



Data limits on digital terrestrial television multiplexes

Guidance

Publication date: 14 December 2006

Introduction

- 1.1 This guidance is provided to assist television broadcasters and licensed television multiplex providers to interpret and apply relevant provisions of the Broadcasting Act 1996 with respect to the data limits on television multiplexes.
- 1.2 The legislative context for data limits is set out in section 12 of the Broadcasting Act 1996 (“the 1996 Act”), as amended by section 242 of the Communications Act 2003 (“the 2003 Act”). The requirements of that legislation are implemented in the DTT multiplex licences for multiplexes 2, A, B, C and D. Annex 1 contains consolidated extracts from the relevant legislation, relevant definitions and a typical multiplex licence condition.
- 1.3 There are five areas where this guidance provides help to licensees on the interpretation of these requirements:
 - Services included within the 90%
 - The basis for the percentage calculation
 - The time period for the percentage calculation
 - How the limit is monitored and enforced
 - Future services
- 1.4 This guidance reflects Ofcom’s current understanding of the legislation and consideration of the general issues at the present time. However, broadcasters and multiplex operators should seek their own legal advice on the legislative requirements. Any changes to their existing arrangements they deem necessary and appropriate in light of this guidance should be undertaken as soon as reasonably practical.
- 1.5 The guidance is non-binding and does not represent a definitive decision about any particular case. Ofcom cannot fetter its discretion when considering whether a particular case does or does not meet the rules set out in the legislation; or what enforcement measures it is appropriate to take; but if a dispute arises in the future, Ofcom will take into consideration all the circumstances of the case, in the context of its statutory duties at the time, before reaching a definitive decision.

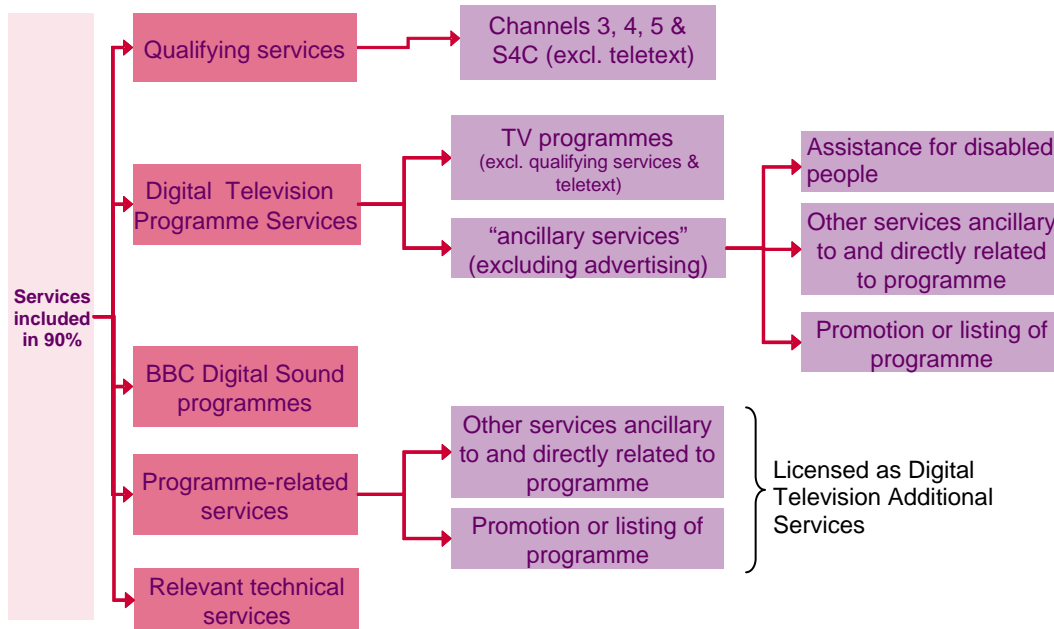
Services included within the 90%

- 1.6 The legislation reserves at least 90% of the capacity on each of the multiplexes licensed by Ofcom for specific types of programme services. At present these are defined to include:
 - qualifying services, excluding the digital public teletext service
 - digital television programme services
 - digital sound programme services provided by the BBC (but not the equivalent commercial radio services)
 - programme-related services; and

- relevant technical services

1.7 Figure 1 below provides a simplified illustration of the components of these services, each of which is discussed in more detail in the following paragraphs.

Figure 1: Simplified overview of the services included in the 90%



Qualifying Services

1.8 “Qualifying Services” are Channel 3, Channel 4, Channel 5 and S4C. Note that for the purposes of section 12 of the 1996 Act, qualifying services do not include the digital public teletext service.

Digital television programme services (DTPS)

1.9 DTPSs are services consisting wholly or mainly of images capable of being seen as moving pictures (“normal” TV channels), either licensed by Ofcom under a Digital Television Programme Service (DTPS) licence, or provided by a broadcaster with an equivalent authorisation from another EU Member State, or provided by the BBC under the Charter. They do not include qualifying services or the digital public teletext service.

1.10 As well as full screen moving pictures, DTPSs could include moving pictures that only fill part of the screen, for example a quarter screen service.

1.11 The definition of DTPS also includes subtitling and audio-description services, promotion and listing of the DTPS and other services which are ancillary and directly related to the DTPS. Examples of such services are interactive and explanatory material associated with a programme, for example material accessed through the ‘red button’. Such material can be of all kinds – text, still images and graphics as well as moving pictures and sound - and may be available for a period before and after the broadcast programme service. In this case it may be accessed via a more generic interactive menu rather than the ‘red button’ whilst the programme is broadcast. However, it must still be directly related to the contents of the programme.

- 1.12 The principal restriction is that advertising services, even though directly related to a programme, do not qualify as ancillary.

Digital sound programme services provided by the BBC

- 1.13 The legislation sets out that BBC radio services are included in the 90%, but commercial radio services are not.

Programme-related services

- 1.14 “Programme-related services” are those which are ancillary and directly related to programme services; or which contain information about the promotion or listing of such programmes. Programme-related services will always be Digital Television Additional Services (DTAS), although not all DTASs will be programme related.
- 1.15 The test for services which are ‘ancillary and directly related to’ a programme service in the context of a ‘programme-related service’ is broadly the same for services which are ‘ancillary and directly related to’ a DTAS. The key difference is that services meeting this criteria and licensed as a DTAS will get included in the 90% via the ‘programme-related service’ route rather than as part of a DTAS.
- 1.16 Promotion and listing of programme services includes the provision of Electronic Programme Guides (EPGs). EPGs are a critical part of the digital television experience, and the availability of an EPG is a key benefit which viewers gain from the switch to a digital service. The 1996 Broadcasting Act refers to “the promotion or listing of such programmes” which indicates that the information needed to populate the EPG should be considered as a programme-related service rather than as “data”.
- 1.17 Each DTT multiplex carries its own EPG information, but also cross-carries that for the other multiplexes. This is an effective way to ensure that all viewers, whichever multiplex they are watching, receive EPG information about the whole DTT services. The whole of the cross-carried EPG information should therefore be considered as programme-related services rather than as “data”.

Relevant technical services

- 1.18 The definition of “technical service” in section 24(3) of the Broadcasting Act 1996 indicates that the term refers to the encryption or decryption of services and is also subject to an order made by the Secretary of State made in 1997 (reproduced in Annex 4). Based on this, Ofcom considers data streams used for encryption purposes and associated with conditional access services to be covered by this term.
- 1.19 “Relevant technical service” is defined in Section 12(4)(c) of the 1996 Act and must also relate to one or more services discussed above which are permitted within the 90%, ie qualifying services, digital television programme services, digital sound programme services provided by the BBC and programme-related services.

Examples of what can and cannot be treated as part of the 90%

- 1.20 In summary, therefore, Ofcom considers that the following are likely to be examples of services falling into and outside the 90%.
- 1.21 In the 90%:

- EPGs because an EPG is a “programme-related service” and as such falls within the services listed in section 12(1A) of the 1996 Act (EPGs are licensed as DTAS).
- extra information about a programme, for example reached through the red button, because it falls within the definition of "ancillary service" (which deems it to be part of the DTAS licensed service that it is ancillary to), provided it is not advertising
- extra information about a programme licensed with a separate DTAS licence providing it can be described as a "programme-related service" (because programme-related services are listed in section 12(1A) of the 1996 Act)
- subtitling for the deaf and other assistance for the disabled (because such a service is "an ancillary service" - i.e. part of the DTAS)
- relevant technical services relating to one or more services which are permitted within the 90%

1.22 Things that cannot be included in the 90% are:

- the public teletext service
- interactive services, for example games, which are not directly related to a licensed programme service or its listing or promotion
- any service which is licensed as a DTAS unless it is a programme-related service
- any advertising, even if it is directly related to the contents of a programme
- any technical service that is not a relevant technical service

The basis for the percentage calculation

1.23 The legislation refers to 90% of “digital capacity”. In order to enable the calculation to be made, it is important that Ofcom should be clear about the definition of “digital capacity”.

1.24 A DTT multiplex is licensed by Ofcom to broadcast in a channel of 8MHz. Depending on the transmission mode adopted by the licensee, this channel can deliver a range of data rates.

1.25 The overall bit-rate of DTT multiplexes is given in the European Telecommunications Standards Institute (ETSI) specification ETS 300 744 'Digital broadcasting systems for television, sound and data services; framing structure, channel coding and modulation for digital terrestrial television'.

1.26 The two modes in use in the UK, and their total bit-rate, are:

- 16QAM¹, rate 3/4, guard interval 1/32 (18.10Mbit/s)
- 64QAM, rate 2/3, guard interval 1/32 (24.13Mbit/s)

¹ Quadrature Amplitude Modulation

- 1.27 The DTT multiplexes carry a number of streams of data to allow the management of the multiplex. These include Service Information (SI) and Programme Specific Information (PSI). All of these are invisible to end-users and perform a purely technical function in allowing the component programme streams multiplexed together to be unpacked and delivered to the user. The multiplex could not exist without these data streams. Together they represent some hundreds of kbps on each multiplex.
- 1.28 PSI and SI packets can also be excluded from the calculation of “digital capacity”. An alternative approach would be to apportion SI/PSI packets, so that those related to services in the 90% (such as EPGs) are counted in the 90%. However this is likely to be a technically more complex approach.
- 1.29 In both cases, it is up to the multiplex operator to use the measurement methodology they consider most practical.

The time period for the percentage calculation.

- 1.30 DTT multiplexes operate on the statistical multiplexing principle. The individual services use different proportions of the total multiplex capacity from one moment to another, thereby optimising the bit-rate available to each. Statistical multiplexing is a valuable tool to ensure that multiplex capacity is used as intensively as possible, and it is therefore highly beneficial to the efficient use of multiplex capacity for the operation of this technique to be as flexible as possible.
- 1.31 Ofcom therefore considers that the calculation of the data percentage should be done over 24 hours. This means that within every 24 hour period, the multiplex would remain within the limits, but would have the flexibility, to use data capacity more heavily at certain times of day.

New technologies

- 1.32 These guidelines are technology neutral. New technologies are emerging for use of the DTT platform that may increase its capacity, functionality and enable new services. If new technologies are adopted on DTT in the future, these guidelines will continue to apply in a technology neutral way. However, these guidelines do not affect the requirement for multiplex operators to comply with the technical specifications set out in “Reference Parameters for Digital Terrestrial Television Transmissions in the United Kingdom”.

How the limit is monitored and enforced.

- 1.33 The responsibility for monitoring the data limit lies with licensees, with occasional audits mounted to ensure compliance. This represents a light-touch approach to regulation which is consistent with Ofcom’s principles.
- 1.34 If Ofcom has any reason to suppose that the limit is not being met in a particular case, it will raise the matter with the licensee and seek more detailed information. This guidance will be taken into account, alongside any other relevant factors at the time. If Ofcom finds a breach of the limit, it will require the licensee to observe fully the terms of their licence by making the changes necessary to restore the limit. However it should be noted that whilst Ofcom would prefer to resolve any breaches in this way, this is guidance only and cannot fetter Ofcom’s discretion in the carrying out of its regulatory duties, which may include using any of the sanctions available to it under the licence to ensure that Conditions of the licence are complied with.

Annex 1

Legislative position

Introduction

A1.1 The legislative context for data limits is set out in section 12 of the Broadcasting Act 1996 section 12, as amended by section 242 of the Communications Act 2003. The requirements of that legislation are implemented in the DTT multiplex licences for multiplexes 2, A, B, C and D. This section provides consolidated extracts from the relevant legislation, relevant definitions and a typical multiplex licence condition.

The data limit

A1.2 Section 12 of the Broadcasting Act 1996, as amended by section 242 of the Communications Act 2003 requires that:

(1) A multiplex licence shall include such conditions as appear to OFCOM to be appropriate for securing—

(h) that, while the licence is in force, at least the required percentage of the digital capacity on the frequency or frequencies on which the service is broadcast is used, or left available to be used, for the broadcasting of services falling within subsection (1A).

(1A) The services falling within this subsection are—

(a) qualifying services;

(b) digital programme services licensed under this Part or provided by the BBC;

(c) digital sound programme services provided by the BBC;

(d) programme-related services; and

(e) relevant technical services.

(4) In subsection (1A)—

(a) “qualifying service” does not include the digital public teletext service,

(b) “programme-related service” means any digital additional service consisting in the provision of services (apart from advertising) which—

(i) are ancillary to the programmes included in one or more television programme services (within the meaning of Part I of the 1990 Act), or in one or more digital sound programme services provided by the BBC, and are directly related to the contents of those programmes, or

(ii) relate to the promotion or listing of such programmes, and

(c) “relevant technical service” means any technical service which relates to one or more services falling within subsection (1A) which are comprised in the multiplex in question.

(4A) In subsection (1)(h), the reference to the required percentage is a reference to such percentage equal to or more than 90 per cent as OFCOM—

(a) consider appropriate; and

(b) specify in the condition.

(5) The Secretary of State may by order amend subsection (4A) by substituting for the percentage for the time being specified there a different percentage specified in the order.

(6) No order under subsection (5) shall be made unless a draft of the order has been laid before and approved by a resolution of each House of Parliament.

Definitions

A1.3 **Digital Television Programme Service** (defined in section 1(4) of the 1996 Act; see also section 362 of the Communications Act)

means a service consisting in the provision by any person of television programmes (together with any ancillary services, as defined by section 24(2)) of the Broadcasting Act 1996 with a view to their being broadcast in digital form so as to be available for reception by members of the public, whether by him or by some other person, but does not include—

(a) a qualifying service,

(b) a teletext service, or

(c) any service in the case of which the visual images to be broadcast do not consist wholly or mainly of images capable of being seen as moving pictures,

except, in the case of a service falling within paragraph (b) or (c), to the extent that it is an ancillary service.

A1.4 **Digital Television Additional Service** (defined in section 24(1) of the 1996 Act, see also section 362 of the Communications Act)

means any service which—

(a) is provided by a person with a view to its being broadcast in digital form (whether by him or some other person) so as to be available for reception by members of the public;

(b) is so provided with a view either—

(i) to the broadcasting being by means of a television multiplex service or by means of a general multiplex service; or

(ii) to the members of the public in question being or including members of the public in an EEA State other than the United Kingdom, or in an area of such a State; and

(c) is not a Channel 3 service, Channel 4, Channel 5, a public television service of the Welsh Authority, the digital public teletext service, a digital programme service, a digital sound programme service, an ancillary service or a technical service.

A1.5 Qualifying Service (defined in section 2(2) of the 1996 Act):

means any of the following, so far as they are provided with a view to their being broadcast in digital form—

(a) a television broadcasting service included in Channel 3;

(b) Channel 4;

(c) Channel 5;

(d) S4C Digital;

(e) a television programme service provided by the Welsh Authority with the approval of the Secretary of State under section 205 of the Communications Act 2003;

(f) the digital public teletext service.

A1.6 Ancillary Service (defined in section 24(2) of the 1996 Act):

means any service which is provided by the holder of a digital programme licence or by an a relevant public service broadcaster and consists in the provision of—

(a) assistance for disabled people in relation to some or all of the programmes included in a digital programme service or qualifying service provided by him;

(b) a service (apart from advertising) that relates to the promotion or listing of programmes included in such a service or in a digital sound programme service so provided; or

(c) any other service (apart from advertising) that is ancillary to one or more programmes so included, and relates directly to their contents.

A1.7 Technical Service (defined in section 24(3) of the 1996 Act):

means a service which—

(a) is provided for technical purposes connected with the encryption or decryption of one or more digital programme services, digital sound programme services or digital additional services, and

(b) is of a description specified in an order made by the Secretary of State.

Other definitions

- A1.8 **Television programmes** - see s.405 of the Communications Act
- A1.9 **Available for reception by members of the public** - see section 361 of the Communications Act
- A1.10 **Television Multiplex** -see section 241(1) of the Communications Act and section 1(1) of the 1996 Act
- A1.11 **General Multiplex** - see section 175 of the Communications Act
- A1.12 **Relevant public service broadcaster** - see section 24(3A) of the 1996 Act
- A1.13 **Public television service of the Welsh Authority** - see section 24(3A) of the 1996 Act
- A1.14 **Text service** - see section 362 of the Communications Act
- A1.15 **Public teletext service** - see section 362 of the Communications Act and section 218 of that Act
- A1.16 **Digital sound programme service** - see section 72 of the 1996 Act

Technical services order

- A1.17 The Broadcasting (Technical Services) Order 1997 relates to the definition of “technical service” and is reproduced below (also see (<http://www.opsi.gov.uk/si/si1997/19971856.htm>)).

1997 No. 1856

BROADCASTING

The Broadcasting (Technical Services) Order 1997

Made	29th July 1997
Laid before Parliament	29th July 1997
Coming into force	20th August 1997

The Secretary of State, in exercise of the powers conferred on him by section 24(3)(b) of the Broadcasting Act 1996[1], hereby makes the following Order:

1. This Order may be cited as the Broadcasting (Technical Services) Order 1997 and shall come into force on 20th August 1997.

2. The services specified for the purposes of section 24(3)(b) of the Broadcasting Act 1996 are those consisting of the transmission of telecommunication signals (as such expression is defined in section 48(6) of the Broadcasting Act 1990[2]) by means of which access to programmes or other information included in digital programme services or digital additional services is controlled so that only those viewers who are authorised to receive such programmes and information do so, and which are required to be offered to all holders of licences under Part I of the Broadcasting Act 1996 in accordance with regulation 11(1)(a) of the Advanced Television Services Regulations 1996[3].

Chris Smith
Secretary of State for National Heritage

29th July 1997

EXPLANATORY NOTE

(This note is not part of the Order)

The Order describes technical services for the purposes of section 24(3)(b) of the Broadcasting Act 1996 ("the Act"). Technical services must be defined in order for them to be distinguished from digital additional services, which will be licensed by the Independent Television Commission under section 25 of the Act.

Notes:

[1] 1996 c. 55.

[2] 1990 c. 42.

[3] S.I. 1996/3151.

Typical multiplex licence condition

A1.18 The numbering and wording of the data limit license condition varies slightly between multiplexes, however a typical condition is set out below:

Condition 7:

(1) The Licensee shall ensure that, during the Licence Period, at least 90 per cent. (or such other percentage as Ofcom may from time to time specify pursuant to Section 12 (5) of the 1996 Act) of digital capacity on the Frequencies is used or left available to be used for the broadcasting of digital television programme services licensed under Part I of the 1996 Act or provided by the BBC, digital sound programme services provided by the BBC, qualifying services, programme-related services and relevant technical services.

(2) For the purpose of Condition 7 (1), "qualifying services" shall be interpreted in accordance with Section 12 (4) (a) of the 1996 Act.

(3) The Licensee shall supply to Ofcom in relation to such periods, in such form and at such times as Ofcom shall require, information as to the percentage of digital capacity available on the Frequencies for the broadcasting of digital television programme services, digital sound programme services, qualifying services, programme-related services, digital television additional services or relevant technical services together with the name of each person providing one or more such services and the percentage of digital capacity available on the Frequencies to him in relation to each such service provided by him.