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Reflect With Insight for RAMS

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Bentley®
Sustaining Infrastructure

Version Control

Date	Version	Changed by	Notes
September, 2014	1.0	JMM	Initial Revision
September, 2014	1.1	JMM	Clarification of various sections
September, 2014	1.2	JMM	Clarification and Removal of various Sections
October, 2014	1.3	JMM	Clarification of section 4.1
October, 2014	1.4	JMM	Clarification of section 3

Reference Documents

Document	Source
UC0001 Use CaseDatamodel.doc	RMS
UC0002_Use DataUpload.doc	RMS
UC0003_DataUpdate.doc	RMS
UC0004_Reporting Requirements on the uploaded Data.doc	RMS
UC0005_AssetInstalled.doc	RMS
UC0005a_CreateNewAsset.doc	RMS
UC0005b_ModifyExistingAsset.doc	RMS
UC0007_DocumentsAttachedtoInspection.doc	RMS
Accomplishment.xls	RMS
Activity.xls	RMS
Defects.xls	RMS
Incident.xls	RMS
Inspection.xls	RMS

LandingAreaFieldtypes_completeList.xls	RMS
Requests.xls	RMS
FD0005_Main Create New Assets.pdf	RMS
FD0005a Create New Assets.pdf	RMS
FD0005b Update_modify asset_v2.pdf	RMS
FD0007 Attaching Documents with Inspection.pdf	RMS
RAMS Reflect with Insight16052014104251.pdf	Bentley
viewDocumentM3Specs.pdf	RMS
ERD_Rwl_RAMS_Int_5.pdf	RMS

1.0 Introduction

In September of 2014 Joseph Mendoza of Bentley Systems was given a set of documents that originated from RMS. These documents showed use cases, flow diagrams and Asset attributes that would be needed by RMS to support loading data from an outside source, in this case, Reflect With Insight (RWI). This should improve the quality of corridor information held by RMS and reduce the cost of duplicating data entry.

RMS and Bentley Systems have established a project to undertake the scope and requirements analysis for this project and then implement the requirements. This report is the result of that analysis and it will be used to ensure everyone has a common understanding of the scope and requirements of this project. This report will then be used as the basis of a software design and of an acceptance test plan to ensure all requirements are met by the software that is produced.

2.0 High Level Requirements

During initial review of the provided documents and discussions from the requirements workshop it was determined that the main objectives of this project are:

- To add asset types or asset attributes as needed to accommodate the Routine Services Data being pushed into the RAMS system.

- To implement a CSV loader that will allow creation and updates of the Routine Services Data Assets

- To create several reporting objects on the data that has been imported or updated.

3.0 Project Scope

RMS have determined that the following items are in scope for this project.

- Bentley should create any necessary assets to store the Routine Services data.

- Bentley will provide a CSV file format to RMS so that test data can be created for the Routine Services loader.

- Bentley will create the GIS themes for the Routine Services Data. Attributes and filters will be determined in the function specification document.

- Bentley will create the necessary queries to report on the Routine Services Data.

4.0 Functional Requirements

The function requirements can be broken down into three categories: Asset Meta-model create/update, CSV file loader and report creation.

4.1 Asset Meta-model create/update

The Exor System (RAMS) must be able to accommodate the data being provided from the third party service providers.

Bentley will create a set of new hierarchical assets to accommodate the Routine Services Data. This data includes information sections for: Accomplishments, defects, Incidents, Inspections and Requests. The data for these sections will be contained under a top level attribute containing the Reference ID, the initial date of creation and location if known.

It is assumed that the combination of Reference ID and one of any of the other IDs (Request ID, Accomplishment ID, Inspect ID, Incident ID or Defect ID) will make a unique listing for that category. It is also assumed that a Unique Reference ID will tie together several categories. For example Reference ID could tie together: a Request, an Incident, and several Accomplishments if needed to complete the item.

The newly created assets would resemble

Parent Asset	Child Asset	Function
RSID		Routine Services Data Reference ID – Holds the Reference ID and the creation date and location.
	RSAM	Accomplishments
	RSDE	Defects
	RSIC	Incidents
	RSIS	Inspections
	RSRE	Requests

This would allow the system to have more than one accomplishment or incident (any child asset in practice) linked to the same reference ID if needed. It also allows for fields to be mandatory for just one child asset and allows the user (via CSV) to not have to fill out other asset items since they may not have occurred yet.

4.2 CSV File Uploader (Routine Services Data)

The RAMS system needs to be able to accommodate the processing of a CSV file to create or update Routine Services Data assets and their locations.

4.2.1   Data Upload/Update from the service providers

*** From UC0002, UC0003

The RAMS system should take a CSV file of a particular format defined by Bentley and supplied to RMS by a service provider. Based on the Reference ID decide if a new Routine Services record needs to be created or to update an existing one.

If a new record is created if possible the asset type code and Key Id are used to reference it to an existing asset.

4.2.1.1 General Work Flow for Routine Services Data Loader

A User imports a Routine Services Data loader file into RAMS. First the loader confirms that a Reference ID is present in the file. If it is and it does not exists in the RAMS asset for that data, then that item is created, otherwise the load continues on. Once the Reference ID is verified the loader then goes through the IDs of the information sections (section IDs): Accomplishments, Defects, Incidents, Inspections and Requests. If a section ID is found, it then checks to see if a new record is needed, otherwise the history of the existing record is maintained, the record is end dated and a new recorded is created with the Information provided in the current file. If a section ID is not found and a record for the reference ID already exists then let the user know that the record already exists.

For example, if a provider has a set of records for a reference ID: ABC123 and the first month they send an Accomplishment with ID: 1, the system makes a record for Accomplishment with Reference ID ABC123, Accomplishment ID 1. The second month they send for reference ID: ABC123: Accomplishment ID 1 (to update the Time Work Field for example) and accomplishment ID 2. The system would see that ABC123 Accomplishment 1 Already exists, end date that record and remake it. Then it would see that ABC123 Accomplishment 2 does not exist and create a new record. As a result, after the two months of data was processed, Routine Services Reference ID ABC123 would have two accomplishments listed: 1 and 2.

If any other error occurs the load should report that error to the user.

4.3   GIS Theme Requirements

The RAMS systems needs to have GIS themes added to accommodate the Routine Services Data Asset structure. Basic Asset themes will be added from the RAMS application when the asset is created.   Any additional GIS themes, including their attributes and filters, will be determined in the functional specification document.

4.4   Reporting Requirements

*** From UC0004

Please choose an option:

The RAMS system needs to have the data in place to be able to produce the following reporting objects. The reporting tool needs to be able to export the results. This export can be in the form of an excel file. Oracle Discoverer can be used as the reporting medium.

The reports can be separated into two categories:

- Management Reports

  - Outstanding defects

    - This report uses data from the Routine Services Data defects section to determine which defects have not been resolved.

  - Outstanding Requests

    - This report uses data from the Routine Services Data Requests section to determine which Requests have not been resolved.

  - Accomplishments during a period

    - This report uses data from the Routine Services Data Accomplishment section to determine which Accomplishments have been completed during a period.

- 3rd party service provider reports

  - Performance during a selected period.

    - The metrics for this report shall be determined and listed in detail in the Functional Specification documentation. However, it should use the requests section and compare the received date to the completion date.

The columns and data displayed in the reports will be detailed in the Functional Specification Document.

5.0 Responsibilities

In order to successfully implement the changes needed to RAMS Bentley Systems and RMS will need to cooperate. The following table lists the responsibilities for various aspects of this project. This list is not exhaustive and other tasks may be required to reach a successful conclusion

Task	Responsibility
Development and of scope and requirements	Bentley Systems, RMS
Documentation of scope and requirements	Bentley Systems
Sign off of scope and requirements	Bentley Systems, RMS
Development of Functional Specification	Bentley Systems, RMS
Test Data	RMS
Sign off project	RMS

6.0 Conclusion

This document is the result of a series of conversations between Bentley Systems and RMS with the objective of creating means to import data, update data and report on data in the RAMS system.

During these discussions Bentley Systems and RMS has established the scope of this project and the requirements that will need to be met in order for the project to be successful.

Using the requirements recorded above Bentley Systems will create a Functional Specification document that details how the interface software will meet the requirements. To do this Bentley Systems will need to work with RMS to design the Exor components of the solution. RMS will then be given the opportunity to confirm this design before the software is built, tested and delivered.