Telecommunications and Information Exchange Between Systems

ISO/IEC JTC 1/SC 6

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Liaison Report on (New) work to SC 06, Tokyo, 3 June Proxying, VL-NFC, Personal Networks and TV WS
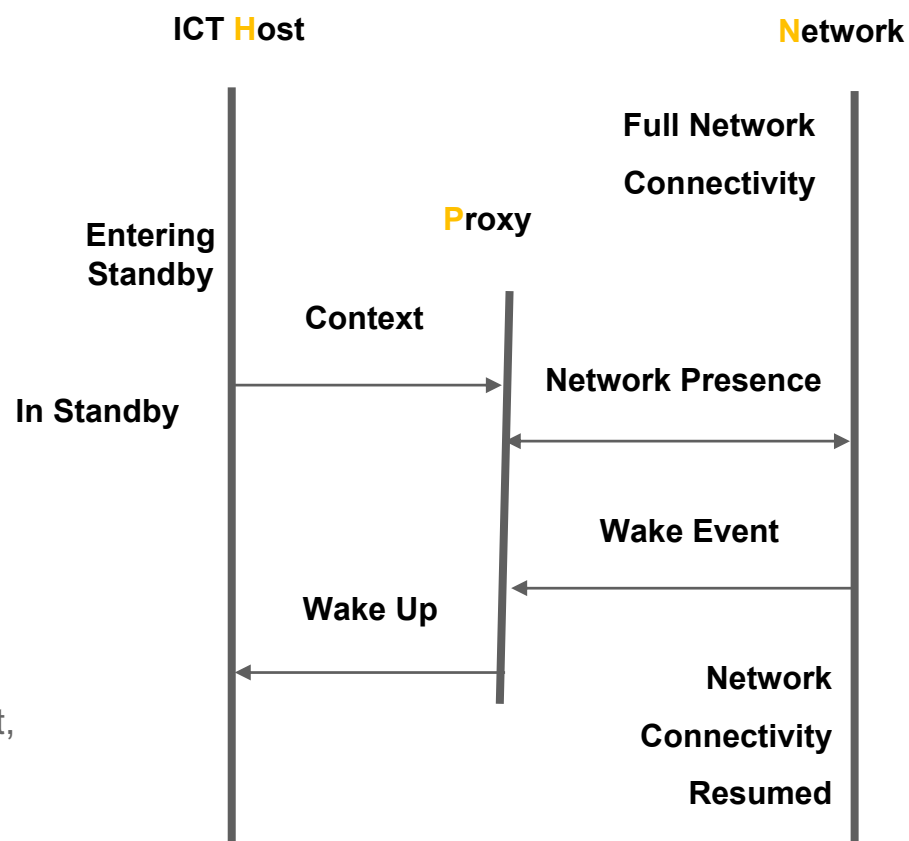
Ecma International

Proxies maintain Network presence so sleeping, higher powered, ICT Hosts reduce energy consumption:

Goals:

- Specify Proxy behavior in Ecma/ISO/IEC Worldwide standard
- Adoption by US Energy Star (Computers) v06 in 2010/11
- EU Lot 26 Sleep State Regulations

Experts from Terra Novum (Chair), LBNL (Vice Chair), Intel (Editor), AMD, Microsoft, Sony, Realtek, Apple, Oce, Lexmark….

ICT Host   **Network**

Full Network
Connectivity

Proxy

Entering
Standby

Context

In Standby   Network Presence

Wake Event

Wake Up

Network
Connectivity
Resumed

![ecma INTERNATIONAL]

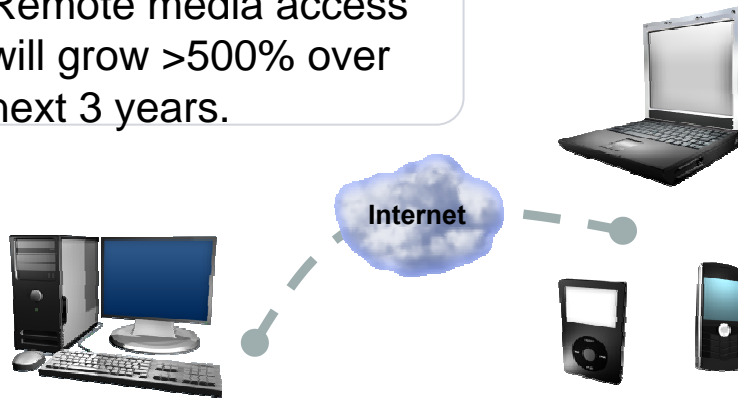| Hosts	Usages/Functional
PC Desktops/Laptops	Remote Desktop, Consumer Manageability, File/Media Sharing
Printers	On-Demand Print
Media PCs, TV, Game Consoles	Wake-On User Trigger On-demand downloads
Application and Services	Distributed Apps (SIP, Teredo, Bonjour)

Remote Media Access

Remote media access will grow >500% over next 3 years.

Internet

Consumer Manageability

Client based services grow with broadband enabled homes rate
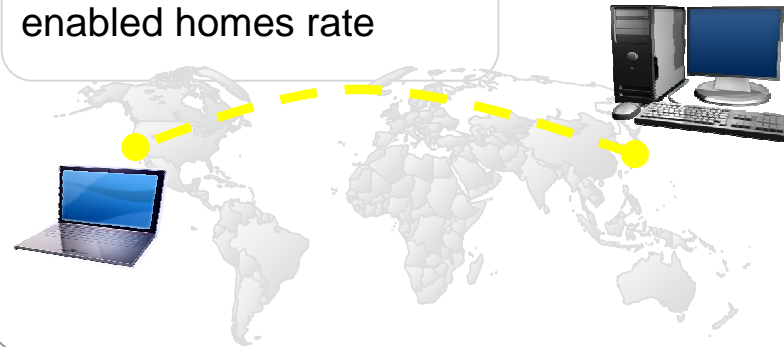
The Energy Challenge

Energy consumption has become key worldwide while desktop PCs waste nearly half their energy[1]

Broadband connected PCs are left in an active state 25% more, increasing energy use by 417% since 2001[2]

ICT/Desktop	Annual Energy
"Always On" in S0 24 X 7 Responsive	430-610 kWh*
S0 + 70% in S3 24 X 7 Responsive	150-210 kWh
Annual Energy Savings	400 kWh ($40)**
150+ Million PCs*	60+ TWh Generating Cap ($6B)
PLUS Millions of "Networked Devices" (Printers, Game Consoles, TVs, etc.)	**Huge Energy savings potential using Network Proxy**

* Source: Energy Star Computer System Data   ** Assuming 10c per kWh

NFCIP-1, 3rd edition ECMA-340
- Reviewed 5th draft that clarifies RFUs, corrects typos, editorials and provides support for NFC-SEC; updates posted in 6th draft;
- Address possible comments on DIS 13157/13158.

NFC-SEC
- Finalised NFC-SEC-PS, ISO/IEC DIS 13157, that specifies generic service definitions and a protocol for NFCIP-1;
- NFC-SEC-01, ISO/IEC DIS 13158, is a specific cryptography standard (that refers to 13157);
- DIS 13157 and 13157 are under JTC 1's 5-month fast track ballot until 27 August 2009 and were circulated with AFNOR's comments received in the 30-day review and Ecma's responses thereto.

MSIP-1 - high data rate system "Memory Spot" at 2,4 GHz
- (re)uses the NFCIP-1 data exchange protocol
- 10th draft under review, publication planned for December 2009
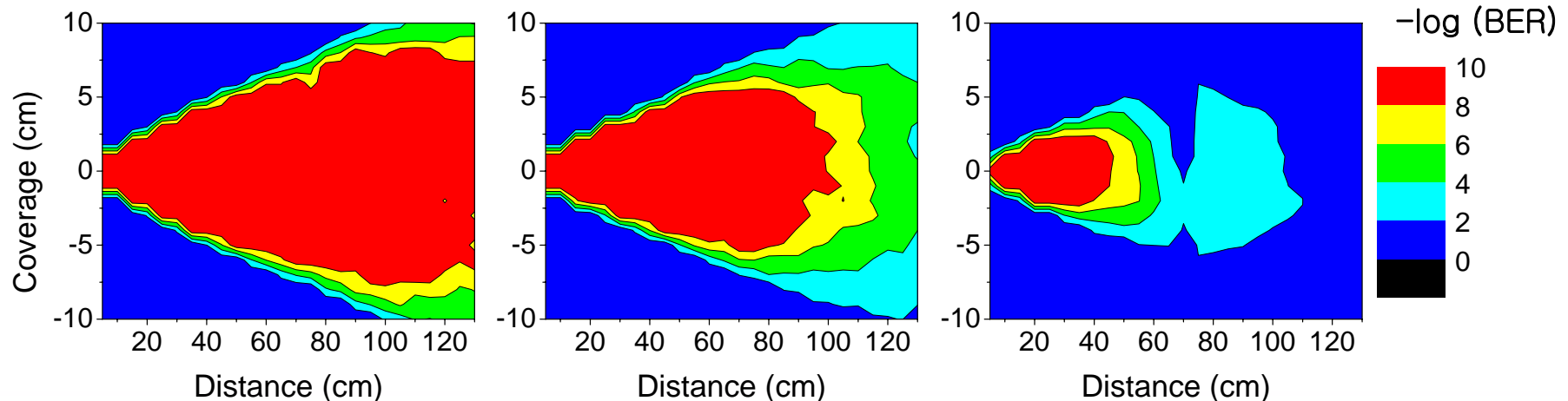- Liaison had started with SC 31

New Visual Light NFC - <u>Lumilink</u>

General characteristics

- Wavelength: between ~400nm (750THz) - ~700nm (428THz);
- Unregulated;
  - Visibility: Aesthetically pleasing;
  - Security: What You See Is What You Send;
  - Safe: Harmless for human body;
  - Line of Sight: Non-interference with other devices
  - High data rates:

| 120 Mbps	240 Mbps	320 Mbps

Personal Area Network (PAN)

Network connecting devices in the close vicinity of a person/personal entity →> **local scope**

Personal Network (PN)

Overlay network on network infrastructure in reach connecting information & communication resources of a person/private entity independent of their location

- **User centred**
- **Secure and trustworthy**
- **Virtual vicinity** of local and remote resources
- **Self-organisation** of network connections
- **Heterogeneity** of technologies

Example: PNs & federations
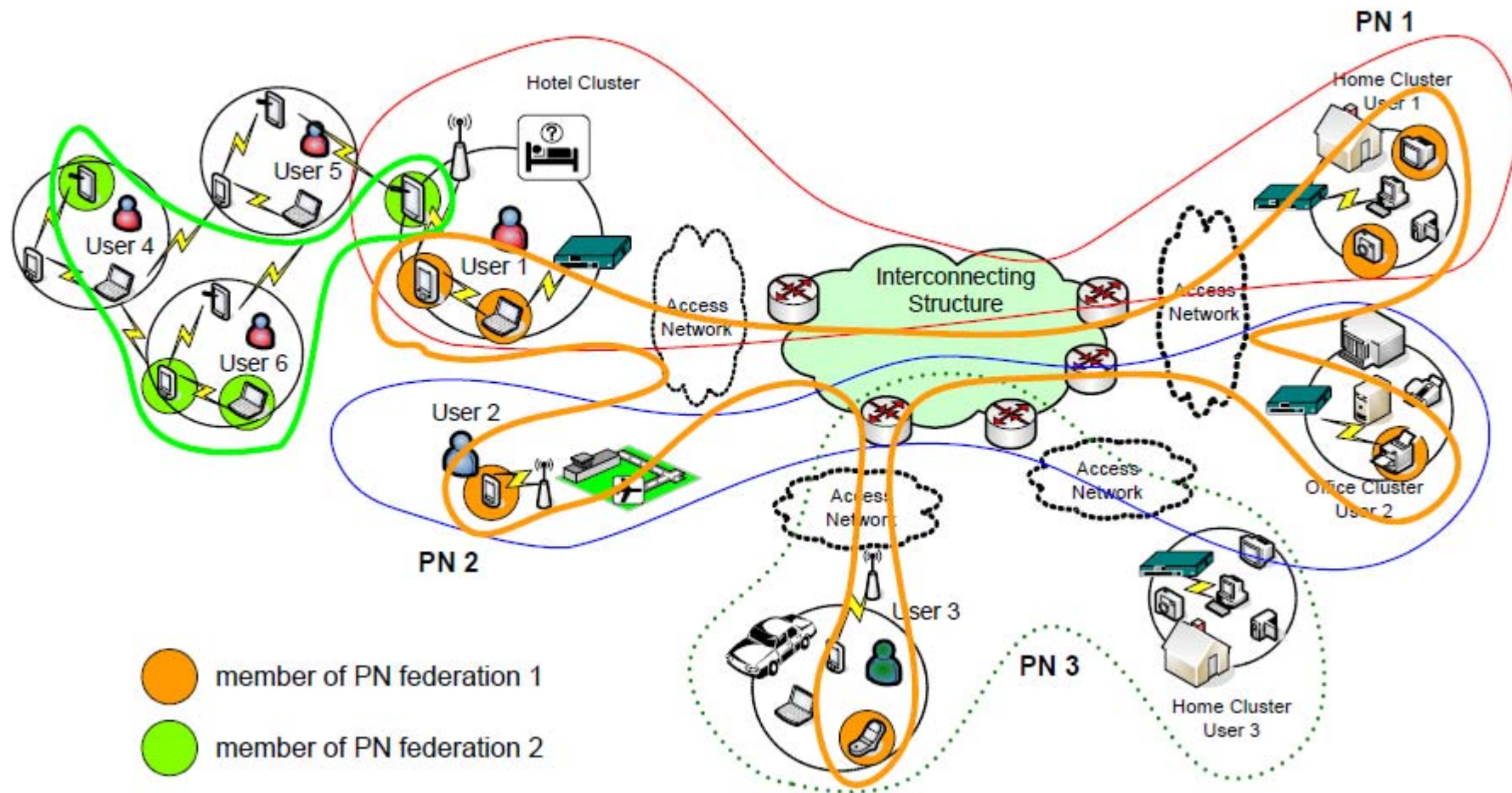
TC32 established Editor Group on 'Personal Networks (PN) and their Federations (PNF)' in August 2008

Develop Technical Reports that analyse standardization needs:

- *Umbrella TR (Architecture, terms, scenarios, regaps,)*

- *Networking TR (addressing & routing, interfaces, trust)*

- *Enabling Services TR (Identity/access mgnt, service discovery)*

- *Federations TR (PN/Service interworking)*

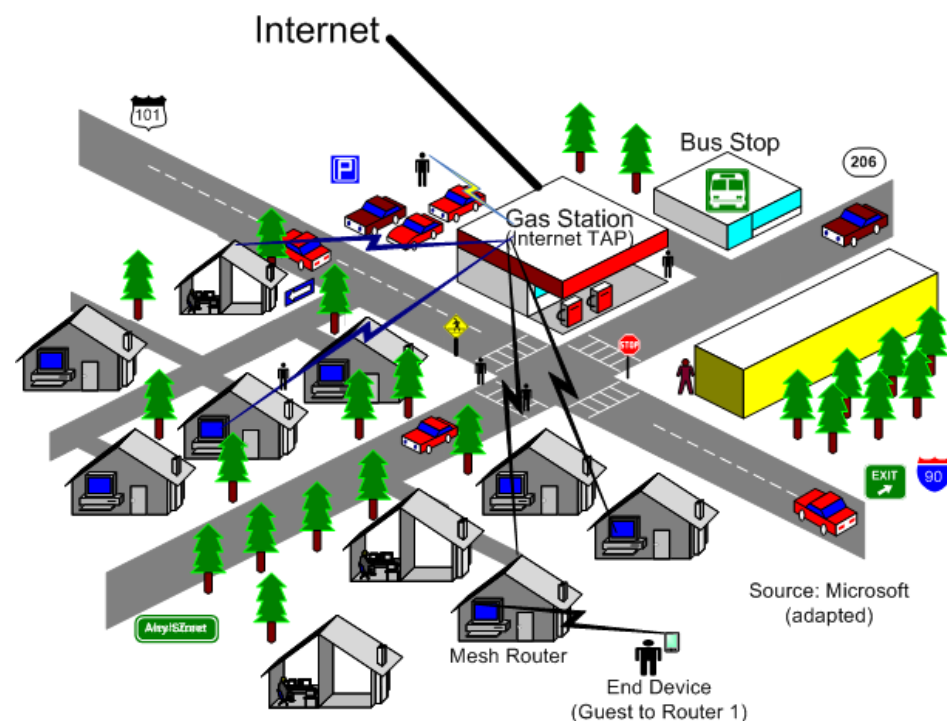**Collaboration with TC32-TG17** (IP-based Communications)

Involved companies/organisations:

- *TU Delft, IBBT, CSEM, TNO, SEN*

Objective: TG or TC to specify standards on PNs

- *Is a high-speed wireless networking standard for use in the Television White Spaces: broadcast television spectrum not being used by licensed services at a given location;*

- *takes advantage of the superior propagation characteristics of the UHF-TV bands;*

- *Delivers more robust wireless connectivity, extend the coverage range and result in cost effective networking solutions, both indoors and outdoors.*

- *Complies with personal/portable device FCC rules to allow unlicensed radio transmitters to operate in spectrum white spaces. Others, e.g. OFCOM in the UK, are working on similar regulations;*

- *Uses cognitive radio technology to avoid interference with licensed services and other incumbent users; and*

- *Is based on the contribution from Cognitive Networking Alliance (CogNeA) that promotes white space devices in a collaborative and complementary fashion with Ecma's standard development.*

- Television white spaces will provide more widely available and cost effective access to the internet in underserved markets.

- The superior propagation characteristics provide much greater coverage range than existing unlicensed technologies.

Internet

101

P

Bus Stop

206

Gas Station
(Internet TAP)

STOP

EXIT

90

Any!Stmet

Source: Microsoft
(adapted)

Mesh Router

End Device
(Guest to Router 1)

- Television white spaces will enable wireless distribution of high-quality high-definition television for whole home, vastly improving the DTV experience.
- The new standard will provide reliable and robust coverage anywhere in a home, while consuming much lower power.