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Interactive Multimedia

An Interactive Multimedia Presentation by

Brian Aldous

Head of Broadcast Technology R&D,
Communications & Information Industries Directorate,
UK Department of Trade & Industry

Chairman, ITU-R Working Party 6M

Vice Chairman, ITU-R Joint Task Group 1-6-8-9

Overview of ITU-R Working Party 6M

- Report by Chairman ITU-R SG11 (TV Broadcasting) to RA in 1993.
- Special Rapporteur Group on Interactive TV set up in 1994.
- Task Group 11/5 set up in 1997 to study the Return Channel for Interactive TV.
- TG 11/5 recognised the potential for Interactive services via Sound Radio - drafted Question for ITU-R SG10 (Sound Broadcasting) 1998.
- Joint Task Group 10-11 set up to study Application Programme Interfaces for Interactive services and Multimedia Evolution and Common Content Format 1998.
- SGs 10 and 11 merged to form SG6 (Broadcasting) and
- TG 11/5 and JTG 10-11 merged to form Working Party 6M (Interactivity and Multimedia) in 2000.

Working Party 6M Tasks

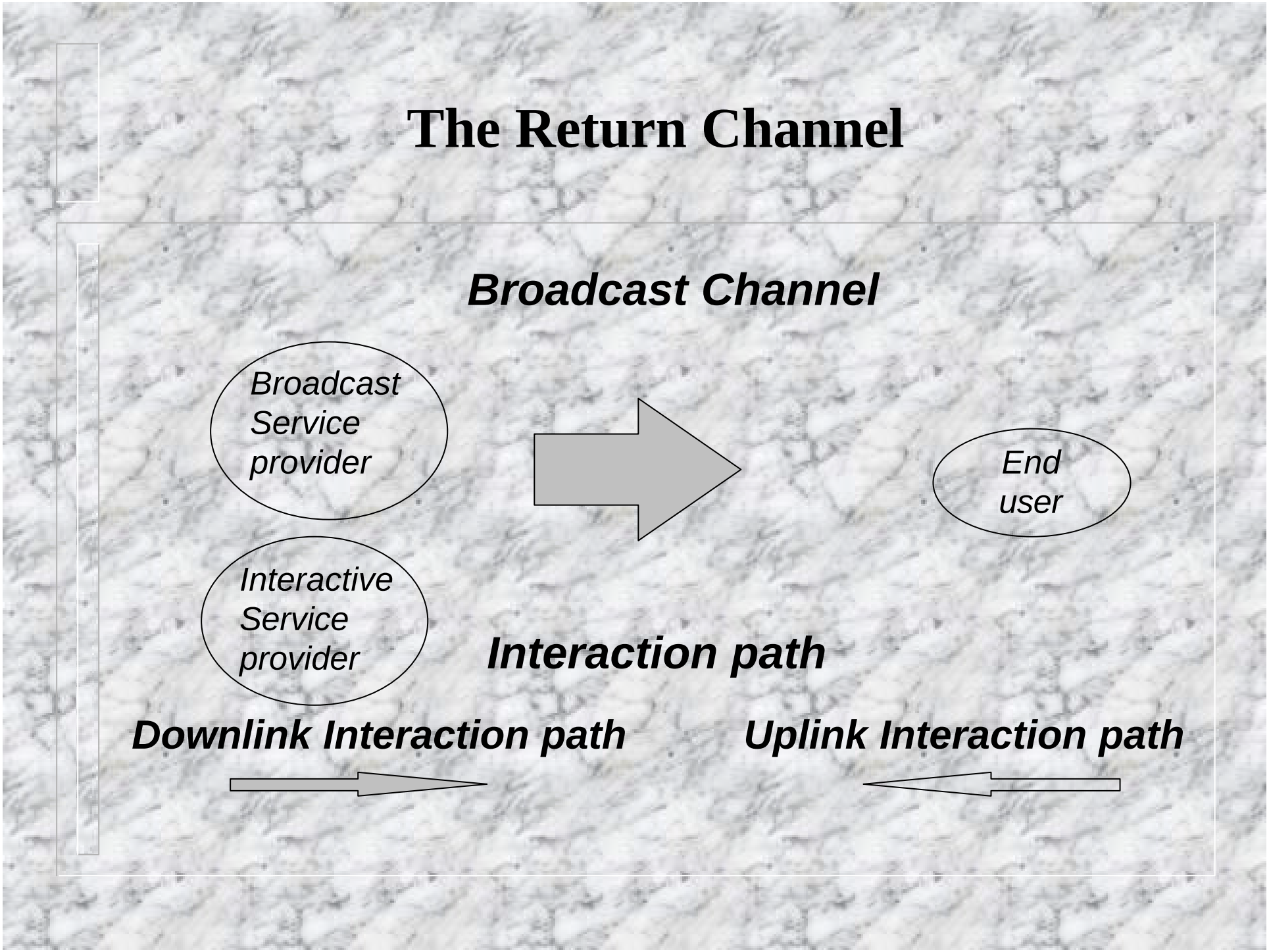
- WP 6M is responsible for interactive data and multimedia broadcasting for radio and television in the digital environment and for the interactive return channel.
- Objectives are to study, and seek to harmonise, systems for delivering data and multimedia services to radio and television receivers using terrestrial, satellite, millimetric or internet platforms and, through liaison with ITU-T Study Group 9, via cable TV platforms.
- Main tasks:
  - **Interactive Return Channel;**
  - **Spectrum Implications of Interactive and Multimedia Broadcasting;**
  - **Application Programme Interfaces, APIs;**
  - **Data Broadcasting;**
  - **Mobile Multimedia Broadcasting;**
  - **Digital Rights Management.**

What is Interactive Multimedia?

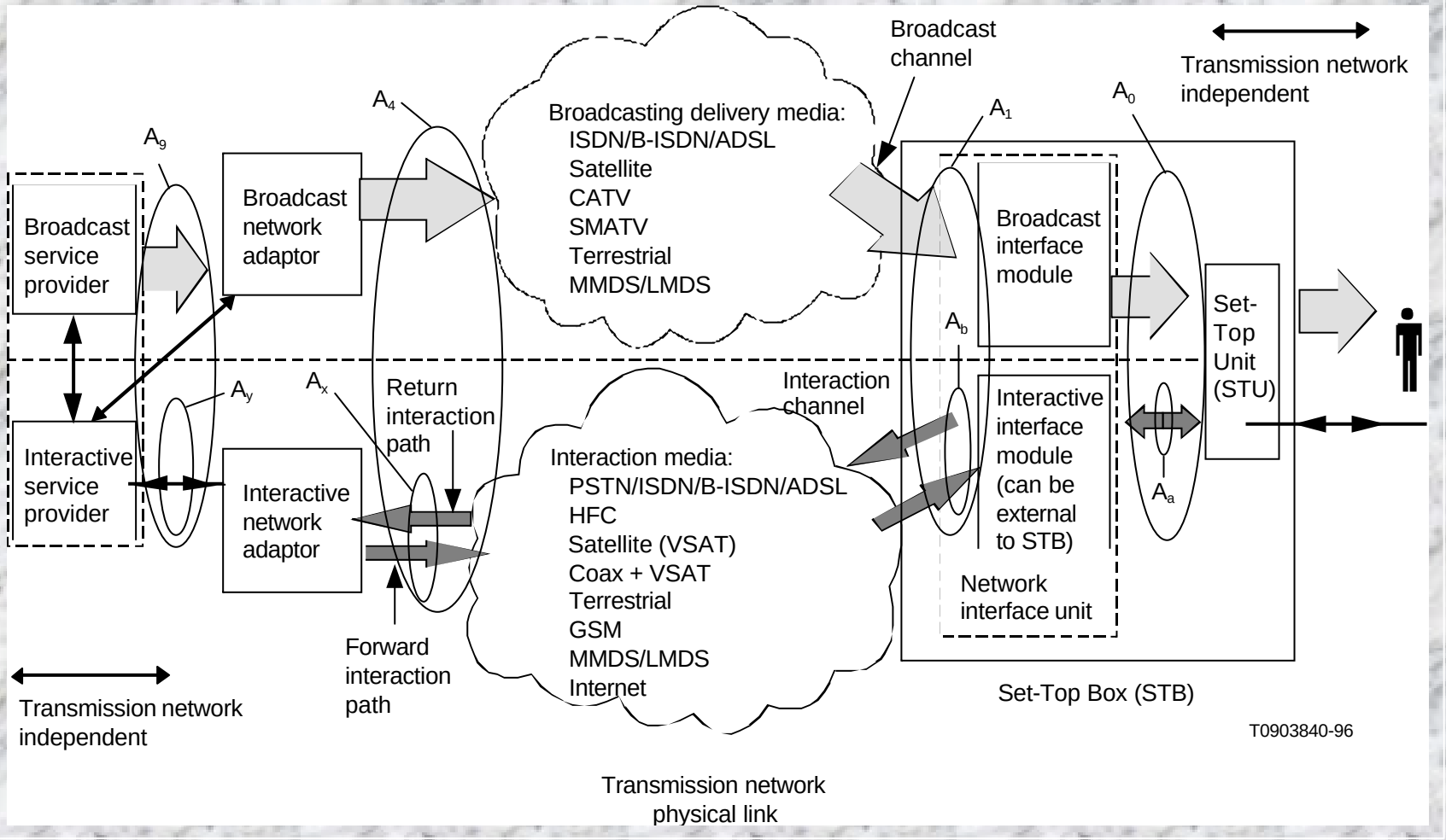
Multimedia Content that the user can interact with.

- Downloaded with broadcast material and stored in receiver - user interacts at the local level selecting different camera angles, different drama scenarios, catalogues of goods for sale, Electronic Programme Guides, World Wide Web pages, etc.
- Specific information requested by the User - implies the need for a channel to contact the broadcaster, the **Return Channel** (sometimes called the Interactive Channel), and a dedicated channel for the broadcaster to provide the information - the **Forward Interactive Channel** (sometimes called the Download Channel).

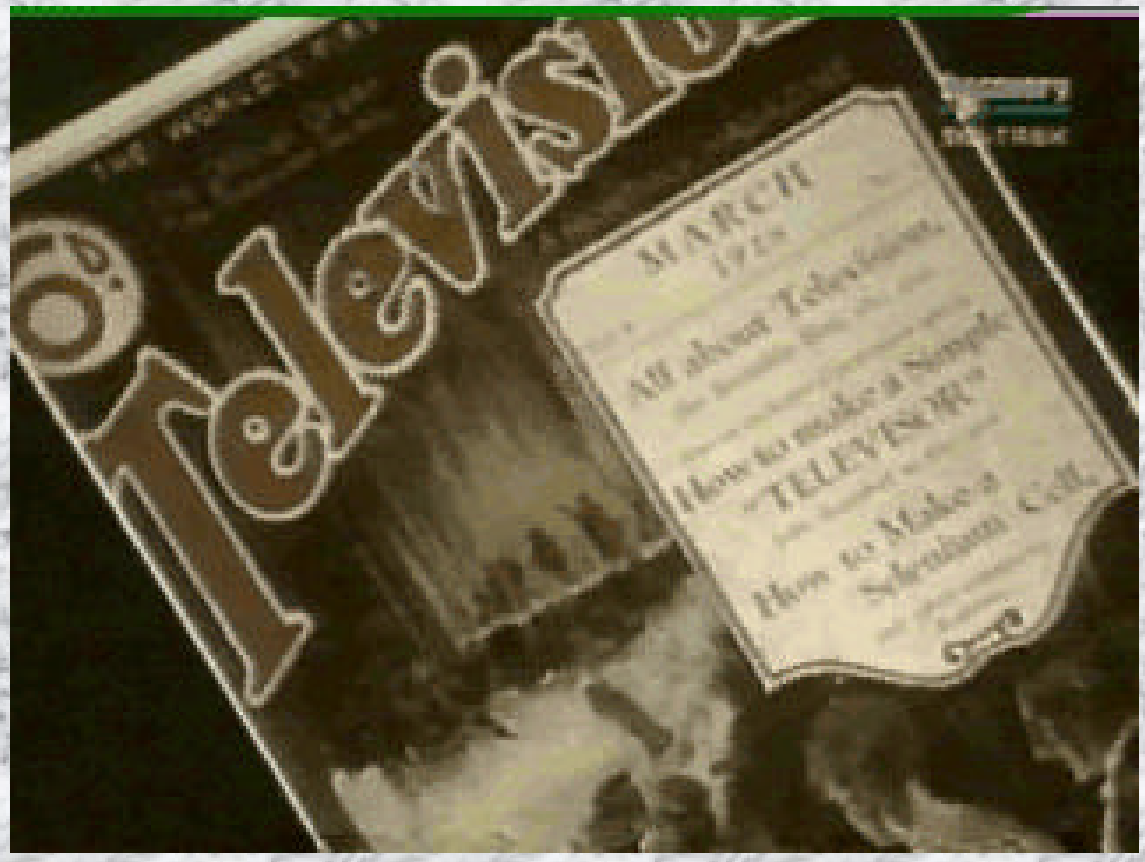
The Return Channel



Functional Reference Model



Existence of the Return Channel unwittingly suggested in 1925

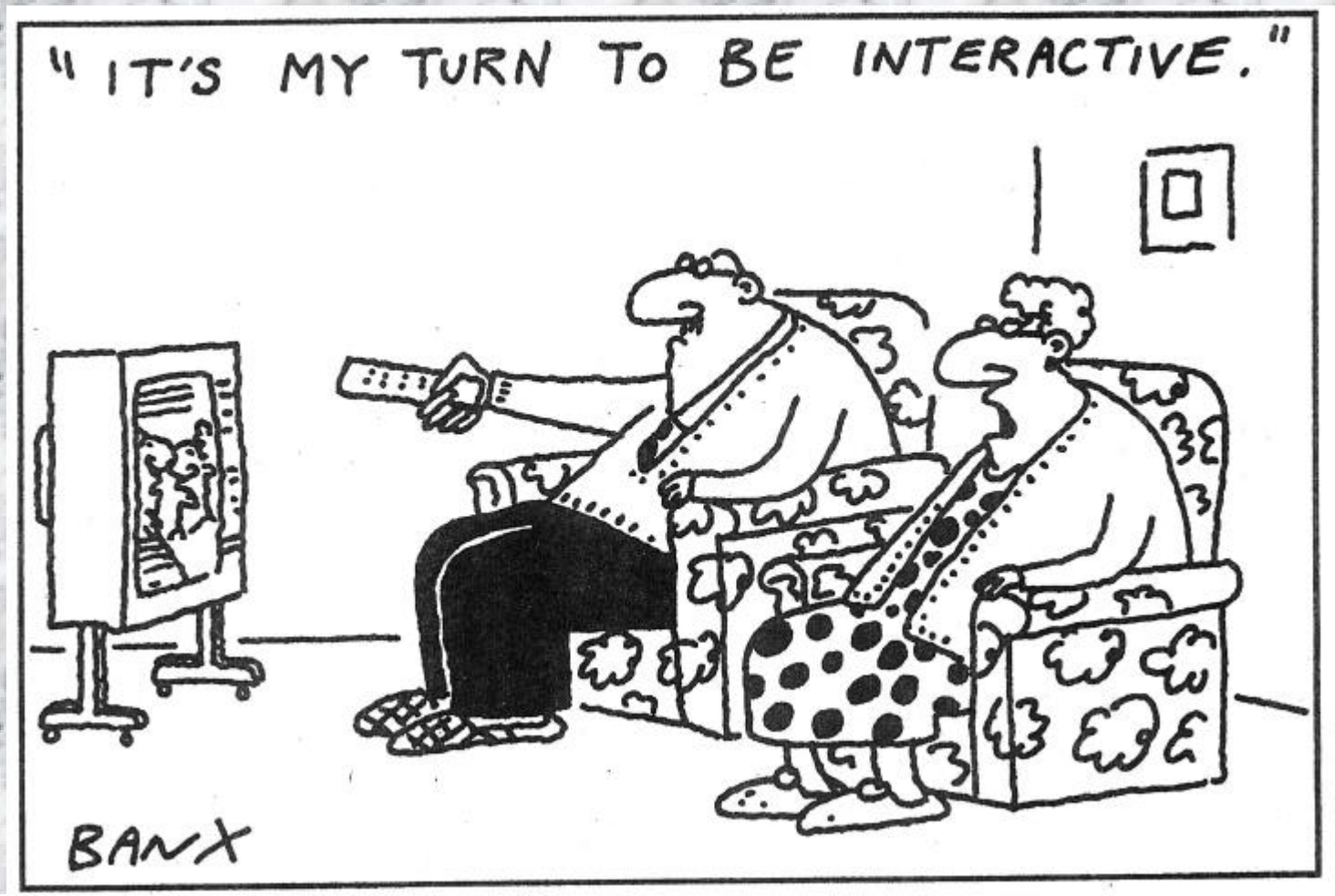


Fear that the BBC could see into your living room!

Not with analogue TV!

- Over air, terrestrial Return Channel very difficult with analogue TV systems, largely due to the difficulty of multiplexing together signals from many different users for transmission back to the broadcaster.
- Digital TV systems make for far easier multiplexing together of signals from different users for transmission back to the broadcaster.
- Data rate can be easily adjusted to suit applications - dynamic reconfiguration.
- Wide range of small digital input devices available - digital keyboards, hand held cameras, etc.
- Easy to use digital compression software available.

Interactive TV



FINANCIAL TIMES MONDAY OCTOBER 14 1996

ITU Return Channel Activity

- SRG set up by ITU-R in 1994.
- Recommendation ITU-R BT.1369 ‘World Wide Common Family of Systems for Interactive Television Systems and Services’ adopted by ITU-T SG9 and ITU-R SG11 in 1997.
- Followed by Recommendations, harmonised with ITU-T SG9, for Return Channels using PSTN, DECT, GSM and LMDS.
- System for a Terrestrial Return Channel in Europe standardised by ETSI in 2001 - now being studied by ITU.
- System for Satellite Return Channel developed by ITU-R WP6S.

Sky Handset

‘The Guide’
Sky’s EPG

Interactive button

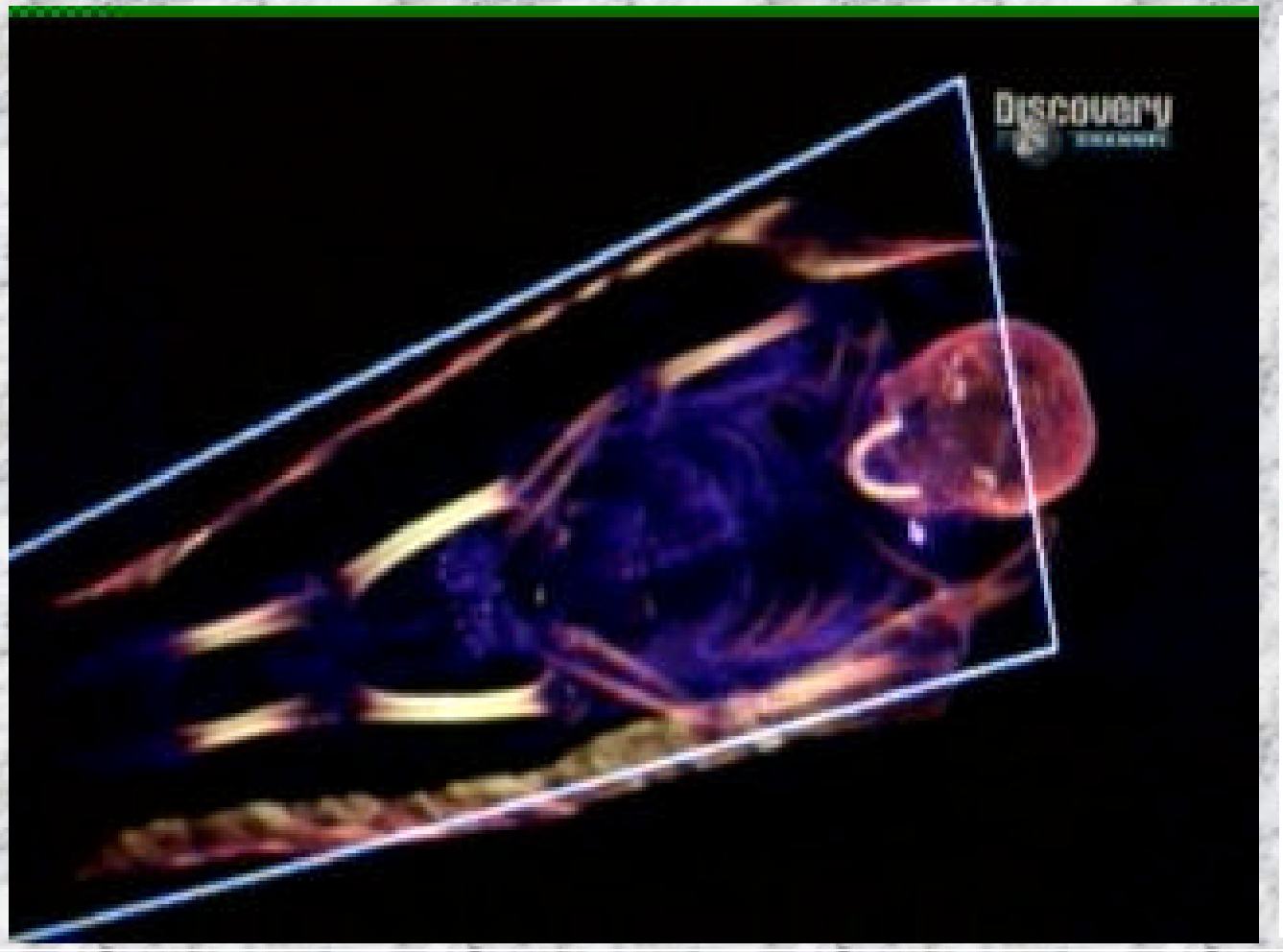
Navigation
Up, Down, Left, Right
Select in centre

Back to previous level

‘i’

The Information button

Sky Interactive Session



Spectrum Requirements

- WRC 2003 to study spectrum requirements for delivery of Terrestrial Wireless Multimedia.
- JTG 1-6-8-9 set up from ITU-R:
  - SG1 - Spectrum Management;
  - SG6 - Broadcast;
  - SG8 - Mobile;
  - SG9 - Fixed Wireless Access.
- WP6M contributing, along with WP6E, to the broadcast requirements for Terrestrial Wireless Multimedia.

Application Programme Interfaces

- API to run Multimedia Applications.
- Different Multimedia delivery Platforms:
  - TV - ATSC, DVB, ISBN, OCAP;
  - Sound Radio - DAB, ISDB, US Digital Radio, WorldSpace;
  - Internet.
- Need to ensure a degree of harmonisation to bring about the evolution of common content authoring.
- JRG set up between ITU-T and ITU-R to study harmonisation between the different TV platforms.

Joint Rapporteur Group

- JRG set up to allow ITU-R WP6M and ITU-T SG9 to harmonise standards for the delivery and international exchange of interactive multimedia material
- Three sub –groups:
  - **Content Requirements**: addressing the requirements of the Content community for programme creation, advertising and broadcasting;
  - **Resource Requirements**: addressing the technical solutions in terms of memory, processing power and speed, bandwidth, latency, etc. to implement the content requirements;
  - **Commonality**: cataloguing the existing worldwide interactive television standards and identifying commonalities, with the objective of identifying a ‘common core’ with the least regional variations.

Data Broadcasting

- SRG surveying existing worldwide standards for data broadcast and aims to draft a new Recommendation that will harmonise data broadcast standards for international programme exchange.

- Organisations that have developed, or are developing, standards for digital TV data broadcasting include:
  - Advanced Television Systems Committee, ATSC;
  - Association of Radio Industries and Businesses, ARIB;
  - Digital Video Broadcast, DVB;
  - Society of Cable Telecommunications Engineers, SCTE;
  - Cable Labs, Open Cable.

Mobile Multimedia

- WP6M is also addressing delivery of multimedia within the mobile environment.
- Currently working on including the delivery of multimedia content to vehicles via the Digital Audio Broadcast (DAB) Traffic Protocol Expert Group (TPEG) system into the overall harmonisation of systems for delivering interactive multimedia.
- Set up Liaison with ISO Technical Committee 204 Working Group 10 which is currently standardising the TPEG specifications.

Digital Rights Management

- Analogue broadcasting and receiving systems - poor quality copies.
- Digital broadcast and receiving systems - every time a perfect copy.
- New home recording systems, including:
  - TiVo, Replay, TV Anytime;
  - PCs with TV tuners and massive hard disc storage;
  - Home DVD recording devices.
- Content authors need new systems to protect their property.

UK Uptake

Over one third of all UK households can now access Interactive Multimedia services.

Out of some 23 million households:

- 5.5 million receive di8gital satellite TV;
- 1.6 million receive digital cable TV;
- 1.4 million receive digital terrestrial TV.

- **Total - 8.5 million households - 36.9%**

Acknowledgements

- Other ITU and DTI colleagues for helpful comment and discussion.
- Discovery Channel: Video Clip from the story of early TV.
- BSkyB: Sky EPG and Sky Active pages.
- Panasonic: Picture of satellite Digi-Box Remote handset.
- Financial Times: Interactive Cartoon.
- Jim Davis: Garfield comic strip.

Electronic Copies

This presentation is available on the ITU-T web site at:

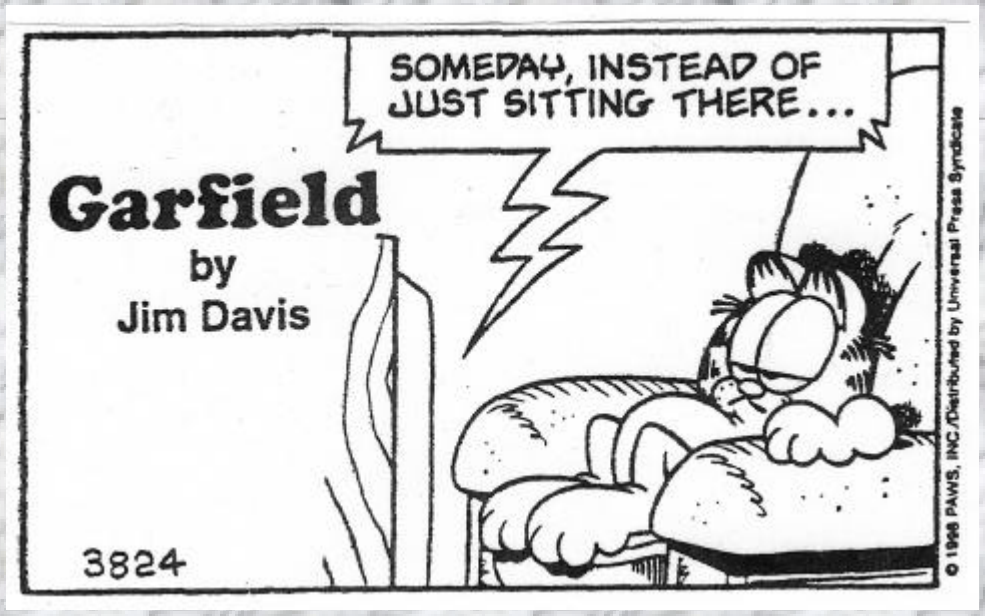
http://www.itu.int/ITU-T/worksem/ipcablecom/program.html

Or at:

http://www.itu.int/itudoc/itu-t/workshop/converge/s5pm1-p1.html

- Basic PowerPoint Presentation (Zipped): s5pm1-p1.ZIP, 5.5 mb
- PDF (acrobat): s5pm1-p1.PDF, 815 kb
- Zipped PDF: s5pm1-p1_pdf.ZIP, 621 kb

…. and finally!



Thank you for your attention!