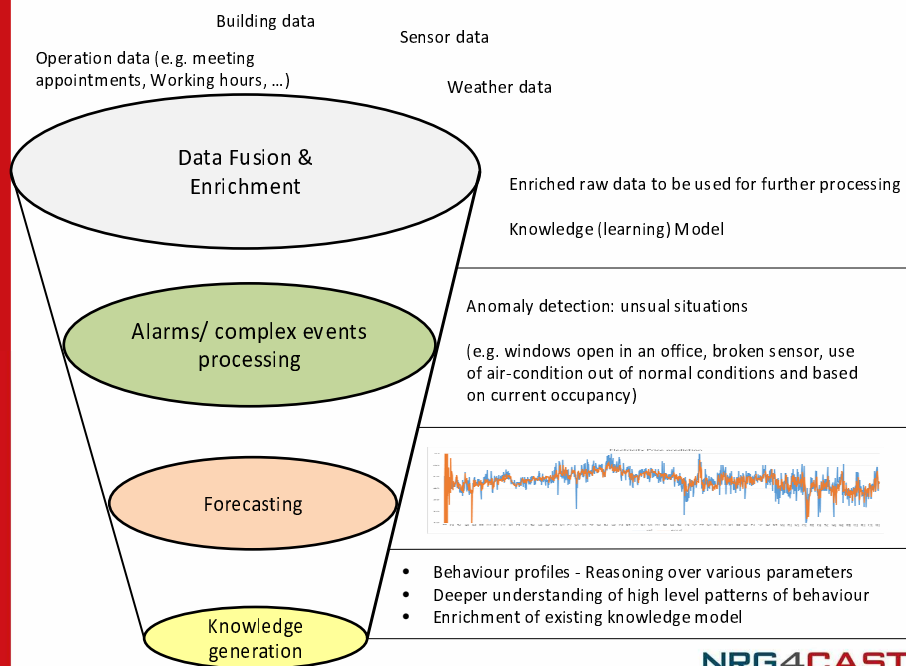


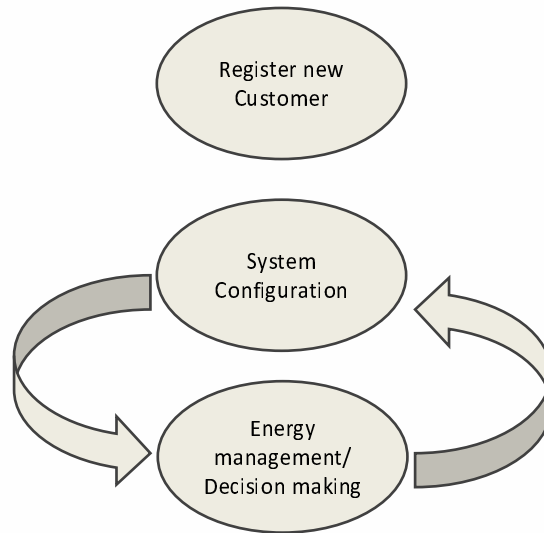
NRG4Cast Tool

Kostas Kalaboukas

Singular Logic



NRG4Cast main phases



MEC Paianias, 21 Nov 2014

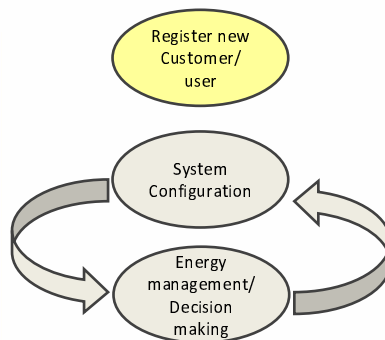
3

NRG4CAST
ENERGY
FORECASTING

Register new customer

NRG4Cast Provider

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

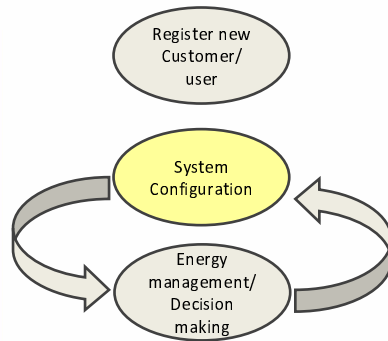
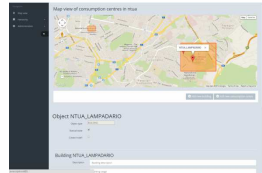


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System Configuration



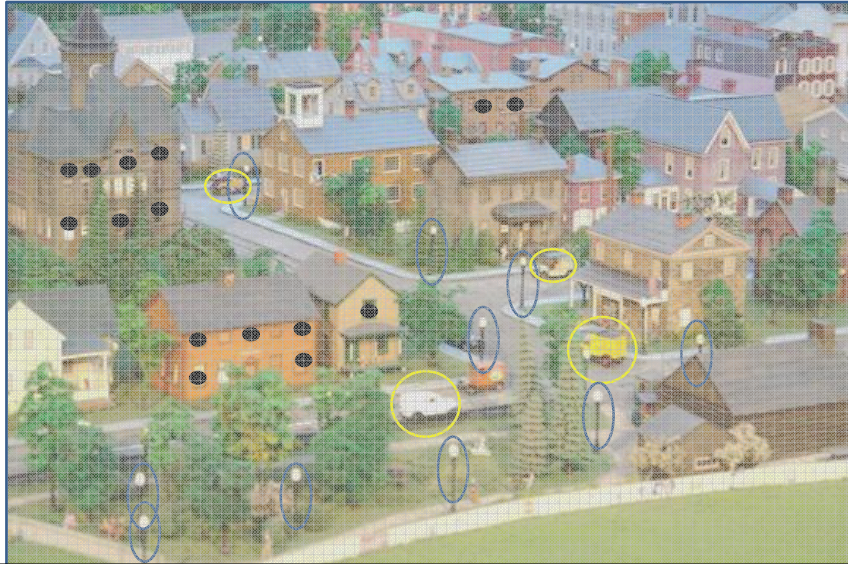
NRG4Cast Administrator

- 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

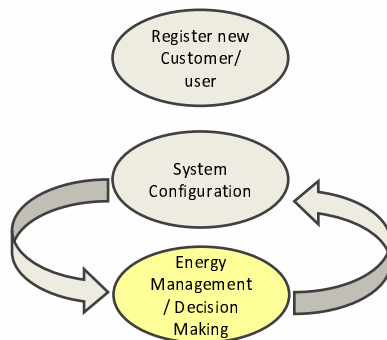
System configuration - Consumption centers/points



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)

Map view of consumption centres in ntua

Object NTUA_LAMPADARIO

Object type: BUILDING

Statistical state:

Create node?:

Building NTUA_LAMPADARIO

Description: Building description

Usage: Building usage

Building type: Building type

Parent building: Choose building

Public?:

Floors: 0

Construction year: 0

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ENERGY FORECASTING

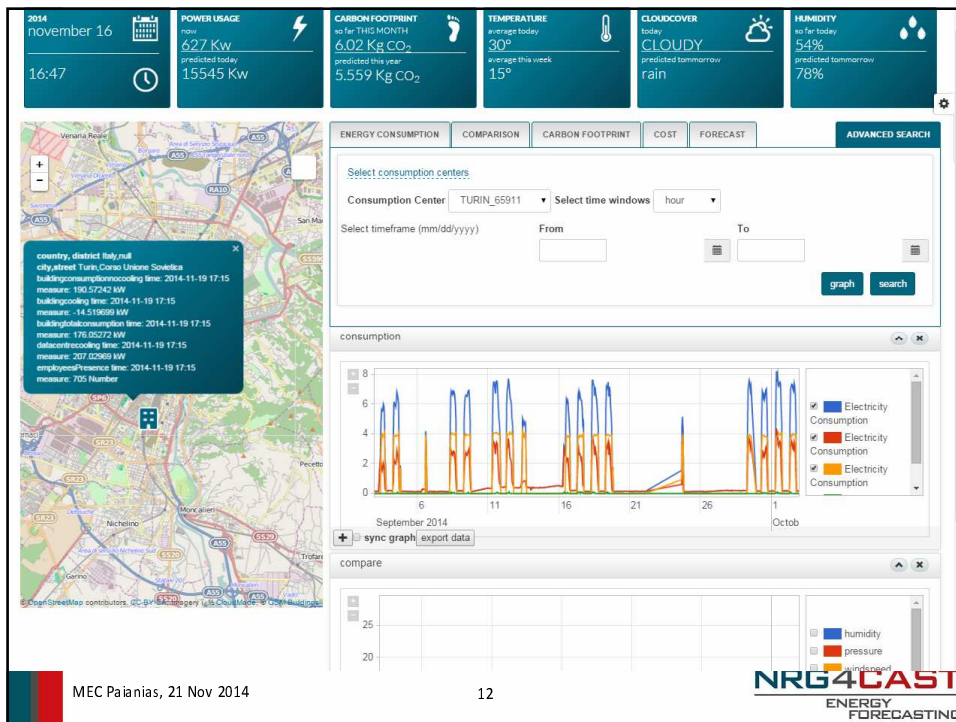
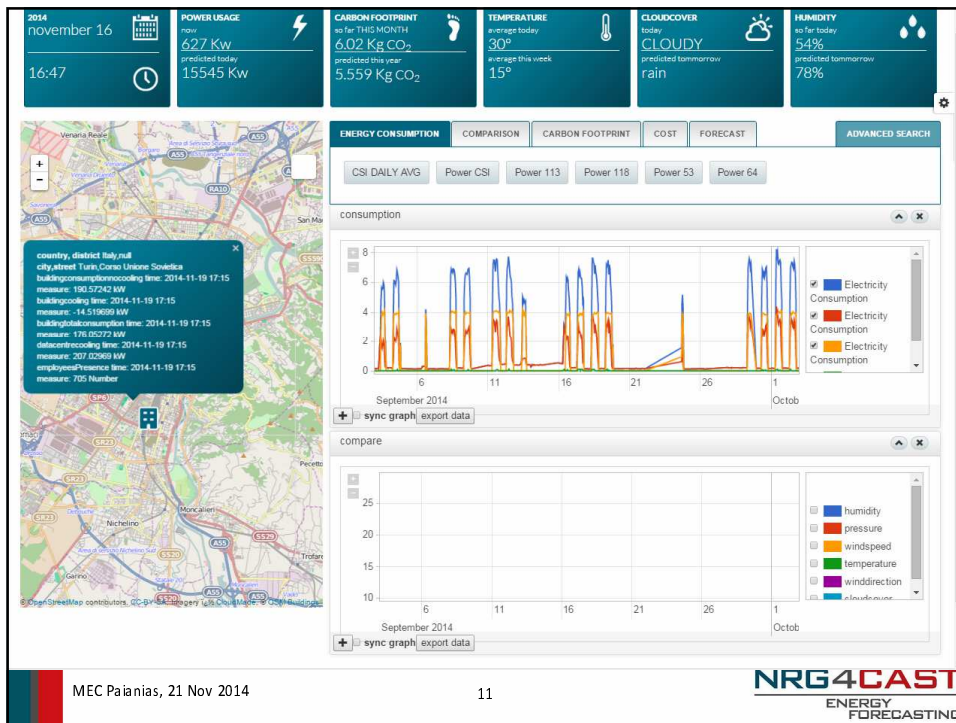
Sensor types

ID	Name	Phenomenon	Unit of Measurement	Column number	Actions
cloudcover	cloudcover	cloudcover		-1	Remove Edit
cloudcover-%	cloudcover-%	cloudcover	%	-1	Remove Edit
cloudcover-%25	cloudcover-%25	cloudcover	%25	-1	Remove Edit
CSL_ELECTRICITY_TYPE	CSL_ELECTRICITY_TYPE	Electricity Consumption	kWh	0	Remove Edit
CSL_PRESENCE	CSL_PRESENCE	Employees Presence	Number	9	Remove Edit
CSL_TYPE	CSL_TYPE	Energy Consumption	kWh	0	Remove Edit
energy-price-EUR/MWh	energy-price-EUR/MWh	energy-price	EUR/MWh	-1	Remove Edit
ESL_CalculatedConsumption	ELON_Measurement	Power Consumption	kWh	11	Remove Edit
ESL_DimLevelCh1	ELON_Measurement	Dim Level	Percentage	9	Remove Edit
ESL_DimLevelCh2	ELON_Measurement	Dim Level	Percentage	10	Remove Edit
ESL_HopCounter	ELON_Measurement	Hop Counter	Item	12	Remove Edit
ESL_MaxValue	ELON_Measurement	Current	mA	7	Remove Edit
ESL_MeasuredConsumption	ELON_Measurement	Power Consumption	kWh	14	Remove Edit
ESL_MinValue	ELON_Measurement	Current	mA	8	Remove Edit
ESL_ReportAvgValue	ELON_Measurement	Current	mA	5	Remove Edit
ESL_ReportNo	ELON_Measurement	Report No	Item	3	Remove Edit
ESL_ReportSummaValue	ELON_Measurement	Report Summa Value	Total	4	Remove Edit
ESL_SamplesSinceLastReport	ELON_Measurement	Samples	Item	6	Remove Edit
ESL_SequenceNo	ELON_Measurement	Sequence No	Item	13	Remove Edit

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NRG4CAST
ENERGY FORECASTING



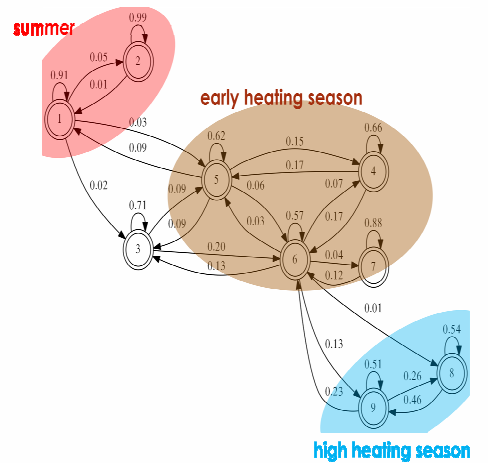
Knowledge creation

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 using NRG4Cast (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
- Assess different retrofit solutions
 - Based on constructional data of the building, ISO
- Asses different HVAC solutions

Thank you for your attention

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kkalab