Interoperability: its complexities, pitfalls and solutions

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The DTG
The DTG

• The DTG is the non-profit UK collaboration centre for innovation in the digital media technology
• Formed in 1995
• All stakeholders collaborate on implementation of digital TV standards
• The D-Book defines the UK’s DTT platforms
• Universally deployed system including interactivity which works
• Industry test house created in 2001 to ensure compliance to specifications
• Hosts the world’s largest collection of receivers – the DTG Zoo
Interoperability

- Oxford English Dictionary definition:
  - The ability of computer systems or software to exchange and make use of information.
Interoperability

- WhatIs.com definition

Interoperability is the ability of a system or a product to work with other systems or products without special effort on the part of the customer.
Interoperability - complexity rises with Functionality

- Reliable pictures and sound
- Channel numbering and programme guide
- Correct colour rendition and bit-perfect audio
The D-Book

DTG DTT Platform Steering group

DTG SI Group
DTG MHEG Spec group
DTG HbbTV Spec Group
DTG RF Group
DTG receiver recs Group
DTG Platform Test group
Principles

• Profile based on international standards
• Produced through collaborative approach
• Where appropriate deliver harmonisation with other international bodies
  • Assists manufacturers and service providers to deliver products to market
• Clear use of language
  • Shall, may, should.
• Features only introduced where there is a guarantee or shared wish to implement on the platform
Managing Interoperability

• Founded in 2000
• Supports the DTT receiver industry
• Develops DTG test suite in support of D-Book
• Testing services carry out conformance testing for Freeview and Freesat trademark licences
Achieving conformance

Number of test cycles required by devices to pass the conformance testing

- 1 - Passed 1st time: 0%
- 2: 43%
- 3: 18%
- 4: 29%
- 6: 7%
Incentives to achieve conformance

UK FreeviewTML Process

1. Specification
2. DTG Testing
   - DTG run conformance test and produce report
3. Freeview
   - Freeview Platform Management Committee considers concessions if requested
   - Manufacturer provides model and chassis information to DTG zoo

German DVB-T2 HD

1. Specification
2. Testing
   - Results, application and sample supplied
3. Deutsche TV-Platforms
   - DVB-T2 HD
Maintaining interoperability

- DTG Zoo
- Test broadcast changes
- Issue resolution
- DTG Engineering Channel
Case Studies

2008 Freeview update
250,000 set-top boxes broken by upgrade
All set-top boxes made without using D-Book

2014 Over-air download
Engineering channel member – D-Book conformant
Download fully tested and approved
Non conformant product in the market had a bug
Up to 400,000 products went blank.
Issue resolved by DTG testing in collaboration both affected manufacturers
Thank you

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