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How user profiles support a reliable infrastructure for Electric Vehicles

Trial Site Ireland

John Howard - ESB

COMPANY
LOGO



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PPP



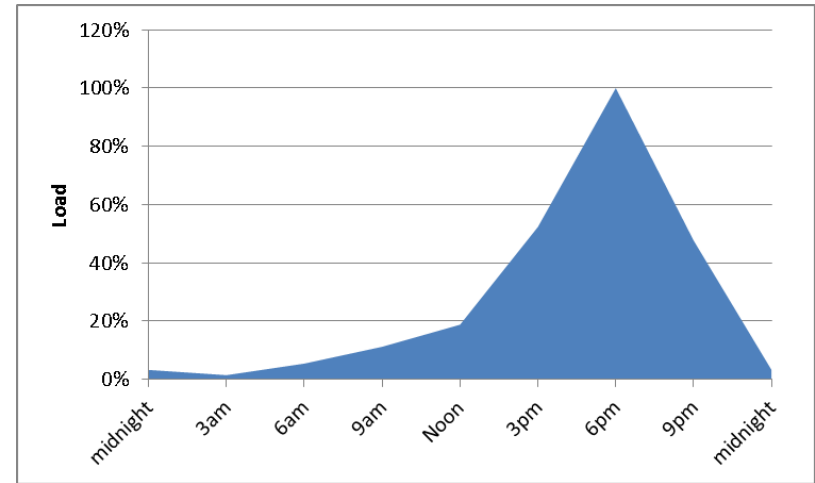
EV Integration Trial

EV Integration Trial- Objectives

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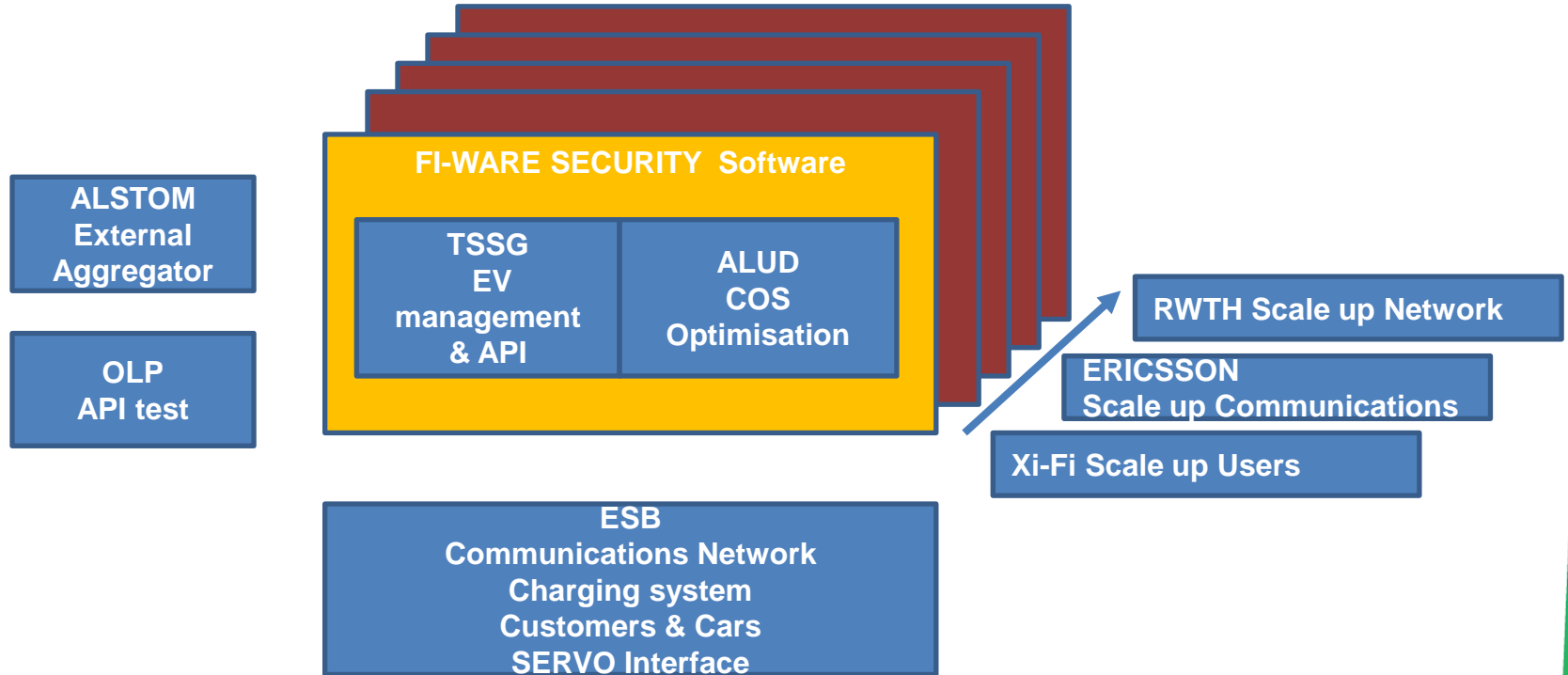
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- Develop demand dispatch system
- FI-WARE Generic Enablers core element of the system – Security & Privacy
- Business case linked to profile
- Impact of Tariffs and incentives
- Undertake large scale modelling
- Identify challenges by building real system



EV Integration Trial– Who's doing what

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EV Integration Trial- Trial Locations

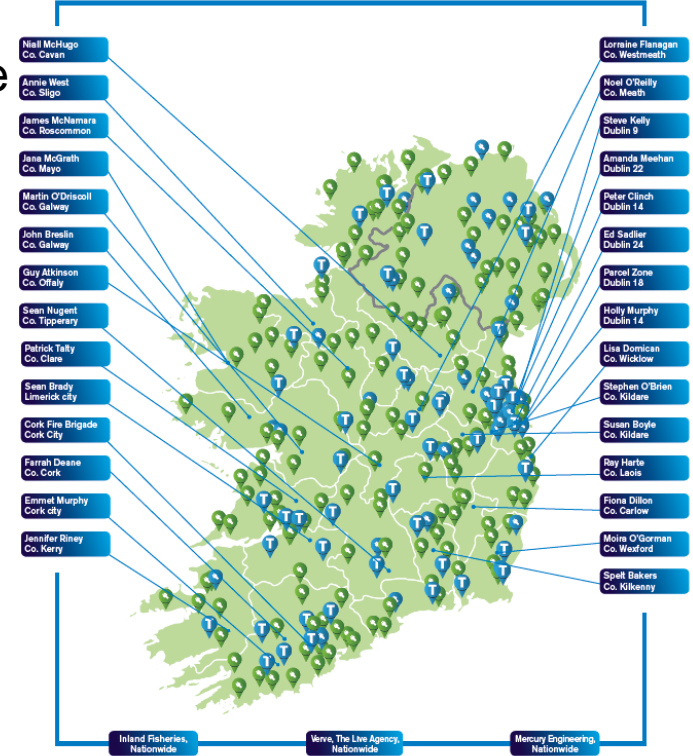
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WiMAX Trial Roscam Galway



- LTE Trial Nationwide



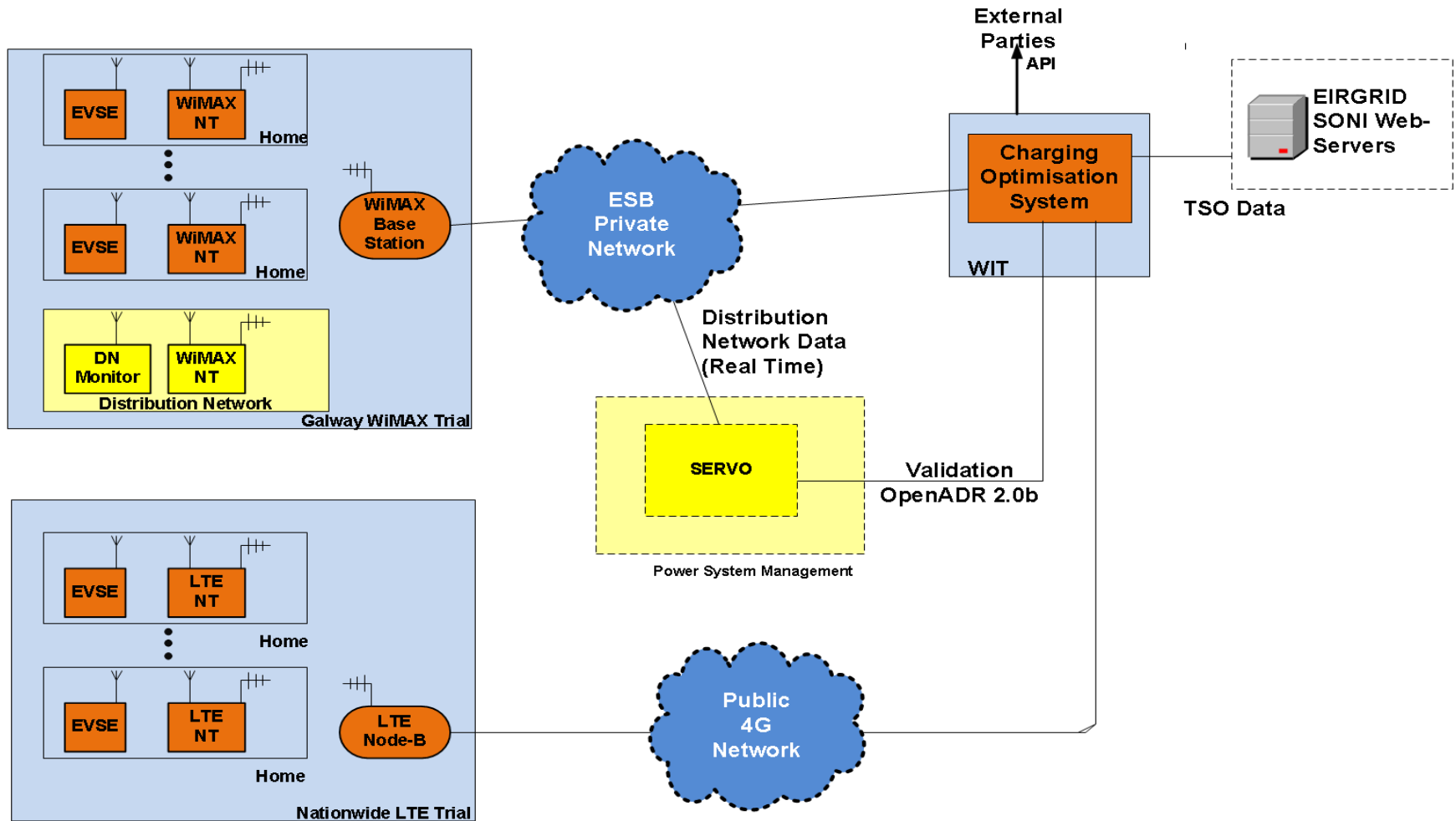
EV Integration Trial– Highlights

- GE Security layer – integration testing underway
- Significant barriers:
 - Cybersecurity
 - User Data Protection
 - Distribution Network integration
- Sell power interruption into energy market
- Integration with ESB SERVO project
- OpenADR 2.0b interface being developed, cooperating with EPRI
- Developing API for user access

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EV Integration Trial – User Support - API

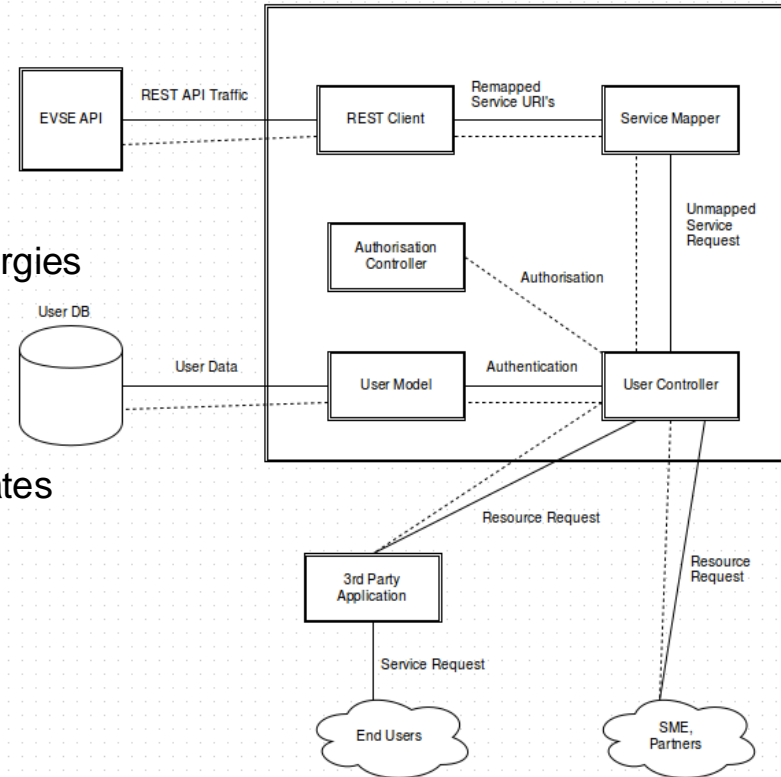
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- Supports external access to EVSE data
- Supports charging control
- Both individual and aggregator level

API Data:

- Regions
- Generationplants
- Generationtypes
- Regionalaggevseenergies
- Regionalenergies
- Timeslots
- Evses
- Evevseconnections
- Evevseconnectionstates
- Chargingmodes
- Evtypes
- Electricvehicles
- Stateofcharges
- Estimatedsocs



EV Integration Trial– Highlights

- Scale of Challenge becoming clear
 - Grid integrity - Cybersecurity
 - Data Protection and Safety
 - Distribution network characteristics
 - Barriers to innovation
- How to address these challenges
 - Open API
 - Generic Enable help build platforms fast
 - Work with SMEs Aggregator, service provider, users

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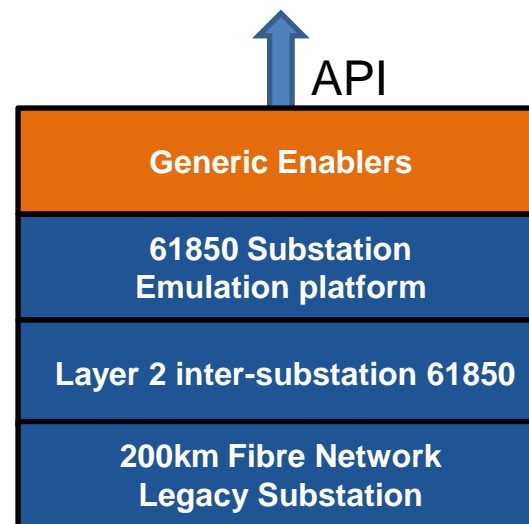
Smart Energy Utility Trial

Smart Energy Utility – Objectives

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- Objective One
 - Platform for Smart Grid application market built with Generic Enablers
 - Demonstrate handling of protection information & Information distribution in public & private clouds
- Objective Two
 - Build advanced optical network
 - Suitable for 61850 substations
 - Support for existing substation



Smart Energy Utility – Highlights

- Completed build 200km fibre wrap infrastructure
- Security infrastructure NERC-CIP
- Legacy Substation - Differential Protection
- Completed build 200km fibre wrap infrastructure
- Distributed switch network field deployment completed

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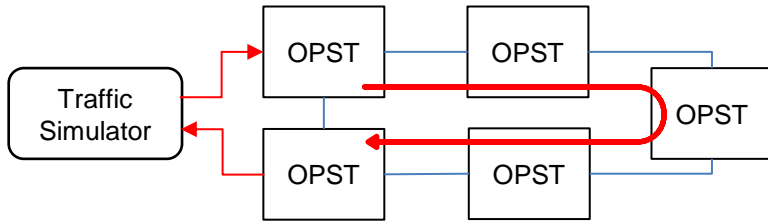


Smart Energy Utility – Highlights

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Trial network – 200km ring with real infrastructure's fibre characteristics



High/low priority traffic transmitted simultaneously over OPST network. Headline results below

Traffic Type	Bitrate	Avg. Latency	Jitter
High Priority	1 Gbit/s	0.89ms	30us
Low Priority	4Gbit/s	0.91ms	45us

Teleprotection Goal

7ms

400us



FINESCE Project – User Impact

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- Two very different trials - common trend
 - Formidable barriers to SMEs/Users
 - Lack of service innovation in energy business
- Mediation layer between Utility and SMEs/Users
 - Platform for innovation
 - New market not understood
 - Need FI-WARE for rapid development
 - Secure and profitability for Utilities
 - Trials are “samples” of what’s possible
- Strategy to develop platform into an industry



Thank You

**Invitation to Trials Open Day
22 Sept 2014 in Portlaoise, Ireland**

Detailed to be published on www.finesce.eu