A little project history

  - Project Teams were oriented either towards 61850 or CIM (just based upon personnel of team).
  - Developed many good use cases and documentation.
  - Results basically kept CIM and 61850 separate.
- This project started in 2009.
  - Team consisted equally of 61850 and CIM expertise.
  - Decided to attempt what people said couldn't be done: A UNIFIED Semantic Model.
Design Concept of Harmonization

- Address the key areas of overlap and where harmonization (e.g. mutual agreement between 61850 and CIM) has to occur.
- Allowing for future expansion and inclusion of 61850 DER definitions.
- Allowing for full lifecycle (Planning->Substation->Scada)
  - Use cases are documented in the report.
  - Initial 61850 interface profile has been generated.
  - Example of the concepts/full lifecycle has been generated.
- Fully integrate 61850 Functions (e.g. Logical Nodes) and Control capabilities.
- Keep packages separate when possible.

What is the project:

- It is NOT:
  - Not a “mash-up” of CIM and 61850 UML.
  - Does NOT include a full IEC 61850 UML model.
- It is:
  - Driven by identified and documented use cases.
  - Identifies key interfaces required to fulfill the use cases.
  - Addresses some design template issues/inconsistencies in both CIM and 61850.
Driven by a relatively large use case/number of actors

1. Ability to exchange and persist CIM and 61850 information.

2. Ability to configure EMS systems with topology information developed with 61850.

3. Ability to auto-configure SCADA acquisition.

4. Ability to enable Condition Based Maintenance.

Area concentrated on in the Report
Structure of the Proposed Model

* - Except where in Harmonized area.

Previously discussed – key linkage points

- Need for semantic agreement for topological UML components between CIM and 61850.
  - A joint Task Force will be required to discuss/change the recommendations in the report.
  - Neither side will be able to proceed without some changes.

- Units of Measure need to be harmonized
  - CIM should adopt the full SI Units and multipliers for 61850.

- Communication information needs to be augmented. 61850 has the definitions, CIM does not.

- How to link PowerSystemResources into 61850 model

- How to link CIM MeasurementValue to Hierarchy of 61850
Proposed Model allows “all” measurements associated with a device to be easily found and communicated with.

Linkage from PSR to IEC61850 Core is in 61850 package
**Design Template application affects Meters/Readings**

Current Model

Proposed Model

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**Concluding Statements**

- IEC TC57 needs to generate a statement endorsing the concepts behind this proposal – *Apparently happened Monday 05-03-2010.*

- IEC TC57 WG19 will be key in the resolution of some issues that appear to exist between the CIM world and 61850 world.
  - Inputs are welcome…

- This approach has been submitted to the NIST Smartgrid initiative and is key to several PAPs.
  - Delay in adopting this concept is really not an option or something else will be generated.
  - Additionally, has been submitted to OPEN SG and various IEC committees.