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Smart Energy Field Trials: FINESCE

Dr. Fiona Williams, Project Coordinator



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Everything gets connected & smart, not
just phones

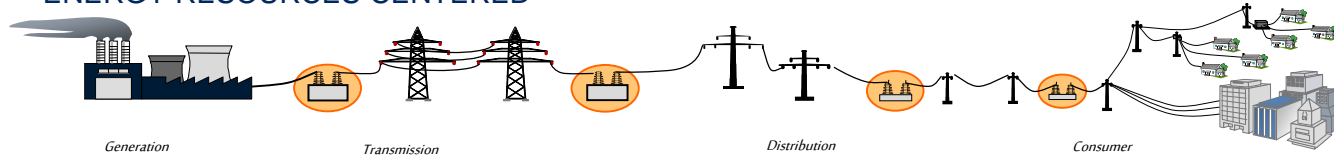
GRID transformation

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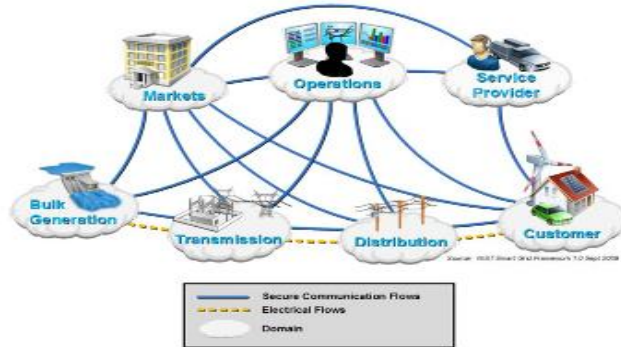
TODAY

ENERGY RESOURCES CENTERED



ONE ENERGY FLOW, ONE INFORMATION FLOW

EXPECTED DISTRIBUTED AND PARTICIPATIVE MARKET



- Distributed generation and consumption
- More focus on customer concerns; quality, security of supply
- New market participants, pro-sumers, aggregators, mobility service operators, etc
- New management models; transparency and non discriminatory access.
- New products and services.

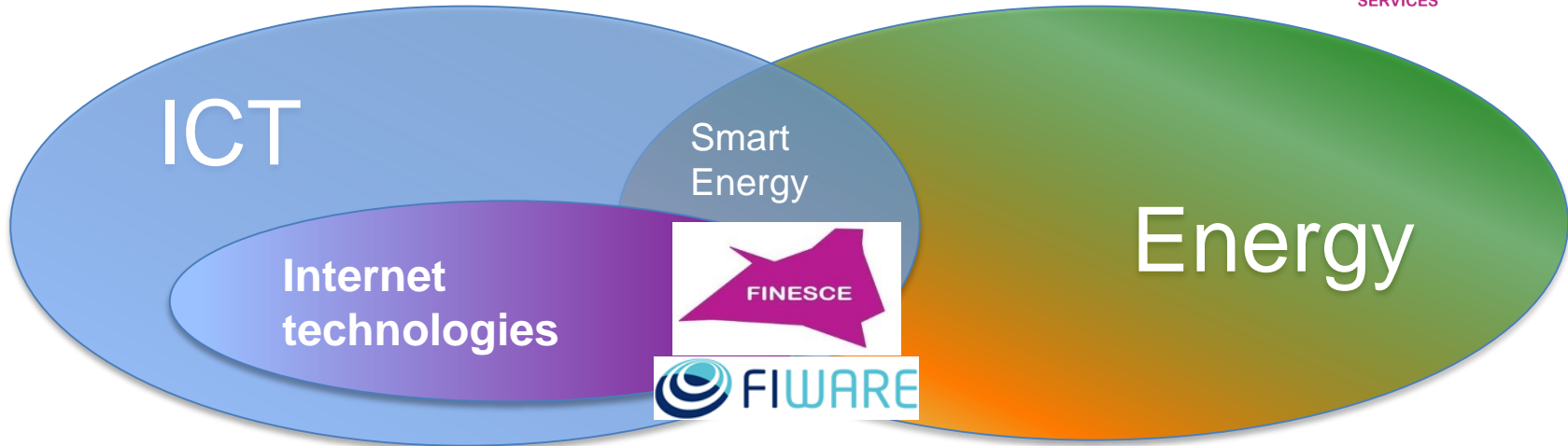
Source: NIST Smart Grid Framework 1.0 Sept 2009

BI-DIRECTIONAL ENERGY FLOW, "N" INFORMATION FLOWS

FIWARE for Smart Energy

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FIWARE of Energy: organizing..

Enabling innovation based on internet interfaces in the energy sector

- (volatile) distributed energy production
- (flexible) consumers and prosumers
- electric vehicles (as consumers and storage)

Benefits of using the future internet and GE approach:

- Shorter time to market!
- Easy access for new partners
- scalability of applications
- lower costs for application development



FINESCE strategic goals:

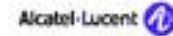
Foster Europe's leadership in ICT solutions
for **Smart Cities and Smart Energy**

Team-up the **ICT and Energy sectors** to build
ICT-enabled sustainable energy management

FINESCE partners and trial sites

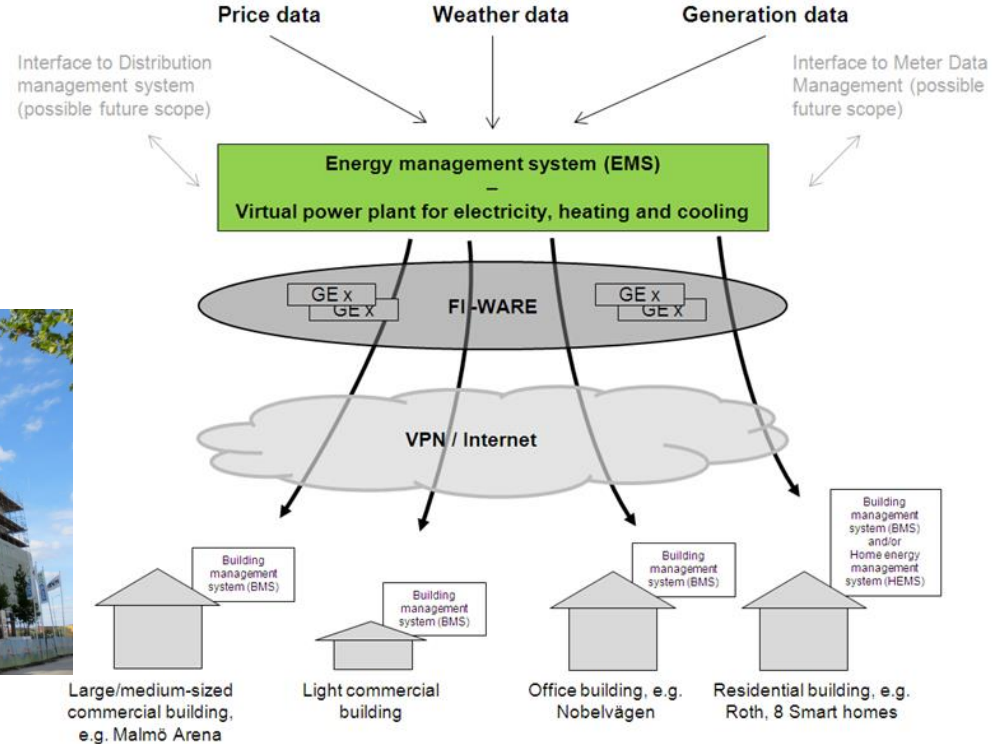
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Trial 1: FIWARE Sustainable Smart City Malmö, Sweden

- Using Future Internet as an enabler for innovation and opening of closed systems
- Demonstrate optimization of supply and demand across different energy carriers, such as electricity, heat and cooling



Trial 2 – FiWARE Smart Region Horsens, Denmark & Madrid

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Two trial sites/streams of activities

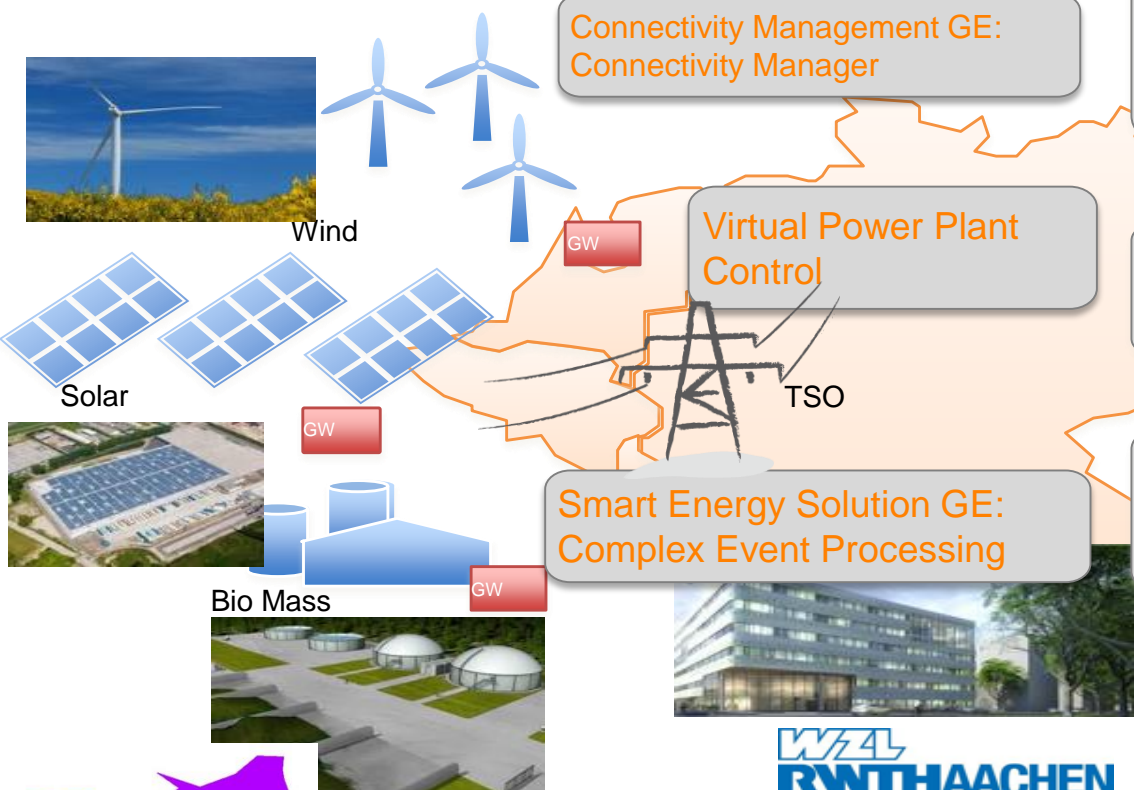
1. Trial site Horsens: Energy management in a community of 20 single family houses in a village
2. Trial site Madrid: Energy management in a commercial office building



WP 2 objectives

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

FiWARE X-border Virtual Utility



- Combine renewable Energy production with Demand Site Management to a Virtual Utility
- Combine different volatile energy production to guaranteed CO2 free certified energy

Objective

- Increase the part of renewable Energy of the consumption of electrical Energy

Scope

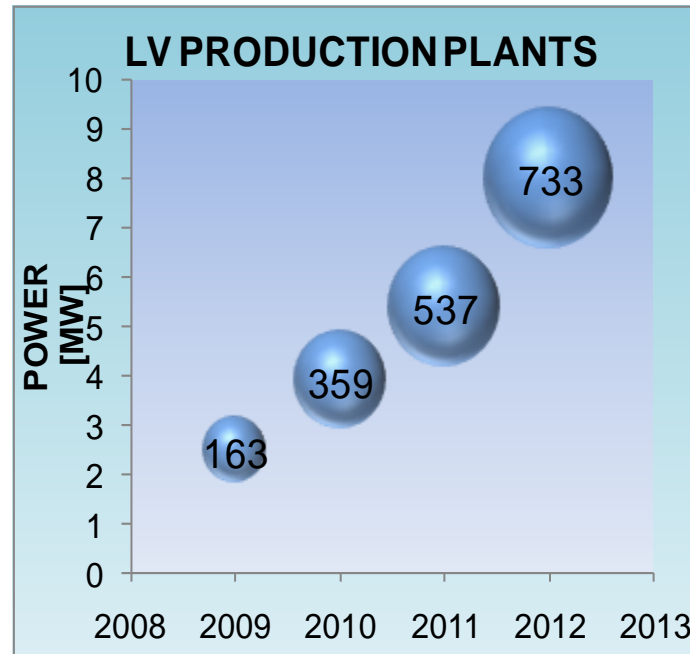
- Trial installation in Belgium and Germany
- ~10 Renewable energy sources
- ~1 Demand Site

Trial 4 – FIWARE for the Energy Marketplace in Terni, Italy

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- Trial site: Terni (Italy)



Trial 5: Ireland

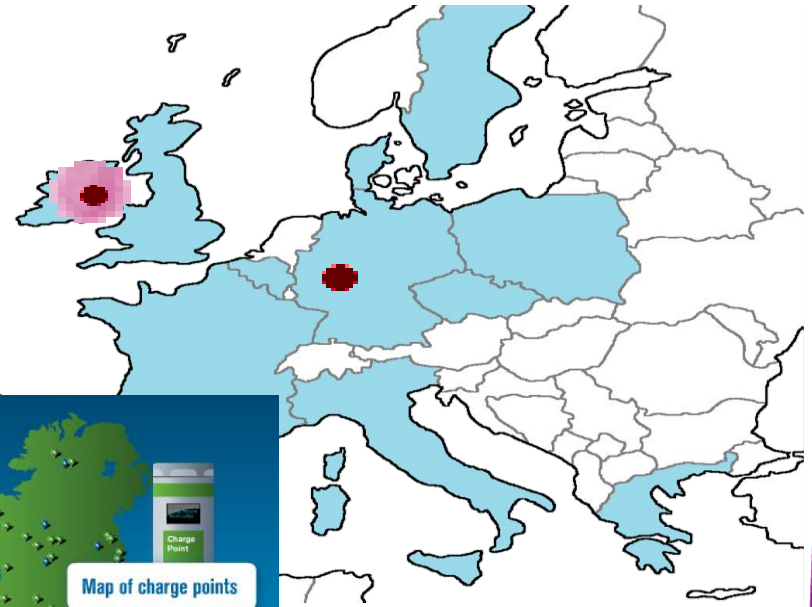
FIWARE for Power management

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Objectives:

- eCar batteries as interruptible loads to balance the power grid
- Substation communication for power management
- Simulation at RWTH to scale up results



■ trial site
● partner location

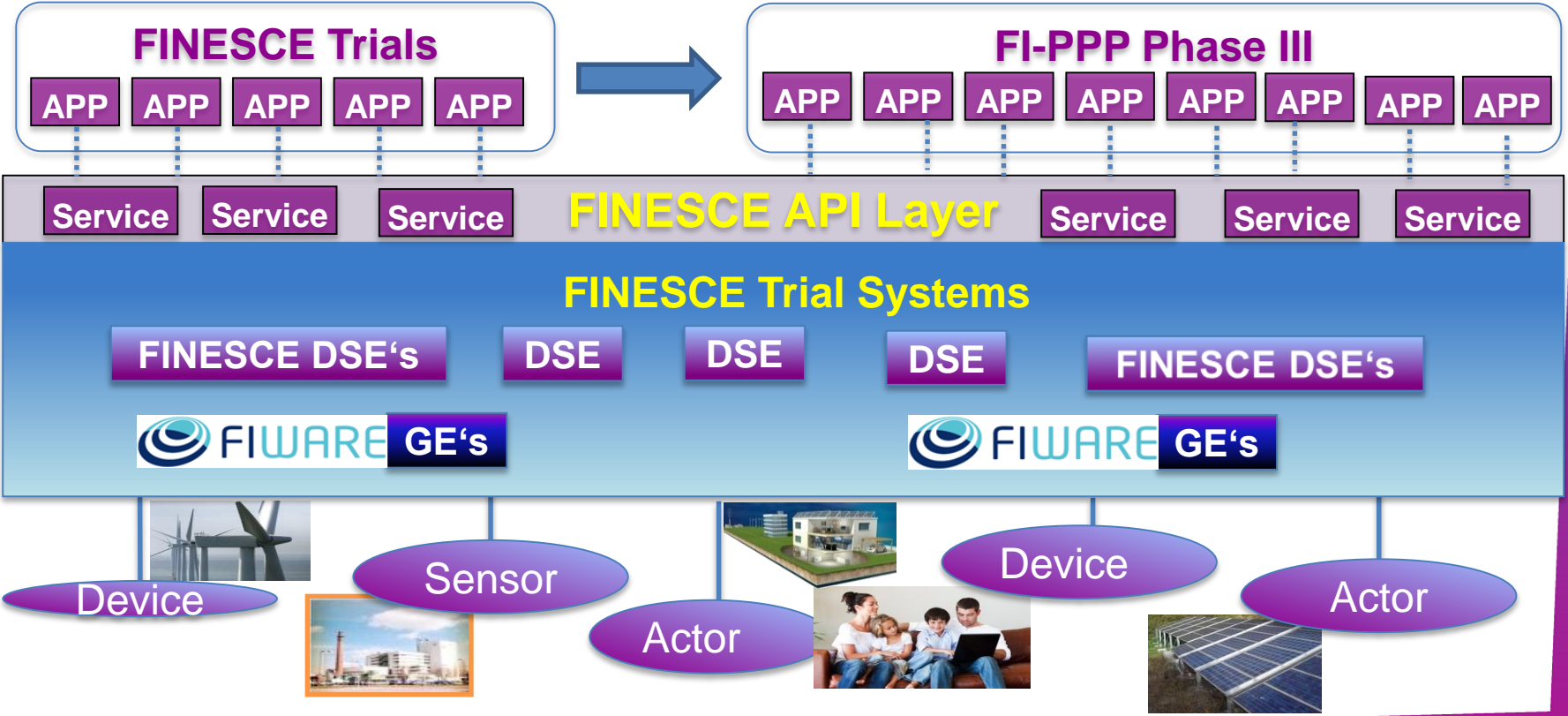


E.ON Energy Research Center



FINESCE API Layer Offers Services to Apps

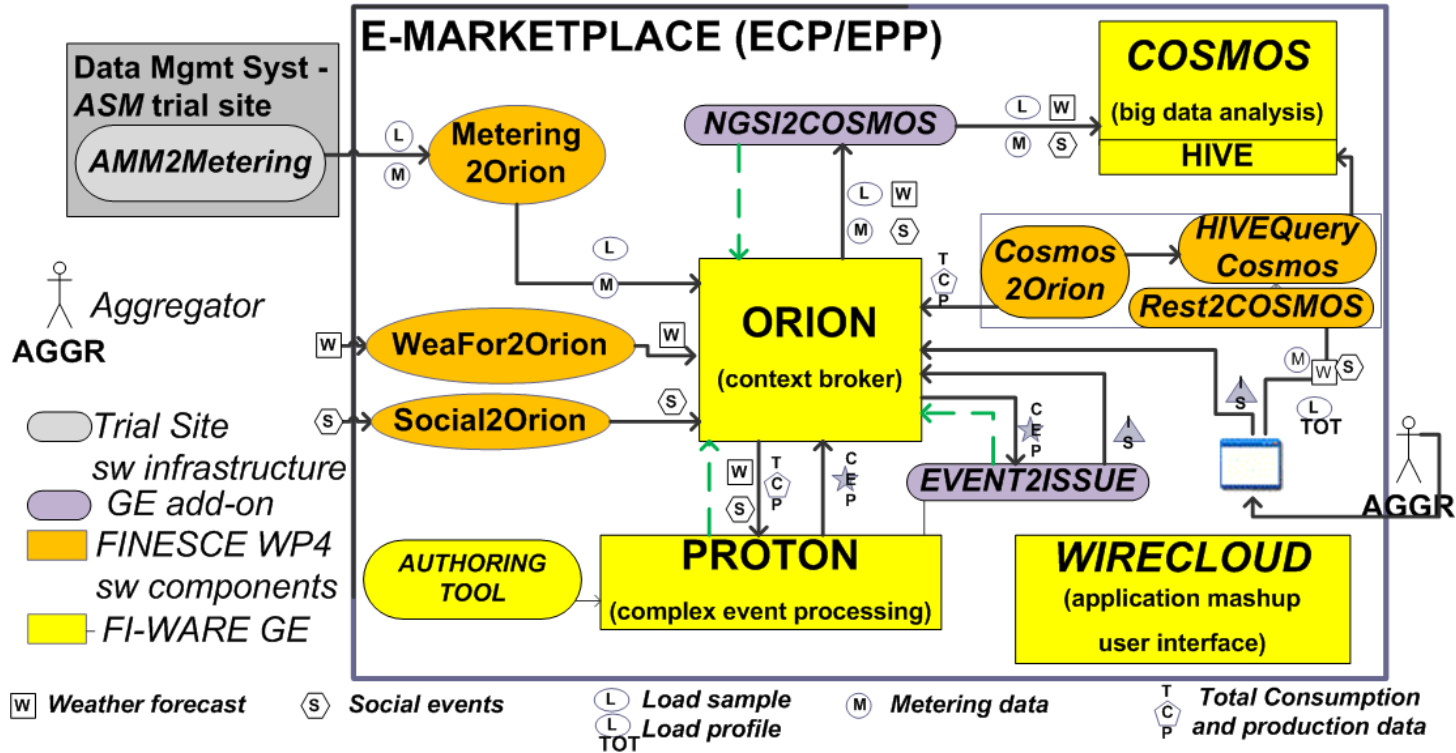
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GE and DSE integration

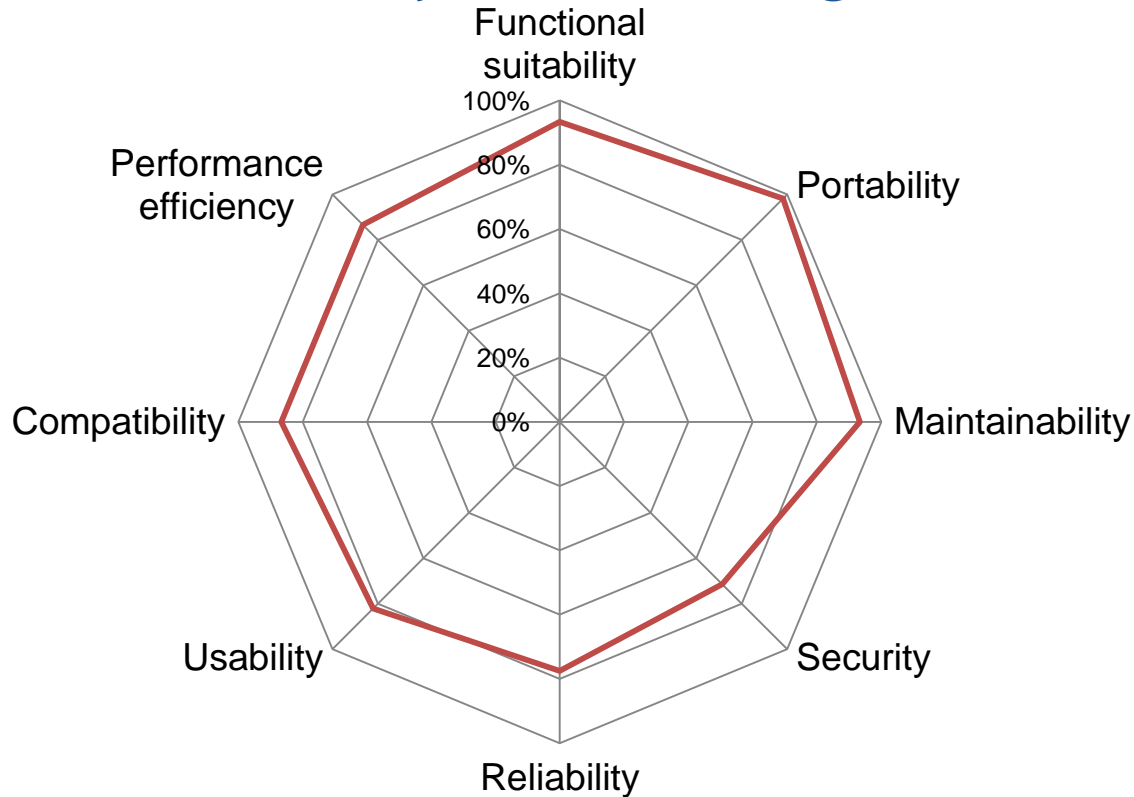
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GE Evaluation Example: Gateway Data Handling

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The GE Gateway Data Handling showed a very good overall result (83,85%) and greatly supports a fast and scalable integration of energy management in an industrial environment!

Our Phase III offer:

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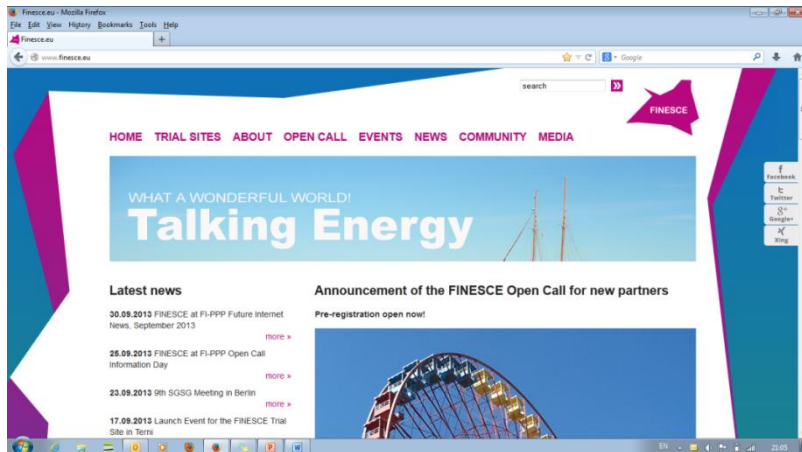


- For Phase III developers:
 - Access to all 7 trial site infrastructures with GEs and Open Source DSE's integrated into the energy infrastructure and accessible via the FINESCE API (case by case investigations of safety, security and data protection issues and in rare cases, terms for use of GEs needs to be agreed with GE owners)
 - Support for the use of the API, associated documentation and web events
 - Invitations to all our field trial Open Days
- For Phase III accelerator projects:
 - Invitations to present accelerators at our 6 Open Day events in 2014 & '15
 - We offer to publicise the best accelerator applications at our booths and in presentations
 - We offer to organise a workshop for all energy related projects to highlight best examples of innovation from SMEs in relation to energy

FINESCE – Team up with us!

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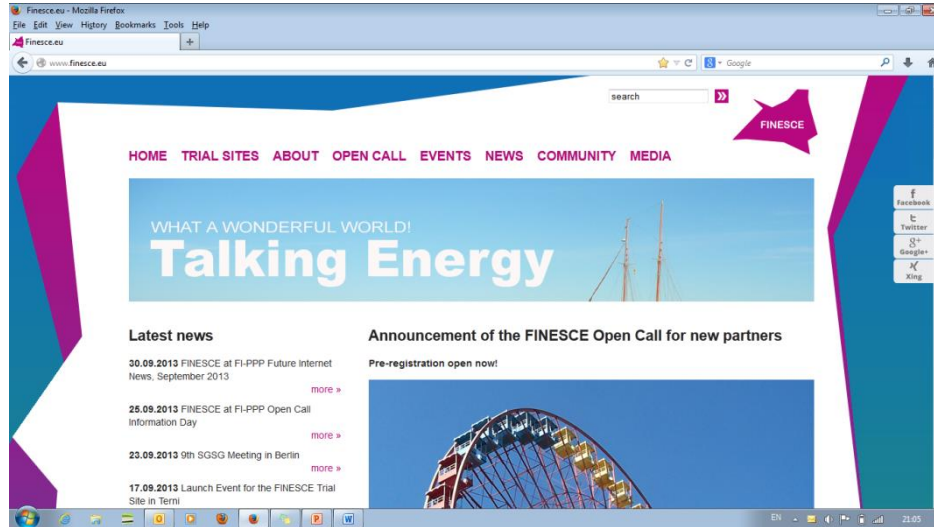
WWW.FINESCE.EU

- › **FINESCE Trial Open Days and events – experience our trials 1st hand!**
 - June - Smart Grid Week **Vienna**
 - June - Open Day **Malmö, Sweden**
(Smart City area)
 - September 2015 **Final Event – Utility Platforms –Berlin**
- › **FINESCE Innovation Community (www.finesce.eu)**
 - for all interested to follow what we are doing
 - membership is free of charge – just enter your email address on our web site or give us a business card

Thank you for your attention!

www.finesce.eu

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