Service Discovery
~ from IPTV Standards

NTT Cyber Solutions Laboratories
Kiyoshi Tanaka
2011/2/9
IPTV Forum Japan

◆ Activities
1. To develop technical specifications related to IPTV services
2. To maintain and update technical specifications related to IPTV services
3. To disseminate technical specifications related to IPTV services
4. To cooperate in testing, etc. for the commercial application of technical specifications related to IPTV services
5. To promote the use of IPTV services and conduct public relations

◆ Members
- 54 member companies
IPTV in Japan

Watch the video clip of IPTV Forum Japan!
HIKARI TV

- IPTV Service provided by NTT Plala
- IPTV Forum Standard-based, open platform
- Attractive content (HD content, FTA, etc.) taking advantage of FTTH/NGN
- Managed Service for proper Security and QoE
HIKARI TV Service with IPTV standards

1. Delivers high-definition video content
2. IP retransmission of digital terrestrial and BS TV broadcasting

- IP retransmission of digital terrestrial TV broadcasting
- Multi-channel broadcasting
- Video On Demand
- IPTV CE set based on standardization
IPTV Forum Specifications

- Standards for implementing open IPTV services as well as technical specifications for receivers
- IPTV Forum Specifications are harmonized with Digital TV Broadcasting Service Spec.
  - i.e. manufacturing Common TV sets for DTV and IPTV
  - e.g. Data Broadcasting Markup Language
**The ITU-T Rec./draft and IPTV Forum Spec.**

◆ IPTV Forum Specifications are also harmonized with ITU-T international standards.

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Standard IPTV System Structure

- Multicast QoS
- Unicast QoS

H.264/AVC HD

LIME (H.762)
Broadcast
VOD
CAS/DRM

Service Discovery (H.770)

NGN

IPTV based on the Standard (H.721)
ITU-T H.721: Basic Terminal Model

◆ Initiated by Contribution from *IPTV Forum Japan*
◆ Many inputs from DVB and ATIS-IIF.
◆ Defines Terminal supporting VoD and Linear TV
◆ Targeted at Embedded TV sets in the retail market as well as STB
◆ Managed network model (agnostic as to IMS)
◆ Network attachment and Service Discovery compliant with H.770
◆ FEC for Error Recovery, compliant with H.701
◆ Supports Portal service as well such as H.762 (LIME)
◆ Implemented and deployed
NTT’s “HIKARI TV” service is delivered to standard-based terminals, compliant to ITU-T H.721 and IPTV Forum Japan’s specification.

These terminals are available in the retail market in Japan.

Customer can buy a TV or PC at a shop, connect to NW, and receive an IPTV service.

**STB**
- PM-700 (HIKARI-TV STB)
- PM-1000 (HIKARI-TV PVR)

**TV set**
- Panasonic VIERA
- SHARP AQUOS
- TOSHIBA REGZA

**PC**
- NEC VALUESTAR
- TOSHIBA Qosimo dynabook
**IPTV Forum Specifications are also harmonized with ITU-T international standards.**

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Why is service discovery needed?

◆ In an open environment, there are multiple service providers available over each network.
◆ Each service provider provides different services such as Linear TV, Content Guide, etc.
◆ How to discover them when you come back home with a new IPTV Terminal device?
Service Discovery

- General Framework for discovering and selecting service providers and services
- Allows user to enjoy various services and service providers easily

1st step: to get service provider descriptions
2nd step: to get service descriptions

After choosing SP, user can choose services offered by the SP, e.g. VOD, Channel service, Karaoke, etc. and then acquire specific content.
ITU-T H.770: IPTV Service Discovery

◆ ITU-T H.770 defines:
  - service provider description locations & delivery protocols
  - service provider description
  - service description locations & delivery protocols
  - service description
◆ Based and harmonized with DVB and ATIS
◆ With some extensions for:
  - delivery protocols (FLUTE)
  - Portal URL, Purchase URL
◆ A profile of (retail service provider model) ITU-T H.770 (such as the one specified by IPTV Forum Japan) is already implemented and deployed in “HIKARI TV” IPTV service.
Service Discovery and the Web

-how is a service found on the web?

Discussion of “Web and TV” must include the mechanism of “service provider discovery” and “service discovery”, which harmonized with the existing standard, such as ITU-T H.770.

-What is the metadata for Service Discovery for the TV on Web?
-How is the metadata processed?
-What are the mechanism for accessing the service and content on the Web after its discovery?
-Are the current web protocols sufficient or do we need more?
-How can we manage the web?