

Gigle Networks
Intelligence under Management™

Flexible Intelligent Multi-PHY Networking

Presentation to: Omega Workshop 2010

February 25th, 2010



Who is Gigle Networks?

Welcome to Networking 2.0

- Solutions enabling intelligent networking for the home
 - Transparent networking between ALL platforms
 - Network management across ALL transports
 - Seamless interoperability through ALL applications
- Unparalleled network performance
 - True “mesh” adaptation
 - Self-aware, self-healing and self-routing networks
 - Intelligent aggregation & switching across ALL media types
- Price/Performance designed from the ground up
 - Most aggressive level of integration in the industry
 - Migration to small geometry process node underway
 - Optimized for the embedded markets (Consumer + Energy)

GGL541 Intelligent Multi-PHY SoC

Dual MII or GMII Ethernet interface



GGL541

Cat 5 MII & GMII 10/100/1000 DFE

MII & GMII 10/100/1000 MAC

Xtendnet™ CPU

Memory

P1901/HPAV
MAC

mediastream™
MAC

P1901/HPAV
AFE & DFE

mediastream™
AFE & DFE

- 200 Mbps PHY throughput over powerline
- Fully compliant with HomePlug® AV specifications
- IEEE P1901 ISP capable

- Intelligent switching agent for layer 2.5 mesh networking
- Provides repeating, channel bonding, failover, and load balancing
- Encryption key exchange protocol
- IGMP snooping for IPTV multicast
- TDMA/CSMA MAC for improved QoS and bandwidth allocation



OR

OR

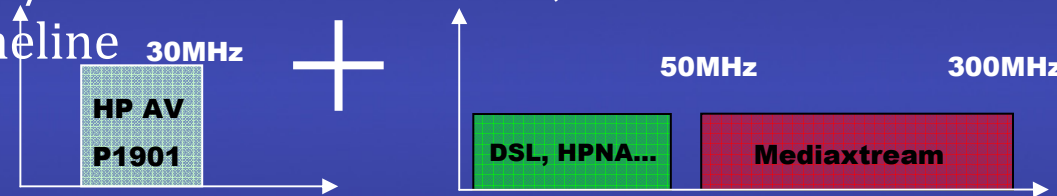
- 1 Gbps PHY rate over anywire
- Designed for compliance with worldwide EMC regulations

Gigle's Flexible Anywire Frequency plan

- HPAV/P1901 + Mediastream, both in PLC



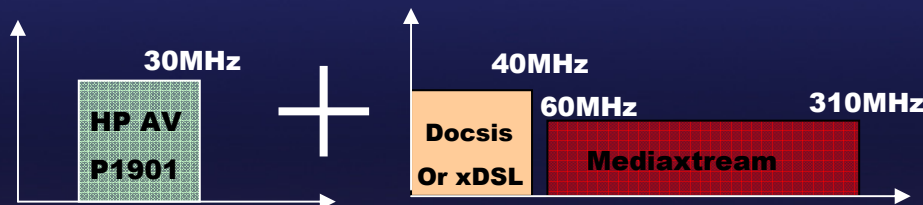
- HPAV/P1901 + Mediastream, HPAV in PLC Mediastream in Phoneline



- HPAV/P1901 + Mediastream, HPAV in PLC Mediastream in RF Coax

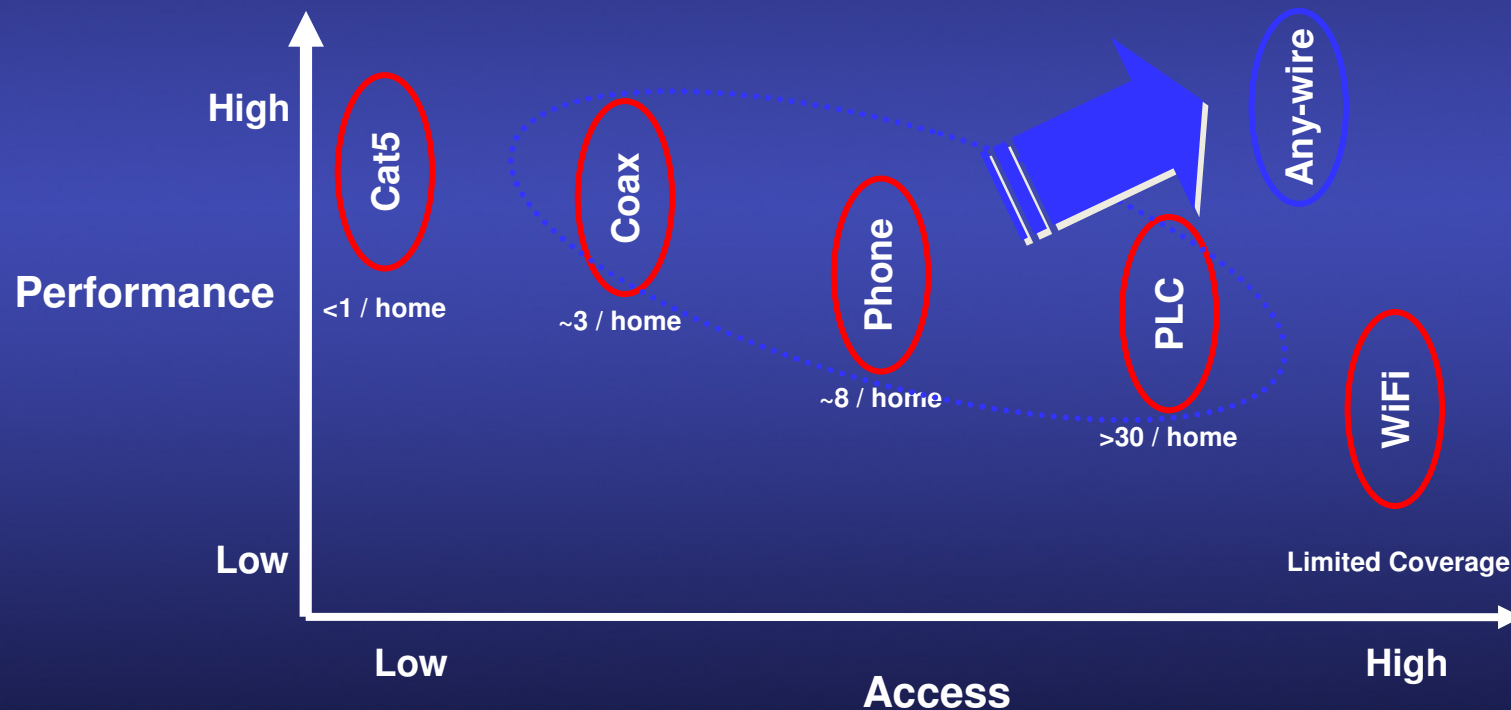


- HPAV /P1901+ Mediastream, HPAV in PLC Mediastream in BB Coax



Hybrid Architecture Increases Performance & Access

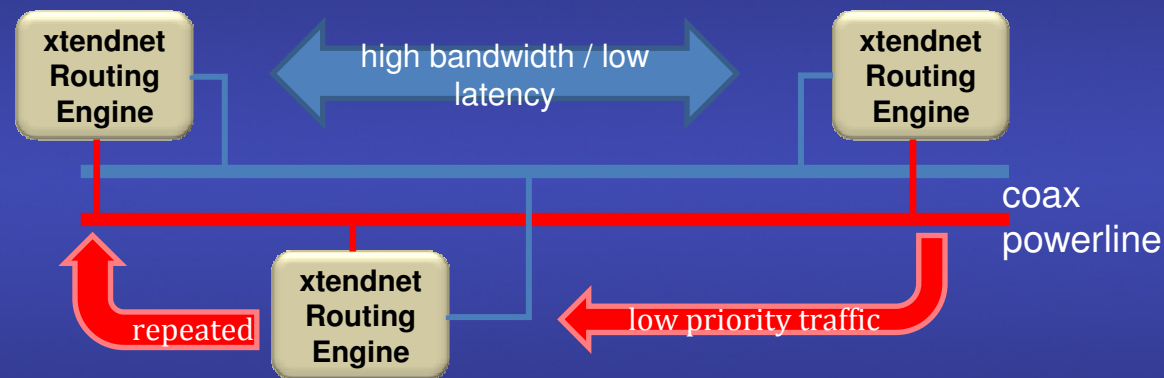
Today, network media are selected based on the trade-off between performance and access



Hybrid any-wire networks increase implementation flexibility providing more access and performance maximization

xtendnet™ *Intelligent Switch*

- Ability to operate on multiple mediums and support multiple streams simultaneously on separate networks
- Developed for high-performance coax + PLC deployments. (example)

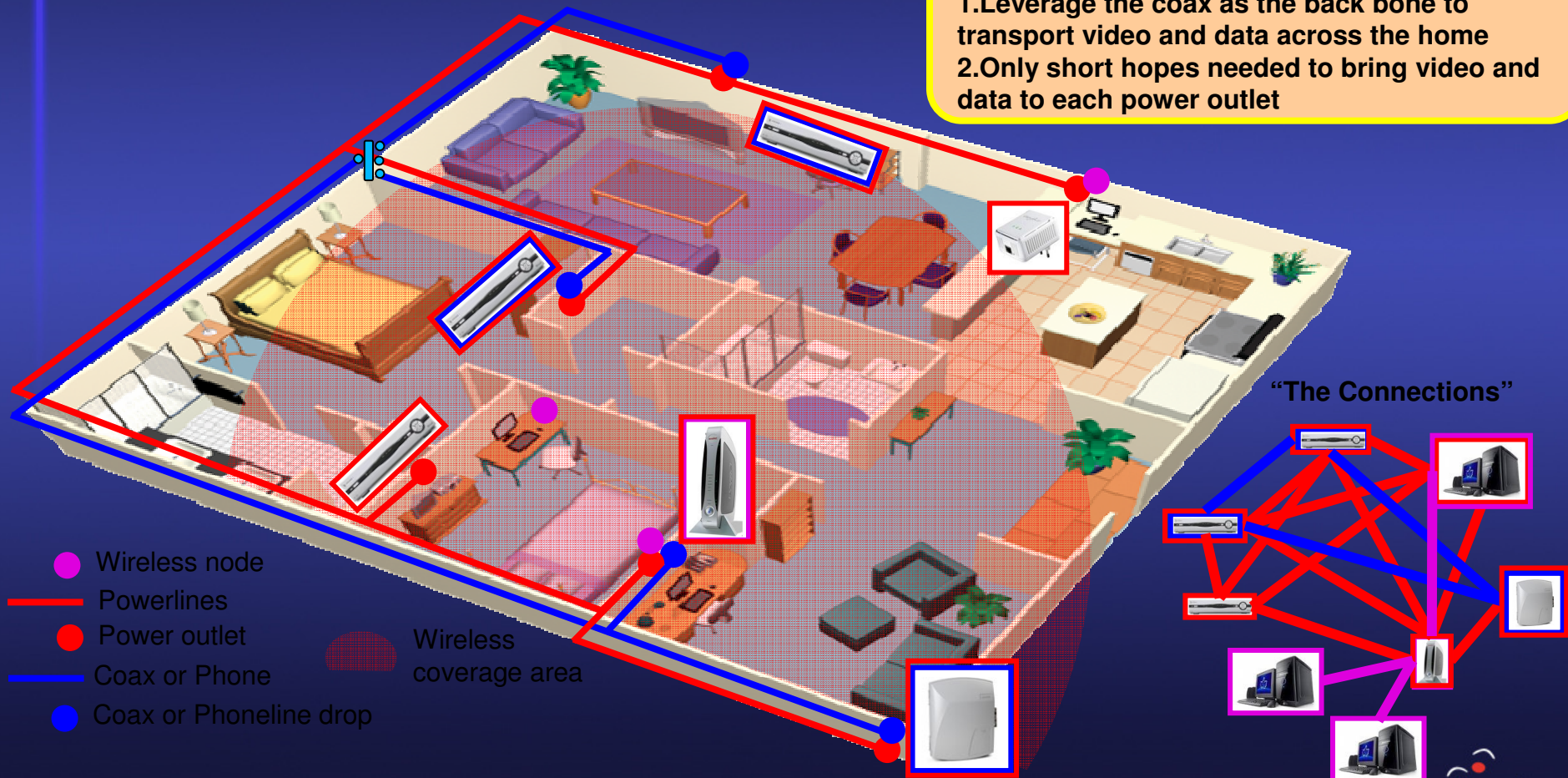


- Each node contains an on-chip layer 2.5 routing engine
 - Optimal per stream route based on QoS requirements
 - Transparent / standards plus operation
- Able to:
 - Assign routes to avoid dynamic interference and channel impairments
 - Form a repeater to regenerate signal to trade-off bandwidth/coverage
 - Aggregate channels for higher bandwidth independent of medium

Powerline/Coax: Gigle's Key Differentiation (eg. Ideal FTTH Service Provider Solution)

Gigle's differentiated solution:

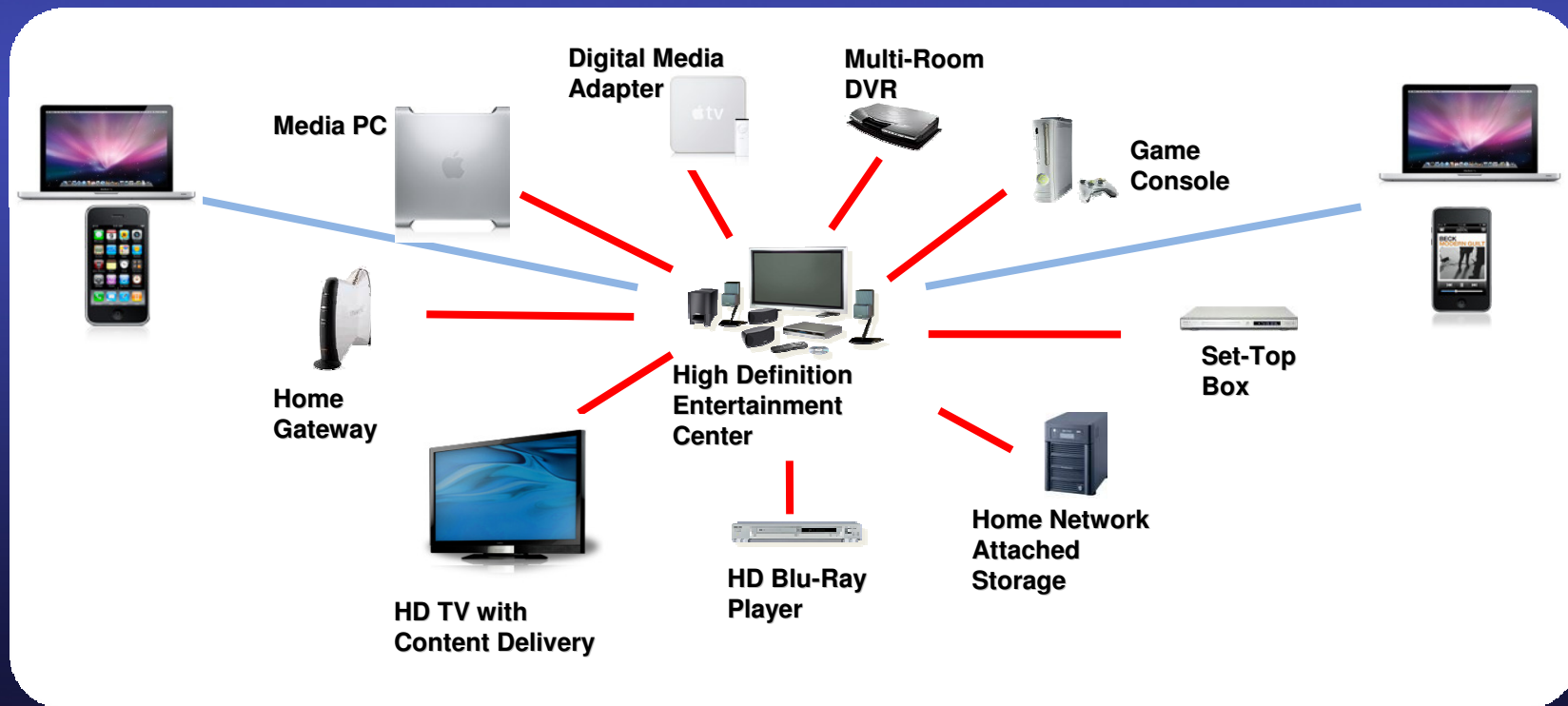
1. Leverage the coax as the back bone to transport video and data across the home
2. Only short hops needed to bring video and data to each power outlet



Wired and Wireless Network Topology

Wired and wireless networks must coexist in the “Connected Home”

- Powerline and cable networks for reliable, high bandwidth fixed entertainment based products *and those always connected to the AC Mains*
- Wireless networks for mobility products or products that have no wires

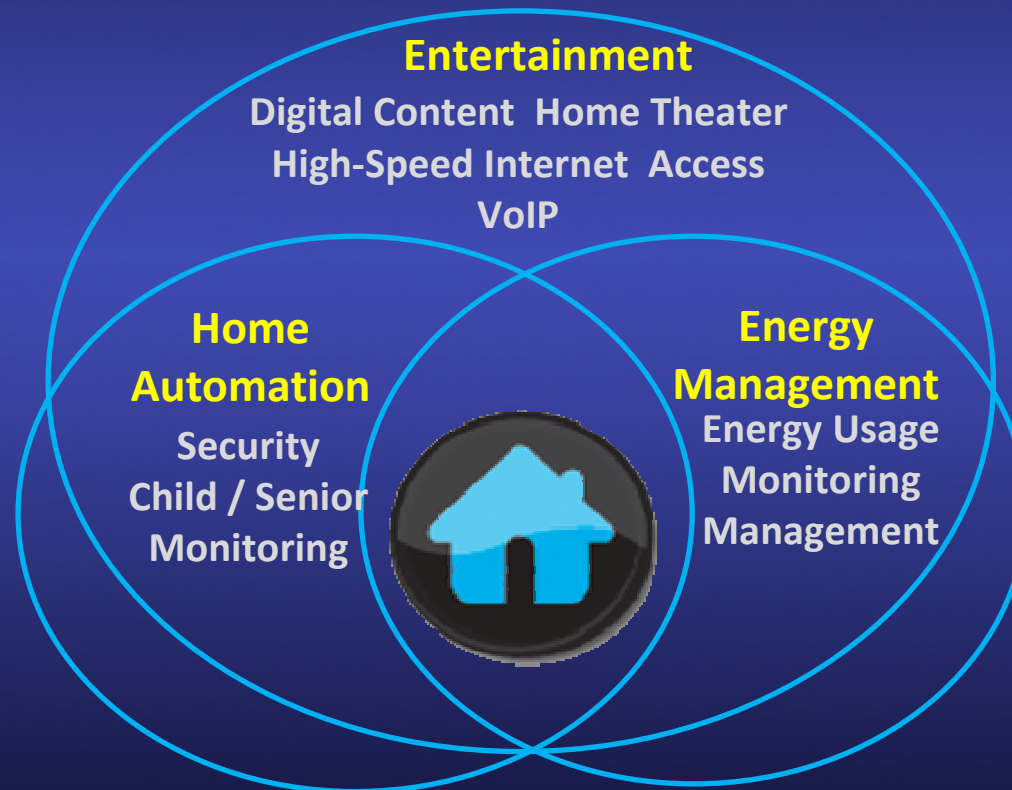


— Wired connection — Wireless connection

Gigle Networks' PLC + Wireless

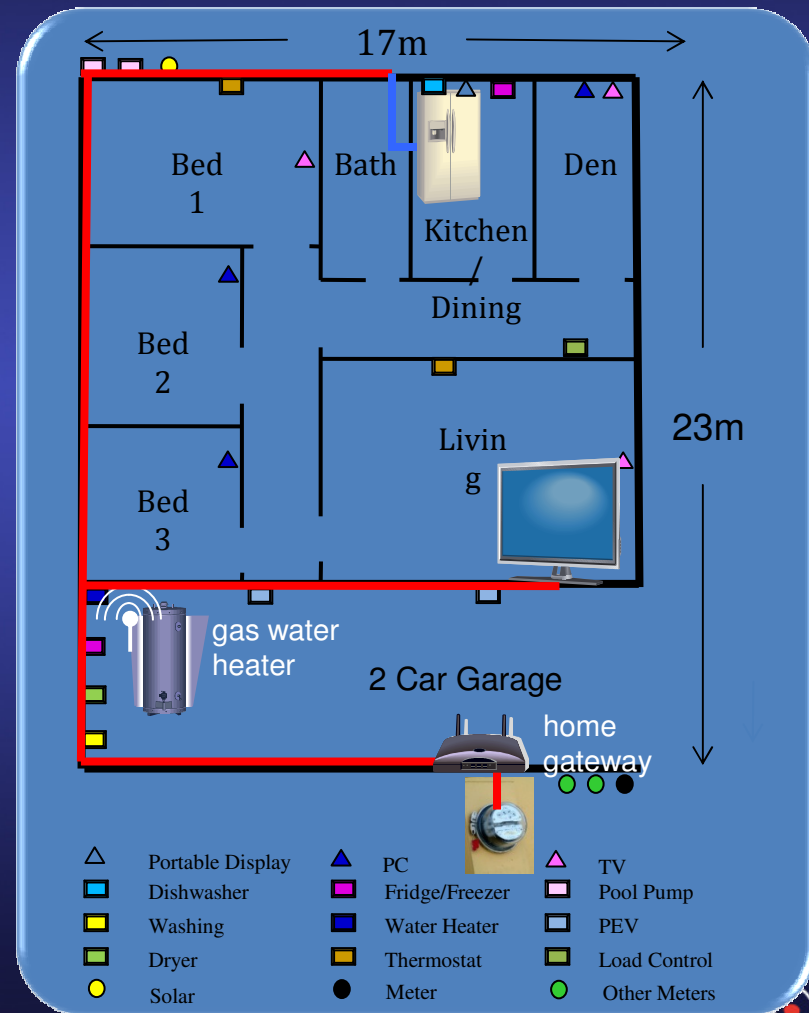
- xtendnet™ Air
 - Intelligent switching/bonding of PLC with WiFi through Ethernet
 - Developed to work on top of existing WiFi implementations
 - Offers intelligent switching and bonding of MX + HPAV and WiFi radio connected through one of two MII ports, allowing both to be managed.
- Network Topology advantages
 - Traffic can propagate '*simultaneously*' over two paths (PLC AND WiFi)
 - Effective higher throughput (aggregation of available bandwidth)
 - Load sharing – balancing of payload between two channels on the link and across the network
 - Content Management – managing multiple streams more effectively
 - Network is self-aware and self-healing – reduces truck rolls and service calls
 - Can provide SAC reduction through network stability

Gigle Networks' Real Connected Home



Integrated Vision for PLC as part of the Home Smart Energy Network

- Single network
 - HomePlug AV for bandwidth intensive applications
 - HomePlug GP for monitor and control of major appliances (HVAC)
 - Zigbee/Zwave wireless for gas and water metering
- Real time monitoring available on
 - dedicated appliance,
 - PC,
 - TV,
 - mobile
 - WWW.



Thank You !

