

# DTV Data Services – Experiences Of The Rollout On UK-DTT

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## *Introduction*

- Need for new DTV receiving equipment creates an opportunity to introduce new multimedia “application environments”
  - Support for “InteractiveTV”
- BBC already has a number of DTV data services on-air and available to the UK public
  - Further service launches and trials are in progress
- BBC’s initial work based on data broadcast
  - “Interactive” refers more to viewer experience
- This is an overview of the BBC’s involvement in the development of such DTV data services

# *Viewer Expectations*

- For many Teletext has been only exposure to an on-screen information service
  - 15m viewers use CEEFAX each week
  - Criticised for “look and feel” and speed of access
  - Content creation is relatively easy
  - Simple and consistent navigation for all services
- Maintain appeal of television data services in the face of competition from other information sources
  - Rapidly expanding access to the Internet
- Need for DTV to improve the services offered

# *Application Environment for UK-DTT*

- UK-DTT has operational model similar to analogue television
  - No single network operator
  - Multiple sources of receivers and equipment
- Need for specification capable of supporting open and interoperable receiver market
  - Core specification based on two ISO standards, DSM-CC Object Carousel and MHEG-5
  - Many other existing standards also included

# *DSM-CC Object Carousel*

- Digital Storage Media - Command & Control
  - MPEG-2 Part 6
- Implements a “broadcast server”
  - Using cyclic retransmission of files
- Features include
  - Variable (virtually unlimited) file size
  - File compression
  - Directory objects
  - Strong links to other parts of MPEG specifications
- Criticisms regarding “weight” of protocol not really an issue in practice

# MHEG-5

- Multimedia and Hypermedia Expert Group
- Object based presentation environment
  - Mainly declarative so ideal for low-resource platforms, e.g. DTV receivers
- Features include
  - Range of pre-defined classes (object types)
  - Explicit positioning of visible objects
  - Event driven with a range of event sources
- Criticisms regarding deployment no longer apply

## *Profiling the Standards*

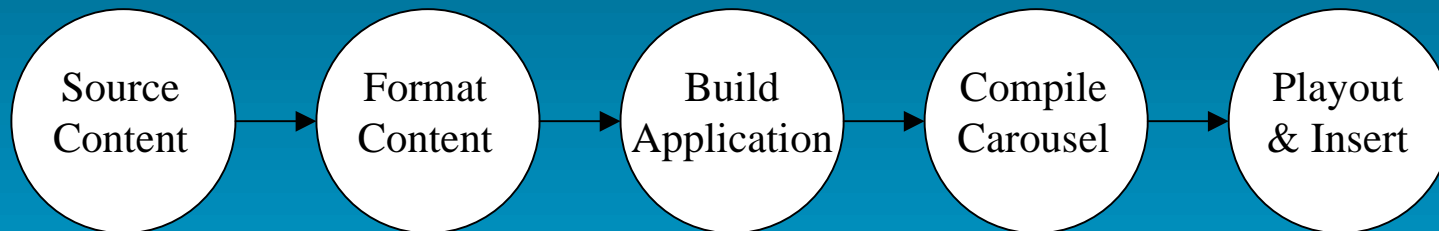
- Simply selecting standards does not create a receiver specification
  - Profile created based on capabilities of current receiver technology
- In UK-DTT, basic application description and execution not as challenging as other issues
  - Avoiding “legacy” issues
  - Ensuring consistent and deterministic presentation
- Applies equally to other open specification initiatives, e.g. DVB MHP

# *Implementing Open Systems*

- Potential to source equipment from a number of independent manufactures
  - But need to have sufficient opportunities to encourage such a market
- Raises the issue of interoperability
  - In UK-DTT currently, at least
    - 3 independent head-end sources
    - 3 independent service providers
    - 4 independent receiver implementations

# Implementing Open Systems: “DIY”

- Can develop equipment and systems in-house
  - For the launch of UK-DTT services BBC has implemented an end-to-end chain in-house



# *Supporting Multiple Platforms*

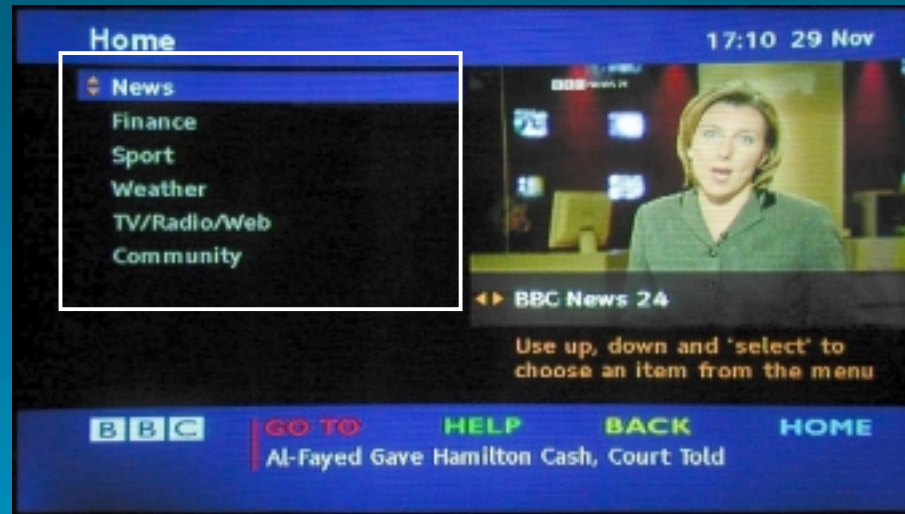
- BBC is committed to supporting all DTV delivery systems in the UK
- Application environments being implemented in the UK vary between delivery systems
- “Technical” issues include differences in
  - Application encoding and functionality
  - Content encoding and presentation
  - Application creation and playout tools
- Editorial issues may be as challenging
  - “Style guidelines” for layout and navigation

## *Rollout of BBC Services*

- DTT receivers supporting broadcast data services are already with the public
  - DigitalText and Parliament on-air to public
  - Knowledge trial ongoing
  - Wimbledon '99 - "EnhancedTV" pilot
- Rollout on DSAT and DCABLE is dependent on the timetables of the network operators
  - Providing necessary receiver functionality
  - Willing to support third party content
  - Availability of tools and support from (mainly proprietary) system providers

# DTT DigitalText

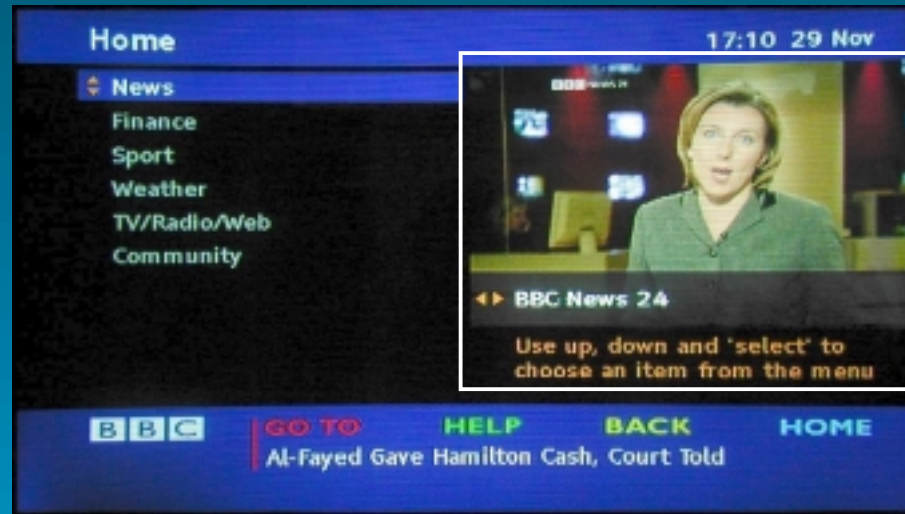
- CEEFAX replacement service



Menu driven navigation

# DTT DigitalText

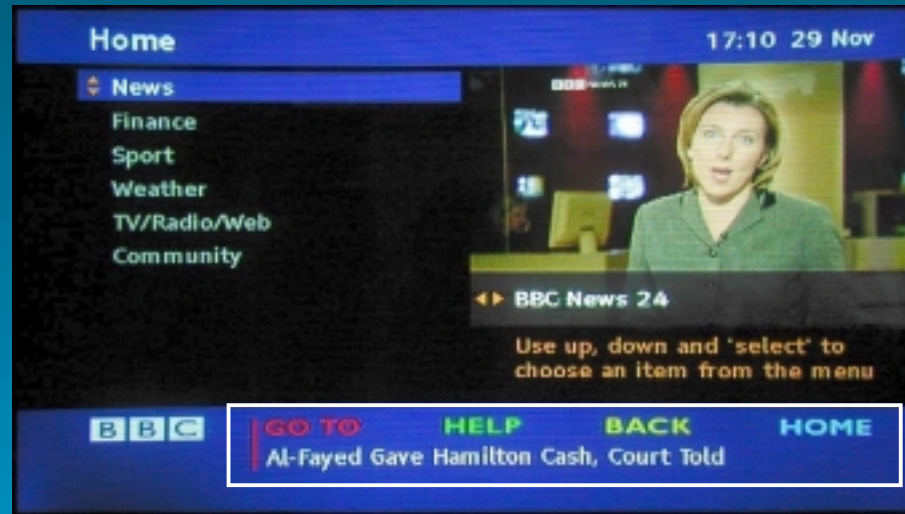
- CEEFAX replacement service



Select “background” video and audio

# DTT DigitalText

- CEEFAX replacement service



“FastText” functionality, e.g. link to other stories

# DTT Wimbledon '99

- “EnhancedTV” pilot



Video switched between full and quarter-screen under user control

# DTT Wimbledon '99

- “EnhancedTV” pilot



Stylised menus

# DTT Wimbledon '99

- “EnhancedTV” pilot



Improved ability for branding

# DTT Wimbledon '99

- “EnhancedTV” pilot



Enhanced graphics

# Summary

- Developing open and interoperable systems is challenging, but early feedback regarding UK-DTT application environment is promising
  - Positive news for similar initiatives, e.g. DVB MHP
- Content providers in the UK facing the problem of supporting a range of different application environments
- Progress on DTT shows that new DTV application environments are capable of supporting interesting and usable broadcast applications

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