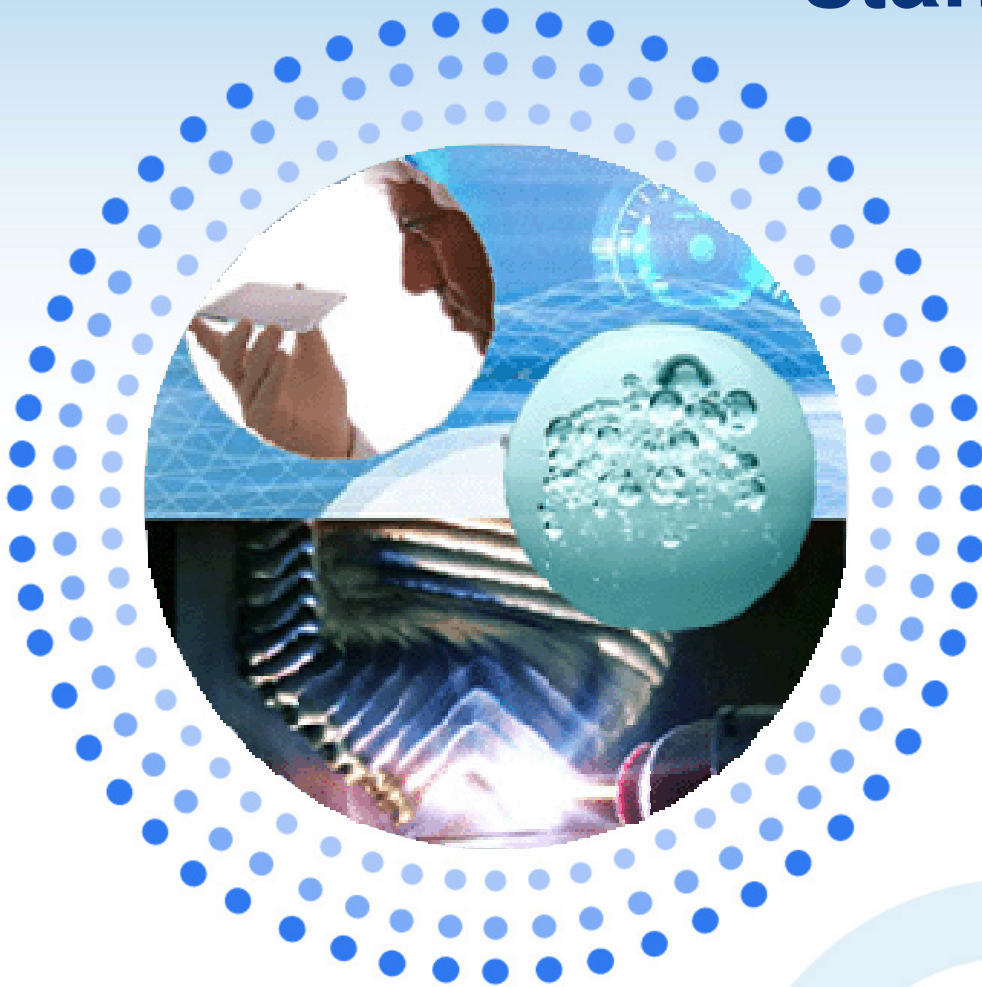


Using IEC CIM, 61850 standards to build the SMARTGRIDS

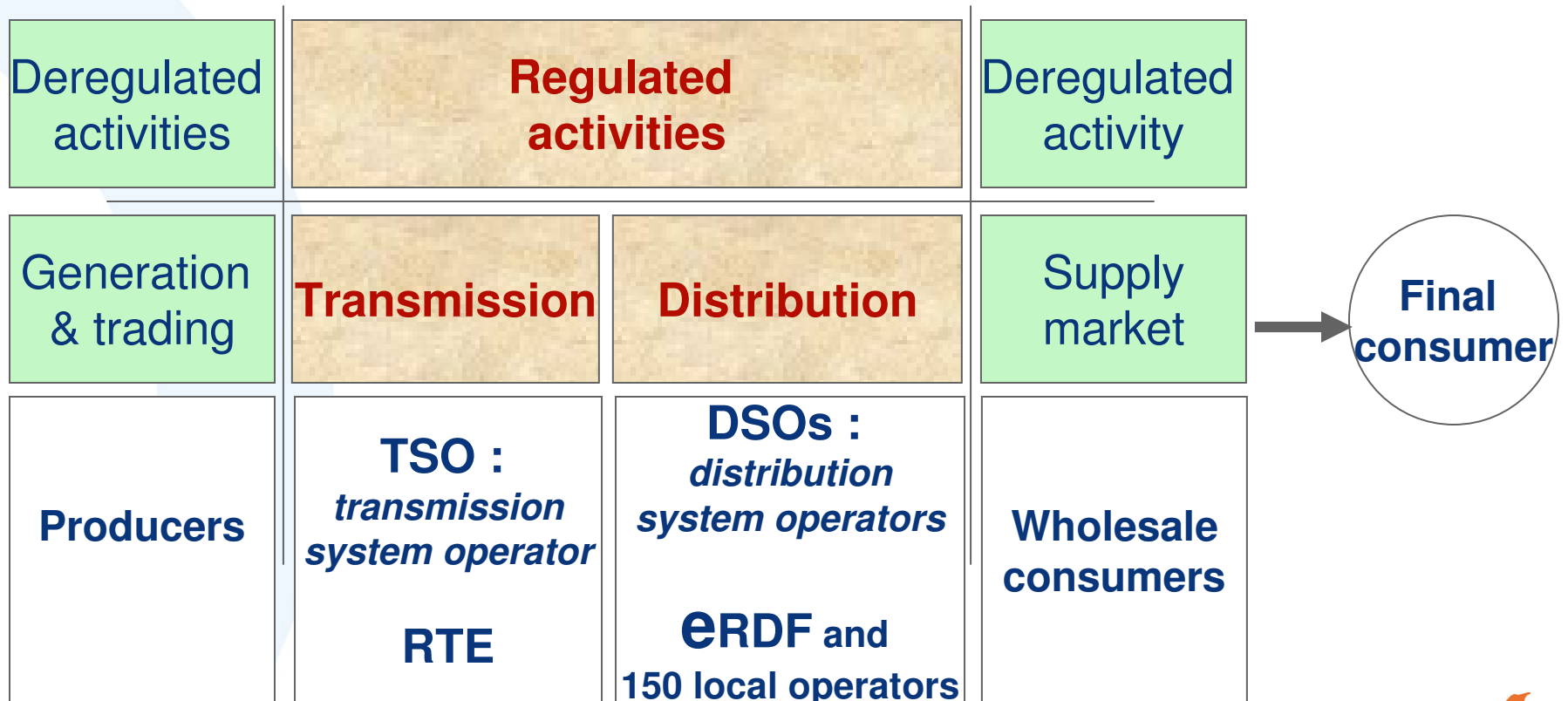
Eric LAMBERT
EDF R&D

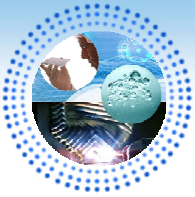
IEEE-DA WG 2009





The electricity sector in France





eRDF network

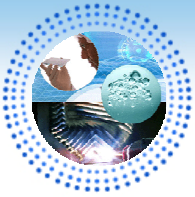
- ◎ 95 % of the French distribution system
- ◎ 2200 delivery point substations connected to the transmission grid

◎ MV network

- **596 200 km**, overhead : 62 %, underground : 38 %
- 100 000 connection points ($P_s > 250$ kVA)
- **727 000 MV / LV substations**

◎ LV network

- **669 300 km**, underground : 36 %, overhead [bare: 17 % + twisted 47 %]
- 310 000 connection points with 36 kVA $< P_s < 250$ kVA
- 32 000 000 connection points with $P_s < 36$ kVA



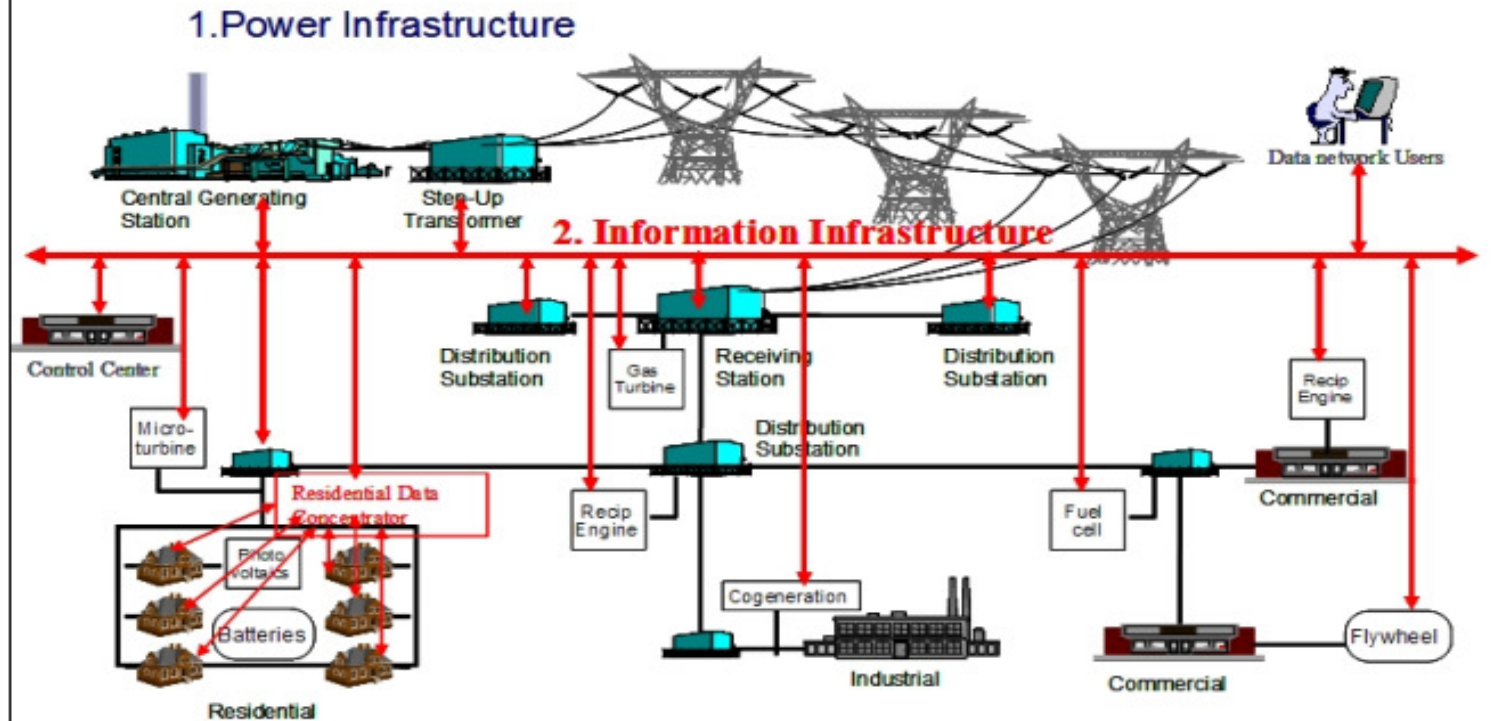
Topics

- ◎ INTRODUCTION
 - Smartgrid Needs
- ◎ CIM for eRDF Distribution System Operator
- ◎ eRDF & IEC WG14 CIM Roadmap
- ◎ EDF R&D Smartgrid Related projects
- ◎ CHALLENGES & CONCLUSION

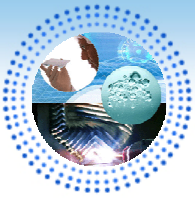


A SMARTGRID NEED

Two Infrastructures must be managed in the future, not one

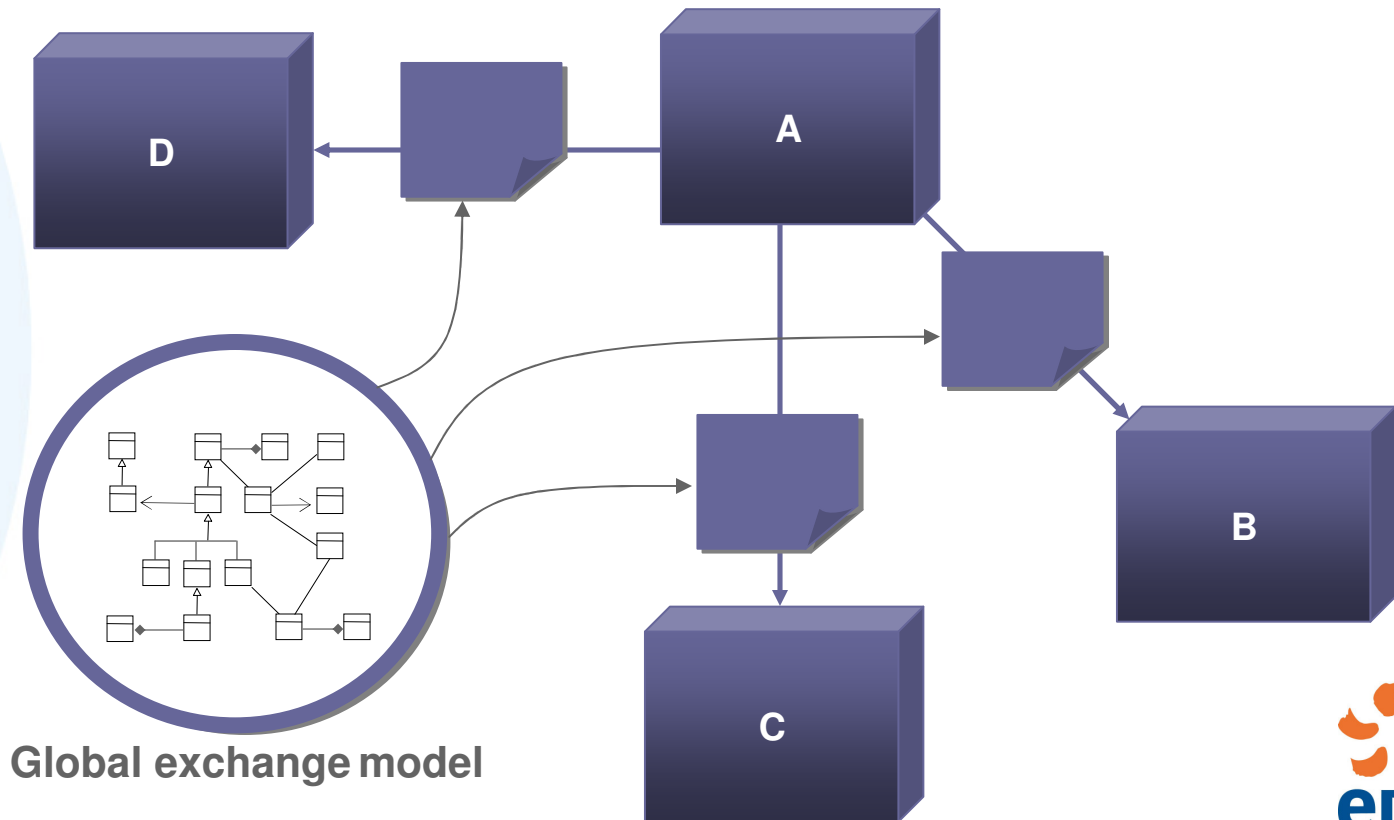


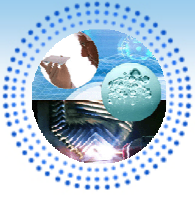
Goal : Satisfy end users and minimize integration costs



One global exchange model

- ◎ The purpose of a global exchange model is the possibility to re-use the same model for all the Information System exchanges.





Global exchange model advantages

- ◎ **Decrease the development time while creating a new interface** : informations to be exchanged are perhaps already described in the global exchange model.
- ◎ **Utility keeps the control of the information exchanges**, even if the exchange occurs between two non-legacy softwares.
- ◎ **More consistency for the Information System datas.**



CIM & 61850 standards

- ◎ CIM and 61850 are information models
- ◎ They are standardized by IEC TC57
- ◎ They do have their Users groups

<http://cimug.ucaiug.org>

<http://iec61850.ucaiug.org>

<http://osgug.ucaiug.org> (Open Smart Grid)

- ◎ IEC TC57 will work closely with IEC SMB strategic group 3 on SmartGrid
- ◎ **CIM & 61850** can/must define the **global exchange model** needed by Smartgrid Targeted Architecture !

CIM for eRDF Distribution System Operator



```
ERROR: undefined
OFFENDING COMMAND: f'~
STACK:
```