How IP can reach …
… all the Planet

IPv6, QoS & Power Line Integration

6POWER: Objectives

- Research native IPv6/IPv4 and related protocols or advanced network services (QoS, security, multicast, mobility, …) support over broadband Power Line, in several platforms/devices, including the necessary standardization activities.

- Adaptation of next generation applications and services, including VoIP, multi-conferencing and audio/video streaming.

- Field Trial and Evaluation, network prototypes, interconnected with other IPv6 trials.
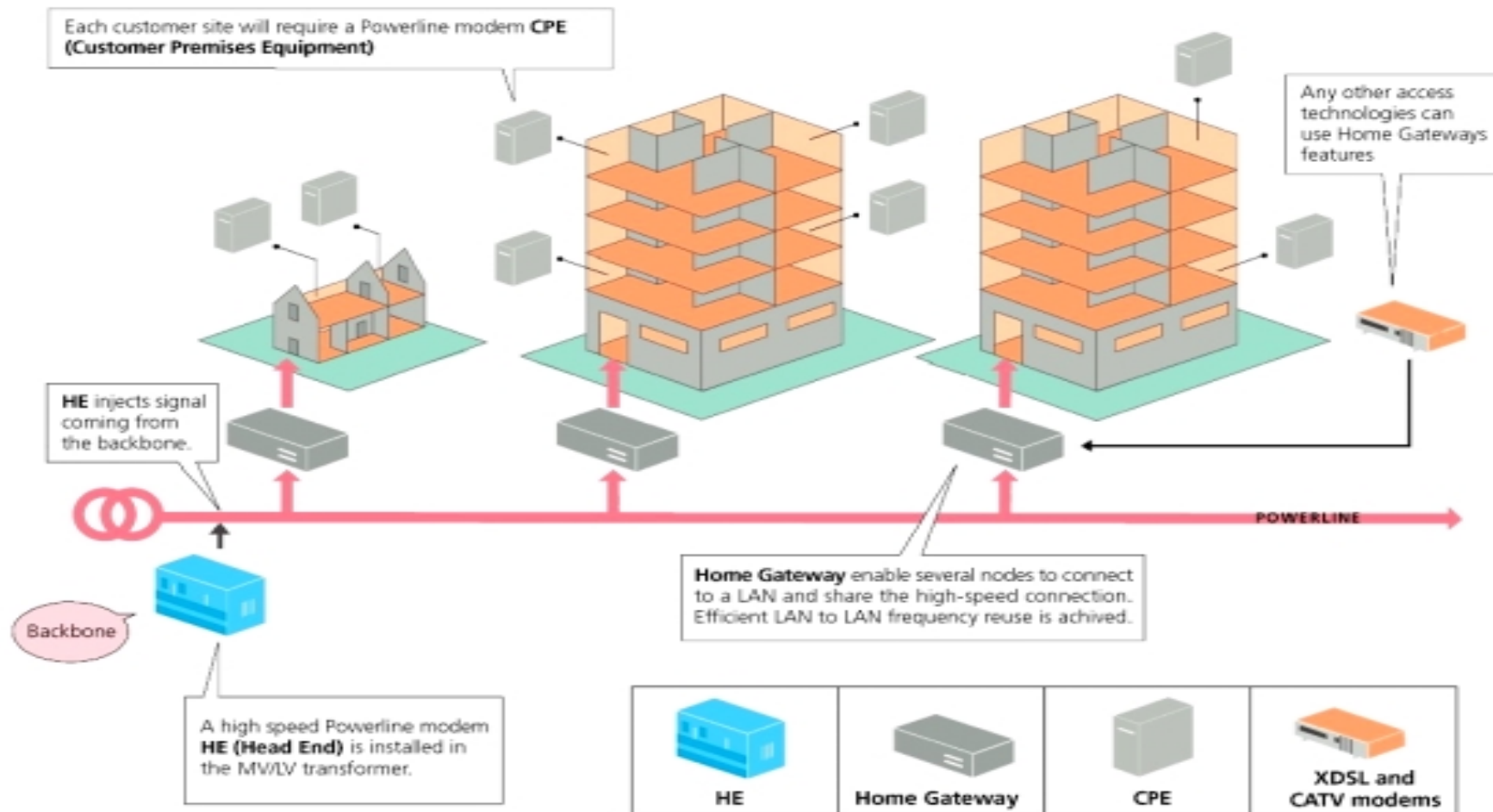
6POWER: Sub-Objectives

- Large-scale deployment of very high speed broadband PLC over 45 Mbps !

- Early deployment of IPv6-capable devices in residential and SOHO environments, first supporting QoS features

- Support for emerging technologies: VoIPv6, advanced "next generation" digital set-top-boxes, next generation services (high-speed interactive TV, secure e-commerce, virtual shopping, infotainment and related applications)

- Dissemination activities

Why 6POWER ?

- Power Line will need v6 for end-2-end model services

- Research other protocols and aspects related to IPv6 and Power Line Technologies

- Research and Identify different models for Power Line application into real life

- Deploy trial networks

- Standardize

Typical PLC Network Topology

Each customer site will require a Powerline modem **CPE** (Customer Premises Equipment)

Any other access technologies can use Home Gateways features

HE injects signal coming from the backbone.

Backbone

A high speed Powerline modem **HE (Head End)** is installed in the MV/LV transformer.

Home Gateway enable several nodes to connect to a LAN and share the high-speed connection. Efficient LAN to LAN frequency reuse is achived.

POWERLINE

| HE | Home Gateway | CPE | XDSL and CATV modems |

Consortium Members

- Power Line experts (DS2)
- Network suppliers (power the networks !) (Endesa)
- IPv6 experts (Consulintel)
- Device manufacturers:
  - Routers (6Wind)
  - Set-top-box (PACE)
- Next Generation Applications and services experts (Agora, MCL)
- Universities, scientific collaboration & evaluation (UMU)
- Sponsors: Willing to participate in test-beds and trials

Work Package Description

- ## WP1:
  - Coordination, Interconnection & Dissemination
- ## WP2:
  - Integration of IPv6 Advanced Services over PL
- ## WP3:
  - Network Architecture Design & Implementation
- ## WP4:
  - PLC Devices
- ## WP5:
  - Next Generation Applications
- ## WP6:
  - Trials and Evaluation

Thanks !

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