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FINESCE WP2

FI for end users of energy ecosystems

Horsens, October, 2013



INSERO Andy Drysdale



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WP2 introduction

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Motivation:

- Support the change of end user behaviour towards a more optimal usage of renewable energy when available.
- Create an opportunity for entrepreneurs and SMEs to implement, test and improve new prosumer services, thus fostering innovation.

Scope:

The WP will follow two streams of activities:

- Energy management in a community of 25 single family houses in the Horsens area
- Energy management in a commercial office building in Madrid



Objectives:

Evaluate the value provided by enabling innovative services to prosumers using FI Generic Enablers in the two trial sites. Jointly, the two streams of activities will address the following objectives:

1. Enable value added services through an open FI based platform with FINESCE APIs, offering rich data on energy needs and consumption patterns.
2. Promote energy efficiency via incentives from the energy market place and dynamic tariffs.



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RWTH



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WP2 trial sites

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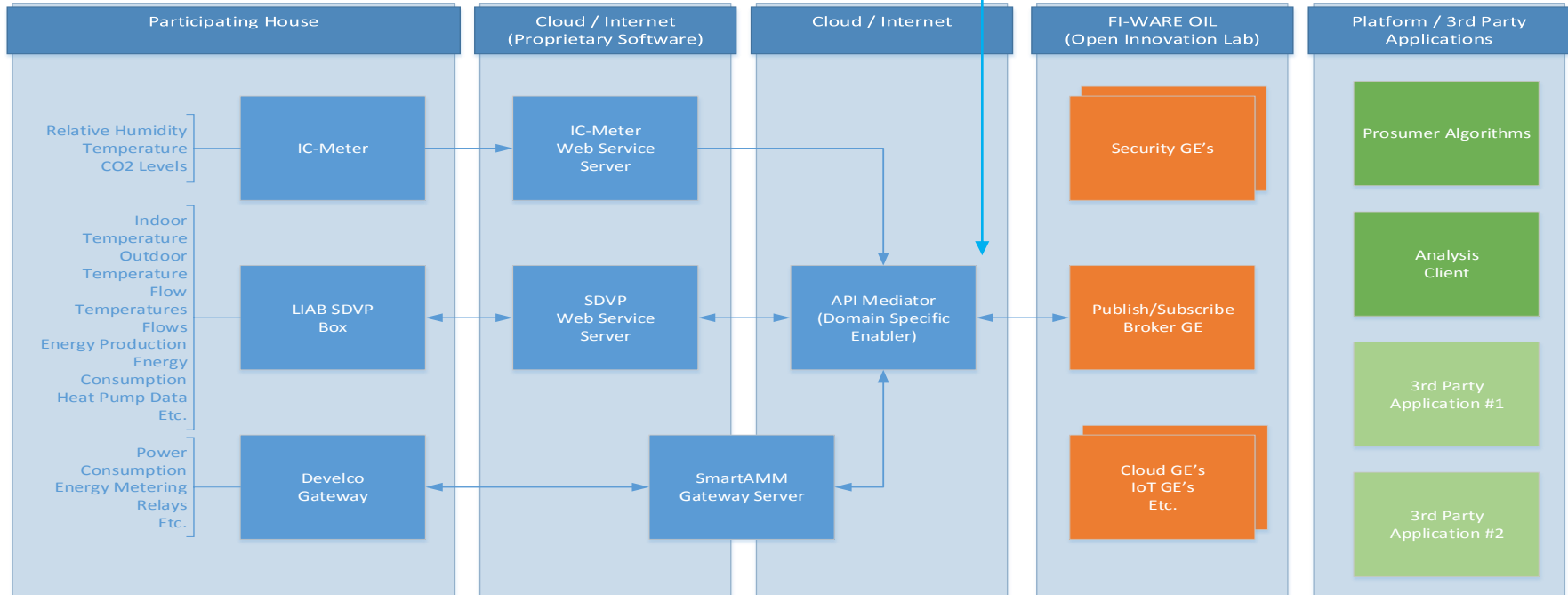


System overview - Horsens

3rd Party information:
Weather, production,
consumption, market

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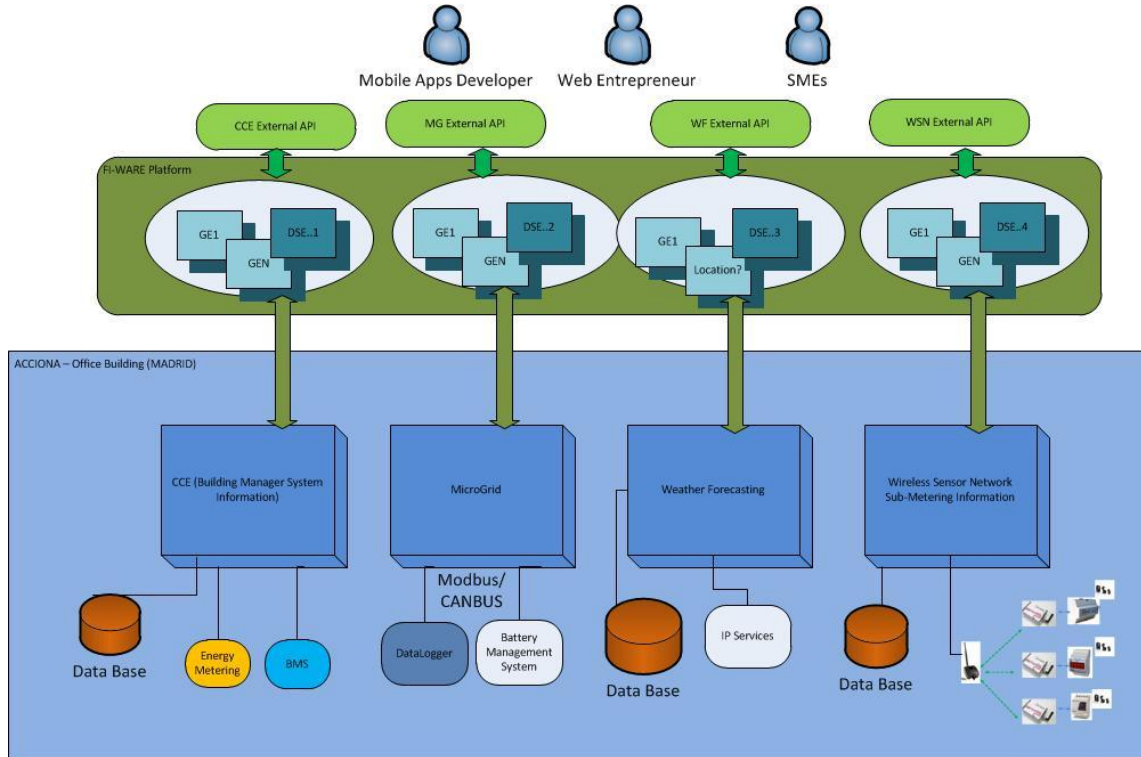
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System overview - Madrid

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Use cases, GEs and APIs for Horsens

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Use cases

- Demand side management (by price or renewable energy)
- Automated Load Shifting

GE prime candidates

- Context Broker
- Gateway Device Management
- Gateway Protocol Adapter
- Gateway Data Handling
- Access Control
- Identity Management



APIs

- `getLiveData`: Provides stream of live data from houses
- `getHistoricData`: Provides historic data from the houses covering the specified time interval
- `getExternalData`: Provides the external data such as weather forecast and price data
- `setOperationalMode`: Sets the mode for the demand side management (optimization) for either price, renewable energy, or mixture.

Use cases, GEs and APIs for Madrid

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Use cases

- Weather forecasting information as BMS input
- Energy sub metering in big buildings
- Multi-building energy management

GE prime candidates

- Big Data Analysis
- Data Handling – PPL
- Publish/Subscribe Context Broker
- Context Awareness Platform

APIs

- `getPowerConsumption`: Provides buildings' energy consumption information
- `getBuildingData`: Provides different information about building conditions (temperature, humidity, HVAC status....)
- `getWeatherForecastingData`: Provides weather forecast for the building specific location
- `getMicroGridConditions`: Provides information about the MicroGrid status



Examples of areas for the Open Call

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In the framework of the EU funded FINESCE project, we can support innovative small or medium sized companies developing ICT solutions for the emerging energy sector.

Area 1:

Proposals may address the dissemination and promotion of new services, applications, apps, concepts, prototypes or demonstrations based on FI-WARE functionality and related to FINESCE trial topics.

- Case 1: Peak load shaving in the electrical grid
- Case 2: Shifting electricity consumption to periods with lower prices
- Case 3: Information about energy consumption to residents
- Case 4: Building and validating forecast profiles
- Case 5: Smart Grid functionality for OEMs

Examples of areas for the Open Call

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In the framework of the EU funded FINESCE project, we can support innovative small or medium sized companies developing ICT solutions for the emerging energy sector.

Area 2:

To expand the scope of the field trial locations in FINESCE by adding new topics and trial sites, developing synergies with the FINESCE and FI-PPP goals. Towards Smart Cities and Smart Regions (community building)

- Toolbox for the community of e.g. visualization and analytics tools as well as application development tools and documentation
- Community support in terms of helping create business models, technical support, competitions and possibly VC (towards 3rd phase)
- Showcasing 3rd party entrepreneurial development projects.

Business Impact

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Market needs as identified by involving professional users of the trial sites

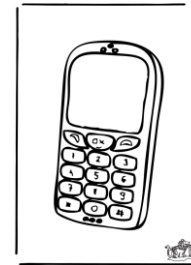
- Case 1: Peak load shaving in the electrical grid
- Case 2: Shifting electricity consumption to periods of low demand
- Case 3: New ways of monitoring and predicting electricity consumption to residents & facility managers
- Case 4: Building and validating forecasting models for electricity consumption
- Case 5: Smart Grid functionality for buildings
- Case 6: New ways of sharing energy information of different buildings all over the world

Creativity needed for new solutions



What we offer

- Full access to the WP2 GE enabled API
- Access to an ecosystem of SMEs and VCs
- An open living lab to test your own products, services and ideas
- Insights into user behaviour and needs, behavioural change and business models as a drivers of change and innovation



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