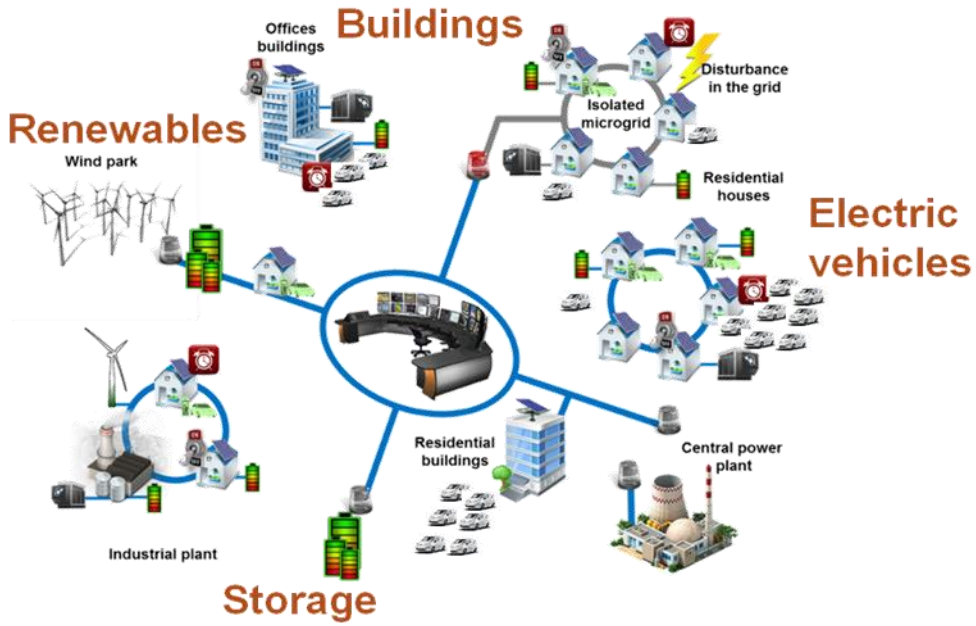
Look around: tomorrows smart cities are being planned and delivered today

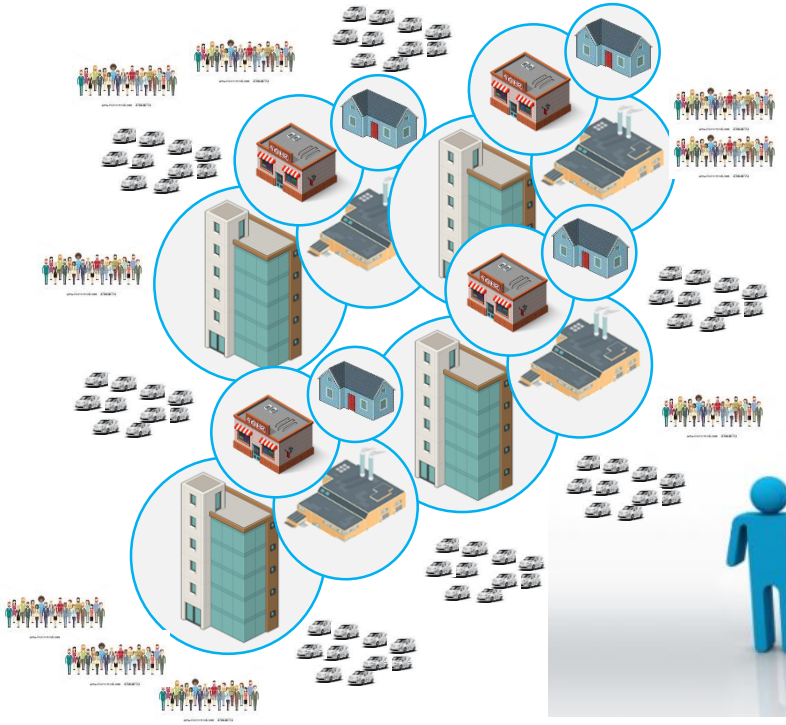
Zita Vale
Polytechnic of Porto, Portugal

Energy in the era of smart grids & microgrids



- Sustainable energy systems
  - Energy
  - Environment
  - Economy

Energy in the era of smart grids & microgrids



- People
  - Citizens (smart cities)
  - Customers (retailers)
  - Consumers (utilities)
  - …

- Demand flexibility
- Demand response

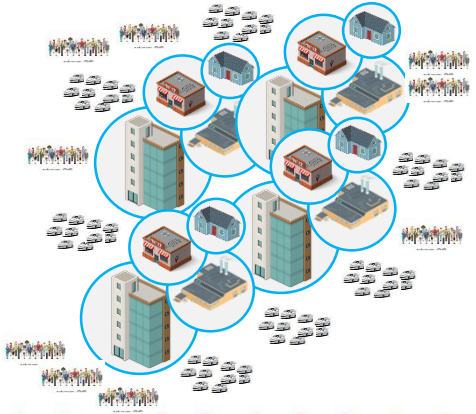
Energy in the era of smart grids & microgrids

Resources and their owners/managers are connected

- Aggregation
- Third-party resources use
- Energy/resource sharing
- Transactions among neighbours

New forms of energy markets

- Local energy markets
- Smart energy communities



DREAM-GO approaches and contributions

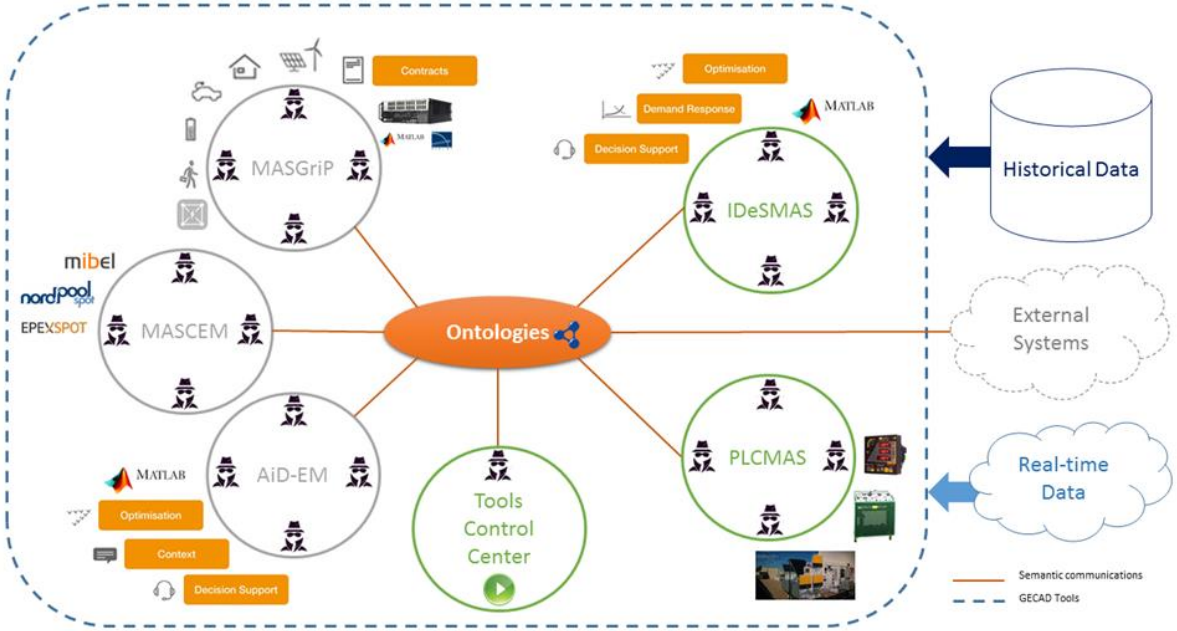
- Reduce costs
- Ensure added value
- Share value

How?

DREAM-GO

- Realistic business models to be used in practice
- Short and real-time demand response
- Demand response contracts
- Remuneration and Tariffs

DREAM-GO approaches and contributions



AiD-EM - Adaptive Decision Support for Electricity Markets negotiations

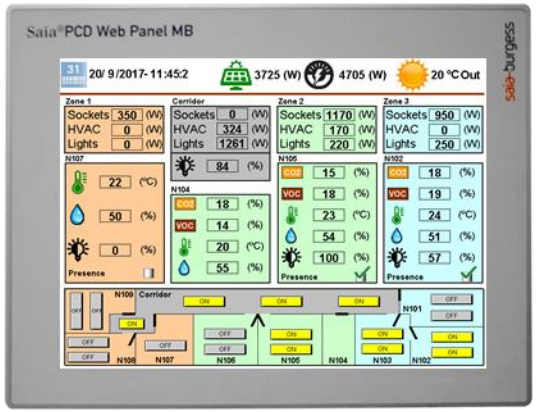
MASCEM - Multi-Agent Simulator of Competitive Electricity Markets

MASGriP - Multi-Agent Smart Grid Platform

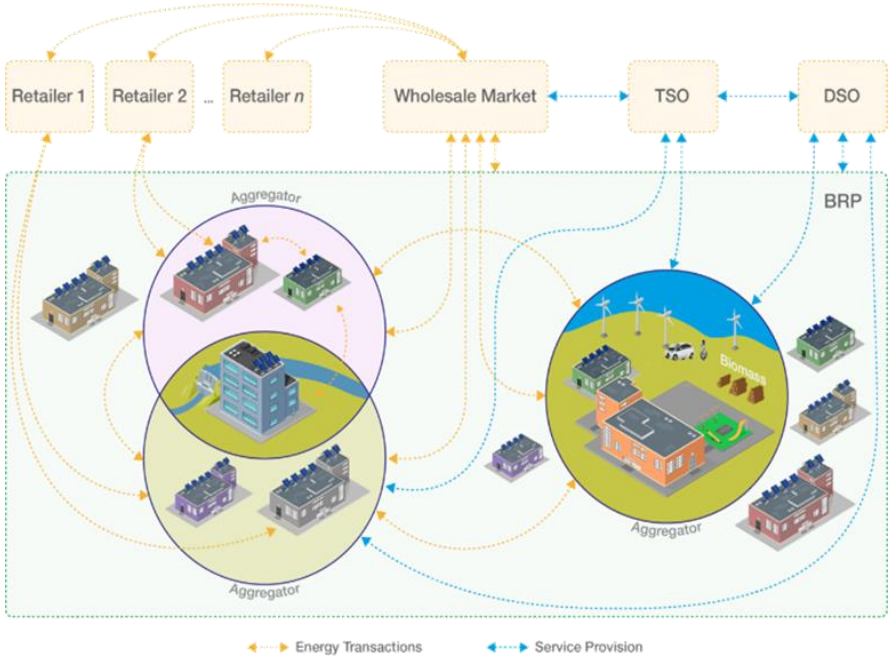
IDeSMAS - Intelligence and Decision Support Multi-Agent System

PLCMAS - Programmable Logic Control Multi-Agent System

Proof of concept and living demos



From Smart Grids to Smart Cities



Building blocks for Smart Cities

- Building smart grids with a bottom up approach
- Enabling energy awareness
- Smart energy communities
- Local markets

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