

Multi-Simulation for SmartGrids

Inria 1st year, MAIA / Madyne, EDF R&D

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MS4SG

PhD seminar of the Department 3
(2014-05-15, 5 minutes)

Needs

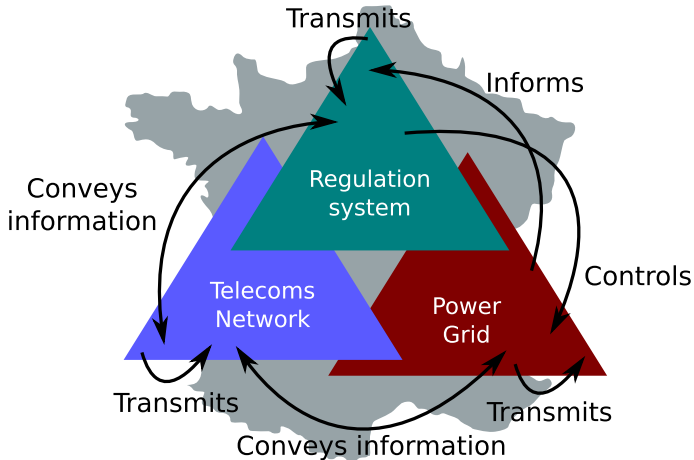
SmartGrid: *modernized electrical grid*

Needs

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- **Emerging technology** in the world
- EDF R&D needs to **simulate SmartGrids** before a deployment at a national scale

Needs



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- Great number of **heterogeneous entities** with local **interactions**
- **Multiple levels** of structure and organization
- Hard to **predict**, hard to **describe**

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SmartGrids are Complex Systems [1]

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- **Several expertises**
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Multi-Simulation is a prerequisite

Our Solution





- Platform **AA4MM** [2]
 - **Meta-model for multi-simulation**
 - **Agents & Artefacts** paradigm [3] (MAS)
 - **DEVS** [4] formalism (equation-based, event-based, etc.)
 - **Proven algorithms:** causality constraint respected and deadlock free
 - Pure **P2P** architecture

My Goals

- **How to couple existing telecom models between them and with the other components at the meta-model level, using AA4MM?**

- **How to semi-automatically generate connectors for integrating these models into SmartGrid multi-simulations?**

References

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