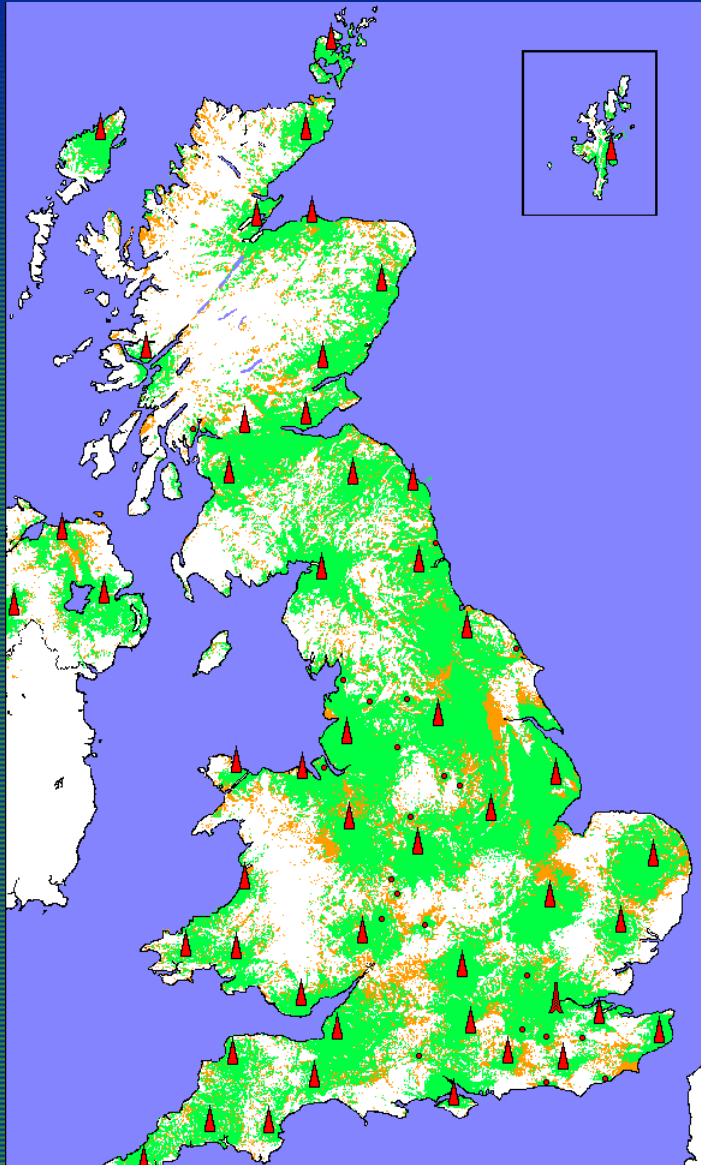


DTT in the UK: key success factors

Martin L. Bell, *Director of Communications, DTG*



UK Digital Terrestrial

- **6 digital networks co-existing with 5 analogue networks;**
- **DVB -T, 2K carriers, MFN,**
4 muxes: 16QAM; $R_c=3/4$, $T_u=1/32$
2 muxes: 64QAM, $R_c=2/3$, $T_u=1/32$
- **total data rate 120Mb/sec**
28 TV, 16 radio, 4 text services;
- **TX power 17dB below analogue**
- **Core coverage 74% households**
from 80 transmitter sites
(analogue: 99.4% from over 1000 sites)

What is the Digital TV Group?

- **The DTG is a DVB ‘User Group’ supporting the adoption of DVB standards worldwide;**
- **It provides an interoperability test regime for open-market products in digital television;**
- **It gives market support and promotion for digital technology in home entertainment systems;**
- **It is an industry lobby group to government and regulators in favour of open standards and horizontal markets.**
- **it supports the Government-backed Digital Action Plan**

DTG membership

Broadcasters:

BBC, BSkyB, ITV, ITVA, Carlton, C4, C5, S4C, QVC, TDN

Transmission companies:

Crown Castle, NTL Broadcast, Telewest

Regulators

ITC, DCMS, DTI, Oftel

Associations:

CAI, Consumers Assoc, Deaf Broadcasting Council, Hearing Concern, Intellect, RNIB, RNID, RTS

DTG membership

Retailers:

Comet, Boxclever, Dixons, Retra

Manufacturers:

Daewoo, Hauppauge, Hitachi, Humax, JVC, LG, Maxview, Micronas, NEC, Netgem, Nokia, Novapal, Pace, Panasonic, Philips, Pioneer, SAGEM, Samsung, Sanyo, Sharp, Sony, Tality, Teledis, Thomson, Toshiba

Technology providers:

BTexact, Cabot, Conexant, Eldon, Ezcom, Frontier Silicon, Imagination, Labgear, LSI Logic, NDS, Pioneer, SCM Microelectronics, S&T, Sysmedia, Tandberg, Techsan, Triax, Zarlink.

DTG Milestones - 1

creation of UK 'D' Book; promotion of DTT concept based on open standards

early support for DVB; founder member of DigiTAG

early evaluation of available APIs and adoption of MHEG-5

early information campaign to retailers and aerial installers: provision of coverage database

publication of industry-agreed guidelines, notably on widescreen switching

DTG Milestones - 2

establishment of DTG Testing Ltd

DTG study '*Impediments to Analogue switchover*' leads to Action Plan concept




industry and consumer promotion of free-to-view DTT throughout 2002 (*post ITV Digital; pre Freeview*)

**Publication of an initial series of 10 Technical Monographs
study on DVB-T modes prepares for change to 16 QAM**

Digital Broadcasting in the UK:

- Summer 1998** Digital TV launched on satellite (BSkyB)
- November 1998** Digital TV launched on DTT
- September 2001** BSkyB ceases analogue transmissions
- April 2002** ITV Digital closed down by its shareholders
- November 2002** Freeview channel line-up launches

UK Digital TV Take-up

		Oct 2003 est	%age TVhh est	Q2 growth
	BSkyB	7.0 m	28.3%	+ 2.8%
	DCable	2.2 m	8.9%	+ 1.8%
	DTT	2.2 m	8.9%	+11.2%

source: DTG estimate

source: ITC Multichannel Quarterly

Nearly 50% of UK TV households have digital TV
Free to air DTT is digital TV's fastest growing sector

The Revolution:

Market reaction

Wide range of free-to-view adapters now available

Sales currently 25,000 per week

iDTV sales growing strongly

Product diversity imminent: twin tuners, integrated PVR, integrated DVD-R, integrated DAB, PC card

Free-to-view digital converter boxes

prices start at £50 (☐69)



Bush	Nokia
Daewoo	Pace
Dijam	Packard Bell
Echostar	Panasonic
Ferguson	Philips
Fusion	Pioneer
Goodmans	Sagem
Grundig	Samsung
Hauppauge	Sony
Humax	Stromg
Labgear	Thomson
Netgem	Triax

Integrated Digital TVs



Bush

Fusion

Goodmans

Humax

LG Electronics

Panasonic

Philips

Sharp

Sony

Toshiba

Key success factors

Regulator fast-tracked licence reallocation

All free-to-view line-up appeals to many non-pay homes

DTT offering now complements DSat and DCable pay

low cost receivers; second boxes increasing

BBC required to promote digital TV

**coverage improvements and use of postcode database
have greatly reduced returns**

cross-industry approach to technical issues arising

Conformance & Interoperability Issues

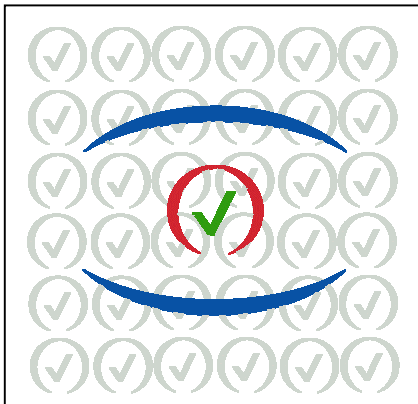
Vertical market operators ensure conformance by contract;

In the horizontal market there is no authority to ensure conformance - it relies on voluntary agreement and the manufacturer's liabilities;

The DTG is providing a testing house for manufacturers of product for UK market;

Conformance is an issue for head-end equipment and for software applications also.

DTG Test Centre



Services to Industry

www.dtg.org.uk/testing
info@testing.dtg.org.uk

Receiver Conformance Testing
testing to UK 'D' Book specification

Test Materials
for MHEG-5, SI/PSI, Audio,
Audio Description, Object Carousel

Interoperability Testing
pre-broadcast testing of interactive
applications

Development Support
dry hire of Test Centre facilities

Engineering Channel
pre-broadcast validation of downloads
and schedule management

Current DTG outputs

Guidelines for the use of Benchmarked Aerials

jointly published with the Confederation of Aerial Industries

Object Carousel Interchange Specification

for the exchange of MHEG-5 and other content between different authoring systems and carousel generators

'I-Book' - Recommendations for the Provision and Display of IP Services on TV

principally concerned with TV browser compatibility issues

MHEG-5 v1.06 Specification

Updated and improved: submitted to the ETSI-MHEG group

TDN-DTG Joint Receiver Specification

updated functional specification: will also appear in revised 'D-Book'

Current DTG projects

Mobile TV Applications Group

looking at possible new services using spectrum released at switchover

Production Systems Group

working on publication on High Definition TV programme-making

PVR Group

establishing a TV Anytime testbed

Schedule Delivery Group

working on open standard system to service EPG for low-cost digital converters and requirements for TV Anytime devices

Wireless Home Network Group

conducting feasibility study for a Digital Video Sender for home distribution at 5.8 GHz

Common Authoring Group

defining common authoring for delivery to multiple platforms

Reports to Government Departments

PRODUCT AND INTEROPERABILITY TESTING AND SUPPORT

The main recommendations centre on learning from the vertical market experience, and investigating how the weaknesses and gaps that have been exposed in the current DTT platform may be addressed within a horizontal market model.

IMPROVING UK AERIAL INSTALLATIONS

raise awareness of the importance of using benchmarked aerial and cable products, and other best practices; develop a test suite for active aerials

RECORDER TECHNOLOGY

including hard disc & DVD recorders; analogue legacy; connectivity issues; TV Anytime and PC-based home media centres.

The DTG Postcode database

Freeview: Reception Enquiry for CO6 3NP



Digital Terrestrial Television

FREEVIEW



Predicted Reception for Postcode

CO6 3NP



Can I get Freeview at this address?

YES, all channels available
[more details](#)

Your existing aerial may need to be repositioned or renewed

Aerials for FREEVIEW reception must be in good condition

For more information:

Freeview www.freeview.co.uk

BBC Reception Advice www.bbc.co.uk/reception
or call ITC Technical Information on 01962 848647

For advice on whether an aerial upgrade is required, either: consult your local retailer, OR consult a Free-to-View aerial contractor.

[Link to information for retailers and installers about transmitters and aerials](#)

The Confederation of Aerial Industries lists dealers in your area: call (020 8902 8998), or consult the CAI website www.cai.org.uk

If you receive your TV through a communal aerial system, please check with your landlord or managing agent.

 [Download](#) the CAI leaflet entitled 'Digital TV and Your Aerial'

The DTG Postcode database

Freeview: Reception Enquiry for CO6 3NP



Digital Terrestrial Television



Predicted Reception

Can I get Freeview at this address

Your existing aerial

Aerials for FREEVIEW

Freeview
BBC Reception
or call ITC Tech

For advice on whether an aerial upgrade is required, either: consult your local retailer, OR consult a Free-to-View aerial contractor.

The Confederation of Aerial Industries call (020 8902 8998), or consult the

If you receive your TV through a contractor or managing agent.

Download the CAI

Freeview: Channels available for CO6 3NP

2



Digital Terrestrial Television

FREEVIEW



Predicted Reception for Postcode

CO6 3NP

Your existing aerial may need to be repositioned or renewed

NOTE:

- The Logical Channel Number (LCN) is the channel your receiver allocates to the service
- In Wales, S4C is on LCN 4 and S4C2 on LCN 13; Channel 4 appears on LCN 8
- In Scotland, TnG is available on LCN 8

LCN	Channel Name	Transmitter
		Sudbury
GENERAL ENTERTAINMENT		
1	BBC ONE	YES
2	BBC TWO	YES
3	ITV 1	YES
4	Channel 4	YES
5	five	YES
6	ITV 2	YES
7	BBC THREE	YES
9	Teletext	YES
10	BBC FOUR	YES
11	Sky Travel	YES
12	UK History	YES
16	OVC	YES

The DTG Postcode database

Freeview: Reception Enquiry for CO6 3NP



Digital Terrestrial Television



Predicted Reception

Can I get Freeview at this address

Your existing aerial

Aerials for FREEVIEW

Freeview
BBC Reception
or call ITC Tech

For advice on whether an aerial upgrade is required, either:
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or managing agent.

Download the CAI

Freeview: Channels available for CO6 3NP

2



Digital Terrestrial Television

FREEVIEW

DIGITAL TV GROUP



Predicted Reception

CO6 3NP

Your existing aerial may need to be repositioned or renewed

NOTE:

- The Logical Channel Number allocates to the service
- In Wales, S4C is on LCN 8 on LCN 8
- In Scotland, TnG is available

LCN
GENERAL EN

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 9
- 10
- 11
- 12
- 16

Freeview: Transmitter and aerial information for CO6 3NP

1



Digital Terrestrial Television

FREEVIEW



Predicted Reception for Postcode

CO6 3NP

Details for retailers and installers

The following transmitters serve this area providing these multiplexes

Sudbury **1 2 A B C D**

Show list of services ranked by multiplex

The existing aerial may need to be repositioned or renewed

NOTE:

The line above which reads "the existing aerial may need to be repositioned or renewed" refers to postcodes which may be either:-

- served by a transmitter with out-of-group channels
- served by more than one transmitter providing digital coverage OR

Digital news

DIGITAL TV GROUP

The Magazine of the Digital Television Group

Number 26

August 2002

SPECIAL 32 PAGE ISSUE



What is the BBC's vision for digital terrestrial TV? Why will it succeed where ITV Digital failed? How much will it cost? Who will be responsible for what? Two of the team at the heart of the BBC's thinking Andy Duncan (left) and Michael Starks (right) give a unique insight to the DTT future in an exclusive *Digital news* double interview with Kate Bulkeley (pages 16 - 18)



DTT: 1,000,000 reasons for confidence

Industry expects substantial DTT uptake over the year

by **Hugo Martin**
Editor, *Digital news*

There are at least a million reasons for confidence in the future of digital television in the UK... and a few questions still to be answered.

The best reason is that award of the multiplex licences, vacated by ITV Digital, to the consortium led by the BBC. The consequence is that in early autumn, the UK will have a 24-channel free-to-air DTT service.

An additional reason would seem to be the BBC's commitment to a change in transmission protocol from 64 to 16 QAM.

There's the Government-funded report that suggests that at least 42 per cent of people without digital TV say that they will switch in six to 10 years.

But the really big numbers come from the digital industry which projects sales of about 1.1 million set top boxes within 12 months. This figure, which is higher than many had expected, is based on a mixture of real orders and research that suggests that the public want to buy into the new proposition.

"The BBC's was the most solid application," says Jocelyn Hay of the Voice of the Listener and Viewer, "and the most likely to succeed." She reflected a broad consensus that welcomed the news as offering the best deal for viewers, with reservations about the all-powerful position that the BBC is building across British broadcasting. As Sir Ronald Beggan, Chairman of the ITC, said "The application is most likely ensure the viability of digital terrestrial TV... and will help the move towards digital switchover."

The decision to adopt 16 QAM has been similarly welcomed but there are dissenters. Although the change represents an increase of 20 per cent in the number of people able to receive DTT, the price is a cut in the number of channels. The BBC proposes four channels per multiplex instead of six.

The ITC is holding a specific consultation on this as there are

strong views within C4 and SDN and, to a lesser extent, ITV that this is too high a price. Channel 4 has invested a lot of time and money in its F4 programming as well as Film Four and had ambitions to extend their reach terrestrially. The BBC, on the other hand, wants to ensure that there is bandwidth available for its fast-growing interactive services. Multi-casting at events like Open Golf, Wimbledon and the Commonwealth Games is proving to be a significant draw.

The MORI poll, commissioned by the Government, produced the following points:

71 per cent of people know about digital television and consider it to be better than analogue;

24 per cent of people without digital television said that they will switch to digital by the 2004;

42 per cent of people without digital television said that they will switch to digital television in six to ten years time.

The DTG's Technical Director, Peter Marshall, has described the outcome as "a win-win situation for everybody. For the BBC, Crown Castle and their partners... above all for consumers."

others are promised, including the controversial £29 box from CompaqTV (see page 24) which is targeted for next Spring.

The news has also represented a boost for the ITV manufacturers who believe that the new proposition should help convince potential buyers that an integrated TV makes sense, at least. DTT uptake, a year hence, might reach 2 million, made-up of 1 million adapters, 5,000 iTVs plus 500,000 "legacy" boxes left over from ITV Digital.

A customer-base (albeit a non-subscriber customer base) of over 2 million would be a triumph. If, at the same stage, Sky reaches 6.5 million and cable gets to two, then nearly 45 per cent of the UK's 24 million TV homes will have gone digital.

highlights

BskyB - the latest figures and news of a new push for Sky?

David Mercer, of top media analyst Strategy Analyst, his view on the DTT

Columnist Chris considers the re-shopping on TV. Love all! Barry finds much to a interactive Win

New names at Westminster. The benefits of performance tuning

IBC 2002 and the shows preview

Hugo Martin reflects on the poor market digital programme Headstrong

Plus the regulars:

PJM

Washington Report

UK News

World news

DTG Activities

Address <http://www.dtg.org.uk>

The Digital Television Group

Liss Mill, Liss
Hants GU33 7BD
United Kingdom

Latest

Welcome
Members List
Consumer
Retail Trade
DTG Activities
DTG Testing
News
Reference
Directory
Link Library

DTT Postcode
Database

Search

Free of charge to over
4,500 industry professionals
Email your details to:
office@dtg.org.uk

Digital latest

Freeview a hit - every 2 seconds

Every two seconds, there's another 'hit' to the DTG's Postcode database. It is a strong indicator that Freeview is a success with the UK public. Anecdotal evidence suggests a buzz of interest in retailers. "For the first time, people are asking about digital terrestrial without being prompted," a store manager in Sussex told the DTG this morning. (1 November)

At Pace, supplying the key £99 digital adapter, a spokesman said "The situation is very buoyant and we are very excited."

The only clouds on the horizon took the form of a spat with the **Discovery Channels** about the justification for the BBC's joint-venture **UK History Channel** and a complaint from Northern Ireland that the service didn't include the Irish language service TG4.

As **Tony Ball** told a small celebration of the launch. "Freeview represents a simple proposition with the power of the BBC behind it. This is the third DTT launch in four years and should be the last!"

Read the whole of 'Freeview a hit - every 2 seconds' ...

New Irish communications
commissioners appointed
(1st November)

Sogecable needs digital DTH
merger for financial survival
(1st November)



- ▶ **Pace Enables Video Games IPTV Gateway Range** (31st October)
- ▶ **WAM TV - arts broadband** (30th October)
- ▶ **New US sports channel to launch on Sky Digital** (30th October)
- ▶ **Murphy to quit Carlton - definitely** (30th October)
- ▶ **Blow for Beeb over fines** (30th October)
- ▶ **P&TLuxembourg**

DTT in the UK: key success factors

Martin L. Bell, *Director of Communications, DTG*