



SUMMARY REPORT ON ASTAP-24 (IPTV)

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1. Abstract

ASTAP-24 this year added IPTV in the Conformance and Interoperability (C&I) working group. This report is on the summary of the C&I result and suggestion on moving forwards suggestion for IPTV standardization initiative in Malaysia.

3. Introduction /Background

IPTV C&I test was showcased during the ASTAP-24. The companies involved in the IPTV C&I are as follows:

1. Hitachi - IPTV Set Top Box
2. OKI - IPTV Middleware and back end server

The objective of this C&I is to show interoperability of new features on an existing standard and thus proposing the new features to be part of the new revised standard. The existing standard that are proposed to be revised are as follows:

1. H.721 – IPTV Basic Set Top Box Device
2. H.762 – LIME (IPTV Light Weight Multimedia Environment)
3. H.770 – IPTV Service Discovery

New features that are being tested and later proposed into the existing standards are as follows:

1. ITU-T H.265 High Efficiency Video Coding (HEVC)
2. ISO/IEC 23009-1 Dynamic adaptive streaming over HTTP (DASH)
3. Interactivity with ITU-T H.810 compliant devices (e-health devices)
4. Support for 4K resolution

4. Agendas/Topics

There is no specific discussion on IPTV during ASTAP-24. However, ITPV was covered under Conformance and Interoperability WG.

5. Findings

I. ITU-T Definition of IPTV

- IPTV is NOT Internet TV
- IPTV is a multimedia services that provides services such as: Television, Video, Audio, Text, Graphics, Data that are delivered over managed IP network to provide the required QoS/QoE level, security, interactivity and reliability.

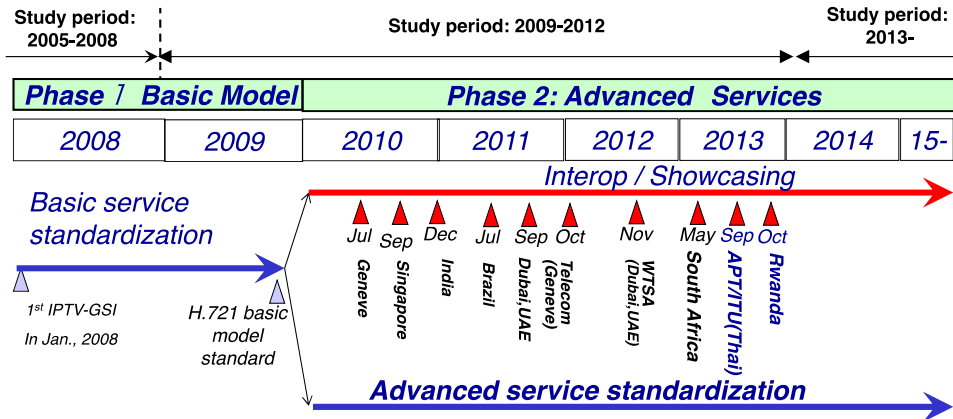


Fig-1: ITU IPTV study group milestone

- ITU-T IPTV-GSI (Global Standard Initiative) has started the study since 2008 and has come out with H.721 standard in 2009. Since then a lot of advancement has been made along years.

II. IPTV is to provide services as follows:

- Basic Entertainment Services
 - Linear Broadcast TV (Channel Services)
 - Video on Demand (VoD)
 - Accessibility: captioning, descriptive audio
 - Audio services
 - Interactive applications: Karaoke, gaming etc
- Public Services
 - Digital billboard
 - Digital signage – disaster alert
 - Digital InfoTraffic – traffic news etc
- E-*
 - E-Government
 - E-Publishing (E-Book, E-Newspaper)
 - E-Commerce (banking, etc)
 - E-Learning (distance learning via TV)
 - E-Health (tele-medicine, tele-healthcare)

III. ITU-T Recommendations for IP

- For Home Networking, the recommended standards is H.622.1 – Requirement and architecture for IPTV which consists of:
 - Y.2007 : NGN Capability - Set 2
 - Y.Sup 5 : IPTV Service use cases
 - Y.Sup 7 : NGN Scope Release 2
 - Y.1910 : IPTV Functional Architecture

- v. Y.1901 : IPTV Service Requirements
- vi. Q.3010 : Authentication protocol

- For Application and End-Systems, the standards used in the CPE as follows:
 - i. H.721 : IPTV Terminal (Basic)
 - ii. H.741.x : Audience Measurement
 - iii. H.750 : Metadata for IPTV Services
 - iv. H.761 : Ginga-NCL
 - v. H.762 : LIME
 - vi. H.763.1 : CCS for IPTV Services
 - vii. H.264 : Video Codec HD
- For ensuring the users quality of experience, ITU-T suggest these standards to be used:
 - i. H.701 : Content error recovery
 - ii. G.1080 : IPTV QoE
 - iii. G.1081 : Performance monitoring
 - iv. G.1082 : Improving IPTV performance robustness
- Finally for security and content protection:
 - i. X.1191 : Requirement and architecture for IPTV security

IV. ASTAP-24 Conformance & Interoperability session 2 result

- IPTV C&I has been conducted by OKI and Mitsubishi
- The purpose of the C&I is to test
 - i.** new video codex ITU-T H.265 (High Efficiency Video Codec – HEVC) to support 4K resolution
 - ii.** Dynamic Adaptive Streaming over HTTP (DASH) protocol
 - iii.** Interoperability wth ITU-T H.810 E-Health devices data monitoring onto IPTV system
- The test was conducted based on
 - i.** draft revised of ITU-T H.721 – IPTV Terminal (Basic)
 - ii.** draft revised of technical paper - HSTP.CONF-H721 conformance testing specification for H.721
- Figure 2 shows the C&I setup

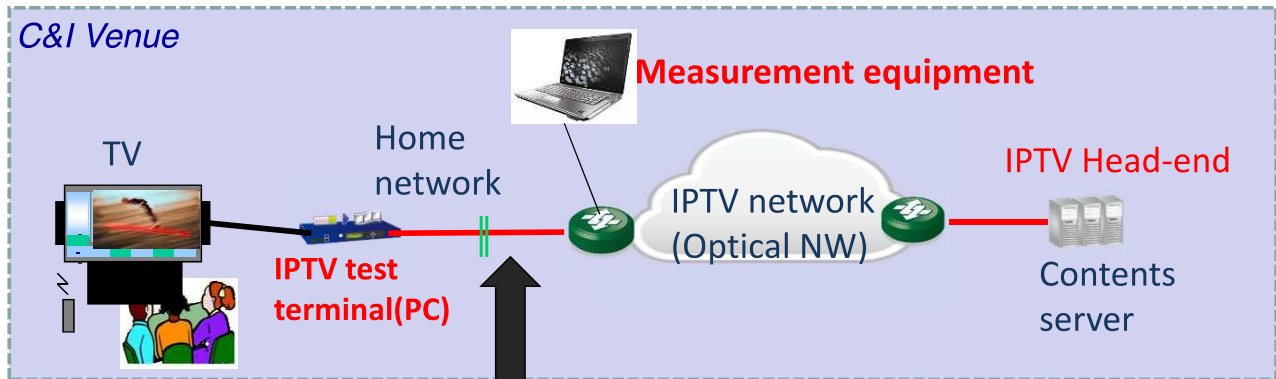


Fig-2: Draft revise Recommendation ITU-T H.721

6. Conclusion

IPTV standards have been established by ITU-T but need to be revised with every new technology developed. Moving forward for IPTV WG, MTFSB To be actively participate IPTV focused events such as:

- a. Connected TV forums
- b. International Broadcast Convention (IBC)

Participation in these events would give a better exposure the WG team on the latest technology and trends of IPTV.

Membership of other standardization bodies that looks into IPTV such as ETSI and 3GPP is also a good venue for making our IPTV standards at par with the current technology trends.



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