FUTURE INTERNET SMART UTILITY SERVICES

FINESCE

How to simplify smart energy application development with FI-WARE technology

…and get funded by the European Commission

Smart Grids Stakeholder Group

Graz, 20.05.2014

Alexander von Jagwitz, B.A.U.M. Consult München / Berlin

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SEVENTH FRAMEWORK PROGRAMME

FUTURE INTERNET PPP

FI-Ware Introduction

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FI-WARE
Open APIs for Open Minds

http://www.youtube.com/watch?v=PkrAxS0HBok

FI-WARE and FI-Lab

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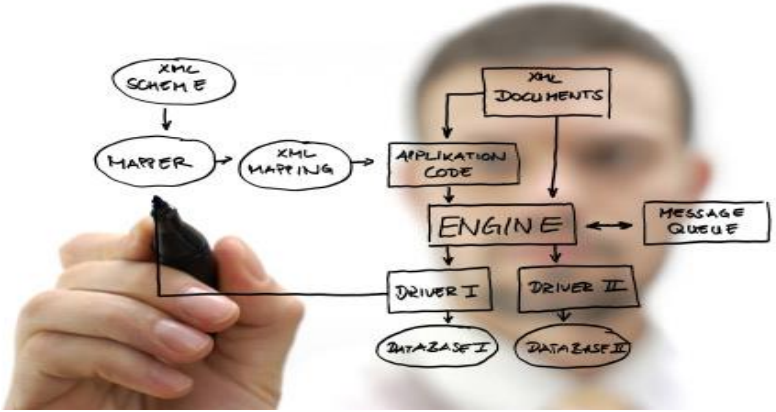

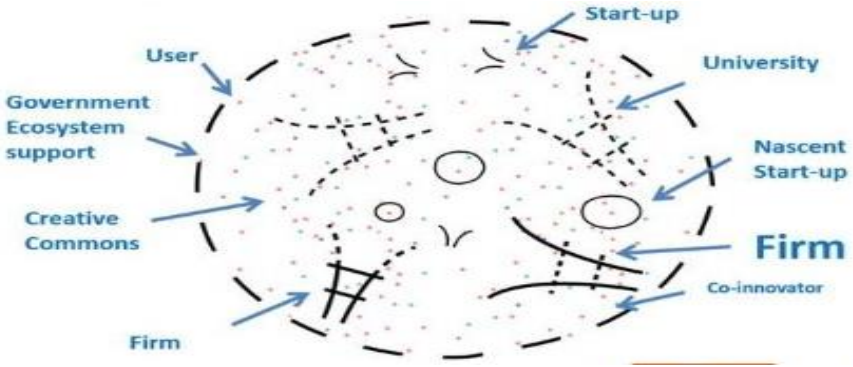

Technology + **A true open innovation ecosystem**

FI-WARE
Open APIs for Open Minds

FI-Lab
Spark your imagination

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FI-WARE: Targeting developers needs

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What

- Connect apps to the physical world
- Manage open data at large scale and transform it into knowledge
- Benefit from open innovation (crowd-sourcing, apps composition)
- Reach target users, monetize
- Ensuring Privacy, Security and Trust
- Take the most of infrastructures while keeping costs lower and under control
- access from everywhere, adapt to devices







How

- Advanced UI Enablers
- IoT-M2M Enablers
- Data/Context Enablers
- Integration and Composition Enablers

Built-in APIs & tools

- Business & Delivery Framework (revenue-share, cross-selling, …)
- Security Enablers
- Advanced Cloud Enablers
- Enablers easing interface to Network and Devices

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Where to start: The FI-WARE Catalogue (http://catalogue.fi-ware.org)

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Home Enablers Tools Forum Login / Register FI-WARE Catalogue

Hosting enablers for creation of FUTURE INTERN APPLICATIONS

Welcome to the FI-WARE C start using a Generic Enal

About the Catalogue

The FI-WARE Catalogue is the centra implementations of Generic Enable of the FI-WARE platform. Apart from you will also find tools and best pra you develop the applications of the

Home Enablers Tools Forum

Generic Enablers

Home / Generic Enablers

Browse by Chapter

Data/Context Management

BigData Analysis - Cosmos

Monitoring and control of the BigData Analysis GE

DATA/CONTEXT MANAGEMENT

Complex Event Processing (CEP) - IBM Prc

Complex Event Processing GE

DATA/CONTEXT MANAGEMENT

Compressed Domain Video Analysis - Coc

Provides a set of tools for analyzing video streams in the compressed domain

DATA/CONTEXT MANAGEMENT

Location - LOCS

Location management of mobile devices via A-GPS, CID and WIFI

DATA/CONTEXT MANAGEMENT

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BigData Analysis - Cosmos

Home / Generic Enablers / BigData Analysis - Cosmos

Overview | Creating Instances | Documentation | Downloads | Instances | Terms and conditions

Chapter: Data/Context Management
Version:
Updated: 2013-10-24
Rating:
Average: 5 (1 vote)
Contact Person: Francisco Romero Bueno frb@tid.es

Please login to be able to subscribe to this GEI.

What you get

Cosmos is an implementation of the Big Data GE, and it is based on Hadoop ecosystem. Current version of Cosmos allows users to:

- Upload big data files to HDFS by means of a SFTP injection server.
- Upload big data files to HDFS by means of HttpFS (in addition to standar WebHDFS).
- Upload and run MapReduce jobs from the Master node.

There is also a module in charge of receiving context data from Orion (Context Broker GE implementation) and storing it in HDFS.

Why to get it

Big Data processing is the technology used to process huge amounts of previously stored data in order to get relevant insights in scenarios where latency is not a highly relevant parameter. These insights take the form of newly generated data, which will be at disposal of applications using t requirements, Cosm

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No votes yet

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BigData Analysis - Cosmos

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Experiments/Trials within the FI-PPP

Projects being part of the FI-PPP program can use the Cosmos product under the conditions established in the FI-PPP Collaboration Agreement that they should have signed as beneficiaries of the program.

FI-LAB (Open Innovation Lab)

Development, testing and experimentation of applications using:

- experimental instances deployed on the FI-WARE Open Innovation Lab facilities (see section "Experimental instances" under the "instances" tab linked to this entry)
- versions of the software downloaded from resources under the "downloads" tab linked to this entry

is subject to the terms and conditions established in the "FI-WARE Open Innovation Lab: Use Terms and Conditions". Any other use is not permitted.

External Availability

Software associated to the Cosmos product is provided as open source under Apache License, Version 2.0. Please check the specific terms and conditions linked to this open source license at http://opensource.org/licenses/Apache-2.0.

Please note that software derived as a result of modifying the source code of the Cosmos product software in order to fix a bug or incorporate enhancements is considered a derivative work of the product. Software that merely uses or aggregates (i.e. links to) an otherwise unmodified version of existing software is not considered a derivative work).

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Getting Started: Rolling out your FI Apps

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1. DEVELOP YOUR IDEA
2. SELECT ENABLERS
3. ACCES FI-LAB /BUILD INSTANCE
4. DEPLOY YOUR CLOUD VMs
5. DEVELOP YOUR APP
6. INTEGRATION & TESTING

FI-Lab

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A key concept: FI-WARE Instances

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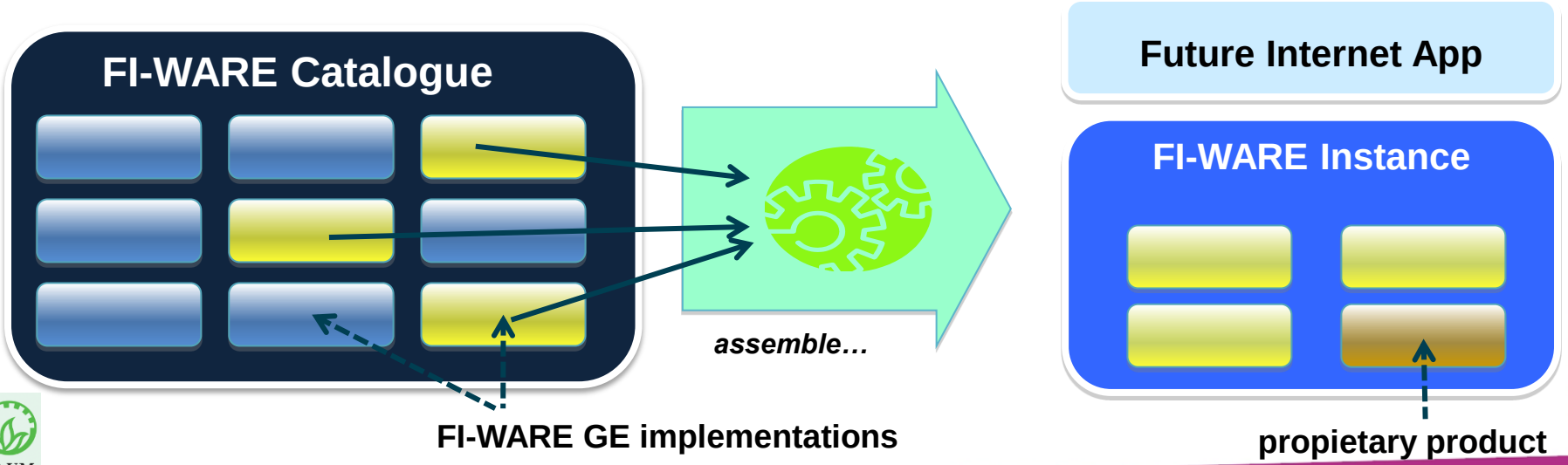
Future Internet Applications run on top of “FI-WARE Instances” that are built by “FI-WARE Instance Providers” upon:

- selection of FI-WARE GEis (products) from the FI-WARE Catalogue
- assembly of selected FI-WARE GEis with proprietary added-value products



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Domain-specific platforms = FI-WARE instance + specific enablers

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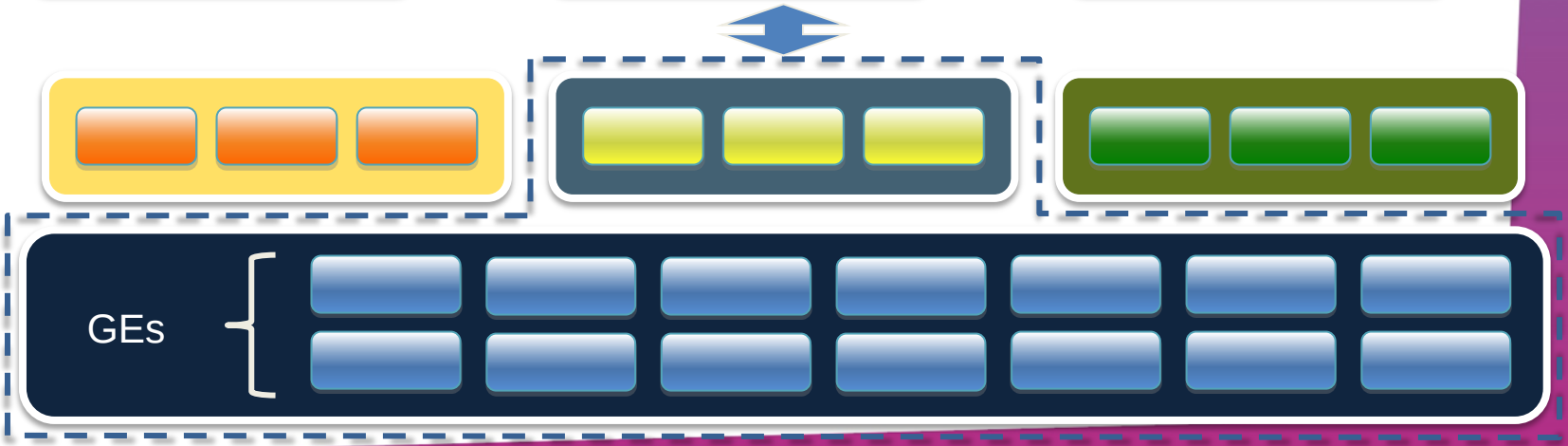

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FI-LAB: the meeting point where a new Open Innovation ecosystem will be boosted

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Application sponsors (business, cities, etc)

- Connect to entrepreneurs
- Put their data at work
- Visibility, promotion
- Costs saving
- Better service to customers

Entrepreneurs, Developers

- Ability to test with real data
- Ability to run trials with real users
- Visibility, promotion
- Hosting of permanent showcase
- Connection to potential customers
- Acceleration of product development

FI-Lab

FI-WARE Technology Providers

- Added value to just the technology
- Connecting to entrepreneurs: Revenue-sharing opportunities

- **100 M€ of funding devoted to entrepreneurs in phase 3 of the FI-PPP**
- **16 accelerator projects proving open calls**
- **Start September 2014 in Munich**

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„European Conference on the Future Internet (ECFI)“ in Munich at September 17th

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- Get an overview about the technical progress of FI-WARE and experience pilot applications
- Get all information to participate in the Open Calls of Phase 3

- Main Event
  (Technical University of Munich)
- Evening Event (Hofbräuhaus)
- Techno Brunch (BMW World)

FINESCE key message:
Smart Energy enabled by FIWARE GEs

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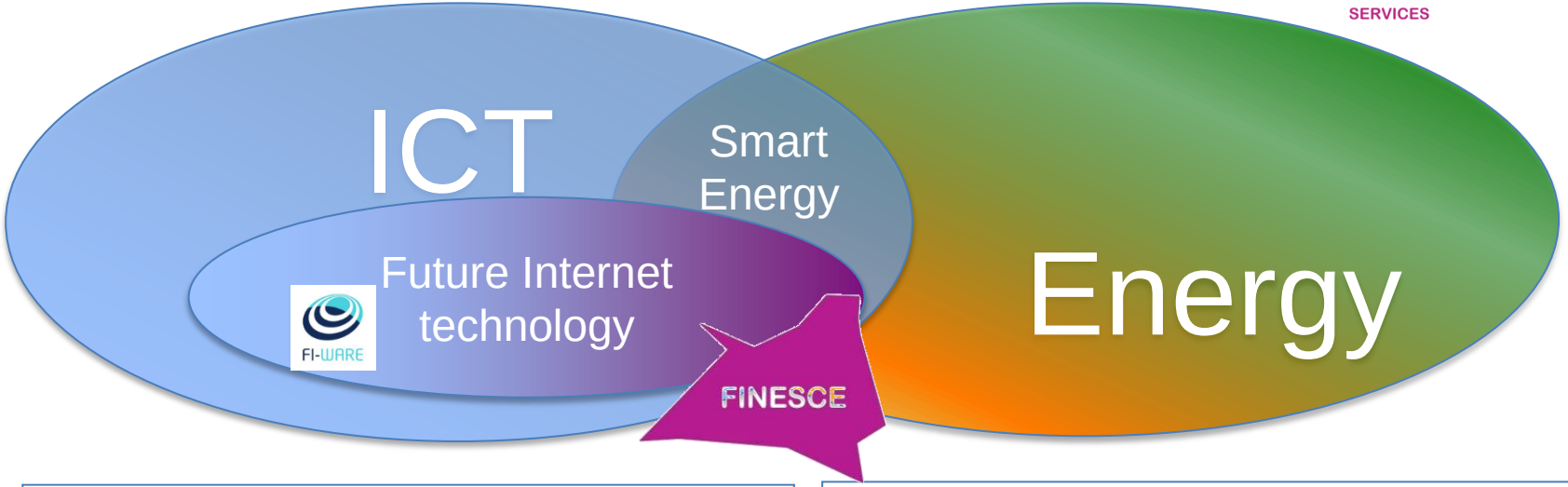

Future Internet offers services for:

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

Benefits of using FIWARE Technology:

- **lower costs for application development**
- **easy access for new partners**
- **scalability of applications**
- **<u>shorter time to market</u>**

FI-PPP Phase I: FINSENY‘s 4-Step Approach

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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. Discriminate **Generic** and **Specific** requirements.

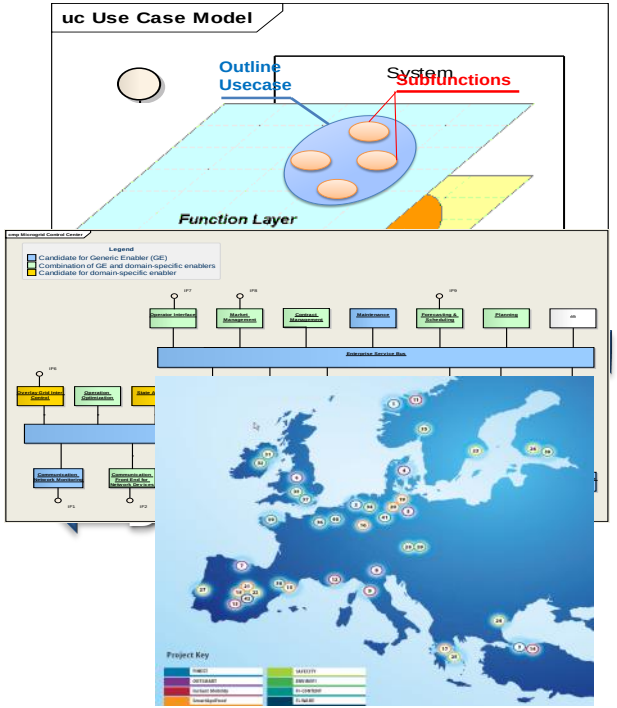
3. Functional Architecture

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

develop ICT architecture based on **Generic** and **Domain Specific** enablers

4. Trial candidates

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



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FINESCE API Layer Offers Services to Apps

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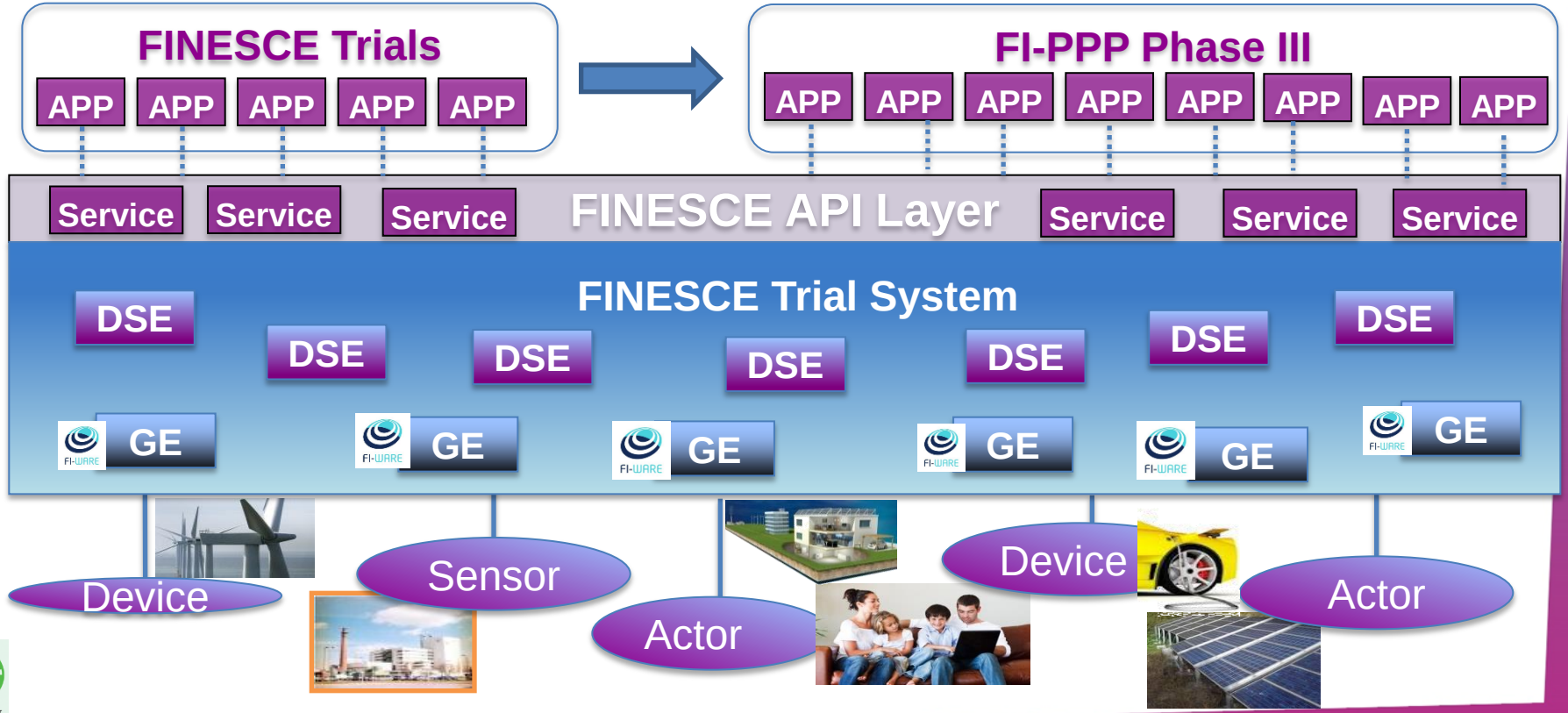

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GE Integration – Madrid trial

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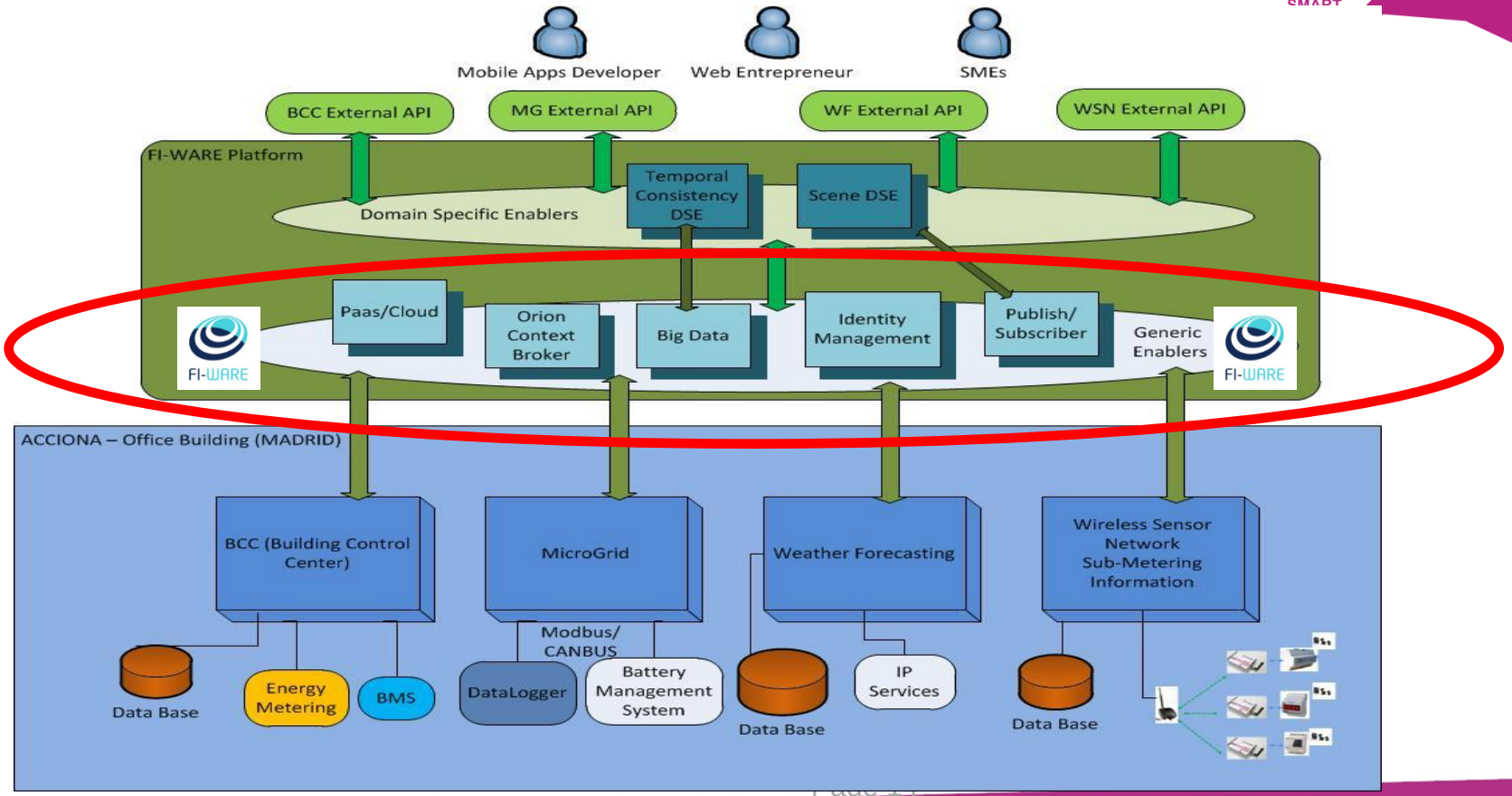

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GE Integration Terni Trial

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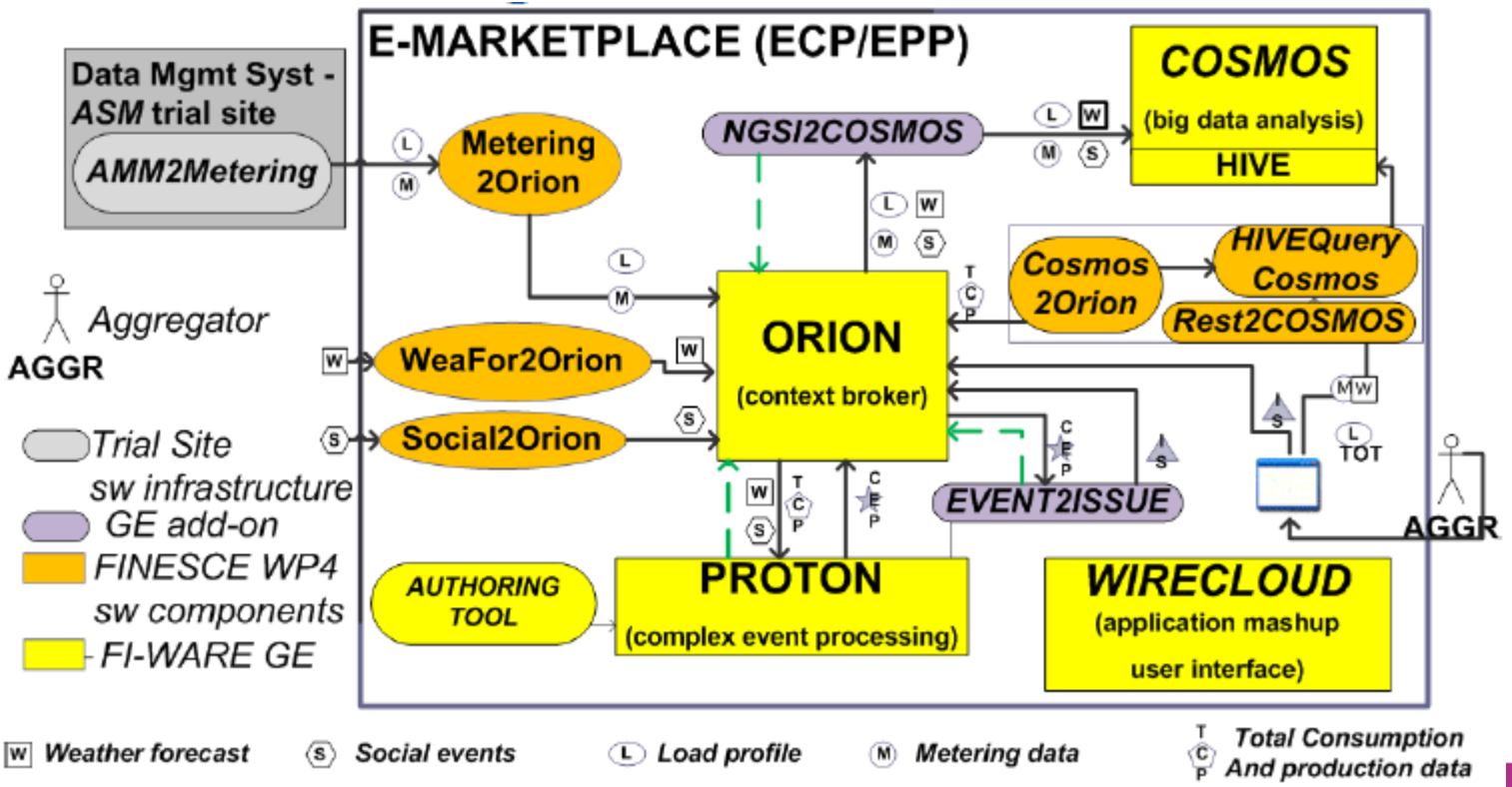

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Thank you for your attention!

SYNELIXIS

fir an der RWTH AACHEN

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