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FINESCE

WP5 – EV Trial

23 Sept 2013



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Overview

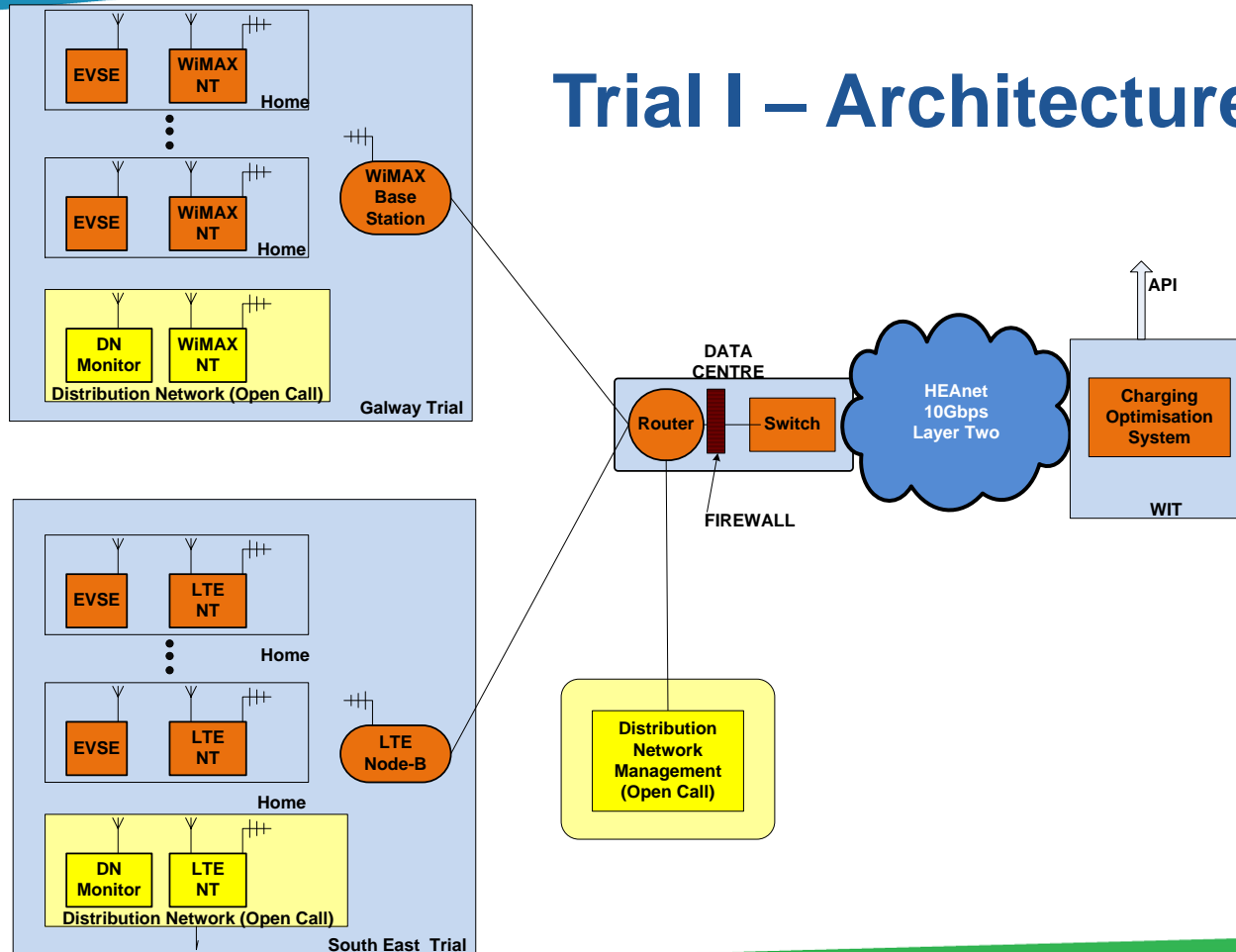
- Two smart energy trials both based in Ireland
- Eight Partners
- Approximately €4.5m funding
- Trial I – EV Grid Integration
- Trial II – Smart Grid IP communications

Trial I - Objectives

- Electric Vehicle integration into the grid
- Develop charging optimisation systems using Generic and Domain Specific Enablers
- Use WiMAX and LTE access technologies
- Large scale modelling
- Provide answers to key issues:
 - Will EVs be integral to the grid ?
 - How will GEs be deployed ?
 - What communications technology to use ?
 - Economic impact ?
- Distribution Network Integration - Open Call

Trial I – Architecture

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Trial II - Objectives

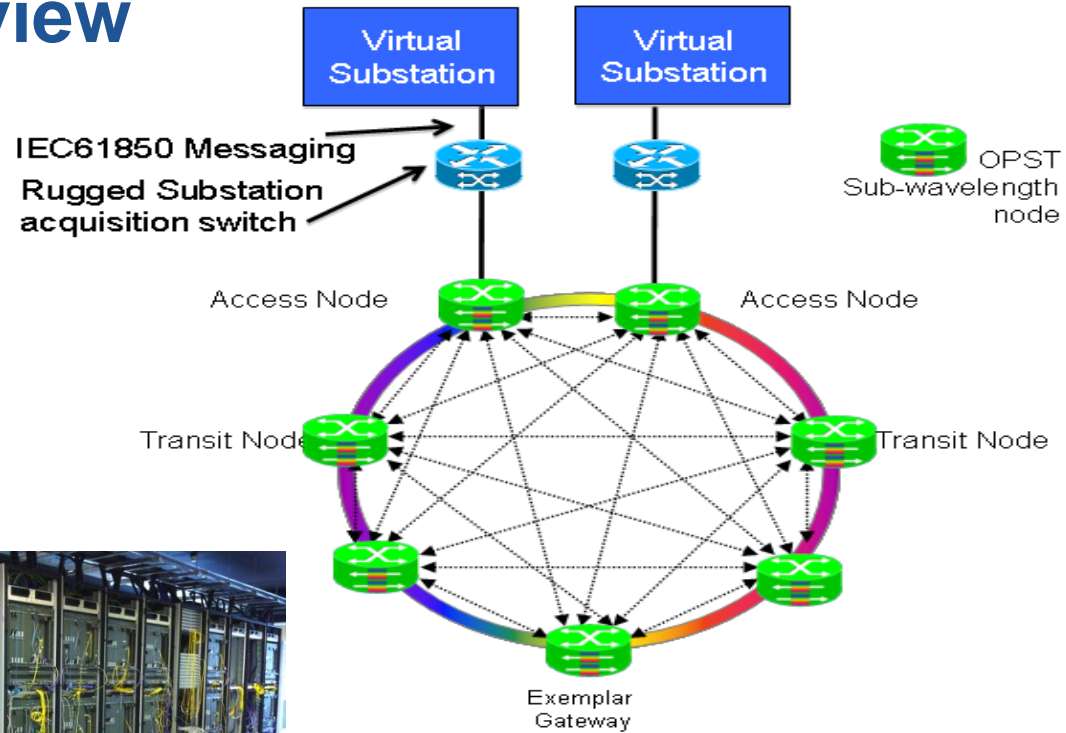
- Advanced IP based smart grid communications
- Utilities slow to adopt IP
 - Electrical protection
 - Cyber security threats
 - Legacy systems
- Impact
 - Missed IP economic of scale
 - Lack of innovation
 - Hybrid solutions
 - End of life issues



Trial II - Approach

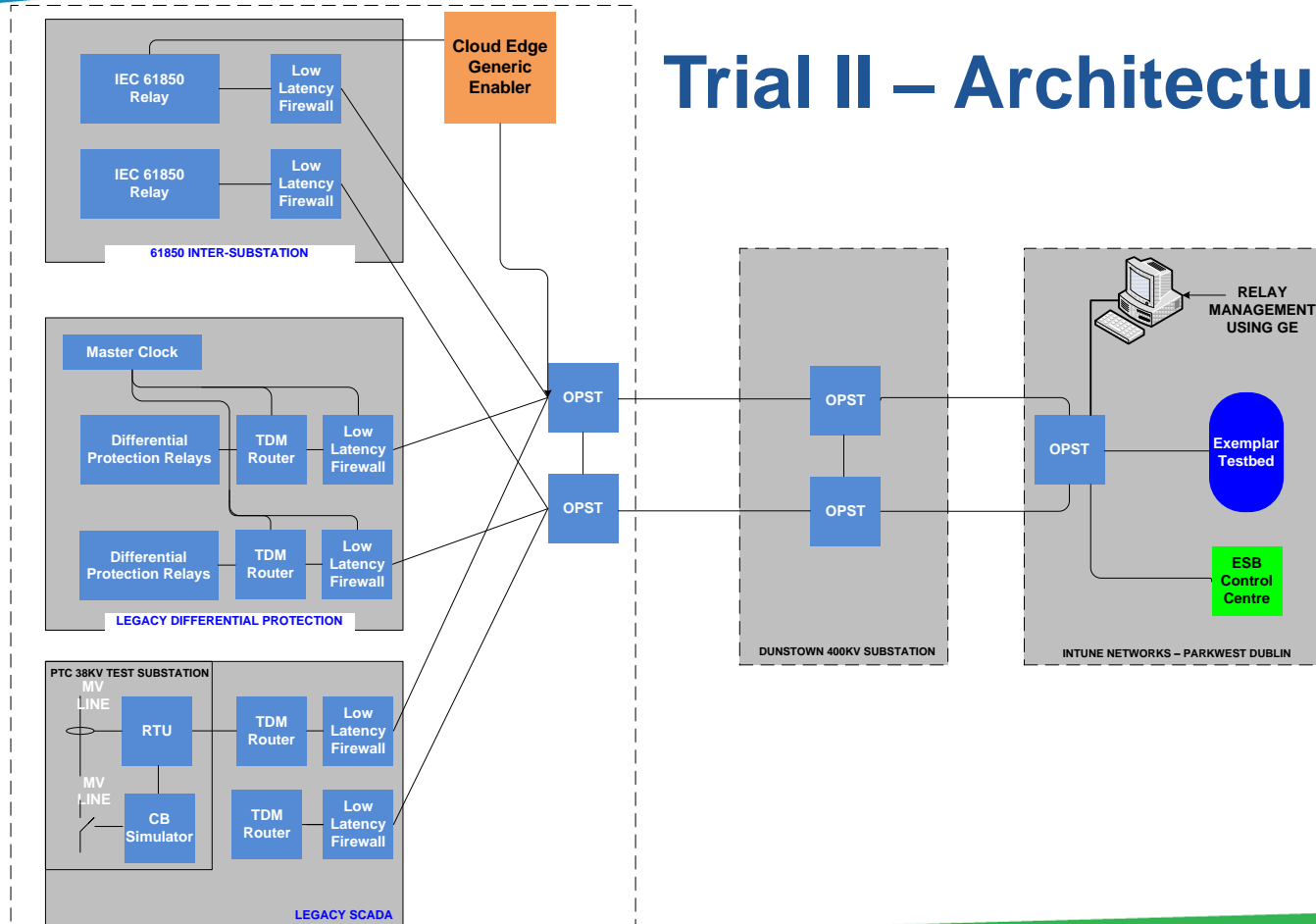
- Use fully optical network – reduce opto-electric transitions
- Achieve greater determinism
- FI-Ware Generic Enabler to provide management security layer
- Test network parameters
- Trial future orientated and legacy electrical systems

Trial II – Overview





Trial II – Architecture



Partner roles

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Partner	Main technical role
ESB	Trial components deployment, integration and testing. Trial implementation. Workpackage coordinator
Ericsson	Wireless communications. Generic Enabler development and integration
ALUD	Algorithm development-supply matching, grid design, Specific enabler development, generic enabler integration.
Intune Networks	Sub-wavelength core network and integration with Exemplar test bed.
RWTH	Mapping small scale trial results to large scale system using simulation.
TSSG-WIT	Algorithm development- charging interruption, Specific enabler development, generic enabler integration.
Alstom	Distribution network systems.
Telefónica Poland	Smart grid mobile communications.