ITU Workshop on "Digital Signage"

(Tokyo, Japan, 13 -14 December 2011)

Current Status of Standardization on Digital Signage in ITU

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- Question for “Multimedia Application Framework for IPTV services”
- IPTV services encompass various video and graphics related services on IP
- IPTV is defined as a multimedia service on a managed network, with interactivity, security, and QoS guarantee.

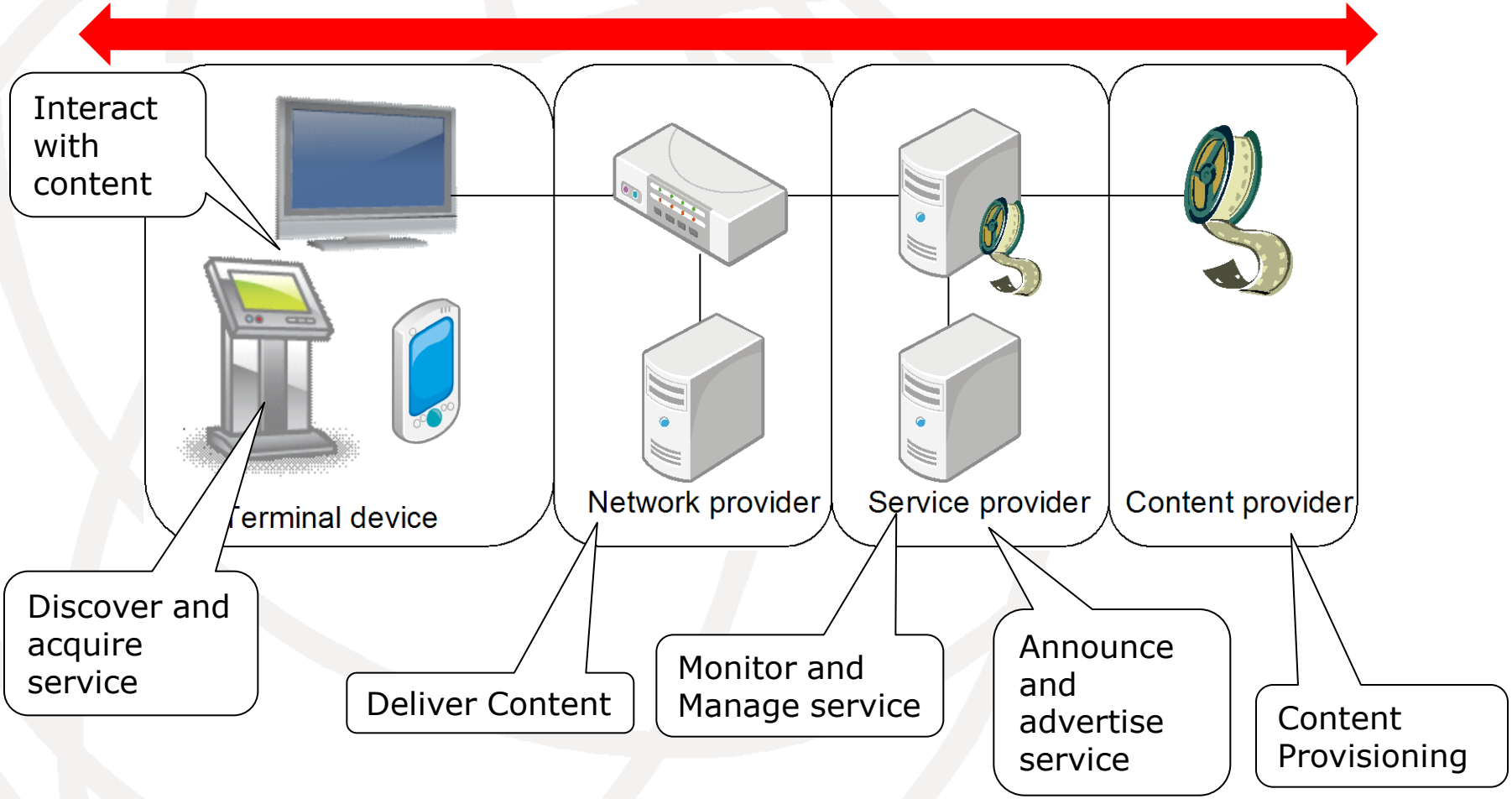
ITU-T's Work on IPTV

- ITU-T has been spearheading the standardization in IPTV for NGN
- Focus Group on IPTV (2006-2007)
- IPTV Global Standardization Initiative (GSI) (2008-)
  - Building on the work of Focus Group, Coordinating all ITU-T's IPTV related activities
  - Currently about 20 Recommendations approved by 6 Study Groups, (SGs 9,11, 12,13,16,17)
  - Harmonization with other Standards bodies
  - Meeting every two to three months

IPTV Value Chain

ITU-T IPTV standards cover all content value chain

End-to-end solution

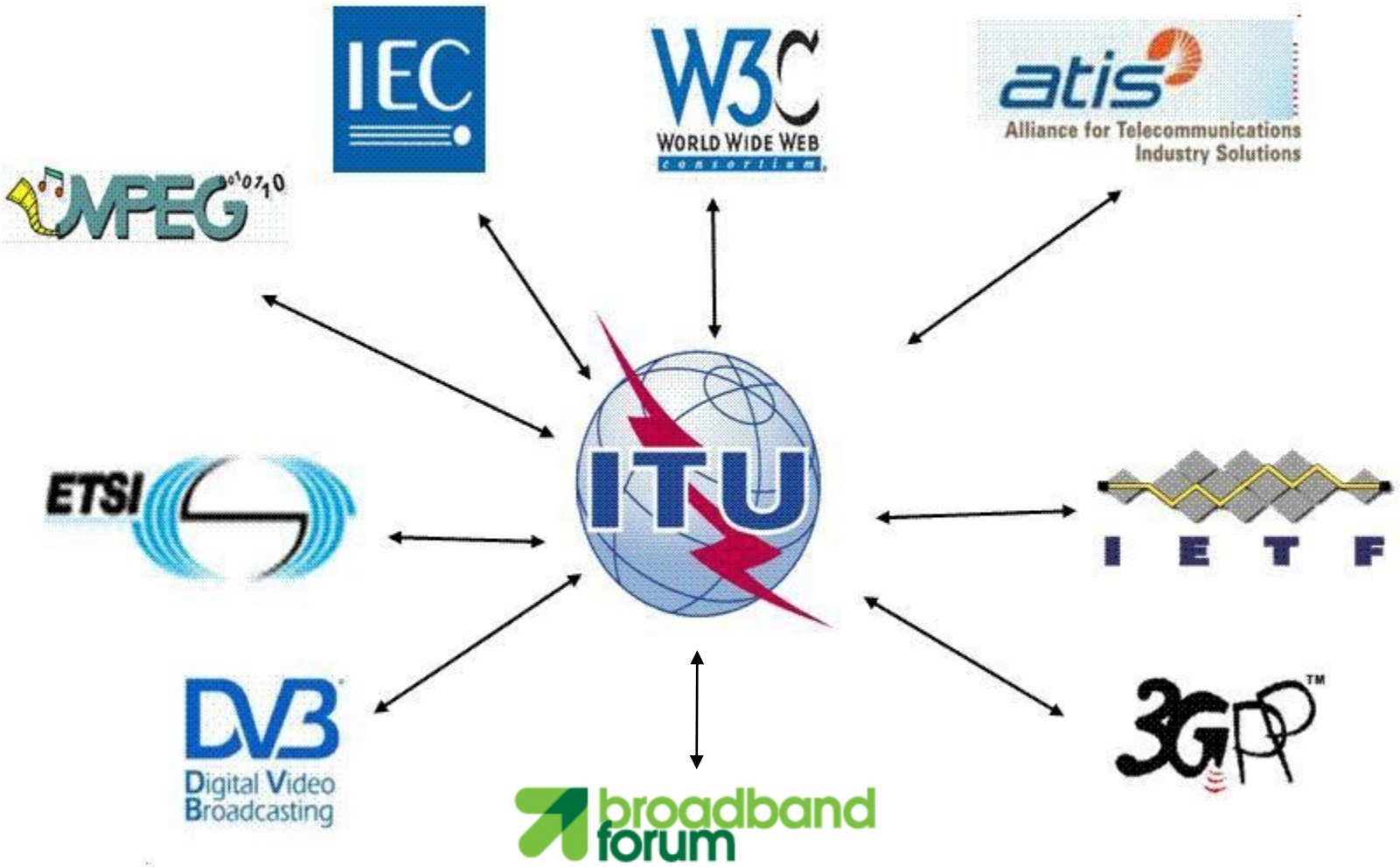


Characteristics of ITU-T IPTV

- End-to-End Solution
- Not to "reinvent the wheels" – Use existing standards as much as possible
- Practical approach for faster deployment and for meeting industry demands
- Close collaboration with key IPTV ecosystem players:
  - Other SDOs
  - Broadcasters
  - CE manufacturers
- Conformance and Interop testing events
- Truly interoperable global standard

ITU-T Liaisons on IPTV

ITU-T IPTV is working with many SDOs:
ensuring interoperability and quality of standards



Current Status

- "Basic IPTV Service" Recommendations are ready
  - TV services, VoD & interactivity
- Advanced features actively discussed
  - Audience measurement
  - Digital signage
  - 3D
  - Internet-sourced contents
  - Service over multiple devices
  - Widgets
- Conformance and Interoperability
  - Agenda of interoperability events (2010, 2011, …)
    - IPTV conformance and interoperability tested
  - Conformance specifications ready, more to come
  - Implementation Guidelines – ongoing work

H.721: IPTV Terminal Model

- 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) – SIP-aware HGW friendly
- Network attachment and Service Discovery (H.770)
- FEC for Error Recovery (H.701)
- Supports Portal service and interactivity (H.761 and H.762)
- Implemented and deployed

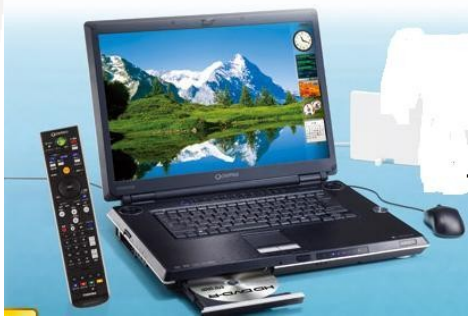
ITU-T H.721 IPTV Terminals

- Terminals based on ITU-T H.721 are available in the retail market
- Customer can buy a TV or PC at a shop, connect to network, and receive an IPTV service
- Conformance Tests ongoing to ensure conformance and interoperability

Set-top boxes

TV sets (also 3D!)

PC



IPTV Services discussed in Q13/16

- Linear (Channel Service) Broadcast TV
- Video On Demand (VoD)
- Accessibility: captioning, descriptive audio
- Audio services
- Karaoke, gaming
- Public Services
  - Billboards, disaster alerts, traffic news, etc
- E-*
  - E-government
  - E-publishing (e-Books, Newspaper)
  - E-commerce (banking, etc.)
  - E-learning (distance learning)
  - E-health (telemedicine, tele-healthcare)
- Private and Community Broadcasting (sharing videos)
- Photo albums (sharing photos with your friends)
- … and **Digital Signage Service**

ITU-T's Work on Digital Signage

- Work item created in March 2011
- New (draft) Recommendation "Framework for Digital Signage Service" (H.FDSS) was created
- high level requirements, architecture and mechanisms for dealing with the aspects of digital signage content:
  - network, middleware, metadata and terminal devices.

Domains of Digital Signage

- A: the services in public spaces (e.g., railways, convention centers);
- B: the services in major distributors and service industry (e.g., banks, supermarkets);
- C: the services in relatively small offices and retailer shops;
- D: the services in home as communication tools.

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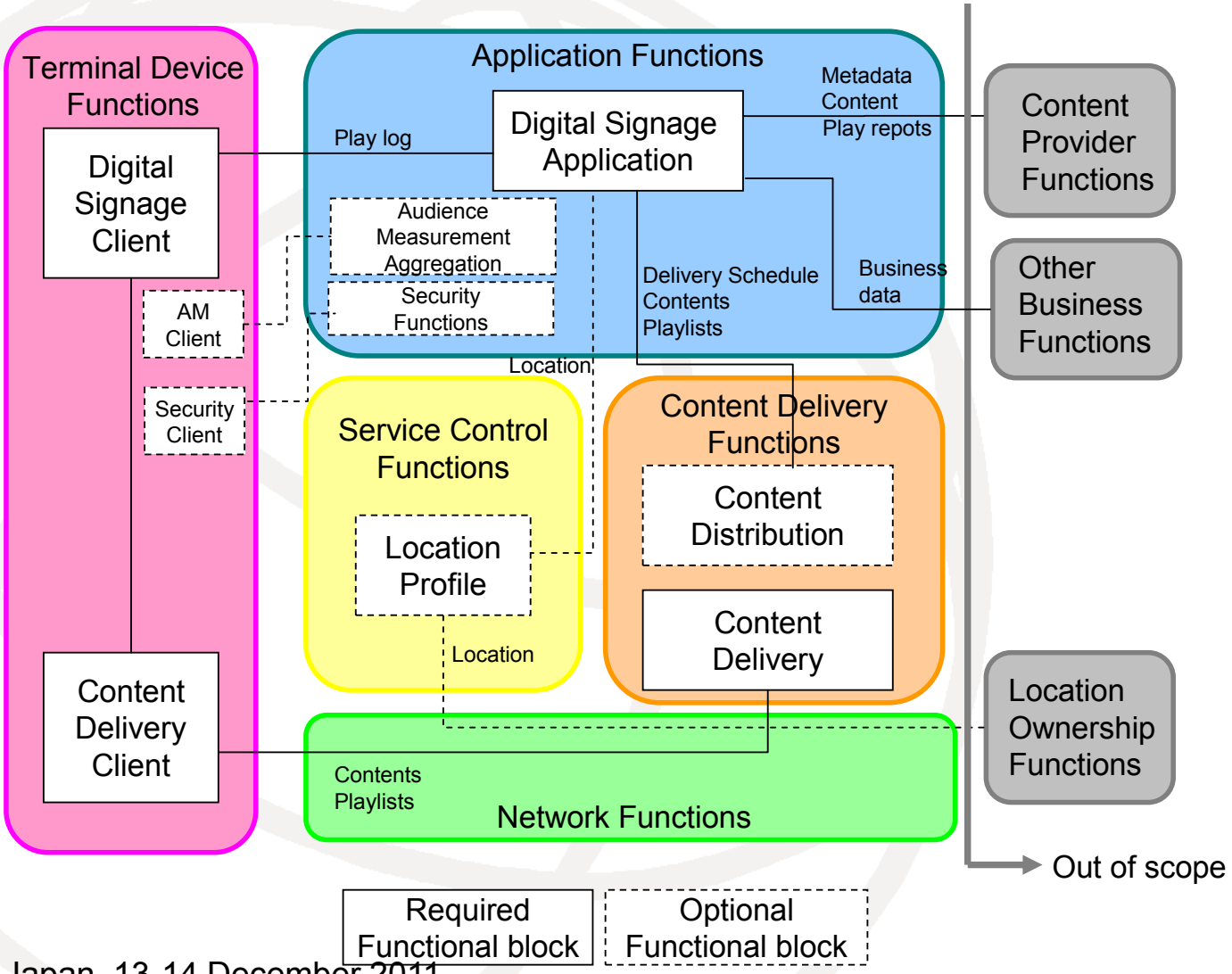
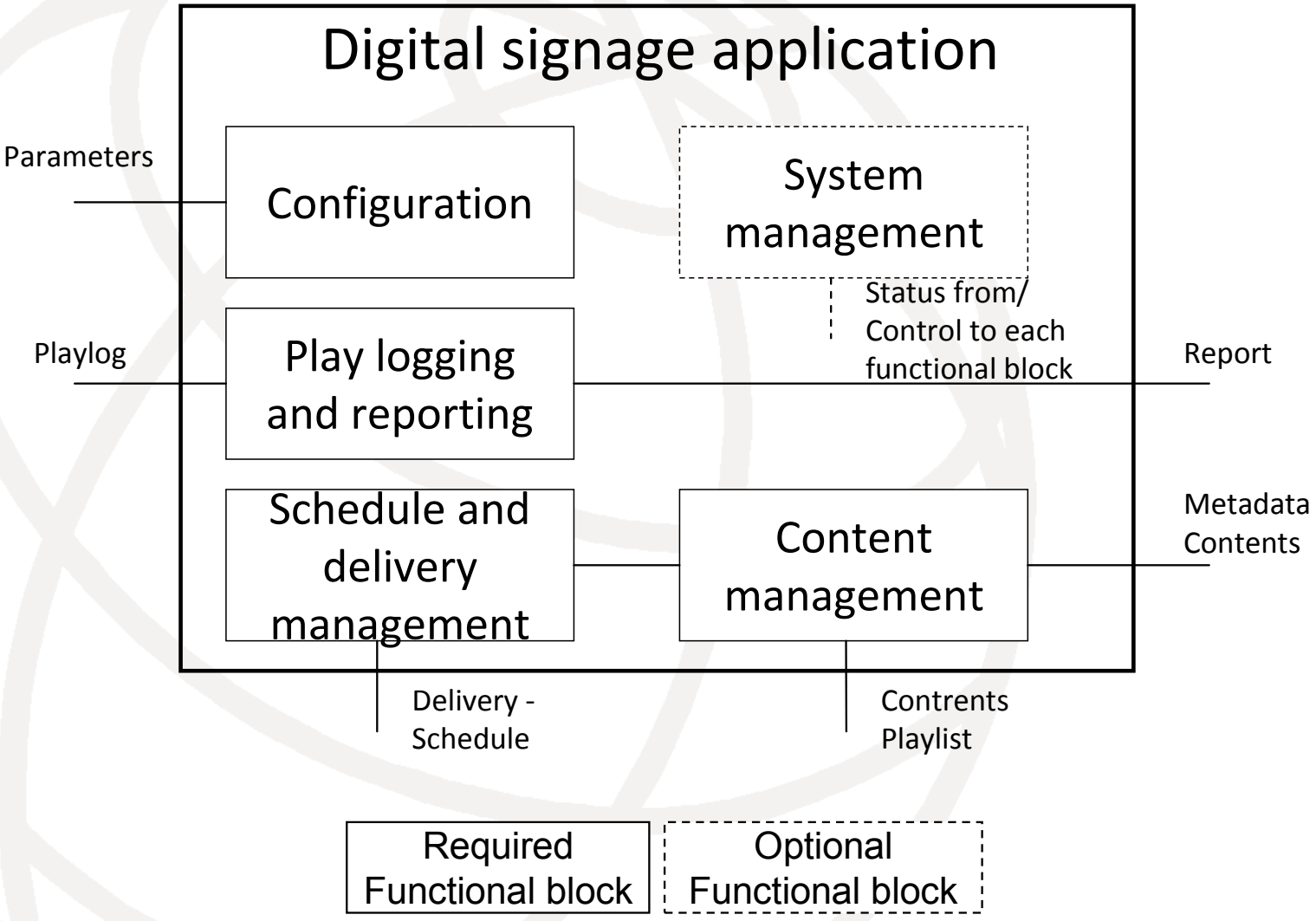
Examples of Display

- Wall screen:
  - Separation type: A STB is separated from display screens;
  - All-in-one type: A display screen includes STB functionalities.
- Stand-type terminals with casing for outdoor installation
- Mobile terminal:
  - Mobile phone/ Smartphone
  - Handy information terminal

Generic DSS architecture



Detail of DSS Application



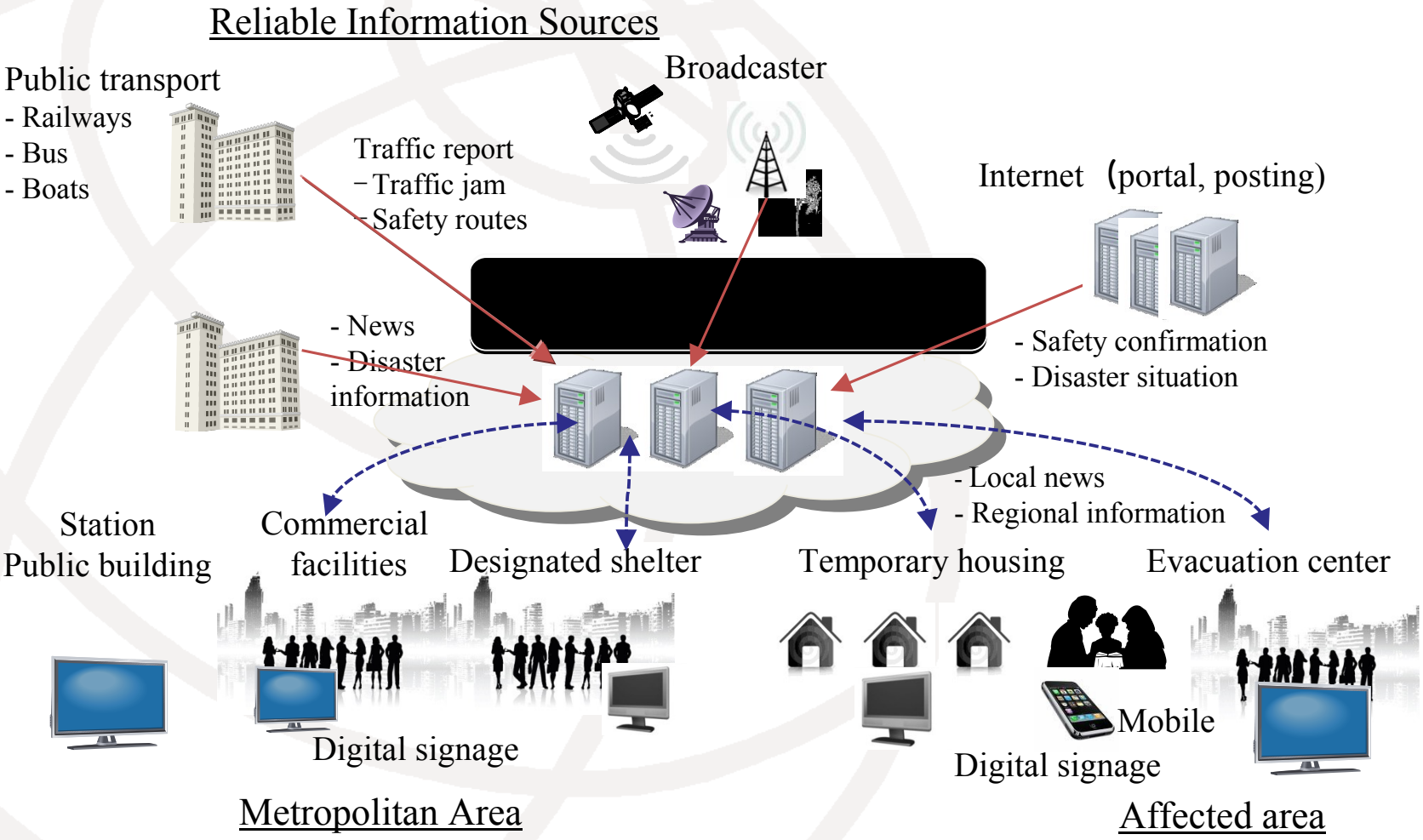
Examples of Digital Signage Services

- Information services:
  - schedule of transportation, map/directory;
- Advertisements/Promotion:
  - commercial messages, details of products/services;
  - shopping coupon
- Space decoration:
  - ornaments / coordination samples of products

Examples of Digital Signage Services

- Emergency communication
- Business linking
- Advertisement
- Advanced services:
  - Context awareness: Messages are delivered to the terminal devices according to the attributes of audience (e.g., subscribed specific services, location, date, age)

Digital Signage for Emergency



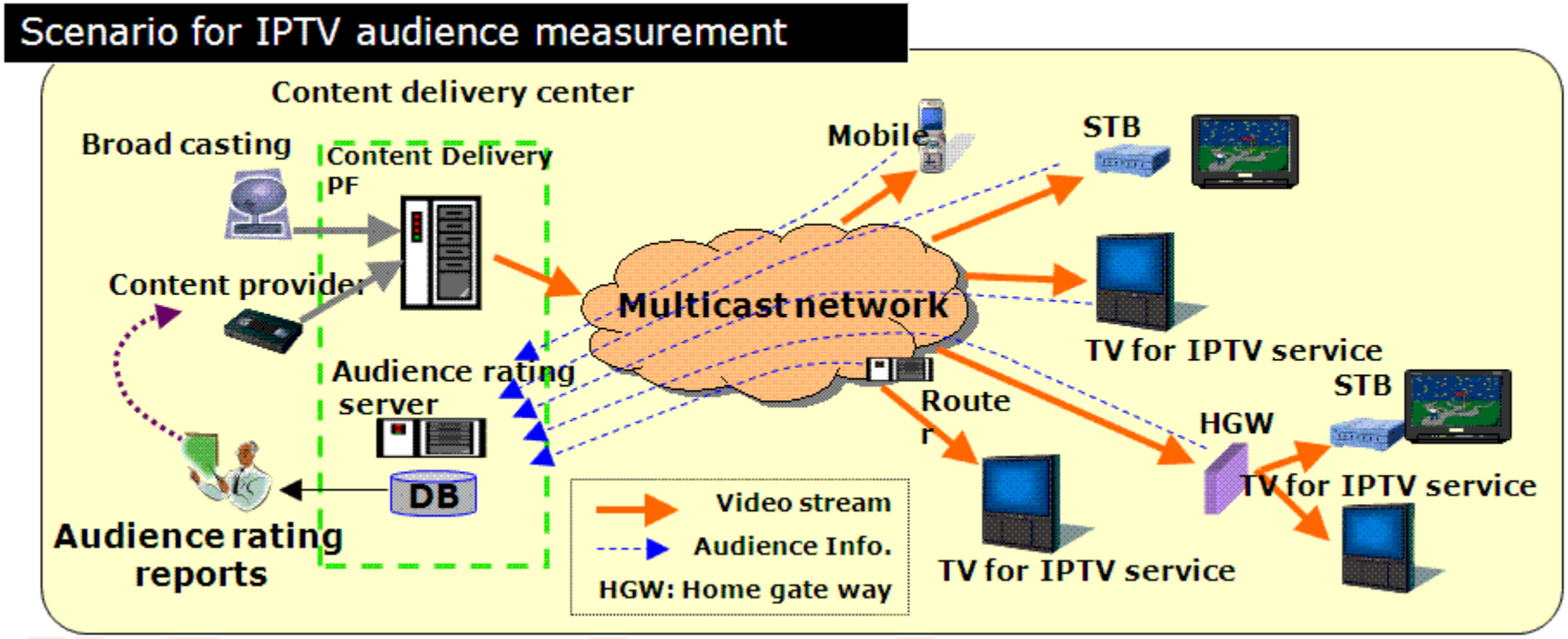
Future Topics

- Use of audience profile, esp. for advertisement
- Initialization of terminal device and service discovery
- User -- terminal interaction
- Scope and definition of "digital signage" – different from IPTV?
- Link with Audience Measurement

H.741: Application Event Handling and Audience Measurement for IPTV

- "IPTV application event handling (H.741)" defines higher level concepts of audience measurement (AM) and includes the scenario of AM

Generation → **Recognition** → **Notification** → **Reception** → **Consumption**



Privacy and Digital Signage

- Digital signage services can be enhanced their interactivity by using audience measurement technologies (e.g., facial recognition).
- Incorporating privacy into digital signage services is more important in the audience measurement.
- Privacy guidelines are currently worked on involving various digital signage service entities.

Q13/16 meetings

- August, 2009 (Mar del Plata, Argentina)
- October, 2009 (Geneva)
- January, 2010 (Geneva)
- March,2010 (Shanghai, China)
- May,2010 (Geneva)
- July, 2010 (Geneva)
- September, 2010 (Singapore)
- December., 2010 (Pune, India)
- March, 2011 (Geneva)
- May, 2011 (Geneva)
- July, 2011 (Rio de Janeiro, Brazil)
- September,2011 (Dubai, UAE)
- November, 2011 (Geneva)
- **February, 2012 (Geneva)**
- **April, 2012 (Geneva)**

Conclusion

- ITU is making a good progress on standardizing Digital Signage
- Architecture, requirements, metadata, etc. are discussed
- Content management and terminals are integral aspects
- Digital Signage in Emergency situation an important application
- More advanced services are expected – Contributions welcomed

- Thank you!!!!

- More information can be found at:
- http://itu.int/itu-t/iptv