CIM University: Using Enterprise Architect Schema Composer

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Purpose

The purpose of this presentation is to describe the use of the Schema Composer feature of Sparx Enterprise Architect to create CIM profiles.
Agenda

- Introduction
- Creating a project in Enterprise Architect
- Creating a Schema Composer Model
- Editing a Schema Composer Model
- Generating a CIM Profile
- Importing and Validating a CIM Profile
- Q & A
Introduction

What Is Schema Composer?

- Schema Composer is a built-in tool in Enterprise Architect (EA) for quickly and easily defining a variety of formal schema from a UML model.
- Due to the unique nature of the Schema Composer, it is not necessary to use a UML profile* or stereotyped elements when building the definition of an XSD, RDF, or other schema documents.

* A UML profile is used to extend the UML language. This should not be confused with a CIM Profile
Introduction – (cont’d)

Why Use Schema Composer?

- Schema Composer greatly simplifies the process of creating CIM compliant schema in a re-usable and accessible manner.

- Schema Composer operates directly on CIM compliant data models to produce CIM compliant schema documents (CIM Profiles)

- There is no need for another external tool to create schemas from your CIM compliant data model maintained in Enterprise Architect.
Creating A Project In Enterprise Architect
Enterprise Architect Projects

- An EA Project is a repository for storing, manipulating and managing one or more Models. A single repository can contain many models, and a repository can be either file based, hosted in a larger DBMS system or based in the Cloud.

- For our example, we will create a single file based EA Project to contain the CIM and our CIM Profile generated by Schema Composer.
Select ‘File > New Project...’ from the Menu bar and the drop down menu. The ‘New Project’ dialog will display. Select a directory and enter a filename for your project. Click the ‘Save’ button.
Creating A New Enterprise Architect Project - New

Once the project has been saved, the Model Wizard displays, which makes a selection of Model Patterns available; select the Model Patterns to use.

Enterprise Architect adds a model containing the selected Model Packages to the Project Browser.
Creating A New Enterprise Architect Project – Copy

- Navigate to an existing EAP file containing your CIM compliant model from your file system.
- Copy and paste the file in the directory of your choice.
- Rename and save the file.
Creating A Schema Composer Model
Creating A Schema Composer Model

- Open an EA project file containing your CIM compliant model from your file system.

- Use the Model Wizard to create a Logical View Model. Name the model ‘CIM Profiles’.
  - Highlight the top level of the model by clicking on its name (‘Schema Composer Example Project’).
  - Enter ‘Ctrl+Shift+M’ to open the ‘Model Wizard’ dialog.
  - Scroll down to the ‘Logical View’ model, check the box, and click the ‘OK’ button.
Creating A Schema Composer Model (cont’d)

- Change the name of the model package to ‘CIM Profiles’.
- Create a package named ‘61968-3’ under the ‘CIM Profiles’ model package.
  - Select the ‘CIM Profiles’ model package by clicking on the name of the package in the Project Browser.
  - Enter ‘Ctrl+W’ to bring up the ‘New Package’ dialog.
  - Change the name to ‘61968-3’; make sure the ‘Package Only’ radio button is selected; and click the ‘OK’ button.
Creating A Schema Composer Model (cont’d)

- Create a package and diagram named ‘Planned Outages’ under the ‘61968-3’ package.
  - Select the ‘61968-3’ package by clicking on the name of the package in the Project Browser.
  - Enter ‘Ctrl+W’ to bring up the ‘New Package’ dialog.
  - Change the name to ‘Planned Outages’; make sure the ‘Create Diagram’ radio button is selected; and click the ‘OK’ button.
Creating A Schema Composer Model (cont’d)

- The ‘New Diagram’ dialog will appear with the diagram already named ‘Planned Outages’ and the Diagram Type ‘Class’ already selected. Click the ‘OK’ button.
Creating A Schema Composer Model – (cont’d)

- The **Project Browser** will have the following model structure:
Editing A Schema Composer Model
Create A Schema Profile

- A schema profile identifies the name, technology and content of the schema as a precursor to defining how the schema is generated.

- You can create and edit as many schema profiles as you need. Schema profiles are bound to a single technology and will either map to a generated schema or a sub-setting transform.
Create A Schema Profile (cont’d)
Populate the ‘Planned Outages’ diagram with classes from the CIM compliant data model that contain the desired attributes for the ‘Planned Outages’ CIM Profile.

- The purpose of this diagram is: 1) to assist in designing the ‘Planned outages’ CIM Profile; and 2) to provide a diagram that can be included in the documentation of the profile.
- The design of a CIM Profile is an iterative process that is facilitated by iteratively updating the diagram whilst designing the profile.
Editing A Schema Composer Model (cont’d)

- The detailed steps of editing a Schema Composer Model can be found in the EA Users Guide online at:
  
  http://sparxsystems.com/enterprise_architect_user_guide/13.0/model_domain/s/create_a_schema_profile.html

- The process involves three iterative steps:
  1. Drag CIM compliant data model classes into Schema Composer;
  2. Select the attributes and associations to be incorporated into the CIM Profile;
  3. Add restrictions to the CIM Profile as required.
Generating A CIM Profile
Generating A CIM Profile

- Having designed a profile, at any stage, with a minimum of definitions and customizations, schema or sub-models can quickly and easily be generated.
Importing and Validating A CIM Profile
Importing And Validating A CIM Profile

- You can import Schemas compatible with the Schema Composer, into Enterprise Architect using the Schema Importer.
- The Schema Importer validates the Schema and creates a Schema type Schema Composer Profile upon successful validation, that can be viewed directly in the Schema Composer.
Importing And Validating A CIM Profile (cont’d)

Currently, you can use the Schema Importer to import these Schemas:

- Common Information Model (CIM) specific XML Schema
- Common Information Model (CIM) specific RDFS XML
Enterprise Architect Schema Composer
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