

# Towards the Networked and Electronic Media (NEM) Initiative

- A Public Service Broadcaster's  
point of view -

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## Public Service Broadcasting [in Germany]

- Committed to serving the public on **three pillars**:  
*information*                      *entertainment*                      *education*
- **Business concept** is based on Free-to-Air (FTA) broadcasting
- Reception is by the **general public**
- Emissions are “**point-to-area**” NOT “point-to-point” or “point-to-multipoint”
- End-user remains **anonymous** (NO identification of the listener/viewer)
- The IRT serves the idea of public service broadcasting on a **technical** basis

## IRT und Public Service Broadcasting

- The IRT is the **R&D** institute of the public service broadcasters in Germany, Austria and Switzerland (ARD, ZDF, DRadio, ORF and SRG/SSR)
- The IRT is of **benefit to the public**
- Through **EBU** the IRT is contributing to the technical development of public service broadcasting in Europe
- The IRT is **open** for cooperation with all who are interested in broadcasted media techniques
- The IRT has been involved in numerous **collaborative projects** furthering the technical development of broadcasting with special emphasis on
  - Open standards, interfaces and protocols
  - Inter-working with other services (such as offered by telecom operators)

## Vision for 2015 – Some Key Areas

- Deployment of Digital TV
- Higher Definition
- Standardised production techniques
- Multimedia Broadcasting
- Convergence of Broadcasting and Telecom Services (mobile and stationary case)
- Interoperable DRM systems

AND

Agreed Standards, and agreed standards, and agreed standards  
and simple and easy-to-use systems

## Digital TV

- Digital TV has become a **huge success**: DVB-S, DVB-T and DVB-C
- 17% of all households in D are “all-digital”
- DVB-T has **high grow rates**: From June 2003 to October 2004, 1.22 Mio STB's had been sold  
(service only available in Berlin, Hamburg, Hanover, Bremen, Cologne and Frankfurt – other islands will follow in 2005/06)
- About 30 programmes are on air including data services such as MHP
- Full coverage anticipated in long-term based on “portable outdoor” service conception

## The Need for Higher Resolution in Digital Television

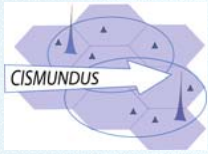
- There is definitely a **need** to increase the definition of the digital TV services
- Higher data-rates are required for lesser number of artefacts due to video compression (especially better **motion portrayal**), SDTV or HDTV?
- Higher data rates are also required to cope with the special display characteristics of the more and more popular flat-screen panels (**progressive** scanning, reduced viewing distance)
- 60 % of all 16:9 devices sold are flat panels (LCD or PDP), 15 % of them are truly **HDTV-capable**.
- **720p50** the reasonable compromise for near future?
- **1080p50** the ultimate production standard?

## Production for Broadcasting and Media Services

- Broadcast content is content to be **consumed**. For easy production, the technical challenge is the interoperability of equipment.
- Technical standards are needed for content handling, content management, content generation, content production techniques including **IPR** monitoring
- Content needs to be generated, processed, assembled and used in association with **metadata** such as UMID or IPR data
- Content exchange, storage and archiving needs standardised forms of **work-flows** by agreeing, *inter alia*, on common **file formats** such as MXP and common **API's** in the production environment
- Tools are needed for automatic or at least semi-automatic **content adaptation** (scaling or tailoring of content) to cope with a wide range of transmission and display characteristics.

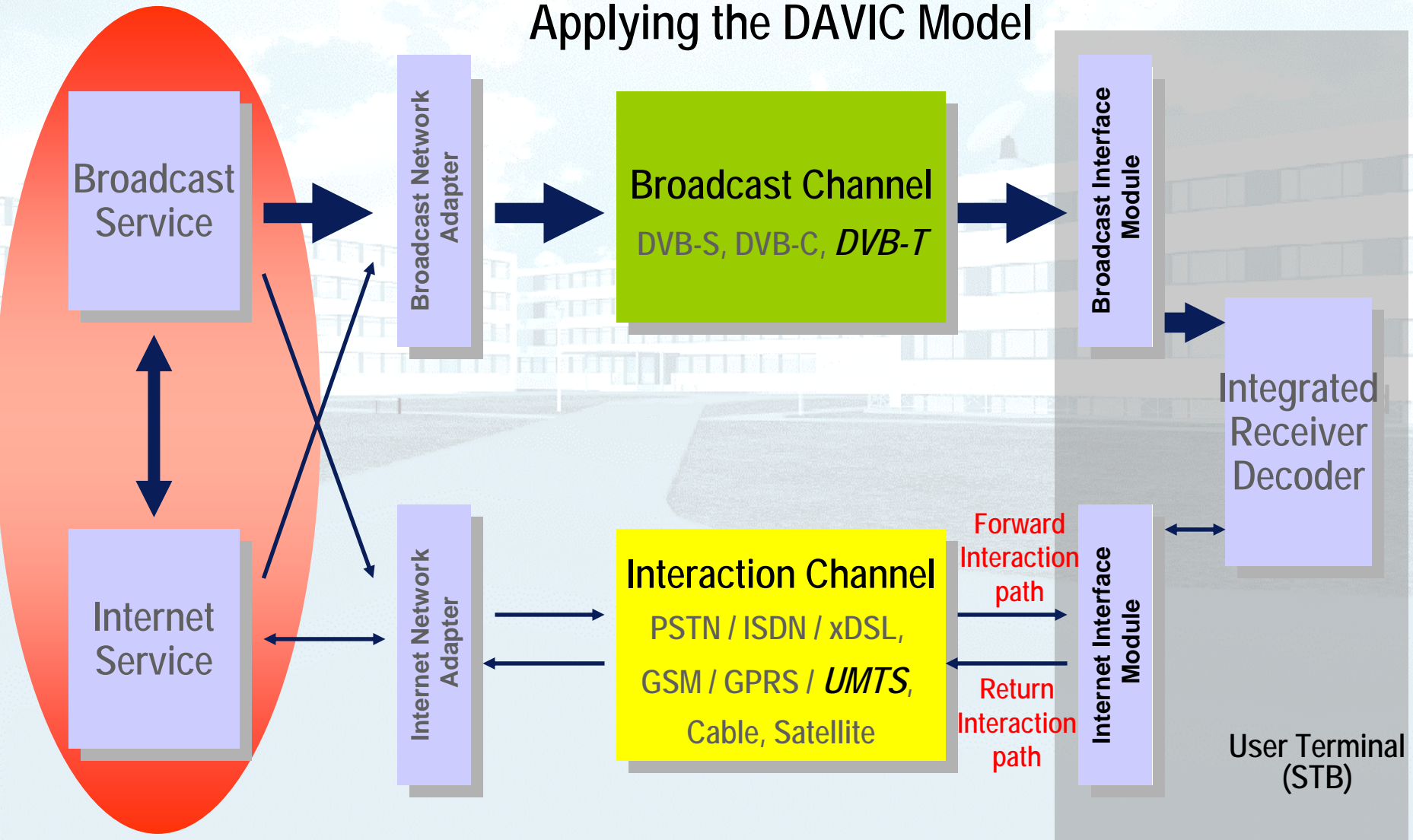
## Multimedia Broadcasting to Handheld Terminals

- Most young people state they would love **mobile TV** (and even watch daily soaps on the small screen of a handheld)
- Technical standards are needed for content and metadata handling, content management (DRM!), reproduction and **interaction** with the 2G or 3G return channel
- The **service** is important not the bearer of the transmission
- **DVB-T** or **T-DAB** are possible bearers depending on the complex media environment which may significantly differ between member countries (specific subsystems may be called DVB-H or DXB/DMB)
- **MPEG-2 Transport Stream and IP-Datcast** can equally be applied to both, the DVB and the DAB system variants
- **NO middleware** such as MHP has yet been specified for DVB-H or DXB



# Convergence of Services offered via Broadcasting and Telecom Services:

## Applying the DAVIC Model



## Convergence of Services offered via Broadcasting and Telecom Networks

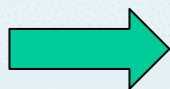
- **At home** Residential Gateway (BC, BB, HLN)
  - Critical element: OK button (lean-back situation)
- **On the move** Handheld/in-car terminal (BC, 2-3G, WLAN, PLN)
  - Critical element: Easy to use (touch screen)
- **In front of a PC** Laptop (BB, BC, any type of LN)
  - Critical element: Keyboard & mouse (lean-forward situation)
- **Interoperability** between components *and* **interworking** between services need to be ensured
  - **Standards and Protocols** need further investigation

## Overall DRM – The Big Challenge

- Interest of content **owners** or providers:
  - Total control of usage (consumption, storage, copying, handing-on, etc.)
- Interest of the **end-user**:
  - “Only model that works is paying once and using freely without any further restrictions” (Survey by Sceneo, April 2004)
  - Maintain control of private data
  - Secure usage of recorded content over many years to come
- Interest of **manufacturers**:
  - Justify the cost of DRM systems built in consumer electronics (or maintain copyright levies)
- Interest of **broadcasters**: Make it simple, no need for CA for FTA
  - Nonetheless, check P2P usage
- Interest of **Regulator** (EC HLG-DRM):
  - Requirement for compatible DRM systems satisfying the various interests

## Overall DRM – The Big Challenge

- There is general agreement that only those DRM schemes can work which are **accepted** by the (end-)user.
- There is also general agreement that any DRM system must **meet the business model** (in our case that of the public service broadcasters)
- A prime prerequisite is **interoperability** across **platforms** (STB....PC....Handhelds....Cell-Phones) and across **networks** (Broadcasting....fixed-line....mobile telcom...)



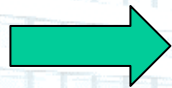
**need to be  
and (possibly)**

**Agreed Standards & Rules which  
established, validated  
certified**

## In General

- There are **different media landscapes** in each Member Country
- The end-user is fed-up with “plug and have the plague”
  - Interconnection of equipment must be really **EASY**
  - Interworking must be really **ASSURED**
  - Operation must be really **SIMPLE**
- So, the big challenge is “interoperability” for the **benefit** of the European citizen, the public services and all sectors in the business chain.
- **European policy** in the audio-visual area should support R&D aiming at
 

inter- be established, certified	Agreed Standards for interfaces and working protocols which need to validated and, where necessary,
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