

# TC 57 – WG16

## CIM and ETSO harmonization

### CIM User Group Bruxelles, May 2009

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# Agenda

- ▶ Introduction
- ▶ Aims of the IEC-ETSO standards harmonization
- ▶ Methodological framework
- ▶ Short methodology examples
- ▶ Progress status
- ▶ Next steps
- ▶ Conclusion

## Initiative background – Strategic importance of standardization within Europe

- ▶ Markets integration across Europe requires market consistency & seamless communication at several levels:
  - ▶ Inter-Participants
  - ▶ Participants to Power Exchanges & TSOs
  - ▶ Inter-TSOs



- ▶ Second European Electricity directive requiring open transmission capacity allocation which increases the need for aligning physical models with market signals
  - ▶ Auction office
  - ▶ Transparency in ATC allocations
- ▶ Need for expanding interoperability between energy stakeholder IT applications (expanding standards down to data models)



- ▶ Market unbundling has distributed Business Processes across various Energy Stakeholders, typically :
  - ▶ Scheduling
  - ▶ Capacity allocation and nomination
  - ▶ Reserve management
  - ▶ Customer switching
  - ▶ Settlement Calculations...
- ▶ This however requires coordination of standards across stakeholders
- ▶ Standardisation is a key element for IT Total Cost of Ownership reduction through :
  - ▶ Harmonization of business processes
  - ▶ Improved component reusability
  - ▶ Market Interfaces
  - ▶ Reduced integration costs

- ▶ CIM Market Extension CME creation
  - ▶ Mainly north American vision of the market in 2003
  - ▶ Taking into account European market design : OTC Over the counter market not modelled
- ▶ IEC European Market Model benefits
  - ▶ Integrating the European market standard defined by ETSO works into IEC
    - Harmonized European role model
    - Enhance IEC standards with business processes
    - Many business processes already modelled by ETSO
    - Extensive business exchanged messages
    - Reuse of the ETSO implementation guides
    - Building of a working framework based on UN/Cefact specification
  - ▶ Hosting the European profile as IEC international standards
  - ▶ Taking advantage of the standardization community



## European WG16 Subteam Members

➤ **WG16:**

**Benoit Marie**

**Areva TD, Coordinator**

**Lars Ola Osterlund**

**ABB**

**Solenne Rebours**

**RTE**

**Maurice Adriaensen**

**KEMA**

**Aleksandar Cvetkovic**

**Syseca**

➤ **ETSO:**

**Michael Conroy**

**Consultant**

**Nisheeth Singh**

**Swiss Grid**

**Leslaw Winiarski**

**PSE-Operator**

➤ **Methodology Experts :**

**Cyril Effantin**

**EDF R&D**

**Jean-Luc Sanson**

**Consultant**

**André Maizener**

**Consultant**



## Project Liaisons

- ▶ Participation to ETSO TF EDI Meeting : Benoit Marie (AREVA)
- ▶ Proposal to appoint dedicated IEC Interfaces in ETSO Technical Groups
  - ▶ ECAN2 : Benoit Marie (AREVA)
  - ▶ ERRP2 : Solenne Rebours (RTE)
- ▶ CIM Model Manager : Kurt Hunter (Siemens)
- ▶ ETSO is now part of the new ENTSO-E (European Network of Transmission System Operators for Electricity)

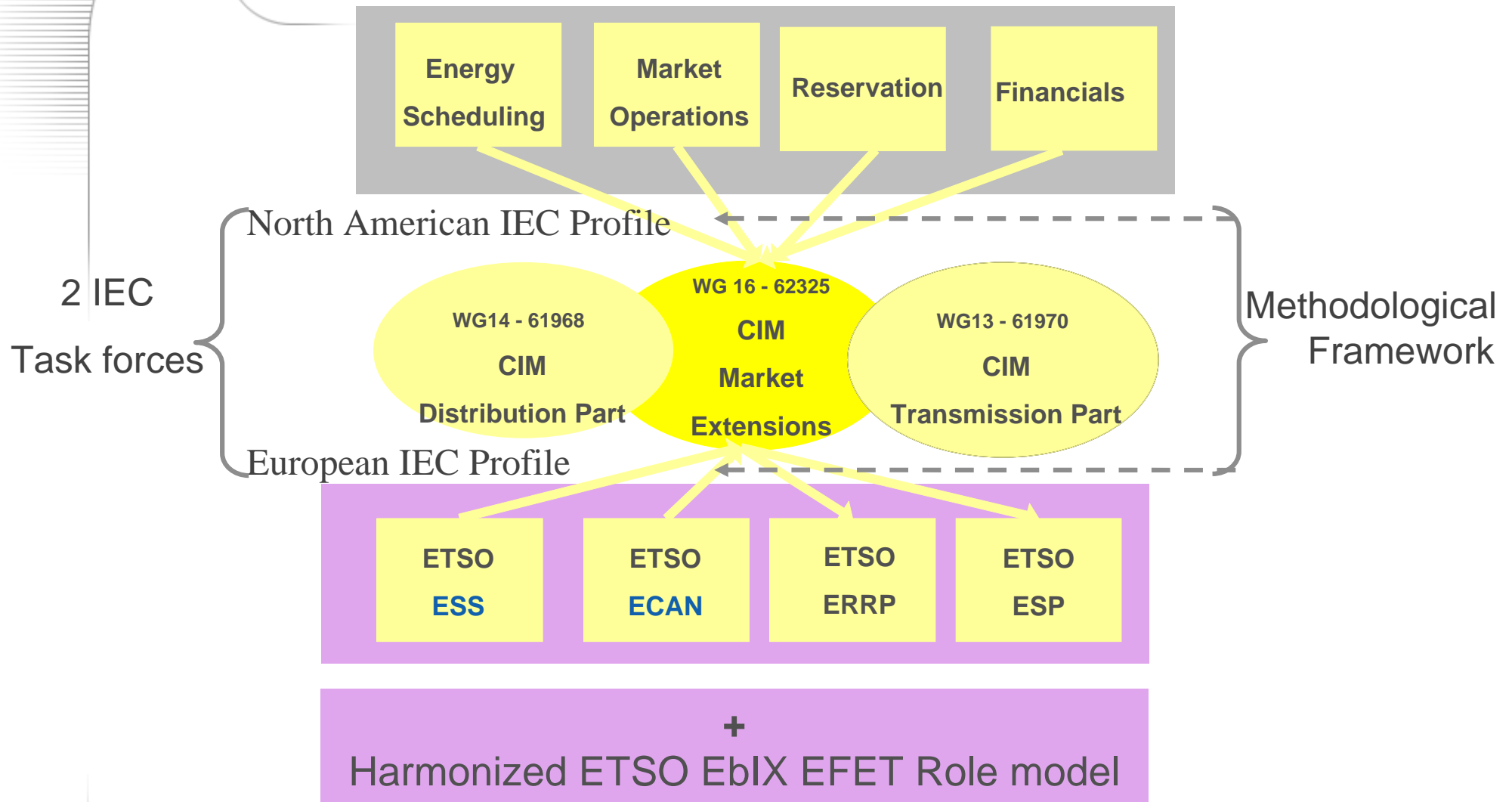


## Calendar

- ▶ **Monthly meeting since Santa Clara in January 2008**
- ▶ **6<sup>th</sup> Technical Workshop Meeting - Paris**                      **September 2008**
- ▶ **Paper at next CIGRE D2-C5**                                      **September 2008**
- ▶ **WG16 Meeting**                      **October 2008, January 2009, June 2009**
- ▶ **First interoperability tests**                                      **2010**

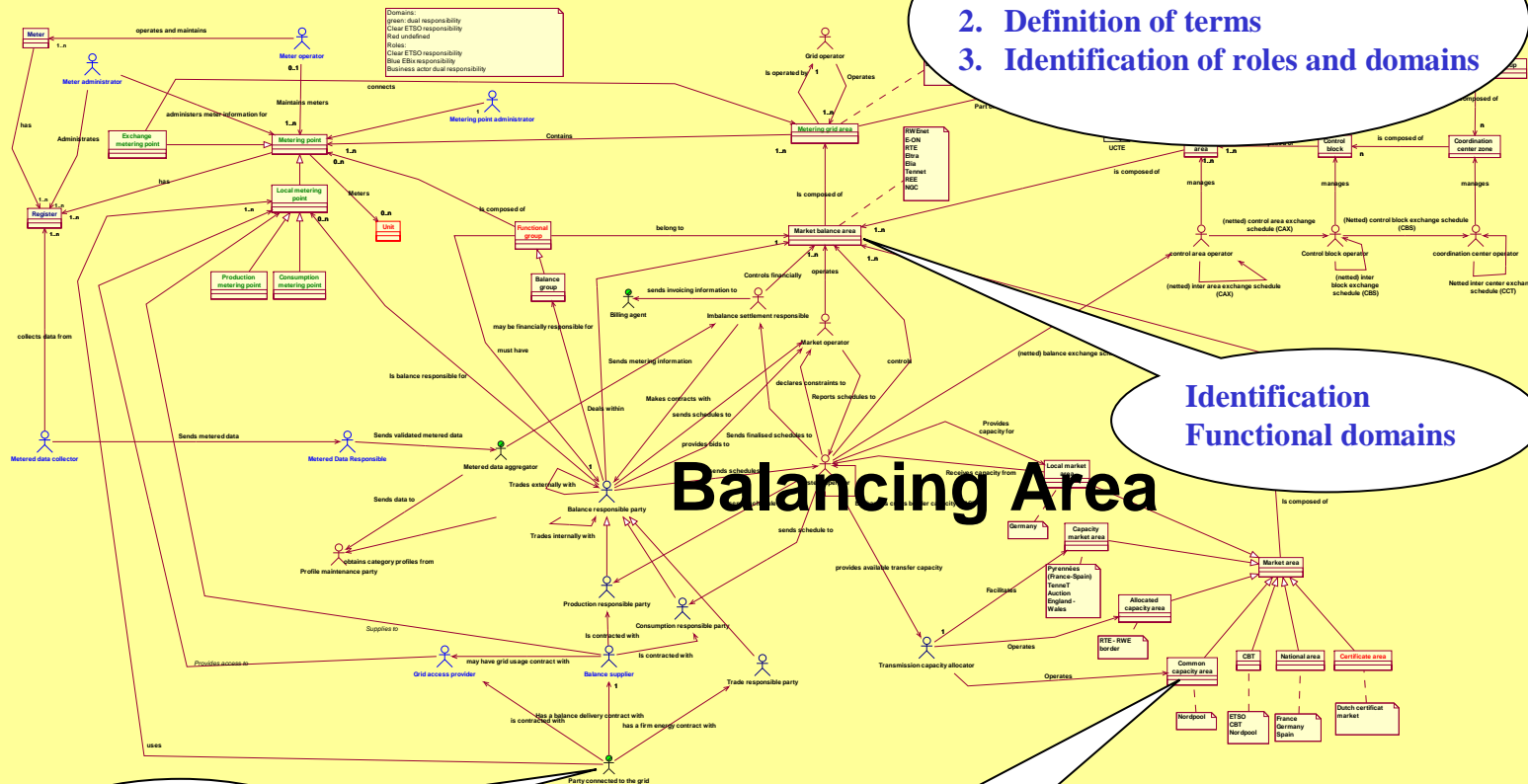
# How to achieve the convergence work ?

Building of the CME (CIM Market Extensions)



# Role Model

1. Harmonisation of vocabulary
2. Definition of terms
3. Identification of roles and domains



Identification Functional domains

Identification Roles of actors

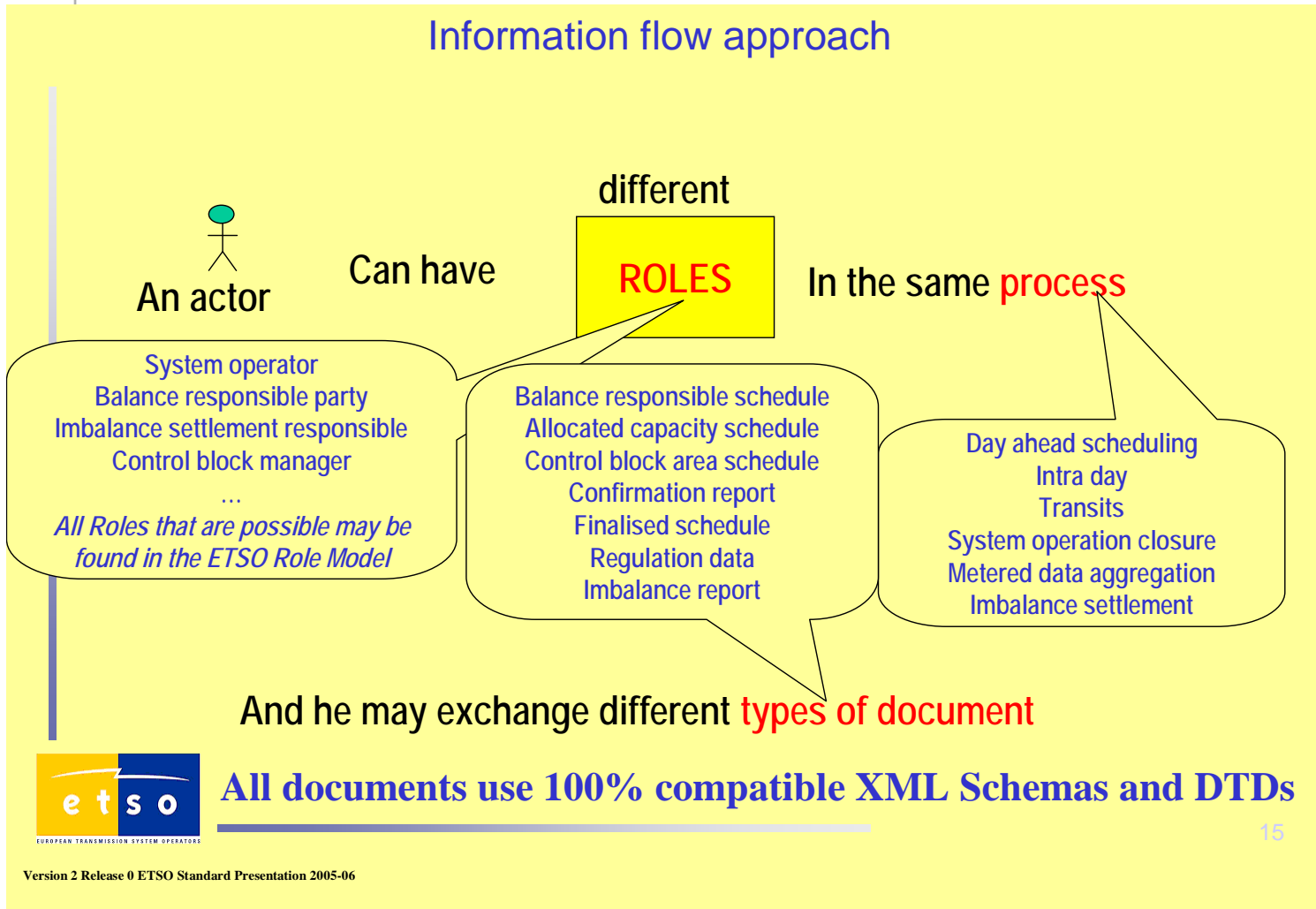
Identification geographical domains

Grid Connecting Party      Capacity Area



# The ETSO Role Model Definition

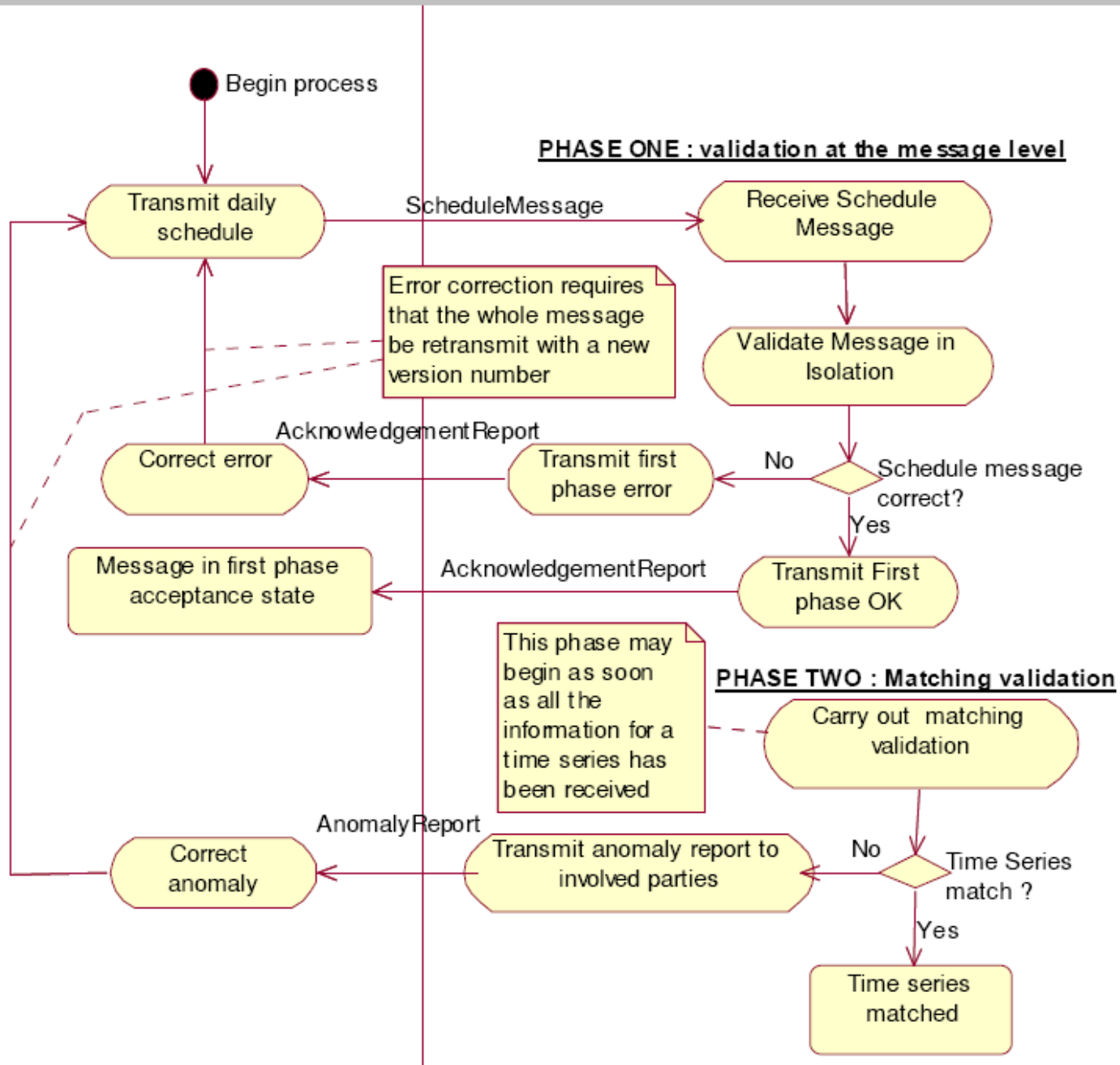
the ETSO concepts behind the scene



# Example of ETSO UML Business Processes

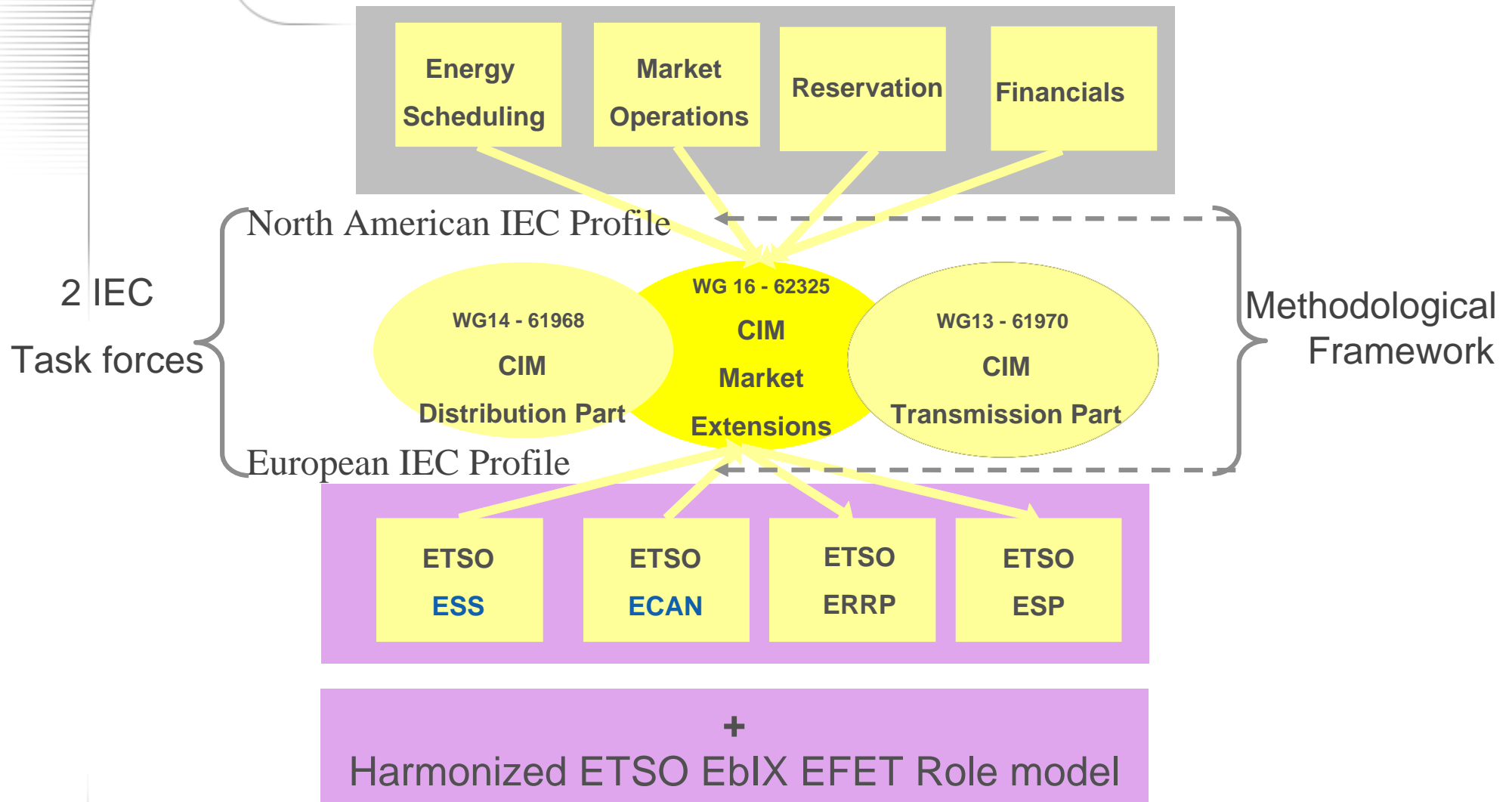
BALANCE RESPONSIBLE PARTY

SYSTEM OPERATOR



# How to achieve the convergence work ?

Building of the CME (CIM Market Extensions)



# Methodological framework

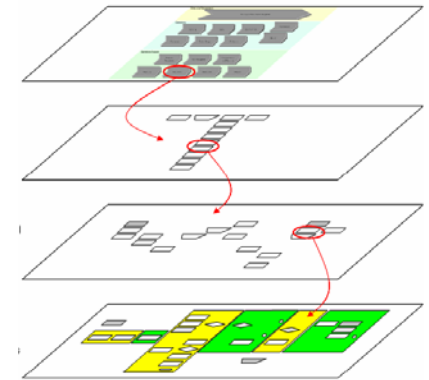
based on UN/Cefact CCTS



UN/Cefact (*United Nations/Centre for Trade Facilitation and Electronic Business*)

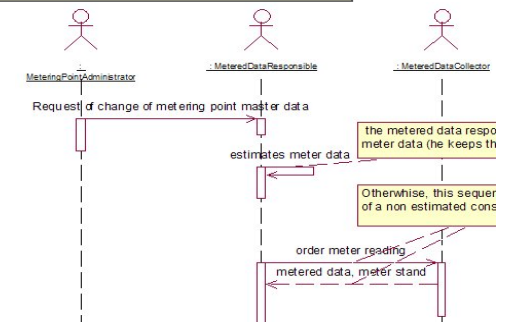
CCTS (*Core Component Technical Specification*)

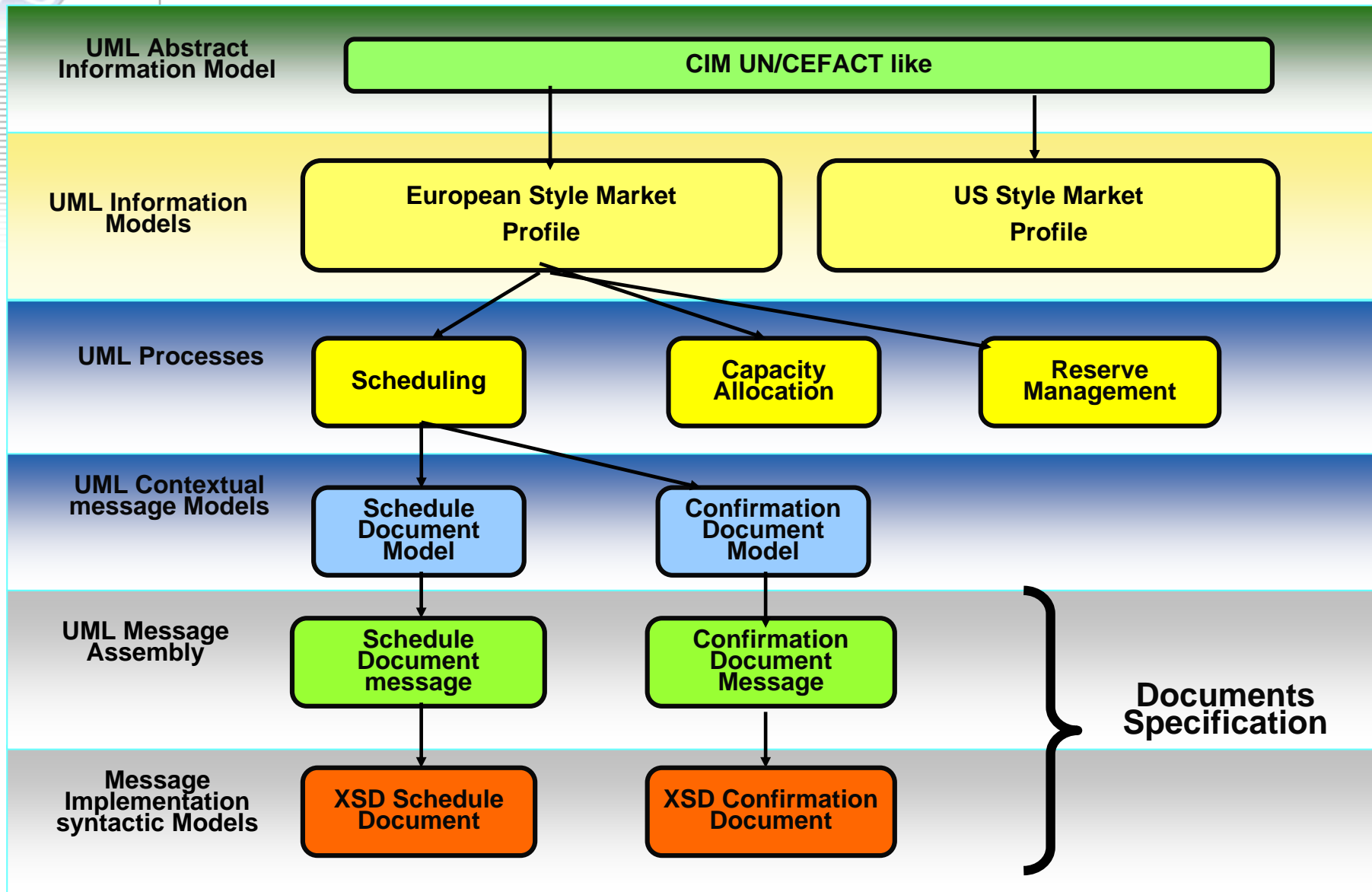
- CCTS Gives a working framework to enhance semantic, interoperability in electronic data exchanges



- In particular, it helps to link business processes data exchanges with a common global information model (such as the CIM model)

ex: ETSO Scheduling Process







Proposed Market Extension

CIM Market Extension UML

CIM

CIM UML

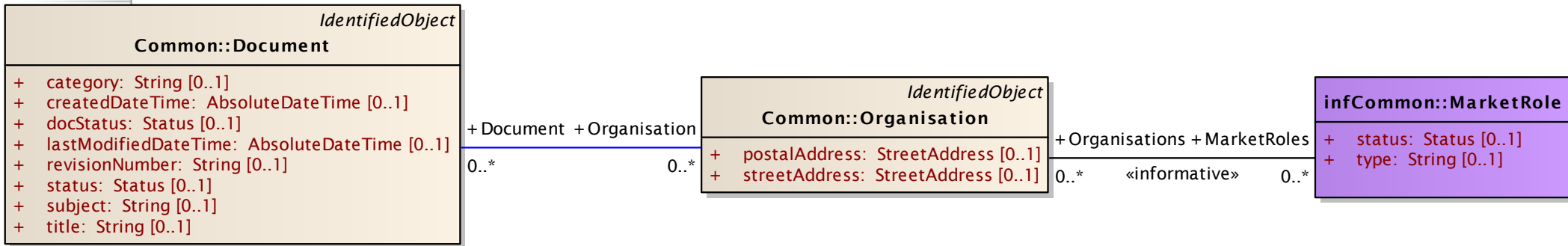
UN/Cefact Data Types Refinement

UML CIM UN/CEFACT like

# Model Derivation by the example (1/5)

## ► CIM LEVEL

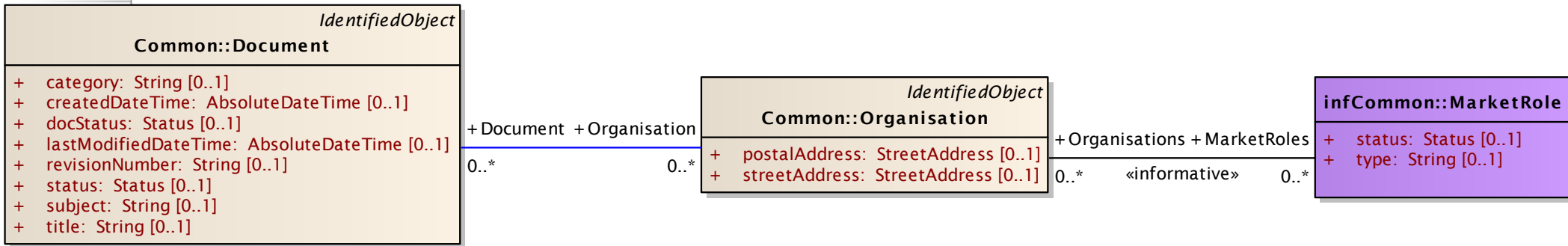
Class IEC62325- Information Model



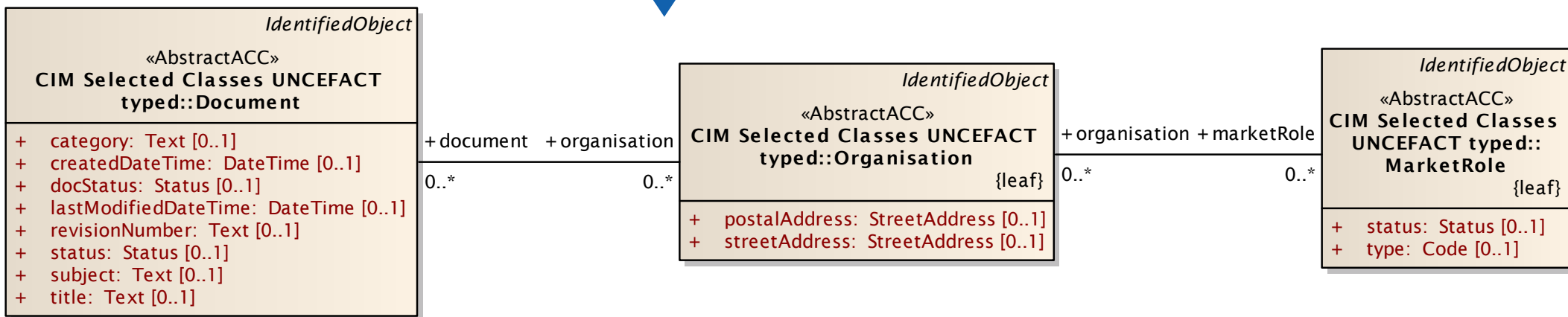
# Model Derivation by the example (2/5)

## ► CIM UN/Cefact like LEVEL

Class IEC62325- Information Model



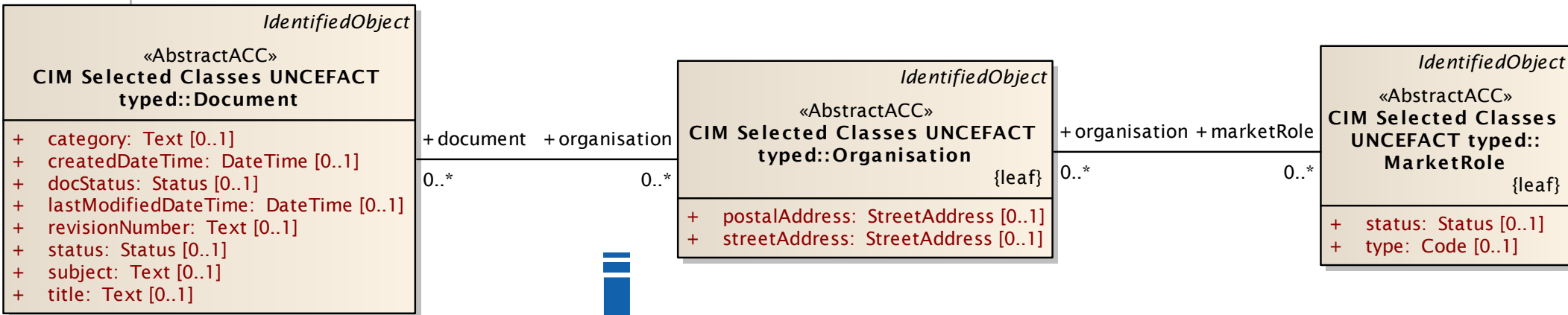
Class IEC62325- Un/Cefact Like Model



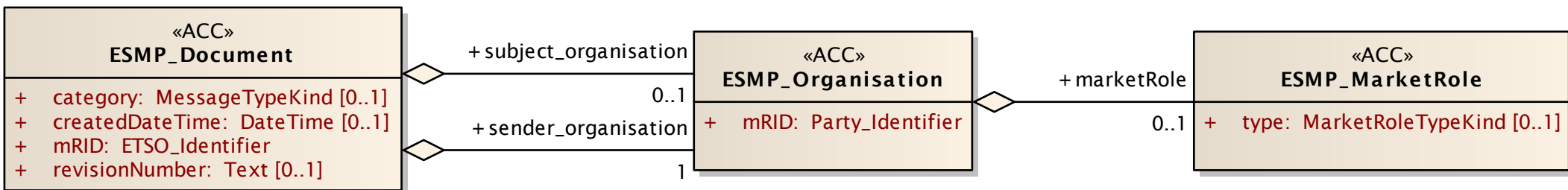
# Model Derivation by the example (3/5)

## ▶ European Style Market Profile level

Class IEC62325 - Un/Cefact Like Model



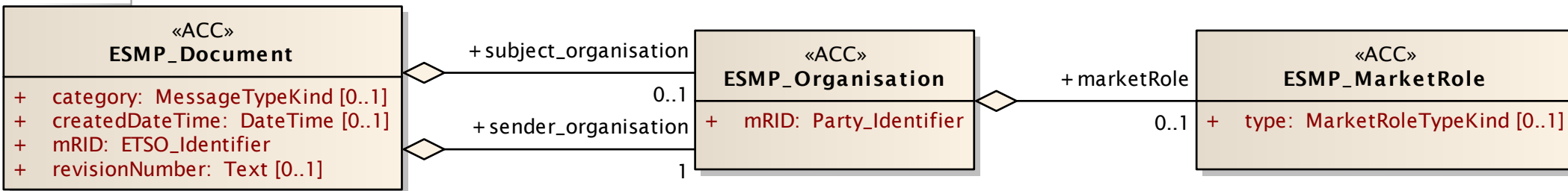
Class IEC62325 - ESMP model



# Model Derivation by the example (4/5)

## ► Contextual Document level

ss IEC62325 - ESMP model

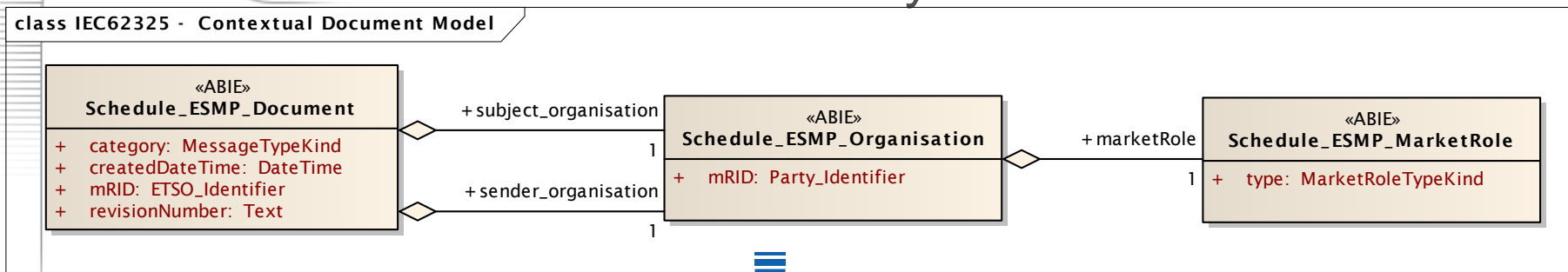


ss IEC62325 - Contextual Document Model

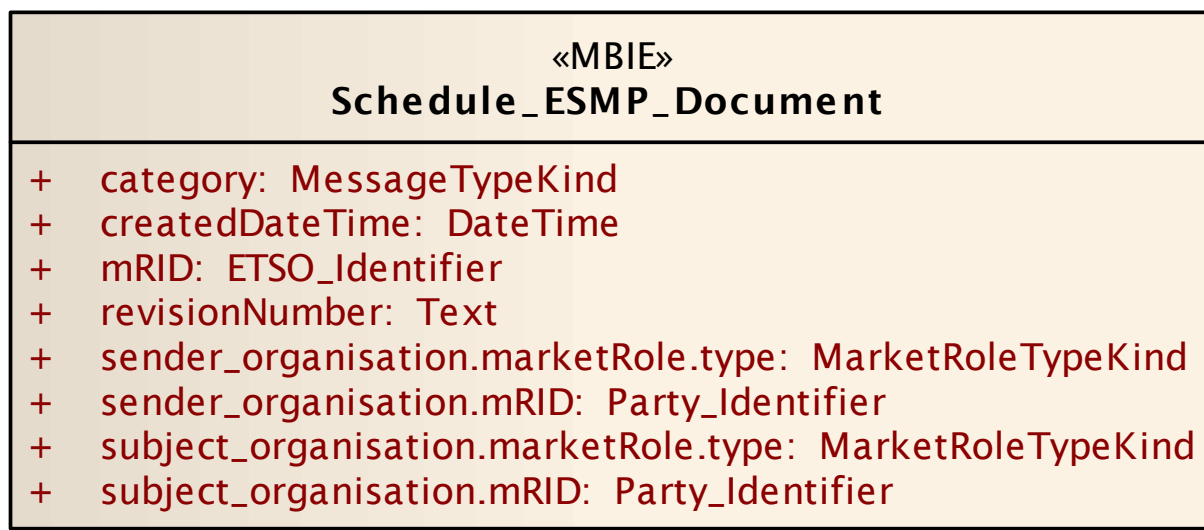


# Model Derivation by the example (5/5)

## ► Document Assembly level



class IEC62325 - Message Assembly Model

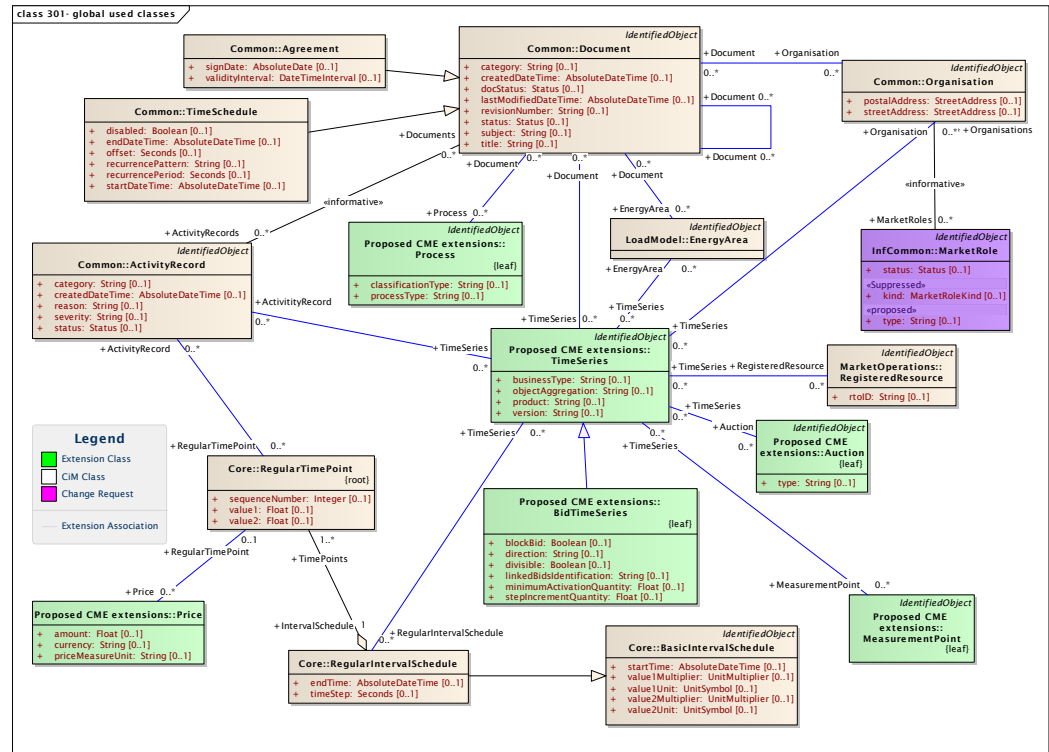




# Proposed CIM Extensions

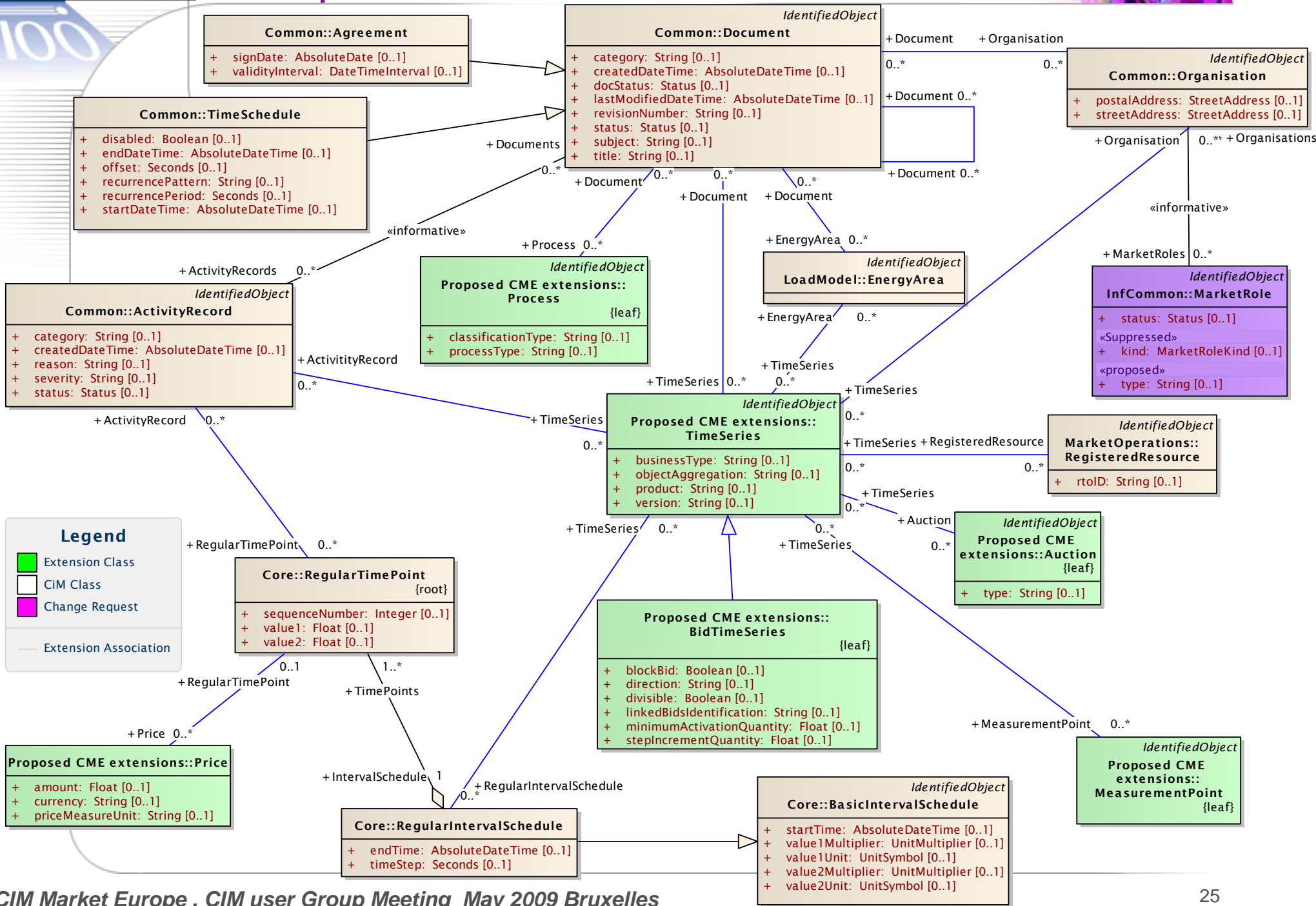
▶ With Scheduling and Capacity Allocation processes studies we have the following new CIM classes :

- ▶ MarketRole
- ▶ Process
- ▶ TimeSeries
- ▶ BidTimeSeries
- ▶ Auction
- ▶ Price
- ▶ MeasurementPoint



# Proposed CIM Extensions

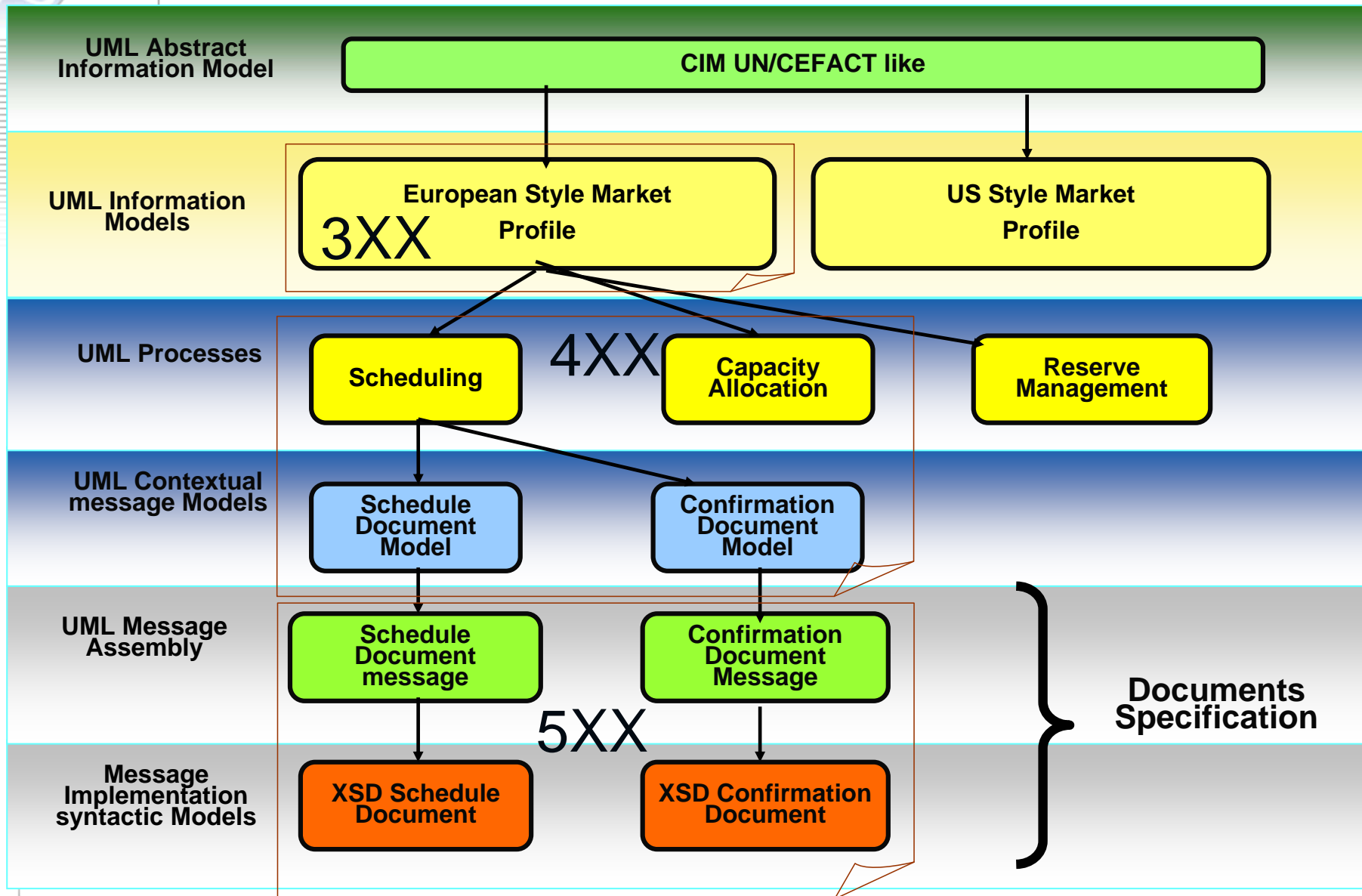
class 301- global used classes





## Progress Status

- ▶ **European Style Market study :**
  - ▶ CIM Information Model Extensions
  - ▶ CIM /UNCefact derived Core Components
  - ▶ European Style Market Profile
  - ▶ European message models for business processes (ESS and ECAN)
  - ▶ Message assembly and syntactic models for all documents
- ➔ Official ETSO Confirmation in April 2008 :
  - “The ETSO TF EDI agreed that the methodology outlined in cooperation with IEC should be promoted.”
- ▶ **2 NWIPs transmitted for vote – publication announcement :**
  - ▶ Modelling methodological rules ➔ TS
  - ▶ UML Model ➔ IS
- ▶ **Model updating for CIM v13 compliance: in progress**
  - detailed CIM version : `iec61970cim13v19_iec61968cim10v18`





## Next Steps

- ▶ Standard publication:
  - ▶ Information model extensions finalized – Ready for publication
  - ▶ Modelling Rules finalized – Ready for publication
  - ▶ European Style Market Profile Model (3XX) finalization – 2009 for publication
  - ▶ ESS and ECAN finalization (from Contextual down to Message model: 4XX and 5XX) – End of 2009/2010
- ▶ CIM Model harmonization :
  - ▶ New Information classes and associations (CIM Issues): Harmonization with North American Style Market Profile
  - ▶ UN/CEFACT data types
- ▶ Modelling supporting Tool :
  - ▶ Support for modelling requirements
  - ▶ Automated generation of syntactic message schemas (xsd)
- ▶ Potential interoperability tests for ESS: 2010

Thank you for your attention.