HbbTV: TV & Internet convergence

Régis Saint Girons
HTTV CEO
President French HD Forum
Chairman HbbTV Marketing Group
HTTV – High Tech TV

- Technology and solution provider for interactive Digital TV

- International implementation
  - French Headquarter since 1999
  - Singapore office since 2011

- Interactive TV experts
  - Over 100 iTV applications deployed
    - HbbTV, OpenTV, NDS, MHP
    - EPG (NagraGuide) deployed over 6M STB

- End to End Digital TV Product Line
  - Head End Play Out Servers
  - STB Software products
  - Connected TV solution based on HTML5 and HbbTV
French HD Forum

- French Digital TV Association
  - Broadcasters, Operators, Manufacturers and Regulators

- Focused on Terrestrial
  - Analog Switch Off
    - TNT started in 2005
    - finalized in 2011
  - HDTV
    - launched in 2008
  - Interactive TV
    - HbbTV launched in 2011 \textbf{TNT 2.0}
  - Ultra HD
    - DVB-T2, HEVC
    - planned for 2016
Connected TV, two separated worlds

**Broadcast Context**
- Program lists
- Linear TV
- Broadcast links

**Internet context**
- Portals, TV Apps
- On demand
- Broadband links
“Smart TV” – Just an Example

- VOD
- App Store
- Recommendations
- advertisement
- Access to „media“
- TV
Challenges for Broadcasters

How to get onto the portals?
How to get found in the portals?
How to adapt service for each portal technology
How to connect linear broadcast to non-linear services?
From Connected TV to ....

Broadcast Services

Internet Services (Portals / TV Apps)

Broadcast (distribution)

Internet (distribution)
... HbbTV – a new paradigm

Mixing TV Entertainment with the Internet Power

Broadcast Services

Internet Services (Portals / TV Apps)

(distribution)
- Broadcaster & TV Manufacturer initiative
  - Moving to Pay TV

- Combines the best of Television and the Internet
  - Gives the broadcasters control over the internet
  - Gives the user the best service access through TV channels
  - Provides service interoperability over any HbbTV devices

- The most deployed open interactive TV standard
  - Deployed in Europe
  - Deploying in Asia (Malaysia, Vietnam...) and Australia
  - Interest in Latin and North America as well as in Africa...
The Key Building Blocks

- Start from mature & stable technology
  - HTML Web standards
  - DSM-CC object carousel as used with MHEG-5

- Mix in elements from other work where necessary
  - Application signaling & lifecycle management as used in MHP
  - JavaScript APIs for TV from OIPF
  - MPEG-Dash Profile
End to end architecture

Reception antenna

Hybrid terminal

Application Data and signalling

Broadcasted linear A/V content

Broadcast and application provider
Limited extra cost
httvLink TVOS Architecture

User Interface Applications
- Install, Zapper, PVR, Media Center, Guide, ...

Web Applications
- Deezer, ...

HbbTV Applications

Middleware
- Management (PVR conflict, Tuner resources, ...)

Broadcast
- DVB T, T2, C, S, S2
- ISDB
- DSMCC

Broadband
- HLS
- DASH
- RTP/RTSP
- iGMP

Media Engine
- EPG Metadata
- PVR
- MPEG

DRM

Media Player
- TS, MKV, MP3, JPEG, ...

Connectivity
- UPnP, DLNA, ...

Hardware Abstraction Layer
- Demux
- IP
- Network
- Video
- Audio
- Output
- PVR
- Tuner

Low level SoC Driver

Linux 
- Boot/Loader

Graphite
- Qt
- DirectFB

HbbTV
- Application Manager
- HbbTV Plugin
- Webkit HTML Browser

Set Top Box Hardware

Open Source

3rd Parties
HbbTV 1.5 moving to the market

- Adding new features
  - EIT-S access (TV Guide)
  - MPEG DASH (Adaptive Streaming)
  - DRM APIs (security). DRM solution outside HbbTV

- Deployed in France on Terrestrial and Satellite
- Deploying in Spain on TDT Hibrida
- All 2014 HbbTV deployments will be HbbTV 1.5 based
HbbTV 2 target specifications

- **New technology**
  - HTML5 and associated technologies
  - HEVC video
  - Subtitle support in ISOBMFF content
  - DRM in a CAM

- **New features for companion screens**
  - Launching a companion screen application
  - Application to application communication
  - Synchronizing applications and content across devices
  - Remotely launching an HbbTV application
HbbTV 2 target specifications

- Feature improvements
  - MPEG DASH improvements
  - Advert insertion into VoD content
  - Application and content synchronization
  - Non-realtime content delivery via broadcast
  - Multi-stream synchronization
  - Support for mouse and keyboard devices
  - Reconciling key request conflicts
  - Trick mode support for VoD
  - Caching of object carousels

- HbbTV 2 Product Deployments expected in 2015
HbbTV deployments in Europe

HbbTV caught interest also outside Europe e.g. US, Australia; South-East Asia, Africa
HbbTV deployments in Europe

- **Germany**
  - More than 80 active HbbTV services
  - Available on satellite (Astra), terrestrial, Cable (Telecolumbus and Primacom, Kabelkiosk)
  - Moving to IPTV with KabelKiosk and Deutsche Telekom (trial)

- **France**
  - A dozen of permanent HbbTV 1.1 services
  - Available on Terrestrial (TNT) and satellite (Fransat)
  - MyTF1 VOD first HbbTV 1.5 service incorporating MPEG-DASH adaptive streaming and supporting the Marlin and PlayReady DRM system

- **Spain**
  - A dozen of HbbTV services have already been deployed
  - TDT Hibrida is the Spanish HbbTV 1.5 DTT specification
Fast HbbTV device deployments

- 10 Million devices sold in Germany
- Mix of TVs and STBs
- Technology established in 3 years only
- 90% of Connected TV sold in Europe are HbbTV

Source SevenOne media
HbbTV usage figures (Germany)

Unique Devices - SAT.1, ProSieben, kabel eins
Number of Clients (=Devices) reached monthly

Source: Internal Tracking SevenOne Media
HbbTV is used by people from any Age

Source: 730 respondents
Question: „And how old are you: …“
SevenOne Media, July 2013
2011-2013: Europe, Turkey, Middle East

2014-2015: Asia Pacific: Vietnam, Malaysia, Australia, New Zealand, Singapore

Next: Africa, Latin America, USA, China
Deployments outside Europe

- **Australia and New Zealand**
  - Freeview in Australia and in New Zealand have announced to move from MHEG5 to HbbTV in 2014 on Terrestrial and Satellite

- **USA**
  - ATSC is in active liaison with HbbTV to use the technology as part of ATSC3.0.

- **ASEAN**
  - Malaysia and Vietnam have adopted HbbTV as part of their DVB-T2 launches
  - Thailand, Singapore, Indonesia... are actively considering HbbTV for their Terrestrial Analog Switch Off

- **Africa**
  - ASBU (Arabic States Broadcast Union) has specified HbbTV for their Analog Switch Off
  - CEDEAO (West African French speaking countries) has also specified HBBTV for their ASO
  - Sentech is implementing HbbTV
Catch-up, Start-over TV services

- 7 days into the past (limitation due to media regulation)
- Both catch-up and start-over TV
- Available on both free and premium channels
- Entire program offering: linear and on-demand
- 7 days into the past (limitation due to media regulation)
- Can be shared across all channels from the same broadcaster
Next Generation Videotext

- High usage in Europe (several million users per day)
- Keeps the established and well known UI (numbered pages)
- Web-based technology offers lots of Internet features
Portal services

- Provided by network operator or device manufacturer
- Can provide customised portal in small deployments (hospitality)
Advising campaigns

- Microsites user experience
- Improved Brand Awareness
Improved Accessibility

- Change font sizes for readability
- Sign language via additional stream
Education

- Enhanced Live TV Programs with interactive education service
- On demand education programs (VOD or Push VOD)
Live demonstration
Thank You

regis.saintgirons@httv.fr