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FINESCE Final Event Overview of results

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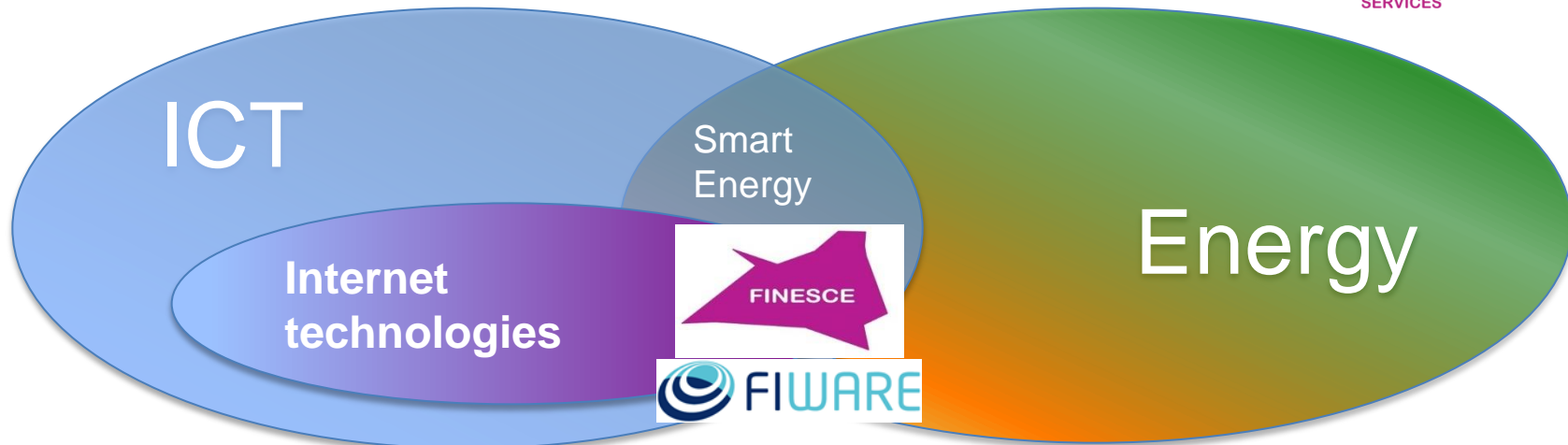


Everything gets connected & smart, not just phones

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

FI-PPP Phase I (2011-13): FINSENY's 4-Step Approach

1. Scenario description

Identify use cases and actors (market roles as well as systems & devices) according IntelliGrid method

2. ICT requirements

Define requirements for communication & information flows as well as services and middleware

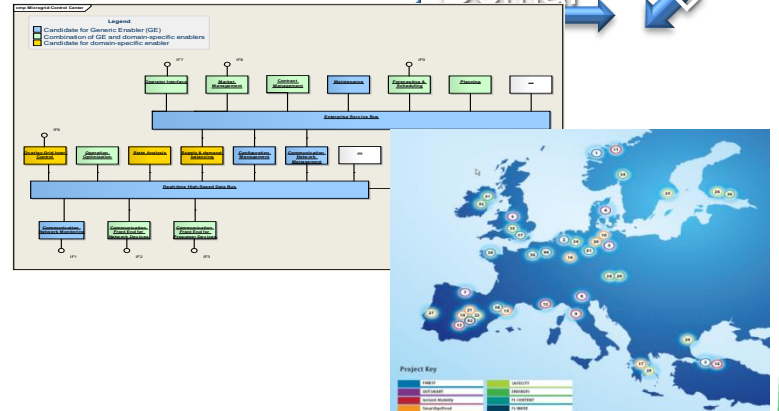
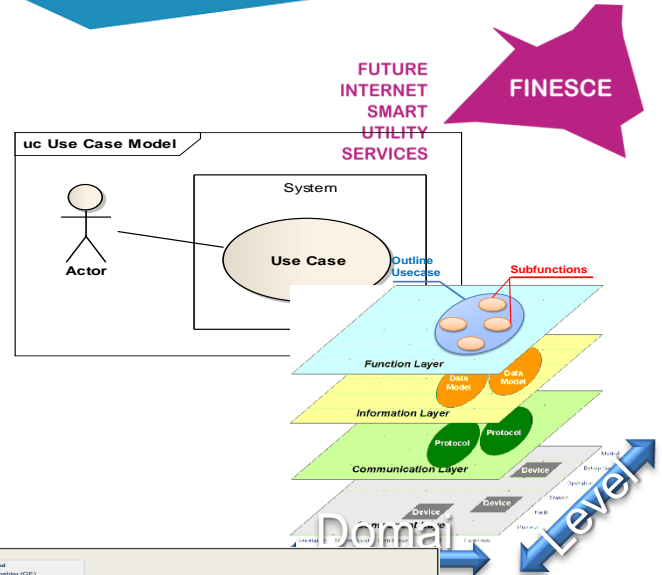
3. Functional Architecture

Identify key functional building blocks and interfaces, specify data models and communication protocols

Develop ICT architecture based on common and domain specific enablers

4. Trial candidates

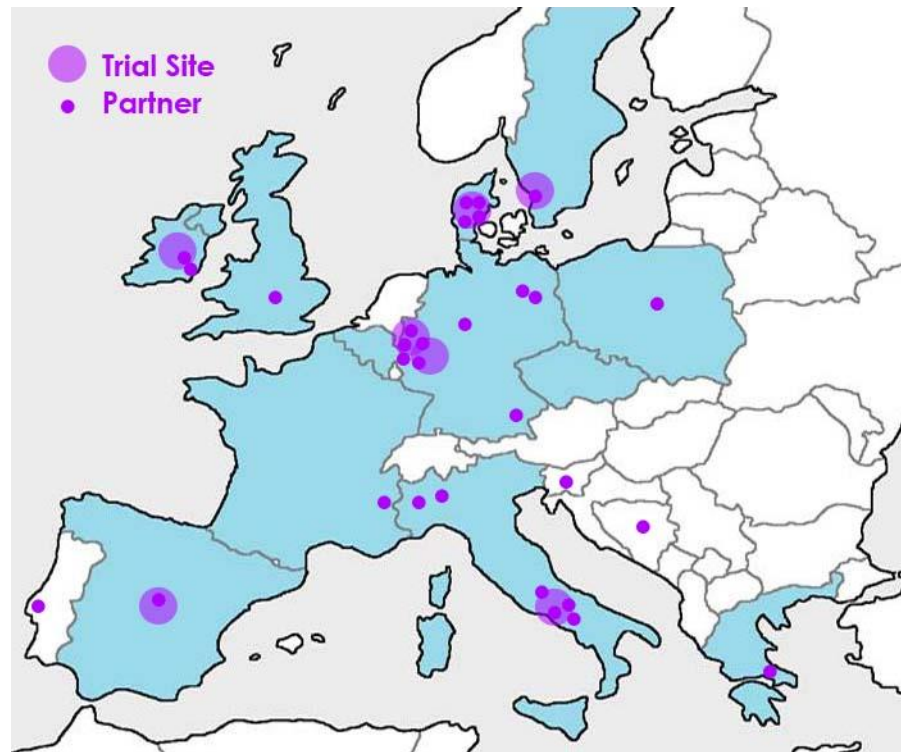
Identify trial candidates taking into account relevance, trial setup and reuse of existing trials



FINESCE partners and trial sites

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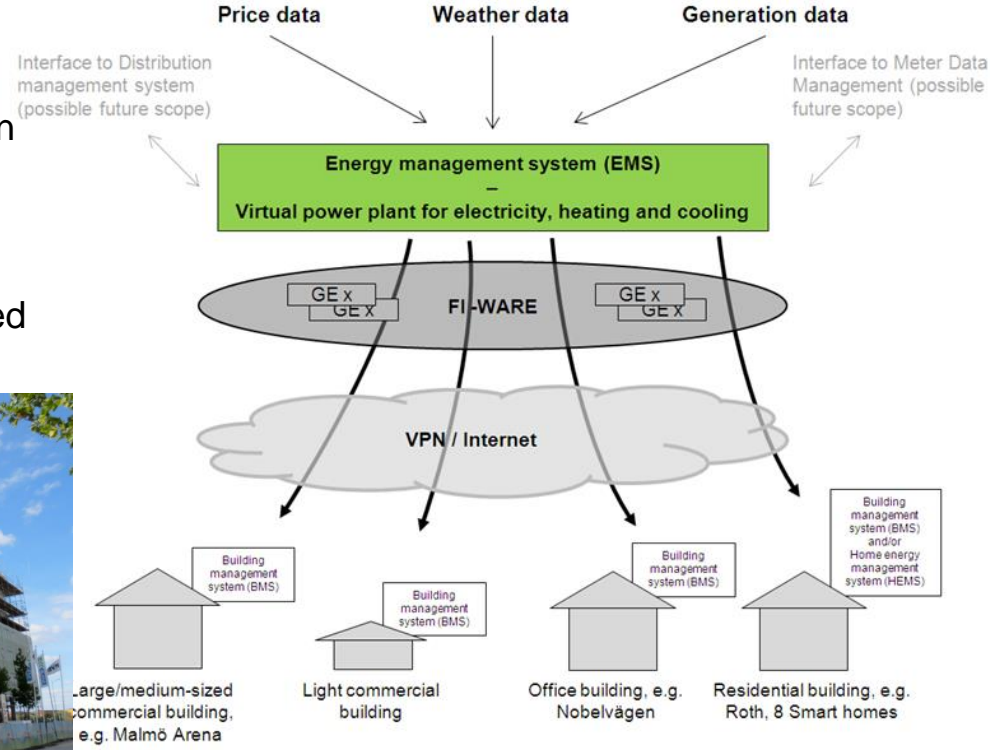
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Trial 1: FIWARE Sustainable Smart City Malmö, Sweden

FIWARE capabilities (e.g. Big Data and security applications) were used as enablers for innovation and the opening of closed systems

The latent **market** demand for **optimisation of power, heating and cooling using demand response** systems was successfully demonstrated by the trial



Trial 2 – FiWARE Smart Region Horsens, Denmark & Madrid

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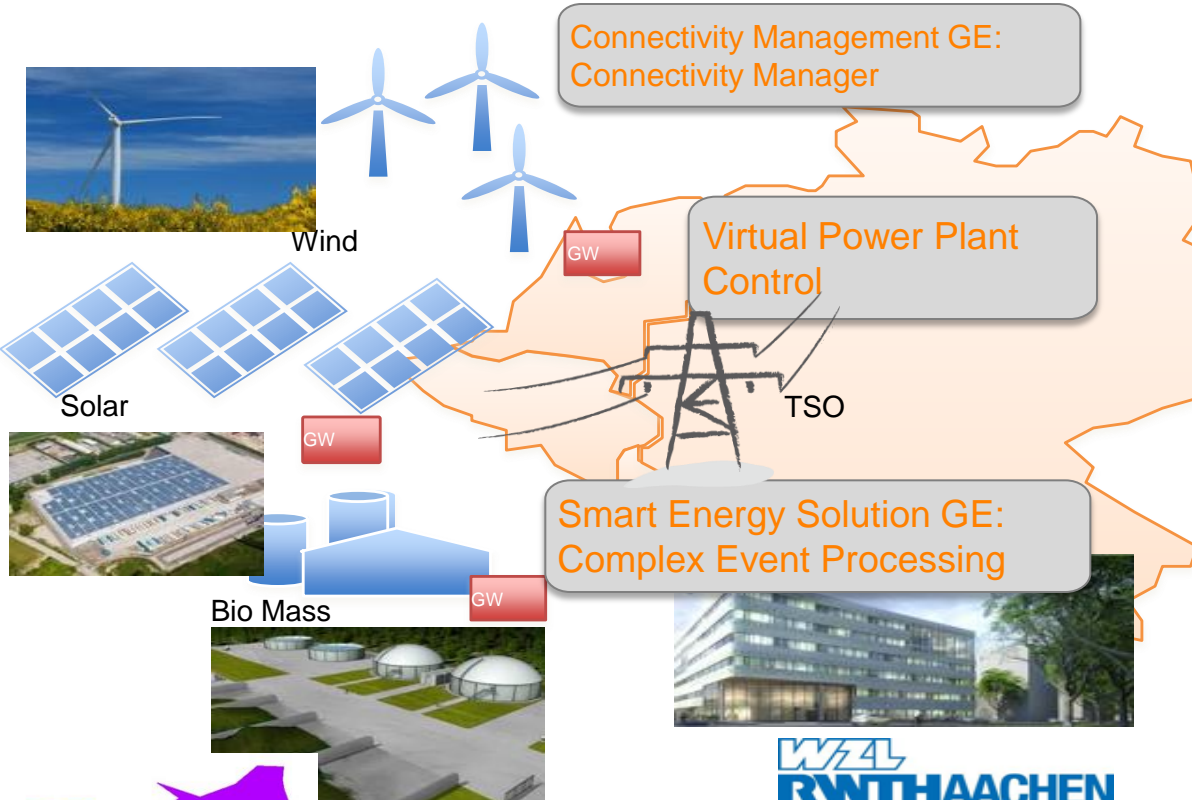
1. Trial site Horsens: Energy management in a community of 20 single family houses in a village
2. Trial site Madrid: Energy management in a commercial office building



- 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
- **Energy (power and heat) offered as a service to users in the trial demonstrating how new business models can work in an area without a district heating system**

FiWARE X-border Virtual Utility

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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

Learnings

- The trial showed that the VPP could be **balanced** using the Smart Factory as a load and led to the identification of new **service provision business** opportunities

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

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- Trial site: Terni (Italy)



A near real time Smart Metering infrastructure was used to build a **cloud based energy marketplace**, which enables demand-response and also contributes to reducing power losses and voltage drops.

ASM Terni is considering to ask for the use of **FIWARE** in future public tenders based on its experiences in the trials

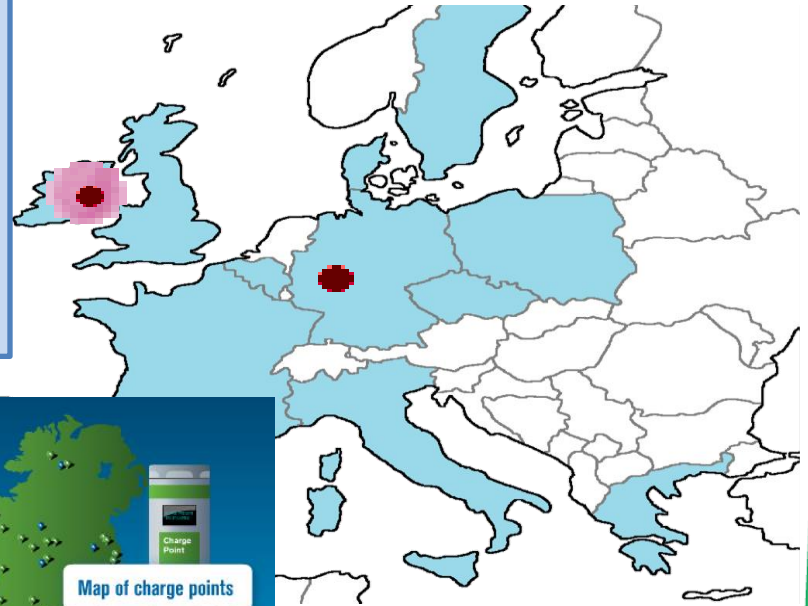
Trial 5: Ireland

FIWARE for Power management

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- eCar batteries as **interruptible loads** demonstrated to **work fast** in the trial **balancing and protecting** the grid – to be scaled up and involve more load types
- **Software defined** utility concept for the **distribution network** demonstrated the low cost and flexibility offered in the trial

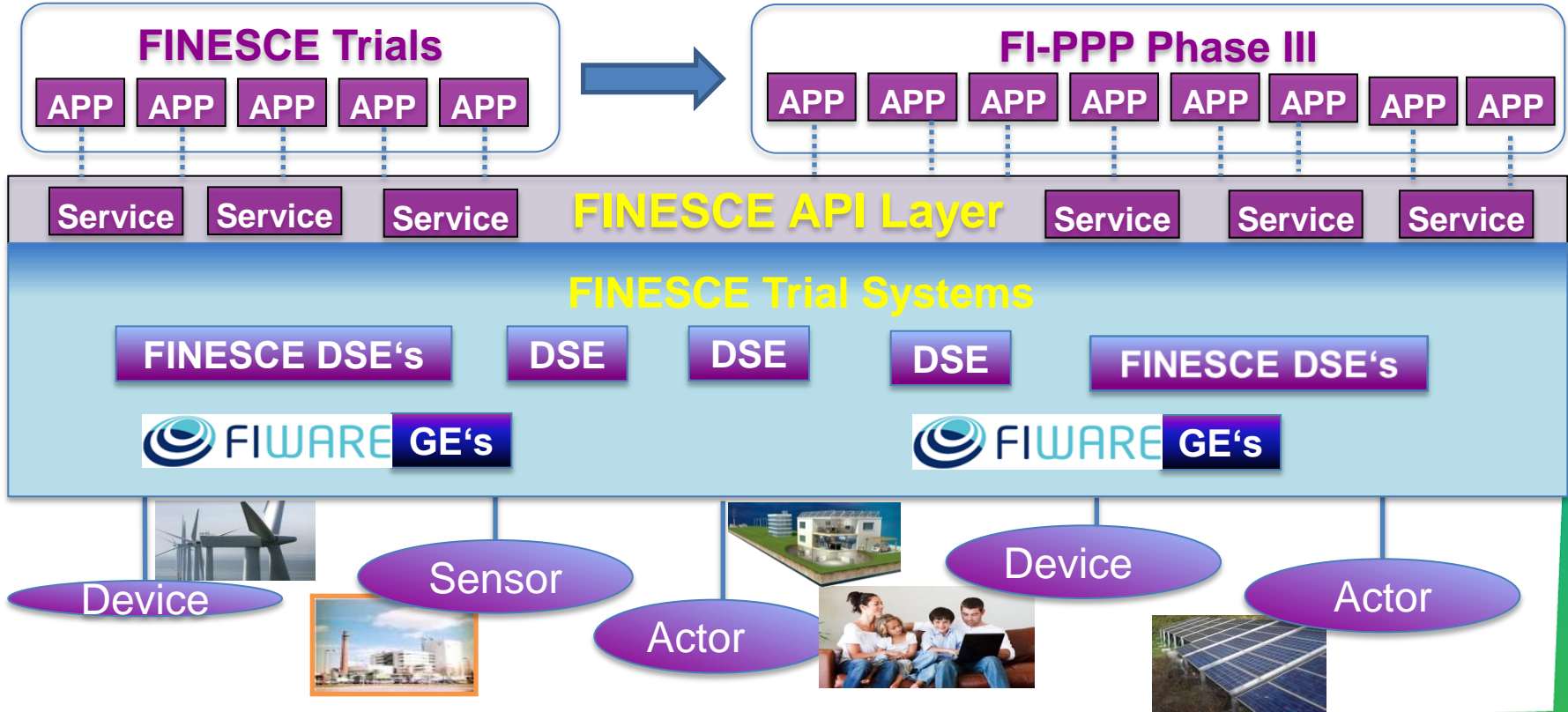


trial site
partner location



FINESCE API Layer Offers Services to Apps

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An overview of strategic results

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Changes in the markets and expectations during the project lifetime:

- Use of and switch to **renewable energy** grew faster than expected (Energiewende in Germany – reduction in use of Nuclear power)
- **Transformation** in the energy sector is happening faster than many in the industry expected
- Trend towards **energy as a customer-centric service** is now established

The FINESCE trial learnings, the FINESCE platform and the Utility 4.0 concept provide:

- a large body of **publicly accessible knowledge** on **how to build and run a customer-centric energy service business based on renewable energy sources**

Outlook beyond FINESCE

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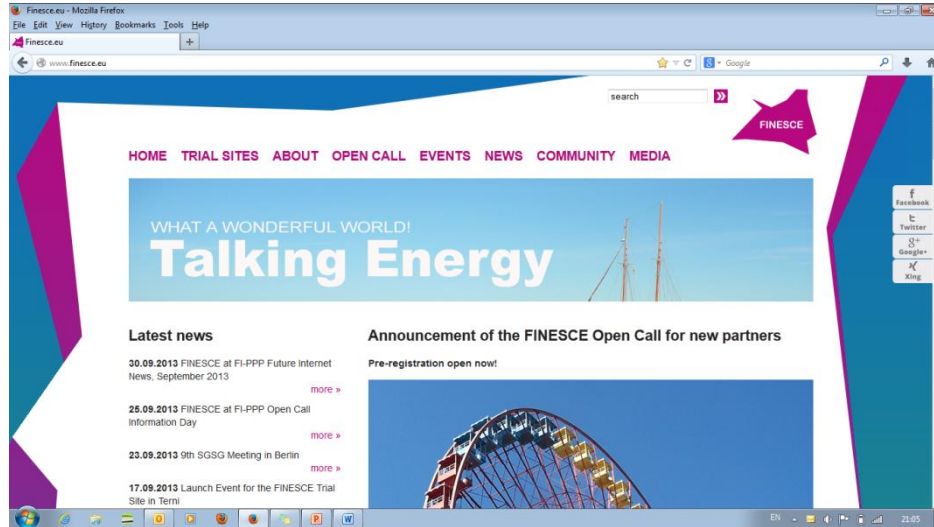


- **Data** have been archived and are available via the FIWARE Lab Data
- **Commercialisation** of project results will continue, including the development of the FINESCE platform
- **GE experiences** reported in public documents on our web site
- **DSE's** continue to be available and are published on GitHub as Open Source
- **Trial sites** will continue to be active after the project ends depending on demand
- **The FINESCE API** will be supported for at least a year after the project ends
- **Further development** of project results will continue in 3 spin-off companies, a range of projects and in business development activities

Thank you for your attention!

www.finesce.eu

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