

# NRG4Cast Tool

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**SingularLogic**

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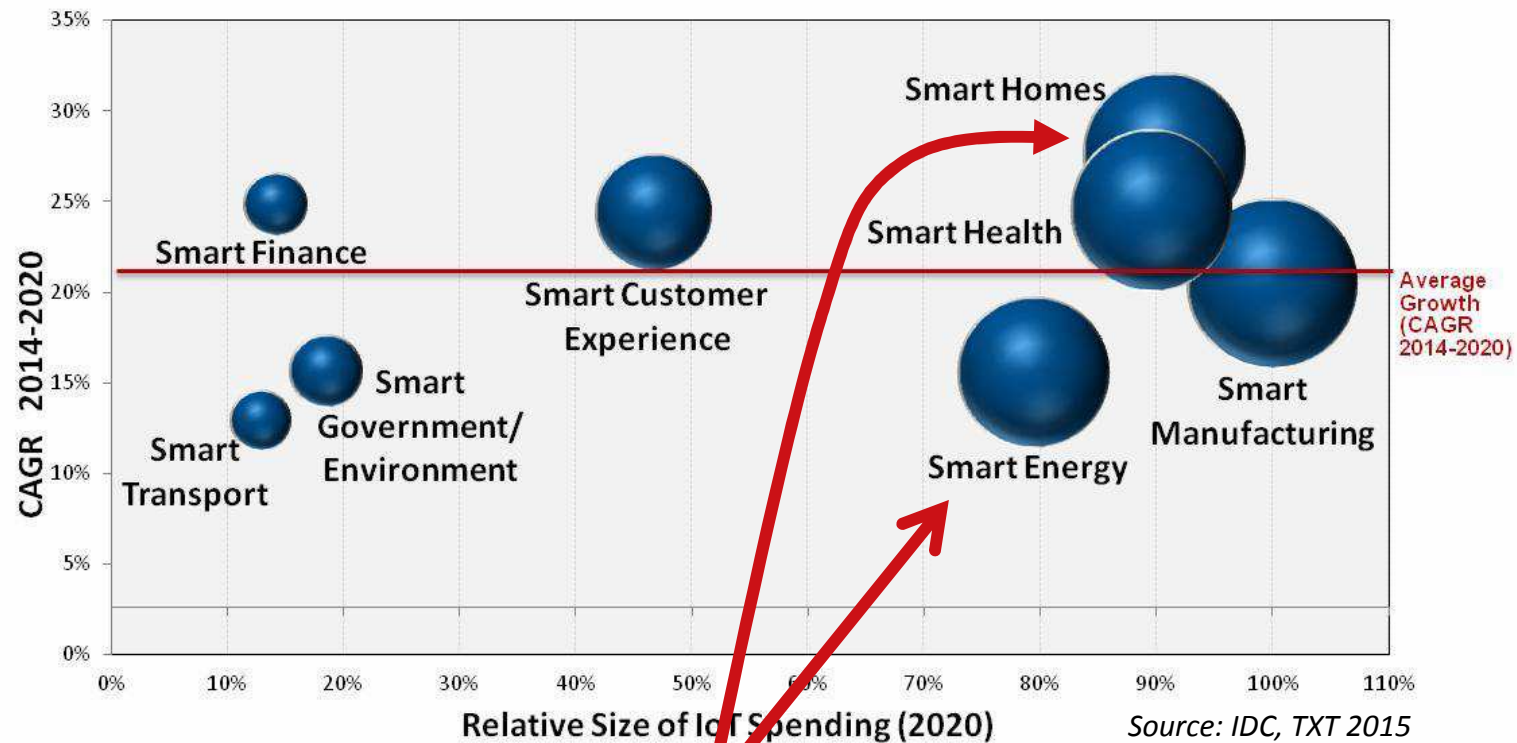
# Topics

- NRG4Cast technology & offerings
- NRG4Cast operation phases
- Demo

Advanced application systems allowing private and public buildings to be equipped with lighting, heating, and electronic devices that can be controlled remotely by smartphones, mobile devices or computers.

<http://smartdatacollective.com/rick-delgado/285576/scary-security-concerns-internet-things>  
<https://www.linkedin.com/pulse/20140312180810-246665791-the-future-of-big-data-and-analytics>  
<http://www.golime.co/blog/?Tag=cloud%20computing>

# NRG4cast position



## NRG4Cast core competences

Data collection and  
fusion services

Data analytics  
capabilities (reasoning,  
CEP, prediction)

(configurable)  
Visualization capabilities

# NRG4Cast offerings

Applications	Description
Basic Monitoring & Prediction	Monitoring at different time intervals consumption & prediction
Complex event detection - situational awareness	Transforming heterogeneous and big data into meaningful information for the users
Behavioural analysis	<ul style="list-style-type: none"><li>• Modelling consumption behaviour</li><li>• Trends detection</li></ul>
“VCC-Virtual Consumption Centres” <i>(Smart simulation)</i>	Simulation capabilities for decision making, assessing the performance of (indicative list): <ul style="list-style-type: none"><li>• Use of new energy technology</li><li>• New retrofit interventions</li><li>• Better assets utilization</li></ul>



Energy Managers



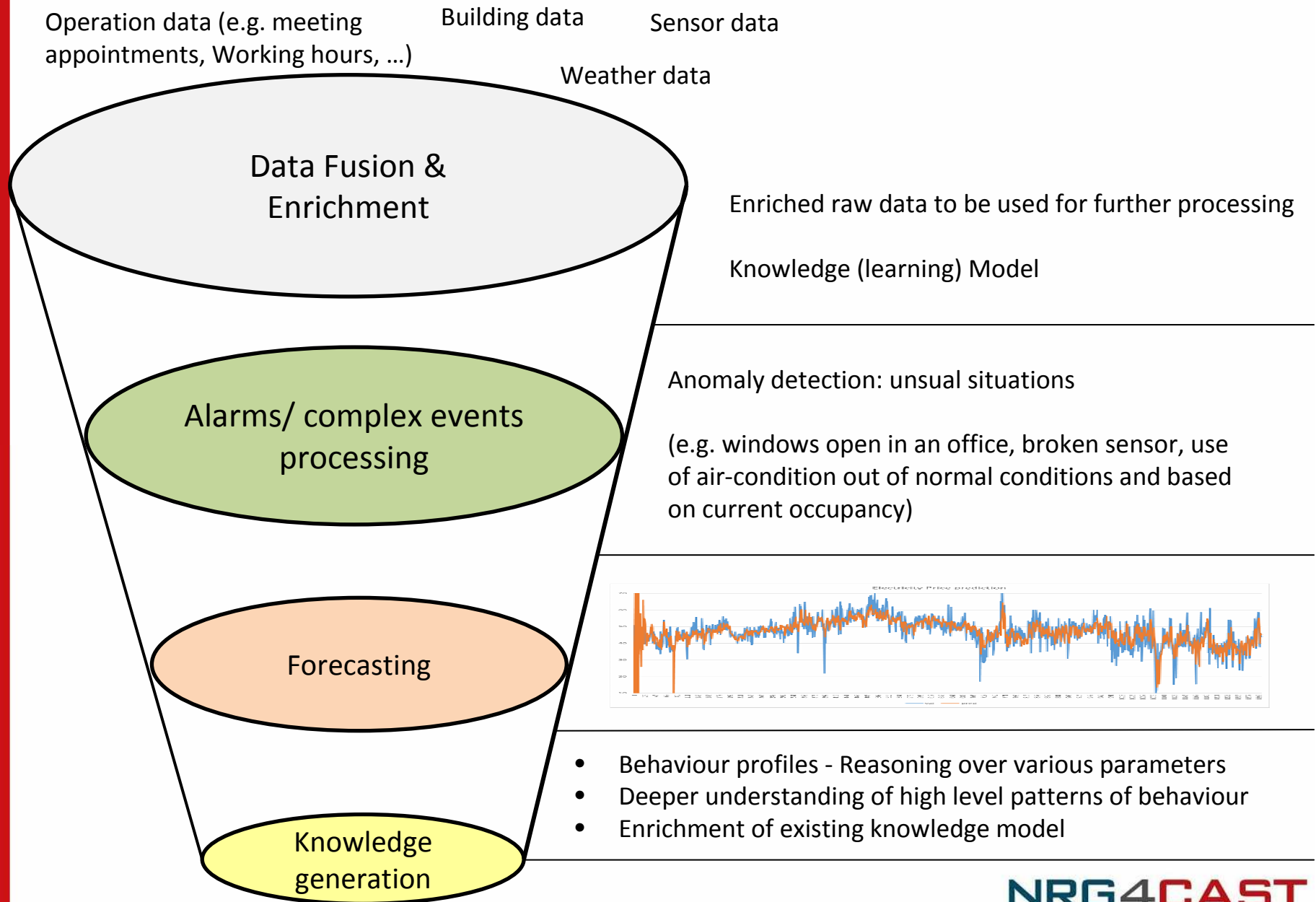
Consumers



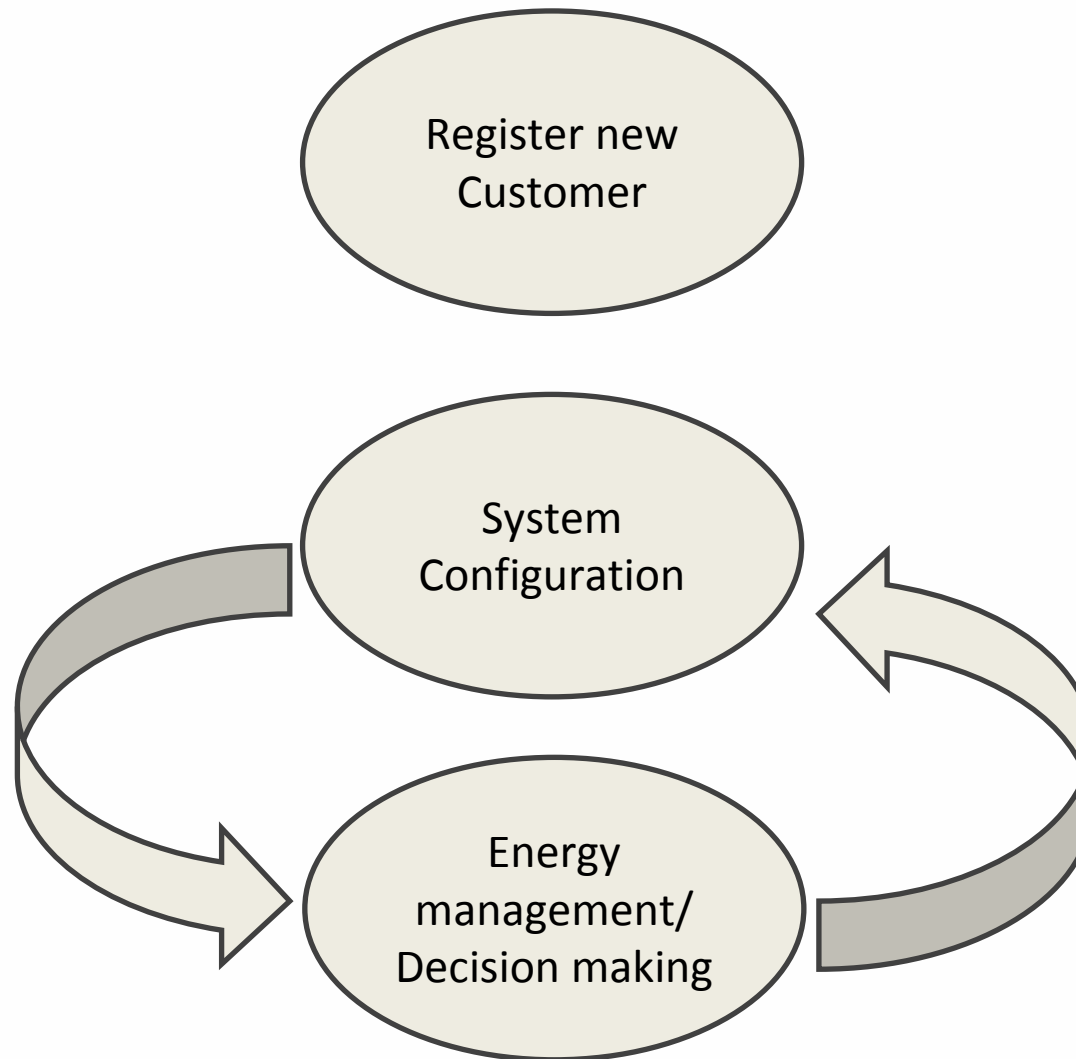
Energy providers



Technology providers



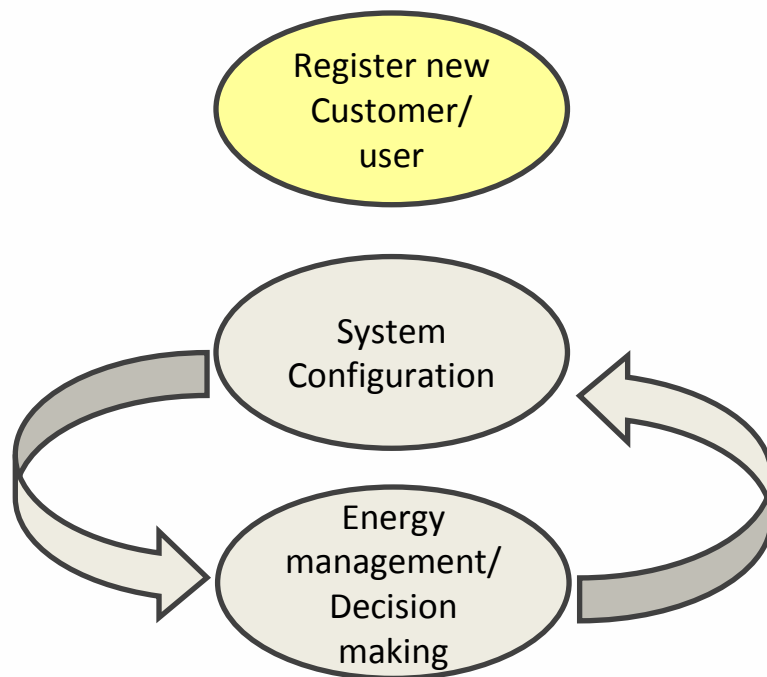
# NRG4Cast main phases



# Register new customer

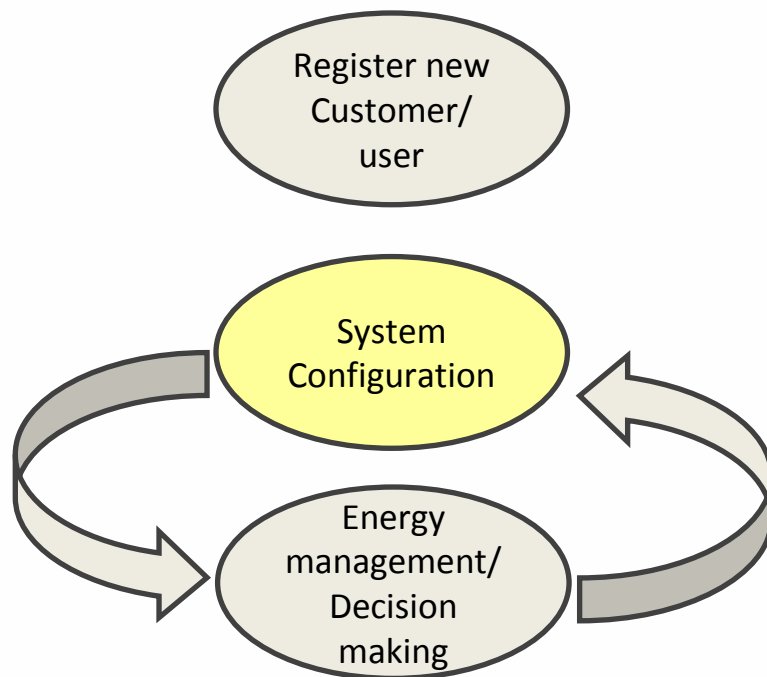
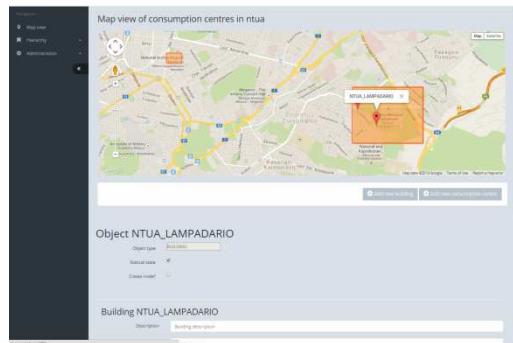
## *NRG4Cast Provider*

- Register new customer
- Assign services (Basic + Value added)





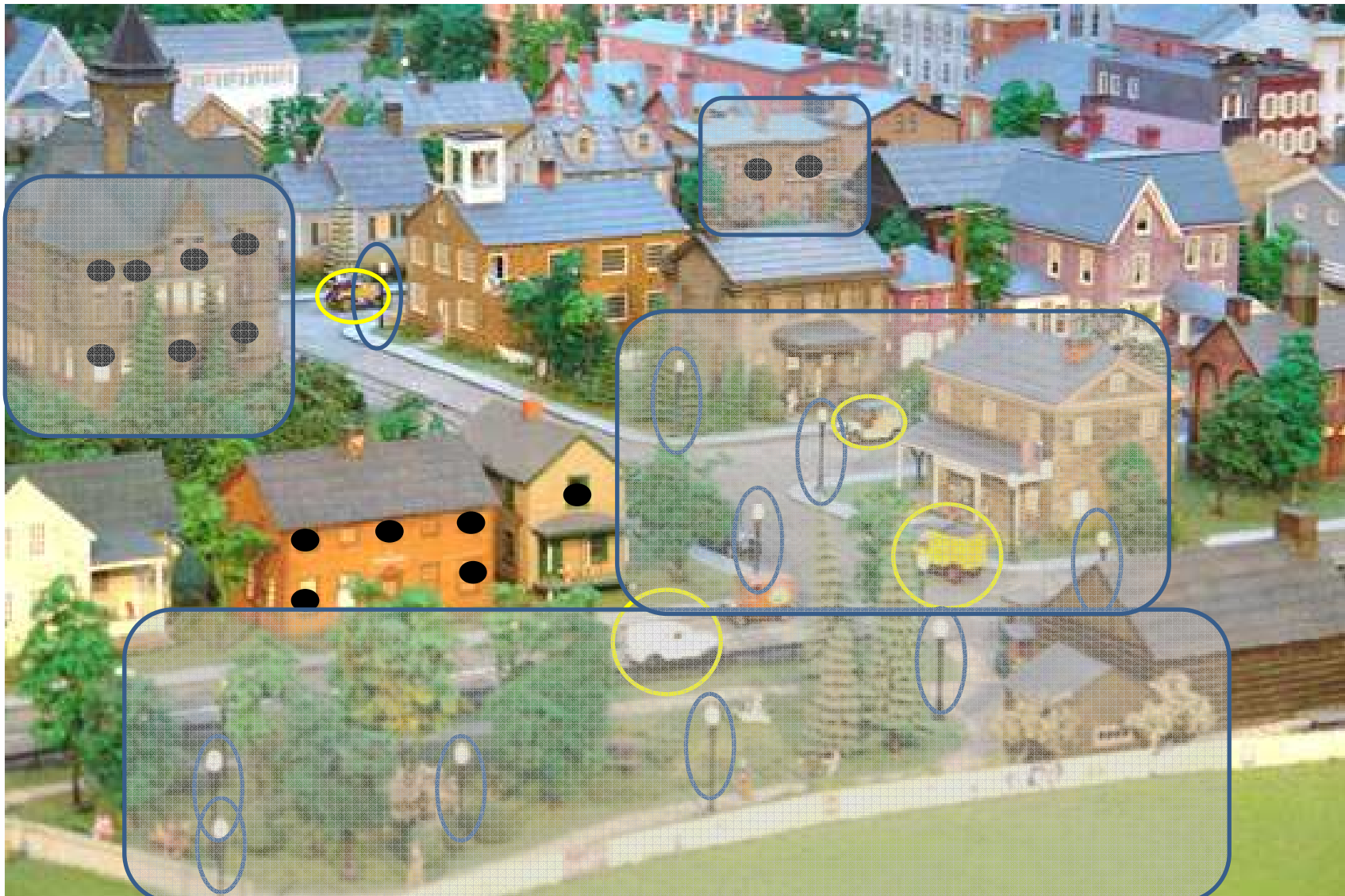
# System Configuration



## *NRG4Cast Administrator*

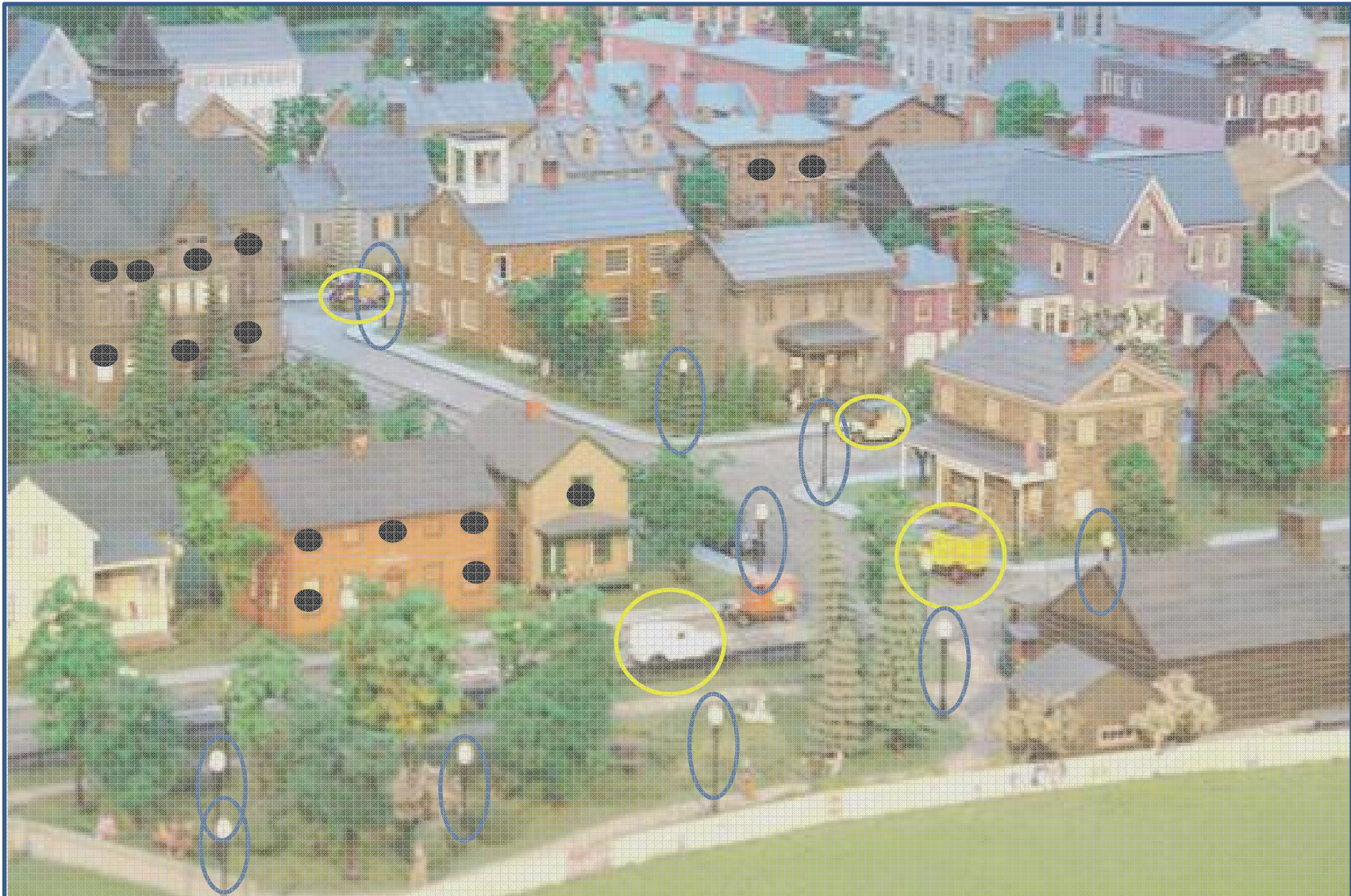
- Define topology
- Register sensors
- User management/ Roles
- Rules definition
- Sources to be integrated
- Other energy monitoring parameters (costs, etc.)
- Frequency of data collection from different sources

## System configuration - Consumption centers/points



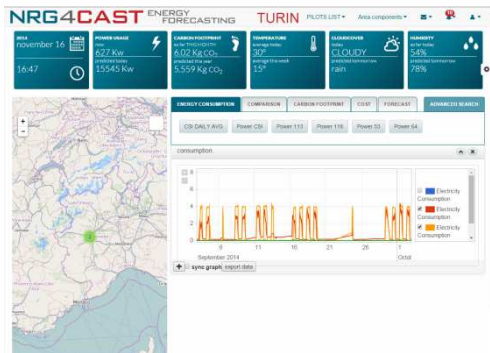


## System configuration - Consumption centers/points



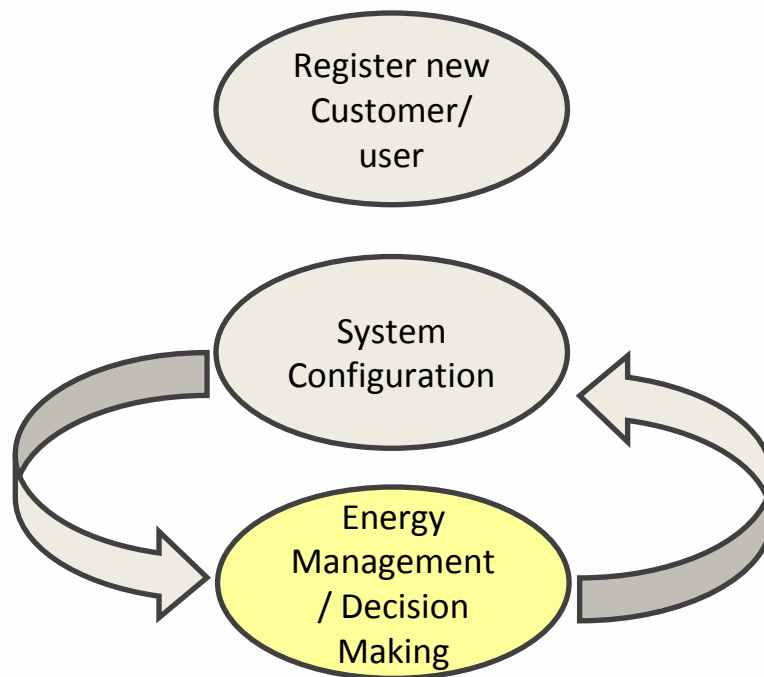


# Energy Management/ Decision Making



## NRG4Cast Administrator

- Display information on topology map
- Navigation and reporting per consumption center(s)/ point(s)
- Prognosis/ forecasting
- Export report data
- Publish data
- Alerts/ notifications
- Energy bookkeeping (Slovenian Law)



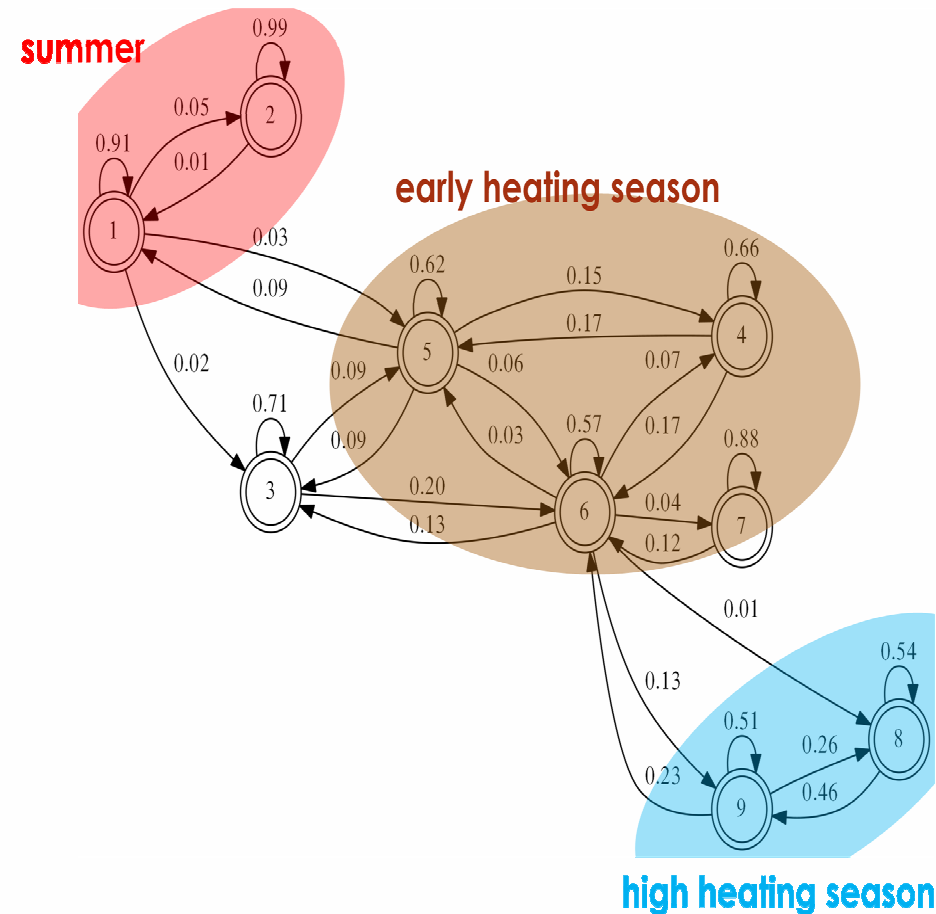
# Knowledge creation

Proof of concept: IREN thermal plant data at Reggio nell' Emilia (Italy).

Methodology identified typical states of the system, annotated by domain expert, such as:

- early heating season,
- transitional season (spring, autumn) or high heating season

with a variety of substates.



# Possible decisions (in buildings)

- Improved building utilization and energy savings
  - e.g. best allocation of class lessons or meetings in a room given constraints in Thermal/Heating
- User engagement programmes
- Assess different retrofit solutions
  - Based on constructional data of the building, ISO
- Evaluate different HVAC solutions

# Demo

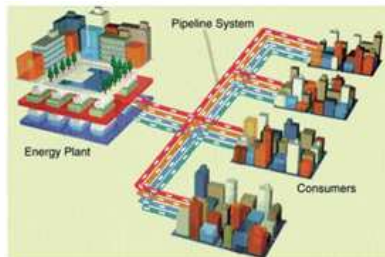


Detailed consumption monitoring  
in 1 office building (Turin)  
Electrical and district heating in 34  
Turin public owned buildings.



National Technical  
University of Athens

Electricity consumption in 47 buildings  
Thermal comfort in 1 building

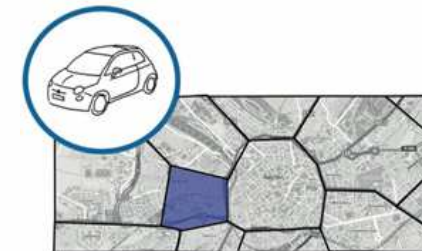


Monitoring and predicting  
demand in district heating



Municipality of  
Miren-Kostanjevica

Street lighting management



Smart charging algorithms for  
electric vehicles



# Thank you for your attention

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