

BBC RESPONSE TO SWITCHOVER-RELATED CHANGES TO DTT LICENCES CONSULTATION

Introduction

1. The BBC welcomes the opportunity to respond to this consultation. Since winning the Multiplex B licence in the summer of 2002 and launching services as part of the Freeview consortium that autumn, the digital terrestrial platform has gone from strength to strength. Today, more than eleven million set-top boxes have been sold, with more than seven million households relying on Freeview as their primary way of accessing digital television. The success of the platform is very encouraging for the BBC and demonstrates that an attractive terrestrial free-to-air service and channel line-up, underpinned by clear and effective marketing, is a compelling proposition for a large percentage of the population.
2. The BBC recognises that key to Freeview's success is the provision of all of the BBC's services on the platform. The BBC considers that the future viability of the DTT platform depends also on its ability to offer new and enhanced services, thus maintaining a level of parity with other platforms. Holding the Multiplex B licence is essential to this and is the only way in which the BBC can make all of its digital services available to terrestrial viewers and to continue to meet its obligations under the Charter and Agreement.
3. Under its new Charter, the BBC has six clear public purposes for the next period of its existence, one of which is to 'take a leading role in the switchover to digital television'. Thus, switchover will be a key part of the BBC's activities in the period to 2016. In discharging this responsibility, the BBC will be building upon the extensive preparatory work it has done over the past few years, not least in the establishment of Digital UK with the other broadcasters. Digital UK will be leading the vital communications and marketing activities required for switchover, as well as providing a co-ordinating body for the roll-out of the technical infrastructure.
4. Clauses 34 to 41 of the new Agreement¹ between the BBC and the DCMS set out a framework of responsibilities and requirements for the BBC in regard to digital switchover. These obligations relate to all of the "BBC principal television services", as defined in 34(2) (a), whichever multiplex they are carried on. The BBC considers that it would be most logical and straightforward for the obligations placed upon it by the licence for Multiplex B to be harmonised with the obligations placed upon it by the Agreement. For instance, it does not appear appropriate for the BBC to agree to committing to switchover-related obligations in advance

¹ Published as a command paper (Cm 6872)

of receiving from the Secretary of State the “coverage plan” as described in clauses 35 and 36 of the Agreement.

5. Any conditions accepted in relation to Multiplex B must also recognise that, in almost every regard, the processes and technical infrastructure that it will be using to provide services on its gifted multiplex (Multiplex 1) will be shared with those used to provide services on Multiplex B. For example, the BBC is placing a single contract which covers the provision of transmission and distribution services for both multiplexes. Similarly, the BBC’s marketing and communications activities concerning switchover (both using its own resources and through Digital UK) will not be specific to particular services or multiplexes but will be supporting the BBC’s digital offering in its entirety.
6. The BBC recognises that its obligations under the Agreement and the multiplex licence, inasmuch as they are separate, will need to reflect the different responsibilities of the two regulatory bodies. But the BBC considers that it and the regulators – Ofcom and DCMS – are in fact together responsible for discharging their duties such that switchover occurs smoothly and to time. For this reason, the BBC considers that the obligations placed upon it should be consistent and structured so as to facilitate the required degree of co-operation.
7. The BBC’s response to this consultation, therefore, seeks to propose a route by which the BBC’s obligations can be harmonised, recognising that switchover is a complex task with many interlocking elements, and in which the BBC is only one part of the process.
8. The BBC’s response is predicated on the basis that the conditions set out for Multiplex B prior to switchover will map through directly into conditions for PSB3 as and from switchover occurs.
9. As the BBC has only obtained a copy of the variations to the licence proposed under this consultation marked-up against a conformed copy of the licence currently in force (and as amended) for Multiplex B from Ofcom recently, it has not been able to confirm that the only changes made are those that are marked. Nevertheless, the BBC understands that Ofcom’s intention is only to introduce new conditions and to make those modifications to existing conditions which are spelt out in the consultation document itself. Accordingly, the BBC’s response is limited to the issues raised in the consultation alone and assumes that Ofcom have not used the publication of draft variations to introduce any other (unannounced) modifications to the licence.
10. This notwithstanding, and aside from this consultation, the BBC understands that Ofcom is also reviewing the document, “ITC Code of Practice for Changes to Existing Transmission Arrangements”. This document was originally issued as part of the initial roll-out of DTT in 1998 and primarily deals with how interference to analogue services from the new DTT services was to be resolved. As such, the BBC considers that the document is no longer relevant, as digital switchover

will not cause permanent interference to analogue television services (as these will have been switched off). In certain small areas, there may be a chance of interference during the 'simulcast period' (that is, the period between the first analogue service and the last analogue service being closed down), as one multiplex comes up on high power before the analogue services are closed. The BBC recognises that this is being managed by Digital UK and that the planning for the roll-out order and timetable is being done to minimise this wherever possible.

11. This response is submitted on behalf of both the BBC and the wholly-owned company formed to hold the Multiplex B licence, BBC Free to View Ltd.

Response to individual questions

Question 1: is the proposed wording of new condition 2(3) of the multiplex licences necessary, appropriate and proportionate? If not, please explain why and propose alternative wording.

12. The new condition 2(3) intends that the BBC should provide Multiplex B from an expanded list of transmitting stations incorporating all of the current 1,154 analogue television stations from the Relevant Digital Switchover Date for each of the ITV regions.
13. The BBC's obligations as far as the selection of transmitting stations for switchover under the Agreement are set out in clause 35. Under these terms, the BBC is obliged to "secure the objective that substantially the same proportion of households in the UK as can...receive the analogue television services in analogue form...can receive all of the BBC's principal television services in digital form by that means" by no later than 31 December 2012 (and a date to be directed by the Secretary of State for the Channel Islands²). The Agreement sets out (in clause 35(3)) that the BBC is to satisfy this objective "in accordance with a coverage plan" approved by the Secretary of State.
14. Clause 35(3) goes on to set out the nature of the coverage plan, noting that it must set out a timetable for switchover and may specify the location, power, frequencies and mode of the transmitting stations to be used. It may also specify specific areas in which the BBC is not obliged to provide services by terrestrial means. The Agreement sets out that the Secretary of State must consult Ofcom before approving a coverage plan (and must re-consult it should she make any amendment to the plan).

² This is currently assumed to be 31 March 2013.

15. The BBC's primary concern comes from the possibility that the coverage plan laid down by the Secretary of State under the Agreement may fall out of step with the specific transmission and timetable details set out in Parts 9 and 10 of Annex A to the Multiplex B licence (or vice versa). The BBC considers that, although unlikely to happen in practice as Ofcom are guardians of the frequency plan on behalf of the UK's spectrum planners, this would be an undesirable occurrence.
16. In any event, the BBC is concerned that the determination of exactly which transmitting stations (and their characteristics) are to be used at this point in time may be premature and may lead to an unnecessary number of changes and variations being required to the licence in due course. The frequency plan is in a state of constant evolution, with the spectrum planners determining the characteristics of first the larger stations and then the smaller relays so that they fit around each other. The BBC expects that the fine details of each station will need to be finalised by the spectrum planners sometime ahead of switchover at that station in order that the transmission infrastructure can be procured and installed. However, this finalisation is likely to only occur around two years ahead of switchover: until that point, many of the characteristics (including the frequencies and power to be used) may not be known with absolute certainty.
17. In addition, the BBC recognises that the 1,154 transmitting stations currently used for analogue broadcasting may not be exactly the network that is required in practice. Whilst the BBC expects that the very great majority of the stations currently used for analogue will be converted to digital operation, some of them – especially those which are built just to provide feeds to other stations and potentially those which were built solely to resolving ghosting issues – may not be required. Further, the BBC acknowledges that the spectrum planners are currently planning for a small number (currently, eight) of entirely new additional stations to be added to the network in order to provide coverage where it is lost due to interference from the continent. The BBC expects that Ofcom and the broadcasters, through the mechanics of the Joint Frequency Planning Project and with the support of Digital UK, will need to determine a process for finalising the spectrum plan as the switchover process gets underway.
18. Furthermore, the characteristics of the stations set out in the tables in the proposed variations to the licence seem, in and of themselves, to be incorrect in some instances. The BBC notes that Ofcom has set out the frequency assignment to be used for Multiplex B at each of the stations but is also mindful that the final allocation of multiplexes to frequencies (even where the final frequencies are now known) has not been completed by the Broadcast Infrastructure Group within Digital UK. The allocation of specific frequencies to multiplexes is a complex task. It must reflect both the order in which the analogue services are to be withdrawn and whether or not that analogue service is using a frequency that is in released spectrum. It must also find the appropriate multiplex

order so that the coverage of the public-service multiplexes can be maximised. Until this process is completed for each station, it is premature to assign multiplexes to specific frequencies.

19. Similarly, the table sets out the antenna height for the transmission. This is highly dependent on the final characteristics of the antenna to be employed at each station, which itself is dependent both on engineering practicalities and on the other usage of aperture at each station.
20. Whilst the BBC recognises that all of these parameters will need to be set out in due course once they have been finalised, it considers that, in setting them out now, Ofcom will be required to vary the licence on very many occasions, with all of the attendant problems in version control and change management which that requires.
21. As Ofcom has explained in the consultation document, its intention in phrasing the new condition in such a way is to provide clarity for all stakeholders in what is a major public project. The BBC suggests that, for the reasons given in the paragraphs above, the effect of the condition is in fact not to give the intended degree of clarity, as so much of what is set out in the detail is liable to change. Arguably, stakeholders require clarity and certainty about the outputs of digital switchover (the intended level of coverage, the transmission mode, and so on) rather than the inputs to that process (which are, in this case, the transmission characteristics of the stations). The broadcasters also need to understand that they are working under common frameworks to a consistent set of expectations and targets. Given the uncertainty which still surrounds many of the inputs, the BBC suggests to Ofcom that it should consider re-wording this condition in the licences to be expressed as an output measure (such as to “substantially replicate the coverage of the analogue television services”) at the present time, and progressively replace this with the precise input measures as they become known.
22. The BBC suggests that the condition may be better phrased differently in each of the multiplex licences. It would consider appropriate an obligation to provide coverage of Multiplex B to substantially the same proportion of households as can currently receive analogue television, which would reflect the language of the Agreement. Then, as the BBC, Ofcom and DCMS come to an agreement (through direction from DCMS) around the coverage plan, such that it would track the industry-wide frequency plan as determined by the Joint Frequency Planning Project, then it would be appropriate in this licence to oblige the BBC to comply with that frequency plan as time to time amended once the stations are due to be in service. The BBC also considers that it might be more straightforward to update the licence periodically (say, after each switchover region has been finalised) with the parameters of the stations to be used: this would at least minimise the number of further variations to the licence to around fifteen. But the BBC does not consider that setting out the list of stations to be used in this way in the multiplex licence at this time is either required or appropriate.

Question 2: Are the proposed new provisions relating to cooperation and coordination with other parties concerning DSO, and contained in the annexes to the multiplex licences, necessary, appropriate and proportionate? If not, please explain why and propose alternative wording.

23. The corresponding obligation in the Agreement is clause 37, which obliges the BBC to use ‘all reasonable endeavours to cooperate...promptly and in good faith’ with a list of bodies which is broadly comparable to those set out in (a) to (d) of condition 17 in the Annex to the multiplex licence.
24. The BBC notes that the number of possible bodies that is caught by clause 37(1)(a) of the Agreement (“public service broadcasters and holders of licences to provide television multiplex services under Part 1 of the Broadcasting Act 1996”) is smaller than those caught by the comparable condition 17(a) in the multiplex licence (“other Ofcom licensees”). This part of Ofcom’s proposed variation encompasses a wide range of people and institutions, some of whom may have nothing to do with switchover and some for whom switchover may not be in their interest.³ Whilst the BBC does not expect there to be any difficulty in its ability to meet this condition, it suggests to Ofcom that a narrowing of this phrasing, whilst leaving the other sub-parts of the condition (so that it broadly tracks the language of the Agreement) may be worthwhile, especially if Ofcom does not intend to introduce a similar reciprocal co-operation obligation into all of its other licences.

Question 3: Are the suggested new provisions concerning an Annual Report and information relating to Digital Switchover contained in the annexes to the multiplex licences, necessary, appropriate and proportionate? If not, please explain why and propose alternative wording.

25. Under clause 41 of the Agreement, the BBC Trust must provide the Secretary of State with “an annual report on what the BBC has done for the purpose of complying with [its switchover-related obligations in] this Agreement”.
26. As outlined in paragraph 4 above, the BBC’s involvement in the digital terrestrial platform and in digital switchover is broader than just holding the licence for Multiplex B. As part of its obligations in implementing switchover, the BBC will be:
 - a. supporting and investing in Digital UK, including funding, according to the relevant provisions in the licence fee settlement, its communications programme;

³ One possible interpretation of this condition would be to include holders of any licence issued by Ofcom, whether or not that was a broadcasting (let alone, television) related licence.

- b. supporting the scheme being put into place for providing targeted help to those whom the Government regards as being vulnerable because of the switchover programme;
 - c. using its own internal resources to promote and manage switchover, using its own airtime (and off-air marketing) to encourage access to digital services and to communicate with the public about switchover;
 - d. through the work of its spectrum planners, working collaboratively with Ofcom and the transmission service providers to develop the frequency plan for the post-switchover transmission network;
 - e. continuing the work of the BBC's Technology Group, contributing the detailed and underlying research and development work necessary for digital broadcasting systems and techniques;
 - f. implementing a number of other associated projects to re-design parts of its playout and distribution architecture to allow for digital switchover; and
 - g. undertaking comprehensive programme management and project support resource that will be required to make sure that switchover is as smooth and straightforward for the BBC's audiences as it can be.
27. The BBC's commitment to switchover, therefore, is extensive and permeates throughout the organisation. It is not possible to take this effort (and the funding of this effort) and determine which parts of it apply solely to the services which are carried on Multiplex B or the provision of that multiplex alone. Nor is it possible to identify individual components or parts of the transmission chain which are used for Multiplex B alone, as the BBC will be using common authoring, playout, distribution, transmission, and management systems to provide both Multiplex 1 and Multiplex B (and PSB1/3 in the future).
28. The BBC considers, therefore, that the extent of reporting that the current licence variation contemplates is unworkable and over-reaches. For the reasons above, the BBC would not be able to provide the "budgets and expenditure" relating to the funding of switchover which condition 18 sets out. The BBC considers that the provisions of the new Agreement lay out quite clearly how the Government intends that its expenditure should be published, audited and regulated. The BBC therefore considers that the condition, as drafted, extends too far and should be more narrowly worded, specifically to exclude any obligation on it to provide budgetary and expenditure information.
29. Nevertheless, the BBC is convinced that the accurate and timely sharing of information about all other aspects of switchover is crucial to the success of the project. The BBC considers that this will be required more frequently than once a year and, indeed, this sharing and pooling of

information is one of the key tasks of Digital UK in the co-ordination of the technical roll-out. As noted in paragraph 25 above, the BBC has an obligation to provide an annual return to the Secretary of State and the BBC proposes that this (or a suitable version of the same) should be satisfactory for Ofcom's needs. The BBC would welcome the redrafting of this condition such that it could make a single return each year and satisfy the needs of both the Agreement and the multiplex licence.

30. The BBC notes that the requirement for an annual report on the operation of Multiplex B survives in the variation to the licence and suggest that Ofcom might also amend that provision so that the licence holders are submitting a single report covering both issues each year.

Question 4: Are the proposed new provisions relating to an obligation to inform viewers about rescanning and other viewer actions required by switchover contained in the annexes of the multiplex licences, necessary, appropriate and proportionate? If not, please explain why and propose alternative wording.

31. The BBC considers that Digital UK should be the primary co-ordinating voice for the public in all messaging about switchover. The organisation has been established by the broadcasters, at the request of the Government, to undertake just this sort of communication activity as part of its wider role. The BBC considers that Digital UK, the communications budget of which it entirely funds, should be responsible for communicating such things as the need to re-scan set-top boxes.
32. The BBC agrees with Ofcom that it is not appropriate to put on to the multiplex licence holders an obligation to inform the viewers which is analogous to the obligation contained in the Digital Replacement Licences. The BBC considers, though, that with the exception of itself (being primarily a broadcaster) the multiplex licence holders actually have very little mechanism for communicating with the audience at all through the multiplex.
33. As the other multiplex operators are broadly powerless to communicate with the audience, the BBC does not agree that the "multiplex operators will have a central coordinating role to play in informing viewers" about the re-scans of receiving equipment that may be necessary due to frequency (and service) changes at switchover. The BBC is unsure how the obligation as currently drafted in the variation could operate in practice.
34. The BBC is also concerned about the practicability of explaining, through on-air messaging, the requirement of Annex A, Part 8, condition 19(1)(a): "how a rescan can be completed". The steps required to re-scan a set-top box differ between each manufacturer (and, indeed, frequently between different models from the same manufacturer). The provision of this information is best done by the manufacturers themselves, through

their involvement in Digital UK. The BBC considers that this part of the condition should be removed in any re-wording Ofcom proposes.

35. The BBC considers that it would be appropriate to re-word the obligation on the multiplex licence holders to participate in viewer information campaigns so that it is part of an expanded obligation to co-operate with Digital UK. This might include an obligation on the licence holder to provide such reasonable assistance in this regard as Digital UK requests.

Question 5: Are the suggested new provisions relating to the Digital Switchover Date and regional timetable contained in the annexes to the multiplex licences necessary, appropriate and proportionate? If not, please explain why and propose alternative wording.

36. In clause 34(5)(a) of the Agreement, the digital switchover date – by which time the BBC is to have ceased providing analogue television services and started broadcasting digital services to the same percentage of the population – is defined as being 31 December 2012 for every region except the Channel Islands. The switchover date for the Channel Islands is left up to the determination of the Secretary of State under clause 34(5)(b).
37. The BBC notes that the detailed order of the transition at switchover has not yet been agreed within Digital UK beyond the outline timetable that was published in the Government's statement in 2005. The BBC's understanding is that the precise ordering of stations within that timetable is a complex task and still under active discussion, albeit that more detailed information for the first two main stations to switch over (Selkirk and Caldbeck in the Border region) have recently been confirmed by ministers to the local MPs.
38. The BBC is of the view that a definite timetable, which sets out the communication steps for each of the regions, is a necessary and vital part of switchover. As currently envisaged, this timetable involves confirming the outline dates three years in advance and further details two years in advance. This permits a level of re-organisation of the timetable "behind the scenes", in order to respond to the challenges of a large and complex engineering project, whilst also giving the certainty about the process that will be so vital for viewers.
39. Again, the BBC considers that now may not be the time to put into the multiplex licences such a defined timetable as that which is set out in the proposed variation. Further, the BBC is concerned that the timetable proposed does neither one thing nor the other: it does not give quite the degree of flexibility that is required at this stage; nor does it oblige the licence holders to complete switchover at each individual station at the same time as the other licence holders and in accordance with the pan-industry marketing and communications plan.

40. The BBC suggests that it may be more appropriate to include an obligation to complete switchover in the UK by 31 December 2012 (and 31 March 2013 for the Channel Islands, if that is what is directed by the Secretary of State) and to comply with the pan-industry timetable as published by Digital UK in accordance with the Secretary of State, rather than setting out the timetable itself here.

Question 6: Is it necessary, appropriate and proportionate to include in the annexes of the multiplex licences the new, proposed conditions setting out details of broadcasting stations? Please comment on the draft wording if you consider it could be improved.

41. The answer to question 1 above gives the BBC's views on the current list of transmitting stations (as set out in the draft variation) and the appropriateness of putting this list into the licence at this point in time.
42. Nevertheless, the BBC considers that the licence must ultimately contain a list of transmitting stations from which the multiplex is being transmitted. The BBC's view is that this list is best updated at (or, preferably, after) the point at which the plan for each of the switchover regions is "locked down".
43. The BBC welcomes Ofcom's move to confirm the selection of transmitting stations to be used by the commercial multiplex licence holders (i.e. Multiplexes A, C, and D). The roll-out of these multiplexes has a potentially significant impact on the cost of access to the shared infrastructure at transmitting stations, where costs are, broadly speaking, intended to be split amongst all of the multiplexes using that station. Without knowledge of to where these licence holders intend to extend their networks, the cost of the infrastructure – indeed, the shape and size and quantity of infrastructure required – cannot be definitively known.
44. Moreover, the extent of the roll-out of the commercial multiplexes affects the coverage of the public service multiplexes, as one produces more or less interference to the reception of the other. Without knowing which of their allocations the commercial multiplexes intend to take up, the BBC (and the other public-service multiplex operator) cannot plan with certainty how it will meet the coverage targets placed upon it.
45. The possibility of the commercial multiplexes rolling out to first around two hundred transmitting stations, then around one hundred and thirty stations, and now just over ninety stations has already put quite some confusion into the planning of the switchover programme. In the absence of a firm decision from these licence holders, the frequency plan has had to be re-worked a number of times to cope with different options. The BBC considers that the decision must be made soon in order that the next phase of the programme – which involves the procurement and installation of infrastructure – can proceed smoothly.

46. Whilst the BBC recognises that the precise characteristics for the commercial multiplexes are subject to the same uncertainty as those for other multiplexes, it considers that a definite list of those transmitting stations which those operators intend to use is of great value at this time.
47. The BBC notes that Ofcom intends to use switchover as a way of reforming the way that Wireless Telegraphy Act licences are held. The BBC currently holds no WTA licences, as these are held on its behalf by National Grid Wireless. As the BBC has set out, in responses to previous consultations issued by Ofcom and the Radiocommunications Agency, the BBC's view is that the WTA licence is best held by that organisation which is best able to comply with it. It is the BBC's contention, therefore, that the WTA licence should be held by the transmission service provider for each service, as it is they who are in a position to ensure that its terms are met (certainly in all practical senses and in terms of radiated power, emission specification, and transmission location).
48. The BBC reaffirms its strong doubts on the validity and benefits of such a change, and in any case would hope that a full consultation and regulatory impact assessment are made before such a change is implemented.

Question 7: Are the proposed new provisions relating to cooperation and coordination with other parties concerning DSO, and contained in the annexes to the DTT service licences, necessary, appropriate and proportionate? If not, please explain why and propose alternative wording.

Question 8: Are the proposed new provisions relating to an obligation to inform viewers/listeners about rescanning contained in the annexes of the DTT service licences necessary, appropriate and proportionate? If not, please explain why and propose alternative wording.

49. The BBC holds only a small number of DSPS licences. As a consequence, its response to these two questions is therefore about the general principles they raise.
50. The BBC welcomes the intention to require 'content' licence holders to co-operate with the switchover process. The switchover process is complex and will require a great deal of co-ordination between many different stakeholders. It is appropriate and proportionate that those who stand to gain from switchover – principally those who provide content services on the platform – should be required to work in harmony with the multiplex licensees, Ofcom and the Government throughout the programme.
51. The BBC has concerns, though, about obliging such licensees to inform listeners and viewers about re-scanning during the switchover process. The BBC considers that this may be impracticable in two respects.

52. First, the granularity of some of the changes required (and thus the messaging that will be needed) is much smaller than the smallest individual unit that can be addressed by any of the multiplexes. Some of the smallest relay stations will be changing frequency and will require rescanning during the switchover process but because these are fed off-air from another transmitter both before and after switchover it is not possible to communicate on-air directly and only with the viewers of the small relay station. Any messaging to these viewers necessarily also involves communicating with all other viewers of the parent station (and any other daughter stations). As an example, it would not be possible – by on-air messages – to inform just the viewers of, say, Ebbw Vale of changes to the services from that station only, without also informing all viewers of Wenvoe (its parent), all of Wenvoe's other daughter stations, and viewers of Abergavenny (a daughter station of Ebbw Vale).
53. Second, it is questionable whether it is practicable for a small, national broadcaster, who is using DTT as an additional platform for its service, to have to inform viewers of DTT about multiplex changes. If, for example, the BBC were to carry BBC Radio Scotland on DTT in Scotland and was required to hold a DSPS licence to do so, the effect of this obligation would be for Radio Scotland to have to broadcast news and communications about the need to re-scan at any one of the transmitting stations in Scotland. This would be despite the fact that BBC Radio Scotland is also broadcast on FM, medium-wave, DAB digital radio, digital satellite and the internet, where such communications would be at least redundant and potentially confusing.
54. For these reasons, the BBC considers that the most appropriate way of facilitating such communication and co-ordinating re-scanning exercises is through Digital UK. These will be a natural part of the marketing and communications work already being done by them as part of switchover.
55. The BBC therefore encourages Ofcom to consider re-wording this obligation. It might be possible to make it part of an expanded obligation to provide co-operation to Digital UK, such that content licensees were obliged to provide such reasonable assistance to Digital UK as it might require in order to ensure that viewers were informed about changes in frequencies and other actions required to continue receiving DTT services.
56. The BBC recognises that re-scanning is a potentially big issue, both during the switchover process and afterwards. Whilst some set-top boxes will already 'auto-scan' and update themselves if they detect a different service-line up, this is by no means a universal function. Nor is it one over which the broadcasters have any control (or a great deal of understanding as to how, precisely, it works). Within the Digital Television Group, the BBC has been exploring the possibility of implementing some form of automatic signalling of changes (including the need for a re-scan) using part of the multiplex transmissions. This technique is in its infancy and might be possible but requires the co-operation of both the broadcasters, who will need to modify a small part

of their transmitted signal, and set-top box manufacturers, who will need to make sure their devices respond correctly to such signalling. This is, of course, only an option for new set-top boxes and is of no use to those that have already been purchased and installed. Given the number of set-top boxes which are likely to be sold and/or installed in the run up to switchover, especially including all those to be deployed as part of the targeted help scheme, the BBC considers that the development of this standard may still be of some use, even if it is only ever implemented in part of the box population.