

Smart Grid Interoperability Panel CFE activities

US-Mexico Smart Grid Conference
March 29, 2012





- CFE Transformation
- CFE Smart Grid activities
- Interoperability activities
- Main results
- Conclusions



CFE VISION 2024

Smart Grid

- It will allow a greater customer satisfaction and a better interaction for accessing to options and rates, resulting in the improvement of the consumption efficiency.
- It will operate under international standards of reliability, security, sustainability, quality and efficiency; that give flexibility and allow to interconnect all type of generation and storage, privileging renewable energy.
- It will boost the processes transformation, supporting the human capital development, as well as an architecture and infrastructure of information technology reliable, secure and integral.
- It will contribute to the achievement of the goals and objectives established in the National Strategy of Energy and other energy sector programs.

MAIN OBJECTIVE

To evolve toward a more secure, efficient, and sustainable power grid that allows to: address the energy challenges of the country, transform the electric energy public service in order to meet the customers increasingly demanding expectations, and to contribute to the economical and social growth of the country.



Interoperability and Cyber-Security are part of the Technology Roadmap.

Some pilot projects are running in order to demonstrate technology, architecture, standards, schemas, and software systems features

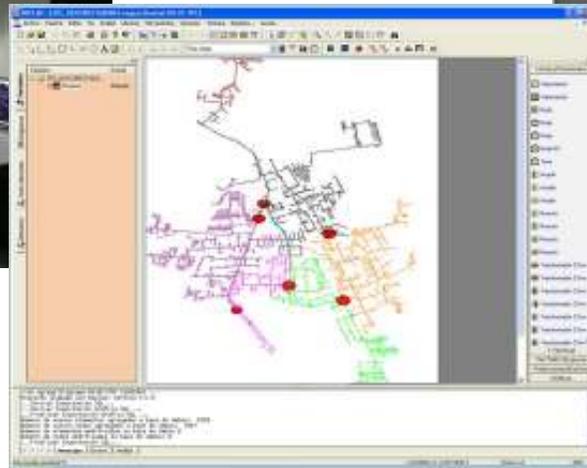
- Example of pilot projects:
 - AMR/AMI:
 - 155,861 meters installed.
 - 146,255 meters in process to be installed.
 - 302,116 total of meters.
 - AMI/MDM-Polanco:
 - 26,000 meter in central zone.

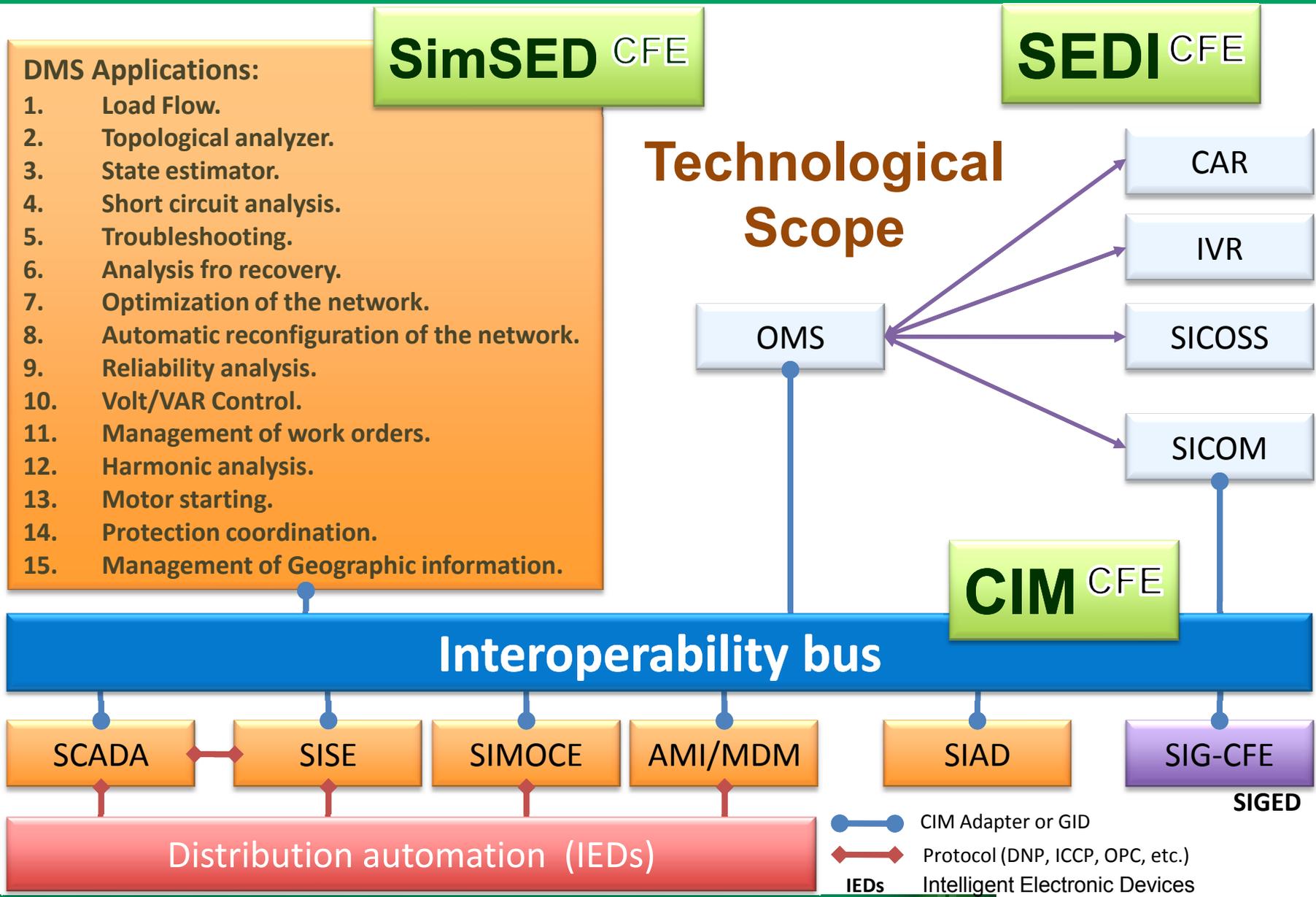




SimSED CFE

- Example of pilot projects:
 - On-Line Simulator for Distribution Operation Modeling and Analysis.
 - Software tool connected to CFE systems (DMS, GIS, SCADA and Historian) in order to Support Decisions at Distribution Control Centers.
 - Installed in Tampico Zone and Golfo Centro Division.
 - In progress to be installed at SLP, Victoria, Mérida, Polanco, and Oaxaca Zones.







- CFE is working in the Semantic Interoperability architecture for the Smart Distribution Power Network in Mexico.

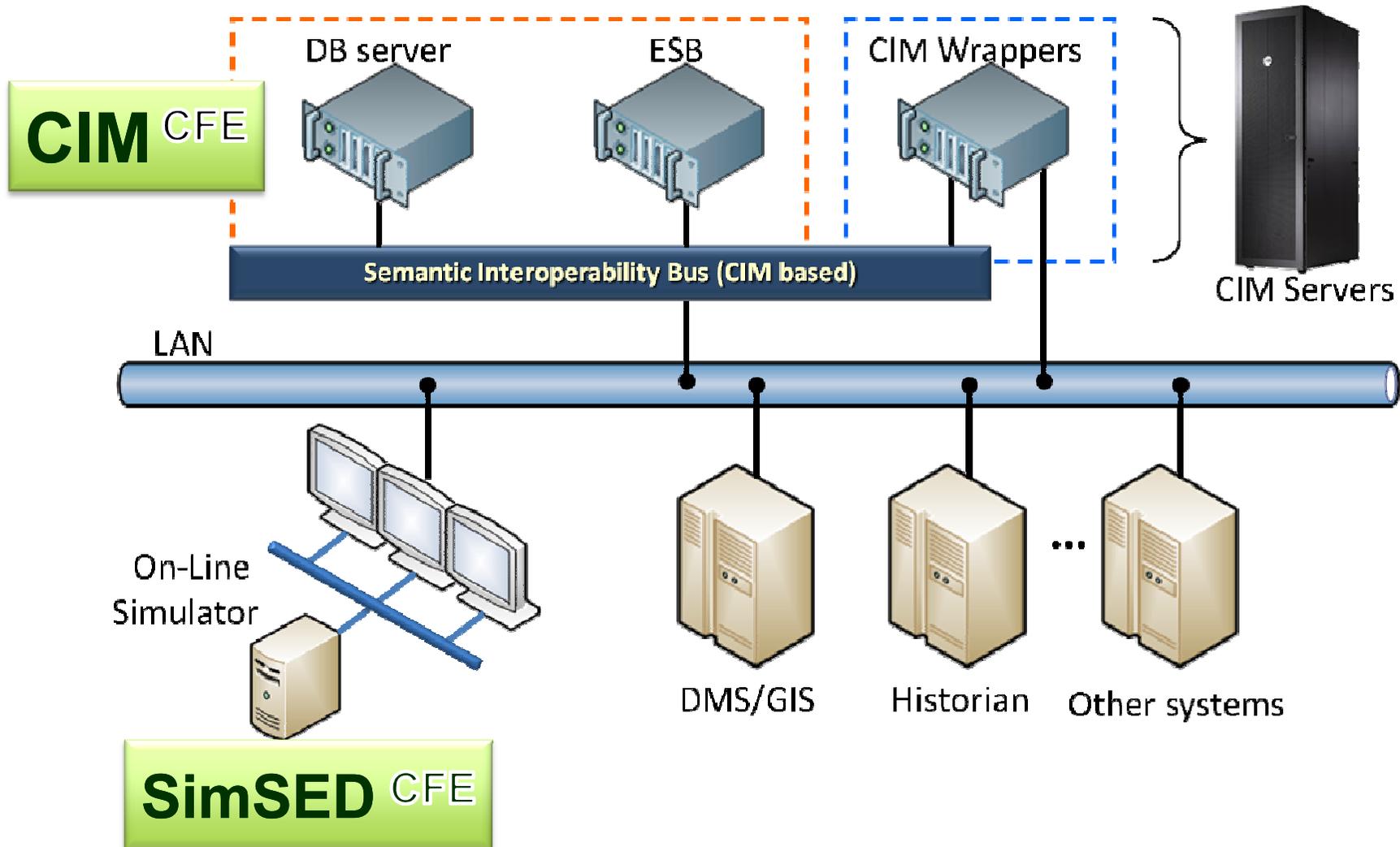


- An architecture for **Semantic Interoperability** was proposed.
- The **Common Information Model** (CIM) is used to define the Semantic Layer in data exchange.
- A CFE-CIM Profile was developed.
- Two pilot projects are running.
 - Tampico and Polanco.



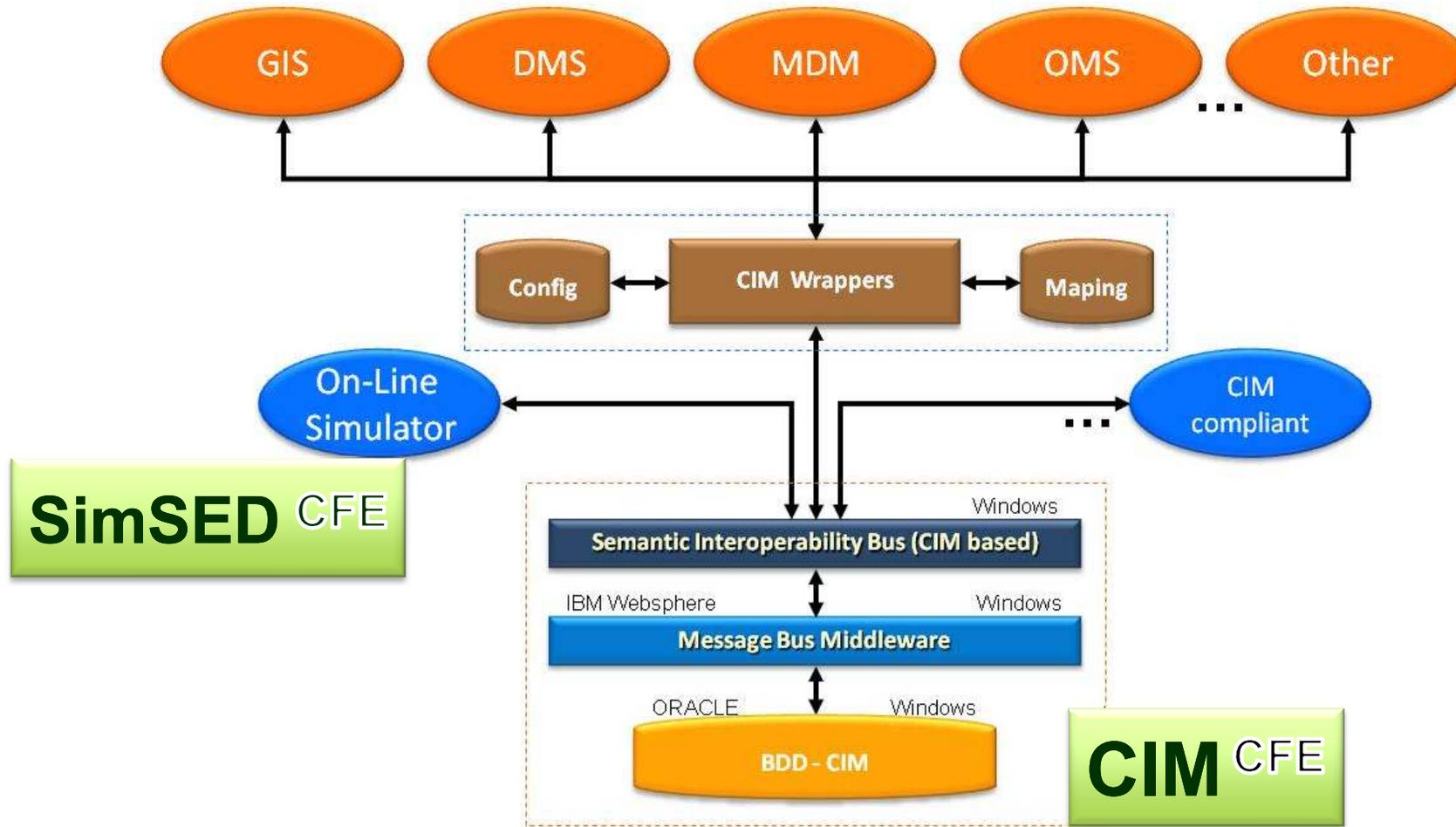


Physical architecture for the semantic interoperability of the Smart Distribution Power Network



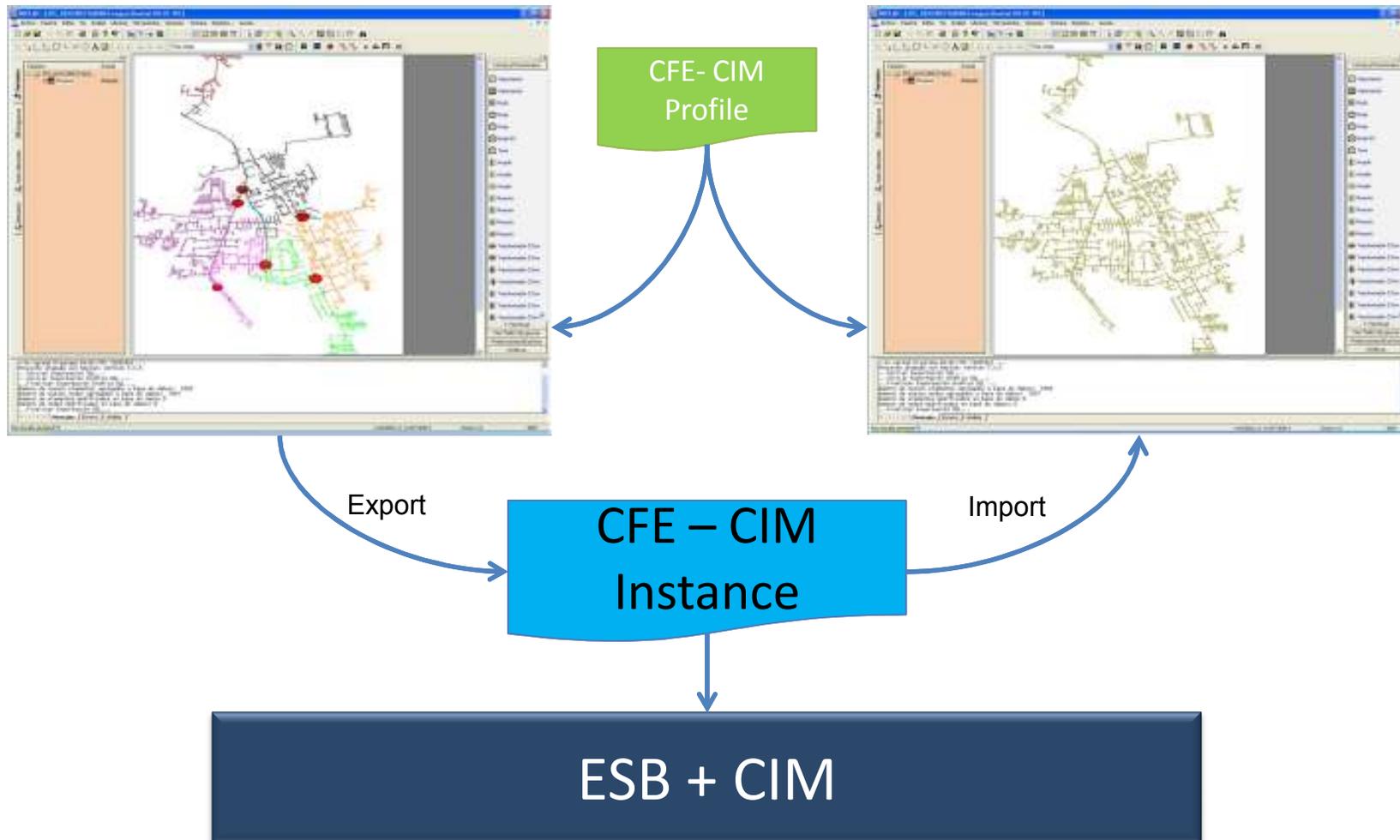


Logical architecture for the semantic interoperability of the Smart Distribution Power Network



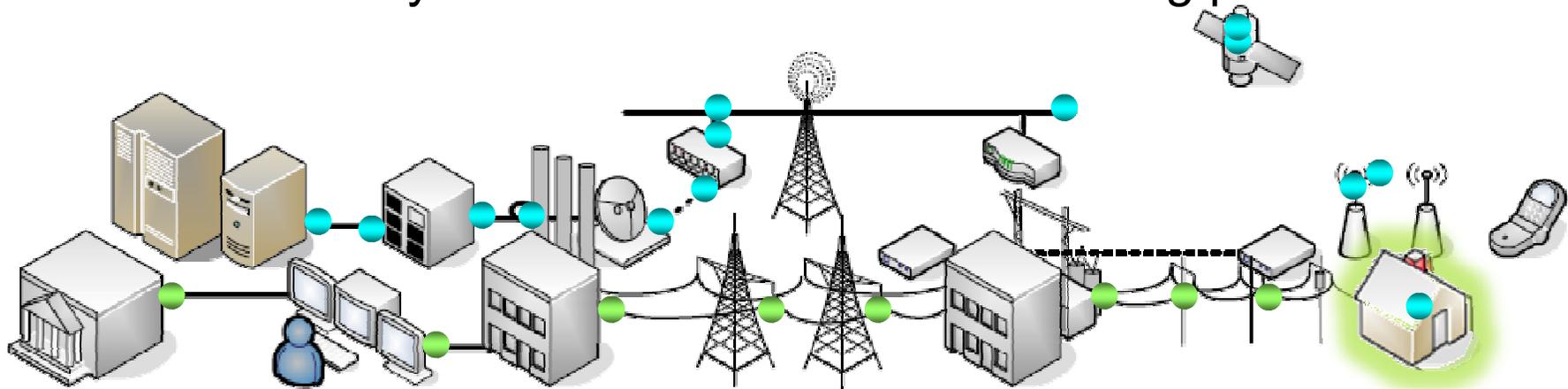


Interoperability testing for CFE architecture CIM-based





- The implementation of the **Smart Grid** is an unprecedented process of modernization.
- The implementation of the **Smart Grid Vision** (strategy) and **Technology Roadmap** (prospective); for the modernization process is vital as they allow to establish an appropriate strategy to specific needs.
- Because of its importance, value added and impact on technical and financial terms, each solution or function proposed must be validated by an evaluation to quantify the **benefits/costs rate**, also too the solvency as business case and evaluating performance.



Implementing CFE Smart Grid Vision



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