

MediaNet: Towards Generalised E-media Services Over Broadband

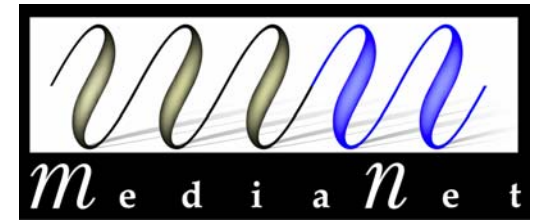
Brussels, October 14, 2004

Michel LEMONIER (L-up)

MediaNet Project Office

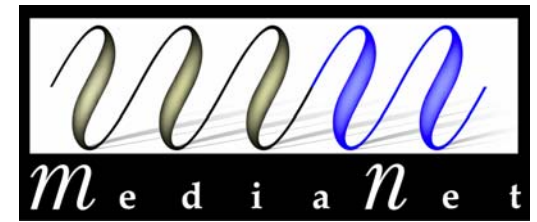
Thomson Technology Group

Project Charter



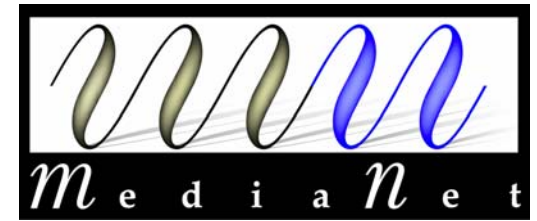
- To seek the prerequisite conditions for easy circulation of digital media contents on networks from creators and providers to customers and between citizens.
- To define and assess the viability of:
 - ▶ An open & seamless access and home networking architecture
 - ▶ Shared by multiple competing applications and devices
 - ▶ For both content delivery and P2P communications service types
 - ▶ Protecting suppliers'/customers' investments and content owners' rights,
 - ▶ Assuring viable business schemes to the stakeholders of the chain
 - ▶ Including possible regulation supported by the Industry.
- To reinforce the related key critical technologies
 - ▶ Multiple focused R&D activities
 - ▶ Joint solution assessment between complementary players
 - ▶ Concertation actions with other initiatives
- To promote the early deployment of efficient, trusted, sustainable solutions inside the Consortium and outside

MediaNet (Multimedia Networking)



Enabling
a myriad of e-media applications
sharing
broadband access network services
and
home platforms

Project Profile

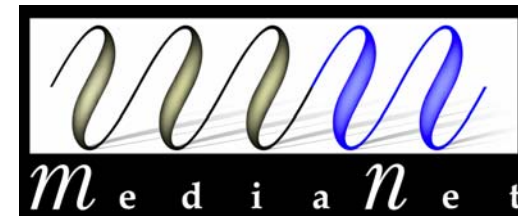


Multimedia Networking (MediaNet)

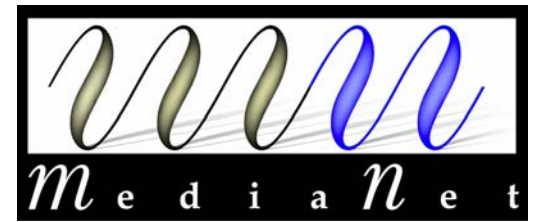
- CEC Research and Technology « Integrated Project »
- Part of the 6th Frame programme - FP6 (2003-2007)
- In the CEC « strategic » domain :
'Networked Audiovisual Services and Home Platforms (NAVSHP)'
- Coordinated by THOMSON (France)

- Started on: December 1, 2003
- Phase 1 duration: 2 years
- Budget: 29.2 M€
- Funding: 15.7 M€
- Phase 2: under preparation (Call 4 –March 2005)

MediaNet Partners (35)

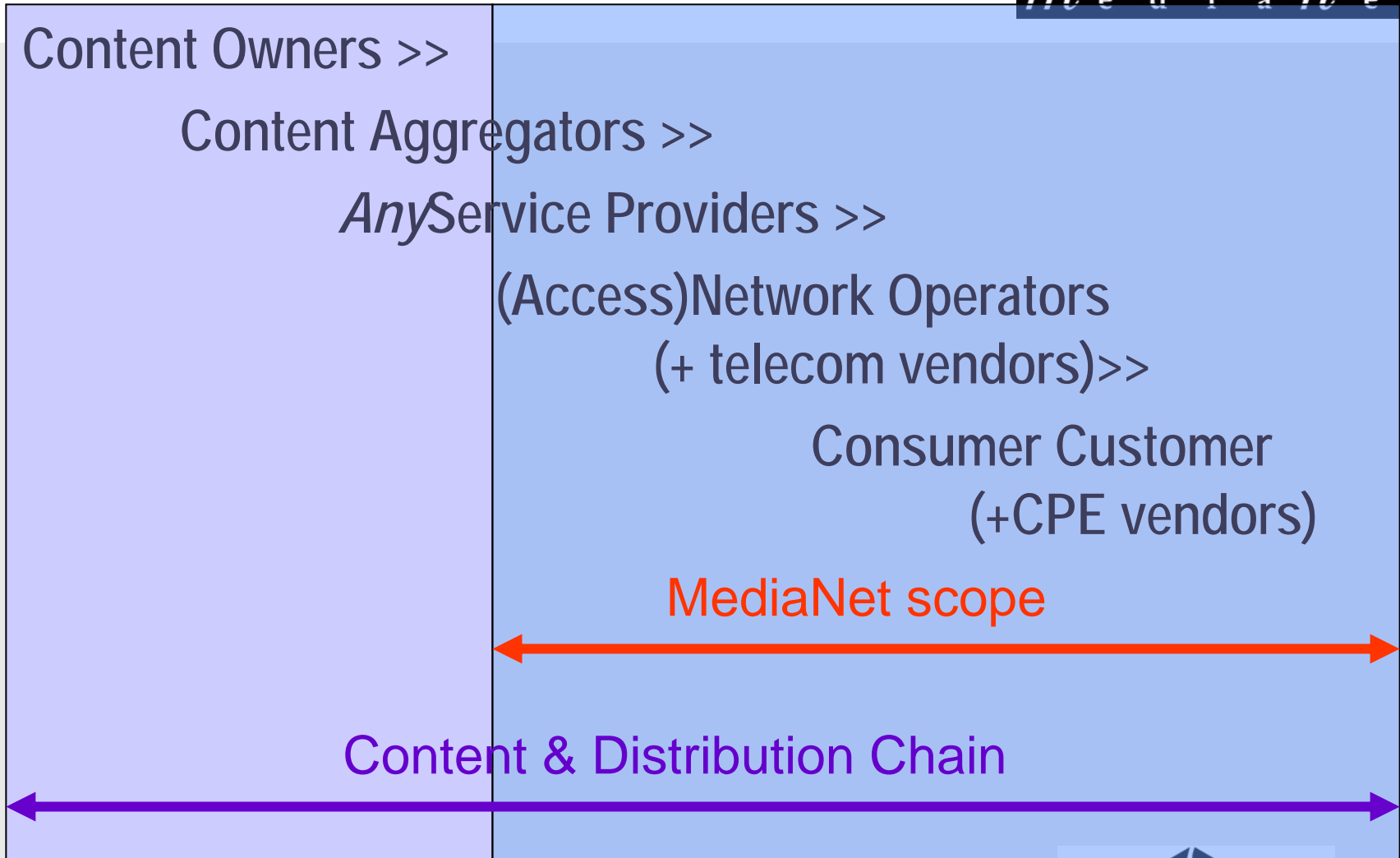
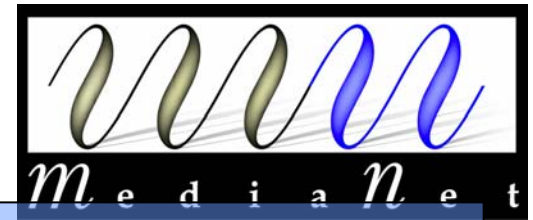


- CE equipment: Thomson (coordinator), Philips
- Operator/SP Equip.: Alcatel, Italtel, EADS Telecom, Nextream, NDS Technologies France
- Operators: Belgacom, Telefonica, Telekom Austria
- Components: ST Microelectronics, Philips, Stepmind, DitoCom
- Content aggregators: VRT, Canal Plus
- Research Institutes / Universities: Fraunhofer/HHI, IMEC, Ecole des Mines de Paris, Bristol University, Ghent University, Université Catholique de Louvain, Milano Politecnico, Consorzio Pisa Ricerche, Valladolid University, ISCTE/ADETTI
- Software House: Trialog
- Project Support: White Balance, L-up

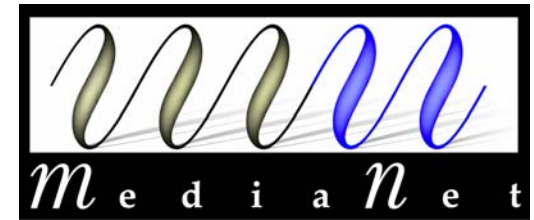


MediaNet Project Objectives

MediaNet in the Networked e-Media Value Chain

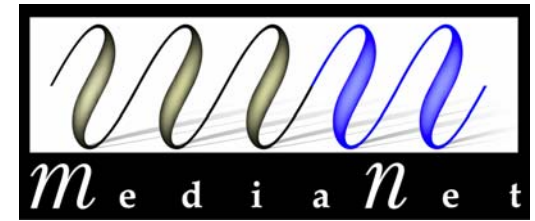


Key issues addressed

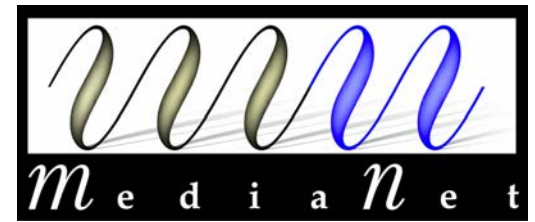


- Viability and conditions of an open delivery chain model ?
Telecom Package vs Vertical Integration ?
- Feasibility of end-to-end service delivery over broadband access AND home network, assuming a multivendor/ multiservice environment ?
Technical/economical/regulatory impacts ?
- Core/access/home infrastructures sharing models for ALL service providers (content delivery, multimedia telephony, internet...) ?
Related migration path/roadmap ?
- Key technical blocking points (next slide) ?

Technology issues addressed

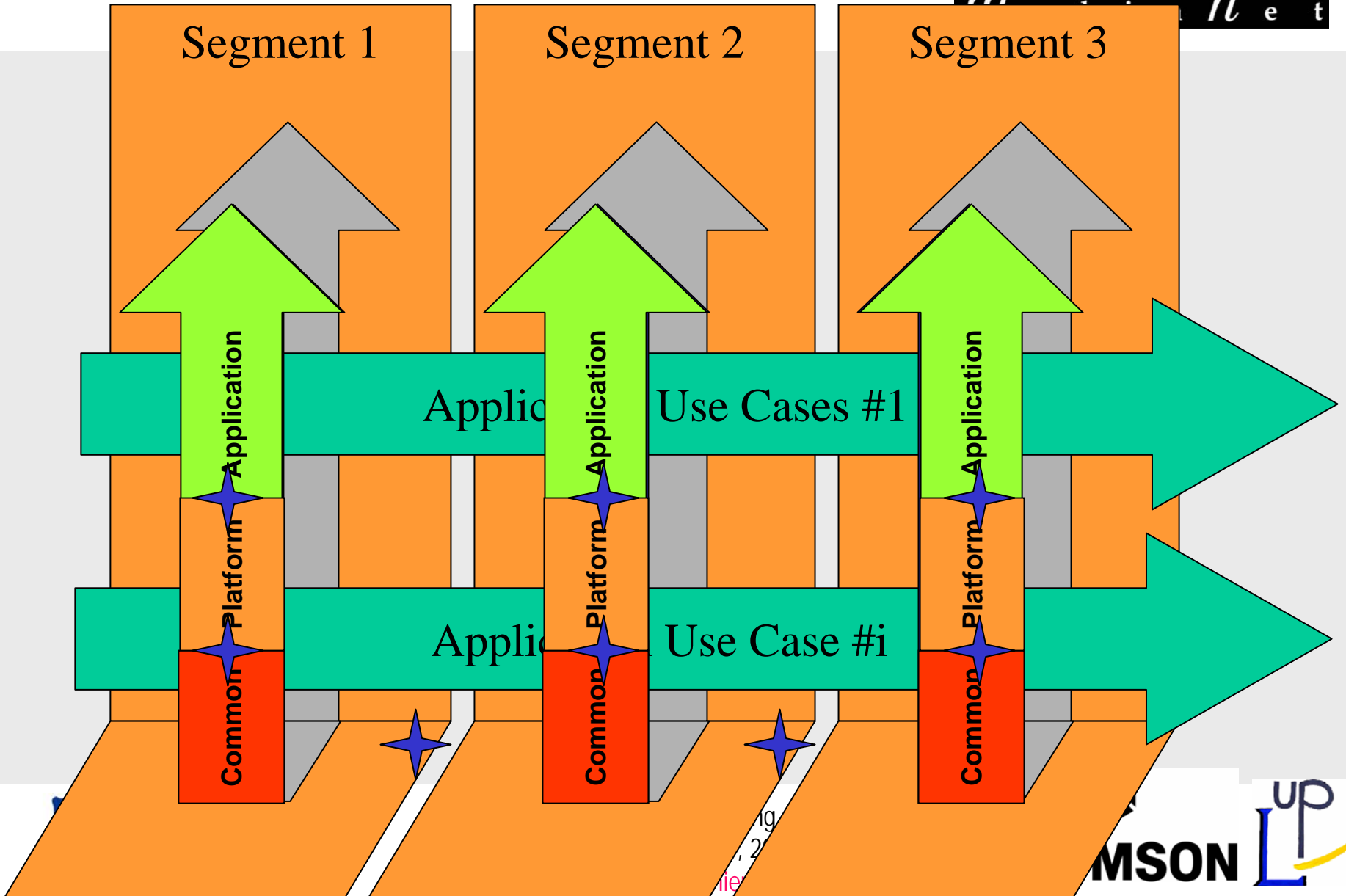
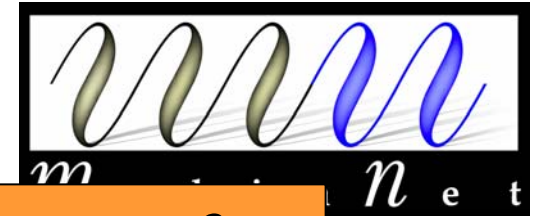


- Added-value NW access services (in collab. with MUSE)
- **Application and N-services Platforms**; related standards
- **The Home Gateway**
 - ▶ as the « universal » network service access point
 - ▶ as the home « collapsed backbone » (management, QoS, privacy, addressing scheme, user interface, customization....)
- **The Home Connectivity** issue: wireless or PLC for A/V distribution
- The shared and distributed 'commodity' **storage** for dematerialized contents (photos, music, films...)
- **A/V encoding/decoding/streaming technologies** suitable for IP telco/home networks (multiformats, scalability, QoS, affordability...)
- Multimedia personal communication **terminals** and related services for consumer market
- **THE DRM/CP** and security issue

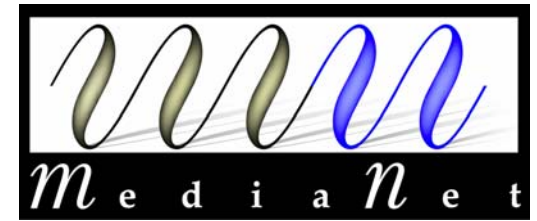


Project System Approach

System Inventory

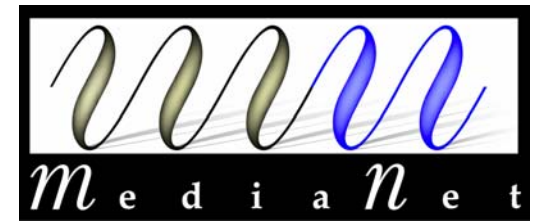


Some application Use Cases

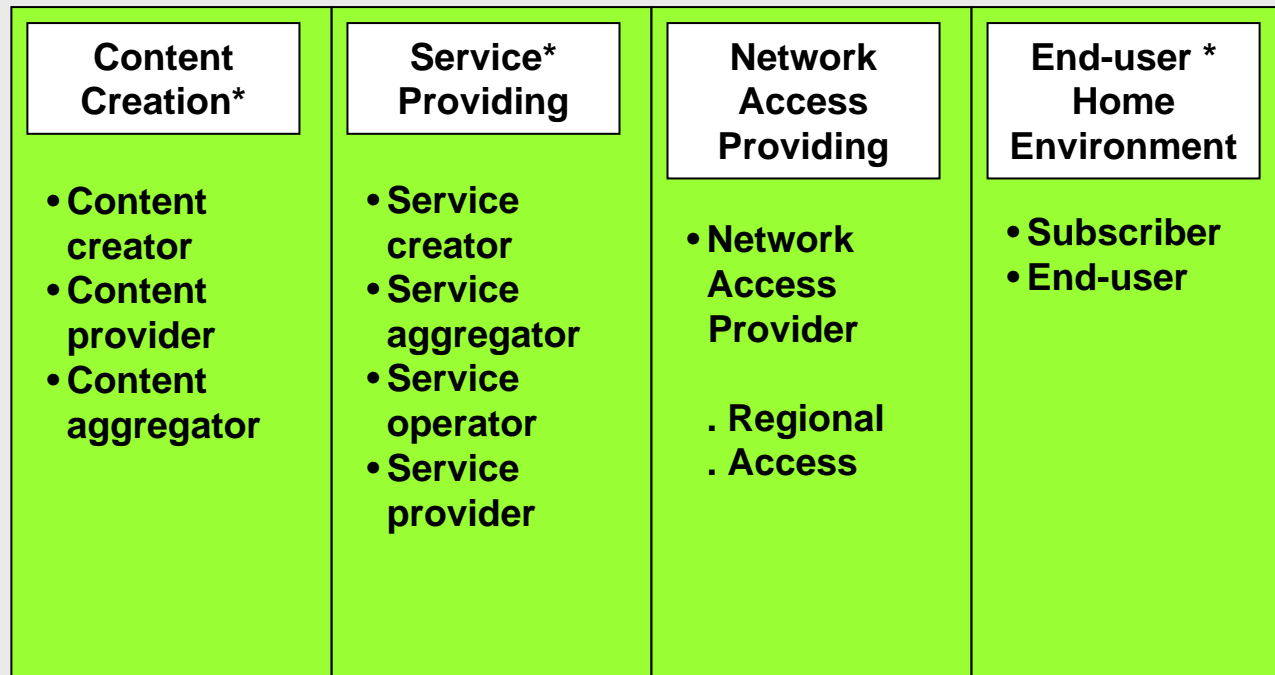


- Network Access services
 - « Boost » Services
- Media Content Delivery
 - Broadcast TV over DVB-IPI & MHP (from multiple providers, with PVR functionalities...)
 - Content-on-demand and downloadable DVD (incl. DRM/CP)
 - Person-based DRM
 - Resource management for concurrent applications in Home Network
 - AMIGO TV, Buddy Quiz, Jukebox, eShopping...
- Personal Multimedia Communication
 - IP telephony, videophony, conferencing, SMS, MMS, Unified messaging ...
- MPEG4/AVC complete delivery chain

Segmentation Model



Step 1: e-Media chain segmentation*

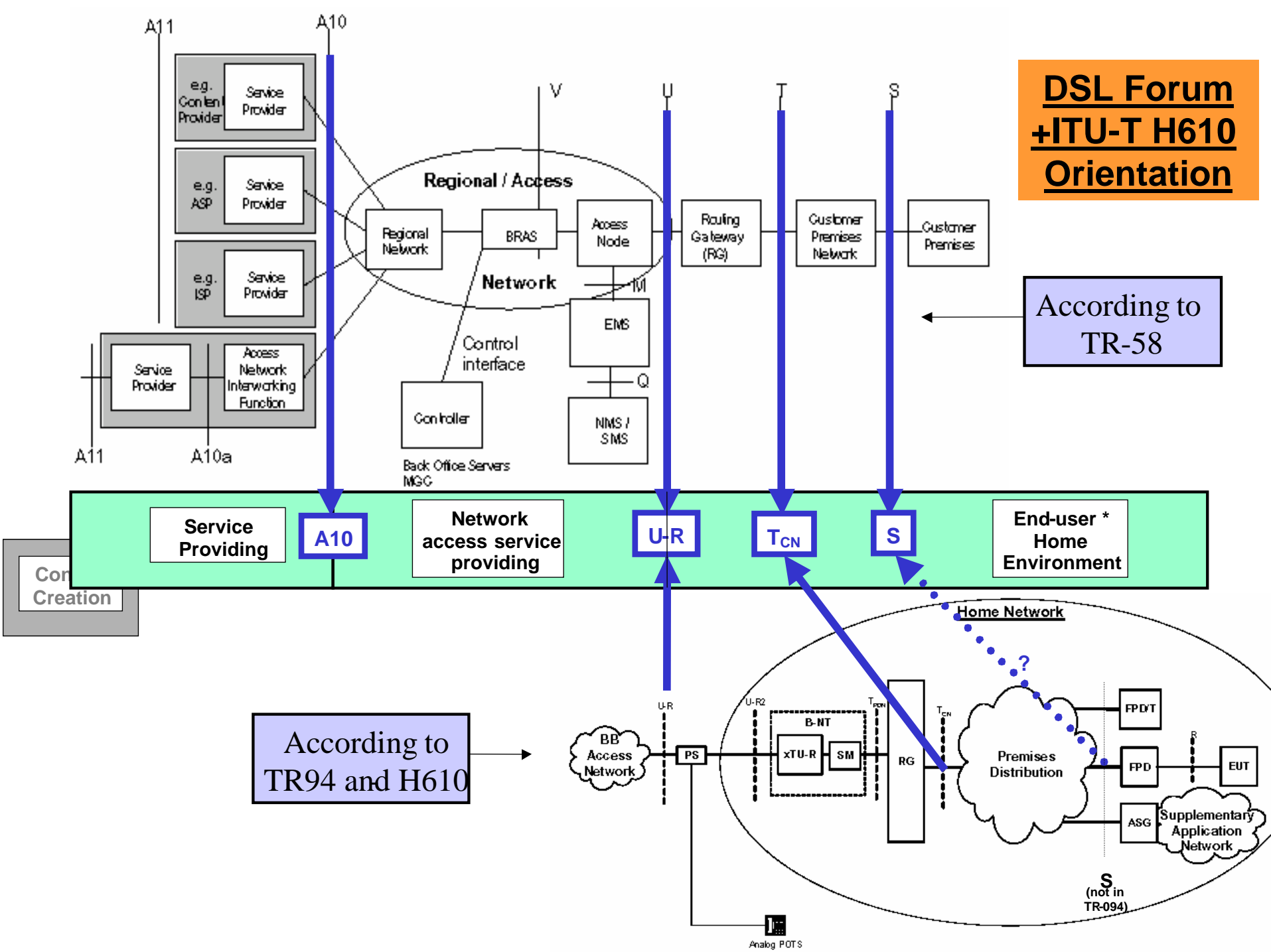


* Intra-segment definitions according to TAHI

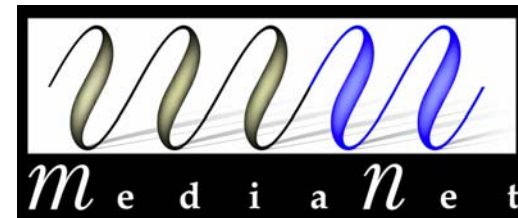
DSL Forum +ITU-T H610 Orientation

According to TR-58

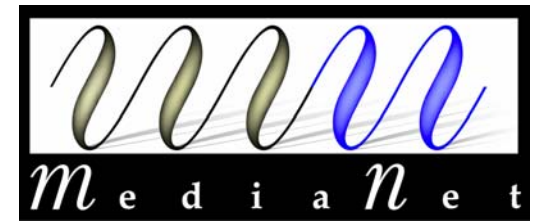
According to TR94 and H610



Key focus points in the common Reference Architecture



- End-to-end application
- Sharing & opening
- Interworking
- Interoperability
- Incremental/seamless deployment
- Lowering entry barriers
- More predictable business cases
- Minimum requirements



Project work breakdown and Expected results

**MEDIANET
INTEGRATION
CHAIN**

SPA: Architectures, Applications and Management (A2M)

WPA1. Technical Orientation, Coordination and Project Assessment

**WPA3. Home Networking
Architectures and services**

**WPA2. MCD scenarios,
architecture and business
modelling**

**WPA5. Testbeds
Environments and
Support**

**WPA4. End-to-end Scenarios for
Personal Multimedia Communications**

WPA0. Programme Management and Communication

**SPC: Home Networking
Constituents (HN)**

- WPC0. SPC Management**
- WPC1. Home Gateways**
- WPC2. Wireless communic.
for A/V streaming**
- WPC3. Distributed Storage
systems**

**SPD: Personal Multimedia
Communication constituents
(PMC)**

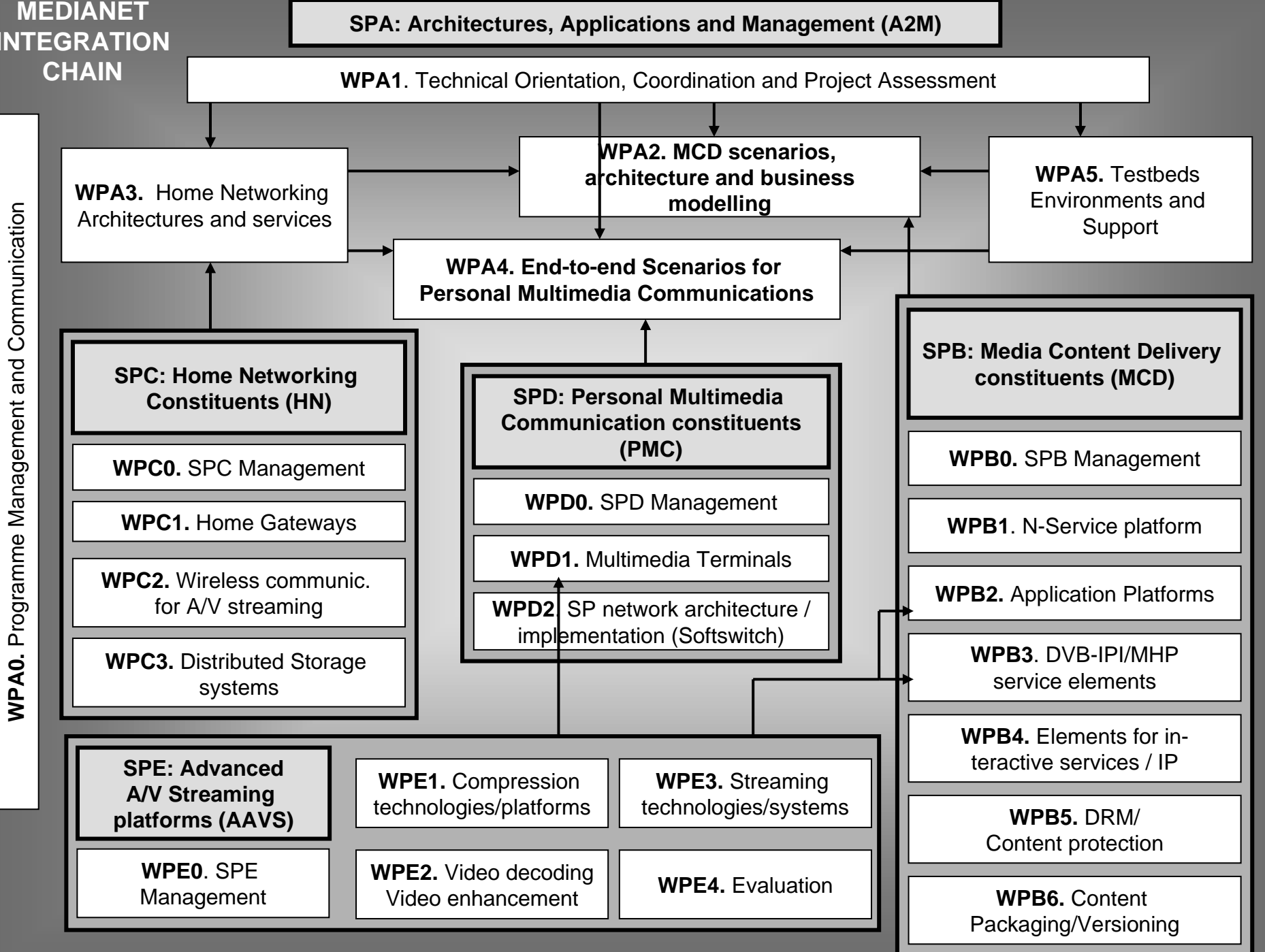
- WPD0. SPD Management**
- WPD1. Multimedia Terminals**
- WPD2. SP network architecture /
implementation (Softswitch)**

**SPB: Media Content Delivery
constituents (MCD)**

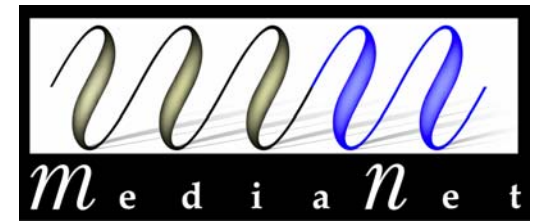
- WPB0. SPB Management**
- WPB1. N-Service platform**
- WPB2. Application Platforms**
- WPB3. DVB-IP/MHP
service elements**
- WPB4. Elements for in-
teractive services / IP**
- WPB5. DRM/
Content protection**
- WPB6. Content
Packaging/Versioning**

**SPE: Advanced
A/V Streaming
platforms (AAVS)**

- WPE0. SPE
Management**
- WPE1. Compression
technologies/platforms**
- WPE2. Video decoding
Video enhancement**
- WPE3. Streaming
technologies/systems**
- WPE4. Evaluation**



Expected results (1/5)

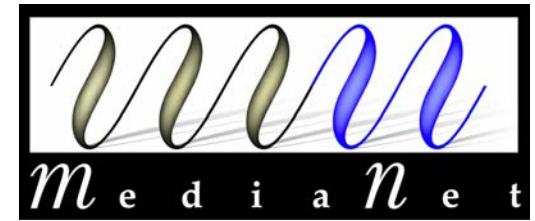


- Subproject A (Architecture and System integration)
 - ▶ Reference architecture model proven viable on technical, economical and political aspects
 - ▶ Integrated testbed with realistic market game roles
 - ▶ Key findings on economics of contents vs economics of networks

DSL Forum
ITU-T
BCD Forum

Expected results (2/5)

ETSI, CEN, W3C, OASIS, UDDI...

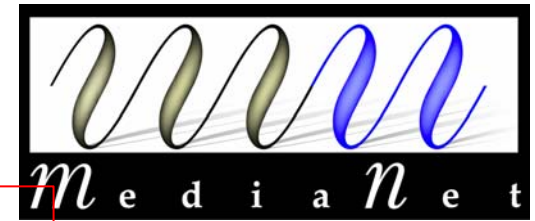


- Subproject B (Media Content Delivery)
 - ▶ Value added differentiated network access services (N-services) fulfilling Application Providers' needs
 - ▶ Effective Media Content Delivery applications and related platforms running on the common architecture model
 - ▶ DRM/CP system policy adequate for this multiplayer business game
 - ▶ Packaging format that facilitates platform independent content creation / publication

MPEG-21

CEN, DVB/CPCT, MPEG IPMP

Expected results (3/5)



CEN/SH, uPNP, DLNA, DSL Forum, ITU-T, TEAHA ?

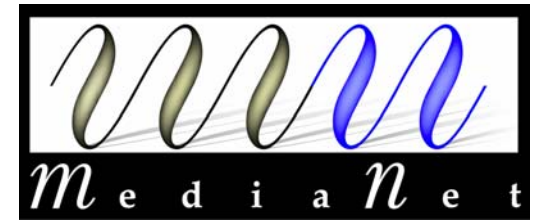
- Subproject C (Home Networking)
 - ▶ HN distributed architecture with QOS, management, addressing, ...
 - ▶ Gateway technology
 - ▶ Clarify video and voice applications specificities on wireless segment, validation of quality of services mechanisms, and possible improvements
 - ▶ Common content indexing for distributed storage

DSL F, IETF, OSGi
ETSI NGN ?

DLNA, IEEE 802.11x, WiFi Alliance

XML Based

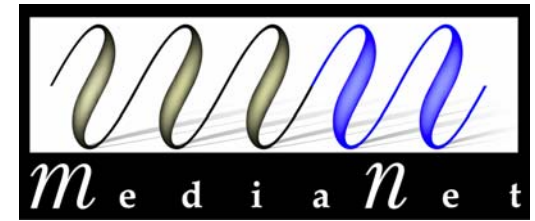
Expected results (4/5)



- Subproject D (Personal Multimedia Communications)
 - ▶ Use cases, service definition and assessment end-to-end within the MediaNet framework
 - ▶ Terminal prototypes and platforms
 - ▶ Implementation of softswitch prototypes and interfacing with access / home network elements

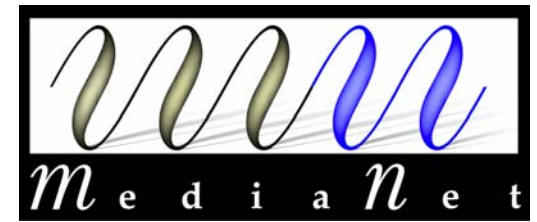
SIP Forum, ITU-T, IETF, OMA....

Expected results (5/5)



MPEG21-SVC, ISMA, DVB-IPI,

- Subproject E (Advanced Audio/video Systems):
 - ▶ New architecture models for both video encoding and decoding (multi-standard, multi-format, multi-application, more flexibility and programmability ...)
 - ▶ Expected performance of MPEG-4 AVC/H.264 : about 50% bit rate saving vs MPEG-2
 - ▶ Adhoc post-processing and error concealment tools for MPEG-4 AVC/H.264, new tools for blocking effects reduction and error resilience
 - ▶ Advanced techniques for adaptive streaming with MPEG-4 AVC/H.264 over IP networks, incl. unicast and multicast applications, and coupled with advanced video playout techniques for frame rate adjustment



Thank you !

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