IPTV Services and End User Systems

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ITU-T IPTV Global Technical Workshop
Seoul, Korea, 12-13 October 2006
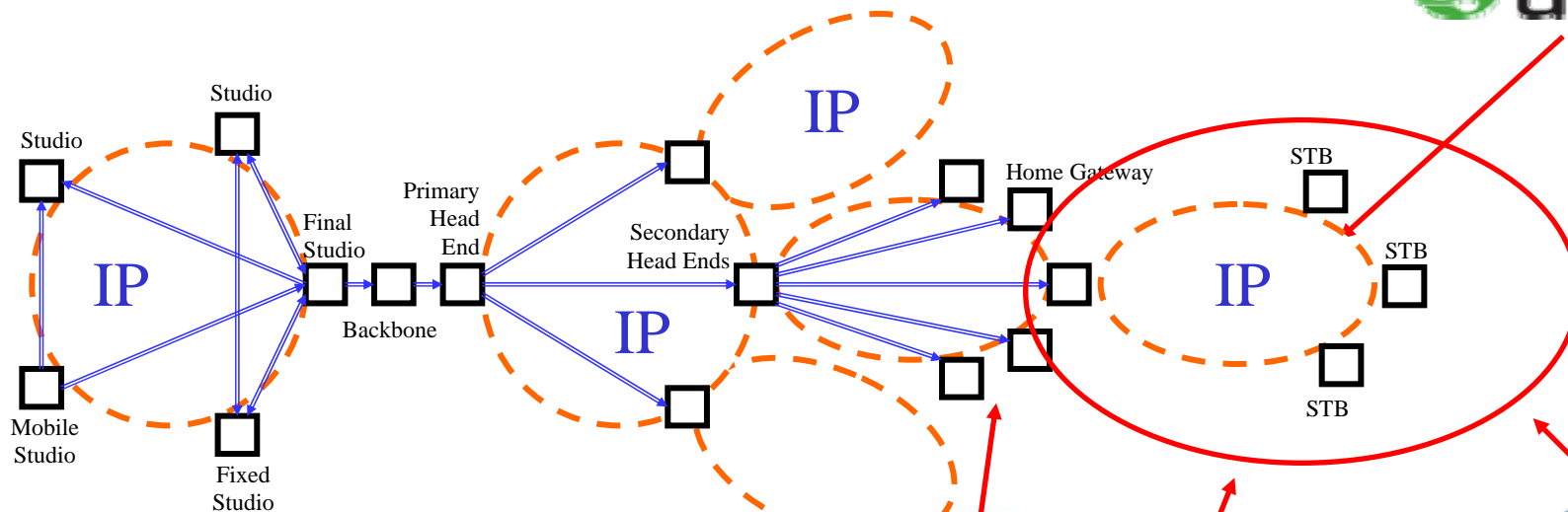
Activities of various SDOs
(From DVB contribution to ITU-T FG IPTV)

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Contribution Network **Distribution Network** **Access Networks** **Home Network**

Studio

Studio

IP

Mobile Studio

Final Studio

Fixed Studio

Backbone

Primary Head End

IP

Secondary Head Ends

IP

IP

Home Gateway

IP

STB

STB

STB

dlna

HGI
Home Gateway I...

ISMA
Internet Streaming Media Alliance

DVB
Digital Video Broadcasting

DSL FORUM

ITU

ETSI

ATIS

Requirements in Principle for Enabling Consumer Retail Devices to Attach to IPTV Networks

http://ww.itu.int/ITU-T/IPTV/docs/iptv028e.doc

o   Compatibility
  - Compatibility of CE devices with different operators' IPTV network
  - Cost effective manner for both consumers & CE manufacturers

o   Open Standards
  - Meaningful participation & consensus by all interested parties in the development of technologies to build compatible devices

o   Reasonable licensing terms
  - To unburden CE manufacturers and video service providers of unreasonable constraints from including necessary technologies

o   Reasonable testing and certification procedures
  - Interoperable and timely deployment to market by approval for products

o   Reasonable terms of service for consumers
  - To allow consumers' choice among various CE products as long as such products do not cause harm to the network and do not enable unauthorized receipt of service

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o **Standards**
- Open and flexible over value chain
- Scalable, i.e., profile based

o **Network**
- Unicast, Multicast Topologies
- Scalable Management (none to significant), including QoS/QoE
- Service and Signal Agnotistic over access network types; easy service discovery and extension(s) via service profile(s);

o **Content**
- Scalable
    – Accommodate variations in Network Bandwith, Latency
    – Accommodate variations in Device Capabilities

o **End User Devices**
- Divisible
    – Don't mandate Monolithic Device
    – Support Distributed Device as Home Network

o   Baseline Functional Requirements

- **Basic Network Services**
    - IP Based Unicast, Multicast Transport
    - QoS Management
    - Session Management

- **Basic Content Services**
    - Audio, Video, Captioning
    - Content Metadata

- **Security Services**
    - Resist harm to Network, Service, Device, End-User
    - Resist unauthorized use of Content and Services

o **Enhanced Functional Requirements**

- **Enhanced Network Services**
  - Remote Device Management
- **Enhanced Content Services**
  - Bound Applications (Program Related)
  - Unbound Applications (Service Related)
- **Enhanced Security Services**
  - Renewable Security
  - Authorized Content Redistribution

Mobile IPTV

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o   IPTV: Mobile Scenarios
- Must be taken into account from the initial stage of IPTV standards process
- Service profiles discussed often assume HD quality video and audio, which is practically impossible for mobile terminals

o   Technical Obstacles
- Reduced Capability Devices
  - A/V decoders, interactive middleware
- Adaptability
  - Various types of access networks, form factors, levels of processing power
- Mobility
  - Mobile terminals are moving so the environment changes dynamically
- Protocols and algorithms
  - Dealing with network congestion
  - Dealing with packet loss due to wireless interference
- Ubiquitousness
  - Different applications and services available from those of the fixed

o **IPTV: Home Network Scenarios**

- **Must be taken into account from the initial stage of IPTV standards process**

- **Architecture must not preclude:**

    — distributed device components in home

    — authorized redistribution or presentation of protected content in home

- **Architecture should enable:**

    — home gateway approach; i.e., protocol/content translation at IPTV/HN boundary