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Logical Channel Number Policy for a Next Generation Platform

Response to consultation

Service List Registry

August 2023

Contents

Executive summary

Everyone TV is consulting on proposals to introduce a new Logical Channel Number Policy for a Next Generation Platform for television services in the United Kingdom.

The Service List Registry provides an open platform to enable service discovery for audiovisual media services.

Drawing on years of experience advising on the convergence of the internet and television services, this response provides detailed answers to the specific questions raised in the consultation. It suggests ways in which such a numbering scheme might be best implemented to allow services to be easily navigated, selected, and accessed.

The recommendations are based on our own extensive research on how a national service list might be structured for the United Kingdom.

Central to the recommended approach are the requirements of the viewer and the need for a numeric service selection system that is logical, intuitive and easy to use.

The suggested strategy is based on a study of the numbering systems employed on the four main television platforms in use in the United Kingdom and it incorporates elements from all of them. This is supported by a category analysis of over 9,000 television services available across Europe.

The research demonstrates the difficulty of devising a system that is entirely consistent and compatible with existing numbering schemes that have arisen independently on competing platforms over the last two decades. A pragmatic approach to the problem attempts to ensure consistency and commonality as far as possible.

The recommendations are consistent with the regulatory requirements of the Ofcom *Code of Practice on Electronic Programme Guides* and the anticipated provisions of the *Draft Media Bill* as it applies to Television Selection Services and Radio Selection Services.

The result is a rational national Logical Channel Number scheme that could be adopted and deployed by the Service List Registry and applied to the Everyone TV Next Generation Platform.

Key number range recommendations

LCN Range	Category
1-99	Favourite channels, pre-assigned with primary services
100-199	Entertainment services, including Designated Channels
200-299	Time-shift and additional Entertainment services
300-799	Thematic channels organised by category, including News and Children
800-975	Radio services
980-999	Adult services with parental controls
1000-9999	Other non-broadcast services

A simple set of business rules is suggested for allocating services to these categories, retaining families of channels where possible and including provision for directly selectable online applications.

An additional means of identifying related channels is recommended to enable cross navigation between families of service.

The numbering framework provides up to 99 custom numbers to enable viewers to set their own personal favourites as shortcuts to the channels that are of most interest to them, while maintaining a fixed list of Logical Channel Numbers from 101 that provide for appropriate prominence and consistency.

A method of tagging is recommended to enable non-broadcast services with numbers above 1000 to be presented in the appropriate thematic category, following any services already allocated in that range.

Recommendations are provided to enable the numbering allocation to be reviewed annually and updated periodically, allowing numbers to be vacated, new services to be introduced, permitting services to change numbers within a category.

These suggestions are indicative and should be subject to further consultation from stakeholders, with a view to drafting a formal policy and set of procedures.

Such a Logical Channel Number system can be implemented using available open standards and can be demonstrated working with a wide range of devices and displays, including receiver models that are already in the market.

Our recommendation is that the resulting Logical Channel Number framework should be managed by Ofcom, the independent communications regulator for the United Kingdom, through a revised *Code of Practice*. This would not apply retrospectively to existing television platforms but would provide a national framework for service numbering for the next generation of services.

This system will provide a nationally regulated Service List of audiovisual media services, while enabling platform operators and manufacturers of devices and displays to have the flexibility to innovate and differentiate their products and services.

Such a system can be introduced progressively, without requiring any changes to existing terrestrial or satellite transmission arrangements. It will provide a flexible foundation for the next generation of audiovisual media services.

We welcome further dialogue with Everyone TV and other stakeholders, including media providers, policy makers, and the regulator, on developing and refining this Logical Channel Number framework.

Suggested arrangements for the first groups of Entertainment channels

Service	Suggested	Notes
BBC One	1 / 101	Relevant national or regional service
BBC Two	2 / 102	
Channel 3	3 / 103	Relevant ITV / STV / UTV regional service
Channel 4	4 / 104	S4C in Wales
Channel 5	5 / 105	
	6 / 106	Vacant
Local	7 / 107	Local service for region
National / Local	8 / 108	BBC Scotland in Scotland
National	9 / 109	BBC Alba in Scotland, Channel 4 in Wales
BBC iPlayer	10 / 110	Direct number for online player
BBC Three	11 / 111	
BBC Four	12 / 112	
ITVX	13 / 113	Direct number for online player
ITV2	14 / 114	Channel 3 portfolio service
ITV3	15 / 115	"
ITV4	16 / 116	"
ITV Be	17 / 117	"
4	18 / 118	Direct number for online player
E4	19 / 119	Channel 4 portfolio service
E4 Extra	20 / 120	"
More4	21 / 121	"
4seven	22 / 122	"
My 5	23 / 123	Direct number for online player
5USA	24 / 124	Channel 5 portfolio service
5Star	25 / 125	"
5Select	26 / 126	"
5ACTION	27 / 127	"
UKTV Play	28 / 128	Direct number for online player
Dave	29 / 129	UKTV portfolio service
Drama	30 / 130	"
W	31 / 131	"
Yesterday	32 / 132	"
NOW	TBC	Sky / Comcast family service
Sky Arts	TBC	"
Pick	TBC	"

Suggested arrangements for the first groups of Entertainment channels

Service	Suggested	Notes
Challenge	TBC	"
Discovery+	TBC	Warner Bros Discovery family service
Quest	TBC	"
Really	TBC	"
DMAX	TBC	"
Quest Red	TBC	"
Food Network	TBC	"
HGTV	TBC	"
Paramount+	TBC	Paramount family service
Legend	TBC	"
CBS Reality	TBC	"
Reality Xtra	TBC	"
Horror Xtra	TBC	"
…		Further services…

1.   Preface

As Chief Executive of the Service List Registry, I welcome this opportunity to contribute to the Everyone TV consultation on a Logical Channel Number Policy for its proposed Next Generation Platform.

Based on internationally implemented open web standards, the Service List Registry enables compatible devices and displays to discover audiovisual media services in an open and competitive market. It supports the DVB-I specification developed by the DVB Project, which addresses the aim of the Everyone TV to enable seamless integration of services delivered over internet protocols with traditional terrestrial and satellite distribution.

The DVB-I specification provides for regulated service lists, enabling national regulatory authorities to approve lists of services, ensuring appropriate prominence for public service media.

The Service List Registry provides a federated global platform to enable audiovisual media service providers to announce services and support service discovery by any compatible device or display. It also provides consultancy services on how best to implement service discovery for audiovisual media services.

Media service providers have flexibility in structuring their service lists and logical channel numbers. This will ideally be achieved through consensus among media provider organisations. However, we recognise the benefits of a national numbering framework overseen by the relevant competent authority, which in the United Kingdom is the communications regulator Ofcom.

The suggestions in this response are therefore based on observations of best practices and international experience. They are not intended to be prescriptive. They may be adopted or adapted as appropriate. They are intended to be compliant with the latest revision of the Ofcom *Code of Practice on Electronic Programme Guides* and the anticipated provisions of the *Draft Media Bill* applicable to Television Selection Services and Radio Selection Services.

Beyond compliance with relevant regulations and competition requirements, our primary concern lies with the interests of the consumer. We seek to enable an open market for compatible devices and displays, allowing viewers to access a wide range of services in a way that offers them choice, convenience and control.

There is therefore the opportunity to create a coherent, consistent, compatible, and above all logical numbering scheme that serves the interests of media providers and their viewers.

I trust that readers, regulators, and policy makers will find this response to be a constructive contribution to the challenge of enhancing audiovisual media service discovery on next-generation platforms.

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Biography

As Head of New Media Operations at the BBC, Dr William Cooper helped to enable the launch of the Freeview digital terrestrial television platform and operationally supported numerous online and interactive service across multiple channels and platforms.

As the founder of the independent consultancy informitv, William has since advised on broadcast and broadband convergence around the world, including Freeview in Australia. He has also advised the European Commission on matters of transfrontier television and advised other leading management consultancies on television and video services.

With a background as a broadcast journalist, William gained a doctorate for his research on video literacy and how audiences appreciate television. He has a particular interest in viewer experience and user interface design. His weekly *Connected Vision* newsletter has been a regular read for thousands of executives around the world for almost two decades. He has chaired or produced over a hundred international conferences and is a regular judge of industry awards.

Service List Registry

The Service List Registry is a federated online directory of audiovisual media services, based on open standards. Registered regulators, media providers, and distributors can manage lists of offerings available online and through traditional broadcast networks. This enables compatible devices, displays and applications with different capabilities to discover and access relevant services from multiple sources, offering users choice, convenience and control, on any screen.

Supporting the open DVB-I standard for service discovery, developed by the international DVB Project that is responsible for standards used to deliver television services across Europe and around the world, the Service List Registry is committed to enabling a competitive market that supports the requirements of users, media providers, manufacturers of devices and displays, and national regulators.

www.slrdb.org

2.   Background

Television is an important medium that continues to inform, educate and entertain millions of viewers, contributing to our sense of national identity and culture.

Broadcast services face increasing competition from online services that can offer viewers more choice and flexibility in viewing.

Average daily television viewing times have fallen to around 40 minutes a day for children and young adults, and to about five-and-a-half hours a day for those aged over 65 with more time available to view. Average viewing of broadcast programming across all individuals, at time of transmission and on-demand, is over two-and-a-half hours a day.

Despite the availability of online video services from broadcasters, they still only account for a minority of viewing. The BBC iPlayer accounts for 14% of all BBC viewing, or around 8 minutes a day per person, while ITVX represents only 7% of ITV viewing, or an average of just 2 minutes a day per person.

Meanwhile, two-thirds of households have access to an online video subscription service like Netflix, Amazon Prime Video, or Disney+. Across the population these are collectively viewed for an average of approaching 40 minutes a day, although among young adults it is getting closer to an hour a day.

While digital terrestrial television, transmitted from tall towers and received through a rooftop antenna, remains the most popular way of receiving broadcast channels in the United Kingdom, it is in long-term decline. The same can be said for satellite services. The future of audiovisual media delivery is increasingly online.

There is an urgent need to facilitate the migration of viewers from legacy platforms to next-generation services, while still providing access to existing channels.

Television platforms

Everyone TV positions itself as the custodian of free television platforms in the United Kingdom. It is jointly owned by the BBC, ITV, Channel Four, and Channel Five, which are designated as public service broadcasters. Everyone TV has no statutory authority but is subject to the regulatory requirements of the communications regulator Ofcom.

- Freeview is a brand name for a digital terrestrial television service in the United Kingdom and is now operated by Everyone TV.

- Freesat is a brand name for a digital satellite television service that is now operated by Everyone TV.

- YouView has the same shareholders as Everyone TV, with the addition of BT and TalkTalk, that also provide services under their own brands.

- Sky and Virgin Media O2 operate pay television platforms in the United Kingdom. These have historically been delivered by satellite and cable respectively, but both operators now also offer services over internet protocols.

The television environment is now very different to the one in which Freeview was originally launched over twenty years ago in 2002. While digital terrestrial television remains an important platform, it operates in a much more competitive market.

The Ofcom *Communications Market* report provides an annual breakdown of households in the United Kingdom by television platform based on BARB Establishment Survey data.

Television ownership has remained consistent over the last ten years at around 95% of homes in the United Kingdom. The biggest decline has been the share of homes using digital terrestrial television, which has fallen from 72% to 52%, while the share of homes with online video subscription services has grown from 14% to 66%.

United Kingdom television homes by platform
%
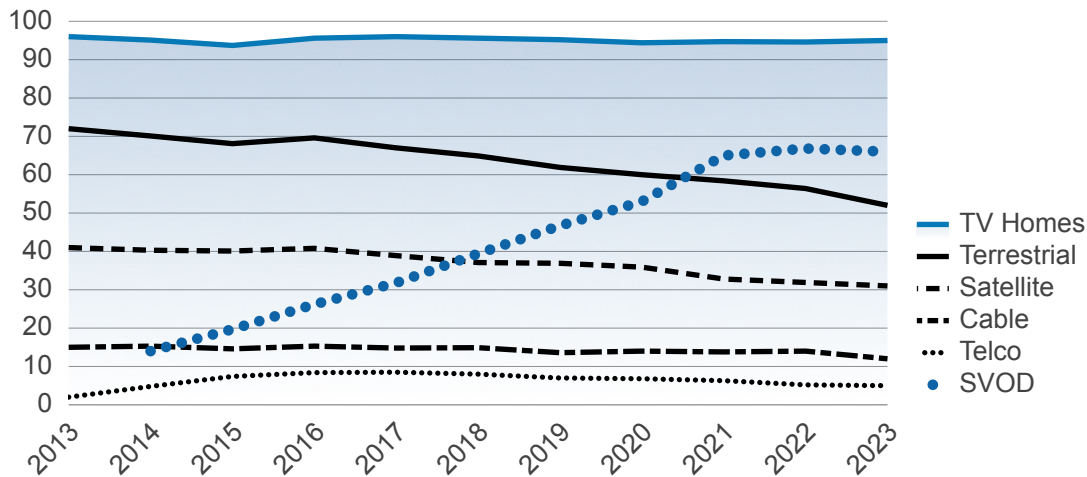
All television sets in the home.
Source: BARB Establishment Survey / Ofcom

- Just over half of households in the United Kingdom (52%) have digital terrestrial television in their home and just over a third (34%) only have digital terrestrial television, which is approaching 10 million homes.

- Three out of ten (31%) of homes have digital satellite television, which is approaching 9 million homes, with 27% of homes subscribing to Sky and 4% using free to view satellite services. Freesat is the main television service in fewer than a million homes.

- 12% of homes have digital cable television, of which Virgin Media O2 is the primary provider, with about 3.4 million television subscribers.

- A further 5% have a telco television service from BT, Plusnet, TalkTalk, or YouView, which is fewer than 1.5 million households.

The experience of Youview and Freesat, which have achieved relatively low market penetration after more than 10 and 15 years respectively, suggests that delivering and deploying a next-generation television platform is far from a guaranteed success.

The success of Freeview has rested on being a free service that works with virtually any retail television because it is based on internationally adopted open standards.

Sky has already launched an online platform, supporting Sky Glass and Sky Stream. Virgin Media has its own Stream proposition.

There are open standards available for next-generation services that are being implemented internationally. These allow for online services to be seamlessly included within a service list, enabling associated applications to be launched directly through a channel selection.

Any platform, device or display that does not integrate online services, including free and subscription services, is destined to be left behind as consumers adopt alternatives that offer choice, convenience and control.

Channel usage

The Ofcom *Media Nations* report provides an annual breakdown of broadcast television viewing in the United Kingdom. This is based on BARB viewing panel data, across all individuals, as viewed on a television, live or recorded, measured over a 28-day period.

United Kingdom television viewing by channels
%
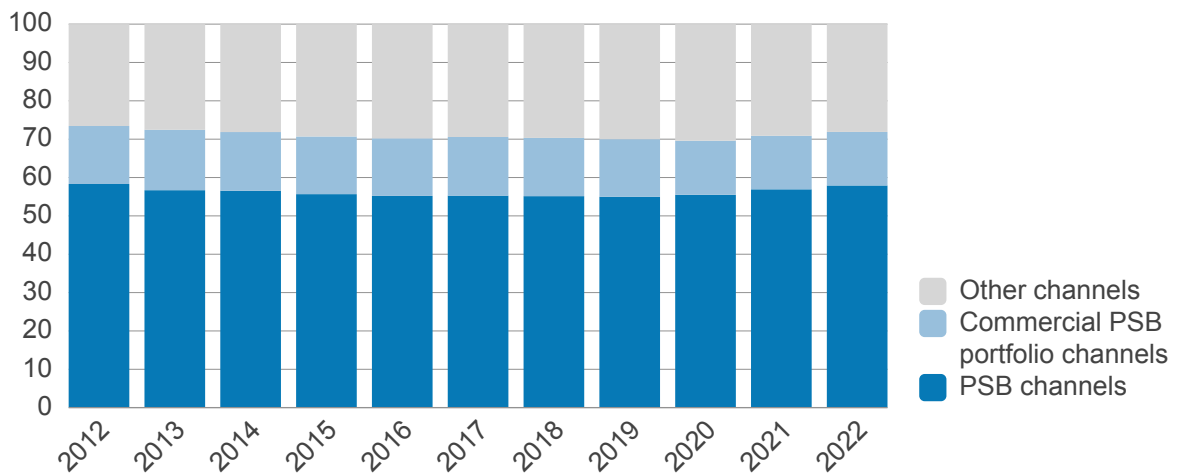
28-day consolidated viewing, all individuals aged 4+, on television sets
Source: BARB / Ofcom

While overall viewing of broadcast television has declined, especially among younger viewers, the relative share of public service broadcasters has remained remarkably consistent, only fluctuating by a few percentage points over recent years.

- Public service broadcasters, comprising all the BBC channels, Channel 3, Channel 4, and Channel 5, account for 57.7% of all broadcast television viewing.

- The portfolio channels of public service broadcasters, including their +1 time-shift channels, contribute a further 13.9% of broadcast television viewing.

- The remaining 28.4% of broadcast television viewing is accounted for by channels from other broadcasters.

With public service broadcasters and their portfolios constituting over 70% of UK television viewing, ensuring easy navigation is paramount for viewer satisfaction. The remaining viewing is shared across numerous other channels and different viewers are likely to have their own favourite services among them.

Audience research suggests that many homes and individuals tend to use a small selection of channels regularly. Although they tend to watch the most popular channels, beyond that they may each watch a slightly different selection of services that form a long tail of viewing options.

Channel numbering

There is a long historical tradition of associating television channels with numbers. This goes back to the inception of analogue television channels that were originally selected using physical

buttons and later using remote controls with number buttons, when there were relatively few channels from which to choose.

The main public service channels in the United Kingdom are strongly associated with the numbers 1, 2, 3, 4, and 5. Apart from the Channel 3 licence, which operates under the ITV, STV or UTV brands, these numbers are integral to the identity of the channels BBC One, BBC Two, Channel 4 and Channel 5.

There is therefore a strong mnemonic association between the channel brand and its number for certain channels.

Beyond the United Kingdom, some channels also strongly associated with numbers, such as TF1 in France or Das Erste in Germany. This can lead to inevitable conflicts when coordinating channel numbers across international services. This is a particular issue in Europe, where there is an assumption of transfrontier television and service portability.

Not all territories have adopted an incremental channel numbering scheme. In Australia, the commercial networks Seven, Nine and 10 have brands that were established according to the VHF transmission channel assignments of stations and have adopted these as their channel numbers. There is no Channel 1 in Australia, with 10 occupying the first position, succeeded by national broadcasters ABC and SBS.

Logical channel numbers

With the introduction of digital television came the ability to map a broadcast channel to a Logical Channel Number. These Logical Channel Number associations are transmitted in service information as part of the digital signal.

Internet-connected devices and displays now offer more flexibility, allowing broadcast channels to be linked to alternative numbers, using service information delivered online, separate from the primary broadcast. This capability is now part of an open standard known as DVB-I, which complements existing standards used for the delivery of traditional digital television services.

It is therefore possible to create a service list with reorganised numbers, without disrupting existing legacy transmissions. These virtual Logical Channel Numbers can be used to reorder legacy channel lists. Links to online services and applications can be seamlessly mixed with broadcast channels. There is no need to have different numbers for standard or high-definition versions of a channel. The same Logical Channel Number can also reference different service instances using different distribution technologies and present these to the use according to the capabilities of the device or display.

Designated channels

In the United Kingdom, certain services are defined as Designated Channels, as specified by the Secretary of State. This is codified by the communications regulator Ofcom, which published the latest update to its *Code of Practice on Electronic Programme Guides* on 31 July 2023.

The Designated Channels are currently all the BBC channels, Channel 3, Channel 4, Channel 5, S4C, local digital television programme services and simulcast local services.

These services must be given appropriate prominence in listings in Electronic Programme Guides. This is currently defined in terms of slot position in a list of channels, or an equivalent level of prominence.

- BBC 1, BBC 2, Channel 3, Channel 4 / S4C, and Channel 5 must be listed in the first five slots of an electronic programme guide.

- The national channels BBC 3 and BBC 4 must be listed within the first 24 slots.

- The news channels BBC News and BBC Parliament must be in the first 8 slots in the relevant genre section or relevant channel grouping.

- The children's channels CBBC and CBeebies must be in the first 8 slots in their relevant section or grouping.

Any regulated Electronic Programme Guide or television selection service must be compliant with these and other requirements of the Ofcom Code.

There is no specific requirement to employ either Logical Channel Numbers or genre categories, providing appropriate prominence is maintained.

There are requirements for arrangements to be managed in a way that is fair, reasonable and non-discriminatory, including publication and compliance with an objectively justifiable method of allocating listings.

The *Draft Media Bill* published by the Government on 29 March 2023 includes provisions for prominence of public service media on Television Selection Services and the availability of United Kingdom radio services through Radio Selection Services.

The Bill includes provisions for Ofcom to designate Internet Programme Services associated with Public Service Broadcasters that are within scope of the prominence regime.

The planned legislation also establishes the definition of a Television Selection Service and the definition of a Regulated Television Selection Service that is used by a significant number of users in the United Kingdom.

The Bill also defines a Radio Selection Service and a category of Regulated Radio Selection Service that applies to the selection of internet radio services by spoken commands.

Responsibility for regulation of Television Selection Services and Radio Selection Services is delegated to Ofcom that is charged with issuing a Code of Practice to ensure compliance.

Alternatives to channel numbers

Logical Channel Numbers provide a convenient means of direct selection through a conventional remote control.

There is empirical evidence that many viewers simply use up and down channel selection and scrolling through lists of channels to identify them by name or logo rather than attempting to select them directly.

Some remote controls no longer use number buttons. They simply use directional navigation and visual feedback.

Some user interfaces also provide alternative forms of navigation through lists, using a pointer, touchpad, or scroll wheel, which can provide fast and smooth scrolling through lists.

Voice control systems allow direct selection services by name, although users may still prefer a manual means of control.

There are ways of presenting service information that do not require logical channels numbers, including grouping services by genre or category tags, families of related channels, favourite channel numbers, personalised recommendations based on usage, prioritisation according to prominence values, or simply alphabetic listing.

There is nevertheless a need to consider the natural order of items in a list, so a system of numbering remains useful.

Illogical channel numbering

The ordering of some channels on legacy platforms has become disorganised over time. With the introduction of additional channels from public service broadcasters in the United Kingdom, the association of channel brand and channel number has broken down and can appear quite arbitrary to viewers.

Portfolio channels

The introduction of digital television provided the opportunity for public service broadcasters to introduction additional services, often referred to as portfolio channels. The numbering of the portfolio channels of public service broadcasters is particularly confusing on Freeview.

- BBC Three is currently number 107 in high definition, and 23 in standard definition.

- BBC Four is on channel 106 in high definition and channel 6 in standard definition.

- ITV 2 is currently on channel number 6, while ITV 3 is on channel 10 and ITV 4 is on channel 26.

This requires a conscious act of memory on the part of the user. While some users may develop a cognitive association or muscle memory to select a favourite channel, this is often despite any system of numerical organisation.

This has arisen partly because of the way in which Freeview and other platform operators have historically managed the allocation of Logical Channel Numbers.

Competitive pressures have resulted in gaming the system to achieve strict compliance with the regulatory requirements for prominence and fair dealing that have resulted in unintended consequences and undesirable outcomes for viewers.

The poor performance of some portfolio channels may be partly attributable to their disorganised presentation in the channel list.

An alternative approach would be to allow a service provider to group all their channels together in a family if they so wish, preferably in a logical order, so that BBC 1, BBC 2, BBC 3, and BBC 4 could appear together, as could ITV 1, ITV 2, ITV 3, and ITV 4, and so on.

The apparent problem precluding this is that the main Designated Channels must appear in a designated sequence, which necessarily interrupts their own numerical order.

A solution to this conundrum is through tagging. This would allow a user interface to present related channels.

For instance, channels effectively tagged as 'BBC' could be viewed and navigated as a coherent set of services. Similarly, channels tagged as belonging to 'Channel 3' could be viewed as a set, as could those of 'Channel 4' and 'Channel 5'.

Such an approach would encourage viewers to explore related channels, while maintaining the strict requirements for prominence of Designated Channels.

Time-shift channels

Time-shift channels, often termed "+1 channels," present broadcasts that are delayed by an hour from their parent channel. However, their current arrangement on some platforms often lacks logical consistency.

On Freeview, Channel 4+1 is on channel 15. ITV 1+1 is on channel 35, while ITV 2+1 is on channel 29. There is no logical or mathematical order to such an arrangement.

It is therefore surprising that such channels find an audience, or more accurately that the audience can find them.

In contrast, Sky employs a system where many +1 channels are assigned a channel number that is 100 greater than their parent channel. This approach offers a degree of predictability.

The value of timeshifted channels should in any case diminish given the capabilities of connected services to offer restart and catchup options. They may become irrelevant and redundant on a next-generation platform.

Value of numbering

Logical Channel Numbers still play a key role in allowing viewers to select channels directly.

- Single-digit numbers allow direct selection with a single button press. This makes them particularly valuable. However, this only accounts for nine channels, disregarding zero.

- Two-digit numbers provide a range of a further 90 numbers, which is adequate to cater for the most popular channels.

- Three-digit numbers are used by cable and satellite platforms in the United Kingdom, starting at 101. There are almost 900 three-digit numbers in this range, which is more than the number of channels currently carried on most digital television platforms.

- Four-digit numbers provide a further 9,000 available numbers, which would be sufficient to cover every channel currently available in Europe.

Favourite numbers

Allowing users to assign services to custom numbers based on their personal preferences enhances usability and accessibility. This approach mirrors the convenience of using contact lists on mobile phones, eliminating the need to remember or enter long numbers. Similarly, bookmarks in browsers simplify the storage and access of web addresses.

This must be balanced against the requirement for users to assign such numbers, the importance of preserving prominence for designated public services, and the desire of service providers to use specific numbers.

The solution adopted by Sky exemplifies this balance by reserving the numbers 1-99 for user favourites, while employing Logical Channel Numbers starting with Designated Channels at 101.

Grouping numbers

Grouping ranges of numbers by category or genre can be useful when navigating many channels.

Platforms such as Sky have historically classified channels under a set of genres, although they now combine channel grouping with filtered views. Freesat and Virgin also use channel category grouping. The current Freeview Play service does not use rigorous genre categorisation, although it does group some categories of service, such as news and programmes for children.

Grouping channels thematically provides structure to an otherwise arbitrary numeric address space. Using round numbers like 300, 400 or 500 as landmarks for categories has value in helping viewers to navigate a numeric system.

It may be useful for channels to be grouped sequentially and thematically through some association to allow up and down navigation between related channels.

Some channel providers may consider the adjacency of channels with similar themes beneficial, enabling them to attract viewers from direct competitors.

Providers with a portfolio of channels may consider it is important to present an association between their channels to retain viewers within their offering.

It is useful to separate certain kinds of channels, such as those aimed at children, from those that are aimed specifically at adults. The use of numbering ranges may prevent inappropriate juxtapositions of channels, but it does not inherently limit their selection. There may be better ways to manage the presentation of such channels, such as modes limiting navigation to channels suitable for young children or inhibiting access to channels intended for adult viewers, which could be enabled or disabled through a mechanism such as a personal identification number.

The European Audiovisual Observatory classifies television services available in the wider European area under a set of 14 categories.

Table 1: Television channels in Europe by category

Category	Europe		Targeting UK	
Entertainment	762	8.1%	60	18.6%
Generalist	4273	45.4%	60	18.6%
Lifestyle / Leisure / Health / Travel	431	4.6%	8	2.5%
Film and TV Fiction	645	6.9%	40	12.4%
Music	458	4.9%	22	6.8%
Sport	822	8.7%	49	15.2%
Documentary	271	2.9%	10	3.1%
Cultural / Educational	199	2.1%	2	0.6%
News / Business	423	4.5%	13	4.0%
Parliamentary / Government / Administration	20	0.2%	2	0.6%
Children	309	3.3%	14	4.3%
Home Shopping	150	1.6%	3	0.9%
Religious	172	1.8%	1	0.3%
Adult	172	1.8%	8	2.5%
Other / Not Identified	299	3.2%	31	9.6%
Total	**9406**	100.0%	**323**	100.0%

Source: European Audiovisual Observatory / MAVISE

While the allocation of channels to specific categories may be in some cases be dubious, this provides a broad statistical overview of types of channels. It shows that Entertainment and Generalist are by far the most frequent type of channel. Film and TV Fiction, Music, Sport are clearly distinct categories. Documentary could be considered a significant category, particularly if combined with Cultural or Educational channels. News or Business is also a distinct category, that could be combined with Parliamentary, Government, or Administration channels. Children is a distinct category. Home Shopping is identifiable as a particular type of programming. Religious channels are equally prevalent to Adult channels across Europe.

BARB data show that sport constitutes around 7-10% of all television viewing in the United Kingdom, while movies make up about 7-8%. Documentaries provide 14-15% of all television viewing. Much of this viewing will be on mixed genre entertainment services, but this indicates their importance as distinct types of viewing.

Network neutrality

It is also important that any system of service ordering is network neutral, rather than reflecting the inherent limitations of any one delivery system or platform provider. For too long, separate policies and numbering schemes have emerged based on differences between platforms.

The result has been consumer confusion. Channel numbering may differ from home to home or even from room to room. It is also more difficult for service providers to promote their services, either on screen, online, or offline, when they need to announce or promote multiple numbers for different platforms.

Co-ordinated approach

A coordinated channel numbering system offers tangible benefits to consumers beyond just fulfilling the prominence requirements for Designated Channels of public service broadcasters.

An example of such co-ordination can be found in telephone numbers. Imagine the confusion if every telecom operator had a unique telephone numbering system. There are clear consumer benefits in a common framework for telephone numbering. This is provided at an international level by the International Telecommunication Union, an agency of the United Nations, and on a national level by Ofcom, which manages the UK National Telephone Numbering Plan.

While expecting subscription television providers to universally adopt a single numbering system might be optimistic, achieving greater alignment in service numbering across various platforms is a realistic goal. This alignment becomes particularly feasible when we consider the necessity to adhere to prominence regulations.

Given that some aspects of ordering are likely to be commercially contentious, this would require a process of independent assessment and arbitration. Rather than relying on an industry body with conflicting shareholder interests, the ultimate arbitrator should be the communications regulator Ofcom.

Summary

- Television remains a nationally important medium. Traditional television channels remain the main way in which people watch television. Channel numbers provide an important means of navigating services, although modern user interfaces offer other forms of interaction.

- Legislation and regulation include provisions to ensure the prominence of public service media in regulated electronic programme guides and television selection services by means of Designated Channels.

- Television platforms have implemented channel numbering and genre classification in different ways that are compliant with these requirements but lack overall consistency. There is an opportunity to learn from this and devise a numbering scheme that is more consistent and coherent.

- There is a role for the communications regulator Ofcom in encouraging a more co-ordinated approach that could achieve greater consistency and alignment in numbering across various platforms.

3.   Key organising principles

Consultation Q1 (Chapter 4). Do you agree with our key organising principles for an NGP EPG?

Do you have any comments on:

i.   our opinion that an NGP would require a new LCN Policy;

ii.   the main TV genre categories summarised in Table 1;

iii. our proposed approach for initially allocating LCNs to public service channels; and

iv. our proposed principles for ordering channels by reach, and allowing pairings of channels as the optimal trade-off between allowing family groupings and maintaining a reach-based ordering?

Comments

It is timely for Everyone TV to consult on a proposed new Logical Channel Number Policy. Given the proposals from the Government in its *Draft Media Bill* in relation to Television Selection Services, it is surprising that no reference is made to this in the consultation.

The consultation is not presented as an attempt to understand what other stakeholders would like to see but a specific proposal on which their opinions are sought.

Everyone TV references quantitative and qualitative research that it has commissioned to understand viewer preferences, but it provides no further details of this beyond vague generalities.

LCN Policy

A next-generation platform provides an opportunity to employ different approaches to signalling service information. This can include Logical Channel Numbers and virtual channels, mapping existing services to an integrated service proposition. A next-generation platform need not be restricted by the constraints and conventions of a grid guide with a list of linear channels.

The consultation is correct to note the confusion created by the historical differences between the existing Logical Channel Number assignments on Freeview digital terrestrial television and Freesat digital satellite television in the United Kingdom. It should be noted that these also differ from the channel numbering on other popular platforms operated by Sky and Virgin Media. There is little mention in the consultation of YouView, which currently shares much of its Logical Channel Number scheme with Freeview.

As the system that has arisen under the previous management of Freeview and Freesat is highly inconsistent, it would make sense to consumers to adopt a more rational scheme for organising channels.

Since the operation of Freeview and Freesat are now in common ownership under Everyone TV, it seems sensible that any proposed future platform should adopt a rationalized approach to Logical Channel Number assignments and require a new LCN Policy.

Any new LCN Policy adopted by Everyone TV would only apply to its Next Generation Platform and would only be relevant to the extent that consumers adopt such a platform, which is uncertain.

Given that it is likely that legacy Freeview and Freesat services and receivers will continue to operate for many years, the proposed LCN Policy would introduce an additional numbering scheme to the market that is already fragmented rather than consolidate any existing arrangements.

Such a scheme needs to account for platform neutral delivery from the outset. It therefore needs to consider the requirements to incorporate not only the existing Freeview and Freesat services, but also the considerable expansion that could be enabled by the integration of online services.

The conspicuous omission is that the Everyone TV proposal does not include online video services from either its own shareholders or popular third-party services in its numbering scheme.

There may be an assumption that online services will be delivered by separate apps, or even that the Everyone TV proposition will somehow subsume these services within its own app.

The failure to address the provision of online offerings, or recognise the availability of competing online video services, is a serious limitation.

There is also a presumption that Everyone TV, an organisation that is wholly owned by public service broadcasters, should determine the order and numbering of services of other commercial media providers.

Of serious concern is the suggestion that Everyone TV intends to develop a new protocol for online channels that it refers to as NGP-approved IP-delivered channels. There is no legitimate need for this, given the availability of open standards for the delivery of online video services, using both unicast and multicast methods that have been proven elsewhere.

While there is a role for an organisation to represent the interests of its public service broadcaster shareholders, it should not act as a gatekeeper to other services. The need to prioritise and protect the interests of public service broadcasters is well understood and is a legal and regulatory requirement. This does not extend to excluding the interests of other parties.

The design of any channel numbering system should prioritise the requirements of viewers who will determine for themselves what they want to watch. That should accommodate their personal preferences, including a wide range of online services.

The future success of universally available public service media will be achieved by creating a service offering that is aligned with the interests of viewers through a rational service proposition that they can easily navigate.

It would be preferable to propose a generic system that could be incorporated in a national numbering framework and adopted by Ofcom as part of its Code of Practice. This would not apply to existing platforms retrospectively but would form the basis of future platform and service development.

To this end, this response provides further recommendations on how such a generic numbering scheme might be constructed, together with a simple set of rules that could be applied in implementation.

Genre categories

The modest proposal from Everyone TV is for seven main genre categories: Entertainment, News, Children's, Music, Shopping, Faith and International, and Adult, plus Radio.

While this seems superficially reasonable, it has obvious omissions. Sport and Movies are notably absent. This seems extraordinary, given that these are major reasons that people watch television, accounting for over 15% of all viewing.

The justification given for this is that dedicated channels in these categories are predominantly pay services and that such programming is provided as part of general entertainment on a free platform.

The argument offered is that there are no dedicated sports channels on Freeview and that there are only seven movie channels. These include, incidentally, Film4, from Channel 4, one of the shareholders in Everyone TV, a channel with the eighth highest weekly audience reach on Freeview in 2022.

It appears perverse to preclude the possibility of major categories like Sport and Movies on apparently competitive or commercial grounds. It does not appear to be in the interest of viewers or a competitive market. Our recommendation is to include separate categories for Sport and Movies to allow for future expansion.

The grouping of Faith and International seems strange, as if these are somehow related. It suggests a marginalisation of such services. It is recommended that there be separate categories for Religion and International, where International includes primarily foreign language programming.

There are several schemes of genre classification in use in the television domain. Based on our analysis of these, the following genre categories are recommended: Entertainment, Movies, Music, Sport, Documentary, News, Regional, Children, Shopping, Religion, International, and Adult, plus Radio. An indication of how these can be applied to number ranges is provided in Table 3 later in this document.

Public service channels

There is a legal and regulatory requirement in the United Kingdom for the Designated Channels of public service broadcasters to be presented with appropriate prominence.

This imposes certain constraints on the numbering of these Designated Channels, complicated by the regionalisation requirements around national and local channels.

A recommended approach is provided in Tables 5, 6, 9 and 10 later in this document. These propose a rational scheme for allocating numbers to regionalised local and national services, and the assignment of a dedicated channel number for the BBC iPlayer in addition to the BBC Three and BBC Four services.

Audience reach

Once Designated Channels are assigned numbers, the question remains of how to allocate channel numbers to other channels within genre categories, particularly in the rest of the Entertainment group.

The approach proposed in the consultation of determining numerical priority by audience reach as the top-level criterion for ordering channels other than those of the shareholders of Everyone TV is superficially attractive but fundamentally flawed.

A brief consideration of the Table 4 in the consultation showing the 40 most popular channels ranked by weekly reach demonstrates the arbitrary appearance of such an approach.

It is unclear why average weekly 5-minute audience reach over time is a better measure than volume of viewing over time in viewer minutes. It is a meaningless metric to viewers. Viewing a channel for as little as 5 minutes a week barely constitutes a meaningful experience.

It may seem reasonable that a more widely used service should receive numerical priority as this will be of benefit to more viewers.

Such an approach will tend to reflect the *status quo* by definition, which may indeed by the intent of its design. It favours already dominant players. It also disadvantages those that are less popular.

This assumes that usage, as measured by audience reach, is inherent to a service and not a factor of its position in a list. If this were the case, its numerical position should be irrelevant.

Given that some services may become more popular over time, while others may become less popular, it requires a mechanism to reassess reach and reassign numbers, which will inevitably lead to viewer confusion and frustration.

Audience reach is only one dimension of the importance of a service. A niche channel may have a small reach but provide an important service that is highly valued by its viewers.

Prioritisation by reach will necessarily lead to the marginalisation of minority interests, which is contrary to public policy objectives for freely available services.

Measurement of reach is inherently unreliable for smaller audiences based on current statistical estimates involving panel methods. The margin of error means that measurement of small audiences becomes unreliable. Some services do not participate in the industry measurement scheme for this reason.

On a connected television platform it may be possible to measure actual viewing through devices and displays and present lists of services by popularity or usage, potentially changing daily. However, this does not mean that this would provide a suitable or stable system of organisation for channel numbers.

There is no real reason to believe that prioritisation based on reach will result in a system of navigation that is any more usable than the broken system of channel numbers that has arisen on Freeview and Freesat over the past two decades.

The requirement for measurement arises because of a need for ordering and an objectively justifiable method for allocating assignments that is fair, reasonable, and non-discriminatory.

Ideally there would be an element of curation, or intentional and subjective ordering for the benefit of the service provider and the viewer, such that services can be sensibly arranged rather than simply ranked by viewership.

The solution proposed by Everyone TV is a system of pairing of channels from the same family, combined with prioritisation based on audience reach but with the option for a provider to swap positions. This is a peculiarly esoteric system that appears to offer little benefit to viewers.

An alternative system of grouping channels by portfolio and families is provided in Tables 7 and 8 later in this document.

This still leaves the problem of ordering any remaining channels. The recommendation here is to use a set of weighted factors, which could include volume of viewing, audience reach, the length of time that a service has been licensed in the United Kingdom, and ultimately alphabetical ordering. This provides a more stable, nuanced approach to ordering that can be systematically and transparently applied. Such a system could be easily implemented in a simple spreadsheet or database query.

In recognition that viewers may all have their own views on how channels should be organised, based on their personal interests, there should be a facility to allow users to assign services to their own favourite numbers to enable rapid selection.

Since a system of personal favourites is potentially in tension with the requirements for appropriate prominence of Designated Channels, the recommendation is to follow the model of other platforms that have satisfactorily resolved this problem. This will be explored further in the next section.

Summary

- There is a need for a new rational numbering scheme. Everyone TV is proposing a new Logical Channel Number policy that would apply to its Next Generation Platform. Existing Freeview and Freesat services would remain unaffected.

- There is therefore a broader opportunity for a Logical Channel Number scheme that could apply to existing digital terrestrial television and satellite services based on a system of service lists. It is recommended that this should be managed independently of any organisation that exists primarily to promote the media interests of its shareholders.

- There is adequate legal and regulatory provision to preserve and protect the prominence of public service broadcasters. Once these requirements are addressed, the primary purpose of a Logical Channel Numbering scheme should be aligned with the interests of viewers to facilitate easy navigation.

- The proposed system of genre classification is fundamentally flawed and should include categories for Sport and Movies and not confuse or conflate Faith and International.

- The proposed approach of using the measured audience reach of a channel to determine ordering within a category is flawed as it only reflects one dimension of the importance of a service.

- It is recommended that a system of weighted factors be used to order services within a category, providing appropriate stability to the numbering system while allowing for changes in response to viewer demand.

- In addition to a system of Logical Channel Numbers, there should be a facility to allow users to assign services to their own favourite numbers, in such a way that the requirement for appropriate prominence is preserved.

4.   Logical Channel Number policy

Consultation Q2 (Chapter 5). Do you agree with the LCN Policy details listed in this chapter?

Do you have any comments on:

i.   the proposed EPG categories and range of LCNs assigned to each one;

ii.   in particular, whether the Children's genre should come ahead of News or vice versa; and

iii. the proposed step-by-step rules for initially establishing the EPG listing in each category?

Comments

Please refer to the previous section for comments on the Electronic Programme Guide categories proposed by Everyone TV.

The proposed categories, while superficially plausible, are unsuitable in several respects.

The question of whether services for Children are ordered before News is far from the most concerning problem with the proposed system and is rather a distraction.

As previously noted, the omission of Sports and Movies is a significant limitation. The grouping of Faith and International is inappropriate.

Aside from the issue of which genre categories to employ and in which order to include them, the main issues arise from how to organise Logical Channel Number assignments within them, including services other than Designated Channels with the general Entertainment group.

The step-by-step approach proposed by Everyone TV appears to be peculiarly arcane and complex. It suffers from two fundamental flaws.

Firstly, using audience reach as a metric to rank services within a group makes little intrinsic sense to users.

Secondly, the proposed pairing of channels is inadequate as a means of grouping services within families.

Both policies appear to be more concerned with addressing the concerns of media providers than with satisfying the expectations of viewers.

Any system that ends up with BBC Four listed before BBC Three, except in Scotland, as apparently proposed, seems to be broken from the beginning.

Recognising the challenge of devising an alternative system that will satisfy both media providers and viewers, we suggest an alternative model that seeks to achieve this.

The recommended approach builds on some of the ideas proposed in the consultation, with some simplifications and refinements.

This solution aims to apply numbering and categories that are as far as possible consistent with other platforms. It also places more emphasis on grouping families of channels in a manner that is more meaningful to viewers.

A simple system of rules is suggested that allows this to be applied in an objective manner that is compliant with regulatory requirements.

Entertainment category

Table 2 presents the numbering scheme as proposed by Everyone TV. This starts numbering at 1, which is consistent with the model originally adopted by Freeview and initially appears intuitive and convenient. Freeview also carries the Designated Channels in high definition starting at 101.

Table 2: Summary of service numbering ranges proposed by Everyone TV

LCN Range	Everyone TV Proposed Categories
1-30	Entertainment
31	Reserved for promotional purposes
32-89	Entertainment (continued)
90-99	Reserved for promotional purposes
100	NGP information
101-249	Entertainment (continued)
250-299	Time-shift (+1 channels)
300-349	Children's / News TBC
350-399	News / Children's TBC
400-449	Music
450-499	Shopping
500-549	Faith & International
550-554	Hybrid Streamed
555	Accessible EPG
556-579	Hybrid Streamed (continued) + Text if needed
580-599	Adult
600-749	Radio
750-799	Regional variants
800-999	Manufacturer Technical Use
1000+	IP channels delivered by manufacturers

Source: Everyone TV consultation

Most services other than Freeview begin their numbering at 101. This is the case for Freesat, Sky and Virgin. There are advantages in following this pattern, particularly for the Designated Services of public service media providers. It means that the most popular services are available in slots that are consistent across platforms. This is convenient for consumers that may access these services on different rooms and in different homes. It also allows consistency in messaging for service announcements and programme promotions.

One of the benefits of starting numbering at 101 is that users can assign the first 99 numbers to favourite channels. A typical use case for this is to assign services to numbers that are more logical for viewers according to their personal preferences. This is an important usability and accessibility feature.

There are clearly also advantages in beginning numbering from 1, as it requires only single or double-digit selection of services.

To address both these requirements, our recommendation is that the Logical Channel Numbers of Designated Channels start at 101 for the purpose of consistency and compliance with the requirements of relevant regulations.

Alignment of numbering is more likely to be achieved by following the conventions established by other existing platforms.

However, there is also a requirement to maintain consistency with the legacy Freeview platform and provide a convenience means of single and double-digit selection for viewer.

Our recommendation is there that the first 99 services are additionally pre-assigned to numbers shifted down by 100 to start at 1 to enable easy selection. This has considerable benefits for usability and accessibility.

This will mean that the Designated Channels will be accessible by default with either single or double-digit selection and through the three-digit selection employed by other platforms.

Where platforms or device or display manufacturers wish to support custom numbering, they can therefore be free to do so in the range 1-99, while ensuring that the Designated Channels remain consistently available in the range above 100 according to regulatory requirements.

This has the benefit of allowing users to assign their own numbers to their favourite services, which could include international channels or radio services. As a usability and accessibility feature, this accommodates any frustrations that users may feel about any other aspects of the numbering scheme.

Promotional channel

It is unclear why numbers 31 and 90-99 should be reserved for "promotional purposes" or to what purpose these would be put or how or to whom they would be assigned.

Reserving 100 for "NGP information" becomes problematic as it is recommended that the number of Designated Channels start at 101 to be consistent with other platforms and there is a requirement that the first five slots are allocated to Designated Channels.

It is therefore recommended that number 200 is reserved for promotional use or as an information service for the relevant platform.

There is also the potential to use further slots ending 00 for promotional use or navigational signposting, such as numbers 300, 400, 500 and 600.

Time-shift channels

It is recommended that time-shift or +1 channels be allocated from 201 onwards, such that that as far as possible they are offset by 100 or 200 from their parent channel. Where such channels exist, they should be linked to their parent channel, so that it is possible to access them from there. The requirement for such time-shift channels should fall away given the capabilities of a proposed next-generation platform to offer more flexible alternatives, allowing viewing from the start of a programme, or providing access to extensive catch-up services.

Genre categories

With respect to genre categories, it is desirable to follow conventions established elsewhere as far as possible to provide consistency across platforms.

There is virtue in having the numbering of services within genre categories start at round number boundaries, such as 300 or 450, as these can be more easily remembered, allowing users to build up a mental map of the architecture of the numbering system, even if they are unable to recall the actual numbers of hundreds of channels.

It is recommended that there be distinct category groupings for Movies and Sport. A distinct category for Documentary and other factual programming is also recommended. These categories represent very different viewer need states, which should be reflected in a numeric navigation system. A lack of channels in these categories suggests a weakness in the platform proposition. The availability of additional online services will complement this and populate these categories appropriately.

In the case of most platforms, the News group of services is allocated to lower number ranges than services for Children. Freeview is an exception in this respect. Although it is not possible to achieve consistency across all platforms, it is recommended that News be allocated the range starting at 500 and services for Children start at 600.

Regional variants would follow the News category, which is preferable to being listed after Radio services. A next-generation platform should provide a better way of accessing regional variants through their relation to parent channels. To the extent that they need to be allocated Logical Channel Numbers at all, they could be assigned in a different range.

An accessible EPG can be included at 555, a number chosen because it is easily selected by touch on a remote control. However, it should be noted that there should be better approaches available to provide accessibility for a proposed next-generation platform. Accessibility should be integral to the service. Furthermore, other forms of accessibility can be supported by machine-readable service lists, allowing features such as voice navigation and personalisation.

It is recommended that Faith and International, which conflates unrelated services, be split into separate categories, following the practice on other services, renamed respectively to Religion for faith services and International for other foreign language programming.

The notion of Hybrid Streamed services is inappropriate. A proposed next-generation platform should be network agnostic. Such a category classification based on the technology of delivery is irrelevant to users. It raises the question of what if any organisation there will be among these services. A genre-based grouping system should be applied consistently if it is adopted. Services should be allocated thematically according to their genre rather than by delivery technology.

The presence of Adult material in the range 580-599 is highly undesirable, particularly as it precedes Radio services. This could result in an adult service being one click away from a popular radio service aimed at a young or family audience.

It is recommended that Radio services be allocated from 800 onwards. This would allow for up to 175 radio services.

The allocation of a block of 200 services from 800-999 to "Manufacturer Technical Use" is entirely unjustified. This implies that Everyone TV will be responsible for allocating services within this block to manufacturers, on terms that are unclear. Such an allocation will appear arbitrary to users.

It is recommended that Adult services be allocated in the 980-999 range, with mandatory parental control system or PIN protection.

The allocation of other services in the range above 1000 is an appropriate approach to maintaining structure within the ordering of the first 999 services while allowing sufficient room for expansion. A system of genre tagging would allow such services to be presented within the appropriate categories, while maintaining prominence for Designated Channels. Consequently, although only 50 channels may be assigned to a block of International services, the user interface could append an arbitrary number of suitably tagged channels to this list when presenting a view of the available services under this category.

Recommended allocation

Table 3 provides an indicative suggestion of how the range of genres could be allocated in a way that is logical, coherent, and consistent for users, and aligns well with other popular platforms.

The determination of the primary genre of a service will normally be self-evident but in case of dispute will be according to any categorisation provided by the relevant regulator responsible for licensing the service.

Table 3: Summary of suggested service numbering ranges

LCN Range	Category	Slots	Notes
1-99	Favourite	100	Pre-assigned channels
100-199	Entertainment	100	Including Designated Channels
200-299		100	Time-shift and further channels
300-349	Movies	50	
350-399	Music	50	
400-449	Sport	50	
450-499	Documentary	50	
500-549	News	50	
550-599	Regional	50	Linked to parent service 555 for accessible EPG
600-649	Children	50	
650-699	Shopping	50	
700-749	Religion	50	
750-799	International	50	
800-975	Radio	175	
980-999	Adult	20	With parental controls
1000-9999	Other	9000	Non-broadcast services

With such a system of genre classification providing a rational structure, once appropriate prominence is given to Designated Channels, the numerical assignment within each category should be determined by a process based on objective rules.

Audience reach over time is an arbitrary measure that is not directly evident to viewers and is difficult to measure with any precision for minor channels.

A system based on popularity is clearly advantageous to services that are currently more popular. However, such a popularity contest is not necessarily in the interests of the platform.

The reach or popularity of a service could be a factor in determining ordering, as could volume of viewing. Our recommendation is to use a weighted set of factors, such as volume of viewing, audience reach, the length of time that a service has been licensed in the United Kingdom, and alphabetical ordering.

In any case, there should be a process of appeal to the regulator or other competent authority to allow parties to resolve disputes and to make their case for alternative ordering.

Cross-platform comparison

Table 4 illustrates how the suggested number ranges are currently used for categories across the main television platforms in the United Kingdom. While there is some consistency in categories, it is evident that it is not possible to achieve a complete alignment of some genres across all platforms. It is not anticipated that other commercial platforms will reorganise their entire line-up to realise this, although of course they may choose to do so. The primary objective is therefore to produce a logically coherent and consistent list of services that is compatible with other platforms as far as is practical.

Table 4: Genre comparison with other leading platforms

LCN Range	Category	Freeview	Freesat	Sky	Virgin
1-99	Entertainment		—	—	—
100-149					
150-199					
200-249		Children/ News	News	Time-shift	
250-299					Music
300-349	Movies		Movies	Movies	Time-shift
350-399	Music			Music	
400-449	Sport			Sport	Movies
450-499	Documentary				
500-549	News		Music	News/ Religion	Sport
550-599	Regional				
600-649	Children		Children	Children	News
650-699	Shopping	Adult	Religion	Shopping	
700-749	Religion	Radio	Radio	International	Children
750-799	International				Shopping
800-849	Radio		Shopping	SD	International
850-899					Regional
900-949				Adult	Radio
950-979			Regional	Regional	Adult
980-999	Adult		Regional		
1000-9999	Other				

Source: Platform listings. See Appendix for details of all channels.

Designated channels

Table 5 shows that there is consistency in the first five Designated Channels across all platforms, subject to the requirement that they appear in the first five slots in the electronic programme guide. In the case of Freesat, Sky and Virgin, this begins at 101. This is also reflected on Freeview. It is recommended that this practice is maintained in the suggested scheme, such that 101 corresponds to BBC One on all platforms. It will also be available by default as channel 1 as a pre-assigned favourite channel.

> **Rule 1: The first five slots, from 101 to 105, shall be allocated to Designated Channels for public service broadcasters (currently BBC One, BBC Two, Channel 3, Channel 4, and Channel 5).**

The platforms diverge after the first five Designated Channels. This is partly due to the less prescriptive requirements for prominence. There is limited consistency in the regionalisation of channel numbers for Channel 4 in Wales or the numbering for BBC Scotland or BBC Alba in Scotland. There are differences in channel numbering for BBC Three and Four across platforms and regions.

Table 5: Designated Channels

Service	Suggested	Freeview	Freesat	Sky	Virgin
England					
BBC One	1 / 101	1 / 101	101	101	101
BBC Two	2 / 102	2 / 102	102	102	102
Channel 3 (ITV1)	3 / 103	3 / 103	103	103	103
Channel 4	4 / 104	4 / 104	104	104	104
Channel 5	5 / 105	5 / 105	105	105	105
	6 / 106				
Local	7 / 107				
National / Local	8 / 108				
National	9 / 109				
BBC iPlayer	10 / 110				
BBC Three	11 / 111	23 / 107 / 301 / 613	107 / 179	115 / 117 / 845	107
BBC Four	12 / 112	9 / 106 / 614	108 / 173	116 / 815	108

The suggested solution is to allocate local channels consistently in slots 7 and 8, according to nation or region.

This leaves slot 6 available for another service. It could either be left vacant, used as a channel to promote the platform, as an occasional service for special events, or retained for future expansion.

Given the ability to regionalise the service list, it should be possible to rationalise the local and national arrangements using slots 7, 8 and 9.

Table 6: National variations

Service	Suggested	Freeview	Freesat	Sky	Virgin
Wales					
S4C	4 / 104	4 / 104	104	104	104
Channel 4	9 / 108	7 / 110	106	108	108
Scotland					
BBC Scotland	8 / 108	9 / 108 / 302	106 / 110	115	108
BBC Alba	9 / 109	7 / 303	109	117	120

Rule 2: Slots 106 to 109 shall be allocated to Designated Channels for national, regional, or local services.

The remaining Designated Channels include the other channels of the BBC. Some of these will be included in this block, while others will be accommodated in the appropriate genre categories for News and Children.

It is recommended that the BBC iPlayer be allocated a dedicated channel number to allow direct numeric selection.

Rule 3: Slots 110 to 112 shall be allocated to Designated Channels for other BBC services.

Related services

In addition to the grouping of services by within portfolio groups and by genre category, there is also another opportunity to group channels that are related by provider.

Grouping of related channels can be achieved through metadata associated with each service that identifies a parent group. Such information can be employed by a user interface to reference and present related services.

For instance, when a service such as BBC One is selected, there could be an option to access related services. These could include channels such as BBC Two, BBC Three, BBC Four, and additionally BBC News, BBC Parliament, CBBC and CBeebies, as well as other national services.

A similar approach may be used to reference associated online services, such as the BBC iPlayer, BBC Sounds, or a News, Sport, or Weather application.

This can provide another dimension by which services can be related. The presentation of such information can be implementation dependent, according to the design of an application or guide.

Portfolio services

Portfolio channels associated with the other public service broadcasters can then be allocated to slots 13-32, with blocks allocated to ITV, Channel 4, and Channel 5, in the order of their primary Designated Channel, followed by the UKTV portfolio channels of BBC Studios, of which the BBC is ultimate owner.

There is a benefit to viewers and service providers in contiguity of these families of services in a revised numbering scheme.

It is also desirable to offer direct access to the online service of each of these families within its group.

This suggests an allocation of five slots for each of the families of portfolio services, including its online offering.

It should be delegated to these service providers to propose how they wish to allocate the order of services within their own family group.

Table 7 offers a suggested line-up that demonstrates how this would bring consistency, coherence and contiguity to these services that is currently missing on existing platforms.

> **Rule 4: Slots 113 to 132 shall be allocated to the portfolio channels associated with the providers of Designated Channels (currently those of ITV, Channel 4, Channel 5, and UKTV).**

Table 7: Suggested portfolio channel numbering

Service	Suggested	Freeview	Freesat	Sky	Virgin
ITVX	13 / 113				
ITV2	14 / 114	6	113	118 / 816	115
ITV3	15 / 115	10	115	119 / 817	117
ITV4	16 / 116	26	117	120 / 818	118
ITV Be	17 / 117	28	119	131	119
4	18 / 118				
E4	19 / 119	13	112	135 / 830	106
E4 Extra	20 / 120	31	126	138	287
More4	21 / 121	18	124	136 / 831	147
4seven	22 / 122	49	127	137	143
My 5	23 / 123				
5USA	24 / 124	21	129	141	141
5Star	25 / 125	32	131	128	126
5Select	26 / 126	46	133	153	138
5ACTION	27 / 127	33	132	150	130
UKTV Play	28 / 128				
Dave	29 / 129	19	157	111 / 811	127
Drama	30 / 130	20	158	143	116
W	31 / 131	25	156	132 / 827	125
Yesterday	32 / 132	27	159	155 / 846	129

Other service groups

That leaves fewer than 50 other services in the Entertainment category that are currently available on Freeview and Freesat. These can be accommodated in the remaining double-digit slots.

Where an ultimate owner controls more than one channel on 30 June 2023, these channels may be assigned to a further family group, with the proviso that no group can contain more than ten services.

The ordering of these family groups will be determined by a weighted set of factors, such as volume of viewing, audience reach, the length of time that services have been licensed in the United Kingdom, and alphabetical ordering.

> **Rule 5: Slots 133 to 199 shall be allocated to family groups of up to ten Entertainment services from the same ultimate owner, ranked by weighted factors.**

The following table is indicative only, with group ordering and numbering to be determined.

Table 8: Suggested family groups

Service	License holder	Ultimate owner
NOW	Sky UK	Comcast
Sky Arts	Sky UK	Comcast
Pick	Sky UK	Comcast
Challenge	Sky UK	Comcast
Discovery+	Discovery	Warner Bros Discovery
Quest	Discovery	Warner Bros Discovery
Really	Discovery	Warner Bros Discovery
DMAX	Discovery	Warner Bros Discovery
Quest Red	Discovery	Warner Bros Discovery
Food Network	Discovery	Warner Bros Discovery
HGTV	Discovery	Warner Bros Discovery
Paramount+	Paramount	Paramount
Legend	CBS / AMC	AMC Networks / Paramount
CBS Reality	CBS / AMC	AMC Networks / Paramount
Reality Xtra	CBS / AMC	AMC Networks / Paramount
Horror Xtra	CBS / AMC	AMC Networks / Paramount

Other family groups can be created where there is an ultimate common owner. Some of these services may elect to be allocated to other categories, such as Movies or Music.

Promotional service

Channel 200 will be reserved for the purpose of platform promotion and service announcements. This could vary by platform or delivery network.

> **Rule 6: Slot 200 shall be reserved for promotion and service announcements on the relevant platform.**

Time-shift services

Time-shift services, often known as +1 channels, will be allocated in the range from 201 to 299 where applicable, offset where possible by +100 from their parent channel. If the parent channel is outside the range 101-199 the time-shift channel may be allocated to the next available slot following the parent channel.

For example, the +1 channel of a parent service numbered 114 will be allocated channel 214. This provides a consistent pattern for the convenience of viewers.

Rule 7: Time-shift or +1 services shall be allocated slots in the range 201 to 299, offset where possible by +100 from their parent service.

Other Entertainment services

Any additional Entertainment services will be allocated available slots in this range, ordered by the priority date on which they were first licensed in the United Kingdom. This will allow the list to expand without disrupting the sequence.

Rule 8: Additional Entertainment services shall be allocated remaining available slots in the range 201 to 299, ordered by the priority date on which they were first licensed in the United Kingdom.

Other non-broadcast services

Some of the most popular online video services are from providers that do not have a broadcast presence on existing free platforms. They include Netflix, Amazon Prime Video, and Disney+.

Channel numbers for such services could be accommodated within the suggested scheme. Alternatively, where supported by platforms, devices and displays, users could assign favourite numbers in the range 1-99 to access installed apps for such services.

Thematic services

Specific ranges are reserved for thematic services, grouped by Movies, Music, Sport, and Documentary. These can include services that are currently broadcast on Freeview and Freesat and licensed services that are only available online.

Rule 10: Movies services shall be allocated slots in the range 300-349.

Rule 11: Music services shall be allocated slots in the range 350-399.

Rule 12: Sport services shall be allocated slots in the range 400-449.

Rule 13: Documentary services are allocated slots in the range 450-499.

News

The News channels BBC News and BBC Parliament could lead the News group, as currently on Freeview, followed by other services including Sky News. There is unfortunately no consistency across numbering of news channels on other services, or easy way of achieving harmonisation.

Table 9: News

Service	Suggested	Freeview	Freesat	Sky	Virgin
News					
BBC News	501	231	200	503	601
BBC Parliament	502	232	201	504	605
[TBC]	503				
…					

> **Rule 14: News services shall be allocated slots in the range 500-549, starting with Designated Services.**

Regions

Regional variations of Designated Channels will be carried in the range 550-599. Since the channel numbering can be regionalised, viewers will see the services of their preferred region at the appropriate number for Designated Channels. Where possible, a system of related channels can be used to link regional variations with their parent service.

> **Rule 15: Regional variations of Designated Channels shall be allocated slots in the range 550-599. Slot 555 is reserved for an accessible programme guide.**

Children

The designated channels for Children, CBBC and CBeebies, would lead the Children group, as they currently do on Freeview and Freesat.

Table 10: Children

Service	Suggested	Freeview	Freesat	Sky	Virgin
News					
CBBC	601	201 / 204	600	607 / 643	701
CBeebies	602	202 / 205	601	608 / 644	702
[TBC]	603				
…					

> **Rule 16: Children's services shall be allocated slots in the range 600-649, starting with Designated Channels.**

Shopping

Shopping services are grouped in the range 650-699. Service providers may also be allocated additional numbers in the Entertainment range if they qualify on other grounds. This grouping provides convenient navigation for viewers specifically looking for shopping services.

> **Rule 17: Shopping services shall be allocated slots in the range 650-699, in addition to any other qualifying slots.**

Religion

Religious and faith services are grouped in the range 700-749.

> **Rule 18: Religion and faith services shall be allocated slots in the range 700-749.**

International

International services are grouped in the range 750-799. These will generally be foreign language services.

> **Rule 19: International services shall be allocated slots in the range 750-799.**

Radio

Allocating 800-975 to radio services allows for 175 services. That is still insufficient to list all the radio stations available in the United Kingdom. RAJAR tracks listening for about 400 services.

However, it should be sufficient to list all the BBC radio services and provide a point of entry for each of the major commercial groups.

Within this range, the first 20 slots could be allocated to BBC services, starting at 801, including regional and local radio services assigned automatically based on geographic location. The last 50 slots in the range could be allocated to BBC local radio services in alphabetical order.

That leaves over 100 slots from 820-924 available for other radio services. We recommend that these are presented in family groups by ultimate owner, ranked by aggregate audience reach across each family.

Additional radio services can be accommodated in the range 1000-9999, which provides significant room for further expansion.

It should be noted that the use of favourites could also allow users to assign services to double digit numbers for easy access based on their personal preferences.

Where voice control is available, this should allow access to any radio service that is licensed in the United Kingdom.

Rule 20: Radio services shall be allocated slots in the range 800-975, starting with 20 BBC services.

Adult

The range 980-999 is reserved for adult services, which should be protected by appropriate parental controls or PIN codes. These services are separated from the preceding television channels by a large buffer zone. They could also optionally be hidden from display in channel listings according to viewer preference depending on the user interface implementation.

Rule 21: Adult services shall be allocated slots in the range 980-999, with appropriate parental controls.

Integration of additional services

It is important to provide a way in which additional services in the range 1000+ can be integrated appropriately into the viewing experience, while preserving the principles of prominence for Designated Channels.

One way in which integration can be achieved is through tagging of services with genre or category classifications. This is a feature of standards such as DVB-I. It allows a service to be associated with one or more genres or categories.

This would enable a service with a high Logical Channel Number such as 1111 that is tagged with the category Sport to be appended to the presentation of a list of services in the range 400-449. This can accommodate numerous Sports channels, while preserving the range 400-449 as an entry point for Sport.

While it may be appropriate for a service to reference multiple categories, it is recommended that channels should generally have one category tag and no more than three.

Rule 22: A service may be tagged with up to three genre categories that are appropriate to its programming.

Favourite channels

A further facility that can improve the viewer experience is the ability for users to add favourite channels, either a device level or for their personal profile, using the numbers 1-99. In this way, they can assign their own personal priorities and numeric associations to services, independent of a logical numbering scheme.

Sky has been a pioneer in providing a favourites list that allows users to select and order their own list of channels from those available. This is presented in addition to the ordering determined by the operator in compliance with the prevailing regulations. In this way, public services can retain prominent presentation, but viewers can establish their own navigation to their favourite services. Sky does this because as a service provider that is obliged to has to earn its monthly subscription it needs to satisfy the needs of its subscribers. Research suggests that the feature is not used by all subscribers but is highly valued by those that do.

Summary

- Any next-generation platform clearly needs to give further thought to how to present its services in a way that is sufficiently future-proof, network-agnostic, family-friendly, and usable by viewers.

- A recommended framework is provided with suggested service numbering ranges and an appropriate set of categories.

- The numbering system starts with Designated Channels at 101 to provide consistency with other platforms in the United Kingdom.

- The number range 1-99 is pre-assigned with references to channels shifted down by 100 to start at 1 to enable easy selection. These may optionally be re-assigned as favourite services.

- The portfolio services of public service broadcasters are grouped in families, followed by family groups of other services according to their ultimate owner.

- Slot 200 is reserved for promotion and service announcements on the relevant platform.

- Time-shift or +1 channels are assigned in the range form 201-299 where applicable, shifted up by 100 where possible from their parent channel.

- Thematic services start at 300, arranged in groups of 50, with News starting at 500 and services for Children at 600.

- Radio services range from 800-975, starting with BBC services, with an alphabetic list of BBC local services starting at 925.

- Additional services can run from 1000-9999, with optional genre tags that can allow them to be appended to views of the relevant categories following any previously assigned channels in numerical order.

- The recommended approach provides a simple set of business rules that are easy to interpret and apply, providing a convenient, coherent, and consistent system of numeric navigation for viewers.

- The suggestions are intended to form the architecture for a regulated national service list. The principles seek to provide a scheme that is sufficiently flexible and extensible to ensure that service offerings remain fit for purpose for the future. The examples illustrate how this would work in practice.

- The details will need to be refined through further constructive consultation with stakeholders. The resulting policy will be appropriately drafted to avoid ambiguity and provide full transparency about its application and implementation.

- The Service List Registry would be pleased to demonstrate how such a system can be implemented and deployed using international standards with television receivers that are already available in the retail market.

5.   Ongoing management

Consultation Q3 (Chapter 6). Do you agree with the proposed rules for the ongoing management of the EPG post-launch?

Do you have any comments on:

i.   our proposed rules for new channels, assigning of LCNs for vacant slots and channel swapping;

ii.   the addition of DSat-only channels to the EPG;

iii.   our proposals regarding minimum broadcast hours and sub-UK channels;

iv.   whether LCN trading should be permitted or prohibited on an NGP; and

v.   our indicative timetable for periodic future reviews of the LCN Policy?

Comments

Please refer to the previous section for more detailed comments on the proposed approach to assigning Logical Channel Numbers and our alternative suggestions.

Managing numbering

Any system of numbering will need a management policy and process for updating, to allow for the updating of service brands, the addition of new services, the deletion of redundant services, and potentially allowing services to swap positions.

Reshuffling of channels to fill slots should be avoided. The processes employed by Freeview and other platforms to date have resulted in the current confusion of numbering.

Our preference is that any future revision of the Ofcom Code of Practice should make clear provision for how matters of prominence should be addressed in the event of any changes to Designated Channels.

Where another slot becomes vacant it may be appropriate to replace the service with a similar service, although there is no real penalty in having an empty position. There are advantages in leaving gaps in ranges to allow for future expansion.

It will be more appropriate to assign new services to the next available slot at the end of the relevant group.

Satellite services

Any system of numbering for a next-generation platform should be network neutral and should therefore cover services whether they are delivered over digital terrestrial television, digital satellite television networks, or online.

Support for freely available services that are currently carried on satellite and not on terrestrial television should be considered from the outset.

There is no reason to delay consideration of services that are currently available on Freesat and not on Freeview. These should be allocated within the initial numbering scheme.

Our proposed channel assignments account for services that are currently available on either Freeview or Freesat. Our analysis shows that most channels available on Freesat are carried on Freeview and that there are few channels that are available on Freesat but not on Freeview.

Where channels available on satellite but not currently on Freesat wish to be assigned a Logical Channel Number, these should be allocated as new services, after the allocation of any existing services on Freeview or Freesat.

Qualifying services

It seems sensible that to qualify for allocation of a Logical Channel Number an audiovisual service should meet a minimum requirement of programming in terms of hours per day. This is necessary to ensure that Logical Channel Numbers are only allocated to providers offering a substantial amount of programming and to avoid confusing viewers.

Provision of two hours a day of continuous programming would appear to be an absolute minimum and a period of six hours would be preferable.

An increase from six to eight hours per day effectively reduces the number of day parts from four to three, which may be undesirable.

Time-exclusive services that may share transmission capacity at different times of day, a buffer time may be desirable between these periods. In such cases, it may be preferable to maintain a requirement for six hours of programming, to allow a static slate to be shown between blocks.

Trading positions

In an open competitive market, it is inevitable that some parties may seek to change or trade Logical Channel Numbers either by means of swapping or selling.

Given the dynamic nature of the market, the media business, and the prevalence of corporate mergers and acquisitions, such flexibility is not only necessary but is desirable to ensure the continuing appropriateness and relevance of the numbering scheme to viewers.

There should be a formal policy, process and published procedure by which any channel reassignments are made.

It should be made clear that providers do not own a Logical Channel Number but are allocated it conditionally under a licence agreement. That agreement should terminate if a provider no longer provides the service for which a Logical Channel Number was originally assigned. The allocated Logical Channel Number would be retained where a service continues under a change of ownership or control.

If a change of ownership or control results in the creation or extension of a family group this should not necessarily result in a reshuffle of channels, although this may be considered in any future number planning.

It should also be made clear that where a Logical Channel Number is assigned based on providing prominence to a Designated Channel or based an original genre classification that these criteria will continue to apply.

With these provisos, where parties by mutual business agreement wish to change their Logical Channel Number, they may make a representation to this effect, which should be permitted according to the availability of Logical Channel Numbers and the rules in place for their allocation.

For the avoidance of doubt, no change of Logical Channel Numbers should be permitted where it would result in any potential viewer confusion of the appropriateness of a service to its Logical Channel Number according to the numbering range scheme.

The final decision on whether to accept a proposed change to a reassignment of channel numbering should follow a period of consultation and should be based on the merits of the case. If it is not possible to reach a consensus on the outcome the requesting party should have the right of appeal to the regulator who may impose a decision.

Sharing numbers

The sharing of a Logical Channel Number on a regional basis should be permitted between the Designated Channels of public service broadcasters, services that have a common ultimate owner, or local channels. There is a clear precedent for this in the case of regionalisation of Designated Channels.

Regular review

It will be necessary to review the effectiveness of the Logical Channel Number arrangements regularly.

The proposal that periodic reviews take place no sooner than three years and no later than five years after the previous review is inadequate given the rapid changes in the media and technology environment.

It is recommended that the Logical Channel Number arrangements be reviewed on an annual basis according to published criteria to ensure that they are working efficiently and effectively for both media providers and viewers.

This does not necessarily mean that there will be changes made every year, but there should be an opportunity for stakeholders to represent proposals for change and for these to be considered and implemented as appropriate.

The numbering scheme should be maintained as far as possible to avoid regular reshuffles that result in viewer confusion.

An appropriate system of curation and categorisation as suggested avoids dependency on measured audience reach as a means of determination of local channel numbers.

Appeal process

There should be a formal procedure by which media providers can make representations about the allocations of Logical Channel Numbers, with an appropriate process for arbitration. If this process is exhausted without satisfaction a media provider should have the right to appeal to the regulator who may return a determination that will be imposed and implemented accordingly.

Summary

- The ongoing management of Logical Channel Number assignments should balance the business requirements of media providers and the expectations and user experience of viewers.

- The numbering scheme should be network neutral from the outset and should account for numbering requirements for services currently available on Freeview and Freesat, together with online services.

- There should be a proportionate requirement for a minimum amount of daily programming for audiovisual services to ensure that Logical Channel Numbers are only allocated to providers offering a substantial amount of programming and to avoid confusing viewers.

- Reassignment of Logical Channel Numbers should be permitted at the request of media providers, subject to maintaining the principles under which such numbers are allocated.

- Regional sharing of Logical Channel Numbers should be permitted between the Designated Channels of public service broadcasters, services that have a common ultimate owner, or local channels.

- The Logical Channel Numbering arrangements should be reviewed annually to ensure that they are working efficiently and effectively for both media providers and viewers.

- The numbering scheme should be maintained as far as possible to avoid regular reshuffles that result in viewer confusion.

- There should be a procedure by which media providers can make representations about the allocations of Logical Channel Numbers, with an appropriate process for arbitration and the right to appeal to the regulator to determine what will be imposed and implemented accordingly.

6.   Conclusion

The Everyone TV consultation on Logical Channel Numbering for its proposed Next Generation Platform is timely, particularly in view of the *Draft Media Bill* proposed by the United Kingdom Government.

This consultation provides an opportunity to review the existing numbering arrangements that have arisen for Freeview and Freesat in the context of other established platforms. These are far from logical in some respects.

The Service List Registry has undertaken a detailed investigation into the relevant requirements, regulatory concerns, and policy issues. It is also aligned with the international context and the development of global standards for audiovisual media service discovery.

A successful product or service will prioritize a user-centric approach to design over bureaucratic rules. However, transparent policies are required to ensure integrity and impartiality.

The primary consideration should be that the proposition to the viewer is coherent, consistent, and convenient.

It is in the interest of all participating media service providers to support the continuing relevance of their services and the prominence of public service media.

It is also essential to consider the interests of manufacturers of devices and displays, without which media service providers have no ability to reach audiences. The television set remains the primary route to market.

The role of regulators is also critical to ensure the delivery of public policy objectives and to maintain a competitive open market for audiovisual media services and products.

Our recommendation is to start with a clean sheet and the fundamental regulatory requirements of the existing *Ofcom Code of Practice* and the anticipated provisions of the *Draft Media Bill*.

The proposals advanced by Everyone TV are superficially appealing but are fundamentally flawed in some respects.

While it makes intuitive sense that popular services should appear before those that are less used, the suggestion that services should be ordered within categories by audience reach is problematic.

Pairing channels from the same provider, as proposed in the consultation, seems illogical. It is not clear how this benefits the viewer.

While there is a regulatory requirement that Designated Channels of public service media providers are accorded prominence, it is also important that their portfolio services and those of competing media providers are also presented in appropriate groups so that they are easily navigable.

Any system that takes the perceived needs of the viewer as a priority will necessarily involve some element of curation, whether that involves categorising services by genre, grouping them by family, or ordering them within groups. Services are more likely to be used and appreciated if they are grouped together in logical families and genre groups.

It is possible to produce a simple set of rules that can achieve such ordering objectively. It is also inevitable that not all media providers will be entirely satisfied with the outcome. They may consider their allocation is less favourable than it might otherwise be.

Rather than simply using audience reach as a system of ordering services within categories, it is recommended to use a set of weighted factors, including measured popularity and the length of time a service has been licensed, to provide an objective means of ordering.

Services in an aggregated service offering will naturally compete with one another for attention on the merits of the brands and their programming. The real competition that they face lies elsewhere and the risk is that without a strong combined proposition viewers will turn their attention to alternatives.

It is vital that any modern system of navigation allows users to move easily between broadcast channels and online services.

It is now possible to assign Logical Channel Numbers to online applications that provide access to programmes on demand. This offers powerful opportunities for existing broadcasters.

This also presents opportunities for new entrants that do not have a presence on existing broadcast platforms. It is futile to ignore them and hope that they will go away.

It will be difficult to sell a television device or display that does not support the main global online video services. The risk is that attempting to banish such services from the universe of television channels will have the unintended result of encouraging users to remain within their apps rather than explore other services. There is evidence that this is already happening, with catastrophic consequences for the viewing of previously pre-eminent broadcasters.

A numeric navigation system should also allow users to associate their favourite services with easily accessed numbers. Clearly this also needs to be balanced with requirements for appropriate prominence and maintaining a readily recognisable numbering scheme for other services.

The suggested system of starting numbering at 101, with the numbers 1-99 available for favourite channels, pre-set to those allocated to slots 101-199, provides an elegant solution that benefits the viewer and offers a degree of consistency with other leading platforms.

Enabling a growing number of online channels in the range 1000+ to follow other allocated channel numbers under the relevant category groups based on genre tags also addresses the problem of how to integrate them with established broadcast services. This is a matter of user interface implementation but is flexible and extensible.

It should be emphasised that all these recommendations can be implemented now with existing services and available receivers using open standards promoted by the Service List Registry.

There is considerable interest in adopting these standards in Europe and around the world.

It is important to adopt an open approach, based on standards that are being implemented internationally. The United Kingdom is not a sufficiently large market for major multinational manufacturers to address specifically.

The risk for broadcasters is that otherwise they will end up as an app on a restricted range of devices and displays, leaving limited opportunities for users that are reliant on existing terrestrial and satellite transmissions to migrate to online services over time.

The principles of national and regional service lists, organised by a system of Logical Channel Numbers as suggested, regulated to ensure appropriate prominence of public service media providers, offers an easily implemented alternative that works for all stakeholders.

Ultimate responsibility for a national plan for Logical Channel Numbers should rest with Ofcom as the communications regulator. Such a numbering scheme will not apply retrospectively to existing platforms, but it should be applicable to the next generation of services.

Open standards should be used for service discovery and delivery. This will encourage market competition and innovation, while ensuring a consistent user experience and preserving appropriate prominence for public service media.

The Service List Registry would be pleased to work with Everyone TV to enable it to adopt such a system.

Annexes

The following documents are provided as separate annexes.

- **Service List Registry**

- **Current channel line-ups by platform**

Annexes

Service List Registry

Our purpose is to make it easy for anyone to discover and access audiovisual media services over any network, on any screen.

We aim to become the *de facto* standard platform for audiovisual media service discovery worldwide, transforming the media market.

We will achieve this by providing the leading international service platform implementing the open DVB-I standard developed by the DVB Project, involving stakeholders across the sector.

- **Users** will benefit from choice, convenience, and control, with simple service selection on any screen.

- **Providers** of audiovisual media services will be able to announce their channels and services through an open platform.

- **Devices**, displays and applications will be able to discover and access audiovisual media services over any network.

- **Regulators** will be able to designate and authorise services to ensure appropriate prominence, provenance, plurality, accessibility, and availability of services.

Our innovative multiscreen index will support the provision of public service media and maintain an open competitive market for audiovisual media services. These may be traditional television channels or on-demand services, available free or through a subscription. The platform will be a key enabler for a multi-billion market, generating substantial and sustainable annual recurring revenues, with a long customer lifetime and significant potential for continuing growth.

Values

- **Open** — We use open standards, freely available to all participants.

- **Equitable** — We are fair, reasonable, and non-discriminatory.

- **Accessible** — Our services are accessible to anyone.

- **Available** — Our platform provides the highest level of availability.

- **Transparent** — We always operate with clarity and integrity.

Position

SLR is an independent and neutral platform for the provision of audiovisual media services over any network to any screen.

We enable providers of audiovisual media to create virtual packages of services that for the first time are independent of any physical cable, satellite, terrestrial or telco network infrastructure. This offers an open alternative to powerful aggregators and gatekeepers that otherwise threaten to foreclose the open distribution of audiovisual media.

We exist to enable the adoption and deployment of the DVB-I standard by multiple mutually competing players in the market.

Problem

Navigating the rapidly evolving viewing environment is increasingly complex for both users and media providers, as competition for audience attention intensifies.

Service discovery

We have more viewing choices than ever and so many more ways to watch, but it is still difficult to discover how to access audiovisual media services on different devices and displays.

Finding a particular programme can be frustrating, as we are often forced to fight our way through multiple menus and similar but separate user interfaces on various screens.

As viewing moves from traditional broadcast channels to online delivery, there has been no standard way for media services to advertise their availability or for devices and displays to discover and offer them to users.

Consumers are no longer satisfied by traditional broadcast services. They expect to be able to access audiovisual media services on any screen, over any network.

- **Users** typically need to navigate multiple applications to access services from different providers, which limits usability, accessibility, and availability. Traditional channels and online services are not necessarily integrated. Users need to switch between different inputs and apps and there is no common system of navigation. This creates confusion and frustration for consumers. It also presents accessibility problems for those with various sensory, cognitive, or physical abilities.

- **Devices** and displays do not have a standard way to discover, offer, and access non-broadcast services. Television manufacturers need to provide products that do not depend on a conventional cable, satellite, or terrestrial antenna connection. Phones and tablets can only access online services. This is leading to market fragmentation.

- **Providers** of media services need to negotiate distribution of their applications across multiple platforms. The fragmented market is eroding the prominence of previously pre-eminent public service media providers. Traditional broadcast channels are facing increasing competition and are losing audience share as viewing moves online.

- **Regulators** are seeking to maintain the prominence of public media services and regulate services that are no longer restricted to licensed radio frequency spectrum. Regulators also have a policy objective or a legal requirement to ensure the prominence, availability, and accessibility of public media services, which is becoming more difficult as the viewing environment fragments.

Current solutions either involve dedicated devices and displays, which do not address the requirement for universal availability, or individual applications that need to be developed for multiple operating environments.

Some aggregators are producing their own integrated hardware devices and displays, like Sky Stream, Sky Glass, Amazon Fire TV, or Roku TV. These competing platforms involve inefficient duplication of incompatible systems, with no one dominant solution in the market.

Audiovisual media service providers need to develop apps for many different types of devices and displays. These add-on solutions end up competing for positioning on products and for the attention of users.

The audiovisual media market is complex, with thousands of services competing for the attention of hundreds of millions of viewers. With billions at stake, the ability to connect viewers with programmes that they want to watch is the key to unlocking the multiscreen experience.

Solution

We want to make it easier for everyone to find media services, offering choice, convenience, and control on any screen.

Simple service selection

Our open platform enables different devices, displays and applications to discover available audiovisual media services and access them across the most appropriate delivery networks.

Imagine a machine-readable online directory that applications and products can use to look up lists of relevant services and offer them within their user interface.

- **Users** with compatible devices, displays or applications can simply select services from lists of familiar channels and online offerings in an integrated view, based on their location and the capabilities of their screen. All queries are anonymous, protecting personal privacy. The ordered service list responses facilitate simple accessible navigation, including numeric selection.

- **Devices**, displays and applications can use open web standards to request service lists and present the results in their own environment. Third parties retain the freedom to innovate and differentiate the user experience of their products in an open and competitive multinational market. This includes integration with intelligent systems, including personalised recommendations, voice control, and home automation.

- **Providers** of media services can publish lists of services available by region across various delivery networks. They can promote their brands and retain control of the distribution of their services, with the option to prioritise different modes of delivery and offer higher quality audio and video formats for compatible devices and displays.

- **Regulators** and legislators can designate and approve lists of services to maintain the prominence of public service media providers and ensure that they are universally available and easily accessible. This identifies the provenance of licenced services within their jurisdiction and facilitates the fulfilment of public policy objectives and plurality of media provision.

Encouraging collaboration between industry stakeholders across the ecosystem, our service discovery platform empowers media providers to extend the reach of their services efficiently and effectively. It simplifies the process of promoting and providing programming across different devices and displays, offering a smooth transition to delivery over any network to any screen.

Value network
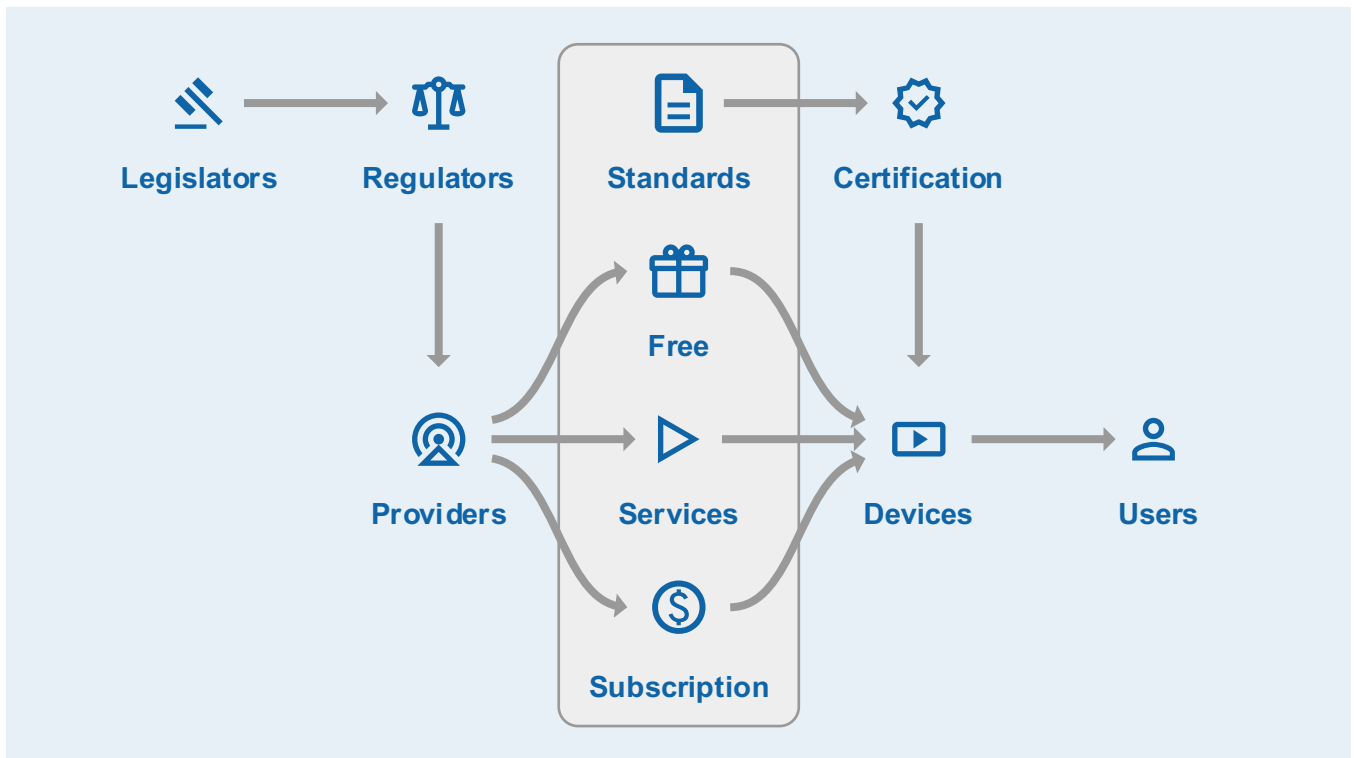
The solution is based on existing open standards and does not require any changes to current broadcast transmission systems. By using web technologies, the online service layer can be easily integrated with various client devices and displays, reducing barriers to adoption. This allows for a gradual migration as products are progressively upgraded or replaced. Employing a federated approach and distributed architecture, the system is designed to scale to serve a massive user base.

The core concept of a service directory is well established in computer science. It is widely used in software such as Microsoft desktop and enterprise products. So far, such a system has been absent in broadcast networks, which have assumed no connection between a client and a server. However, with the advent of devices and displays with network connections, such an architecture now offers advantages.

The unique innovation enabled by SLR is to allow the flexible aggregation of media services across multiple delivery networks without the requirement for additional investment in infrastructure. This is a business breakthrough as much as a technology innovation. Just as the development of the World Wide Web applied a new protocol to an existing internet infrastructure, the Service List Registry has the potential to transform the way we access audio and video services.

The SLR platform offers an addition to the industry ecosystem. It extends the reach of media services without requiring customers to change their existing distribution arrangements. It allows them to maintain legacy services while developing their online strategy. It does not require a step change investment but allows incremental enhancement of services. The cost to media providers is marginal and the risk involved is low.

Foundation

The solution is based on the open DVB-I specification developed by the DVB Project, the member organization responsible for the development of digital broadcasting standards in use across Europe and around the world. This is in turn based on open web standards developed by the W3C World Wide Web Consortium.

A limited version of the proposed approach has already been adopted for the Freeview Play proposition in the United Kingdom, where it is known locally as Channel List Management and is based on a proprietary implementation.

The significance of the DVB-I specification is that it will bring the capability of service list aggregation to a much wider market, based on open standards that can be adopted worldwide.

Innovation

The Service List Registry is an essential component of the ecosystem. It provides an index that devices, displays and applications can query to request available audiovisual media services with which they are compatible.

Although the DVB-I standard specifies the registry in terms of request and response syntax and semantics, the actual operation of the service platform is outside the scope of the standard, both in technical and business processes. It is simply assumed to exist. Reference implementations that have been developed are not suitable for production deployment.

The Service List Registry fills this market requirement and aims to provide an industrial-strength operational platform to support the international deployment of the standard. It achieves this though both technical innovation and its business model.

Implementation

The technical implementation involves innovative features that enable the registry to meet the anticipated demand from devices, displays and applications. These proprietary approaches are more efficient than traditional relational database models that do not scale well.

The business implementation includes a federated system that delegates the administration of services to authorized audiovisual media service providers, service aggregators, and regulators. This avoids the need for a central service registry, which would be politically and commercially contentious.

A comparison may be drawn to the DNS Domain Name System that allows any device to resolve a human readable domain name to an internet address. The distributed architecture allows third parties to register domain names and administer records without recourse to a central database. This system is fundamental to the operation of the internet and has successfully scaled to support billions of devices worldwide.

Proposition

The Service List Registry enables the virtual aggregation of audiovisual media services across diverse delivery networks that can be accessed on any compatible device, display, or application.

Data flows
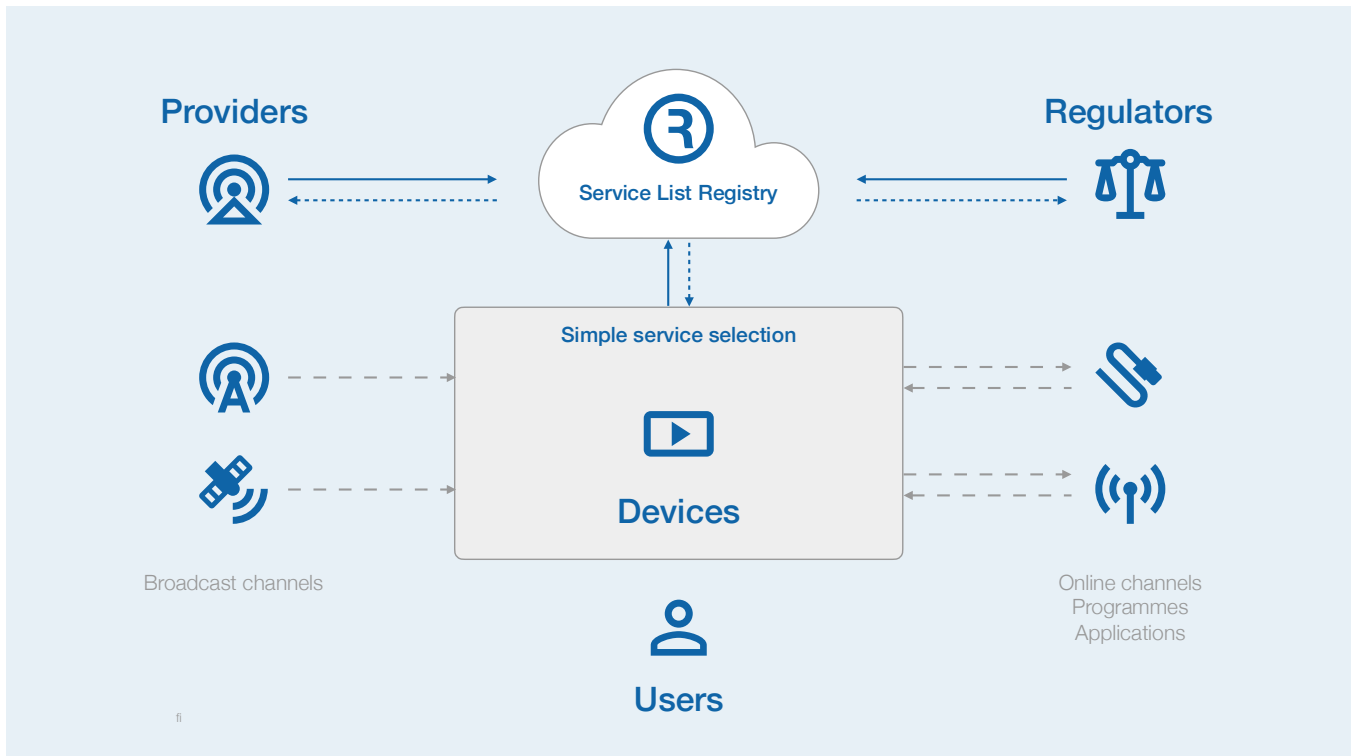
The unique value proposition is that the Service List Registry enables media providers and service aggregators to announce linear channels and on-demand applications without being limited to conventional cable, satellite, or terrestrial transmission infrastructure. It enables online-only video services to co-exist with traditional channels. It also provides a way for traditional broadcasters to extend beyond those modes of delivery and migrate to online distribution over fixed or wireless internet connections.

Such a solution is urgently needed, as online viewing is increasing rapidly, and a strategic service platform is required to enable the long-term migration from traditional broadcasting.

There is no comparable open platform that is available to audiovisual media service providers internationally.

An international approach is necessary as no single territory, at least in Europe, has sufficient scale to support manufacturers that aim to address multinational markets with devices and displays. The main threat that national broadcasters face is from online video services that are multinational.

Development

The DVB-I specification has been developed and published as an open standard by ETSI (TS 103 770 V1.1.1) as revised in DVB Bluebook DVB Document A177 Rev.5.

SLR has developed a proof-of-concept, and this was demonstrated to industry stakeholders at DVB World in May 2022 and the IBC trade show in 2023. SLR has also provided private workshops to broadcasters from Japan and Australia.

SLR has announced a Pilot Programme to enable early adopters to evaluate their requirements.

Closed pilot projects in progress with public and private broadcasters in Germany and Italy are moving to a second phase of trials to address the requirements for market introduction to the public in these territories.

SLR is in discussions with other broadcasters about other pilot projects. These include Freeview Australia, which represents all the major public service, commercial, and regional television broadcasters in Australia. They comprise more than 40 television channels with over 45 regional variations.

The SLR platform is currently hosted on AWS global network infrastructure that provides high levels of availability, integrity and security, necessary for supporting transmission critical services.

A simple online demonstration, showing how queries to the registry are constructed and providing example responses, is available at slrdb.org/demo.

Channel numbering across existing platforms

The following tables indicate the channel numbering used across Freeview, Freesat, Sky, and Virgin Media platforms in the United Kingdom. They indicate the scale and complexity of the channel numbering schemes in use and the difficulty of harmonising numbers across all platforms.

Freeview

LCN	Service	Notes
1	BBC One	HD
2	BBC Two	HD
3	ITV1	
4	Channel 4	
	S4C (Wales)	
5	Channel 5	
6	ITV2	
7	Local TV (England)	
7	Channel 4 (Wales)	
8	Local TV	
9	BBC Four	HD
10	ITV3	
11	Sky Arts	
12	Quest	
13	E4	
14	Film4	
15	Channel 4+1	
16	QVC	
17	Really	
18	More 4	
19	Dave	
20	Drama	
21	5 USA	
22	TJC	
23	BBC Three	HD England
25	W	
26	ITV4	
27	Yesterday	
28	ITVBe	
29	ITV2+1	
30	E4+1	Not via relays in Wales
31	E4 Extra	
32	5 STAR	
33	5ACTION	
34	GREAT! movies	
35	ITV1+1	
36	Pick	
37	QVC 2	
38	Channel 5+1	
39	DMAX	
40	Quest Red	
41	Legend	
42	GREAT! action	Not Wales
43	Food Network	
44	HGTV	
45	Gems TV	
46	5 SELECT	
47	Film4+1	

Freeview

LCN	Service	Notes
48	Challenge	
49	4seven	
50	GREAT! tv	
51	Ideal World	
52	GREAT! romance	
57	Dave Ja Vu	
58	ITVBe+1	0400-0500
59	ITV3+1	2100-0400
60	Drama+1	
61	GREAT! movies+1	Closed
62	GREAT! tv+1	0400-2200 Manchester only
63	GREAT! romance+1	2200-0400 Manchester only
64	Blaze	
65	That's TV UK	0600-0400
66	TBN UK	
67	CBS Reality	
68	Reality Xtra	Local TV coverage areas only
69	Horror Xtra	
70	Quest+1	
71	That's 60s	0900-0300
72	Jewellery Maker	0800-1300
73	Shopping Quarter	
74	Yesterday+1	0500-0700
75	That's 70s	0300-0900
76	That's 80s	0400-0600
77	That's 60s MCR	Manchester only
78	TCC	0300-0500
79	Earthx TV	
80	That's 70s MCR	Manchester only
81	Blaze+1	
82	Talking Pictures	
83	Together	0500-0700 Online at other times
84	PBS America	1300-0000
85	Create & Craft	0700-2200
86	That's 80s MCR	Manchester only
87	TV Warehouse	Manchester only
88	TV Warehouse+1	Manchester only
89	ITV4+1	0500-0700
90	Together TV+1	0700-0800 / Streaming at other times.
91	WildEarth	
100	Freeview	Portal to Freeview Play (Information channel for older Freeview receivers)
	HIGH DEFINITION	
101	BBC One HD	
102	BBC Two HD	
103	ITV1 HD	

Freeview

LCN	Service	Notes
104	Channel 4 HD	
	S4C HD (Wales)	(1900-0600 Mon-Fri, 1400-0600 Sat/Sun)
105	Channel 5 HD	
106	BBC Four HD	
107	BBC Three HD (not Wales)	
110	Channel 4 HD (Wales only)	
	CHILDREN	
201	CBBC	HD England
202	CBeebies	HD England
203	CITV	
204	CBBC HD	
204	CBeebies SD	Some Freeview Play devices only.
205	CBeebies HD	
205	CBBC SD	Some Freeview Play devices only.
206	POP	Local TV coverage areas only.
207	Tiny POP	Local TV coverage areas only.
208	POP Max	Local TV coverage areas only.
209	Ketchup TV	Streaming service
210	Ketchup Too	Streaming service
211	YAAAS!	Streaming service
212	POP Player	Streaming service
	NEWS	
231	BBC News	
232	BBC Parliament	
233	Sky News	
235	Al Jazeera English	
236	GB News	
237	TalkTV	
	DATA AND STREAMING	HbbTV-based services
250	BBC Red Button	
261	Vision TV	Streaming service
262	Arise News	Streaming service
263	Sonlife	Streaming service
264	Fail Army	Streaming service
265	On-demand 365	Streaming service
266	Pet Collective	Streaming service
267	Al Jazeera English	Streaming service
268	Al Jazeera Arabic	Streaming service
269	WION News	Streaming service
270	Real Crime	Streaming service
271	Channelbox	Streaming service
272	Asharq News	Streaming service
273	Al Arabiya	Streaming service
276	Shots!	Streaming service
277	UK Radio Portal	Streaming service
279	Al Alaraby	Streaming service

Freeview

LCN	Service	Notes
280	ROK	Streaming service
281	Revelation TV	Streaming service
282	God TV	Streaming service
283	3ABN	Streaming service
284	Amazing Discoveries	Streaming service
	IP CHANNELS	Some Freeview Play devices only
301	BBC Three HD	
302	BBC Scotland HD	
303	BBC Alba HD	
501	BBC News HD	
502	BBC Parliament HD	
	ACCESSIBILITY SERVICE	
555	Accessible TV Guide	Freeview Play devices only
	INTERACTIVE	
601	BBC RB1	
	SD CHANNELS	Devices that support HD substitution
611	BBC One SD	Some Freeview Play devices only
612	BBC Two SD	Some Freeview Play devices only
613	BBC Three SD	Some Freeview Play devices only
614	BBC Four SD	Some Freeview Play devices only
	ADULT	
670	Adult Section	
671	Adult Xpanded	
673	SmileTV3	
674	Adult Babestn	
699	Adult Section	
	RADIO	
700	BBC Radio 1	
701	BBC Radio 1 Xtra	
702	BBC Radio 2	
703	BBC Radio 3	
704	BBC Radio 4	
706	BBC Radio 5 Sports Extra	
705	BBC Radio 5 Live	
707	BBC Radio 6 Music	
708	BBC Radio 4 Extra	
709	BBC Asian Network	
710	BBC World Service	
711	Hits Radio	
712	KISS FRESH	
713	KISS	
714	KISSTORY	
715	Magic	
716	Greatest Hits Radio	
717	Kerrang!	
718	Smooth Radio	
719	BBC Local Radio (England)	
	BBC Radio Wales (Wales)	

Freeview

LCN	Service	Notes
720	BBC Local Radio (England)	
	BBC Radio Cymru (Wales)	
721	BBC Local Radio (England)	
	BBC Radio Cymru 2 (Wales)	
722	BBC Local Radio (England)	In some regions only
723	TalkSport	
724	Capital	
725	Premier	
726	BBC Local Radio (England)	In some regions only
727	Absolute	
728	Heart	
730	RNIB Connect	
731	Classic FM	
732	LBC	
733	Trans World Radio	
734	BBC Local Radio (England)	In some regions only
735	BBC Local Radio (England)	In some regions only

Channel 780-799 Reserved for temporary services.

Channel 800+ Receiver specific range and non-Freeview channels.

Freesat

LCN	Service	Notes
101	BBC ONE HD	Local BBC service
102	BBC TWO HD	
103	ITV1 HD	STV SD (C/N Scotland)
		ITV1 Border Sco. SD (Border)
		UTV HD (Northern Ireland)
		ITV1 Channel SD (CI)
104	Channel 4 HD	S4C HD (Wales)
105	Channel 5 HD	
106	-	BBC SCOTLAND HD (Scotland)
		Channel 4 HD (Wales)
107	BBC THREE HD	
108	BBC FOUR HD	
109	BBC ALBA HD	
110	BBC SCOTLAND HD	(SD version in Scotland)
111	ITV1 SD	ITV1 HD (Border)
		STV HD (Central/N Scotland)
112	ITV1+1	Not in STV/UTV regions
113	ITV2 HD	
114	ITV2 +1	
115	ITV3 HD	
116	ITV3 +1	
117	ITV4 HD	
118	ITV4+1	
119	ITVBe	
120	S4C HD	In Wales on 104
121	Channel 4 + 1	
122	E4	
123	E4+1	
124	More4	
125	More4 +1	
126	E4 Extra	
127	4seven	
128	Channel 5 + 1	
129	5USA	
130	5USA +1	
131	5STAR	
132	5ACTION	
133	5SELECT	
134	Reality Xtra	
135	CBS Reality	
136	CBS Reality +1	
137	Legend	
138	Horror Xtra	
139	Horror Xtra +1	
141	5STAR+1	
142	GREAT! tv	
143	GREAT! tv +1	
144	Pick	

Freesat

LCN	Service	Notes
146	Challenge	
147	Sky Arts	
148	Food Network	
149	Food Network +1	
150	DMAX	
151	DMAX+1	
155	PBS America	
156	W	
157	Dave	
158	Drama	
159	Yesterday	
160	Really	
162	Blaze	
164	Together	
166	HGTV	
167	Quest HD	
168	Quest+1	
169	Quest Red	
170	Quest Red+1	
172	Quest	
173	BBC FOUR SD	
174	BBC SCOTLAND SD	Not Scotland
177	Court TV	
178	That's TV UK	
179	BBC THREE SD	
	NEWS AND SPORT	
200	BBC NEWS HD	
201	BBC PARLIAMENT HD	
202	Sky News	
203	Al Jazeera English HD	
204	France 24	
208	Bloomberg HD	
209	NHK World-Japan HD	
210	CNBC	
212	BBC NEWS SD	
213	Channels 24	
214	Arirang TV HD	
215	TRT World	
216	GB News HD	
217	TalkTV HD	
250	Sporty Stuff HD	
	FILMS	
300	Film 4	
301	Film 4+1	
302	GREAT! movies	
303	GREAT! romance	
304	GREAT! romance+1	
305	GREAT! movies action	

Freesat

LCN	Service	Notes
306	Talking Pictures TV	
	MUSIC	
501	4Music	
502	The Box	
503	KISS TV	
504	Magic TV	
505	Kerrang!	
506	That's 60s	
	CHILDREN	
600	CBBC HD	
601	CBeebies HD	
602	CITV	
603	POP	
604	Pop Max	
605	Tiny Pop	
606	CBBC SD	
607	CBeebies SD	
	RELIGION	
691	Daystar HD	
692	Revelation	
694	GOD Channel	
695	Sonlife	
	RADIO	
700	BBC Radio 1	
701	BBC Radio 1Xtra	
702	BBC Radio 2	
703	BBC Radio 3	
704	BBC Radio 4	
705	BBC Radio 5	
706	BBC Radio 5 Sports Extra	
707	BBC Radio 6 Music	
708	BBC Radio 4 Extra	
709	BBC Asian Network	
710	BBC Radio 4 LW	
711	BBC World Service	
712	BBC Radio Scotland	
713	BBC Radio Nan Gaidheal	
714	BBC Radio Wales	
715	BBC Radio Cymru	
716	BBC Radio Ulster	
717	BBC Radio Foyle	
718	BBC Radio London	(London) BBC Radio Cymru 2 (Wales)
719	Capital	
720	Capital Xtra	
721	Classic FM	
722	Gold	
723	Radio X	

Freesat

LCN	Service	Notes
724	Absolute	
726	Absolute 80s	
730	Planet Rock	
731	TalkSport	
732	Smooth	
733	Heart	
734	LBC	
735	BBC Radio Cymru 2	Except Wales, where it is on channel 718
736	Virgin Radio UK	
750	RTÉ Radio 1	
751	RTÉ 2FM	
752	RTÉ Lyric	
753	RTÉ RnaG	
786	Forces Radio BFBS	
790	TWR	
	SHOPPING	
800	QVC HD	
801	QVC Beauty	
802	QVC Extra	
803	QVC Style HD	
805	Gems TV (Gemporia)	
807	Jewellery Maker	
809	TJC	
810	TJC Beauty	
812	Ideal World HD	
813	Create & Craft HD	
	REGIONAL VERSIONS	Viewers will see relevant version on channels 101-103
951	BBC One London HD	
952	BBC One NE & Cumbria HD	
953	BBC One North West HD	
954	BBC One Yorkshire HD	
955	BBC One E Yorks & Lincs HD	
956	BBC One West Midlands HD	
957	BBC One East Midlands HD	
958	BBC One East HD	
959	BBC One South East HD	
960	BBC One West HD	
961	BBC One South HD	
962	BBC One South West HD	
963	BBC One Channel Islands HD	
964	BBC One Scotland HD	
965	BBC One Wales HD	
966	BBC One NI HD	
967	BBC Two Network	Except Eng/Sco
968	BBC Two Wales HD	Except Wales
969	BBC Two NI HD	Except NI

Freesat

LCN	Service	Notes
	OTHER	
970	BBC RB1 HD	
971	BBC RB1 SD	
977	ITV London AD	Except London
998	Freesat UHD	
2101	Rakuten TV	New Freesat devices only
2102	BBC iPlayer	New Freesat devices only

Freesat

Sky

LCN	Service	Notes
101	BBC One	
102	BBC Two	
103	ITV1	STV in Central and Northern Scotland, UTV in Northern Ireland. HD except Channel Islands and Border Scotland.
104	Channel 4	S4C (Wales)
105	Channel 5	
106	Sky Showcase	
107	Sky Witness	
108	Sky Atlantic	Channel 4 (Wales)
109	alibi	Sky Atlantic (Wales)
110	GOLD	alibi (Wales)
111	Dave	Gold (Wales)
112	Comedy Central	Dave (Wales)
113	Sky Max	Comedy Central (Wales)
114	Sky Comedy	Sky Max (Wales)
115	BBC Three HD (England/NI)	Sky Comedy (Wales); BBC Scotland (Scotland);
116	BBC Four	
117	BBC Three (England, outside of London)	London Live (London); BBC Alba HD (Scotland)
118	ITV2	
119	ITV3	
120	ITV4	
121	Sky Documentaries	BBC Three (Scotland)
122	Sky Crime	Sky Documentaries (Scotland)
123	Sky History	Sky Crime (Scotland)
124	Sky Nature	Sky History (Scotland)
125	Discovery	Sky Nature (Scotland)
126	MTV	Discovery (Scotland)
127	Comedy Central Xtra	MTV (Scotland)
128	5STAR	Comedy Central Xtra (Scotland)
129	Nat Geo	5STAR (Scotland)
130	Sky Arts	Nat Geo (Scotland)
131	ITVBe	Sky Arts (Scotland)
132	W	ITVBe (Scotland)
133	TLC	W (Scotland)
134	S4C (Eng, NI, CI, IoM)	TLC (Scotland)
135	E4	S4C (Scotland)
136	More4	E4 (Scotland)
137	4seven	More4 (Scotland)
138	E4 Extra	4seven (Scotland)
139	Sky Sci-Fi	E4 Extra (Scotland)
140	Food Network	Sky Sci-Fi (Scotland)
141	5 USA	Food Network (Scotland)
142	Really	
143	Drama	

Sky

LCN	Service	Notes
144	QUEST	
145	Challenge	
146	CBS Reality	
147	Reality Xtra	
148	Legend	
149	Quest Red	
150	5ACTION	
151	Pick	
152	Sky Replay	
153	5SELECT	
154	ID	
155	YESTERDAY	
156	Crime+Investigation	
157	GREAT! tv	
158	HGTV	
159	E!	
161	Discovery Turbo	RTÉ One in Northern Ireland
162	Animal Planet	RTÉ 2 in Northern Ireland
163	Sky History 2	TG4 in Northern Ireland
164	BLAZE	
165	Nat Geo Wild	
166	Eden	
167	Disc. Science	
168	Sky History 2 (Northern Ireland only)	
169	BBC Alba HD	5USA (Scotland)
170	Together	
172	DMAX	
174	PBS America	
176	ITV1 HD [Border England version]	In the Border Scotland region.
177	Discovery History	
178	Animal Planet (Northern Ireland)	
179	Court TV	
180	EarthX TV	HD only.
181	Channel 7	
182	Travelxp	
183	That's TV (UK)	
184	Discovery Turbo (Northern Ireland)	
185	NTD	
186	Ayozat	
187	BBC Scotland	(not Scotland)
200-299	+1 CHANNELS	100 places above the parent channel
203	ITV1+1	Not in the STV region.
204	Channel 4+1	
205	Channel 5+1	
206	Sky Showcase+1	
207	Sky Witness+1	
208	Sky Atlantic+1	

Sky

LCN	Service	Notes
209	alibi+1	Wales: Sky Atlantic+1
210	GOLD+1	Wales: alibi+1
211	Dave ja vu	Wales: GOLD+1
212	Comedy Central +1	Wales: Dave Ja Vu
213		Wales: Comedy Central+1
218	ITV2+1	
219	ITV3+1	
220	ITV4+1	
222	Sky Crime+1	Not Scotland
223	Sky History+1	Scotland: Sky Crime+1
224		Scotland: Sky History+1
225	Discovery+1	Not Scotland
226		Scotland: Discovery+1
228	5STAR+1	Not Scotland
229	Nat Geo+1	Scotland: 5STAR+1
230		Scotland: Nat Geo+1
232	W+1	Not Scotland
233	TLC+1	Scotland: W+1
234		Scotland: TLC+1
235	E4+1	Not Scotland
236	More4+1	Scotland: E4+1
237		Scotland: More4+1
240	Food Network+1	Not Scotland
241	5USA+1	Scotland: Food Network+1
243	Drama+1	
244	QUEST+1	
246	CBS Reality+1	
249	Quest Red+1	
254	ID+1	
255	YESTERDAY+1	
256	Crime+Investigation +1	
257	GREAT! tv+1	
258	HGTV+1	
261	Disc. Turbo+1	(In Northern Ireland on 284)
262	Animal Planet+1	(In Northern Ireland on 278)
266	Eden+1	
267	Discovery Sci+1	
269		Scotland: 5USA+1
272	DMAX+1	
277	Discovery History+1	
278	Animal Planet+1	(In Northern Ireland)
284	Discovery Turbo+1	(In Northern Ireland)
300-349	MOVIES	
301	Sky Cinema Premiere	
302	Sky Cinema Select	
303	Sky Cinema Hits	
304	Sky Cinema Sci-Fi/Horror	
305	Sky Cinema Animation	

Sky

LCN	Service	Notes
306	Sky Cinema Family	
307	Sky Cinema Action	
308	Sky Cinema Comedy	HD only
309	Sky Cinema Thriller	HD only
310	Sky Cinema Drama	HD only
311	Sky Cinema Greats	
313	Film4	
314	Film4+1	
317	Horror Xtra	
318	Horror Xtra+1	
319	GREAT! romance	
320	GREAT! romance+1	
321	GREAT! movies	
322	GREAT! movies+1	
323	GREAT! movies action	
324	GREAT! movies action+1	
325	Movies24	
326	Movies24+	
328	TalkingPictures	
350-399	MUSIC	
350	MTV MUSIC	
351	MTV HITS	
352	MTV 90s	
353	MTV 80s	
354	4Music	
355	The Box	
356	KISS	
357	Magic	
358	Kerrang!	
360	Trace Vault	
361	NOW 70s	
362	NOW 80s	
363	NOW ROCKS	
364	Clubland TV	
365	That's 60s	
366	That's 80s	
400-499	SPORT	
401	Sky Sports Main Event	
402	Sky Sports Premier League	
403	Sky Sports Football	
404	Sky Sports Cricket	
405	Sky Sports Golf	
406	Sky Sports F1	
407	Sky Sports Action	Sky Sports NFL (part-time)
408	Sky Sports Arena	
409	Sky Sports News	
410	TNT Sports 1	
411	TNT Sports 2	

Sky

LCN	Service	Notes
412	Viaplay Sports 1	HD only
413	Eurosport 1	
414	Eurosport 2	
415	Sky Sports Racing	
416	Sky Sports Mix	
417	TNT Sports 3	
418	MUTV	
419	Viaplay Sports 2	HD only
420	Viaplay Xtra HD	HD only
421	TNT Sports 4	
423	LFCTV	
424	Racing TV	
427	Sporty Stuff TV HD	HD only
429	DAZN 1 HD	HD only
490	TNT Sports Box Office	part-time
491	Sky Sports Box Office SD	part-time
492	Sky Sports Box Office HD	part-time
493	TNT Sports Ultimate (UHD)	part-time
494	TNT Sports Box Office 2	part-time
495	DAZN PPV	part-time
500-579	NEWS	
501	Sky News	
502	Bloomberg	
503	BBC NEWS	
504	BBC Parliament	
505	CNBC	
506	CNN	
507	NHK World	HD only
508	Euronews	
509	NDTV 24x7	
510	FRANCE 24	
511	Al Jazeera English	HD only
512	GB News	HD only
513	TRT World	
515	Channels 24	
516	Arise News	
518	Arirang TV	
519	WION	HD only
520	TVC News	
521	NBC News Now	HD only
522	TalkTV	HD only
523	India Today	
580-599	RELIGION	
580	GOD Channel	
581	revelation	
582	TBN UK	
583	DAYSTAR	
584	Inspiration TV	

Sky

LCN	Service	Notes
585	LoveWorld	
586	EWTN Catholic	
587	Word Network	
588	Faith World TV	
589	KICC TV	
590	Faith UK	
591	Good News TV	
592	Dunamis TV	
593	SonLife	
594	New Media HD	
600-659	CHILDREN	
601	Cartoon Network	
602	Cartoon Network +1 (CN+1)	
603	Boomerang	
604	Nickelodeon	
605	Nicktoons	
606	Nick Jr.	
607	CBBC	
608	CBeebies	
609	Sky Kids	
610	Cartoonito	
611	Boomerang+1	
612	CITV	
613	Nick Jr. Too	
614	POP	
615	Tiny Pop	
616	Nickelodeon+1	
618	Tiny Pop+1	
619	POP+1	
620	POP Max	
621	POP Max+1	
622	Nick Jr+1	
624	RTÉjr	Northern Ireland only
626	Baby TV	
640	Cartoon Network	SD version
641	Boomerang	SD version
642	Nickelodeon	SD version
643	CBBC	SD version
644	CBeebies	SD version
645	Nick Jr.	SD version
660-699	SHOPPING	
660	QVC	HD only
661	JML Direct	
662	TJC	
663	QVC Beauty	
665	Gems TV	
666	High Street TV 1	
667	High Street TV 2	

Sky

LCN	Service	Notes
668	TJC Beauty	
669	Best Direct	
670	Gemporia Craft	
672	High Street TV 3	
673	Create & Craft HD	
674	HobbyMaker	
675	High Street TV 4	
676	TV Warehouse	
677	QVC Style	HD only
678	Direct Store TV	
679	QVC Extra	
680	Craft Extra	
681	Cruise1st.tv	
700-799	INTERNATIONAL	
701	B4U Movies	
702	B4U Music	
703	SONY TV	
704	Utsav Bharat	
705	Utsav Plus	
706	COLORS	
707	Zee Cinema	
709	Zee TV	
710	AAJ TAK	
711	MATV National	
712	Foodxp	
713	Colors Rishtey	
714	Colors Cineplex	
715	SONY MAX	
716	Siraj TV	
717	Utsav Gold	
718	SONY SAB	
720	SONY MAX 2	
724	Aastha	
725	Sanskar	
731	MTA1 World	HD only
732	HUM Masala	
733	Hidayat TV	
734	GEO News	
735	PTV Global	
736	New Vision TV	
737	Islam Channel	
738	GEO TV	
739	Noor TV	
742	IQRA TV	
743	92 News	
744	Islam TV	
745	Ahlebait TV	
746	Madani Chnl	

Sky

LCN	Service	Notes
749	Takbeer TV	
751	HUM EUROPE	
752	British Muslim	
754	Dunya News	
755	Islam Ch Urdu	
757	Eman Channel	
758	ARY Digital	
759	Samaa TV	
760	Siraj TV	
761	QTV	
766	PTC PUNJABI	
767	Brit Asia TV	
768	Sikh Channel	
769	Sangat	
770	Akaal Channel	
772	Kanshi TV	
774	Pitaara	
775	PBC	
777	CHSTV	
778	IQRA BANGLA	
779	ATN	
780	NTV	
781	TV One	
782	iON TV	
783	Deen TV	
784	Islam Bangla	
786	Abu Dhabi TV	
787	Ahlulbayt TV	
788	Sky News Arabia	
789	ImamHussain3	
791	PCNE Chinese	HD only
794	Colors Gujarati	
800-899	SD SWAP	Standard definition versions of channels with an HD version. (Excludes children's SD/HD swaps)
801	BBC One Nightlight	No regional programmes
802	BBC Two	
803	ITV / STV / UTV	
804	Channel 4	
805	Channel 5	
806	Sky One	
807	Sky Witness	
808	Sky Atlantic	
809	alibi	
810	GOLD	
811	Dave	
812	Comedy Central	
813	Sky Max	

Sky

LCN	Service	Notes
814	Sky Comedy	
815	BBC Four	
816	ITV2	
817	ITV3	
818	ITV4	
819	Sky Documentaries	
820	Sky Crime	
821	Sky History	
822	Sky Nature	
823	Discovery	
824	MTV	
825	National Geographic	
826	Sky Arts	
827	W	
828	TLC	
829	S4C	
830	E4	
831	More4	
834	Quest	
835	E!	
836	SyFy	
837	Crime+Investigation	
840	Sky History 2	
841	Nat Geo Wild	
843	Smithsonian Channel	
844	BBC Scotland	
845	BBC Three	
846	Yesterday	
847	BBC ALBA SD	
848	Sky Cinema Premiere	
849	Sky Cinema Greats	
850	Sky Cinema Family	
851	Sky Cinema Action	
855	Film4	
858	Sky Sports Main Event	
859	Sky Sports Main Event	UHD/HD swap
860	Sky Sports Premier League	
861	Sky Sports Football	
862	Sky Sports Cricket	
863	Sky Sports Golf	
864	Sky Sports F1	
865	Sky Sports Action	
866	Sky Sports Arena	
867	Sky Sports News	
868	Eurosport 1	
869	Eurosport 2	
870	BT Sport 1	
871	BT Sport 2	

Sky

LCN	Service	Notes
873	Sky Sports Mix	
874	BT Sport 3	
875	MUTV HD	
876	BT Sport ESPN	
877	Racing TV	
881	Sky News	
882	BBC News	
883	CNBC	
884	CNN	
886	TRT World	
890	TJC	
892	Sony TV Asia	
893	Utsav Plus	
894	Colors	
895	Sony Max	
896	Utsav Gold	
898	Zee TV	
900-929	ADULT	
900	TVX	
901	Adult Channel	
902	Xpanded TV	
903	Babes & Brazzers	
904	Babenation	
905	Get Lucky TV	
906	XXX Public Pickups	
907	TVX 40+	
908	XXX Girl Girl	
909	XXX College	
950	Sky Intro	
951-980	REGIONAL VARIATIONS and BBC RED BUTTON	Viewers will see relevant version on channels 101-103.
951	BBC One London HD	
952	BBC One NE & Cumbria HD	
953	BBC One North West HD	
954	BBC One Yorkshire HD	
955	BBC One E Yorks & Lincs HD	
956	BBC One West Mids HD	
957	BBC One East Mids HD	
958	BBC One East HD	
959	BBC One South East HD	
960	BBC One West HD	
961	BBC One South HD	
962	BBC One South West HD	
963	BBC One Channel Islands HD	
964	BBC One Scotland HD	
965	BBC One Wales HD	
966	BBC One NI HD	
967	BBC Two HD	NI/Wales

Sky

LCN	Service	Notes
968	BBC Two Wales HD	Eng/Sco/NI
969	BBC Two NI HD	Eng/Sco/Wal
970	BBC RB 1 HD	(Red Button)
971	BBC RB 1 SD	
973	ITV1+1	in some regions
990-999	OTHER	
996	Channel Line-up	
998	Sky Intro	
999	Sky	
	RADIO	
101	BBC Radio 1	
102	BBC Radio 2	
103	BBC Radio 3	
104	BBC Radio 4	
105	BBC Radio 5 Live	
106	Classic FM	
107	Absolute Radio	
108	TalkSport	
109	Capital	
110	Planet Rock	
111	Heart	
112	Heart 80s	
113	Radio X	
114	Capital Xtra	
115	BBC World Service	
116	BBC Radio Scotland	
117	BBC Radio Wales	
118	BBC Radio Ulster	
119	BBC Asian Network	
120	BBC Radio 6 Music	
121	Gold	
122	WRN Europe	
123	LBC	
124	Smooth Radio	
125	Panjab Radio	
126	BBC Radio 4 Extra	
127	BBC Radio 1Xtra	
128	TWR	
129	BBC Radio Nan Gaidheal	
130	BBC Radio 4 LW	
131	BBC Radio 5 Live Sports Extra	
132	Heart Extra	
133	Sukh Sagar	
135	variations:	BBC Radio London (London); BBC Radio Foyle (NI); BBC Radio Cymru (Wales)
136	variations:	BBC Radio Cymru (Eng, Sco, NI); BBC Radio Cymru 2 (Wales)
137	RTÉ Radio 1	

Sky

LCN	Service	Notes
138	RTÉ 2fm	
139	RTÉ Lyric	
140	RTÉ Raidió na Gaeltachta	
141	Kiss	
142	Magic	
143	Hits Radio	
144	Absolute 80s	
145	Absolute 90s	
146	Jazz FM	
148	Absolute Classic Rock	
149	BFBS Forces Radio	
150	Virgin Radio	
151	Greatest Hits Radio	
152	Heart 90s	

Virgin

LCN	Service	Notes
100	Virgin Media Previews HD	
101	BBC One HD	Your local BBC One service
102	BBC Two HD	
103	ITV1/STV/UTV HD	
104	Channel 4 HD	S4C HD in Wales
105	Channel 5 HD	
106	E4 HD	
107	BBC Three HD	England/NI
	BBC Four HD	Scotland/Wales
108	BBC Four HD	England/NI
	BBC Scotland HD	Scotland
	Channel 4 HD	Wales
109	Sky Showcase HD	
110	Sky Witness HD	
111	Sky Max HD	
112	Sky Comedy HD	
113		BBC Three HD (Scot/Wal)
114	Alibi HD	
115	ITV2 HD	
116	Drama HD	
117	ITV3 HD	
118	ITV4 HD	
119	ITVBe HD	
120	5USA	BBC Alba HD (Scotland)
121	Sky Crime HD	
122	Sky Sci-Fi HD	
123	Sky Arts HD	
124	GOLD HD	
125	W HD	
126	5STAR	
127	Dave HD	
128	Really	
129	Yesterday HD	
130	5ACTION HD	
131	Sky History HD	
132	Comedy Central HD	
133	Crime+Investigation HD	
134	MTV HD	
135	Pick	
136	Together TV	
137	Quest HD	
138	5SELECT	
139	Challenge	
140	Sky Arts (HD)	
143	4seven HD	
147	More4 HD	
148	CBS Reality	
149	LEGEND	

Virgin

LCN	Service	Notes
150	That's TV UK	
154	Comedy Central Extra	
156	Sky Replay	
159	Local TV	(in some areas only, e.g. London Live in London)
160	E! HD	
161	BBC Alba HD (Eng/Wal/NI)	On 120 in Scotland
162	BBC Scotland HD (Eng/Wal/NI)	5USA (Scotland)
164	S4C HD (Eng/Wal/NI)	On 104 in Wales
165	TLC HD	
166	Investigation Discovery (ID)	
168	Quest Red	
169	DMAX	
170	GREAT! tv	
171	Horror Xtra	
172	Reality Xtra	
174	BLAZE	
175	Virgin UHD	
176	Eden HD	
177	Discovery HD	
178	Animal Planet	
179	Discovery Science	
180	Discovery Turbo	
181	Discovery History	
182	Nat Geo Wild HD	
183	National Geographic HD	
186	Sky History 2 HD	
187	PBS America	
188	Sky Documentaries HD	
189	Sky Nature HD	
190	Food Network	
191	HGTV	
192	God TV	
	IP Services	
204	Netflix	
205	Amazon Prime Video	
220	Inside Crime UK	
221	Real Wild	
222	Mystery TV	
223	HauntTV	
224	History Hit	
230	Homes Under The Hammer	
231	Great British Menu	
232	Tastemade	
242	NextUp Live Comedy	
243	Chat Show	
244	Baywatch	
250	Deal or No Deal USA	

Virgin

LCN	Service	Notes
251	Fear Factor	
252	Wipeout Xtra	
	MUSIC	
280	MTV Music	
281	MTV Live HD	
282	MTV Hits	
283	MTV 90s	
284	MTV 80s	
285	The Box	
286	4Music	
287	E4 Extra	
288	Kiss	
289	Magic	
290	Kerrang!	
291	Vevo	
292	Clubland TV	
293	Now 70s	
294	Now 80s	
295	Now Rock	
296	That's 60s	
	+1 Timeshifts	
303	ITV1+1	STV+1 / UTV+1 (Scot/NI)
304	Channel 4+1	Not Wales
305	Channel 5+1	
306	E4+1	
308	Channel 4+1	In Wales
310	Sky Witness+1	
314	Alibi+1	
315	ITV2+1	
316	Drama+1	
317	ITV3+1	
318	ITV4+1	
319	ITVBe+1	
320	5USA+1	Not Scotland
321	Sky Crime+1	
324	Gold+1	
325	W+1	
326	5STAR+1	
327	Dave Ja Vu	
329	Yesterday+1	
331	Sky History+1	
332	Comedy Central+1	
333	Crime+Investigation+1	
337	Quest+1	
347	More4+1	
348	CBS Reality+1	
362	5USA+1	in Scotland
365	TLC+1	

Virgin

LCN	Service	Notes
366	ID+1	
369	DMAX+1	
371	Horror Xtra+1	
376	Eden+1	
377	Discovery+1	
378	Animal Planet+1	
379	Discovery Science+1	
381	Discovery History+1	
383	National Geographic+1	
391	HGTV+1	
	FILMS	
400	Virgin Movies Previews	
401	Sky Cinema Premiere HD	
402	Sky Cinema Select HD	
403	Sky Cinema Hits HD	
404	Sky Cinema Greats HD	
406	Sky Cinema Family HD	
407	Sky Cinema Action HD	
408	Sky Cinema Comedy HD	
409	Sky Cinema Thriller HD	
410	Sky Cinema Drama HD	
411	Sky Cinema Sci-Fi & Horror HD	
412	Sky Cinema Animation	
419	Movies 24	
420	Movies 24 +	
424	GREAT! movies classic / christmas	
425	GREAT! movies	
426	GREAT! movies action	
428	Film4 HD	
430	Film4 +1	
445	Talking Pictures TV	
	SPORT	
501	Sky Sports Main Event HD	
502	Sky Sports Premier League HD	
503	Sky Sports Football HD	
504	Sky Sports Cricket HD	
505	Sky Sports Golf HD	
506	Sky Sports F1 HD	
507	Sky Sports Action HD	
508	Sky Sports Arena HD	
509	Sky Sports News HD	
510	Sky Sports Mix HD	
511	Sky Sports Main Event	V6 box
512	Sky Sports Premier League	V6 box
513	Sky Sports Football	V6 box
514	Sky Sports Cricket	V6 box
515	Sky Sports Golf	V6 box
516	Sky Sports F1	V6 box

Virgin

LCN	Service	Notes
517	Sky Sports Action	V6 box
518	Sky Sports Arena	V6 box
519	Sky Sports Racing HD	
521	Eurosport 1 HD	
522	Eurosport 2 HD	
526	MUTV	
527	TNT Sports 1 HD	
528	TNT Sports 2 HD	
529	TNT Sports 3 HD	
530	TNT Sports 4 HD	
531	TNT Sports Ultimate (UHD)	
532	Sky Sports Main Event UHD	
533	Sky Sports F1 UHD	
534	Sky Sports UHD 1	
535	Sky Sports UHD 2	
536	Racing TV HD	
544	LFC TV HD	
551	Viaplay Sports 1 HD	
552	Viaplay Sports 2 HD	
553	Viaplay Xtra HD	
	NEWS	
601	BBC News HD	
602	Sky News (HD)	
604	GB News HD	
605	BBC Parliament HD	
606	TalkTV HD	
609	Bloomberg HD	
613	CNBC	
614	NBC News Now HD	
620	Euronews	
621	NDTV 24x7	
622	Al Jazeera English	
624	France 24 English HD	
625	NHK World-Japan HD	
	CHILDREN'S	
701	CBBC HD	
702	CBeebies HD	
703	Baby TV	
704	Cartoon Network HD	
705	Cartoon Network +1	
706	Cartoonito	
707	Sky Kids HD	
712	Nickelodeon HD	
713	Nick +1	
715	Nick Jr.	
716	Nick Jr. Too	
717	Nicktoons	
730	Boomerang	

Virgin

LCN	Service	Notes
731	Boomerang +1	
734	CITV	
736	Pop	
737	Tiny Pop	
	SHOPPING	
740	QVC HD	
741	QVC Beauty	
742	QVC Style HD	
743	QVC Extra	
748	Create and Craft	
755	Gems TV	
757	TJC	
	INTERNATIONAL	
800	Desi App Pack	
801	Utsav Gold HD	
802	Utsav Bharat	
803	Utsav Plus HD	
805	SONY TV ASIA HD	
806	SONY MAX HD	
807	SONY SAB	
808	SONY MAX 2	
809	Zee TV	
810	Zee Cinema HD	
815	B4U Movies	
816	B4U Music	
825	Colors Gujarati	
826	Colors TV HD	
827	Colors Rishtey	
828	Colors Cineplex	
829	NDTV Good Times	
831	Al Jazeera Arabic	
838	Islam Channel	
839	Islam Channel Urdu	
	VARIATIONS	
861	BBC One London HD	
862	BBC One Scotland HD	
863	BBC One NI HD	
864	BBC One Wales HD	
865	BBC Two HD	Network version for England and Scotland
875	RTÉ One	In Northern Ireland.
876	RTÉ 2	In Northern Ireland.
877	TG4	In Northern Ireland.
	RADIO	
901	BBC Radio 1	
902	BBC Radio 2	
903	BBC Radio 3	
904	BBC Radio 4	

Virgin

LCN	Service	Notes
905	BBC Radio 5 Live	
906	BBC World Service	
907	BBC Radio 1Xtra	
908	BBC Radio 5 Live Sports Extra	
909	BBC Radio 6 Music	
910	BBC Radio 4 Extra	
911	BBC Radio 4 LW	
912	BBC Asian Network	
913	BBC Radio Cymru 2	
915	Absolute Radio	
916	Smooth Radio	
917	RTÉ Radio 1	
918	Heart	
919	LBC	
920	WRN	
921	Heart 80s	
922	Classic FM	
923	Gold	
924	Planet Rock	
927	TalkSPORT	
928	Magic	
930	BBC Radio Scotland	
931	BBC Radio Wales	
932	BBC Radio Ulster	
933	BBC Radio Foyle	
934	BBC Radio Nan Gaidheal	
936	BBC Radio Cymru	
937	BBC Radio London	
951	Absolute 80s	
952	Absolute Classic Rock	
958	Capital	
959	Capital Xtra	
960	Radio X	
963	Kiss	
	ADULT	Variations apply to V6 box
968	PIN Help	Advisory
969	Previews	
970	TVX	
978		
971	Babes and Brazzers	
972	Adult Channel	
980		
973	XXX Brits	
979		
974	GirlGirl	
981	Babenation	
982	Meet The Babes	
985	PIN Help	Advisory

Virgin

LCN	Service	Notes
	OTHER	
991	BBC RB1 HD	BBC Red Button service
998	VM Previews	
999	VM Ultra HD	

Virgin