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Siemens Power Technologies International

Bridging the Gap – Enterprise Model Management for Operation and Planning

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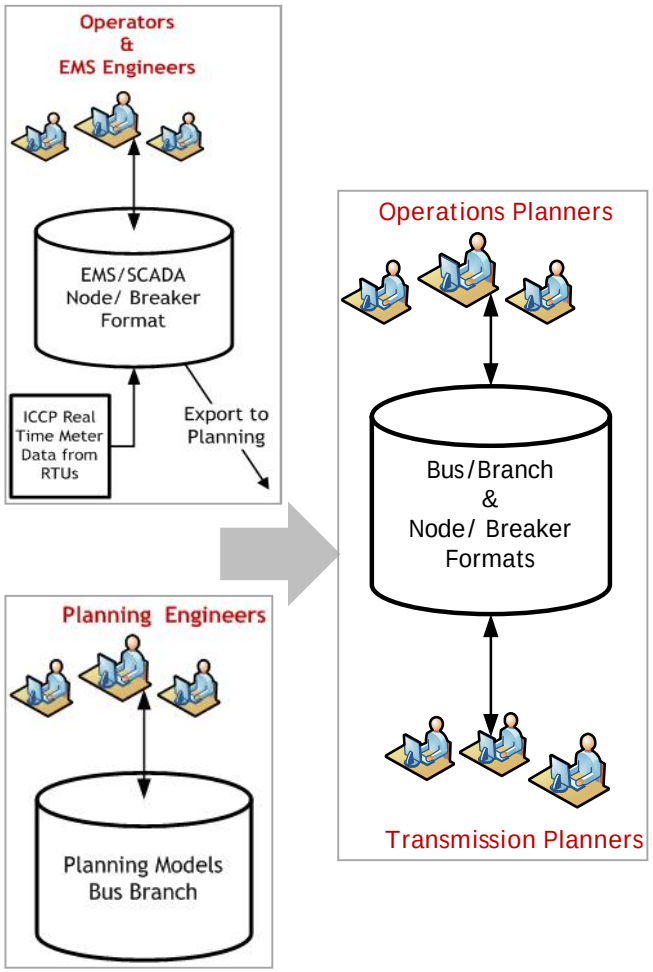
Contents

Enterprise CIM-Based Model Management

Realize efficiency through Model Synchronization



Market trends

- Planning departments are merging in organizations
- Regulatory requirements for different levels of analysis on consistent networks for reliability and planning

Customer challenges

- The Planning models and the Operations models are NOT consistent
- Need for different levels of granularity and regional aspects vary in planning

Siemens PTI Solution

- Enterprise deployment of PSS®ODMS in Network Model Management in CIM Data standard
- Transmission & Distribution Analysis based on consistent Network Data
- Vendor Neutral integration into GIS, and Asset management systems

Enterprise CIM-Based Model Management

Realize efficiency through Model Synchronization

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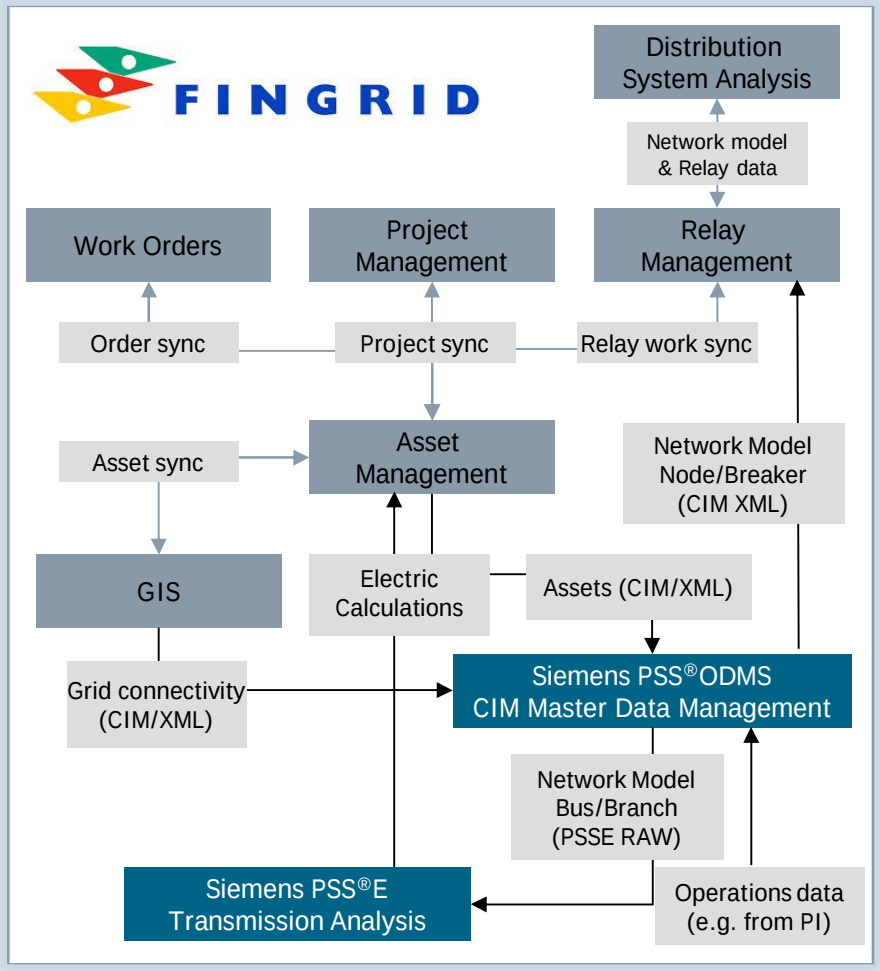
Customer benefits

- Grid information system e.g. mobile usage, asset register, geographical information, maintenance management and calculations of capacity analysis
- CIM based master network data management system
- Vendor neutral and seem less integration with GIS, Asset systems, operations and planning tools through CIM
- Strong Analysis tools from Siemens PSS® portfolio
- Capability to handle and convert different granularity of network models quickly for analysis.
- Time based models for short term and long term planning



Enterprise CIM-Based Model Management

Realize efficiency through Model Synchronization

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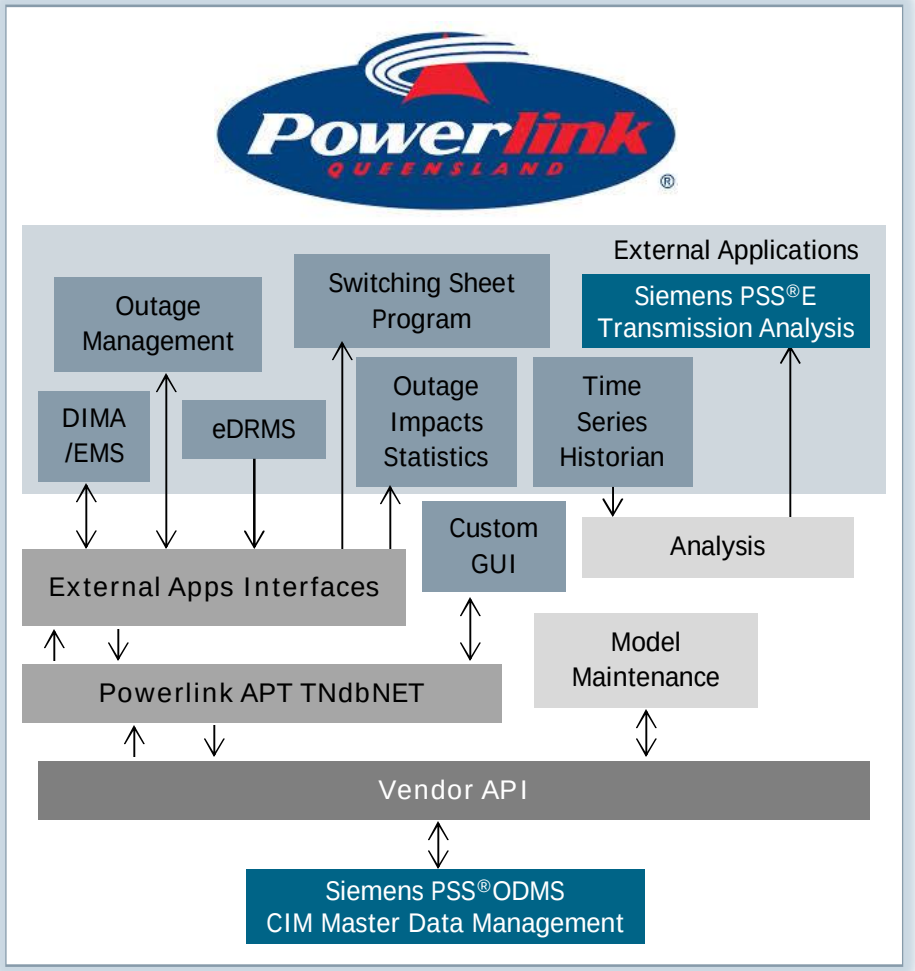
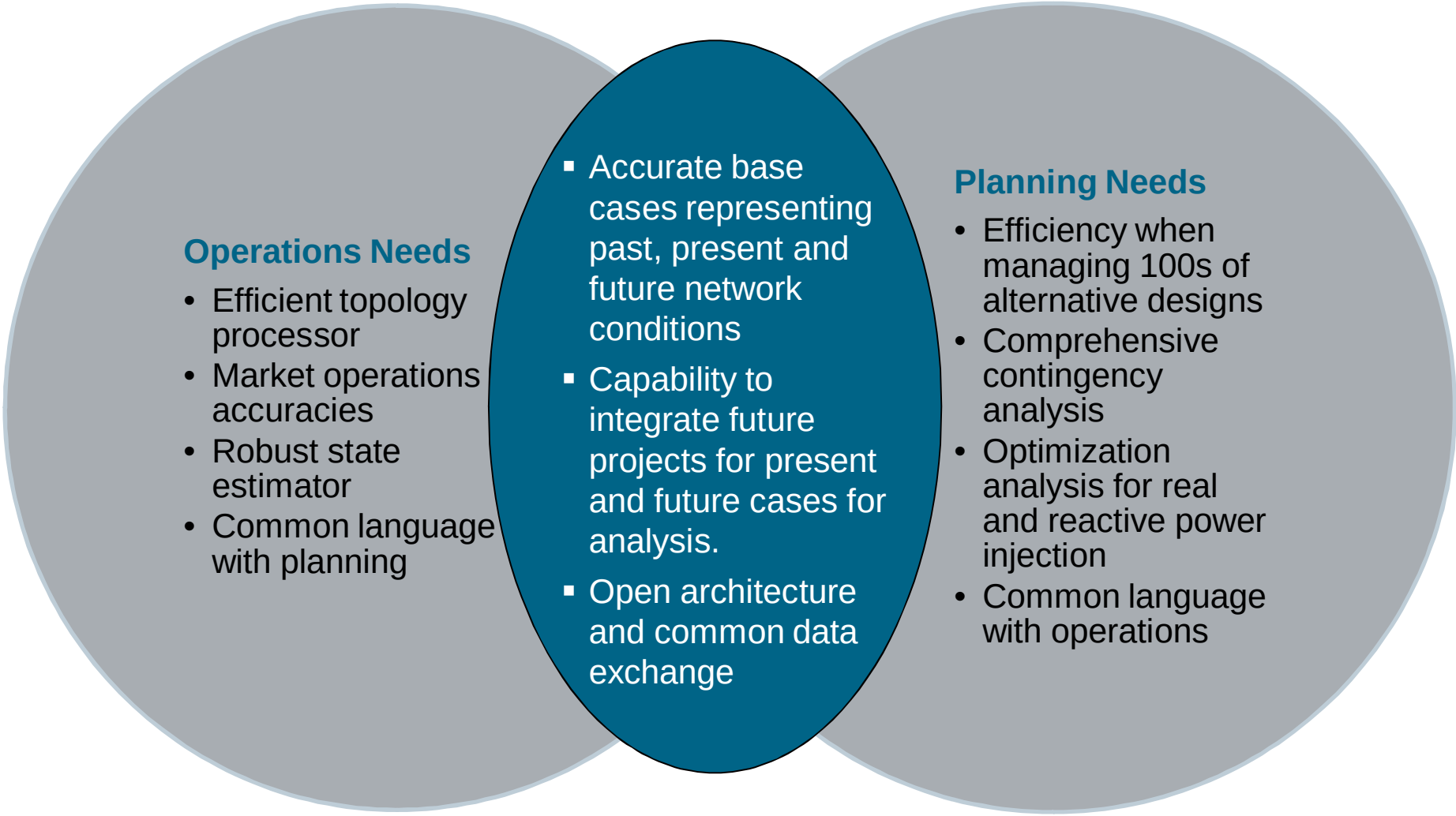
Customer benefits

- Reduction in data maintenance costs achieved by establishing a single, controlled data repository for the current and future network models for use by EMS, Planning and Protection
- Savings in development and maintenance costs of associated corporate applications
- Significant application lifecycle cost savings derived by migrating from a custom internal application to a fully supported, industry standard product maintained by a major vendor.

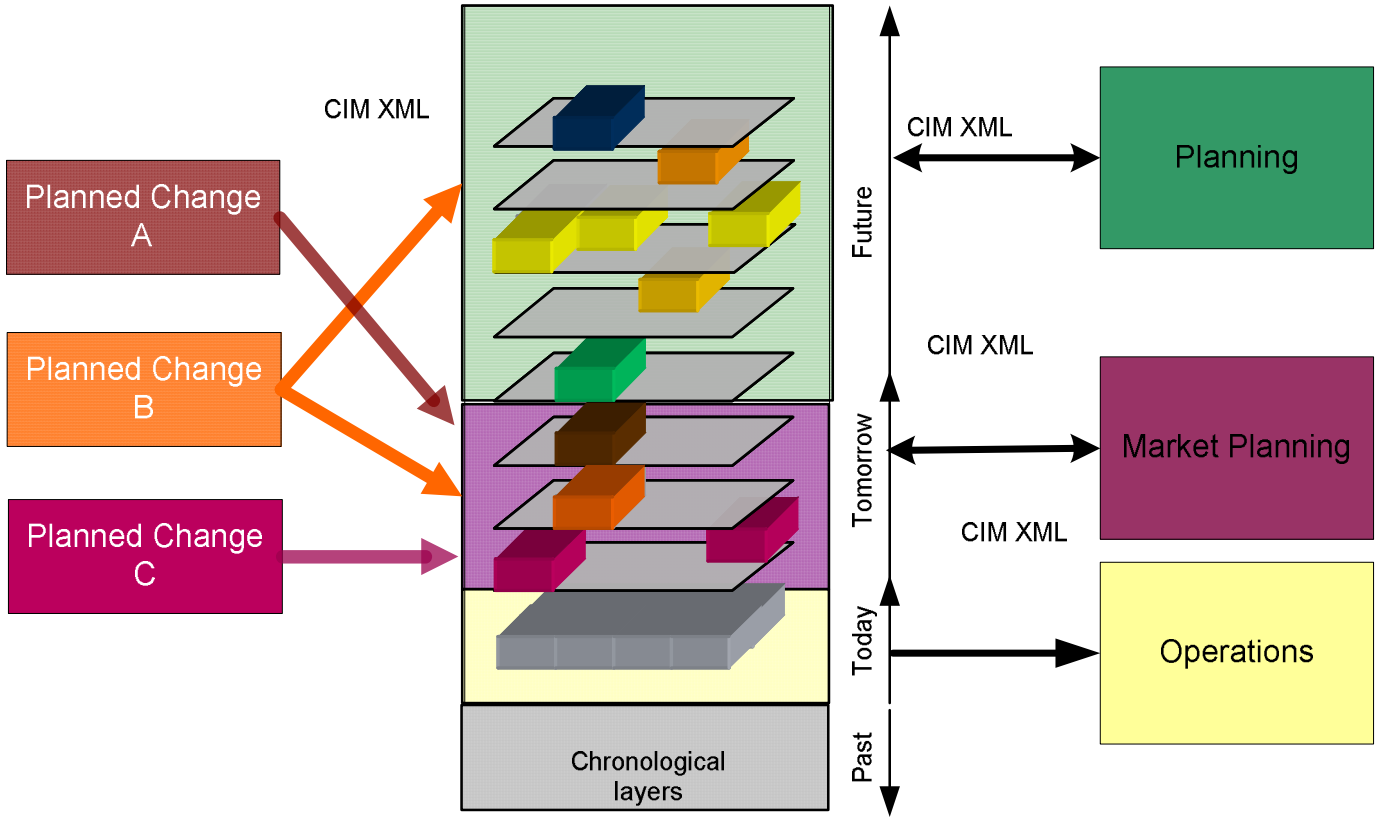


"Application of CIM Model for Enterprise Wide Power System Model for Planning, Protection and Operations", IEEE PES 2008 General Meeting, Paper PESGM2008-001060.

The Need and The Overlap

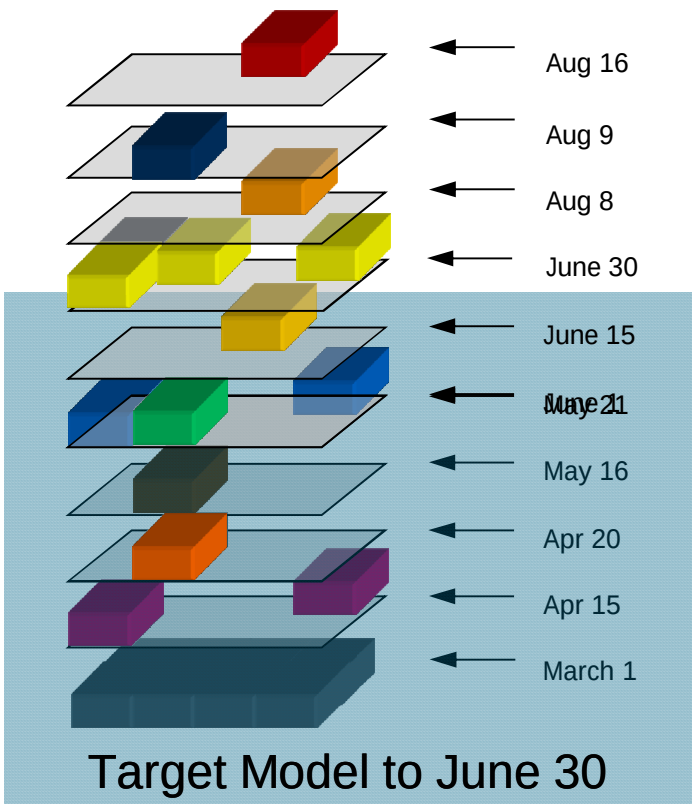


Planning, Engineering and Operations Workflow



Historical Time Based Model

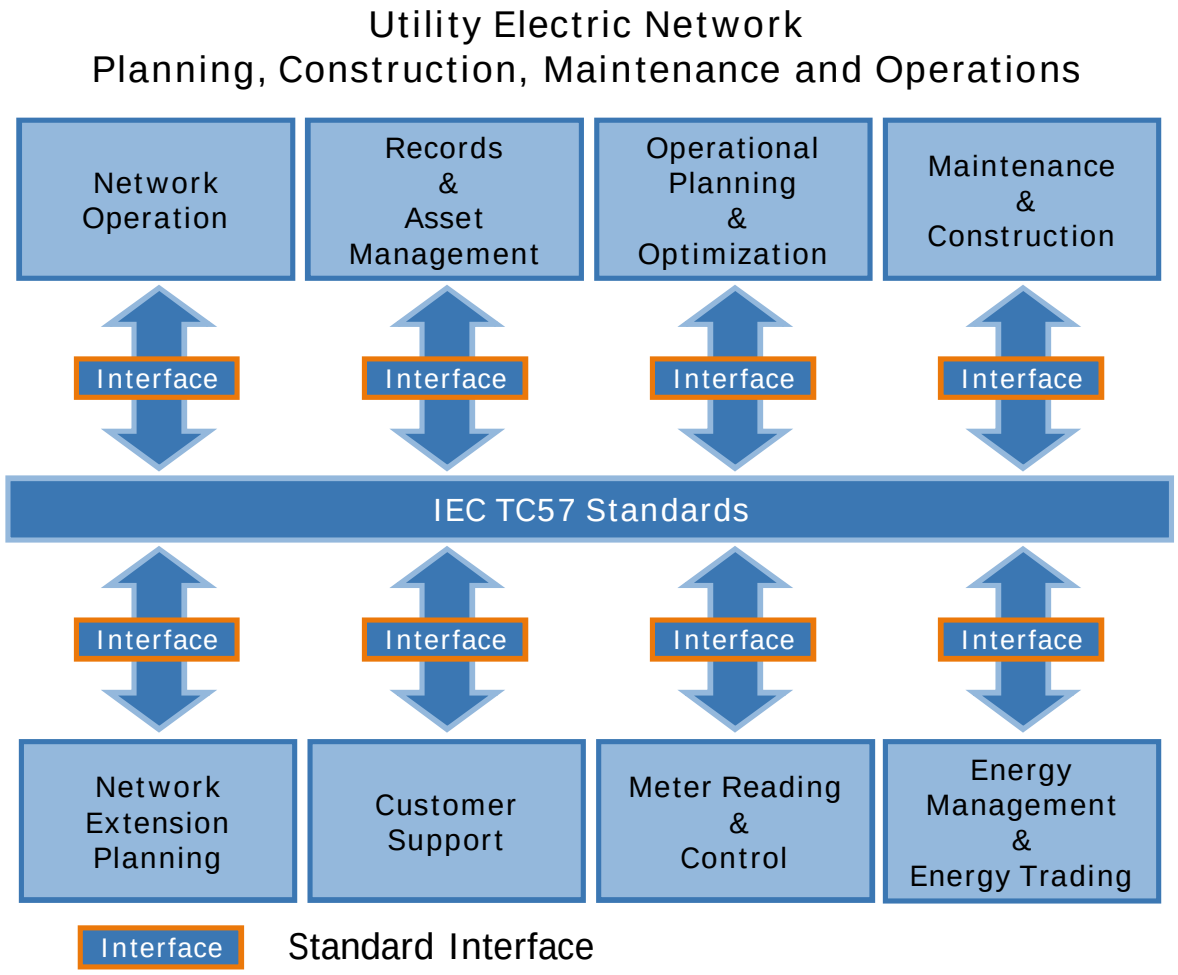
Base Model Plus “Projects” and “Subprojects”



- Model is based on a base model plus changes (“Projects” or “Subprojects”)
- Target model at any point in time is base model plus applicable Projects/Subprojects
- Existing projects can be
  - Changed
  - De-commissioned
  - Inserted
- Time based models available for
  - Operations models
  - Planning models

The Role of the Common Information Model (CIM)

- There are three **core standards** under CIM:
  - IEC 61970 – EMS Application Program Interface
  - IEC 61968 – System Interfaces for Distribution
  - IEC 62325 – Energy Market Communications



The CIM Data Model

… a strong Base for Enterprise Integration

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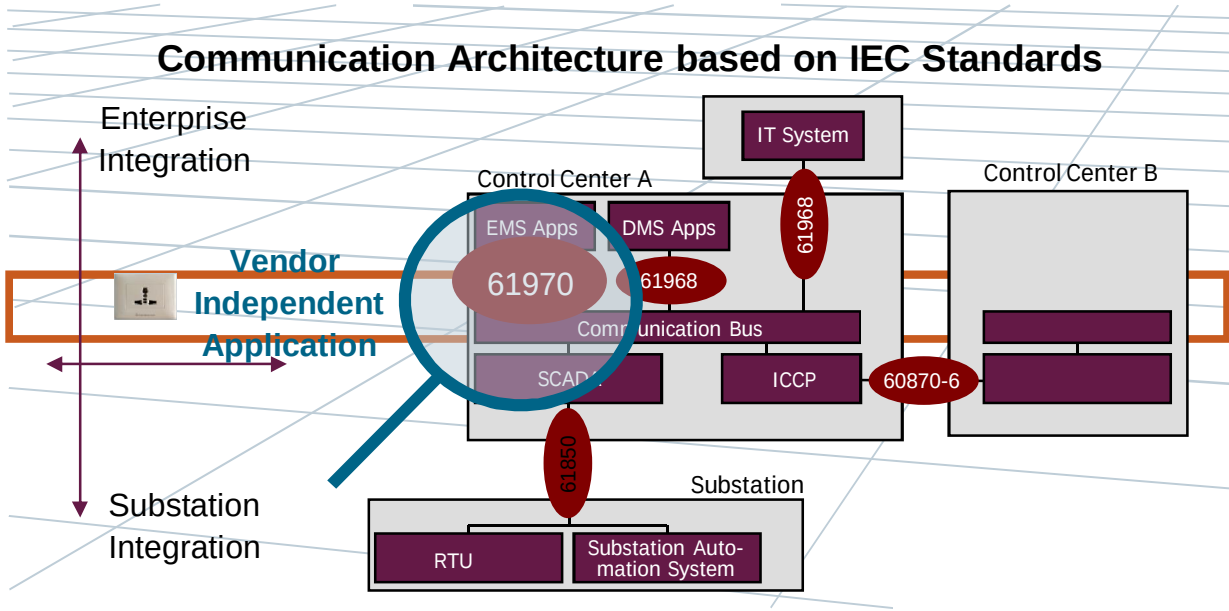
Standards

The sustainable way to the future:

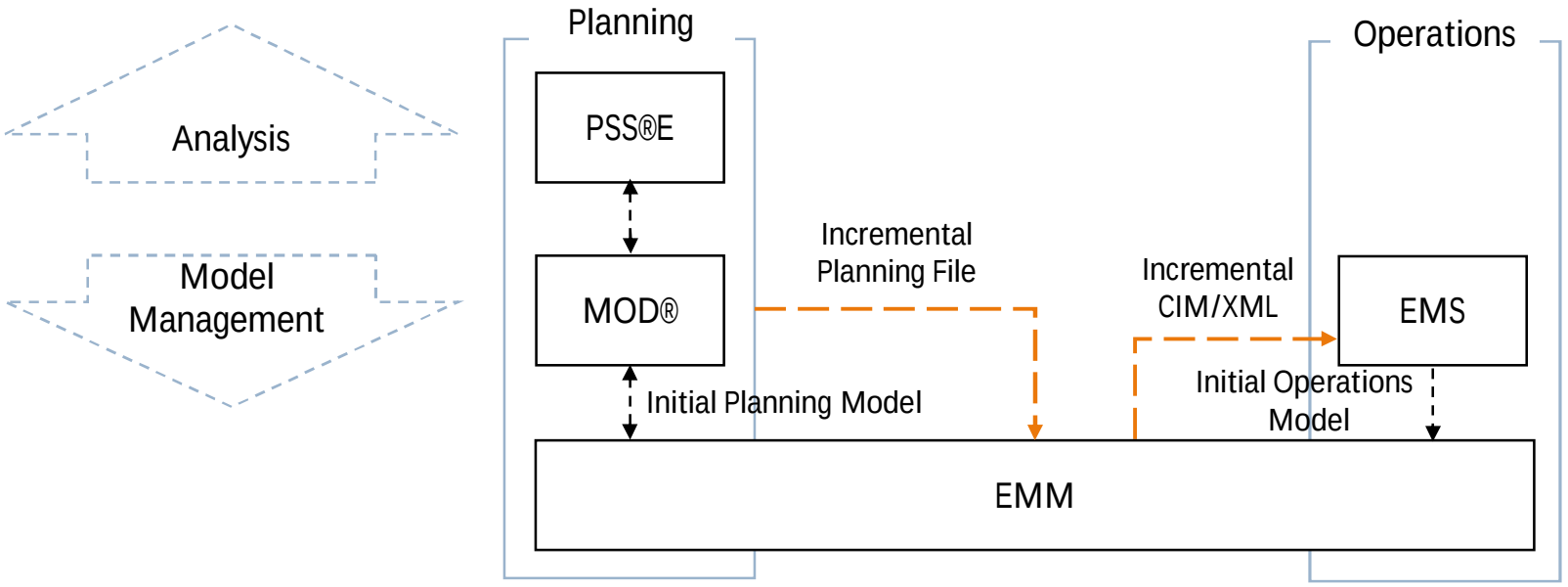
- IEC 61970 / IEC 61968 / IEC 62325
- IEC 61850 / IEC 60870-6



CIM

- The CIM Standards have reached a maturity level that ensures successful usage through several interoperability tests and iterations
- Need to support the standardization effort and interoperability tests from day zero
- Market needs implemented standards to help the users to ease integration, reduce implementation costs and ensure future improvements

PSS®ODMS Platform
Model Management Solution



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Model Management Solution Benefits

Improve Quality

- Single source of model data in common format
- Data consistency across all study environments
- Improved study results and model accuracy
- Access to consistent real time snapshot data for planners

Enhance Data Migration and Validation

- Incremental file exchange and model updates between environments
- Data migration to PSS® Product Suite – MOD®, PSS®E, PSS®MUST
- Track and log projects/updates from planning into operations
- Validate model and incremental changes within the application
- Manages past, present and future models

Efficiency

- No need to rebuild model in multiple environments
- Reduces model maintenance cycle with incremental changes
- Allows separation of responsibilities for model builders
- Incremental propagation and validation reduces build and deployment time to EMS

Thank you for your attention!

Please join us at our UGM and Powertrack in Orlando Florida April 28th -30th

Or Contact me at

Joseph_smith@siemens.com
317-432-3611

To arrange for interactive demonstration of CIM Enterprise Model Management.