



At the Crossroad of Broadcasting and Future Internet

– A view of public service broadcasting R&D -

“ Future Internet Public-Private-Partnership:
When smart technologies connect people“
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www.irt.de

The Vision: Convergence finally becomes a reality (1)

- Hybrid Broadcast Broadband Television (HbbTV) has been introduced based on the open standard for HbbTV
- Several hundred thousand hybrid HDTV/Internet sets have already been sold (40 % of them are already online connected to a broadband network)
- (HD)TV-Terminals are available in the market and have access to both broadcast and broadband networks:
 - They become the gateway of home local network (as UPnP/DLNA control point)
 - They display the broadcast content as well as the content delivered via the Internet



The Vision: Convergence finally becomes a reality (2)

- **Additional services:**
Linked with a broadcast programme or not, signaled in the broadcast and retrieved/delivered via the Internet: Enhanced Teletext, additional videos and audio streams, graphics, subtitles, e-commerce, e-health and much more
- **VoD/catch-up TV:**
Possible at the push of a button on the remote control, connecting to a broadcaster's video archive ("mediatheque") via selected portals
- **Powerful enhanced applications:**
Linking the processing power of (cloud) computers with the receive capabilities of broadcast/broadband terminals

IRT and the Future Internet: Networked Media (1)

- IRT is the Media Technology Institute of the fourteen Public Service Broadcasters of Germany, Austria and Switzerland
- We undertake joint R&D with other partners (industry, universities, research institutes, SMEs, etc)
- IRT is founding member of NEM (Networked and electronic Media)
- *We support the FI for improved service and IT access for all Citizens*

by

- Research and development
- Coordination of research clusters
- Standardization and specification activities (operational agreements)
- Policy Support (Regulations)
- Dissemination of results



IRT and the Future Internet: Networked Media (2)

- All knowledge areas of IRT can be involved:
 - *Platforms for Broadcast & Online Services (push, hybrid, IPTV)*
 - *Information Services (Applications)*
 - *Production Systems Television*
 - *Production Systems Audio*
 - *Network Technologies*
 - *Radiocommunication Systems*
 - *Frequency Spectrum Management*



IRT and the Future Internet: Networked Media (3) + transport/mobility - Our Research topics include

- Multimedia content search and retrieval
- Metadata generation and management
- 3D television and 3D sound
- Accessibility for all
- Network architectures and management
 - Peer-to-peer
 - Contribution networks
 - Seamless session handover
 - QoS/QoE
- Rights management systems (across platforms and networks)
- Spectrum management and cognitive radio
- Broadcast/broadband convergence (networks and services)
- Community-based services and contribution by users, quality assurance

*and
Traffic Information Systems*

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