# MISA MRM Demo Script Outline

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## Introduction

A significant amount of information useful to municipal stakeholders exists in the form of printed documents, spreadsheets, diagrams, etc. This information is very valuable, but leveraging this value is challenged by having the content in a form that is difficult to access, manage, extend and integrate, as well as developed using different vocabularies. The MRM provides a common vocabulary and comprehensive municipal model content that evolved out of harvesting these diverse documents into a common, proven framework.

The *Service Design Workbench* (SDW) described in this demo script provides an implementation of the MRM to enable an effective means of defining, extending, integrating and sharing the municipal reference models, and instantiations of those models for specific municipalities. SDW provides a collaborative environment in which municipal models can be created, validated, communicated across a wide range of stakeholders, reasoned about and acted upon to deliver value to the community. It produces reports and work products that support different stakeholder viewpoints in order to address different concerns.

The demo steps below are intended to summarize SDW capabilities that support the MRM method as described in its business use cases, tasks, activities and functions. The demo does not describe the particular sequences of activities that would comprise municipal modeling projects or engagements. Rather it describes general capabilities that would be applicable to these activities.

## Creating a municipal model from the MRM

The MRM is a reference model that represents a reusable asset capturing a best practices municipal governance business architecture. Each municipality that uses these MRM will create an instance municipal model from the MRM, and will customize that instance for their particular needs: both to establish a baseline municipal architecture, and as guidelines for evolving that municipal architecture to address business influencers, constituent needs, and performance gaps.

* 1. Access an backup of the MRM database from MISA
* The MRM database backup could be accessed by a RAM server over the Web
* The MRM asset could be stored in a version management system in order to support lifecycle management and governance
  1. Open the SAEM and connect to the municipal System Architect database server
  2. Show how to restore a new encyclopedia database from a file, navigating to the MRM backup file obtained from MISA

## How municipalities access their municipal models

The municipal model is a shared resource among the business users and analysts who will be developing, communicating, validating, reasoning about and acting upon information captured in the model. These users must have controlled access to the shared resources in a manner that provides proper authentication and access control, role-specific viewpoints, efficient access, versioning and support for parallel development.

Rational System Architect provides a number of facilities that support these requirements including:

* A distributed, multi-user database server with full authentication and access control
* The ability for multiple System Architect rich client applications to attach to a shared database in the same LAN (not WAN).
* The ability to access different System Architect clients that share a database server in the same LAN, possibly in a Cloud, through virtual desktops or Windows Remote Desktop Connection
* The ability to access a shared enterprise encyclopedia database from a Web browser in a WAN using SA/XT
* The ability to have local installations of System Architect with their own local encyclopedias with more controlled municipal models.
* The ability to detach a database from a remote server and attach it to a local server for more focused and localized collaboration
* The ability to checkout portions of a shared model into a local encyclopedia to do independent, possibly disconnected work and check the results at some later time, while avoiding the possibility of update collisions
* The ability to work in different workspaces on the same shared municipal models and to compare and merge the contents of different workspaces for exploring different opportunities and solutions and lifecycle management

## Providing End-User Guidance

There are many stakeholders that participate in the development of a municipal model, and use of that model in strategic planning, project management, solution delivery and municipal governance. Many of these users will have only occasional use of the MRM and its supporting tools, and will need guidance for how to perform activities that address their needs and concerns.

Rational System Architect supports frameworks to help users navigate specific methods. The Framework Browser enables you to view and access the models and artifacts you have developed in a System Architect encyclopedia through a framework interface. Each cell of the framework can be opened, to view a filtered browser list of all diagrams and definitions in the encyclopedia that pertain to that cell of the framework.

System Architect also provides Guide Books that help users perform specific tasks within a framework. A guide book is a set of HTML pages integrated within System Architect that describe the best practices and steps required to perform tasks that may be specific to the chosen framework, or general purpose. Links in the guide book pages can perform System Architect menu commends, opening browsers, matrices, running reports, opening diagrams, creating new model elements, etc. These guidebooks help inexperienced or infrequent users make the best use of the MRM.

Users may also wish to configure strategic planning and development methodologies using Rational Method Composer (RMC). RMC not only supports capturing the development process, but also the team roles, work product templates and descriptions, technique papers and tool mentors to explain how to do specific method activities.

System Architect also has a help system that can be extended with method and metamodel specific information.

1. Start System Architect and open the Gotham City encyclopedia

* Show how users can select different encyclopedias for different projects

1. Show TOGAF as an example framework and the framework steps.

* Click on a step in the framework and show how it opens the explorer and/or matrix browsers that support that step

1. Show the System Architect Welcome Guide as an example guidebook and navigate through some pages

* Click on the “Architect Your Business” step, then “Build an Enterprise Architecture”
* Show how links in the guidebook can invoke System Architect functionality

1. Show the on-line help and indicate that it can be customized for specific methods

## Viewing and editing the municipal model with role-specific viewpoints

The many stakeholders involved in municipal business architectures and strategic planning may play different roles and have different concerns. Each of these roles may have a preferred viewpoint through which they access and manipulate the municipal models in order to address their concerns.

System Architect supports these viewpoints through:

* Role-specific activities in a framework
* Specific sections in guide books that support the activities of a given role
* Specific static or dynamic Explorer browsers that contain the diagrams and definitions that are of interest to the stakeholder playing a specific role
* Specific Matrix browsers that organize matrices for editing relationships between model elements by role
* Explorer Object and Explorer Relationship reports can be used to create role-specific diagrams for exploring model elements, navigating related elements and performing impact analysis
* Specific analytics available from the Heat Map Manager
* Report files that organize reports by role
* Different work products and generated documents

1. Recall that frameworks provide views for specific activities
2. Recall that guidebooks provide guidance and active links in support of specific activities page
3. Show the MRM Explorer Browser

* Show that the MRM Explorer Browser contains diagrams and definitions for MRM-specific model elements
* Indicate that different Explorer Browsers can be created for different MRM roles that only show the model elements and diagrams that are applicable to that role.
* Each user can have their own set of Explorer Browsers
* Users can create explorer browsers on the fly to support specific needs at some point in time

1. Show the MRM Matrix Browser

* Show that the Matrix Browser contains matrices for MRM-specific relationships
* Indicate that different MRM Matrix Browsers can be created for different MRM roles, showing only the relationships that are applicable to that role
* Users can create their own user-defined matrices

1. Show an explorer diagram and how it can be used to navigate relationships and do impact analysis
2. Show the reports in the MRM report file

* Indicate that reports can be organized in different report files to support different roles
* Users can add their own reports organized into report files as they wish

## Searching for model elements

Users can search for model elements, diagrams, symbols or definitions, whose properties match the specified criteria. The result of the search is displayed in a view where the user can double-click on any matching element to open and view or edit that element.

1. Show an example of a search for all MRM Services whose name starts with “Fire”
2. Open one of the found services to see its definition
3. Explain that Advanced search provides an ad-hoc query mechanism of any elements in the encyclopedia

* The Advanced search is similar to reports, but has a fixed output format

## Editing model elements

Definitions are model elements in System Architect that represent instances of the MRM metamodel that defines the encyclopedia. All definitions are created, edited, searched, navigated, reported on, etc. the same way.

Definitions are edited by double clicking on the name of the definition in many of the places it appears in System Architect views and diagrams. The properties of the definition are displayed in a dialog organized by tabs, pages, and rows and columns within a page. Tabs organize related properties. Pages are used within a tab if there are more properties than can be displayed in one page. Properties can then be organized in row/column grids with grouping, labels and input fields.

1. Open the Fire Rescue service.

* Show how typing in the Explorer view scrolls to the definition or diagram with the matching name

1. Show the properties on the introduction page, and on the MRM tab
2. Edit the Fire Rescue service description
3. Set the Service Type to Public
4. Set the service to a new output: “Rescued person or property”
5. Click the Define button to navigate to the “Rescued person or property” output
6. Edit the output description
7. Set the output type to Service
8. Set the Service Output Type to Interventions
9. Set the output’s service value to SV01
10. Set the service value SV01 outcome to the existing “Reduced loss of property from fire”
11. Add a new output outcome “Reduced loss of life from fire”
12. Navigate to the “Reduced loss of property from fire” outcome and show that its target group is “Home Owner”
13. Navigate to the new “Reduced loss of life from fire” outcome and set its target group to “People involved in fires”

System Architect also supports a Properties View that remains open and can be used to view and edit the properties of the selected model element.

1. Open the Properties view
2. Show how selecting model elements in the Explorer view, in diagrams, or from reports and model searches displays the properties of the selected element.
3. Show that the Advanced Edit button in the Properties view toolbar opens the properties dialog as described above

## Editing relationships using matrices

Relationships are modeled using definition properties in System Architect whose values refer to other definitions. There are also cases where the relationship itself can have properties and has referencing properties for its ends, allowing the relationship to model a mediator pattern. Relationships can be “mirrored” so that the can be navigated from either direction. Setting either end of a mirrored relationship automatically sets the other end.

Since relationships are modeled with properties, the definition dialogs can be used to create, update or delete relationships. Definition dialogs that display relationship properties can use the name of the related item to navigate to that item, opening the its definition dialog. As shown in the previous activity, many definition dialogs can be opened displaying a complex chain of relationships that can be edited along the way.

Relationships can also be edited using diagrams. Relationships are usually depicted with lines that represent a particular definition. Double click on the line to open the relationship definition.

Finally, relationship can be viewed and edited using matrices, which provide a convenient way to edit a number of related elements very quickly, and to easily see where relationships might be missing.

1. Open the Matrix Browser and click on the MRM pane.
2. Open the Program administers Services matrix
3. Select the programs and services that comprise the scope of the matrix

* Note that these scopes can be saved and opened from the Saved matrices pane

1. Show the various fire services are administered by the “Fire Safety” program
2. Note that “Fire Safety Promotion” is not administered by any program. Click in the cell to indicate it should be administered by the “Fire Safety” program
3. Show that row and column definitions can be created, edited and/or deleted from the matrix as well

## Displaying related model elements

Sometimes it is convenient to quickly see all the elements related to a given element, and to be able to browse the definitions of those elements. Two was to do this is by showing references from the definition dialog, and by showing related elements on an explorer diagram.

1. Open the “Fire Rescue” service
2. Click on the References button to see the all the references to/from “Fire Rescue” in the model.
3. In the References view that is displayed, expand MRM Program and double-click on “Fire Safety” to display its properties

* Note that “Fire Safety” appears twice in the list since “Fire Rescue” refers to its administering program, and the program in turn refers to the services its administers (through the “mirrored” properties), indicating the relationship is navigable in both directions.

1. Create an Explorer diagram and drag-and-drop the “Fire Department” organization unit on the diagram
2. Select Fire Department and Show Immediate Relatives

* Show how this can be used to navigate relationships in the model showing all related elements

1. Select Hide Relationship Lines not attached to the Selected Object

* Show how this can be used to facilitate impact analysis of change

## Using Diagrams for Stakeholder Views

Diagrams that provide specific views on the model elements for a specific purpose can support different stakeholder viewpoints. Diagrams can be used to show and edit relationships between model elements graphically. This can be a very effective way of visualizing elements in the municipal model, communicating the relationships and their business implications to stakeholders.

1. Open the “Fire Department” SIAM diagram. This diagram shows the accountability chain from organization units to the programs they are accountable for to the services administrated by the programs to the target groups whose needs are addressed by the service output.
2. Demonstrate how to add new entities and relationships to the model from the diagram
3. Demonstrate how to move items on the diagram and arrange lines
4. Demonstrate Zoom
5. Demonstrate show/hide relationship lines
6. Demonstrate mouse-over highlighting
7. Discuss diagram formatting

* Diagram format: notation, display options, grid and symbol layering
* Symbol format: Pen, line, font, text position, color, text display, symbol style
* Symbol Display Mode: symbol name, graphic comment, auto-resize

1. Show editing an entity or relationship definition from the diagram

## Viewing model elements and relationship displayed in diagrams

Model Elements can easily be added to or removed from a diagram through the following techniques:

* Elements can be dragged from the Explore onto a diagram. If the diagram supports the element, it will be depicted on the diagram with the appropriate symbol.
* Right-click in empty space in the diagram and select Choices. The model elements that can be depicted on that diagram are displayed. Drag-and-drop elements from the choices list to the dialog.
* Drag-and-drop an Explorer Object or Explorer Relationship report onto a diagram to add elements selected by the report that are allowed on the diagram. *Note: The relationship lines added are not refreshed when the entities and relationships in the database are updated or deleted. To refresh the diagram, select all the elements of type Relationship (the ones added by the explorer relationship report) remove them from the diagram, and then use the explorer relationship report to put back the updated relationship lines.*
* Select any node symbol on the diagram and press the delete key to remove the symbol form the diagram, or purge (i.e., delete) the represented entity from the repository
* To remove a line from the diagram, select the line and invoke Hide Selected <type> Relationship Lines…
* To get the lines back, right click in empty space on the diagram and select Hide Selected Relationship Lines… Deselect any hidden lines you wish to see.
* You can also select a node symbol and invoke Isolate Selected Symbol And Attachments to remove all symbols and lines from the diagram except those that are selected. This might be useful if an Explorer Object Report added too many symbols to the diagram.

## Creating Hierarchy Diagrams

Many elements in the MRM metamodel can be organized in hierarchies. These include Organization Unit, Program, Service, Process, Resource, Need, Outcome, Output, and Target Group. These hierarchies are created by setting the appropriate properties, each of which starts with “Sub-”.

1. Open the “City Manager’s Office” Organization Unit definition and show the Sub-Organization Unit property.
2. Show the Organization Unit report
3. Create an MRM Hierarchy Diagram
4. Drag and drop the “City Manager’s Office” Organization Unit on the diagram
5. Select the organization unit and invoke Tools🡪Utility Macros🡪Build Diagram Hierarchy
6. The hierarchy for the organization unit is drawn on the diagram

## Querying, validating, and reporting on model content

Besides simple search, it is also possible to quickly write reports that present information in the model that match a query. Reports can use diagrams, symbols or definitions as data sources, and can filter based on complex expressions involving property values and relationships to other entities.

Reports can be used to find matching elements in the model, or to validate elements by showing elements whose properties have missing or invalid values. Reports can be grouped into report files that address the concerns of a particular stakeholder.

The MRM comes with a set of reports already created that support the functions and operations of the MRM business use cases and their tasks.

1. Open Reports🡪Report Generator… and ensure the MRM Reports.RPT file is open. This report file contains all the reports that are applicable to the MRM
2. Generate the Program Administers Services report
3. Show how the programs and services in the report view can be opened to display their details
4. Generate the Programs administering no Services report
5. Generate the Services with no administering Program report
6. Show how the Program Administers Services report was created

## Analyzing a Municipal Model

Running various analytics reports on the model, and depicting the results on diagrams as heat maps can facilitate understanding the implications of elements in a municipal model, and the potential effect of changing those elements. Diagrams can be decorated with colors and icon depictions that reflect assessment of any number of performance indicators against information in the municipal model.

System Architect provides a number of capabilities for establishing and displaying analytics to quickly communicate information and alerts to stakeholders that address their specific concerns. Analytic collections group together a number of related analytics that establish a means of visualizing particular criteria for evaluation or property values. Each analytic consists of a depiction specification and a report query that determines what information should be depicted for that analytic and how the depiction should be represented. The depiction can either be a color, or an icon. Several analytics in a collection can use similar icons that for example represent a gauge at different levels based on the value returned from the analytic report. The depiction is displayed near the lower-left corner of the symbols on the diagram whose definition matched the analytic query.

Analytics can be dragged and dropped onto any diagram to add the depictions for that diagram. Alternatively, the Heat Map Manager can be used to associate different analytic collections and Explorer reports to particular diagram types. Users can then apply analytic collections and Explorer reports to a diagram directly from the Heat Map Manager. This results in a legend being added to the diagram, and all depictions from the analytics in the collection are added to the diagram.

1. Open the Transportation PSAM Explorer diagram
2. Open the Heat Map Manager view
3. Select the analytics in the Congested road system analytic collection

* Indicate that in this case, the analytic collection corresponds to a performance indicator in the municipal model
* The analytics represent different assessments of the performance indicator’s actual value against the performance target

1. Apply the selected analytics to the diagram
2. Point out the assessment of the Roads program and Traffic Flow Control service – both have Medium Congestion as measured in % lane-miles less than 10,000 vehicles/lane/day
3. Show how to hide and show analytic depictions on a diagram

## Publishing the municipal model

Municipal model users can generally be categorized into three groups:

1. Business Analysts – Full model access for model creation and editing through Rational System Architect rich client
2. Business Users – Require flexible model access with limited editing through the Rational System Architect/XT Web interface
3. Community Constituents – Require read-only access to model contents published on collaboration sites such as Lotus Quickr or Lotus Connections

Business analyst will usually access the municipal models through the System Architect rich client, providing them with full access to the model elements, diagrams, reports, etc. Some business analysts and more business users with limited editing needs may use System Architect/XT to explore the municipal models and make simple changes to the model elements.

A broader community of business users will also benefit from the ability to browse the model, reason about its contents, determine if there are contradictions, missed objectives, or any number of other activities that could lead to effective action. These users generally don’t need to, or do not have permission to, edit the model. They may also be occasional users or constituents who do not need to invest the effort to become proficient at using municipal model editing tools, possibly even System Architect/XT. For these users, navigating a published model on the web is generally sufficient.

System Architect Publisher can be used to publish parts of, or the complete municipal model to the Web making it accessible through a collaboration site for a broad range of municipal users.

1. Start SA Publisher and open the MRM.xml publisher configuration file
2. Show how the model would be published to the Web
3. Demonstrate the results of a published model in a Web browser (Windows Explorer)

## Publishing MRM method work products

The outputs of a municipal modeling engagement/project are the work products of the method. These work products consists of the models themselves, the models as published to collaboration sites, and the published reports and documents specified by the method. It is trough these published work products that the broader municipal community, administering officers, and commissions achieve value from the modeling activities.

System Architect provides a number of facilities for generating publish-quality work products from information in the model. Some of these facilities are focused on the creation of Web resources that are accessible by the broader community:

* HTML documents created by the Report Generator (instead of grid views in System Architect)
* HTML reports of selected documents and definitions
* HTML documents created by SA Publisher

Others provide publishable documents that may be appropriate for printed distribution:

* Word Reports
* Rational Publishing Engine

Still others are oriented around support for business intelligence and integration with other data sources:

* Rational Insight
* Cognos Reports

The SDW supports a number of publishable work products as specified by the MRM method:

* Business Model Report: a report with selectable scope and depth to summarize the Organization Units, Programs, Services, Processes and Resources in the municipal model
* Organization Unit Profile: a report that lists all organization units and their properties
* Program Profile: a report that lists all programs and their properties
* Service Profile: a report that lists all services and their properties

1. Demonstrate the creation of a Business Model Report using the RPE Launcher

* Open the Organization Unit Profile Report.dsx document specification
* Run the document specification
* View the resulting report document

1. Demonstrate the creation of a Program Profile Report

## Customizing the metamodel

The MRM is a highly customizable metamodel that can easily be extended to capture properties that address specific municipal needs. System Architect is designed specifically for extensibility with the ability to:

* Define new diagrams, symbols, model element definitions, properties and relationships
* Customize the dialogs for viewing and editing entity and relationship properties
* Create custom browsers to organize model content for particular stakeholder viewpoints
* Create matrices for editing new relationships
* Create analytics and heat maps
* Create reports to query, validate and communicate municipal model content
* Create reports and document templates for new method work products

1. Show the MRM USRPROPS.TXT file and discuss how new diagrams, symbols and definitions are created

## Backing up and restoring a municipal model

Municipal models represent valuable assets that influence municipal strategic planning that can result in significant community impact – these models can affect peoples’ lives. It is therefore important to properly preserve these models, and make them accessible to stakeholders for reuse.

Database backups must be properly secured as they can contain sensitive information that must be carefully handled. Flexible authentication and access control supporting municipal governance principles is a must.

1. Show how to use the Encyclopedia Manager to backup and restore municipal models
2. Show how database security is supported through roles and access control
3. Show the SA Catalog Manager for managing enterprise encyclopedias

## Municipal model versioning and lifecycle management

Municipal models are constantly evolving to address business influencers and changing environments and needs. Each municipality that uses the MRM will potentially discover new programs and services that were initially unique to their situation, but may later be discovered to be applicable to other communities. The value of the MRM can therefore grow over time by harvesting and reusing model content and best practices that are discovered over time. Making changes to municipal models, whether they are changes within a single community exploring different solution opportunities, or changes to the shared reference model itself require rich facilities for lifecycle management consistent with governance policies and principles.

System Architect provides a number of features that can be exploited to support lifecycle management and governance of municipal models.

* The MRM itself, and different municipal models that are instances of the reference model can be saved as backup files for future use. These files can be stored in a version management system such as Rational Team Concert, and made available to potential users through asset management facilities such as Rational Asset Manager.
* Encyclopedia databases can have change management enabled, which allows the database to record changes in all model elements.
* Users can create workspaces in an encyclopedia database that can be used to separate work streams, enable parallel modeling activities, explore different opportunities, and compare and merge different work streams.
* Users can checkout part of the model elements and work on them in their own private encyclopedia, possibly disconnected from the network. When they are done, they can check their changes back in and be assured that there will be no collisions in the database.
* Encyclopedias can be detached from one server and attached to another to work more collaboratively in a different location. Then the encyclopedia can be re-attached to the shared database for broader use.