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# MHEG-5 Standardisation

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# Agenda

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- Introduction to IMPALA and members
- Introduction to MHEG-5 Technology
- MHEG-5 market reach
- MHEG-5 roadmap: MHEG-5 on PVRs, HD, IPTV

# MHEG-5

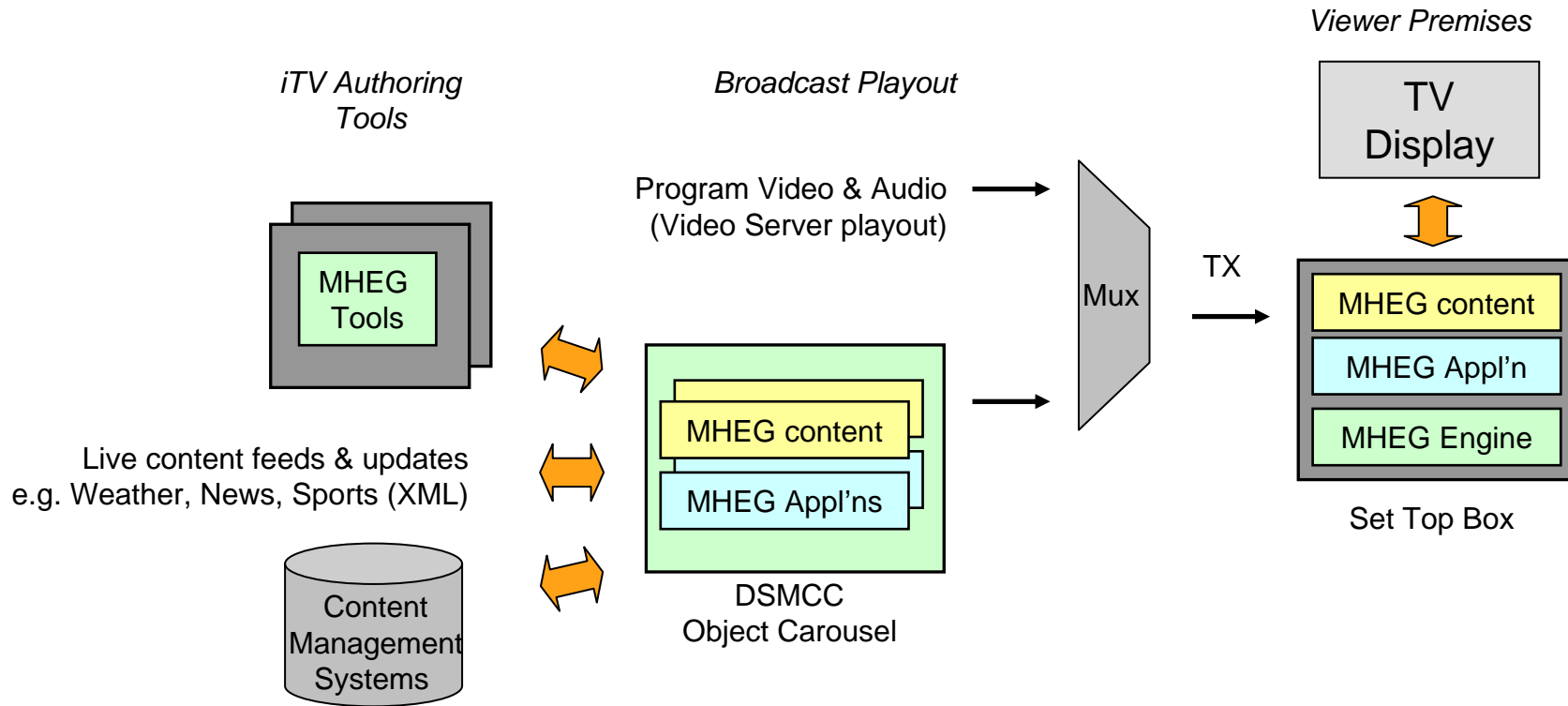
- Developed in ISO-MHEG group and DAVIC in 1995
  - Intended as UI for DAVIC interactive services and VOD
  - Simple object oriented interpreted language
- Standardised in ISO 13522-5 and adopted by UK DTG in 1997
- UK Profile includes text, graphics and DSM-CC carousel systems
- Profile evolved to UK Profile 1.06 (current); ETSI standard ES 202184
- New international profiles extend the UK profile:
  - New Zealand - extra Maori characters and EPG key
  - Hong Kong - Traditional Chinese font
  - Singapore / China - simplified Chinese font
- Extensions under development within DTG for deployment in 2008:
  - IP Interaction Channel (return path)
  - Improved graphics
  - HD compatibility and support
  - PVR support

# What is MHEG-5?

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- Simple object orientated programming language
  - to control presentation of content made up from audio, video, text and still graphics objects
  - to provide user interaction with the application
  - supporting real time video and audio presentation
  - focussed on TV requirements
  - low overhead and high speed
- A complete environment including
  - Authoring tools and data systems
  - Broadcast transmission using DSMCC Object Carousel standard and optional IP-based connectivity
  - Middleware – the MHEG middleware or ‘stack’ that is resident in the STB. This provides an API on which interactive applications can run

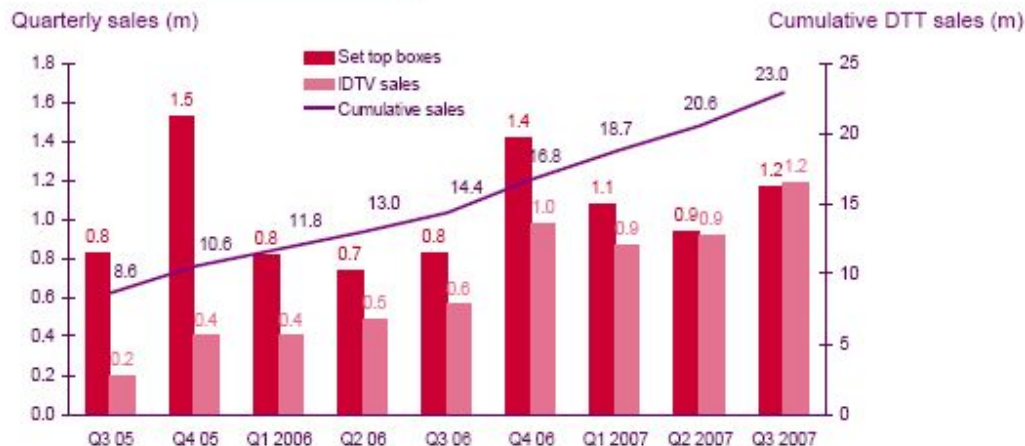
# MHEG System Architecture



- UK – Freeview report over 26.8 million receivers sold to Q4 2007

3.16 Between Freeview's launch in October 2002 and Q3 2007, almost 23.0 million DTT units have been sold. This includes over 7.2 million IDTVs and over 15.7 million DTT set-top boxes.

**Figure 15: DTT cumulative sales** since launch of Freeview in 2002



Source: Sales figures from GfK, as adjusted by Freeview.

- Q4 product split – 2.1m iDTVs; 1.7m STBs

- Joint venture between BBC and ITV
- Launches in UK in May 2008
- Over 80 channels in SD and HD
- Free to view – no subscription
- Standards:
  - DVB-S/S2
  - SD/HD MPEG-4
  - MHEG-5
- Available to 98% of UK homes

# MHEG-5 Rollout



- Successfully deployed in UK Freeview
  - >26.4m receivers sold
- Launched in New Zealand in May 2007
  - DVB-S receiver sales over forecast so far (already >40,000 units)
  - DTT launched April 2008 with MPEG-4 HD and MHEG-5
- Will launch in India and in Hong Kong in 2008
- Trials and evaluations in Ireland, Malaysia, Singapore, Turkey, and Russia with interest from other countries in Europe and Asia
- Wide integration into iDTVs in Europe
  - 50% of receiver sales now iDTV...MHEG all products in most leading brands
- MHEG is included as the UI for new Common Interface spec (CI+)

# MHEG-5 Country Profiles

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- Only specify what is required for each market to reduce font license costs and memory requirements.
- Based on UK Profile 1.06
  - New Zealand (adds Maori character set & EPG key)
  - Malaysia (adds EPG key)
  - India (adds Indian languages and EPG key)
  - Ireland (adds Gaelic character set and EPG key)
  - Hong Kong and Singapore (adds Traditional and Simplified Chinese characters)

# MHEG Extensions for 2008

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- Interaction channel (Return path)
- HD support
- Specification work underway within DTG
  - Will output to ETSI for standardisation
  - Conformance tests being built by DTG Testing
- PVR Support
- New version of Common Interface CI+ will use MHEG for user interface

# Hybrid TV systems

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- Broadcast delivery of content and applications
  - is well established
  - has powerful economics for mass distribution
- Addition of IP network delivery enables
  - extended delivery of content
  - from broadcaster or other source
- Can provide seamless user experience in transition between delivery modes
- Interactive applications should be portable between delivery modes

# MHEG Interaction Channel

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- Extension of Profile to add ‘always on’ IP connection
  - Connected to home network
- Enables
  - Seamless extension of interactive services using content from broadcaster-defined servers
  - Commercial transactions
  - Security
- Now under development for use in 2008
  - Including conformance test regime
- IPTV extensions under discussion
  - MHEG control of presentation of streamed and possibly downloaded a/v from IP source
  - Enables broadcaster-controlled IPTV / “catch-up TV”

# Key points

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- Delegation of network connection to device
- MHEG extensions for connection events
- Hybrid file-system enabling
  - consistent use of objects from DSM-CC or HTTP delivery
  - seamless user experience
- Security based on trusted broadcast
  - Server access restricted to broadcast server list
  - Certificates delivered in broadcast

# Specification progress

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- UK DTG Group
  - Includes CE, operator and broadcast contributors
- HD extensions is editing phase
- Interaction Channel in final editing
  - Simple IPTV extensions to come
- Work to present to ETSI
  - to follow during 2008

# Conformance Regime

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- A tough conformance regime, using Pass/Fail tests to achieve acceptance, is recommended for
  - SI, Subtitles, MHEG-5, RF, OAD, AFD, etc
- MHEG profile has ~ 350 tests
  - Stable, managed, licensable test suite
  - Development programme in place for extensions
- Can be operated by or licensed from DTG
  - Including subcontracting test work to DTG
  - or licensing for local independent test operation

# ITU Status

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- Current ETSI specification ES 202184 now informative reference in Rec. 201
- Could we make this a normative reference?
- Can we include imminent extensions in ITU workplan and future normative recommendations ?

# Thank you!

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