

A/V IN-HOME NETWORKED POWER SAVE

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Entertainment/TV Everywhere





Yesterday – Service Providers and Retail



Service Provider Devices

Retail Devices with Content

Retail Devices without Content

Transition: Service Providers - DLNA CVP-2





Service Provider Device

Retail Devices Enjoying Content



- Network standby solutions 2013 Chapter 4 discussed categories of Technical Solutions
 - Different solutions will be appropriate for different types of products.
- Energy management powering down products <u>without</u> network Cooperation
 - E.g. Proxying
- Energy management powering down products with cooperation from the network
 - E.g. Wake-On-LAN
- Power scaling
 - E.g. Dynamic power savings
- These three types of technical solutions are included in DLNA Low Power / UPnP EnergyManagment Service
- http://upnp.org/specs/lp/energymanagement1/

DLNA / UPnP Network Power Save





Service Provider Device

Retail Devices Enjoying Content

DLNA / UPnP Network Power Signaling

- Service Subscription allows clients to indicate which resources are needed from a server so that a server can make informed choices on how to reduce its power while limiting disruption to the clients that depend on it.
- WakeOnPatterns "Wake On" does not really have standards. DLNA Low Power allows a device to advertise on the network this specifics of signaling (ie, Wake On Patterns) to change its network interface state.
- Proxied Network Interface Information allows a server device to be immediately discoverable by client devices even if the server devices network interfaces are currently non-active.





In-home Connectivity / Networking



- Energy Efficient Ethernet (EEE) is not really applicable to Home Networking
 - Most homes do not have Ethernet (CAT-5/6) between rooms
 - Even if present, is not always in convenient location
- So most service providers end up deploying "No New Wires" networking technologies:
- HomePlugAV / Green PHY over electrical mains
- MoCA over TV/Cable/Satellite coaxial cabling
- Wi-Fi no wires



1905 Solution Using MoCA + HomePlug + Wi-Fi



"Connected everywhere and always connected"

Wireless coverage area Wireless node

HomePlugAV2 / GreenPHY Power Outlet

MoCA Coax drop

Hybrid Home Networking nVoy / 1905.1





- http://grouper.ieee.org/groups/1905/1/
- http://www.nVoy.org
- <u>http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=65021</u> 64



- Topology Discovery (to help identify bottlenecks & misconfiguration)
- Diagnostics (both locally and thru WAN accessible TR-069 data model)
- Simplified security setup (Push Button and NFC)
- Automatic configuration of secondary Wi-Fi Access Point(s)
- Enabler for enhanced path selection (link metrics information)
- Enabler for enhanced network power save (by optimizing network power usage across different technologies)





Thank You