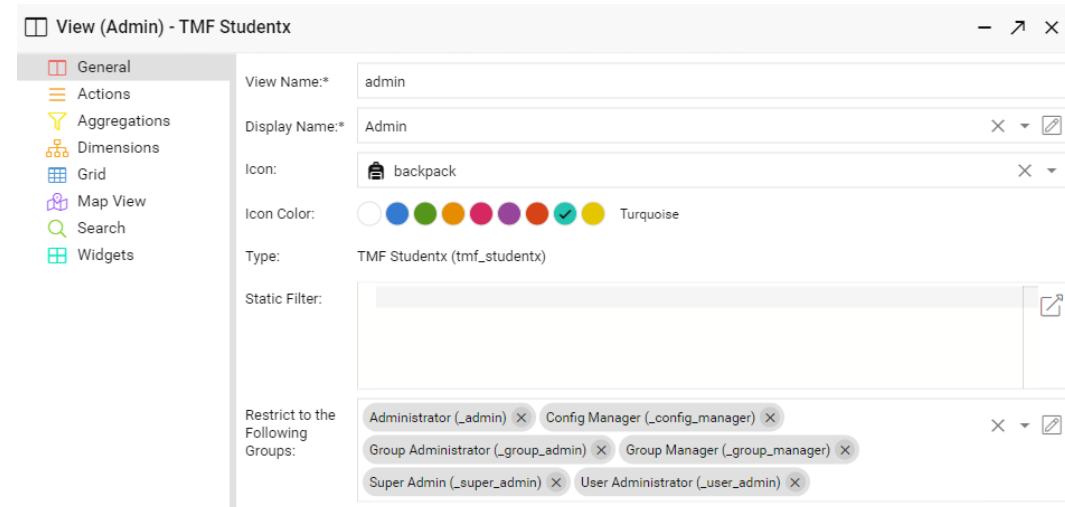
The screenshot shows the TMF Author View interface with the 'Tags' tab selected. On the left, there's a navigation tree with nodes like 'My Desk', 'Favourites', and 'Tags'. Under 'Tags', there are three items: 'My Documents', 'My Locked Documents' (which is highlighted), 'Priority Docs', and 'Training Docs'. To the right, a table lists tags with their details:

ID	Display Name	Condition
mydocs	My Documents	creator=user
mylocked	My Locked Documents	lock_owner=user

Below the table are buttons for '+ Add', 'Edit', and 'Remove'. At the bottom right are 'Save' and 'Cancel' buttons.

View - Security

- Select the users and groups who will have access to the view
- By default all users have access to the view, the **Restrict to** field is blank initially. Once a group has been added, only the listed groups will have access.
- The view still needs to be added to a workspace which the users have access to. Workspaces are also restricted to specific users and groups.



View - Widgets

- Display additional information about the currently selected document
- Users can close and re-add the widgets available to them. They can also resize and reorder.
- Standard widgets:
 - Attributes
 - Bar Code
 - Content/Renditions
 - Details
 - QR Code
 - Thumbnail
 - Versions
- Some widgets have config options, others are just enabled or disabled for a view
- The Details widget can be used as a custom widget, it accepts HTML X-templates. It can also make use of variables

The screenshot shows a software interface for managing document widgets. At the top, there's a header bar with a search icon and a user profile. Below it is a navigation menu with items like 'File', 'Edit', 'View', 'Insert', 'Format', 'Tools', and 'Help'. The main content area is titled 'Widgets' and contains several sections:

- Attributes:** A table showing document metadata: Creator (Barry.Prince), Lifecycle name (studentx_lifecycle), Lifecycle state (Draft), and Subject (Regulatory Document 105).
- Content/Renditions:** A table showing file formats, sizes, and creation dates: Word Document (23.5 KB, 3/21/22 1:59 PM) and Acrobat PDF (422.5 KB, 3/21/22 1:59 PM).
- Locations:** A tree view showing the location path: /TMF/Regulatory/General.
- Versions:** A table showing version details: Version label (0.1, LATEST, Draft).

On the right side, there's a sidebar with icons for General, Actions, Aggregations, Dimensions, Grid, Map View, Search, and Widgets. The 'Widgets' icon is highlighted. Below the sidebar is a table with columns for ID, Header, and Type, listing various widget types and their configurations.

ID	Header	Type
attributes	Attributes	Attributes
content	Content/Renditions	Content/Renditions
locations	Locations	Locations
qr	QR Code	QR Code
versions	Versions	Versions
details	Details 2	Details
relations	Relations	Relations
thumbnail	Thumbnail	Thumbnail

At the bottom, there are buttons for '+ Add', 'Edit', 'Remove', 'Save', and 'Cancel'.

Attributes Widget

- Attributes widget - choose the attributes to be displayed
- Enter a user friendly **Header** label.
- Add system and type specific **Attributes**
- Arrange them in the order they are to be displayed.

Attributes	
Name	Value
ACL Name	draft_acl
Created	3/21/22 1:59 PM
Creator	Barry Prince
Lifecycle name	studentx_lifecycle
Lifecycle state	Draft
Subject	Regulatory Document 105

□ attributes – Widget – View – Default ✖

Type: Attributes
ID: attributes
Header*: ✖ ✎

Attributes*: ACL Name (acl_name) ✖ Created (created) ✖ Creator (creator) ✖ Lifecycle name (lifecycle_name) ✖ Lifecycle state (lifecycle_state) ✖ Subject (doc.subject) ✖

Save Cancel

Content/Renditions Widget

- Content/Renditions widget. Optionally enter a **Hidden Format**, that is formats which will not be displayed to users within the widget. This is useful if there are rendition formats being generated automatically via rendition services which are not intended to be viewed by end users.

Content/Renditions			
	Format	Size	Created
	Word Document	23.5 KB	3/21/22 1:59 PM
	Acrobat PDF	422.5 KB	3/21/22 1:59 PM

content - Widget - View - Default

Type: Content/Renditions

ID: content

Header: Content/Renditions

Hidden Format:

Save

Cancel

Relations Widget

- Relations widget. Select which attributes are displayed and whether **Child** and **Parent** relations are shown. Cell styles & actions can be customised.
- Can be restricted to specific **Types** and **Relations**, but this is not required. Leave blank to make all relationships visible.
- Attributes which are added but not **Visible** can be manually selected by users, in the same way as for the main view grid.
- A good example of a relationship is when emails and their attachments are imported.
- Remember to check the ACL permissions on both documents, relate is an extended permission.

Add Relationship

	Name	Modified	Version label	Created
	tr2103a	3/30/22 2:16 PM	0.1, LATEST, Draft	3/21/22 1:59 PM

... Select Remove

External Approval Signoff

Related:

	Name	Modified	Version label	Created
	tr2101b	3/22/22 2:35 PM	1.0, LATEST, Approved	1/21/22 9:2

... Select Remove

Bind To:
 Selected Version Latest Version Version with Label...

Create Cancel

Relations

	Type	Comment	Name	Version label	Modified
	External Approval Signoff		test 0203a	1.0, LATEST, Approved	3/22/22 2:35 PM

relations – Widget – View – Default

Type: Relations
ID: relations
Header: Relations
Related Type: TMF_Studentx (tmf_studentx)
Relation Type: SOP
Include: Child Relations Parent Relations

Attribute	Label	Alignment	Width	Visible?	Sortable?	Cell Styles	Cell Actions
Name (object_name)	Name	Left	100	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Version label (version_label)	Version label	Left	100	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Modified (modified)	Modified	Left	100	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

+ Add + Add multiple Edit Remove

Save Cancel

QR Code Widget

- Generate and display a QR code.
- New options were added in v5.4, the QR code can link to the document object or directly to the content. The version directed to can also be chosen.
- Displays the unique ID (combination of type and unique identifier) and name.



qr - Widget - View - Default

Type:	QR Code
ID:	qr
Header:*	<input type="text" value="QR Code"/> X edit
Link To:	<input checked="" type="radio"/> Document <input type="radio"/> Content - Primary <input type="radio"/> Content - PDF
Link to Versions:	<input type="radio"/> Selected <input checked="" type="radio"/> Latest

Save Cancel

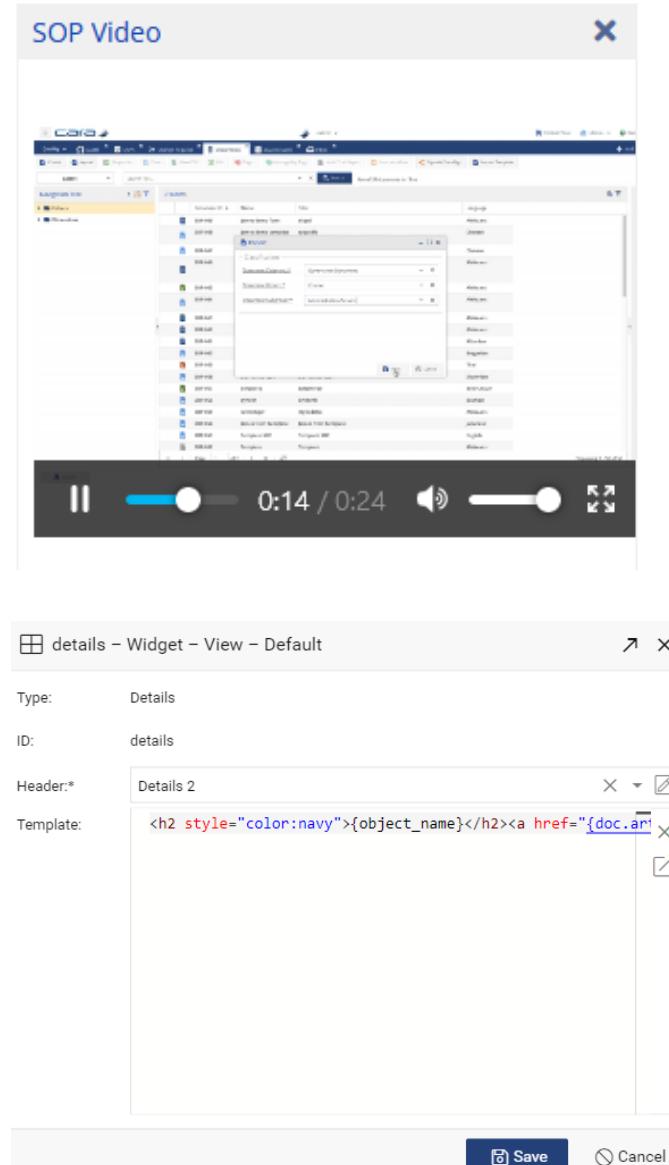
Details Widget

- The Details widget acts as a custom widget.
- HTML X-Template format.
- Can use variables such as attributes of the currently selected document.
- **Example 1 - Link to a video showing instructions for an SOP:**

```
<video width="320" height="240" controls="">  
  <source  
  src="https://www.dropbox.com/s/s883vlkuvwoixjb/Scree  
nRecorderProject5.mp4?raw=1" type="video/mp4">  
</video>
```

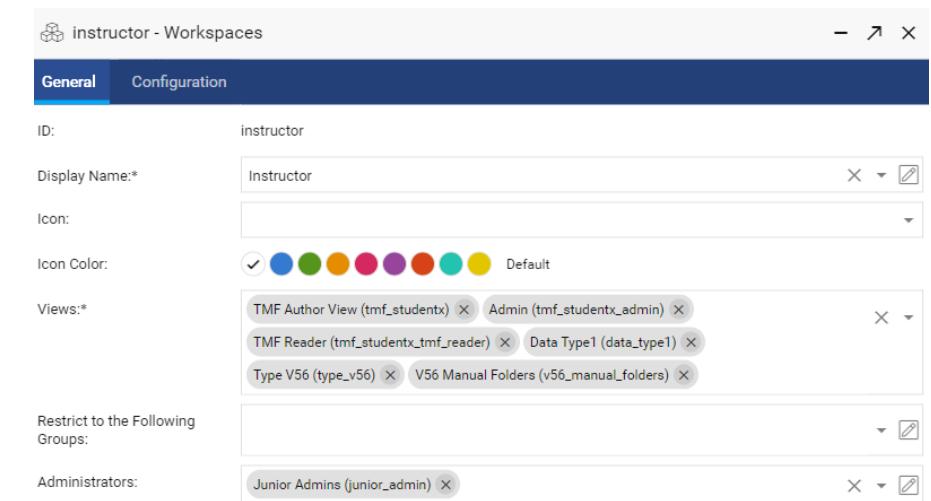
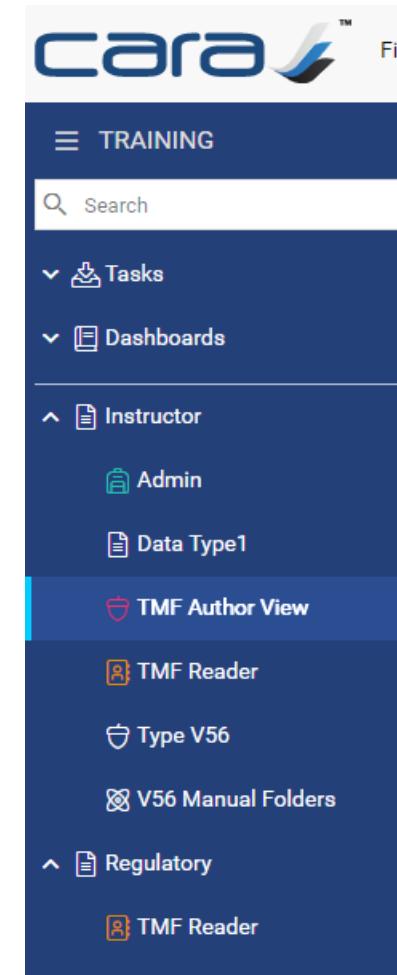
- **Example 2 – Link to external document using variables:**

```
<h2 style="color:navy">{object_name}</h2><a  
href="{doc.article_url}" target="_blank">Download  
original from here</a>
```



Workspaces

- A workspace is a collection of views. They determine the views (and therefore types) available to different groups of users. Users may have access to multiple views or just one.
- A view can belong to multiple workspaces.
- Select which groups have access to which workspace. If left blank all users have access.
- Users can have access to multiple workspaces.
- Workspaces are selectable from the left-hand side menu. The tasks inbox and dashboards are also located within this menu.



Workspaces Configuration

- The workspace configuration tab is used to select which configuration elements can be updated by administrators of the workspace, as specified in the Administrators field on the General tab.
- It can be used to create junior administrators who have access to selected configuration elements within the control panel. For example, a user could be allowed to update only the dictionaries, reports or workflow templates associated with the workspace they are responsible for.

The screenshot shows the 'instructor - Workspaces' configuration interface. The 'Configuration' tab is active. The interface is organized into sections: Types, Dictionaries, Taxonomies, Custom Actions, Dashboards, Reports, and Workflow Templates. Each section contains a list of items, each with an 'X' icon and an edit icon (pencil). The 'Dictionaries' section contains 'Studentx Section (studentx_section)' and 'Studentx Zone (studentx_zone)'. The 'Taxonomies' section contains 'Studentx Main Classification (studentx_main_classification)'. The 'Dashboards' section contains 'Studentx Dashboard (studentx_dashboard)'. The 'Workflow Templates' section contains 'Primary Approval Workflow (studentx_workflow)'.

Classification Definition

- Based on a taxonomy, determines the document choices presented to users when creating new documents.
- A large amount of the configuration applied to a document is determined by the classification selected.
- Levels can be required or optional.
- Choose the taxonomy.
- Choose an attribute for each level.
- Choose how many levels are required for documents and templates.
- **Recommendation.** Create specific attributes for storing the classification choices when defining the type.

Create

Classification

Zone:*

Regulatory

Section:*

General

Creation Method

Create:

Placeholder From Template From eForm

> Next Cancel

Classification Definition - TMF Studentx

Taxonomy:*

Studentx Main Classification (studentx_main_classif)

Levels

Level 1 Attribute:*

doc.zone

Level 2 Attribute:*

doc.section

Required Levels:*

2

Required Template Levels:*

1

Save Cancel

Lifecycles - Introduction

- A lifecycle describes a series of states which a document may pass through such as draft, reviewed, approved.
- Each state of a lifecycle can modify properties of the document attached to it, for example the document security might be changed to read-only when approved.
- Lifecycles are applied to documents automatically at the time they are created and moved between lifecycle states either manually by users or automatically by a workflow.

The screenshot shows two windows from a software application's control panel. The top window is titled 'Control Panel - Lifecycles' and displays a list of existing lifecycles. It includes a sidebar with various configuration options like Dashboards, eForms, and Workflows. The list table has columns for ID, Display Name, Version, and Updated. Two entries are visible: 'studentnb.lifecycle' (Studentnb Lifecycle, Version 1, Updated 12/9/21 2:56 PM) and 'studentx.lifecycle' (Studentx Lifecycle, Version 7, Updated 2/4/22 2:13 PM). The bottom window is titled 'studentx.lifecycle - Lifecycles' and shows the details for this specific lifecycle. It lists three states: Draft, Approved, and Obsolete, each with associated actions and notifications. At the bottom, there are buttons for Add, Edit, Remove, Save, and Cancel.

ID	Display Name	Version	Updated
studentnb.lifecycle	Studentnb Lifecycle	1	12/9/21 2:56 PM
studentx.lifecycle	Studentx Lifecycle	7	2/4/22 2:13 PM

State Name	Actions?	Notifications
Draft	No	No
Approved	Yes	No
Obsolete	No	No

Lifecycles – Creation Overview

- Define the states of the lifecycle, for example Draft, Reviewed, Approved.
- For each state, define Actions and who should be notified when a document enters that state.
- Define the Transitions, that is which state can follow which. Transitions do not need to be linear.
- Select Add State Name as Version Label to automatically update the version label, otherwise define it as an action.

studentx_lifecycle - Lifecycles

ID: studentx_lifecycle
Display Name: Studentx Lifecycle
 Add State Name as a Version Label

States	Transitions	
State Name	Actions?	Notifications
Draft	No	No
Approved	Yes	No
Obsolete	No	No

+ Add Edit Remove

Save Cancel

State - Approved - studentx_lifecycle

Name: Approved
Options: Attachable Reset to Base on Versioning

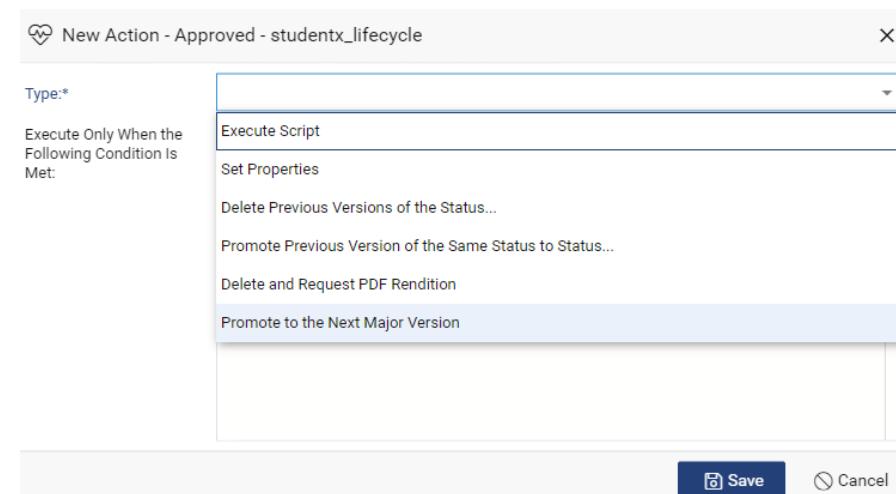
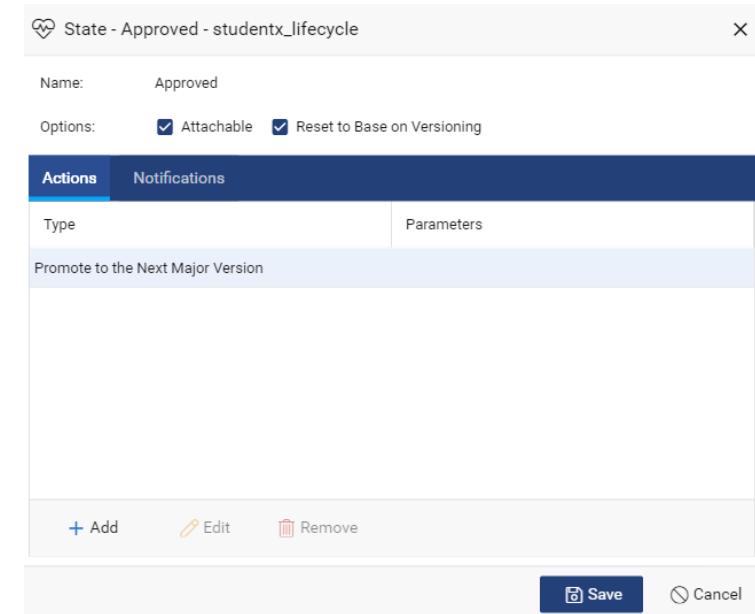
Actions	Notifications
Type	Parameters
Promote to the Next Major Version	

+ Add Edit Remove

Save Cancel

Lifecycles - States

- **Name** each state.
- **Attachable**. Can a document begin in this state? Multiple states could be attachable, for example if some documents being imported are already approved.
- **Reset to Base on Versioning**. For example if an approved document is versioned then send it back to draft.
- **Actions**. Include Set Properties and Promote to the Next Major Version.
- Other actions can be defined as a script.
- Actions can be conditional.
- **Recommendation**. Typically draft documents (minor versions) are promoted to major versions when approved using the “Promote to Next Major Version” action.



Lifecycles - Transitions

- For each transition specify the **Source State** and **Target State**, as well as a user friendly label (displayed within Status Manager).
- Allow **Manual Transition** via Status Manager if appropriate.
- Optionally restrict which groups are allowed to perform the manual transition.
- Transitions can be conditional on a script.

Status Manager

Lifecycle: Studentx Lifecycle (studentx.lifecycle)

	Name	Modified	Version label	Created	Created By
Draft (1)	tr0902c	2/9/22 11:15 AM	0.2, LATEST, Draft	2/9/22 11:15 AM	Barry Prince

Change State To... ▾

Promote to Approved

Mark as Obsolete

studentx.lifecycle - Lifecycles

ID: studentx.lifecycle

Display Name: Studentx Lifecycle

Add State Name as a Version Label

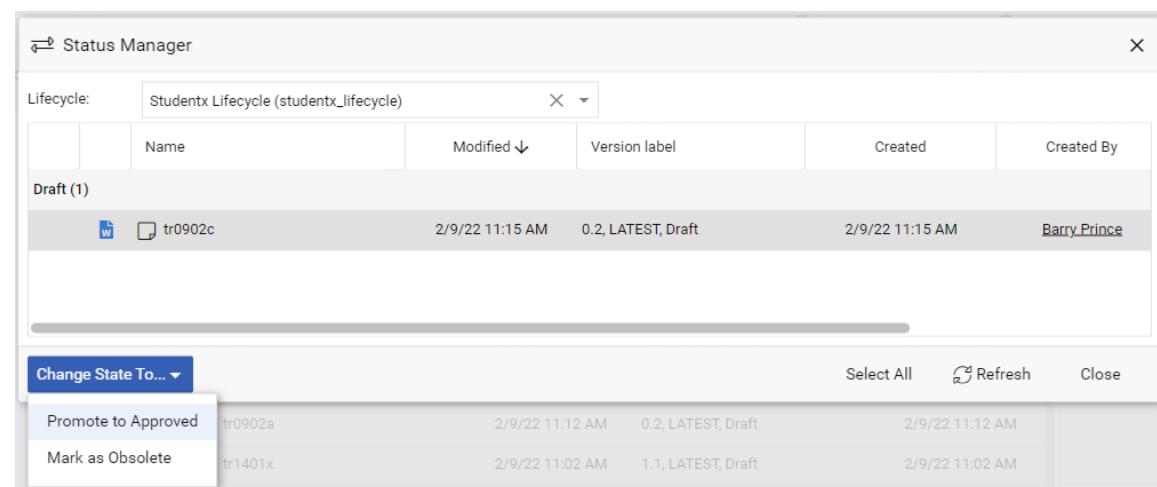
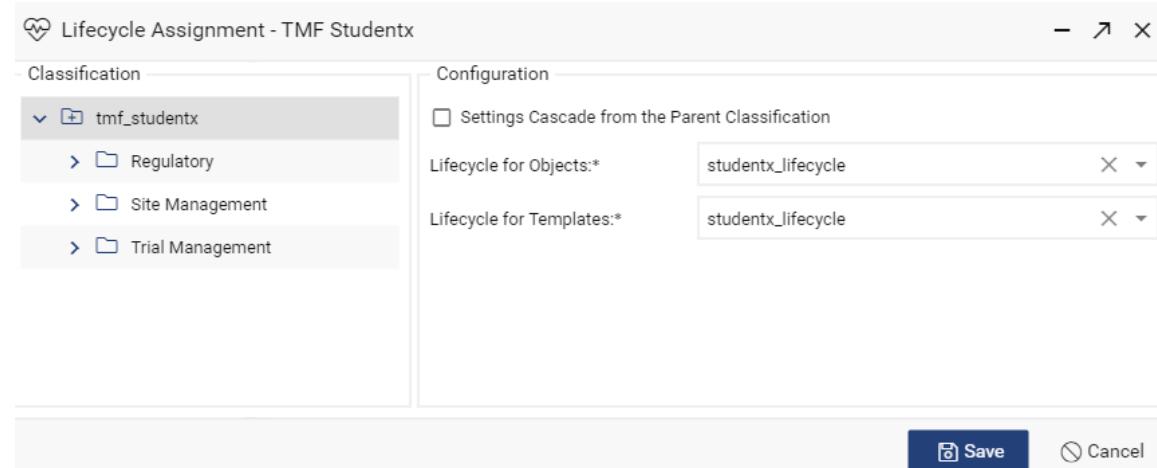
States	Transitions	
Source State Name	Target State Name	Label
Draft	Approved	Promote to Approved
Approved	Draft	Return to Draft
Draft	Obsolete	Mark as Obsolete
Obsolete	Draft	Return to Draft

+ Add Edit Remove

Save Cancel

Lifecycle Assignment

- Assign a lifecycle to be applied to a document when created.
- Like many other configuration elements, each node of the classification taxonomy can have its own setting or inherit from its parent. You could just have one lifecycle used by all documents.
- Document Templates can have a different lifecycle selected.
- Users can manually move documents through a lifecycle via Status Manager, or a workflow can move the document between lifecycle states.



Template Assignment (Content Templates)

- **Configuring Template Assignment is required before any templates become user selectable**, regardless of templates having already been imported.
- Select which versions of content templates (MS Word or Excel etc..) will be provided to users, either the Latest Version or a Defined Version such as Approved.
- Optionally select which (if any) properties will be inherited from the template. Template attribute values can be set when importing a content template.
- Please note, when templates are imported their classification is chosen, this determines which content templates are available for which classification of documents.
- **Recommendation:** Have specific linking rules for templates, this point will be emphasised in the Linking section.

Template Assignment - TMF Studentx

Classification

- tmf_studentx
 - Regulatory
 - Site Management
 - Trial Management

Configuration

Settings Cascade from the Parent Classification

Template Availability:

Latest Version Defined Version

Properties to Inherit:

- Subject (doc.subject)
- Substances (doc.substances)

Save Cancel

Import Template

Classification

Zone: * Regulatory

Section: General

Next Cancel

Auditing - Overview

- Auditing creates a history of events such as creation, editing, viewing and task completion.
- The audit history is displayed to users as an audit trail report.
- There is a default set of events recorded in the audit trail automatically. These events are listed in the `_audit_events` dictionary and include system events. It may not be necessary to configure type specific auditing.

The screenshot shows a software interface for managing audit trails. On the left, there's a sidebar with filters for 'Countries' (United Kingdom) and 'Events'. The main area displays a table of audit events with columns for 'Event', 'Version', 'User Name', 'Time Stamp', 'Reason', and 'Signature'. One row is selected, opening a detailed modal window titled 'Audit Trail - Details' with tabs for 'General' and 'Properties Change'. The 'Properties Change' tab shows a table of modified attributes with columns for 'Attribute', 'Old Value', and 'New Value'. The modal also lists 'Removed' attributes. At the bottom right of the modal, it says 'Displaying 1 - 25 of 29'.

- The audit events to be recorded for a type can be selected, with conditions.
- Each audit event can require a signature and reason. The reason can be free text or dictionary based.
- Property changes (old and new values) are recorded and are displayed in the report.
- **Recommendation.** Typically leave the default audit config as is but add those events which need a signature. Also remember to add auditing to individual workflow templates.

Audit – Adding a Configuration

- Add a new audit configuration, per type.
- Make **Active** and optionally add conditions.
- Multiple audit configurations with different conditions can be created, for example, draft vs approved documents.
- Add **Events**. Task related events are available once configured.
- Signatures can be required. Reasons can be required or optional.
- A **Default Reason** can be provided.

New Auditing - TMF Studentx

Active?

Configuration Name:*

Condition:

Events:

New Audit Event

Event Name: Export

Signature:*

Reason:*

Not Required Required

Not Required

Required – Free Text

Required – Dictionary

Required – Dictionary or Free Text

Reason Label:

Default Reason:

Save Cancel

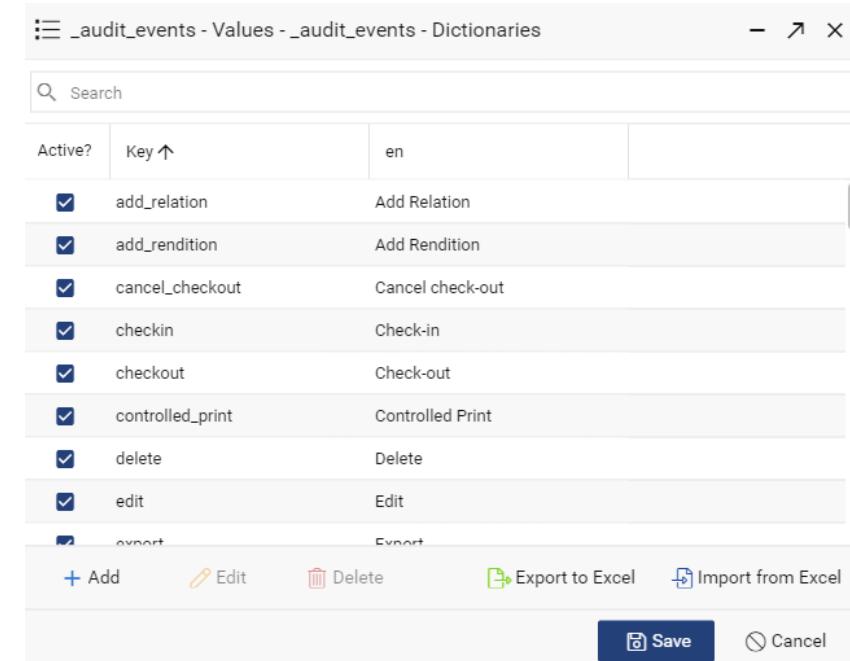
Default Student Doc Auditing

Event Name	Signature	Reason
Check-in	✓	✓
Export	✓	✓

Add Edit Remove

Audit Events Dictionary

- `_audit_events` dictionary lists the auditable events, which are active (recorded) and their user friendly display labels.
- User friendly display labels can be updated as required.
- Make an event **inactive** to remove it from the default audit events, don't delete them.
- **Recommendation.** The `_audit_events` dictionary includes system events such as content being indexed and renditions being added. These can be inactivated if required, however it is preferable to leave the defaults, users can easily filter between user and system events in the audit report.



The screenshot shows a software interface titled '_audit_events - Values - _audit_events - Dictionaries'. It displays a table of audit events with columns for 'Active?' (checkbox), 'Key ↑' (label), and 'en' (label). The table lists nine events: add_relation, add_rendition, cancel_checkout, checkin, checkout, controlled_print, delete, edit, and export. Each event has a corresponding label to its right. At the bottom, there are buttons for '+ Add', 'Edit', 'Delete', 'Export to Excel', 'Import from Excel', 'Save', and 'Cancel'.

Active?	Key ↑	en
<input checked="" type="checkbox"/>	add_relation	Add Relation
<input checked="" type="checkbox"/>	add_rendition	Add Rendition
<input checked="" type="checkbox"/>	cancel_checkout	Cancel check-out
<input checked="" type="checkbox"/>	checkin	Check-in
<input checked="" type="checkbox"/>	checkout	Check-out
<input checked="" type="checkbox"/>	controlled_print	Controlled Print
<input checked="" type="checkbox"/>	delete	Delete
<input checked="" type="checkbox"/>	edit	Edit
<input type="checkbox"/>	export	Export

Audit Trail Report

- Add as a View Action; toolbar button, menu button or both.
- Various filters are available to fine tune the report.
- View only the selected version's events or all versions. **Include All Versions** is a tick box in the bottom right corner.
- **System Update** events show where attributes were individually changed. Double-click to see old and new property values.
- **Export to Excel** icon is located in the top-right corner. Since v5.4 the export matches the column layout and therefore can be customised.

The screenshot shows the Audit Trail Report interface. On the left, there is a sidebar with filters for 'Countries' (United Kingdom), 'Events' (System: Content Access, System: Index Content, System: Update, System: Add Rendition, System: Check-out), and 'Modified Attribute' (modified, content.data_indexed, renditions.created, renditions.file_id, renditions.format). Below these are 'Apply' and 'Reset' buttons, and a checked checkbox for 'Include All Versions'. The main area displays a table of events:

Event	Version	User Name	Time Stamp	Reason	Signature
System: Index Content	0.3	_Indexer	3/31/22 10:18 AM		
System: Content Access	0.3	_Indexer	3/31/22 10:18 AM		
System: Add Rendition					
System: Index Content					
System: Content Access					
System: Content Access					
System: Update					
System: Version					
System: Content Access					
System: Check-out					
System: Update					
System: Index Content					
System: Add Rendition					
System: Content Access					
System: Index Content					
System: Content Access					
System: Update					

A modal window titled 'Audit Trail - Details' is open, showing a 'Properties Change' tab with a table of modified attributes:

Attribute	Old Value	New Value
doc.country	uk	germany
modified	2022-03-31T09:18:30.032Z	2022-03-31T09:18:41.975Z
modifier	_worker	Barry Prince

The modal also has tabs for 'General' and 'Removed', and buttons for 'Close' and 'Displaying 1 - 25 of 29'.

Sequences

- A sequence is an automatically incremented numeric value **used within auto-values**. Can be used to uniquely number documents.
- Specify an **ID** and **Description**.
- Enter the **Start Value** and **Increment** (usually 1)
- Choose a **Format** such as 0000, in which case the first document would be 0001.
- When sequences are used within an auto-value rule the sequence value must be stored in an integer attribute, this can be a **custom attribute** or the system attribute **sequence_no**.
- **Recommendation.** Multiple sequences can be created, so each type of document can have its own unique numbering via a dedicated auto-value.

The screenshot displays the Control Panel - Sequences interface. On the left, a sidebar lists various system components under General, with Sequences selected. The main area shows a table of existing sequences:

ID ↑	Display Name	Version	Updated
sequence2	Clinical Document Sequence	2	2/1/22 9:11 AM
studentnb_sequence	Studentnb Sequence	1	12/9/21 2:31 PM

A modal dialog for "sequence2 - Sequences" is open, showing configuration details:

- ID: sequence2
- Display Name*: Clinical Document Sequence
- Start Value: 1
- Increment By: 1
- Format: 00

At the bottom of the dialog are "Save" and "Cancel" buttons. Below the main table, another modal dialog titled "{sequence} - Auto-Value" is shown, with the following settings:

- Element Type: Sequence (radio button selected)
- Sequence*: sequence2
- Store Sequence Value In*: Unique ID - doc.unique_id (Integer)

At the bottom of this dialog are "Save" and "Cancel" buttons.

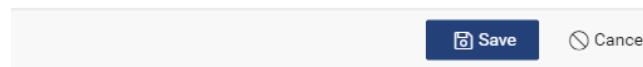
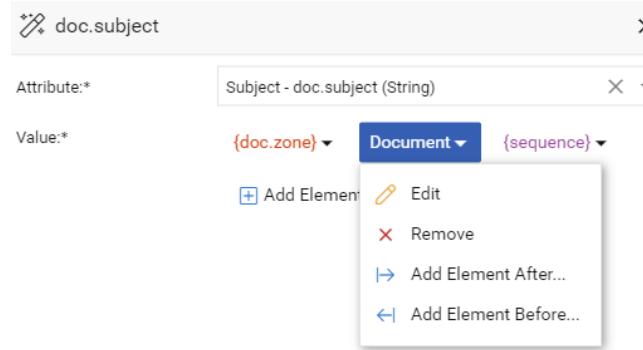
Auto-Values

- Set property values automatically each time a document is **versioned**.
- Separate from Properties Initialization.
- Auto-value rules can insert a combination of static text and other attribute values. Sequences can also be included.
- Each auto-value rule can apply multiple properties and be conditional (CQL condition).
- Auto-values do not apply to multi-value attributes.

The screenshot shows two overlapping configuration windows. The top window is titled "Default Subject - Auto-Values - TMF Studentx". It has a checked "Active?" checkbox, a "Configuration Name:" field set to "Default Subject", and a "Condition:" section which is currently empty. Below these is a table titled "Auto-Values:" with one row. The row contains "Attribute" (doc.subject) and "Value" ({doc.zone} Document {sequence}). At the bottom of this window are "Add", "Edit", and "Remove" buttons, and a "Save" button. The bottom window is titled "doc.subject" and shows a "Subject - doc.subject (String)" attribute and a "Value:" field containing "{doc.zone} Document {sequence}" with dropdowns for "Document" and "Sequence". It also has an "Add Element" button and a "Save" button.

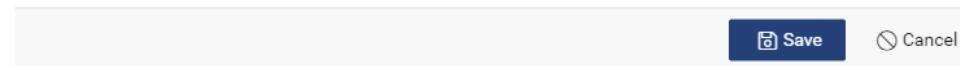
Auto-Values - Elements

- An auto-value attribute could be static text, it could also be a combination of **static text**, other **attribute values** and **sequences**.
- Select the Attribute and then **Add Element After** or **Before**.
- For Attribute Values, an **Unspecified Value** is required in-case there is no value for the current document.
- Values can use dictionary aliases, have their case changed and be truncated, useful if attributes can be very long.
- Remember to **add spaces between elements**. Usually add a space at the end or the beginning of a static text string.



New Element

Element Type:	<input type="radio"/> Static Text <input checked="" type="radio"/> Attribute Value <input type="radio"/> Sequence
Attribute:	Country - doc.country (String)
Unspecified Value:	unknown
Dictionary:	
Dictionary Alias:	
Case:	<input checked="" type="radio"/> Regular <input type="radio"/> Upper-Case <input type="radio"/> Lower-Case
Truncate After:	Char(s): <input type="text"/> Replace Characters: <input type="text"/> With: <input type="text"/>



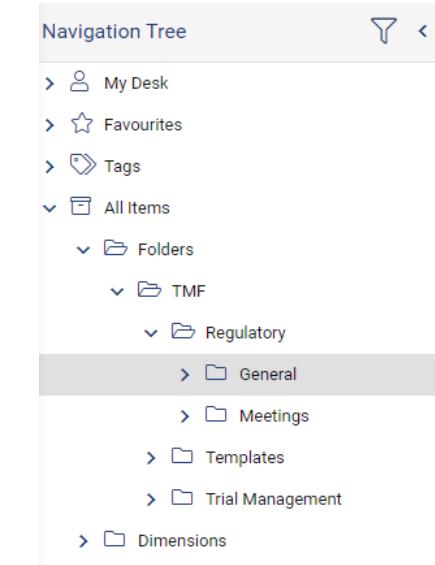
Linking

- Rules defining which **folders** documents are placed into automatically. Folders are created automatically as needed.
- The option for users to create and delete folders **manually** is also available. It is per type and must be selected at the **type definition**.
- Having folders is not compulsory, they are not fundamental to object definition and dimensions are available separately.
- Each document can be linked to multiple folders if desired.
- Where there are multiple linking rules they must be placed in an appropriate order, with more specific rules at the top. The first matching rule triggers.
- If a document's property value is changed it will be relocated to the new folder path. Different versions of a document can have different folder locations.
- **Recommendations.** Having folders created and populated automatically reduces scope for human error. The option to have manual folders was added for specific scenarios.

Linking - TMF Studentx			
Active?	Config Name	Condition	Folder Paths
✓	Document Templates	is_template=true	TMF/Templates
✓	EMEA Documents	doc.region='EMEA'	EMEA/{doc.zone}/{doc.section}
✓	Default User Documents		TMF/{doc.zone}/{doc.section}

Displaying 1 - 3 of 3

+ Add Edit Delete Save Cancel



Linking – Adding Path Elements

- Linking rules can be conditional.
- Each folder path can be made up of multiple elements, a combination of static text and attribute values.
- **Important:** add a forward slash between folders, but not at the beginning or end of the path.
- An **Unspecified** value for attribute elements is required, in case the attribute is blank.
- Dictionary aliases can be used.
- Elements can have their case changed and be truncated as needed.
- **Recommendation.** Create a separate path for content templates, using `is_template=true` as a condition.

The screenshot shows the configuration interface for a linking rule named "Linking - TMF Studentsx". The rule is active and configured for the "EMEA Documents" content type. The condition is set to "doc.region='EMEA'". The path is defined as "EMEA / {doc.zone} / {doc.section}".

Configuration Name: EMEA Documents

Condition: doc.region='EMEA'

Folder Paths: EMEA / {doc.zone} / {doc.section}

Save **Cancel**

This dialog is used to define the path element for the zone attribute. It specifies the element type as "Attribute Value" and the attribute as "Zone - doc.zone (String)". The unspecified value is set to "unknown". The case is set to "Regular".

Element Type: Attribute Value

Attribute: Zone - doc.zone (String)

Unspecified Value: unknown

Dictionary:

Dictionary Alias:

Case: Regular

Truncate After: Char(s) Replace Characters: With:

Save **Cancel**

Testing Linking Rules

- Ordinarily, to test linking rules, a document needs to be resaved to prompt the application of the linking rules. If you want to change the folders for multiple documents they would all need to be updated in some way.
- The **cara_security_and_linking_update** job was added for testing linking rules without individually resaving documents. It also reapplies security rules to the selected documents.
- The job requires a complete CQL **select** statement to identify which objects/documents to reapply rules to. What the **select** part returns is irrelevant, use the **from** to select the object type.
Example: `select * from tmf_studentx`
- Empty folders, which may happen if you move documents to a new folder based on linking rules, can also be removed automatically. Use the **cara_folders_cleanup** job.

The image displays two side-by-side job configuration screens from a software application.

Top Screenshot (Job ID: cara_security_and_linking_update):

- ID:** cara_security_and_linking_update
- Display Name:** Recalculate Security And Linking Job
- Method:** Recalculate Security And Linking On ObjectsJob and (c
- Status:** Active
- Mode:** Manual (radio button selected)
- Managers:** (empty dropdown)
- Notifications:** (checkboxes for On Successful Completion and On Failure)
- Parameters:** A table with one row: Name = cql, Value = select * from tmf_studentx

Bottom Screenshot (Job ID: cara_folders_cleanup):

- ID:** cara_folders_cleanup
- Display Name:** Empty Folders Cleanup Job
- Method:** Empty Folders Cleanup Method (cara_folders_cleanu
- Status:** Active
- Mode:** Scheduled (radio button selected)
- Schedule:**
 - Mode:** Daily
 - Every:** Day (radio button selected)
 - Starts At (UTC):** 1:00 AM
- Managers:** (empty dropdown)
- Notifications:** (checkboxes for On Successful Completion and On Failure)
- Parameters:** A table with one row: Name = cql, Value =

Both screens include standard UI elements like Save and Cancel buttons at the bottom right.

Document & Object Security Overview

- **Set which ACL will be applied to which documents.**
- Each document has 1 ACL at a time, not multiple.
- You could have 1 security rule and ACL template per type. Alternatively multiple security rules with different conditions can be active at the same time.
- Security rules are placed in a hierarchy. The order of rules is important as the first rule to match wins. They are reordered via click and drag.
- The ACL templates need to be created in advance of writing the security rule.
- There is a Default ACL that is assigned if no security config has been created. The Default ACL template can be modified.
- Current ACL and permissions granted for a document, including the current user's, can be viewed by selecting Permissions within a View.

Permissions: tr2103a updated from queue updated from queue X

Your Permission: Delete, Annotate, Relate

ACL

Name:	studentx_acl
Template ID:	studentx_acl
Template Description:	Studentx ACL
User/Group	Permissions
_admin	Delete
_owner	Delete
_all	Read Properties, Annotate, Relate

Close

Security - TMF Studentx

Active?	Config Name	Condition	Security
	special_acl	title='special'	special_acl_1
	Approved Documents	lifecycle_state='Approved'	approved_acl
	Draft Documents	lifecycle_state='Draft'	draft_acl
✓	Default User Docs		studentx_acl

Displaying 1 - 4 of 4

+ Add Edit Delete Save Cancel

ACL Templates

- An ACL Template specifies users/groups and their respective permissions.
- 3 types of ACL** can be created: General, Property Based and Object Based.
- General** are the most common, a single simple static ACL shared by any number of documents. General ACL templates do not need to be tied to a type, the others do.
- Property Based** can use properties in a condition, for example: authors = read permission unless state = approved. Can be shared by multiple objects.
- Object Based**. Can also use properties in a condition. Creates an ACL per object.
- The Name Template refers to the name of the ACL which will be generated and can be simple static text or can use attribute values.

New ACL Template

User/Group	Permissions
_admin	Default: Delete
_owner	Default: Delete
_all	Default: Read Properties

New ACL Template

Type: General - Not Based on Properties
 Property Based - Properties Used in the Name Can Then Be Used in the Definition
 Object Based - All Object Properties Can Be Used
⚠ Selecting this option will result in an ACL instance per object

Object Type: TMF Studentx (tmf_studentx)

Name Template: `{lifecycle_state}` ▾ Documents ▾ (owner) ▾ ACL ▾ [+ Add Element](#)

User/Group	Permissions
_admin	Default: Delete
_owner	Default: Delete
_all	Default: Read Properties
(owner)	Default: Version, Annotate, Relate

ACL Templates – Setting Permissions

- Add users or groups. Can be **dynamic** (e.g. ‘creator’ rather than a named user or group)
- Set a **Default Permission**. These permissions are in a **hierarchy**:
 - None.
 - Read Properties.
 - Read Content.
 - Version.
 - Save Properties.
 - Save Content.
 - Delete.
- Permissions **Annotate** and **Relate** can also be granted, these are not hierarchical.
- Permission **conditions** can be added, based on attributes used in the naming field. For example: admin = delete. If state = approved, then admin = version.

The image displays three separate instances of the 'Add User/Group' dialog box, each showing a different configuration of permissions:

- Top Dialog:** Shows a static user/group ('Training Reader (training_reader)') with a default permission of 'Read Content' and additional permissions for 'Annotate' and 'Relate' checked.
- Middle Dialog:** Shows a static user/group ('Training Reader (training_reader)') with a default permission of 'Version' and additional permissions for 'Annotate' and 'Relate' checked. It also includes a condition row for 'None' with 'lifecycle_state=Obsolete'.
- Bottom Dialog:** Shows a dynamic user/group ('Version') with a default permission of 'Version'. It includes a naming template ('{owner}') and a condition row for 'Version'.

Creating & Applying Security Rules

- Security rules are type specific. They can be active or inactive.
- The condition is optional and based on CQL.
- Select an existing ACL template from the drop down list to apply the rule to.
- When a document is saved or checked-in, that is when the ACL security rules are applied. Previous versions retain their old ACL unless saved/checked-in.
- Updates to the Template ACL immediately apply to all documents using the ACL.
- **Recommendation.** Use the security and linking update job when testing security rules.

Active?	Config Name	Condition	Security
	special_acl	title='special'	special_acl_1
	Approved Documents	lifecycle_state='Approved'	approved_acl
	Draft Documents	lifecycle_state='Draft'	draft_acl
✓	Default User Docs		studentx_acl

Approved Documents - Security - TMF Studentx

Active?

Configuration Name:*

Condition:

Approved Documents

lifecycle_state='Approved'

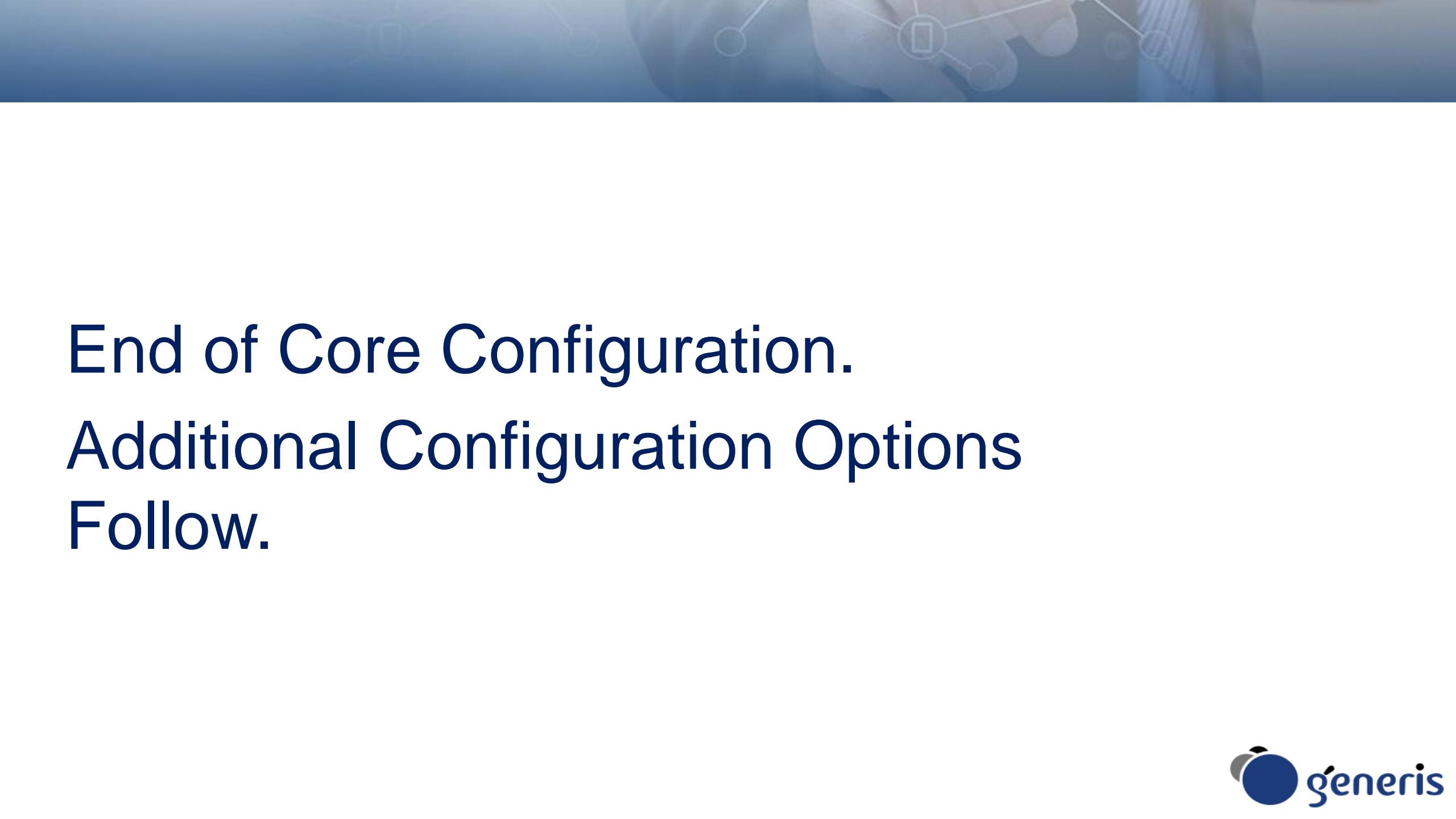
Displaying 1 - 4 of 4

Save Cancel

ACL Template:*

Approved ACL (approved_acl)

Save Cancel



End of Core Configuration.
Additional Configuration Options
Follow.

Workflow

The screenshot shows the CARA software interface. On the left, there's a sidebar with 'TRAINING' at the top, followed by 'Tasks', 'Inbox', and 'Completed Tasks' (which is selected). Below that is 'Dashboards'. At the bottom of the sidebar, there's a message: 'Task overdue' with a 'GT' icon, 'Generis Task Do Not Ignore To Barry Prince', and a link to view it in a web browser.

The main area has three tabs: 'TMF Author View', 'Inbox', and 'Completed Tasks' (selected). The 'Completed Tasks' tab shows a table of completed tasks:

Task Name	Workflow Name	Attachments
Approve	Primary Approval Workflow	tr0902a
Review	Office365 Collaboration	0802d
Approve	Primary Approval Workflow	tr3020a
Approve	Primary Approval Workflow	tr010222b
Approve	Primary Approval Workflow	tr010222a
Approve	Primary Approval Workflow	tr2101a
Approve	Primary Approval Workflow	tr2101b
Approve	Primary Approval Workflow	TR140122a

Hello Barry Prince,
Your task is now overdue.
Please access CARA as soon as possible to complete, reject or delegate the task. The details of this task are below.

Ref:	APQR - 10-03-2022
Version:	0.1, LATEST, Collaboration
Task name:	Collaborate
Workflow initiator:	George Waideil

You can open the document(s) in CARA by clicking on the following link(s):

<https://cls-demo.generis.cloud/cara/task/2193>



Workflow Overview

- A workflow is a task or series of tasks.
- Users initiate a workflow, selecting recipients and options such as when the workflow is overdue.
- Workflows carry out actions on documents such as changing properties.
- Workflows can combine with lifecycles, moving the document between lifecycle states.
- Task recipients have an inbox within CARA. Email notifications with links are sent out automatically.
- Workflow activities are included within the audit trail.
- Workflow reports provide detailed information about tasks, active and completed.
- Workflow can include collaboration; Office365 or Google Docs

The screenshot displays the CARA software interface. At the top, there's a navigation bar with 'File', 'Edit', 'Tasks', 'Tools', 'Settings', and 'Help'. Below the navigation bar, the main window has tabs for 'Inbox' (selected), 'Completed Tasks', and 'TMF Author View'. On the left, there's a sidebar titled 'Filters' with dropdowns for 'Last Month', 'Workflow Name' (set to 'Primary Approval Workflow (2)'), and 'Status' (set to 'Sent (2)'). The main area is titled 'Tasks' and shows a table with columns: Task Name, Status, Workflow Name, Attachments, and Sent Date. One task is listed: 'Approve' (Status: Sent, Workflow Name: Primary Approval Workflow, Attachments: tr0902c, Sent Date: 3/31/22 1:36 PM). A context menu is open over this task, showing options: 'Task Details', 'Start', 'Delegate', 'Approved', and 'Rejected'. Below the table, there's a toolbar with various icons for file operations like Move, Rules, Send to OneNote, Assign Policy, Read, Categorize, Follow Up, and Tags. To the right of the toolbar are buttons for New Group, Browse Groups, Search People, Address Book, Filter Email, Find, Read Aloud, Translate, Viva Insights, and Add-in. A message at the bottom says 'New Task: Approve for tr0902c in CARA' and 'Generis Task Do Not Ignore To Barry Prince'. Another message below it says 'The following task has arrived in your CARA Inbox.' followed by task details: Task Name: Approve, Task Performer: Barry Prince, Workflow Name: Primary Approval Workflow, Message Text: Please approve or reject the attached document., Sender Name: Barry Prince, Date Sent: 03-31-2022, Workflow Supervisor: Barry Prince. A link to the workflow task is provided: <https://training.generis.cloud/cara/task/190>.

Creating Workflow Templates - General

- Enter an **ID** and **Label**.
- Select **Active** and **Available for Manual Creation**.
- **Only One Active Instance.** Can the workflow run multiple times simultaneously on the same document?
- **Target Duration.** Number of days before reminder emails are sent.
- Add **Instructions** for the **Initiator**.
- Select which users/groups can **Initiate**. If blank then all users can.
- **Workflow Managers** can modify active instances – they can change recipients or cancel.
- **Recommendation.** If a min/max number of recipients are required, make this clear in the instructions.

studentx_workflow - Workflow Templates

General Attachments Auditing Variables Initialization On Issue Actions Steps

ID: studentx_workflow

Label*: Primary Approval Workflow

Options:

Active
 Available for Manual Creation
 Allow Only One Active Instance

Target Duration*: 10 Day(s)

Instructions: Please select the users who will be sent the document for approval.

Users and groups allowed to initiate it:

Workflow Managers:

Save Cancel

Workflow Templates – Attachments

- **Required Attachments.** Workflows usually involve a document, but don't have to. Select how many the initiator must select. If **None**, documents can still be attached but are optional.
- **Object Type.** Associate an object type, required for attributes to be updated.
- **Bind To.** Which document version will recipients receive. Usually the Latest, but other options are available.
- **Lifecycle.** Optionally require a document to be in a specified lifecycle and lifecycle state. The workflow can then move the document between states.
- **Additional Condition.** CQL condition limiting which documents the workflow can apply to e.g. department x or region z.

studentx_workflow - Workflow Templates

General **Attachments** Auditing Variables Initialization On Issue Actions Steps

Required Attachments:*

None Single Document Multiple Documents
Attachment Required to Initiate the Workflow

Object Type:*

Bind To:*

Lifecycle:

Lifecycle State:*

Additional Condition:

Attachments Menu Actions:

Save Cancel

The screenshot shows the 'Attachments' tab of a workflow template configuration. Key settings include:

- Required Attachments:** Single Document (selected)
- Object Type:** TMF Studentx (tmf_studentx)
- Bind To:** Latest Version (selected)
- Lifecycle:** Studentx Lifecycle (studentx_lifecycle)
- Lifecycle State:** Draft

There are also sections for Additional Condition and Attachments Menu Actions, along with standard Save and Cancel buttons at the bottom.

Workflow Templates - Auditing

- Which task related **events** will be included in the audit trail. These are in addition to the usual document events such as check-out/in.
- **Signatures** (password) can be required and included, with or without a reason to be selected or manually entered.
- A list of **Reasons** can be provided from a dictionary.
- A **Default Reason** can be selected.

studentx_workflow - Workflow Templates

General Attachments **Auditing** Variables Initialization On Issue Actions Steps

Enable Auditing Of:

Sending Cancelling Recipient Change Delegation Reassign

Signature:*

Not Required Required

Reason:*

Not Required

Required – Free Text

Required – Dictionary

Required – Dictionary or Free Text

Reason Label:

Save Cancel

Workflow Templates - Variables

- Optional. Workflow initiators can be prompted to enter additional information (variables) on a form to be used within the workflow when selecting recipients.
- Define variables and place them on a properties form, using the same form builder tools as for document properties.
- This is not usually needed, there is a separate window for configuring recipients.

ID	Display Name	Type	Multi-V...
department	Department	String	

Buttons at the bottom: + Add, + Add Sub-Attribute, Edit, Delete, Edit Variables Form, Save, Cancel.

New Variable

Name: * department

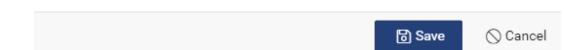
Display Name: * Department

Data Type: * String

Multi-Value

Source Object Property to Copy as Default:

If the action will only be performed on one object, the value of the attribute will be copied as the default value of the variable.



Form - studentx_workflow

Structure

Form

Label: label1

Combo Box: Department

Preview

Form

Select Department Below:

Department:

Buttons at the bottom: + Add, Edit, Delete, Save, Cancel.

Workflow Templates – On Issue Actions

- Actions can be performed on attached documents when the workflow is **issued**. This is in addition to actions based on task outcomes.
- Select a type of action. Properties can be updated, lifecycle states entered and scripts executed.

The screenshot illustrates the configuration of 'On Issue Actions' within a workflow template. The top navigation bar includes tabs for General, Attachments, Auditing, Variables, Initialization, **On Issue Actions**, and Steps. The 'On Issue Actions' tab is currently active. A modal window titled 'New Action' is open, showing a dropdown menu with three options: Set Properties, Change State, and Execute Script. The 'Set Properties' option is selected. Below this, another modal window titled 'Set Properties - Action' is open, showing the configuration for the selected action. The 'Type:' field is set to 'Set Properties', the 'Display Name:' field is also set to 'Set Properties', and the 'Properties:' field contains the value 'doc.subject='Sent for Approval''. At the bottom of the properties dialog, a note specifies: 'Every line should contain a setting with format 'property=value', where property is the attribute name and value is the value to be set. Date properties should be in yyyy-MM-dd format. Boolean properties should be T or F'. There are 'Save' and 'Cancel' buttons at the bottom right of both modals.

Workflow Templates – Steps Overview

- Define the **individual steps** or tasks within the workflow. A workflow can consist of one or more steps. Many workflows are just a single step, for example to approve a document.
- Each step requires **recipients** to be selected either manually or automatically. Provide instructions for recipients.
- Each step needs all possible **outcomes** and **transitions** (next steps) defined. All steps must lead to an End step.
- Define **actions** based on outcomes, for example document approved = change state to Approved, document not approved change state to Draft.

The screenshot shows a software interface for managing workflow templates. The title bar reads "studentx_workflow - Workflow Templates". Below the title is a navigation bar with tabs: General, Attachments, Auditing, Variables, Initialization, On Issue Actions, and Steps. The "Steps" tab is currently selected and highlighted in blue. The main content area displays a table with three columns: Step Name, Outcomes, and Transitions. There is one row visible for a step named "approve", which has outcomes "approved,rejected" and transitions "End,End". At the bottom of the table are buttons for Add (+), Edit (pencil), Remove (trash), Save (disk icon), and Cancel (cancel icon).

Workflow Templates – Defining Steps - General

- Define how the step looks to users.
- Add an **ID** and **Label**.
- **Priority** is a coloured arrow icon within the Inbox.
- Enter **Target Duration**.
- Add **Instructions** for recipients.
- Optionally add **Roles**. Recipients can be allocated a role within the workflow, for example author approval or manager approval. Audit requirements can be role specific. When selecting recipients, the issuer chooses the role:

The screenshot shows a workflow template editor window titled "approve - studentx_workflow". The window has tabs at the top: General (selected), Recipients, Collaboration, and Outcomes & Transitions. The General tab contains the following fields:

- ID: approve
- Label*: Approve
- Priority: Medium (radio button selected)
- Target Duration*: 10 Day(s)
- Instructions: Please approve or reject the attached document.
- Roles: A table with one row showing "approver" with "Approver" as the display name.

Workflow Templates – Defining Steps - Recipients

- **Restrict Recipients To.** Which users/groups the initiator can choose from. Usually use a List of users/groups. If **None** is selected, then anyone can be chosen. Variables defined previously can also be used.
If a group is selected, all members of the group become recipients.
- **Selection Method.** Recipients can be **Automatically Pre-Populated** or **Selected By the User** (workflow initiator).
- **A Minimum and Maximum number** of recipients can be set. If set then ensure the instructions for the issuer are clear, that they know how many are required before they can issue the task.

The screenshot shows the 'Recipients' tab of a workflow template configuration interface. The template is titled 'approve - studentx_workflow'. The 'Recipients' tab is active, indicated by a blue underline. Below the tabs are sections for 'Restrict To', 'Recipients', 'Selection Method', 'Define Default Recipients', 'Minimum number of recipients', 'Maximum number of recipients', 'Restrictions', and 'Sequence'. At the bottom are 'Save' and 'Cancel' buttons.

Approve - studentx_workflow

General Recipients Collaboration Outcomes & Transitions

Restrict To

Restrict Recipients To: None List Variable Values

Recipients

Selection Method: Automatically Pre-Populated To Be Selected by User

Define Default Recipients: None From List From Variable Values

Minimum number of recipients:

Maximum number of recipients:

Restrictions:

Prevent Sequence Change
 Prevent Recipient Change
 Prevent Recipient Delegation

Sequence: Parallel All Recipients Must Complete

Save Cancel

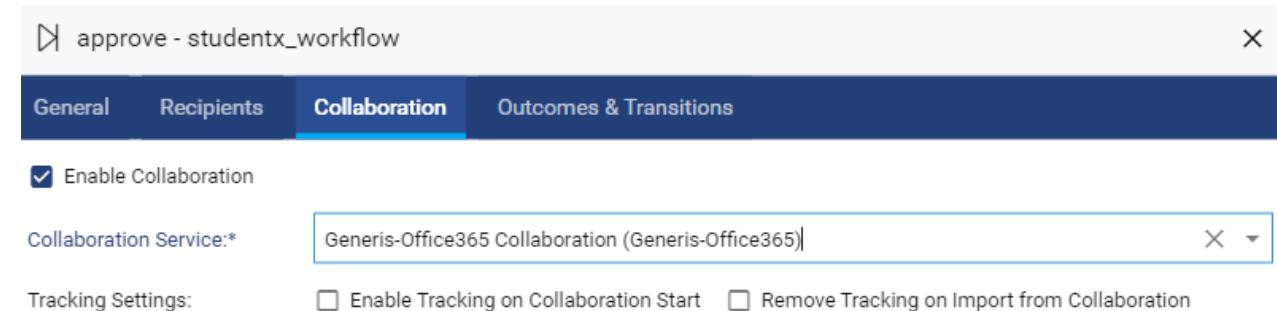
Workflow Templates – Defining Steps - Recipients

- **Prevent Sequence Change.** If unselected, workflow initiators will be allowed to change the order of task steps.
- **Prevent Recipient Change.** If unselected, workflow managers will be allowed to change recipients for future tasks.
- **Prevent Recipient Delegation.** If unselected, recipients will be allowed to delegate their task to another user. Recipients cannot delegate if they have already marked their task as started.
- **Sequence.** Set if the sequence will be parallel or serial. Not relevant where tasks only go to a single recipient.
- Additional select if **All Recipients Must Complete** the task. If not ticked, then any one recipient can complete the task.

The screenshot shows the 'Recipients' tab of a workflow template configuration interface. The template is titled 'approve - studentx_workflow'. The 'Recipients' tab is active, indicated by a blue underline. Below the tabs are sections for 'Restrict To', 'Recipients', 'Selection Method', 'Define Default Recipients', 'Minimum number of recipients', 'Maximum number of recipients', 'Restrictions', and 'Sequence'. In the 'Restrict To' section, 'None' is selected. Under 'Recipients', 'To Be Selected by User' is chosen for 'Selection Method'. 'None' is selected for 'Define Default Recipients'. Both 'Parallel' and 'All Recipients Must Complete' options are available under 'Sequence'. At the bottom right are 'Save' and 'Cancel' buttons.

Workflow Templates - Collaboration

- If the workflow template will use collaboration, the service to be used (Office365 or Google Docs) must be selected here. The service must have already been configured in the control panel.
- Document change tracking can be turned on automatically when the task is started, in which case provide the password specified in Collaboration Configuration.
- Tracking can also be turned off automatically once the task completes.
- Enabling collaboration here makes new actions available in the steps (see later slides).



Workflow Templates - Outcomes

- Define the possible outcomes of the step, for example an Approval step outcome could be approved or rejected. Colour code the visible choices in the recipient's inbox.
- Decide if user needs to add comments.
- **Auditing.** Each outcome can be configured differently, for example rejection may need a reason but approval might not. Auditing can be role specific as well, click the menu icon to open a role-specific audit sub-menu.

approve - studentx_workflow

General Recipients Collaboration Outcomes & Transitions

Outcomes:*

Outcome	Label	Signature	Reason
approved	Approved	✓	✓
rejected	Rejected	✓	

+ Add Edit Remove

Transitions:*

Condition	Next Step	Actions
At Least One Outcome = approved	End	Approved
At Least One Outcome = rejected	End	

+ Add Edit Remove

Save Cancel

approved - approve

ID: approved

Label: Approved

Color: Turquoise

Comment: Hidden Optional Required

Auditing

Signature: Not Required Required

Reason: Not Required Required – Free Text Required – Dictionary Required – Dictionary or Free Text

Reason Label:

Default Reason:

Roles:

Save Cancel



Workflow Templates - Transitions

- **Condition.** Select whether the transition is conditional on **At Least One Outcome** being true or **All Outcomes are true**.
- **Outcome.** Select which outcome the transition is based on.
- Define **Execute Actions.** Same options as On Issue Actions. Additional for collaborations.
- **And Go To.** Define what step will follow. End state is always available, it does not need to be defined. All workflows must reach an **End** step, including single step workflows.
- **Completion Status and Mark as Successful** are only available when **And Go To = End**.
- The Completion Status is shown in Workflow Reporting. Successful as green and unsuccessful as orange.

End - approve

Condition:
 At Least One Outcome...
 All Outcomes Are...
 Workflow Aborted

Outcome:
Approved (approved)

Execute Actions:

Type	Display Name
Change State	Approved

+ Add Edit Remove

And Go To:
End

Completion Status:
Document Approved
 Mark as Successful

Save Cancel

New Action

Type:
|

Display Name:
Set Properties

Change State

Execute Script

Complete Collaboration

Abort Collaboration

Save Cancel

Workflow Reporting

Filters

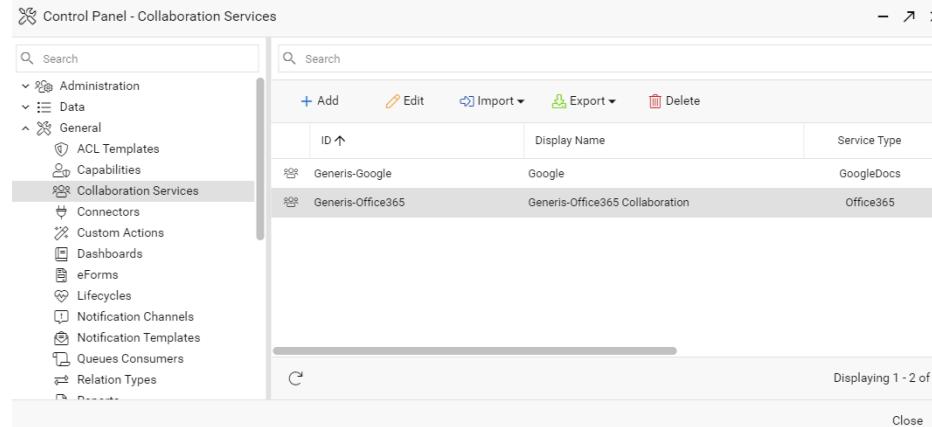
Results

Workflow Name	Attachments	Sent Date	Status	Current Step	Target Step Date	Target Date	Completion Date
✓ Primary Approval Wo... TR140122a		1/14/22 11:37 AM	Completed	End	1/24/22 11:37 AM	1/24/22 11:37 AM	1/14/22 11:40 AM
✓ Primary Approval Wo... tr2101b		1/21/22 9:23 AM	Completed	End	1/31/22 9:23 AM	1/31/22 9:23 AM	1/21/22 10:41 AM
✓ Primary Approval Wo... tr2101a		1/21/22 9:23 AM	Completed	End	1/31/22 9:23 AM	1/31/22 9:23 AM	1/21/22 9:38 AM
✓ Primary Approval Wo... tr010222a		2/1/22 9:47 AM	Completed	End	2/11/22 9:47 AM	2/11/22 9:47 AM	2/9/22 9:16 AM
✓ Primary Approval Wo... tr010222b		2/1/22 9:48 AM	Completed	End	2/11/22 9:48 AM	2/11/22 9:48 AM	2/9/22 9:14 AM
✓ Primary Approval Wo... tr3020a		2/3/22 1:40 PM	Completed	End	2/13/22 1:40 PM	2/13/22 1:40 PM	2/22 1:41 PM
✓ Office365 Collaborati... 0802d		2/8/22 5:05 PM	Completed	End	3/10/22 5:05 PM	3/10/22 5:05 PM	2/25/22 3:22 PM
✓ Primary Approval Wo... tr0902a		2/9/22 9:22 AM	Completed	End	2/19/22 9:22 AM	2/19/22 9:22 AM	2/9/22 9:23 AM



Collaboration Services

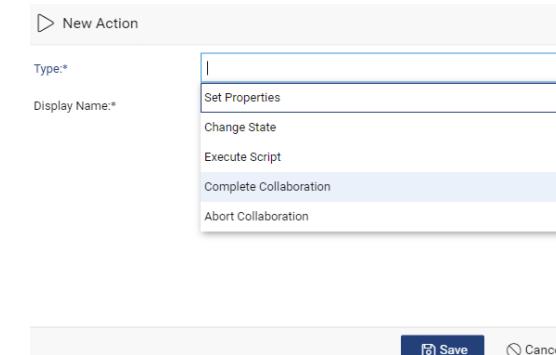
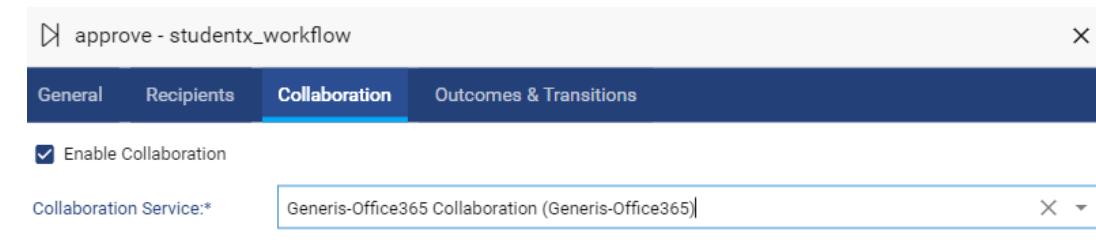
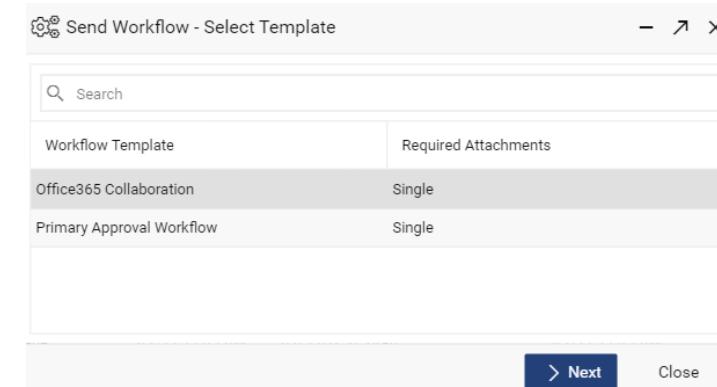
- CARA supports SharePoint/Office365 and Google Docs collaboration services, allowing multiple users to simultaneously update a document.
- The collaboration service must be configured with the connection details to be used for either service.
- For **Office365** the configuration is set via the GUI. For **Google Docs** some settings are in a JSON file directly on the CARA server, as required by Google.
- Object Name Pattern & Unique Name Pattern ensure docs have unique names when exported to the collaboration service.
- Users must have a corresponding user account in the collaboration site specified with email address that matches that in CARA. This can be simpler if using LDAP with Office365.



The screenshot shows the 'Generis-Office365 - Collaboration Services' configuration dialog. It has tabs for General and Proxy, with General selected. The General tab contains fields for ID (Generis-Office365), Display Name (Generis-Office365 Collaboration), Service Type (Office 365), Source Formats (doc, docx), Object Name Pattern (\$object_id}_\${object_name}), Unique Name Pattern ('(dd-MMM-yyyy HH-mm-ss z)'), and a checked checkbox for Generate Unique Names. The Proxy tab contains fields for URL (https://generiscorp.sharepoint.com), User Name (jenkins@generiscorp.com), Password (redacted), Site Name (cara51), Target Path (/cara51), and three checked checkboxes under Options: Enable Recycle Bin, Enable Change Tracking on Export, and Disable Change Tracking on Import. At the bottom are Save and Cancel buttons.

Collaboration Services & Workflow Tasks

- It is primarily intended for use within workflow tasks, though separate custom actions can be added.
- The workflow template must have collaboration enabled, including actions to end the collaboration once the task completes.
- Add the Edit in SharePoint/Google Docs action to the workflow template.
- Sequence must be set to parallel when selecting recipients.
- Once the workflow task completes, the document remains in Sharepoint due to SharePoint temporarily maintaining a lock. The cara_sharepoint_cleanup job is used to clear out such documents periodically.



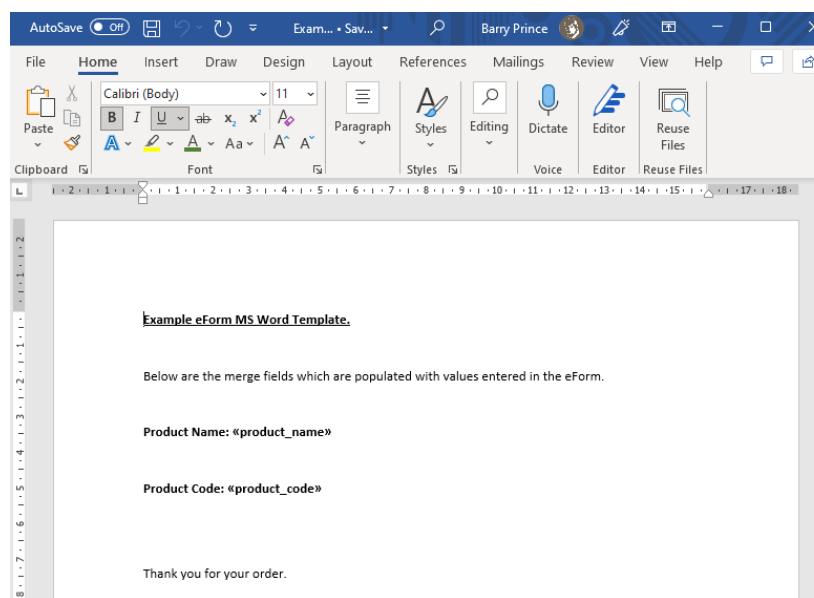
eForms - Overview

- eForms provide structured document content.
- An eform can be provided for users to fill out additional attributes (non-type related) which are then merged into an MS Word template and rendered as a .pdf file.
- eForms use the same form builder tools as document property forms. Variables are placed on the form.
The variables on the eForm need to be added as merge fields in the MS Word document.
- When the user creates a new document with an eform, they complete the eform, which is merged into the MS Word doc and the .pdf rendered.

The screenshot displays the cara software interface, specifically the TMF Author View. On the left, a navigation tree shows 'My Desk' with items like 'My Last Action Items', 'Subscriptions', 'In Collaboration', and 'Trash'. Below it are 'Favourites' and 'Tags' sections, and a 'All Items' section with 'Folders' and 'Dimensions'. The main workspace is titled 'My Desk/My Last Action Items' and shows a table with one item: 'tr0804b' (Name), '4/8/22 12:45 PM' (Modified), and '0.1, LATEST, Draft' (Version label). To the right, there's a 'Preview' section containing sample text: 'Example eForm MS Word Template.', 'Product Name: Training Name Example', 'Product Code: Training Code Example', 'Thank you for your order.', 'Best regards,' and 'ABC Inc. Customer Support.' At the top, there's a 'Create' dialog box with fields for 'Classification' (Zone: Regulatory, Section: General), 'Creation Method' (Create: Placeholder, From Template, From eForm selected), and 'eForm' (TR eForm 0422 (tr_eform_0422)). Below the preview, there are 'Save' and 'Cancel' buttons.

eForms - Creating

- Define the **Variables**. These are separate from type attributes.
- Edit the **Variables Form** and add the variables to it.
- Upload an MS Word document as a **Template**. The document should contain merge fields for the variables.
- Creating new documents from eForm is a type capability.
- eForms must have a type specified under Restrictions.



The screenshot shows the 'tr_eform1' configuration screen. The 'General' tab is selected, displaying the following information:

- ID: * tr_eform1
- Display Name: * TR eForm 1
- Variables: * Search by ID , Display Name

The 'Restrictions' tab is also visible. Below the tabs, there is a table with two rows:

ID ↑	Display Name	Type	Multi-Value
code	Product Code	String	
product	Product Name	String	

At the bottom, there are buttons for Add, Add Sub-Attribute, Edit, Delete, and Edit Variables Form. The 'Template:' field shows 'tr_eform1.docx' with the note 'MS Word template file that will be rendered to a PDF with the eForm values'. There are also Upload and Export buttons.

The screenshot shows the 'tr_eform1' configuration screen. The 'General' tab is selected, displaying the following information:

Type Restrictions: *

Group Restrictions:

A modal window titled 'TMF Reference Model 5_1 (tmf_5_1)' is open in the center.

At the bottom right, there are Save and Cancel buttons.

Relation Types

- Relationships provide a quick method of connecting and locating documents. Administrators define the relationships available.
- Define the **Relation Names**.
- **Integrity**, usually documents in a relationship are independent of each other, but the relationship can restrict deletion.
- Define the **Parent** and **Child** object **Types**.
- Define **Conditions** and who can apply the relationship (**Restricted Accessors**).
- Examples of relationships include emails and their attachments, which would be imported separately. Also a SOP document and a corresponding work instructions document.

The screenshot displays two side-by-side configuration windows for a relation type named 'external_approval'.

General Tab:

- Status: Active (checkbox checked)
- ID: external_approval
- Relation Name: External Approval Signoff
- Converse Name: Externally Approved Document
- Icon: book-open
- Icon Color: Default (radio button selected, with a color palette below)

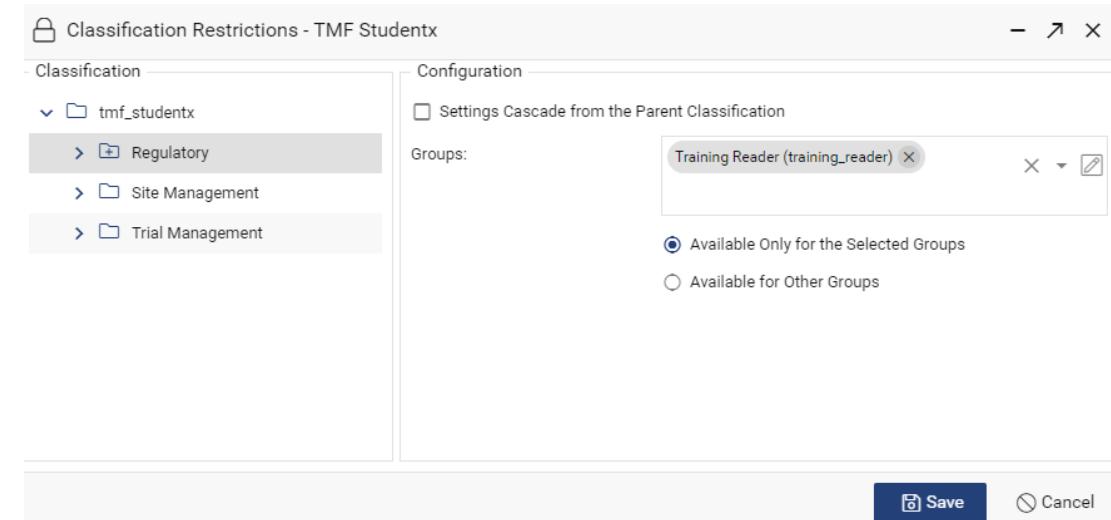
Security & Restrictions Tab:

- Integrity Kind: Allow Deletion of Related Objects (AllowDelete)
- Parent Type: TMF Studentx (tmf_studentx)
- Parent Condition: (empty)
- Child Type: TMF Studentx (tmf_studentx)
- Child Condition: (empty)

At the bottom right of the second window are 'Save' and 'Cancel' buttons.

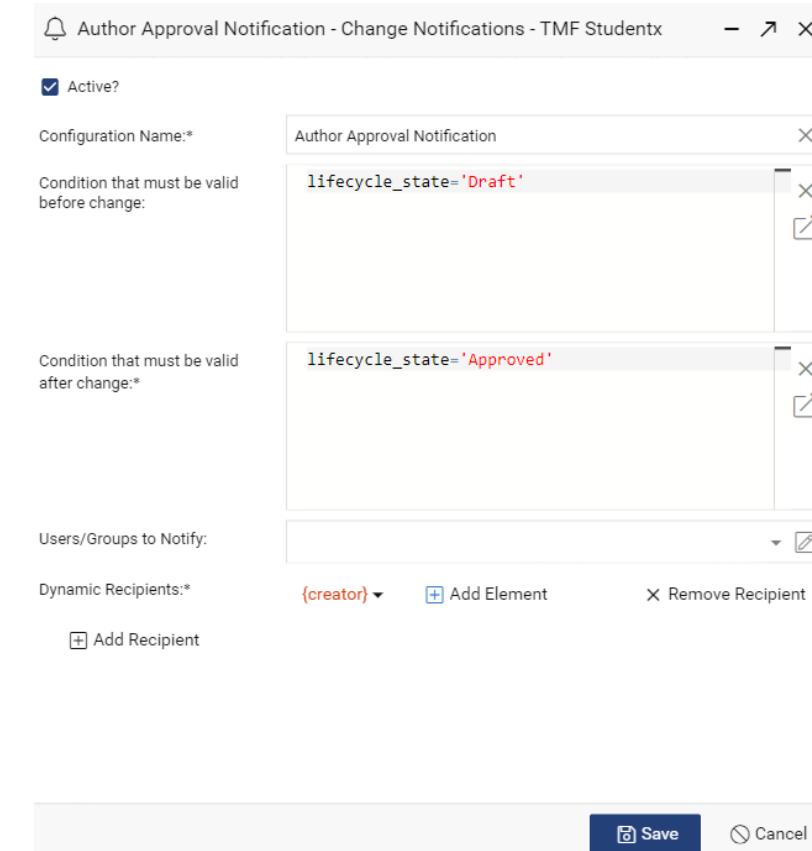
Classification Restrictions

- **Select which groups are allowed (or not) to create documents of the specified classification.**
- **If not configured, all users are allowed to create documents with any available classification.**
- Keep in mind users would still need access to type's view and the capability to create new documents.
- The Classification panel (left side) is automatically populated with the classification taxonomy.
- Each level of the taxonomy can have different restrictions or inherit from the parent (which is the default). Note levels with their own restrictions set have a different icon (folder with a + icon).
- Specified groups can either be included or excluded, based on the radio button choice.



Change Notifications

- Configure condition based change notifications to be sent to groups of users automatically. These are in addition to users manually opting for change notifications.
- The primary trigger is “**Condition that must be valid after change**”, expressed as a CQL condition. However the notification can be further fine tuned by adding a “Condition that must be valid **before** change”.
- Recipients can be users, groups or dynamic, such as the document’s authors.



Date Based Notifications

- Date based notifications are also custom notifications, but based on a date
- They can also use CQL conditions. They use custom notification templates.
- The recipients can be simply selected (users and groups) or dynamically selected based on an attribute such as author or creator.
- A date-based condition is required. Either a default date attribute can be used or a type specific date-based attribute.
- **The custom notification template needs to be created in advance.**

Document Lock Reminder - Date Based Notifications - TMF Studentx

Active?

Configuration Name:*

Condition:

When:*

Notification Template:*

Users/Groups to Notify:

Add Recipient

(creator)

Save Cancel

Notification Channels

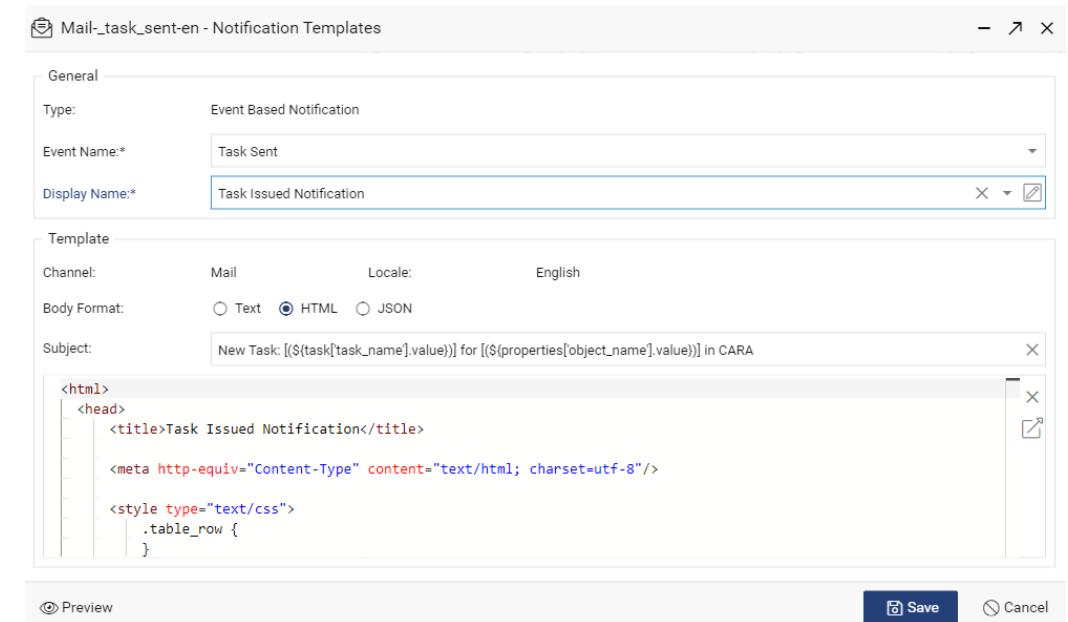
- Notification channels are the methods used to pass notifications to users, such as when a document has been updated.
- Notification templates are configured for each event and then a notification channel is selected.
- The most common notification channel is Mail, where users receive an external email via their email client such as MS Outlook. Others are Slack channel and Internal CARA pop-up.
- More than 1 notification channel can be configured of each channel type, for example if 2 or more SMTP servers are available or a different sender name is to be used.
- Each notification template is tied to a specific notification channel instance.

Mail - Notification Channels

Channel:	Mail
Display Name:*	Mail Channel
SMTP	
Host:*	smtp.office365.com
Encryption:	<input type="radio"/> None <input type="radio"/> SSL <input checked="" type="radio"/> TLS
Port:	587
User Name:	
Password:	
Sender Name:*	
<input type="checkbox"/> Send Emails on Behalf of the Original User. The mail server needs to be configured to allow.	
URL	
Application URL:*	https://training.generis.cloud/cara/ Full URL of the application that will be used in emails as a base link.
<input type="button" value="Save"/> <input type="button" value="Cancel"/>	

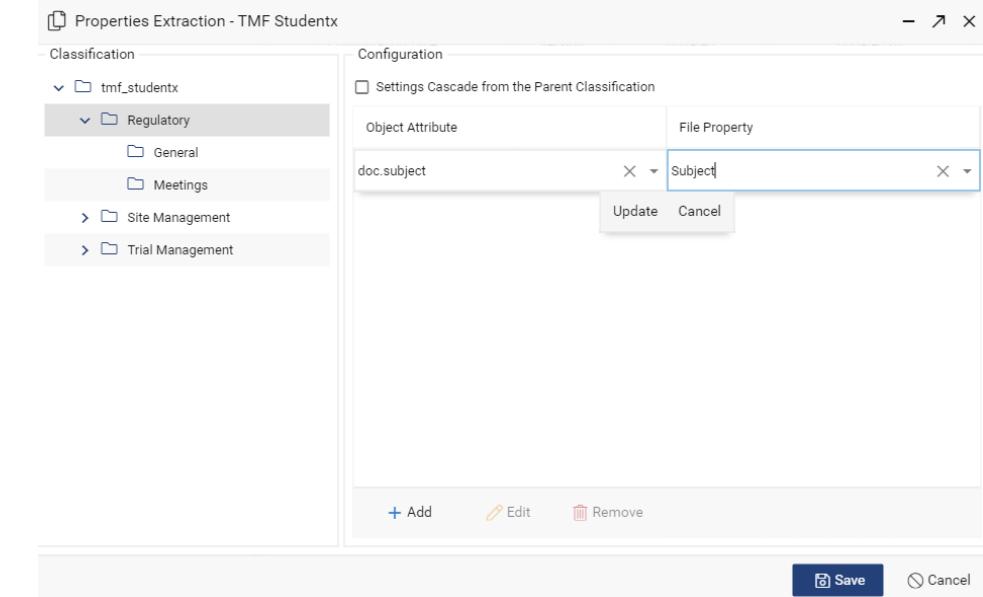
Notification Templates

- Notification templates are the basis of email and other notifications, which are automatically sent to users based on trigger events such as a document being versioned.
- Notification templates consist of a subject line and body of text created in either a plain text, HTML or JSON format. The syntax is validated when saved. Preview is available.
- Standard notification templates have a trigger event, selected from the `_notification_events` dictionary.
- Variables such as the user's name or the document's name can be included using `${variable_name}`.
- Notification templates can be language specific.
- Custom notification templates can be created for type specific date-based notifications.



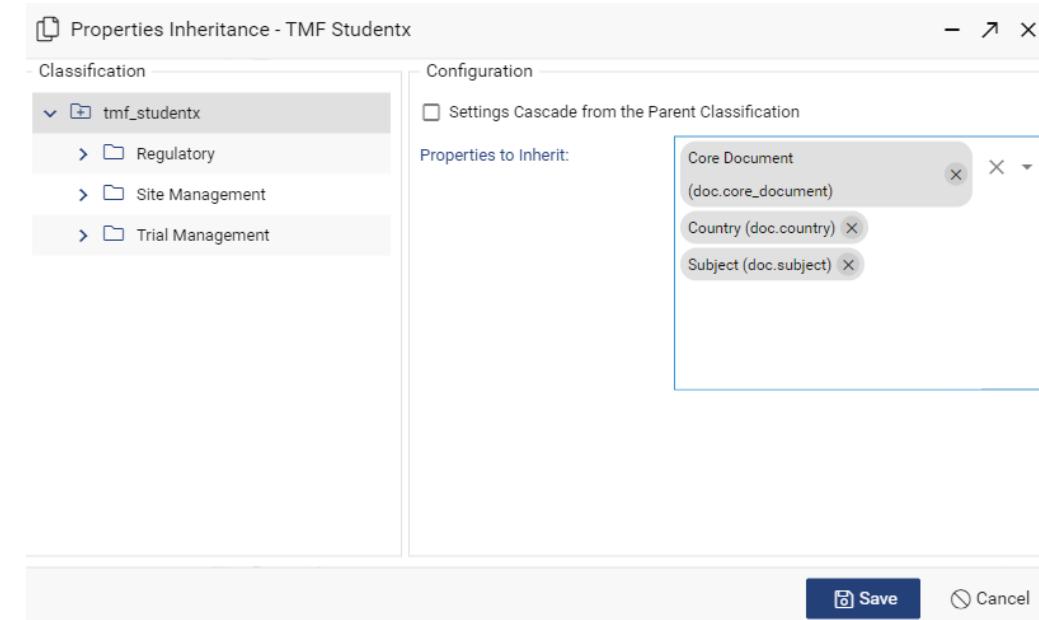
Properties Extraction

- **Applies to import only.** New document creation has other initialization options.
- Copy **file** properties such as Title or Subject from an imported document to the document within CARA.
- As well as file properties, can also include email Subject, From and Message Date.
- Select the imported **File Property** and map to the **Object Attribute**.
- When documents are imported, users will see the imported values on the property form and have an opportunity to check and correct as needed.



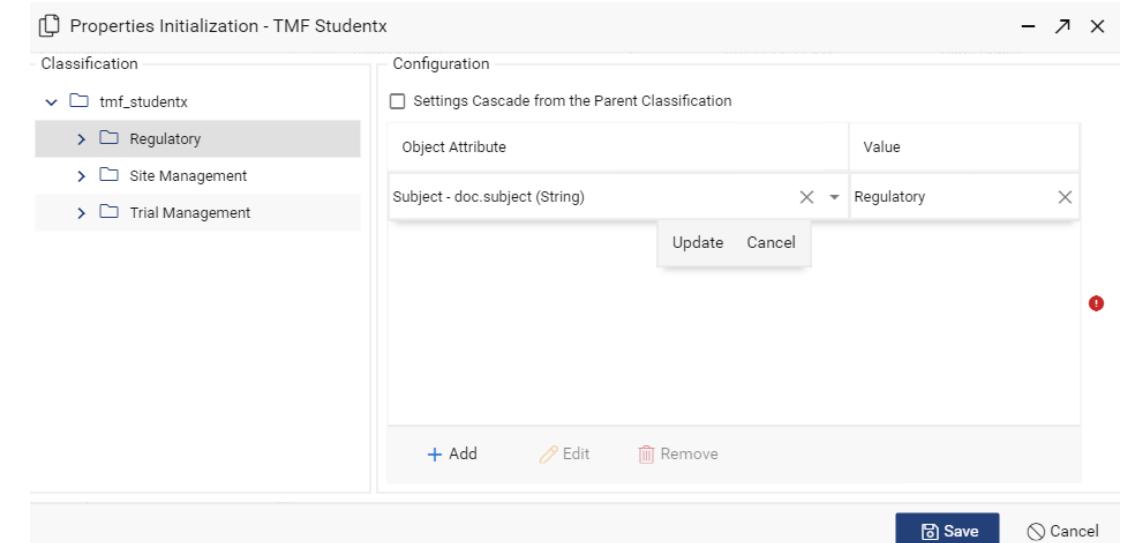
Properties Inheritance

- If a user highlights a document prior to selecting **Create**, the new document will copy the classification **and selected attributes**.
- Can save users significant time when documents have a large number of attributes to be filled out.
- In the **Properties Inheritance** window, untick **Settings Cascade from the Parent Classification** for the root and other nodes to be configured.
- For each node within the classification select which attributes will be copied from the **Attributes Selection** window.



Properties Initialization

- Set initial property values for new documents.
- Can save users time and ensure consistent data.
- Like other initialization options, this configuration is applied only to the **initial version**. This is **different from Auto-Values** which are applied for each version.
- For each node within the classification select initial attribute values.
- Can use codes such as CURRENT_DATETIME and USER.



Purge Config

- Delete documents automatically after a period of time
- Set a number of days and an attribute to trigger from, this could be a custom attribute created specifically for the purpose such as doc.expiration_date.
- Optionally add a condition, for example version_label='Obsolete'.
- Select option to additionally delete Audit Trail Entries.
- **Works in combination with the cara_purge job.** It is this job that does the purge operation, based on the purge configuration. As is standard for CARA jobs, the job could be scheduled to run regularly or run on demand.

Obsolete Documents - Purge Config - TMF Studentx

Active?

Configuration Name:*

Obsolete Documents

Condition:

lifecycle_state='Obsolete'

When:*

10 Day(s) After deleted

Options:

Delete Audit Trail Entries

Save Cancel

cara_purge - Jobs

ID: cara_purge

Display Name:*

Document Purge Job

Method:*

Document Purge Method (cara_purge)

Status:

Active

Mode:

Manual Scheduled

Schedule

Mode:*

Daily

Every:*

Day Day of Week

Starts At (UTC):*

1:30 AM

Managers:

Notifications:

On Successful Completion On Failure

Parameters:

Name	Value
test	true

Add Delete

Save Cancel



Legal Hold

- Prevent the changing of documents.
- Overrides ACL permissions.
- Can be based on a condition and therefore does not have to apply to every instance of a specific document type, for example could have legal hold on approved but not draft documents.
- Can allow some named groups to continue to modify the documents, such as administrators.

The screenshot shows a configuration dialog titled "regulatory_doc_hold - Legal Hold Items - TMF Studentx". It includes fields for "Active?", "Configuration Name:" (set to "regulatory_doc_hold"), and "Condition:" (set to "doc.reg_status='Hold'"). A section for "Groups Allowed to Modify Documents on Legal Hold:" lists "Administrator (_admin)". At the bottom are "Save" and "Cancel" buttons.

regulatory_doc_hold - Legal Hold Items - TMF Studentx

Active?

Configuration Name:*

Condition:

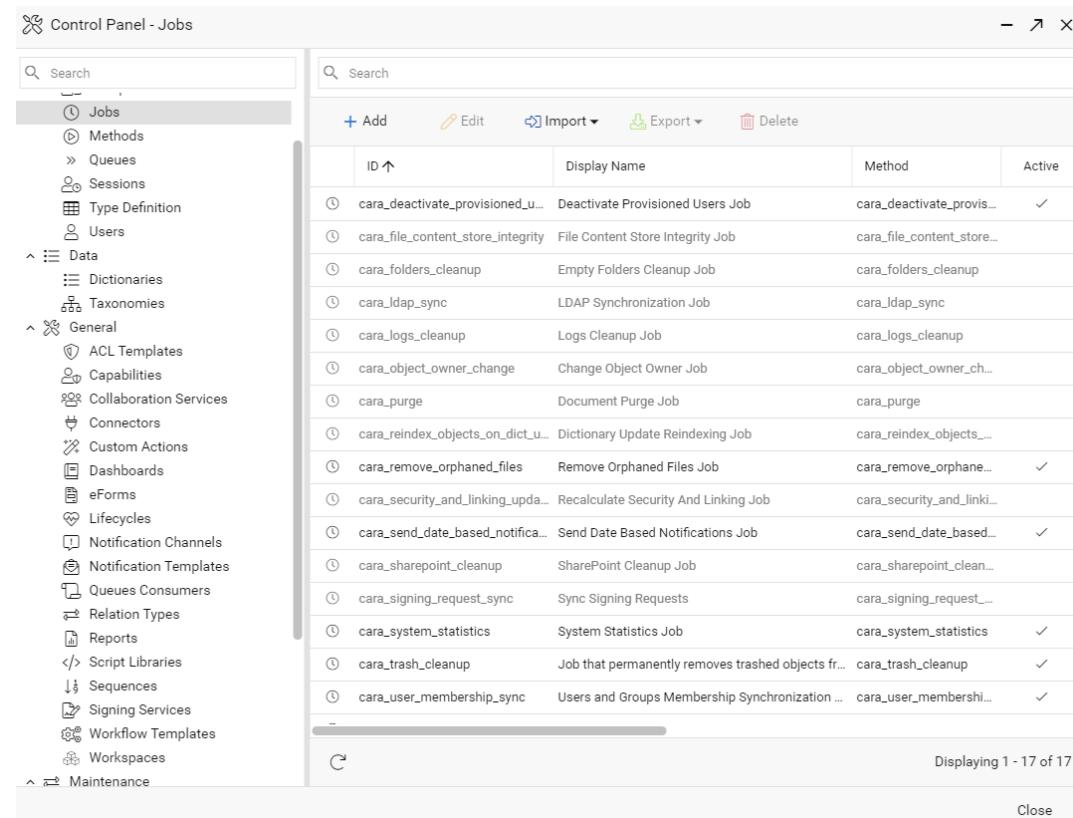
Groups Allowed to Modify Documents on Legal Hold:

Administrator (_admin)

Save Cancel

Methods and Jobs Overview

- A method is a Java class or script which performs a function, for example a method is used to synchronise user details via LDAP. Others are used to send notifications or run maintenance tasks. Several methods are installed by default and should not be removed.
- Methods can be run manually or scheduled as a job.
- New methods can be written and added to extend CARA functionality.



The screenshot shows the 'Control Panel - Jobs' interface. On the left is a navigation sidebar with a tree view of system components: Jobs (selected), Methods, Queues, Sessions, Type Definition, Users, Data (with Dictionary, Taxonomies), General (with ACL Templates, Capabilities, Collaboration Services, Connectors, Custom Actions, Dashboards, eForms, Lifecycles, Notification Channels, Notification Templates, Queues Consumers, Relation Types, Reports, Script Libraries, Sequences, Signing Services, Workflow Templates, Workspaces), and Maintenance. The main area is a table titled 'Jobs' with columns: ID, Display Name, Method, and Active. The table lists 17 entries, all of which are active (indicated by a checkmark). The entries are:

ID	Display Name	Method	Active
cara_deactivate_provisioned_u...	Deactivate Provisioned Users Job	cara_deactivate_provis...	✓
cara_file_content_store_integrity	File Content Store Integrity Job	cara_file_content_stor...	
cara_folders_cleanup	Empty Folders Cleanup Job	cara_folders_cleanup	
cara_ldap_sync	LDAP Synchronization Job	cara_ldap_sync	
cara_logs_cleanup	Logs Cleanup Job	cara_logs_cleanup	
cara_object_owner_change	Change Object Owner Job	cara_object_owner_ch...	
cara_purge	Document Purge Job	cara_purge	
cara_reindex_objects_on_dict_u...	Dictionary Update Reindexing Job	cara_reindex_objects...	
cara_remove_orphaned_files	Remove Orphaned Files Job	cara_remove_orphane...	✓
cara_security_and_linking_upd...	Recalculate Security And Linking Job	cara_security_and_linki...	
cara_send_date_based_notifica...	Send Date Based Notifications Job	cara_send_date_based...	✓
cara_sharepoint_cleanup	SharePoint Cleanup Job	cara_sharepoint_clean...	
cara_signing_request_sync	Sync Signing Requests	cara_signing_request...	
cara_system_statistics	System Statistics Job	cara_system_statistics	✓
cara_trash_cleanup	Job that permanently removes trashed objects fr...	cara_trash_cleanup	✓
cara_user_membership_sync	Users and Groups Membership Synchronization ...	cara_user_membershi...	✓

At the bottom right of the table area, it says 'Displaying 1 - 17 of 17'. Below the table is a 'Close' button.

Running Methods

- The system methods do not need to be run manually. However any method can be run manually from the right click menu.
- Selecting to run a method queues the method for execution and provides a link to the Method's run log.
- Double-click an individual log entry to view details. The details displayed are specific to the method.

The screenshot shows the 'Control Panel - Methods' interface. On the left, a sidebar lists various system components: Jobs, Methods (selected), Queues, Sessions, Type Definition, Users, Data (Dictionaries, Taxonomies), General (ACL Templates, Capabilities, Collaboration Services, Connectors, Custom Actions, Dashboards, eForms, Lifecycles, Notification Channels, Notification Templates). The main area displays a table of methods:

Name ↑	Display Name	Type
cara_deactivate_provisioned_users	Deactivate Provisioned Users	JavaClass
cara_file_content_store_integrity	File Content Store Integrity Method	JavaClass
cara_folders_cleanup	Empty Folders Cleanup Method	JavaClass
cara_ldap_sync	LDAP Synchronization Method	JavaClass
(+ Add)	Logs Cleanup Method	JavaClass
(Edit)	Change Object Owner	JavaClass
(Delete)	Document Purge Method	JavaClass
(AuditTrail Report)	Dictionary Update Reindexing Method	JavaClass
(Run)	Remove Orphaned Files Method	JavaClass
(View Logs)	Recalculate Security And Linking On Objects Job and	JavaClass
(History)	Send Date Based Notifications	JavaClass
cara_sharepoint_cleanup	SharePoint Cleanup Method	JavaClass

A context menu is open over the 'cara_ldap_sync' row, listing options: + Add, Edit, Delete, AuditTrail Report, Run, View Logs, History. The 'Run' option is highlighted. Below this, a detailed view of the 'cara_ldap_sync' method is shown:

ID: cara_ldap_sync
Display Name*: LDAP Synchronization Method
Type*: JavaClass
Class Path: com.generiscorp.cara.server.method.CaraLDAPSyncM...

Buttons at the bottom: Save, Cancel.

generis

Jobs

- **A job is a method which has been scheduled to run automatically.**
- Jobs which are not active will not run automatically and are greyed out in the Jobs window, but can still be run manually.
- The Jobs window lists which jobs are active, when each job last ran, and when they are next scheduled to be run.
- Jobs can have parameters, which are determined by the method. Parameters are job specific.
- As with methods, job logs are available.
- Managers (a named group) can be automatically notified when a job runs, either on success or failure.
- **Recommendation.** Refer to the configuration manual for descriptions of the system jobs, along with their parameters.

The screenshot shows a software interface for managing jobs. The job being configured is named "cara_folders_cleanup".
- **ID:** cara_folders_cleanup
- **Display Name:** Empty Folders Cleanup Job
- **Method:** Empty Folders Cleanup Method (cara_folders_cleanup)
- **Status:** Active (unchecked)
- **Mode:** Scheduled (radio button selected)
- **Schedule:** Daily
- **Every:** Day (radio button selected)
- **Starts At (UTC):** 1:00 AM
- **Managers:** (empty)
- **Notifications:** On Successful Completion (checkbox), On Failure (checkbox)
- **Parameters:** (empty table)
At the bottom, there are buttons for Save and Cancel.

Queues

- Queues pass requests to services. A request is generated when an action is performed on an object and then placed in a queue. For example, checking in a document sends queue requests for renditions and full text indexing.
- Default system queues do not need to be created or configured but can be monitored. Queues for 3rd party services can be created.
- Default system queues:
 - _docsecure. DocSecure queue.
 - _fulltext. Full Text queue.
 - _notifier_mail. Email queue.
 - _notifier_slack. Slack channel queue.
 - _renderer. Renderer queue.
 - _user_rename. Rename user queue.
- Trigger events are configured per type.
- **Mailer and Slack queue items can be re-queued.**

The screenshot shows two windows from a software application's control panel. The top window is titled "Control Panel - Queues". It has a sidebar with categories like Jobs, Methods, Queues (which is selected), Sessions, Type Definition, Users, Data (with sub-options like Dictionaries, Taxonomies), General (with sub-options like ACL Templates, Capabilities, Collaboration Services, Connectors, Custom Actions, Dashboards, eForms), and eForms. The main area lists system queues with columns for ID, Display Name, Queue Type, SAC, Items, and Consumers. The bottom window is titled "_renderer - Queue Items". It shows a table of items with columns for Status, Start Time, Status Change Time, Related Object, and User. The status column shows entries like "Done" and "Pending". The user column consistently shows "Barry Prince". Navigation and search tools are visible at the bottom of both windows.

ID	Display Name	Queue Type	SAC	Items	Consumers
_docsecure	DocSecure Queue	System	0	1	
_fulltext	Full Text Queue	System	0	1	
_notifier_mail	Notifier Mail Queue	System	0	1	
_notifier_slack	Notifier Slack Queue	System	0	1	
_renderer	Renderer Queue	System	0	1	
User Rename Queue	User Rename Queue	System	✓	0	2
Training Queue 1	Training Queue 1	Standard		0	2

Status	Start Time	Status Change Time	Related Object	User
Done	3/31/22 10:18 AM	3/31/22 10:18 AM	tmf_studentx:188	Barry Prince
Done	3/31/22 10:18 AM	3/31/22 10:18 AM	tmf_studentx:187	Barry Prince
Done	3/21/22 1:59 PM	3/21/22 1:59 PM	tmf_studentx:186	Barry Prince
Done	3/2/22 11:48 AM	3/2/22 11:48 AM	tmf_studentx:185	Barry Prince
Done	3/2/22 11:48 AM	3/2/22 11:48 AM	tmf_studentx:184	Barry Prince

Queuing Config & Queue Consumers

- **Queuing Configuration.** Each type can have its own Queuing configuration for when to make a request to such a service, such as which events trigger a rendition request and any parameters that need to be passed. Parameters are determined by the specific service, for example a rendition server may expect to be passed a format such as pdf or jpg.
- **Recall that in type definition fulltext and renderer are set to automatic, therefore there's no need to setup queuing for _fulltext and _renderer.** The same goes for DocSecure, no queuing config is needed.
- **Queue Consumers** allow a script to be run against objects in a custom queue. The name of the queue consumer must match the name of the custom queue. Objects within a queue are processed in series in date and time order.

The screenshot shows the 'Training Queue - Queuing - TMF Studentx' configuration dialog. It includes fields for 'Active?' (checked), 'Configuration Name:' (set to 'Training Queue'), 'Condition:' (empty), 'Queue Name:' (set to 'Training Queue 1 (training_queue1)'), 'Parameters:' (empty), and an 'Events' section with checkboxes for 'Create', 'Update', 'Version' (which is checked), and 'Set Content'. At the bottom are 'Save' and 'Cancel' buttons.

The screenshot shows the 'training_queue1 - Queues Consumers' configuration dialog. It includes fields for 'Queue:' (set to 'training_queue1'), 'Display Name:' (set to 'Training Queue 1'), 'Status:' (with 'Active' checked), and a 'Script to Process Items:' code editor containing the following JavaScript:

```
//change name
var present_name = object.getObjectName();
object.setObjectName(present_name + " updated from queue"
//update object
CARA.objects().update(object);
```

At the bottom are 'Save' and 'Cancel' buttons.

Connectors

- CARA supports multiple services and locations for **content storage**, for example Amazon S3 cloud services, Box, Azure Blob storage or simple file shares.
- Each connector represents a storage service and/or device.
- Each type points to a specific connector.

Control Panel - Connectors

Search

+ Add Edit Import Export Delete

ID ↑	Display Name	Version	
_amazon_s3	CARA S3 Connector	1	3/19
_azure_blob_storage	CARA Azure Blob Storage Connector	1	8/6
_box	CARA Box Connector	1	3/19
_file_system	CARA FileSystem Connector	1	3/19
_gcp_storage	CARA Google Storage Connector	1	1/10

_file_system - Connectors

Status: Active

ID: _file_system

Display Name:*

Class Path:*

Save Cancel

New Type Definition

General Attributes Sizing

Type Name:*

Display Name:*

Icon:

Purpose:*

Data (objects without a content file)
 Documents (objects with a content file)

Content Storage:*

Content Processing:

Versioning:*

Folders:*

CARA S3 Connector (_amazon_s3)

CARA Azure Blob Storage Connector (_azure_blob_storage)

CARA Box Connector (_box)

CARA FileSystem Connector (_file_system)

CARA Google Storage Connector (_gcp_storage)

Disabled

Connector Configuration

- Each connector implementation has its own configuration files which are deployed on the server. For example details of the network path and encryption used for a File System connector or the login details for Amazon S3.
- File System connector is built-in, cara_connector-fs.yml.
- Amazon S3 is also built-in, cara_connector-s3.yml
- Examples of these configuration files are included in the configuration manual.

```
1  #Default content store path
2  path: /Users/olo/Desktop/ES
3  #Whether to encode file content, if true, the keystore must be provided
4  encryptionEnabled: true
5  #Algorithm: AES/DES/DESede
6  encryptionAlhorithm: AES
7  #Mode: CTR/CBC/GCM
8  encryptionMode: CBC
9  #Padding: NO_PADDING, PKCS5_PADDING
10 encryptionPadding: PKCS5_PADDING
11 encryptionPassword: UXztG+qPZpsHW02NEE/HV2CxQkfRirH1sWC02c25XdSn2j1iH/RQ
```

```
1  # Default content store path
2  bucketName: cara-s3.cara.cloud
3  # AWS region name
4  regionName: eu-central-1
5  # Whether to encode file content, will utilize server-side S3 encryption
6  encryptionEnabled: false
```

Custom Actions - Overview

- Custom actions are a method of extending the functionality of CARA.
- Custom actions can:
 - Run a script (Groovy style Java)
 - Open reports in a dashboard
 - Open a dialog with a URL
 - Group menu buttons together
 - Provide a new document shortcut
- Custom actions can include variables, either entered manually by the user in a custom form or taken from the currently selected document.
- Custom actions are provided to users as toolbar buttons and menu bar actions.

The screenshot shows the 'Control Panel - Custom Actions' interface. On the left is a navigation sidebar with categories like Administration, Data, General, and Custom Actions. The main area displays a table of custom actions with the following data:

ID ↑	Display Name	Type
create_new_draft	Create New Draft Version	ExecuteScript
dashboard_button	Dashboard Button	OpenDashboard
EditInSharePoint	Edit in SharePoint	OpenDialogWithURL
external_website	Wiki Page	OpenDialogWithURL
import_excel	Import from Excel	ExecuteScript
my_new_dashboard	TMF Reports	OpenDashboard
new_reg_document	Create Regulatory Doc	NewItem
set_attributes	Set Document Attributes	ExecuteScript
update_object	Update Object	ExecuteScript

Custom Actions – General & Definition Tab

- Provide an **ID** and **Display Name**.
- Enter a user friendly **Label**.
- Select an **Icon**.
- Select a **Main Menu Location**: Tools, Settings or Help.
- On the **Definition** tab select the custom **Action Type**. Subsequent options are action type specific.

update_object - Custom Actions

General Definition Variables Restrictions Options

ID:	update_object
Display Name:*	Update Object Internal Name of the Custom Action
Label:*	Update Object Button and Menu Item Label
Icon:	ballot Button and Menu Item Icon
Icon Color:	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Default
Main Menu Location:	Tools
Status:	<input checked="" type="checkbox"/> Active

Custom Actions – New Item

- Provide a convenient shortcut for users who often create documents with a specific classification or from a particular template.
- Can also be used to limit the choices available to users, for example if a group of users are only allowed to create a specific document/template combination.
- Can be used to create new placeholders and eForms as well as traditional documents from templates.
- Initial property values can also be set.
- **Recommendation.** Ask users if there are specific documents they create frequently and add the custom action as a View action.

new_reg_document - Custom Actions

General Definition Variables Restrictions Options

Action Type:

Object Type:

Creation Method:

No Content
 From Template
 From eForm
 From File

Classification

Zone:

Section:

Template

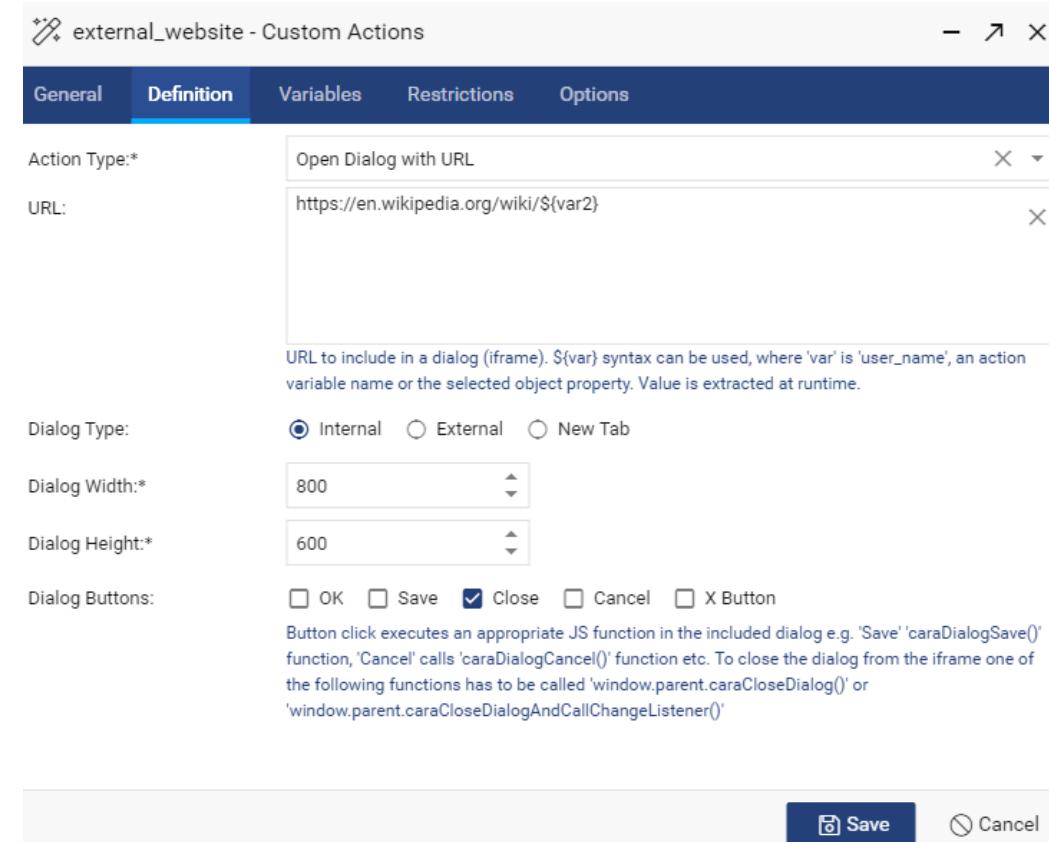
Template:

Object Attribute

	Value
<input type="button" value="Add"/>	<input type="button" value="Edit"/>

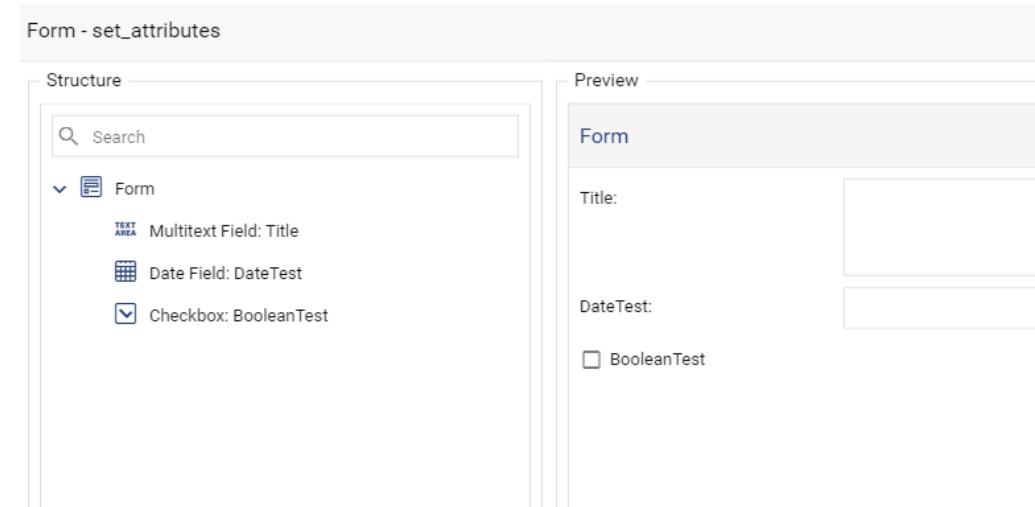
Custom Actions – Open Dialog with URL

- Similar to the details widget, but with more options and without the same screen space limits.
- Open a new dialog with a URL specified, either within the CARA GUI (internal) or as a new page (external).
- The URL can include variables such as object_name.
- Use \${variable_name} syntax.
- Define variables within the following tab (next slide).
- The dialog size, buttons and other options such as fullscreen or toolbar can be selected.



Custom Actions - Variables

- Variables can be defined, which can be passed to a script, dialog URL or dashboard.
- The variable can use an attribute of the currently selected document
- Variables can be placed on a property form for the user to manually enter before running the custom action.
- For dashboards, the variable has usually been defined within the report and does not need to be configured separately for the dashboard.



Edit "var2"

Name: [*]	var2
Display Name:	var2
Data Type: [*]	String
<input type="checkbox"/> Multi-Value	
Source Object Property to Copy as Default:	doc.zone

If the action will only be performed on one object, the value of the attribute will be copied as the default value of the variable.

Custom Actions – Setting Restrictions

- **User/Group Restrictions.** Custom actions can be restricted to only being run by specified groups of users, however remember the associated view will already be restricted by group.
- **Required Object Selection** is usually necessary, we need the user to select the (correct type of) document the action will be applied to .
- An **Audit Event** can be added upon execution.
- **Required Permission.** Users may be required to have a specified permission (on the selected object) to run the action.
- **Availability Conditions** based on CQL can be added.

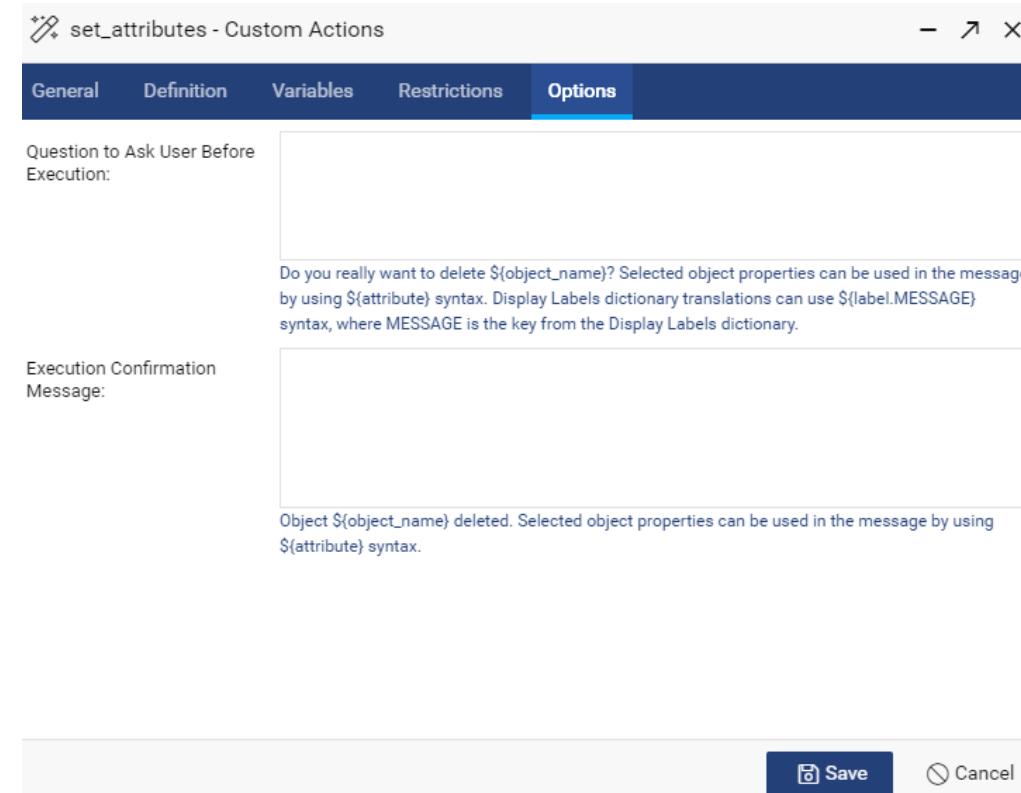
The screenshot shows a software interface for configuring a custom action named 'set_attributes'. The window title is 'set_attributes - Custom Actions'. The top navigation bar includes tabs for General, Definition, Variables, **Restrictions**, and Options. The 'Restrictions' tab is currently active. The configuration area contains several sections:

- User/Group Restrictions:** A dropdown menu with an edit icon.
- Required Object Selection:** Radio buttons for None (selected), Single Object, Two Objects, and Single or Multiple Objects. A note below says 'Select 'None' If No Object Selection Is Required.'
- Audit Event:** A dropdown menu.
- Object Type:** A dropdown menu.
- Required Permission:** A dropdown menu.
- Availability Condition:** A large text input field with an edit icon.

At the bottom right of the configuration area are 'Save' and 'Cancel' buttons.

Custom Action – Further Options

- **Question Before Execution.** Users can be asked a confirmation question before the action is executed.
- **Execution Confirmation.** A confirmation message can be displayed on completion.
- **Recommendation.** Both the question to ask before and the confirmation message can include variables, see screenshot example.



Reports and Dashboards

- Reports return detailed information about documents and other objects.
- Reports are based on a CQL query or script and can include variables as filters. Variables are placed on a form.
- Reports can also include full document management functions with a dedicated toolbar.
- A dashboard is a collection of reports. Each report becomes a tab within the dashboard.
- Dashboards become custom actions, which are added to views as actions (buttons on the toolbar).

The screenshot shows the cara software interface. At the top, there's a navigation bar with 'File', 'Edit', 'Tasks', 'Tools', 'Settings', and 'Help'. To the right are 'Control Panel', 'Analytics', 'Utilities', and a 'BP' dropdown. Below the navigation is a dark blue header bar with tabs: 'Studentx Dashboard' (selected), 'Authors Report', 'Status Report', and 'Author Report v56'. On the left is a sidebar with icons for users, documents, and other categories. The main area has a title 'Report Filters' and a search field 'Document Author: Barry Prince'. Below that is a 'Results' section with a table:

	Document Name ↑	Author	Created	Zone	Lifecycle n...	Lifecyc...
W	0802d updated from queue	Barry.Prince	2/25/22 3:22 PM	Regulatory	studentx_lifec...	Obsolete
W	Clinical Report TR		5/24/21 2:02 PM	Regulatory	studentx_lifec...	Draft
W	Clinical Report TR		5/28/21 4:06 PM	Regulatory	studentx_lifec...	Draft
W	Document 1307d		7/20/21 1:46 PM	Regulatory	studentx_lifec...	Draft

To the right of the results is a 'Preview' section with a toolbar and a small atomic model diagram. Below the preview is a detailed description of atomic orbitals:

In atomic theory and quantum mechanics, an atomic orbital is a mathematical function that describes the wave-like behavior of either one electron or a pair of electrons in an atom. This function can be used to calculate the probability of finding any electron of an atom in any specific region around the atom's nucleus. The term atomic orbital may also refer to the region of space where the electron is calculated to be present, as defined by the mathematical form of the orbital.

Each orbital in an atom is characterized by a unique set of values of the three quantum numbers n , l , and m , which respectively correspond to the electron's energy, angular momentum, and an angular momentum quantum number.

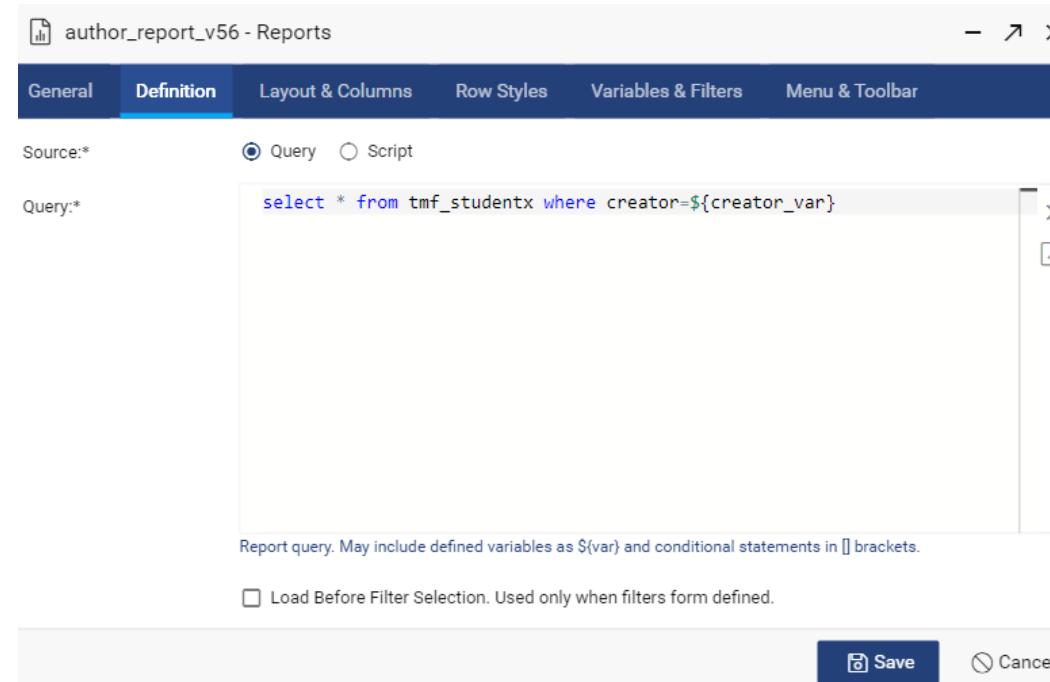
Reports – General Options

- Enter an **ID** and **Description**
- Select and Icon and icon colour
- **Content.** Select if the report will return **Objects** (including documents) or **Data**.
- For objects, select the object type. Not required for data reports.
- **Recommendation.** If in doubt, select objects. Document specific icons (such as the lock icons) will be displayed and document management toolbar options and buttons can be included.

The screenshot displays two windows of a reporting application. The top window is titled 'author_report_v56 - Reports' and has a 'General' tab selected. It contains fields for 'ID' (set to 'author_report_v56'), 'Header:' (set to 'Author Report v56'), 'Icon:' (set to 'file-chart-line'), 'Icon Color:' (set to 'Orange'), 'Contents:' (radio button selected for 'Objects'), and 'Object Type:' (set to 'TMF Studentx (tmf_studentx)'). Below these are search and filter fields. The bottom window is also titled 'author_report_v56 - Reports' and has a 'Menu & Toolbar' tab selected. It includes sections for 'Double-Click Action:', 'Toolbar Actions', and 'Context Menu Actions'. At the bottom of both windows are 'Save' and 'Cancel' buttons.

Reports - Definition

- Reports can be **CQL** (CARA Query Language) or **Script** based.
- **Variables** can be included, use \${variable_name} or @variable_name.
- **Load Before Selection** means that users will see results as soon as the report has been opened, they do not have to first make a selection and then click run.



Reports - Columns

- Add the attributes which will be displayed as **Columns** in the report results.
- The same options as when configuring the view grid.
- For each column a user friendly label can be added, these can be selected from the `_display_labels` dictionary.
- Choose a default column to **Sort By**.
- Select pagination options.
- Optionally enable the preview panel

The screenshot shows the cara software interface. At the top, there's a navigation bar with 'File', 'Edit', 'Tasks', 'Tools', 'Settings', 'Help', and a user icon labeled 'BP'. Below the navigation bar, there's a breadcrumb trail: 'Studentx Dashboard > Authors Report > Author Report v56'. On the left, there's a sidebar with icons for 'Report Filters', 'Status Report', and 'Author Report v56'. The main area has a 'Report Filters' section where 'Document Author' is set to 'Barry Prince'. Below it is a 'Results' section with a table. The table has columns: Document Name (sorted by ascending), Author, Created, Zone, Lifecycle n..., Lifecyc..., and Obsolete. There are three rows of data:

- Row 1: Document Name is '0802d updated from queue', Author is 'Barry Prince', Created is '2/25/22 3:22 PM', Zone is 'Regulatory', Lifecycle n... is 'studentx_lifec...', Lifecyc... is 'Obsolete'.
- Row 2: Document Name is 'Clinical Report TR', Author is 'Barry Prince', Created is '5/24/21 2:02 PM', Zone is 'Regulatory', Lifecycle n... is 'studentx_lifec...', Lifecyc... is 'Draft'.
- Row 3: Document Name is 'Clinical Report TR', Author is 'Barry Prince', Created is '5/28/21 4:06 PM', Zone is 'Regulatory', Lifecycle n... is 'studentx_lifec...', Lifecyc... is 'Draft'.

Below the table is a 'Preview' section showing a diagram of an atom with a nucleus, protons, neutrons, and electrons, along with some explanatory text about atomic orbitals.

The screenshot shows the 'author_report_v56 - Reports' configuration panel. The tab 'Layout & Columns' is selected. At the top, there are buttons for 'General', 'Definition', 'Layout & Columns' (selected), 'Row Styles', 'Variables & Filters', and 'Menu & Toolbar'. Below that, there's a section 'Display Results As:' with radio buttons for 'Grid' (selected) and 'Tree Grid'. A checkbox 'Enable Preview Panel' is checked. The main area is a table with columns: Attribute, Label, Alignment, Width, Visible?, Sortable?, Cell Styles, and Cell Actions. There are three rows of data:

Attribute	Label	Alignment	Width	Visible?	Sortable?	Cell Styles	Cell Actions
Name (object_name)	Name	Left	100	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Creator (creator)	Creator	Left	100	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Created (created)	Created	Left	100	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

At the bottom of the table are buttons for '+ Add', '+ Add multiple', 'Edit', and 'Remove'. Below the table are sections for 'Sort By:', 'Enable Paging', and 'Page Size'. At the very bottom right are 'Save' and 'Cancel' buttons.

Reports - Row Styles

- Row Styles - select a style based on a CQL condition.
- Row Icons - select icons based on a CQL condition. Each icon also has a colour selected.
- Bullets can also be selected.

The screenshot shows a software interface for managing report styles. At the top, there's a title bar with the file name "author_report_v56 - Reports". Below the title bar is a navigation menu with tabs: General, Definition, Layout & Columns, Row Styles (which is currently selected), Variables & Filters, and Menu & Toolbar. The main area is divided into two sections: "Row Styles" and "Row Icons".

Row Styles: This section contains a table with columns for "Condition", "Color", "Italic", and "Bold". There are three empty rows in the table. Below the table are three buttons: "+ Add" (blue), "Edit" (orange), and "Remove" (red).

Condition	Color	Italic	Bold

Row Icons: This section contains a table with columns for "Condition", "Icon", and "Bullet". There are three empty rows in the table. Below the table are three buttons: "+ Add" (blue), "Edit" (orange), and "Remove" (red).

Condition	Icon	Bullet

At the bottom right of the interface, there are "Save" and "Cancel" buttons.

Report Variables and Filters

- Variables can be used as report filters.
- Place filters on a form, the form appears at the top of the dashboard window. Recommend reducing the default form window size as otherwise there will be little room for the report results.
- The Apply/Run button can be customised.

Form - author_report_v56

Structure

- Search
- Form
 - Combo Box: Creator

Preview

Filters

Creator:

author_report_v56 - Reports

General Definition Layout & Columns Row Styles Variables & Filters Menu & Toolbar

ID ↑	Display Name	Type	Multi-V...
creator_var	Creator		

+ Add + Add Sub-Attribute Edit Delete Edit Variables Form

Custom Apply Filters Button Label:
Custom Apply Filters Button Label if Different than "Apply Filters"

Variables Initialization Script:
1

Save Cancel

Dashboards

- Dashboards group reports together.
- Enter an **ID** and **Description**.
- Select an **Icon** and colour.
- Choose which **Reports** will be included, each report will become a tab
- Optionally restrict to specified groups of users. Recall that the view will be restricted by group anyway.
- Add the dashboard to a custom action and add the custom action to a view.
- Each report can be used in multiple dashboards.

studentx_dashboard - Dashboards

ID:	studentx_dashboard
Display Name:*	Studentx Dashboard
Icon:	
Icon Color:	Green
Dialog Size:	Width: 800 Height: 600
Options:	<input checked="" type="checkbox"/> Displayed under the Dashboards Node
Reports:*	<input type="checkbox"/> Authors Report (author_report1) <input type="checkbox"/> Status Report (status_report1) <input type="checkbox"/> Author Report v56 (author_report_v56)
Restricted to the Following Groups:	<input type="checkbox"/>

Save **Cancel**

Multi-Tenancy & Spaces Management

- Multi-tenancy enables the creation of multiple tenants, called spaces. Every space within a multi-tenancy environment has its own domain and visibility only of its own data. Spaces within a multi-tenancy environment share the underlying Elasticsearch platform.
- Multi-tenant environments must be enabled at installation time. A root space is used to manage other tenants/spaces and is not used to store data.
- Only the root space has the Spaces management option within the control panel. Must be a SuperAdmin to manage.

The screenshot displays two windows from the Control Panel - Spaces.

The top window is titled "Control Panel - Spaces" and shows a list of spaces. The "Spaces" item in the sidebar is highlighted. The table lists the following data:

Space Name ↑	Display Label	Host Name	Users	Last Login
mt1	Tenant 1	develop2-mt-1.generis.cloud	96	2/11/22 2:06 PM
mt2	Tenant 2	develop2-mt-2.generis.cloud	87	2/11/22 1:55 PM
mt3	Tenant 3	develop2-mt-3.generis.cloud	2	2/11/22 11:33 AM
new	new	new	1	
qa	QA	qa	1	
tasteTenant	atest	naasd	1	2/11/22 10:15 AM
test	testaa	test	1	2/4/22 10:31 AM

The bottom window is titled "mt2 - Spaces" and shows the configuration for the Tenant 2 space. It includes fields for Name, Display Label, Host Name, Status (Active), and Space Logo (Light Mode and Dark Mode).

Buttons at the bottom of the "mt2 - Spaces" window include "Save" and "Cancel".

Configuration Export & Import

- Configuration Tags
- Configuration Export
- Type Definition Export
- Configuration Import

Configuration Tags

- Tags are descriptive labels applied to sets of configuration. They are used when exporting and importing configuration.
- When exporting configuration, the choice is provided to export the configuration as it currently is (Latest), or as it was when a specified tag was applied.
- Tags are displayed in many of the configuration windows within the CARA Control Panel. Hover over the icon to see the tags applied.
- When a tag is created it is applied only to the then current version configuration elements.
- There is no GUI option to remove tags.

The screenshot shows the CARA Control Panel - Dictionaries window. The left sidebar lists categories: Administration, Data (with Dictionaries selected), General, and others. The main pane displays a table of dictionaries with columns: ID ↑, Display Name, Version, Tags, and Updated. A modal window titled "Tag Current Configuration" is open at the bottom, asking for a "Tag Name:" and providing "Tag" and "Cancel" buttons.

ID ↑	Display Name	Version	Tags	Updated
_audit_events	Audit Events	3		1/10/22 2:06 PM
_countries	Countries by code	1	UAT_Complete	3/19/21 1:09 PM
_display_labels	Display Labels	1	UAT_Complete	3/19/21 1:09 PM
_notification_events	Notification Events	2		1/10/22 2:06 PM
country	Country	8		3/30/22 2:14 PM
region	Region	7		1/19/22 12:05 PM
studentx_section	Studentx Section	2	UAT_Complete	3/19/21 1:42 PM
studentx_zone	Studentx Zone	4		1/24/22 1:55 PM

Configuration Export

- Export of CARA configuration in .yml format. The latest version of the configuration or specific tagged versions can be exported.
- Can be full or partial configuration export, for example could just export dictionaries.
- The exported zip file contains folders for each configuration type, with individual .yml files for each configuration element within.
- **Does not include type definition** (including attributes) but does include type configuration such as views. Type definition should be exported separately from the Type Definition window as individual .yml files.
- Does not include documents.
- Does not include users or groups.

The screenshot shows the 'Control Panel - Configuration Export' window. On the left is a sidebar with a tree view of configuration categories: Taxonomies, General (ACL Templates, Capabilities, Collaboration Services, Connectors, Custom Actions, Dashboards, eForms, Lifecycles, Notification Channels, Notification Templates, Queues Consumers, Relation Types, Reports, Script Libraries, Sequences, Signing Services, Workflow Templates, Workspaces), Maintenance (Configuration Export, Configuration Import, Configuration Tags), and Type Configuration (Data Type1 (data_type1), TMF Studentx (tmf_studentx), Type V56 Simple Versioning (...), V56 Manual Folders (v56_ma...)). The 'Configuration Export' item under Maintenance is selected. To the right is a table titled 'Select Configuration to Export' with a 'Latest' filter applied. The table has columns: Configuration, ID, Version, Updated, and Update. A checkbox next to 'Administration' is checked. Under 'Methods', several checkboxes are checked, including 'Change Object Owner', 'Deactivate Provisioned...', 'Dictionary Update Rei...', 'Document Purge Met...', 'Empty Folders Cleanu...', 'File Content Store Inte...', 'LDAP Synchronization...', 'Logs Cleanup Method', 'Recalculate Security ...', 'Remove Orphaned Fil...', 'Send Date Based Notifi...', 'SharePoint Cleanup M...', 'Sync Signing Requests', 'System Statistics Met...', 'Trash Cleanup Method', and 'Users and Groups Me...'. The 'Deactivate Provisioned...' row is highlighted with a blue background. At the bottom are buttons for 'Uncheck All', 'Export to ZIP', 'Export to PDF', and 'Export to AsciiDoc', and a 'Close' button.

Select Configuration to Export:				
Latest				
Configuration	ID	Version	Updated	Update
<input checked="" type="checkbox"/> Administration	0	0	2/17/22 3:03 PM	_initial:
<input checked="" type="checkbox"/> Methods				
<input checked="" type="checkbox"/> Change Object Owner cara_object_owner_change	14	2/17/22 3:03 PM	cara_deactivate_provisioned_u...	_initial:
<input checked="" type="checkbox"/> Deactivate Provisioned... cara_deactivate_provisioned_u...	17	2/17/22 3:03 PM	cara_deactivate_provisioned_u...	_initial:
<input checked="" type="checkbox"/> Dictionary Update Rei... cara_reindex_objects_on_dict_u...	17	2/17/22 3:03 PM	cara_reindex_objects_on_dict_u...	_initial:
<input checked="" type="checkbox"/> Document Purge Met... cara_purge	17	2/17/22 3:03 PM	cara_purge	_initial:
<input checked="" type="checkbox"/> Empty Folders Cleanu... cara_folders_cleanup	17	2/17/22 3:03 PM	cara_folders_cleanup	_initial:
<input checked="" type="checkbox"/> File Content Store Inte... cara_file_content_store_integrity	17	2/17/22 3:03 PM	cara_file_content_store_integrity	_initial:
<input checked="" type="checkbox"/> LDAP Synchronization... cara_ldap_sync	17	2/17/22 3:03 PM	cara_ldap_sync	_initial:
<input checked="" type="checkbox"/> Logs Cleanup Method cara_logs_cleanup	17	2/17/22 3:03 PM	cara_logs_cleanup	_initial:
<input checked="" type="checkbox"/> Recalculate Security ... cara_security_and_linking_upd...	14	2/17/22 3:03 PM	cara_security_and_linking_upd...	_initial:
<input checked="" type="checkbox"/> Remove Orphaned Fil... cara_remove_orphaned_files	17	2/17/22 3:03 PM	cara_remove_orphaned_files	_initial:
<input checked="" type="checkbox"/> Send Date Based Notifi... cara_send_date_based_notifica...	17	2/17/22 3:03 PM	cara_send_date_based_notifica...	_initial:
<input checked="" type="checkbox"/> SharePoint Cleanup M... cara_sharepoint_cleanup	17	2/17/22 3:03 PM	cara_sharepoint_cleanup	_initial:
<input checked="" type="checkbox"/> Sync Signing Requests cara_signing_request_sync	11	2/17/22 3:03 PM	cara_signing_request_sync	_initial:
<input checked="" type="checkbox"/> System Statistics Met... cara_system_statistics	17	2/17/22 3:03 PM	cara_system_statistics	_initial:
<input checked="" type="checkbox"/> Trash Cleanup Method cara_trash_cleanup	17	2/17/22 3:03 PM	cara_trash_cleanup	_initial:
<input checked="" type="checkbox"/> Users and Groups Me... cara_user_membership_sync	17	2/17/22 3:03 PM	cara_user_membership_sync	_initial:

Type Definition Export

- Separate from the main configuration export.
- Includes the type definition with attributes.
- Export each type individually.
- From the Type Definition window select either Export to File or Export to Editor.
- When importing config, import the type definition beforehand.

Control Panel - Type Definition

The screenshot shows the 'Control Panel - Type Definition' window. On the left is a navigation sidebar with links like Administration, Auth Tokens, Groups, Jobs, Methods, Queues, Sessions, Type Definition (which is selected and highlighted in grey), and Users. Below that is a 'Data' section with Dictionary and Taxonomies. The main area has a search bar and a table with columns: Name, Object Count, and a status icon. The table contains four rows:

- data_type1 (v1)
- tmf_studentx (v1) - highlighted with a red border
- type_v56 (v1)
- v56_manual_folders (v1)

A horizontal toolbar above the table includes Add, Edit, Import, Export (with a dropdown arrow), and Delete. The 'Export' dropdown is open, showing two options: 'Export to File' and 'Export to Editor'. The 'Export to Editor' option is highlighted with a blue background.

Name	Object Count
data_type1 (v1)	16
tmf_studentx (v1)	156
type_v56 (v1)	5
v56_manual_folders (v1)	4

```
tmf_studentx
advanced_versioning_enabled: true
attributes:
- data_type: "String"
  description: "Article URL"
  multi_value: false
  name: "article_url"
- data_type: "ID"
  description: "Attachment"
  multi_value: true
  name: "attachment"
  type_binding: "RootId"
  type_name: "tmf_studentx"
- data_type: "Boolean"
  description: "Core Document"
  multi_value: false
  name: "core_document"
- data_type: "String"
  description: "Section"
  multi_value: false
```

Configuration Import

- Import of a previously exported CARA configuration.
- Configuration import can be partial or complete.
- When importing, each configuration element from the archive zip file can be ignored, imported and updated or deleted.
- The configuration log details changes.

By default:

- Configuration elements present in the zip archive but not present in the destination will be marked to be **Imported**. They are listed in blue.
- Configuration elements in the zip archive and already in the destination will be **updated**. They are listed in green
- Configuration elements not present in the zip archive but present in the destination configuration are displayed in red but not selected, no action will be performed on these elements. If selected, they will be **deleted**.

The screenshot shows the 'Control Panel - Configuration Import' dialog box. On the left, there is a sidebar with a tree view of configuration categories: Taxonomies, General (ACL Templates, Capabilities, Collaboration Services, Connectors, Custom Actions, Dashboards, eForms, Lifecycles, Notification Channels, Notification Templates, Queues Consumers, Relation Types, Reports, Script Libraries, Sequences, Signing Services, Workflow Templates, Workspaces), Maintenance (Configuration Export, Configuration Import, Configuration Tags), and Type Configuration (Data Type1 (data_type1), TMF Studentx (tmf_studentx), Type V56 Simple Versioning (...), V56 Manual Folders (v56_ma...)). The 'Configuration Import' item under Maintenance is highlighted with a gray background. The main area is titled 'Import' and contains a table of configuration items. The table has columns: Configuration, ID, Version, Updated, and Update. Most items have a green checkmark in the 'Update' column, indicating they are updated. A few items have a red minus sign, indicating they are deleted. The table includes rows for various methods like 'Change Object Owner', 'Deactivate Provision...', 'Dictionary Update Rel...', 'Document Purge Met...', etc., all with green checkmarks.

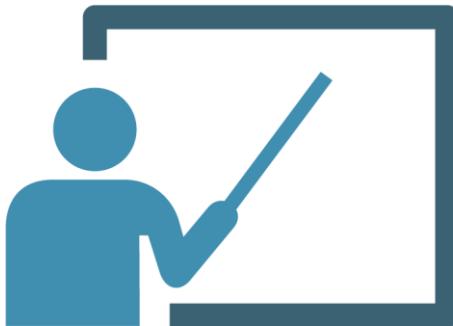
Configuration	ID	Version	Updated	Update
Administration	0			
Methods	0			
Change Object Owner	cara_object_owner_change	14	2/17/22 3:03 PM	_initial:
Deactivate Provision...	cara_deactivate_provisioned_u...	14	2/17/22 3:03 PM	_initial:
Dictionary Update Rel...	cara_reindex_objects_on_dict_u...	17	2/17/22 3:03 PM	_initial:
Document Purge Met...	cara_purge	17	2/17/22 3:03 PM	_initial:
Empty Folders Cleanu...	cara_folders_cleanup	17	2/17/22 3:03 PM	_initial:
File Content Store Inte...	cara_file_content_store_integrity	17	2/17/22 3:03 PM	_initial:
LDAP Synchronization...	cara_ldap_sync	17	2/17/22 3:03 PM	_initial:
Logs Cleanup Method	cara_logs_cleanup	17	2/17/22 3:03 PM	_initial:
Recalculate Security ...	cara_security_and_linking_upda...	14	2/17/22 3:03 PM	_initial:
Remove Orphaned Fil...	cara_remove_orphaned_files	17	2/17/22 3:03 PM	_initial:
Send Date Based Noti...	cara_send_date_based_notifica...	17	2/17/22 3:03 PM	_initial:
SharePoint Cleanup M...	cara_sharepoint_cleanup	17	2/17/22 3:03 PM	_initial:
Sync Signing Requests	cara_signing_request_sync	11	2/17/22 3:03 PM	_initial:
System Statistics Met...	cara_system_statistics	17	2/17/22 3:03 PM	_initial:
Trash Cleanup Method	cara_trash_cleanup	17	2/17/22 3:03 PM	_initial:

Lab Time

- Lab time. Please continue from where you finished yesterday.
- The lab includes testing the configuration you've created.
- Let me know if you have any issues.
- Remember to substitute “studentx” with your student number.

Further Information & Support

- <http://my.generiscorp.com> is the CARA knowledgebase and where support tickets can be logged. Access to the FTP site is also available there. You need to register for an account using your corporate email address.
- Standard CARA Configuration and End User manuals accompany each major release
- Online CARA training videos are available at <http://generis.talentlms.com>
- The main webpage <http://generiscorp.com> includes a resources section



The screenshot shows a web browser window with the URL support.generiscorp.com/a/solutions. The page title is "Knowledge base (Generis Support Portal)". On the left, there is a sidebar with icons for Home, Support, Knowledge Base, and Profile. The main content area has a search bar labeled "Search articles". Below it, there are three categories: "Categories (8)".

- CARA Docs**
 - Product Support Dates (08)
 - Release Notes (123)
 - Project Plans (14)
- Generis Cloud Downtimes and O...**
 - Upcoming releases and planned outages (03)
 - Generis Cloud Downtimes and Outages (04)
- Public Space**
 - CARA v3 - Guides (142)
 - CARA v5 - Guides (21)
 - CARA v5 - Script Samples (41)

At the bottom right, there is a link "View all 04 folders".