



CIM University

Track 2 – CIM and Network Analysis Data

North American CIM User Group Meeting

Atlanta, Georgia, USA

16 November, 2016



CIM U Track 2 - CIM and Network Analysis

■ Speakers:

- Pat Brown – EPRI, US [WG13](#)
- Jay Britton - Britton Consulting, US [WG13](#), [WG19](#)
- Chuck DuBose – Siemens PTI, US [WG13](#), [WG14](#)
- Alan McMorran – Open Grid Systems, UK [WG13](#), [WG19](#)
- Kendall Demaree – Alstom, US [WG13](#)

■ Questions for You

- *For whom do you work?*
- *What do you do?*

CIM U Track 2 - Agenda

- Overview of CIM and network analysis (9:15 – 9:45)
 - CIM as a semantic model [15 minutes] – Pat
 - Power flow data from a CIM perspective [15 minutes] - Jay
- Equipment profiles (9:45-10:30, 10:45-11:45)
 - Basic equipment EQ [45 minutes] – Alan

BREAK (10:30 – 10:45)

- More complex equipment EQ and dynamics DY [60 minutes] - Chuck

LUNCH (12:00 – 1:00)

- Diagram profile (1:00 – 1:30)
 - Diagram layout DL [30 minutes] - Alan
- Other network model profiles (1:30 – 2:30)
 - Steady State Hypothesis (SSH), Topology (TP), State Variables (SV) [60 minutes] - Kendall
- Current WG13 topics (2:30 – 3:00)
 - Change models [30 minutes] – Kendall

BREAK (3:30 – 3:45)

- Network model management success story (3:00 – 3:30)
 - ERCOT's NMMS [30 minutes]– Pat
- Current WG13 topics continued (3:45 – 4:45)
 - Frames & Assemblies [60 minutes] – Jay
- Joint Panel with Track I (4:45 – 5:30)
- Reception (5:30 – 7:00)

The CIM is...

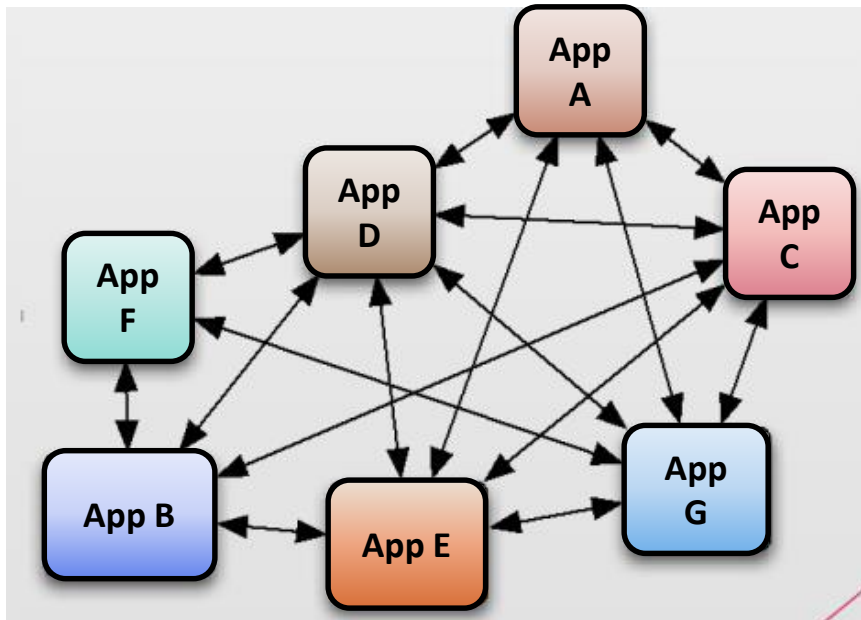
- A model for organizing shared data
- Electric utility industry specific
- A model which is growing and being refined
 - By experts serious about the quality of the model
 - By real-world implementations
- Divided into 3 sets of IEC standards
 - 61970 – WG13 – network models
 - 61968 – WG14 – meters, assets, work
 - 62325 – WG16 – markets

The Network Model Portion of the CIM

- A set of 61970 standards
 - 301 & 302 - model
 - 400 series – profiles
 - 500 series – serialization of profiles using RDF Schema
- The most mature portion of the CIM
 - Interoperability tests
 - Deployments
- Has grown over time
 - Equipment/connectivity (typically breaker/node)
 - Topology (bus/branch)
 - Diagram layout
 - Dynamics
 - HVDC
- Continues to grow
 - Changes (projects, outages)
 - Frames, assembly of model parts into cases
 - ICCP configuration
 - DER, congestion management, etc.

The CIM Organizes Shared Data

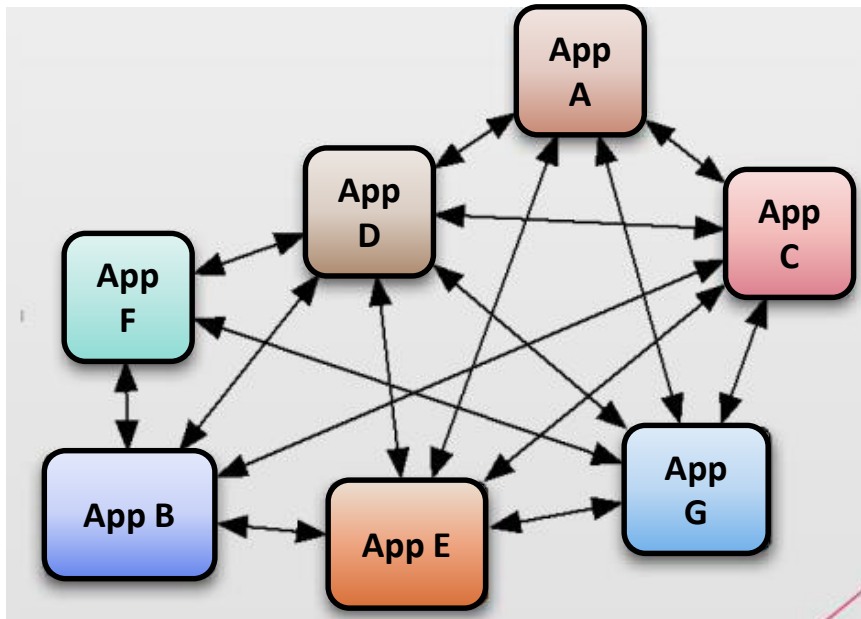
- By simplifying translations



It can transform data sharing spaghetti with lots of point-to-point data translations

The CIM Organizes Shared Data

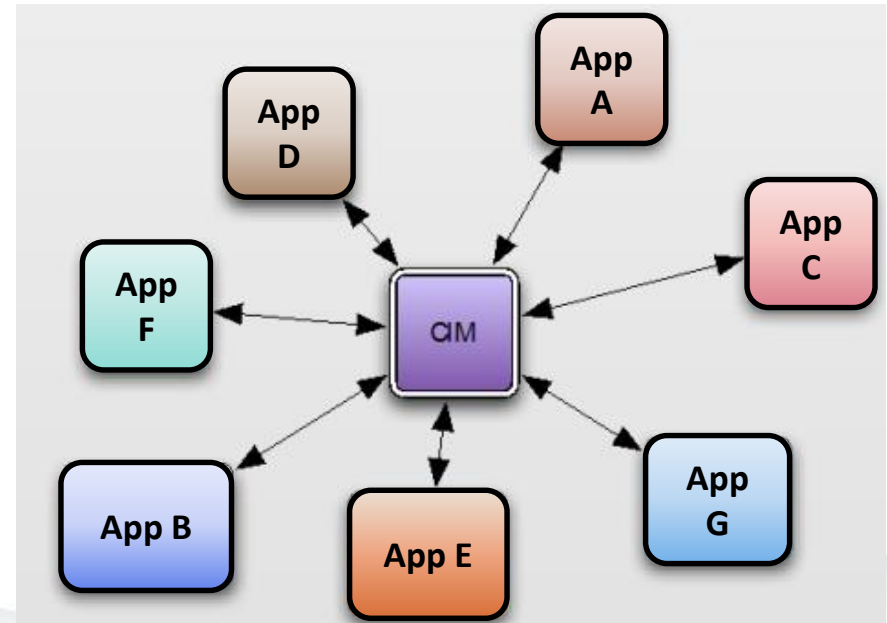
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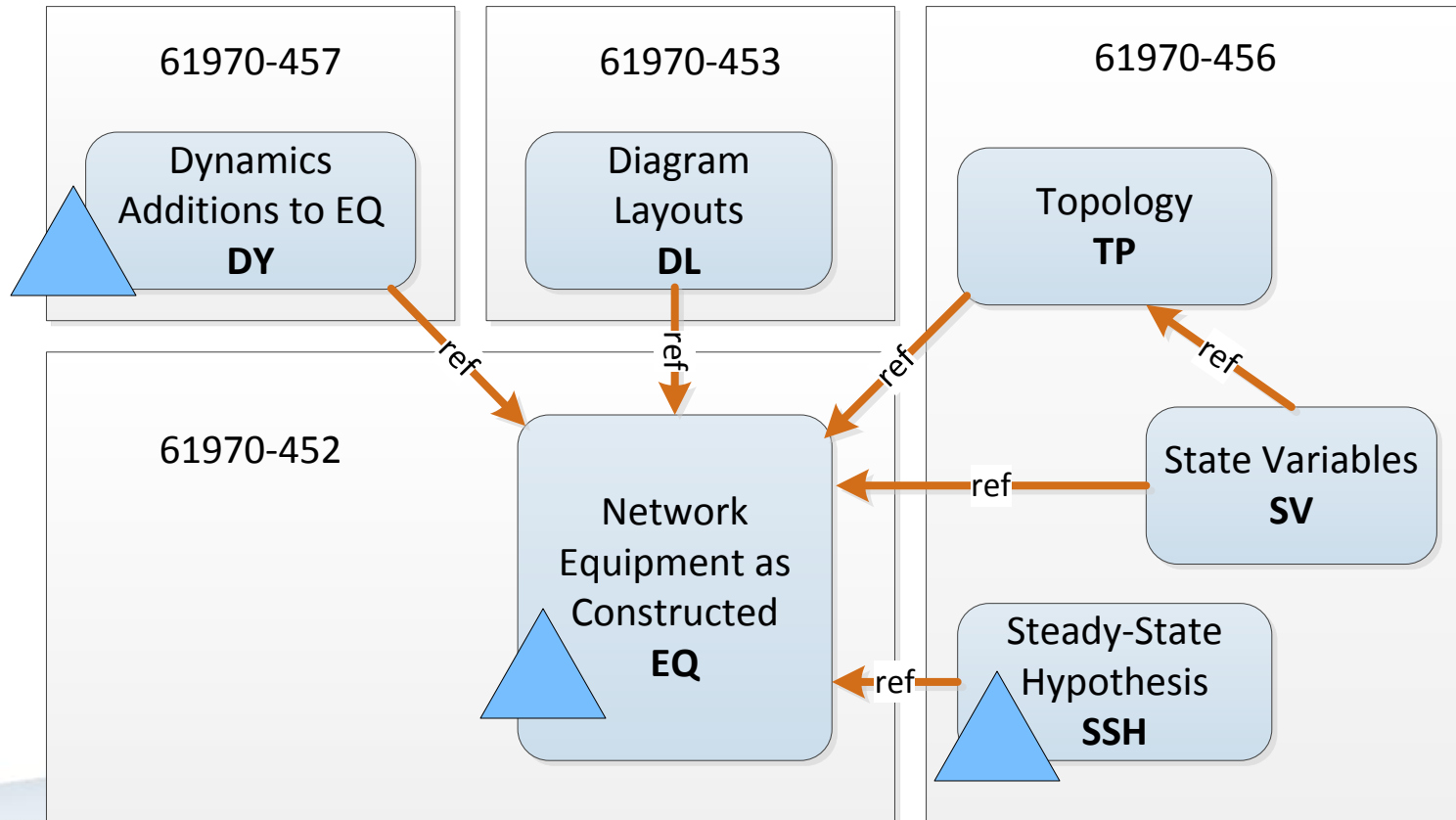
Into an organized environment where each application requires only one translation

..by using a 'canonical' form in the middle



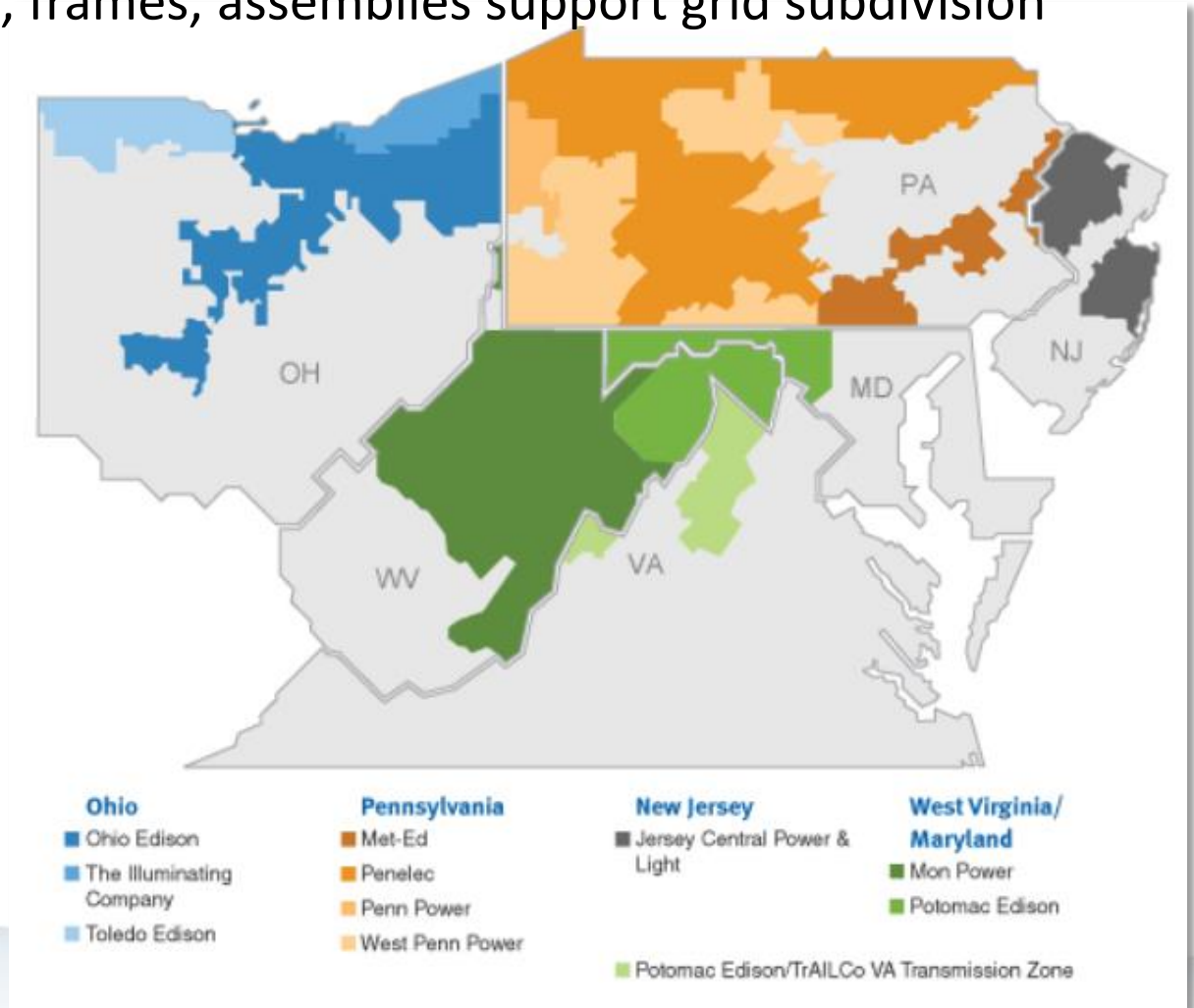
The CIM Organizes Shared Data

- By supporting “chunks” of data to share
 1. Profiles reflect types of data
 2. Change models to describe projects



The CIM Organizes Shared Data

- By supporting “chunks” of data to share
 3. Boundaries, frames, assemblies support grid subdivision



The CIM and Network Analysis

- Effectively organizes shared data
 - Is common canonical model
 - Each application translates once
- Supports 'chunking' of complex network model data
 - By 'type'- profile
 - By changes (to support 'what if's)
 - By grid subdivision
- CIM is flexible, powerful tool for network model data management

