Trends in IPTV Standardization

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NTT

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Agenda

- **What is IPTV**
- **IPTV Standardization in ITU-T**
- **Other Standardization Efforts**

What is IPTV

- **TV-like service provided via IP (Internet Protocol)**
- **Services may include:**
  - **Video On Demand (VOD)**
  - **Linear (Channel Service) Broadcast TV**
  - **Audio services**
  - **Gaming**
  - **TV yellow pages**
  - **Photo albums**
  - **…**
- **ITU-T defines it as "multimedia service over managed IP network"**
- **Different from Internet TV**

IPTV Standardization in ITU-T

ITU-T Focus Group on IPTV (FG IPTV)

- ITU-T set up a Focus Group for IPTV in July 2006 to promote standardization of IPTV.

- It will last approximately one year.

- The results developed by FG will then be taken up by Study Groups in ITU-T to make recommendations.

Definition of IPTV in ITU-T FG

- **At the second meeting the following definition was adopted:**

- IPTV is defined as multimedia services such as television/video/audio/text/graphics/data delivered over IP based networks managed to provide the required level of QoS/QoE, security, interactivity and reliability.
- Key features of IPTV
- - Supportable by NGN
- - Bi-directional networks
- - Real time and Non-real time service delivery
- * Note: Definition of IP based networks, NGN and services exist in ITU documentations.

Background of FG IPTV

- **IPTV is becoming an increasingly important service in the market**
- **More and more ITU-T Members are facing challenges from technical as well as regulatory issues**
- **ITU-T has received proposals to strengthen its work on IPTV standardization**
- **ITU-T has decided to set up a Focus Group IPTV to start work on IPTV standardization.**
- **The first meeting was held in July 2006.**

The mission of FG IPTV

- to coordinate and promote the development of global IPTV standards taking into account the existing work of the ITU study groups as well as Standards Developing Organizations, Fora and Consortia.

Goals of FG IPTV

- Definition of IPTV
  - Identification of scenarios, drivers and relationships with other services and networks
  - Identify requirements and define framework architecture
- Review and gap analysis of existing standards and ongoing works
  - Identification of opportunities for ITU-T
  - Identification of activities that ITU-T would encourage other organizations to pursue
- Coordination of existing standardization activities
- Harmonization of the development of new standards
- Encourage interoperability with existing systems where possible

Meeting Schedule of FG IPTV

- 7. 2006   1st Geneva, Switzerland
- 10.2006 2nd Busan, S.Korea
- 1. 2007   3rd MountainView, US
- 5. 2007   4th Bled, Slovenia
- 7. 2007   5th Geneva, Switzerland
- 10. 2007   6th Tokyo, Japan
- 12. 2007   7th TBA

Members of the Management of FG

- **FG Chairman**
  - Mr. Ghassem Koleyni (Canada)
- **Vice Chairs**
  - Mr. Simon Jones (UK)
  - Ms. Duo Liu (China)：
  - Mr. Chae-Sub Lee (S.Korea)

FG-IPTV and its Working Groups

WG	Name	Leaders
WG1	Architecture and Requirements	Junkyun CHOI (ICU, Korea) Christian JACQUENET (France Telecom) Julien MAISONNEUVE (Alcatel)
WG2	QoS and Performance Aspects	Paul COVERDALE (Canada) Juergen HEILES (Siemens)
WG3	Service Security and Contents Protection Aspects	WANG Dong（ZTE, China） Catherine PERGUE（DELL, Switzerland） Glenn ADAMS （Samsung, Korea）
WG4	IPTV Network Control	Daegun KIM (KT, Korea) Jifei Song (UTStarcom)
WG5	End Systems and Interoperability	Men JIANTING (China Telecom) Gale LIGHTFOOT (Cisco, USA) Yoshinori Goto (NTT)
WG6	Middleware, Application and Content Platforms	Masahito KAWAMORI (NTT) Charles SANDBANK (DTI, United Kingdom)

WG1 Architecture and Requirements

☐ to define service, user and architectural requirements and framework architecture, considering existing IPTV services and solutions by examining deployed scenarios and use cases based on classical IPTV and VoD uses, but also exploring domains such as NGN where more interactivity is required and where interaction with external services is a necessity.

WG2 QoS and Performance Aspects

- Champion and promote the development of global QoS and performance standards necessary to ensure high end-user satisfaction, and hence high end-user acceptance, for IPTV services.
  - End-user performance expectations, including those for users with disabilities, and associated metrics for audio/video quality and control functionality
  - Performance implications of content coding
  - Network transport and QoS mechanisms
  - Unicast and Multicast performance
  - Signalling performance
  - QoS/QoE monitoring methodologies
  - Traffic management considerations (e.g. admission control, priority, etc.)
  - Reducing the impact of traffic impairments (e.g. packet loss, bit errors)
  - Reliable service delivery and network operation

WG3 Service Security and Contents Protection

- to provide a focus, within the FG IPTV, to address the urgent needs for globally accepted IPTV security standards as the market demands.

- define the security architecture, identify and if necessary initiate the development of the security mechanisms and interface specifications for IPTV, which will satisfy the Business & Security requirements and align with the IPTV system architecture.

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WG4 IPTV Network Control

- Naming, addressing, and identification aspects
- Control and signaling mechanisms
- Content distribution and data plane aspects
- Access & Home network issues
- Related issues

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WG5 End Systems and Interoperability

- Implementation Scenario's & Application's:
  - The relationship between IPTV End System & Home Network (i.e., Integrated Television, Settop Box, Media Center PC, etc.), and what services are supported by IPTV End System

- Terminals
  - Test/Interoperability – Procedures/Criteria for potential independent testing facility to verify performance/conformance to appropriate standards (we suggest this be access network agnostic).
  - Investigate basic functional architecture of the IPTV terminal

- Remote Management
  - Scope how remote management (services/content) is authorized/requested by the consumer in a vertical (OEM) and horizontal. (Retail) markets– and the relationship with the provider.

WG6 Middleware, Application and Content Platforms

- to identify and define platforms, including middleware, applications, content formats, and their uses, that facilitate effective and interoperable use of an IPTV system for presenting and interacting with IPTV services.
  - Metadata, i.e. the descriptive data about content
  - Content Navigation Applications, such as IPG and enhanced EPG
  - Navigation, Channel and Menu Processing,
  - Content Discovery
  - Content Presentation and Execution Engines
  - IPTV Middleware
  - Audio and Video coding

Digital Divide and IPTV

- IPTV can be an important tool in bridging the Digital Divide.

- FG IPTV has several requirements related to bridging the gap

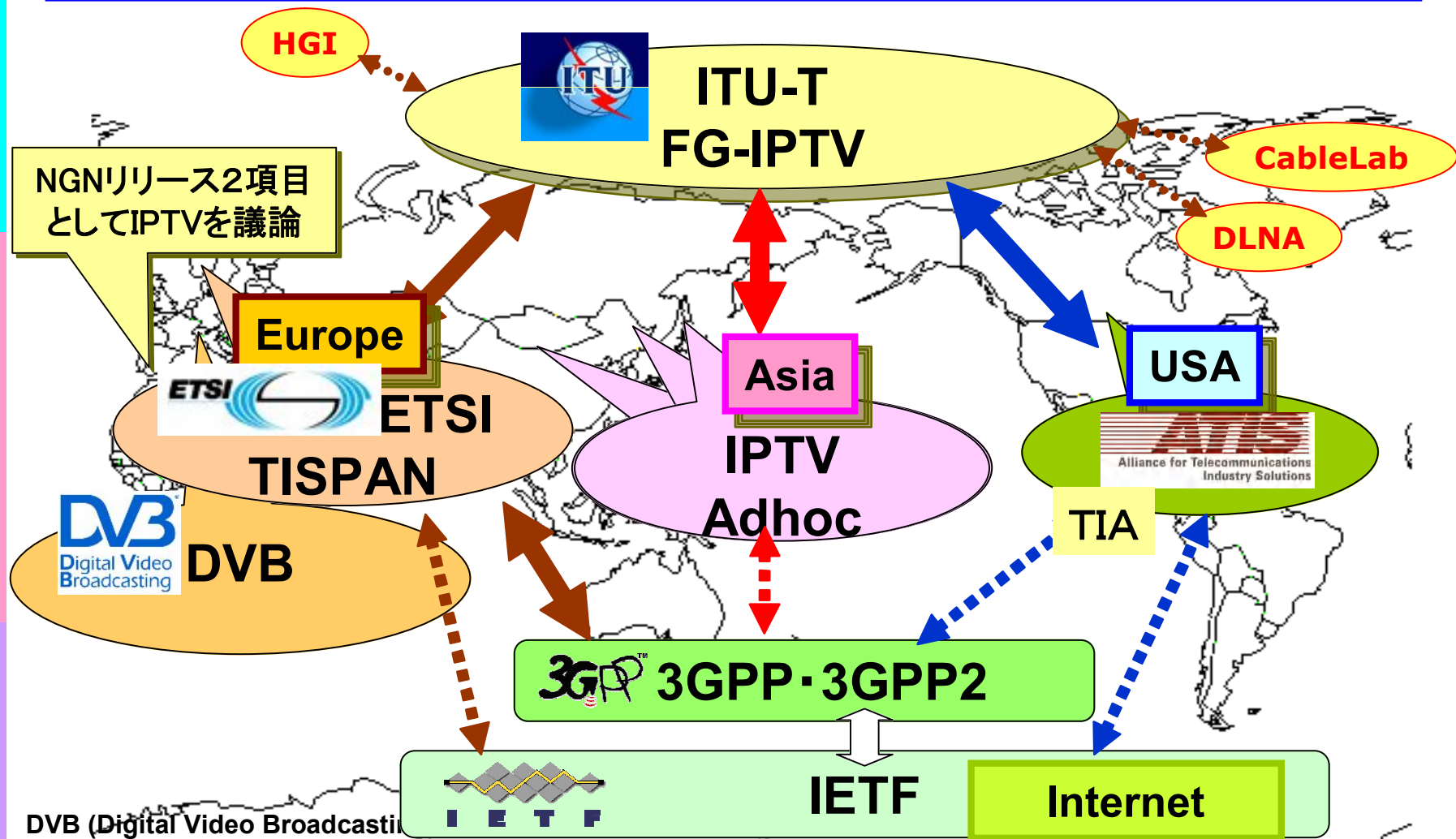- Accessibility requirements

- QoE (Quality of Experience)

Other SDOs related to IPTV

SDOs related to IPTV

- **ATIS (Alliance for Telecommunications Industry Solutions）set up June 2005, IPTV Interoperability Forum(IIF) .**

- **CEA（Consumer Electronics Association）set up March 2006 IPTV-OCC(Oversight and Coordination Committee)を結成し、starts discussion on the IPTV requirements from CE perspective.**

- **DVB (Digital Video Broadcasting) has been working since 2003 on IP within DVB-IPI (IP Infrastructure) .**

- **ETSI TISPAN (Telecoms and Internet-converged Services and Protocols for Advanced Networks)**

- **DLNA**

- **DSLForum**

- **HGI**

Relationship between ITU and other SDOs

HGI

ITU-T
FG-IPTV

CableLab

DLNA

NGNリリース2項目
としてIPTVを議論

Europe

ETSI
TISPAN

Asia

USA

IPTV
Adhoc

DVB

TIA

3GPP・3GPP2

IETF

Internet

DVB (Digital Video Broadcasting)
FG IPTV (Focus Group on IPTV)
Standards Institute),
ATIS (Alliance for Telecommunications Industry Solutions)
TIA（Telecommunications Industry Association ）

ETSI (European Telecommunications

CJK (China, Japan, Korea)
IETF (The Internet Engineering Task Force)

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ATIS

- **Alliance for Telecommunications Industry Solutions**

- **U.S.-based organization**

- **committed to rapidly developing and promoting technical and operations standards for the communications and related information technologies industry worldwide**

- **set up June 2005, IPTV Interoperability Forum(IIF) .**

CEA

- **Consumer Electronics Association**

- **set up IPTV-OCC (Oversight and Coordination Committee) in March 2006, starts discussion on the IPTV requirements from CE perspective.**

- **Identify needed standards enabling interoperability of CE devices in the home with IPTV networks using a national standardized interface.**

- **Fixed life project stages:**
  - **Phase 1 – identify Use Cases**
  - **Phase 2 – identify Standards and Gaps**

DVB (Digital Video Broadcasting)

- an industry-led consortium of over 260 broadcasters, manufacturers, network operators, software developers, regulatory bodies and others in over 35 countries

- committed to designing global standards for the global delivery of digital television and data services.

- has been working since 2003 on IP within DVB-IPI (IP Infrastructure). Its Phase 1 (more broadcasting-like service) has been finished, and Phase 2 (more interactive services) is now being developed.

ETSI (European Telecom. Standards Institute)

- **TISPAN (Telecoms and Internet-converged Services and Protocols for Advanced Networks)**

- **Defines many standards related to broadcasting as well as telecommunications**

DLNA

- **Digital Living Network Alliance** focuses on delivering an interoperability framework of design guidelines based on open industry standards to complete the cross-industry digital convergence.

- Defines profiles relating especially to home networks, such as content format, plug-and-play, communication protocols, including mobile.

HGI (Home Gateway Initiative)

- SDO for Home gateway.
- Collecting requirements for Home gateways
- Recently started work on IPTV

Relations between IPTV SDOs

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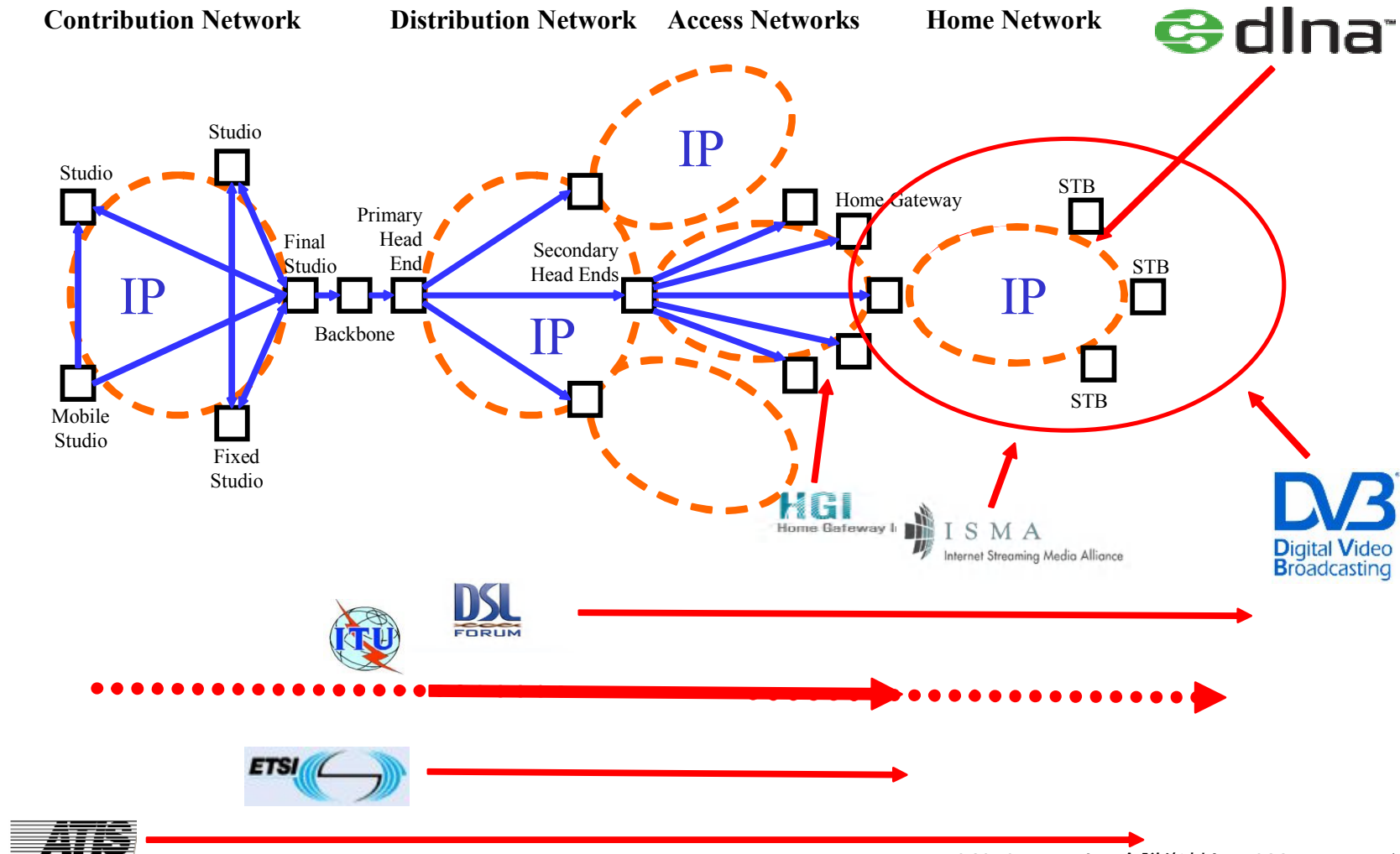
Conclusion

- IPTV is an important service/application area of next generation.

- Its standardization is vigorously conducted, and its

- It is a good platform for bridging the digital divide

□ Thank you!

□ Contacc:

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