

Question 1: which services are most likely to drive take up of DTT consumer reception equipment using new technologies? In particular, are HD services the most likely to do so?:

This question is facetious. It is quite clear that DTT using existing transmission modulation (DVB-T) and content compression (MPEG-2) can provide ALL the television services that the general public would expect from public service broadcast (i.e no return path) television:

Standard Definition Video

Stereo Audio

Alternative Audio Channels (i.e audio description for the visually impaired)

Text Captioning (i.e. subtitles for the hard of hearing)

Push Only Data services, with a multimedia display and navigation platform (i.e MHEG, 'Digial Teletext')

High Definition Video

Multi Channel Audio (i.e. surround sound)

Only the last 2 services are not provided at present on UK DTT, but there are plenty of examples from around the world where these are broadcast using the same standards as UK DTT. It is a fact that there are no technical restrictions within the DVB-T and MPEG-2 standards that stop UK broadcasters from broadcasting a 720p/50Hz video stream and an AC3 audio stream.

The only reason these services are not on UK DTT already is purely one of SPECTRUM RESTRICTION - an issue that OFCOM are further contributing to by belligerently sticking to its plan of selling off, to the highest bidder, spectrum that is currently used to provide free public services to the UK general public.

So much for OFCOM being the 'consumer champion' of the UK general public.

OFCOM is only using the onset of future technologies (in the case of DVB-T2 or more efficient real time MPEG-4 Encoders, technologies that have NO SHIP DATE!) as a 'get out of jail free card' so that OFCOM can continue its belligerent 'spectrum yardsale' policy.

Question 2: do you agree with Ofcom's assessment that it would be beneficial for the DTT platform to begin to upgrade to new technologies ? DVB-T2 and MPEG-4 - to make more efficient use of spectrum and to allow for the introduction of new services?:

Forget if it is 'beneficial for the DTT platform'... as the so called 'consumer champion', OFCOM should be asking if it is beneficial to UK consumers, who are currently being forced into purchase of new reception equipment because of DSO.

And the answer to that question is clearly NO.

Lets start with the fact that around 10 Million 'main tv sets in the household' currently pick up UK DTT using DVB-T based equipment.

By advocating that the existing UK DTT Multiplexes are upgraded to DVB-T2, and at the same time belligerently refusing to award new spectrum licenses for additional Multiplexes, OFCOM is in fact advocating REMOVING access to existing services for those 10 Million DVB-T receivers. And expecting consumers to pay up a second time for DVB-T2 equipment to access the services they already have access to today!

How is that at all of benefit to UK consumers?

Now, back to the actual question. I believe that if NEW services are provided on the UK DTT platform such as High Definition Video, they should be provided with the most up to date technology available at the time of launch.

If there is a newer technology, with a HARD availability date within the next 2 years, that will make more efficient use of spectrum, then the launch of those new services should be delayed so that they can take advantage of the new technology.

These new services MUST be provided without interruption or degradation of existing services. This will require that the new services are either provided on new Multiplexes, or that the existing services are redistributed across existing Multiplexes allowing one or more existing Multiplexes to be 'reused' for the new services.

Technologies used to provide existing services MUST NOT be upgraded if it results in more than 20% of the viewing public losing existing services. In other words, 80% of the viewing public must already have newer reception equipment, compatible with newer transmission technology that they have purchased to receive new services, before existing services are upgraded to use the same newer transmission technologies.

Question 3: Ofcom is particularly interested in hearing from multiplex operators and programme providers as to whether they are interested in using DVB-T2 and / or MPEG-4, and whether Ofcom should consider permitting their use on DTT?:

I am not a Multiplex operator, but if the staff at OFCOM believe, for one nanosecond, that they should NOT be considering permitting these new technologies on UK DTT, then they should hand in their resignations to the Culture Secretary and go home.

Question 4: do you agree that the earliest possible availability and adoption of the technologies is in the interests of consumers and citizens?:

No. I believe that adopting these technologies, on all services, new and existing, at the earliest possible time will result in more than 10 Million households losing existing services, and/or being forced to spend more on new receiving equipment to continue to access the services they have today. This is CLEARLY not in the best interests of consumers and citizens.

The best plan of action is to initially restrict the use of these new technologies to new

services, provided on new or 'vacated' Multiplexes. Once there is a sufficient number of households that possess receiving equipment compatible with these new technologies (see answer to Q2), then existing services can be migrated to the new broadcast technologies. This of course could mean that migration of existing services could have to wait until several years after DVB-T2 and MPEG-4 are commercially available.

Question 5: do you agree with Ofcom's view that DVB-T2 MPEG-4 reception equipment could be commercially available in time for DSO in Granada region in late 2009?:

No, not at all. There is 0% chance of this happening, and this is due to the current state of the DVB-T2 standard.

The DVB Consortium are a committee, and ratification of any technical standard that is developed by committee is painfully slow. It is currently late 2007, 2 years before Granada region has DSO. DVB-T2 does not yet even exist in DRAFT form - the committee has only just set performance goals and is still accepting technology suggestions on how to achieve those goals! Competing suggestions will need to be evaluated (along with plenty of lobbying tactics from those with vested interests), those suggestions have yet to be combined into a working package, Intellectual Property Licensing sorted out, etc. DVB-T2 will not be commercially available in 2 years.

The experience of IEEE 802.11n and how long that is taking to ratify that standard should be a prime example of the likely delay before DVB-T2 is commercially available.

Question 6: do you agree that some form of intervention is required in order for the DTT platform to commence an upgrade to new technologies without delay?:

I would not agree with the use of the word 'upgrade' (see the points I have made in Q4). I would say that using DVB-T2 and MPEG-4 to provide new services that augment the existing services will need intervention.

The thing is, that intervention will be in the form of the Culture Secretary intervening and overruling OFCOM if it continues with its belligerent 'spectrum yardsale' policy, and allowing the Public Service Broadcasters to provide HDTV on newly awarded Multiplexes in spectrum freed up by DSO.

Question 7: Do you have any proposals for launching MPEG-4 services on a DTT multiplex using DVB-T in advance of the proposed 2009 timetable and if so can you provide details of how such a service would not undermine the proposed MPEG-4/DVB-T2 launch in 2009?:

No. OFCOM is correct in stating that allowing MPEG-4 to be used on UK DTT when DVB-T is the only modulation standard available will result in UK consumers having to buy DVB-T+MPEG-4 equipment ahead of this proposed timetable, and then an

additional purchase of DVB-T2+MPEG-4 equipment when this timetable is fulfilled (which will not occur in 2009, see answer to Q5).

This is not in the best interests of UK consumers.

Question 8: do you agree with Ofcom's proposed approach for adding SD and HD versions of MPEG-4 and DVB-T2 profiles to the list of permitted standards for DTT in the spring, and that Ofcom's consent must be sought prior to adoption of these standards?:

I am unaware of the Terms and Conditions the current UK DTT broadcasters have to abide by. If these T&Cs state that consent must be sought prior to adoption, then the broadcasters must continue to comply with those conditions.

If no such conditions exist, then I see no reason for OFCOM to demand consent if they have added these technologies to the UK DTT standard.

I would advise that when MPEG-4 is added to the UK DTT standard, it is NOT permitted to be used with the DVB-T modulation standard. It should only be permitted for use in the DVB-T2 standard, to avoid the situation of consumers having to buy new reception equipment twice (see Q7).

Question 9: do you agree with Ofcom's proposal that Multiplex B should be cleared and upgraded to new technologies?:

This proposal is only feasible if National Grid Wireless, licensee of Multiplexes C and D, agree to hand over the additional 12MB/s bandwidth that they would gain from 64QAM mode change after DSO, to ITV and Channel 4.

Given that caveat, I agree with the proposal.

Question 10: do you agree with Ofcom's proposal that all multiplexes should be required to upgrade to 64QAM at DSO in order to make the most efficient use of spectrum (ie that the mode change should not merely be optional)?:

Yes

Question 11: do you agree with our proposals for accommodating Five, S4C, TG4 and GDS on Multiplex 2?:

Yes

Question 12: do you agree with our assessment that nine SD services can operate on Multiplex 2? If not, do you have an alternative proposal?:

No. Multiplex 2 is already using 64QAM so there will be no change there, this Multiplex will have 24 Mb/s bandwidth. 9 services would mean 2.67 Mb/s per service. Based on my own experience as a viewer of the UK DTT platform, even with statistical multiplexing of all services in a multiplex, 3 Mb/s is the bare minimum for satisfactory MPEG-2 SD picture quality.

Question 13: do you agree with our proposals for the reorganisation process for the existing multiplex services set out in the central case scenario?:

Yes, but I cant foresee National Grid Wireless agreeing to this proposal, so whether or no I agree is pretty much immaterial.

Question 14: do you agree with the principles / conditions that Ofcom proposes to use to evaluate counterproposals for the reorganisation process?:

If you mean the OFCOM 'public value criteria' review system... In my opinion, that system has been broken since instigation

Question 15: Do you have an alternative proposal for the reorganisation process? If yes, please provide details.:

No, I have an alternative proposal TO the reorganisation process! Leave the existing Multiplexes as they are, and provide new spectrum/licenses/multiplexes for provide HDTV.

Question 16: do you agree with Ofcom's assessment of the options for allocating the upgraded capacity?:

Again, Yes, but I cant foresee National Grid Wireless agreeing to this proposal, so whether or no I agree is pretty much immaterial.

Question 17: do you agree with the proposal that HD broadcasting on the DTT platform should use the more efficient progressive format, rather than the interlaced format?:

Yes, research at Brunel University seems to prove that when using MPEG-4 compression, progressive formats produce better image quality at lower bitrates than interlaced formats.

<http://bura.brunel.ac.uk/bitstream/2438/1181/1/Studies+on+the+bit+rate+2006.pdf>

Question 18: do you agree with the proposal that Ofcom should not mandate the use of the capacity for any particular service type (SD or HD) but allow the broadcasters to make proposals?:

Yes

Question 19: do you agree with the proposal that the capacity should be allocated in three UK-wide blocks initially, rising to four blocks at DSO?:

No. This is based on an assumption that by 2009, realtime compressed MPEG-4 HD video will have acceptable image quality at 10-11 Mb/s (31.2/3).

This is a completely incorrect assumption.

As of 2006, the EBU recommended a range of between 10 and 18 Mb/s for acceptable image quality, therefore a mean of 14 Mb/s. An estimate by the independent organisation used by the BBC Trust to answer technical questions regarding the BBC HD service have estimated that realtime MPEG-4 compression efficiency will improve by a factor of 2.5 over 10 years. Therefore over 3 years (ie, by 2009), the improvement needed to get down to a mean of 10 Mb/s will never be achieved.

Question 20: do you agree with the proposed criteria for the comparative selection process?:

No Comment

Question 21: do you have any comments on Ofcom's proposals for the upgraded multiplex?:

No Comment

Question 22: Do you agree with Ofcom's impact assessment?:

Yes

Question 23: Do you agree with Ofcom's assessment of the potential benefits, risks and mitigations strategies relating to the impact of these proposals on the DSO programme?:

Yes

Additional comments: