Enabling Ultra-HbbTV

A vision on future converged media

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Trend: TVs are getting bigger and smarter
Ultra HbbTV: More pixels!

Cisco ‘Fresco’ future-of-video at IBC 2013

4K / 8K screens
Ultra HbbTV : More frames-per-second!  
Better colours!  
Better audio!

BBC high-frame-rate demo at IBC 2013

Wider colour gamut

3D audio
Ultra HbbTV: also more sources!

Format-agnostic production by FascinatE

- OmniCam
- Microphones
- Satellite Cameras
Ultra HbbTV: also more interactivity!

Tiled video by FascinatE
Ultra HbbTV: also more synchronisation!

Companion stream & stream sync framework by HBB-Next
Ultra HbbTV: also more diversity!

- Need for more flexibility in combining delivery modes
- E.g. possibility to switch to broadcast mode depending to popularity
- Blurring between “live”, “synchronised”, “catch-up” and “on-demand”
Video demo!

Synchronised hybrid HD interactive tiled streaming
As shown at IBC 2013, HBB-Next booth
Ultra HbbTV: more standards!

- Need for over-arching frameworks, e.g. synchronisation, hybrid CDN
- Need for “running code”, proving the standards
- There is no “they” in Standardisation
Ultra HbbTV: more research?

- Europe underestimates importance of “innovation in ICT and Media”
- ICT is framed as “just an enabler” for energy, mobility, health, …
- Media is dismissed as “entertainment”
- Horizon 2020 offers limited opportunities for Media R&D
- EIT ICT Labs 2014 does not provide for Media valorisation
- Neelie Kroes Digital Agenda: worry about ICT research in Europe
Ultra HbbTV: more research!

- Strong European players (technology, service, R&D, SME)
- Strong European interests in Media
  - Media is binding the European society, what people spend time on
  - $138x10^9$ broadcasting market EU 2016 (Research and Markets)
  - $75x10^9$ connected devices in 2020 (Morgan Stanley)
  - 400% growth of internet traffic for video next two years (Cisco)
- Competition/dependence from US and Asian technologies
- Convergence is finally happening in ICT and Media
  - Fixed, mobile, internet, broadcast → Ultra HbbTV
Conclusions

› Opportunities for Europe
  › Ultra-HbbTV offers an opportunity for Europe
  › One non-fragmented European ICT & Media industry
  › “Hybrid Europe” versus “Software US”, “Hardware China”

› Challenges for European R&D
  › Get Media (back) on the European Research Agenda
  › Enable standardisation in European R&D

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TNO: Innovation with ICT

- TNO: 3900-employee not-for-profit Dutch research institute.
- Mission: bring innovation to small and large businesses.
- Information society expertise: telecommunication and content delivery networks, network planning and performance analysis, application development, security, business modelling, usability, predicting the success of innovations.
- Media networking group
  - Activities: TV, CDN, interactivity, social TV, beyond HD, immersive, companion screen
  - Standardization: DVB, OIPF, IETF, HbbTV, ETSI, 3GPP, OMA, …
  - European research projects: HBB-Next, FascinatE, STEER, Figaro, iCORE, …

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Dr. M. Oskar van Deventer

- European – and customer projects
  - IMS-based IPTV, CDN-I, Rubens, HBB-Next
  - Combining content with communication, social TV, media sync, companion screen, multi-user services
- Standards contributor and rapporteur
  - HbbTV, DVB, OIPF, ETSI, IETF, ITU
- Author & co-author
  - Over 100 international publications
  - Over 500 standardization contributions
  - IPTV, CDN-I, HbbTV 2.0, media sync
- Creativity
  - Over 50 patent applications
  - Award-winning game “Triangler”
  - Guinness: largest order Rubik’s Cube

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