



USE OF CIM for EDF Distribution Automation

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Session: Information Models for Distribution Automation

Agenda

- ❖ Introduction
 - ❖ Context
 - ❖ How CIM is used and extended by IEC TC57 ?
 - ❖ Interoperability tests adding-value
 - ❖ Is CIM used in Europe ?
- ❖ ERDF CIM DA Feedback & Challenges
- ❖ EDF R&D CIM DA Feedback & Challenges
- ❖ Smartgrids Challenges
 - ❖ Information models Harmonization
 - ❖ Smartgrid European projects Coordination
- ❖ Conclusion

Introduction Context

- ❖ NIST SGIP initiative with PAPs
 - ❖ PAP 8 : CIM for Distribution Grid Management
 - ❖ PAP14 : Transmission and Distribution Power Systems Model Mapping
- ❖ In Europe : Smartgrid Roadmap
- ❖ Standard Information Models are Key in Smartgrid vision (CIM, 61850, COSEM)
- ❖ EDF R&D contributes to these international efforts since 1997

Introduction

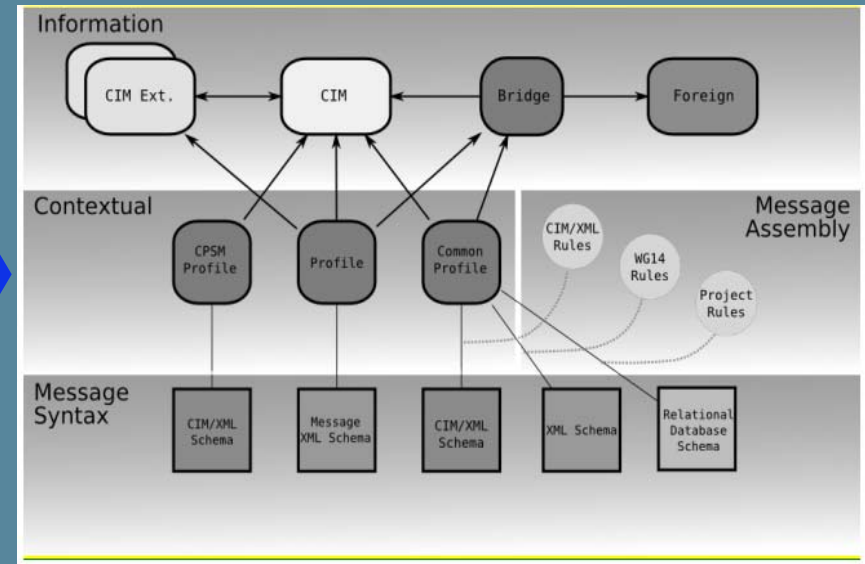
How CIM is used and extended by IEC TC57 ?

- Business process analysis = Use Case
- Information model extension
- Profile definition

Use Case
Definition
(text)



Profile
Companion
Document
(text)



Introduction

Interoperability tests adding value (1/3)

- ◆ 61970-452 profile or CPSM was existing
 - NERC requirement for North American TSOs
 - Some interoperability tests were organized by EPRI since 1999
- ◆ 2004 EDF R&D Cimergy project :
 - why not having an equivalent profile in Europe for European TSOs ?
 - If CIM is used by TSOs it will be used by DSOs
 - why not having a common model data exchange for DSOs ?

Introduction

Interoperability tests adding value (2/3)

- ◆ Let's define a profile for European TSOs based on CPSM,
 - convert existing data exchange used by European TSOs
 - prove consistency of this European standardized data set during IOP tests
- ◆ Let's define a profile for DSOs
 - Create a NWIP at the IEC level : 61968-13
name it CDPSM (Common Distribution Power System Model)
 - mapping EDF distribution data set to a CIM based profile based on CPSM
 - prove its consistency during IOP tests
 - 61968-13 became an International standard in 2008
 - With smartgrid initiative, it got more attention...

Introduction

Interoperability tests adding value (3/3)

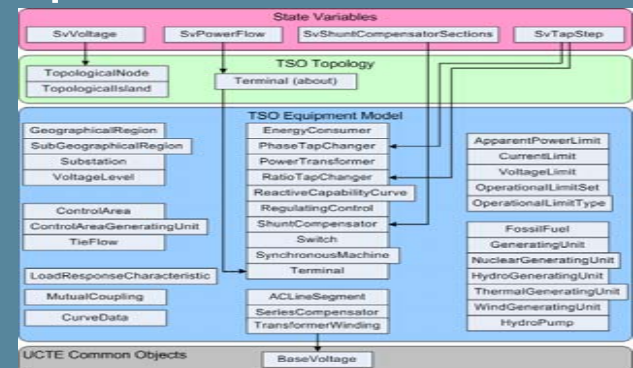
IOP Helped to consolidate some CIM standards parts

- ◆ 61970-301 : CIM Information Model
61968-11 : Distribution CIM Information Model
- ◆ 61968-13 : Model exchange profile for Distribution
- ◆ 61968-9 : Metering related profiles

Introduction

Is CIM Used in Europe ? (1/2)

- March 2009 : first CIM IOP test in Europe for TSOs
- July 2009 ENTSO-E created : 34 countries, 42 TSOs
- Business process : Day ahead congestion study
- European TSOs migration process started in 2010
- EDF provides converters between CIM profile for ENTSO-E and the old Data Exchange Format



Introduction

Is CIM Used in Europe ? (2/2)

- ENTSO-E 2010 IOP tests #2
- European DSOs are more & more familiar with CIM
- Smartgrid European projects funded by EC are using CIM or 61850
 - ADDRESS project
- EDF R&D,
ERDF (french DSO),
RTE (french TSO)
are using CIM, and need to develop its usage

Agenda

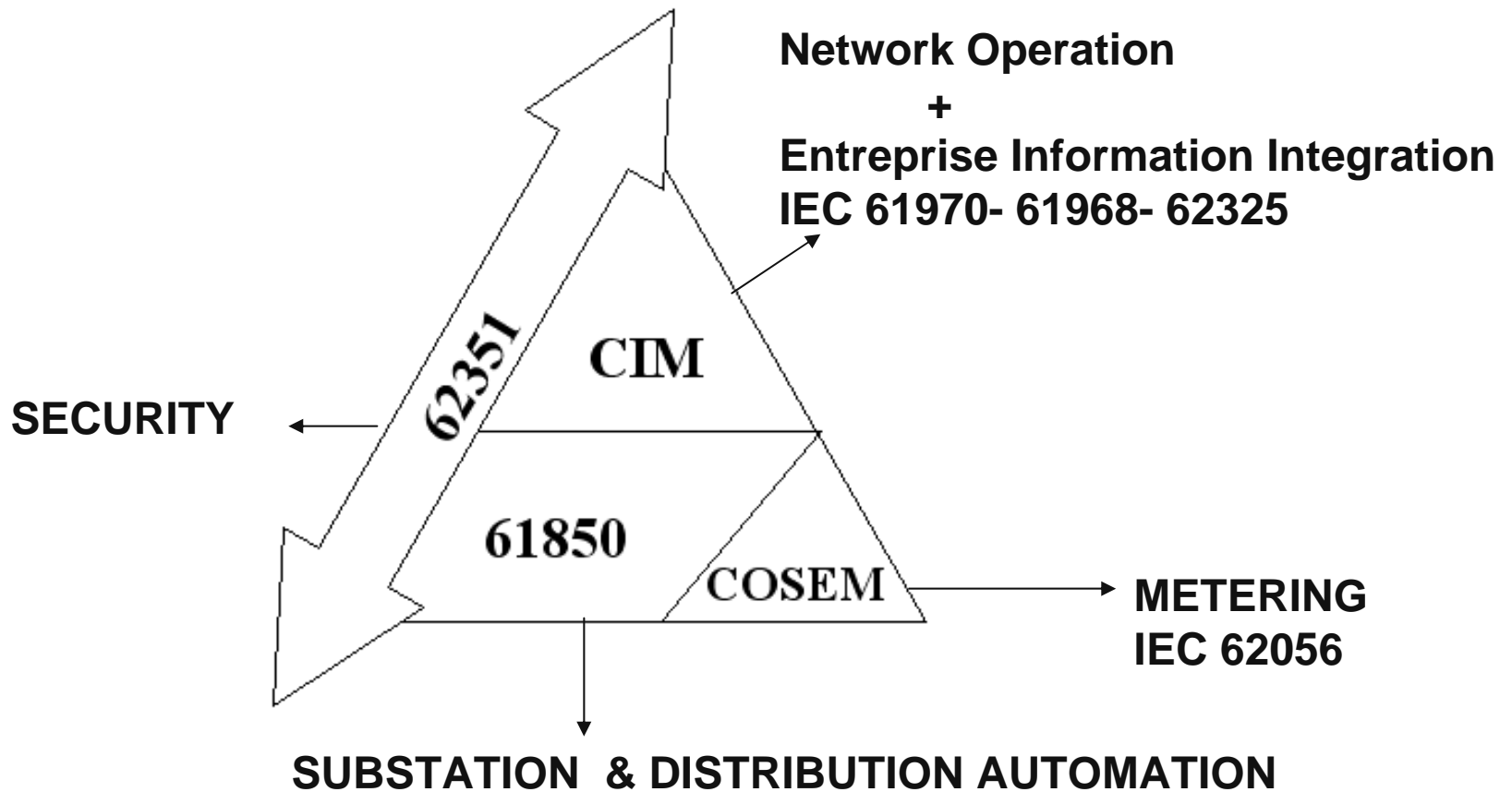
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EUROPEAN SMARTGRID CHALLENGE

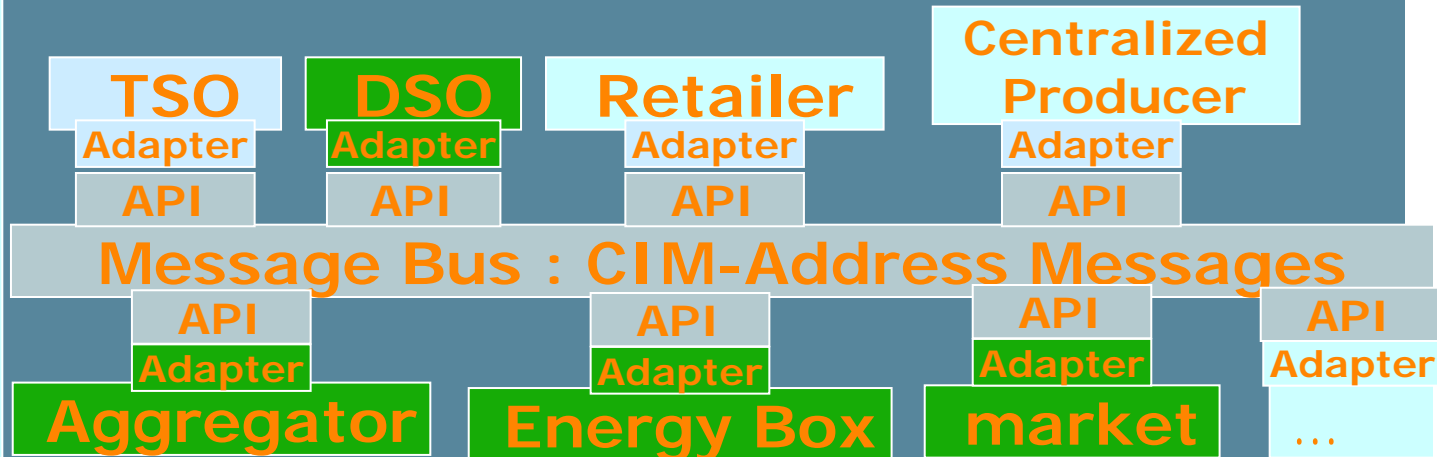
CIM, 61850, COSEM European smartgrid reference Information models



SMARTGRID EUROPEAN PROJECTS COORDINATION

- ❖ ADDRESS project (Active Demand project) is the first project which leverages CIM information model

Field Test
=
integration
with some
real
application



- ❖ Other projects OpenNODE, DERRI want to have the same approach
- ❖ THIS REQUIRE COORDINATION AMONG EUROPEAN PROJECTS !

Conclusions

Next Steps

- ❖ Interoperability tests for CIM Distribution (January 2011)
- ❖ Maintenance Cycle of IEC standards
- ❖ Consolidate Uses Cases from Utilities and expand CIM
- ❖ Harmonize CIM and 61850 to improve Distribution Automation

Thanks for your attention !

Questions ?