
ITU

Next Generation of IPTV Services

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IPTV by ITU-T

IPTV (Internet Protocol Television) is a **multimedia** service encompassing television, video, audio, text, graphics and data delivered **over IP** based networks which are **managed** to provide the required level of **QoS** and QoE, security, interactivity and reliability.

ITU-T Q13/16 is the group responsible for standardization on IPTV

ITU-T H.700 series

- ITU-T H.700 – General aspects
- ITU-T H.720 – Terminal Devices
- ITU-T H.730 – Middleware
- ITU-T H.740 – Application Event Handling
- ITU-T H.750 – Metadata
- ITU-T H.760 – Multimedia App. Frameworks
- ITU-T H.770 – Service discovery

IPTV as a convergent platform

- IPTV metadata is flexible
  - Extensible metadata allows for offering new services
  - Any multimedia service can be announced
  - IPTV service providers can even offer QoS-enabled services carried from non-QoS sources
- New services, integration with other platforms

Seamless experience

- Multi-sourced services (IPTV, Web, OTT, FTA, SAT…)
- Cross-platform recommender systems with AI
  - End user may loose the perception of content sources and source switching
- IPTV as a convergent, aggregative platform
  - is the starting point that enables the acquisition of the needed metadata in a standardized way.

Multi-device Service

- User interaction can be transferred to secondary devices
  - Notifications, content selection, additional content, device switchi
  - Augmented Reality
  - Virtual Reality
  - Device synchronization may be required
- Under study in Q13/16

Meta Mirror

Enhanced user interface

- Touch, voice, gestures as system-wide supported inputs
- These may not be enough if used separately
  - Advanced and Immersive applications will require new forms of user interaction
- Multimodal interaction
  - Interaction based on the combination of inputs of different kinds
  - e.g: Pointing to a product on the video and saying “Buy that!”
- Under study in Q13/16

Scene-based metadata

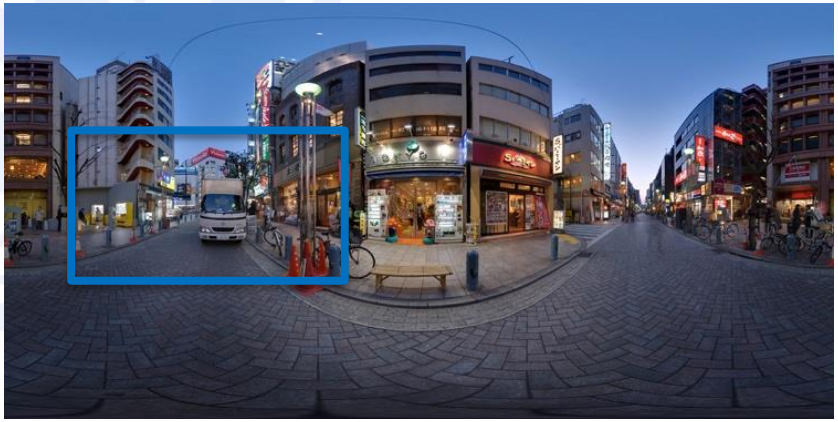
- Enhanced search services
- Scene semantics may be captured
  - Include movie script information
- Scene compilation services
  - User-generated compilations
  - Auto-generated compilations
- Fine-grained recommendations
- Under study in Q13/16

Virtualized terminal device

- Separation between
  - Physical terminal (PT) – end-user side
  - Function platform (FP) – network-side
- Cloud-based IPTV
  - Thin terminal devices, inexpensive
  - Easily updated with new services and application frameworks
- Under study in Q13/16

UHDTV and beyond

- UHDTV resolutions and beyond are supported
- They may not represent just better video quality
  - Interactive, immersive content based on UHDTV delivery are possible
    - 360º video
    - Free Viewpoint video
  - How to support these new kind of content formats and interaction?



Media things

- IPTV terminal devices can be connected to sensors and actuators
  - Home automation
  - E-health
- May be used for more immersive experiences
  - Lights, Thermostats, Wind, Smells etc, may be synchronized with the content
- How to support this new kind of content format and the media things?

And more...

- How **software-defined networks** can ease the management of IPTV services?
- How to provide IPTV **roaming** services with the required QoS?
- How the IPTV architetcure can easier keep up with the **evolution of content formats** and their new interactive experiences?

Join ITU-T Q13/16 to help us addressing these and the questions to come

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