SLR

Prominence framework

Submission

In response to the Australian Senate Environment and Communications Legislation Committee Inquiry into Communications Legislation Amendment (Prominence and Anti-siphoning) Bill 2023

Service List Registry

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Executive summary

This submission from the Service List Registry supports the prominence framework for television services in Australia proposed by the *Communications Legislation Amendment (Prominence and Anti Siphoning) Bill 2023*. This will require Regulated Television Services to be carried by Regulated Television Devices and made available through their Primary User Interface with Minimum Prominence Requirements. The regulatory regime will be governed by guidelines to be introduced by the Australian Communications and Media Authority, ACMA. The Service List Registry recommends the introduction of a Regulated Service List together with specific provisions to achieve this.

The broadcasting environment is evolving rapidly with a long-term transition to online delivery, which offers benefits to both broadcasters and viewers. There is an urgent need to ensure that traditional broadcasters have equitable access to television screens and that viewers continue to have unhindered access to a diverse range of free-to-view services. The increasing adoption of closed, proprietary platforms could limit interoperability and consumer choice, with the risk of market monopolization by a few powerful entities. There is a real risk that traditional broadcast channels will end up as a series of apps on a limited range of devices. The consumer electronics market is increasingly global and relies on economies of scale, making it impractical to develop products specifically for Australian requirements. While regulation is necessary to achieve policy objectives, it is important to allow for innovation and differentiation. This emphasises the need for open standards to enable a competitive market.

Using DVB-I, an open standard developed by the DVB Project, the Service List Registry enables media providers to announce services and allows compatible applications, devices and displays to discover and access them. Through the online provision of relevant service information, the DVB-I specification supports traditional television transmissions as well as linear channels and interactive applications delivered online over fixed and wireless networks. This can facilitate a long-term transition to online delivery and provide a familiar user experience to viewers without access to traditional television reception.

The Regulated Service List will provide an unambiguous technical definition of the priority and prominence of Regulated Television Services. This approach reduces compliance costs and regulatory risk for application developers and manufacturers, providing a structured way to conform to legislative and regulatory requirements. Using an open and easily implemented international standard, it will avoid the requirement to develop different applications or products for separate national markets. The service information can also be transformed into other formats to support existing devices and displays, or otherwise be published in paper or electronic form.

The list of Regulated Television Services will include the national, commercial, and community broadcast television services and associated broadcasting video on demand services specified in the legislation and determined by the relevant Minister. The list will support regional variations and specify service order and logical channel numbers, ideally determined through industry consensus based on current practice, but ultimately arbitrated by ACMA. The Service List Registry suggests that the costs of this system be recovered through registry fees and broadcast television licensing.

The Service List Registry considers that this system will offer broadcasters a mechanism for unimpeded distribution while enabling a transition to online delivery. It will enable broadcasting video on demand services to be conveniently accessible as virtual channels.

For consumers, the approach provides choice, convenience, and control, through simple service selection on any screen.

In conclusion, the Service List Registry supports the proposed legislative amendment. It recommends the introduction of a Regulated Service List as a practical approach to fulfil the intent of the legislation and regulation. This will help promote an open and competitive consumer market, while safeguarding national and cultural interests.

Preface

As Chief Executive of the Service List Registry, I welcome this invitation to contribute to the Australian Senate Environment and Communications Legislation Committee Inquiry into Communications Legislation Amendment (Prominence and Anti-siphoning) Bill 2023.

The Service List Registry endorses the provisions for a prominence framework to support the availability of free-to-air television services on internet connected television devices.

Furthermore, the Service List Registry offers a simple technical solution to enable this to be implemented in practice with minimal effort by all parties.

Our federated global service discovery platform is designed to enable consumers to discover and access audiovisual media services on compatible devices. Providers of media services can use the platform to announce them to applications, devices and displays and make them accessible to users. Manufacturers of devices and displays can therefore address regulatory requirements by ensuring compatibility with simple open industry standards that can be implemented internationally.

The Service List Registry supports the open DVB-I industry standard developed by the DVB Project, an industry-led consortium of the world's leading media and technology companies working together to design open technical specifications for digital media delivery.

Central to this specification is the concept of a Service List that provides data about the availability of services over various networks. The DVB-I specification also includes provision for a Regulated Service List, enabling national regulatory authorities to authorise ordered lists of services with logical channel numbers and ensure appropriate prominence for public service media.

Beyond compliance with relevant regulations and competition requirements, our primary concern in in 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.

The Service List Registry is actively working with stakeholders around the world to pilot this system. We welcome the opportunity to demonstrate this to government, policy makers, and regulators, as well as the wider industry and consumers.

Dr William Cooper

Chief Executive
Service List Registry Limited
Brock House
London
W1W 6BP
UNITED KINGDOM

About the author

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 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.

William is Chief Executive of the Service List Registry and is responsible for its development.

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.

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1. Problem

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

Broadcast channels face increasing competition from online services that can offer viewers more choice and greater flexibility in viewing. The ability to deliver audiovisual media services at high quality over the internet is transforming the television and video environment. While this offers far more choice to viewers, the navigation of services is becoming increasingly complex and the distinction between traditional television channels and online video services is becoming blurred.

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

Although digital terrestrial television transmission is likely to continue for many years, possibly decades, there is an urgent need to plan for a long-term evolution to online delivery using internet protocols over fixed and wireless data networks, while still providing access to existing channels.

Given product development lead times and relatively long replacement cycles for television devices and displays, planning needs to begin now to manage any long-term migration to online delivery. This is likely to take at least ten years and arguably longer.

A key issue will be the equivalent regulation of services that are delivered online to those that are distributed over traditional broadcast networks.

The risk for broadcasters is that 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 transmissions to transition to online services over time, with catastrophic consequences for the viewing of previously pre-eminent broadcasters.

If service providers and manufacturers of devices and displays do not adopt open standards and employ closed proprietary implementations there is a risk of market foreclosure by powerful gatekeepers.

The nature of broadcasting is that it relies on open standards to provide interoperability between transmitters and receivers. A broadcast network effectively requires conformance to certain industry standards to achieve this. There is no such requirement in a closed network. As a result, platform operators may implement unique or proprietary approaches that effectively lock out other parties, unintentionally or otherwise.

Australia does not exist in isolation in respect to international markets and standards. The market for media products and services is increasingly international or even global. This is particularly true for consumer electronic products such as devices and displays, including televisions and handheld screens. Without access to such screens, media providers have no viable route to market.

The Australian consumer electronics market does not provide sufficient volume to support the development of products specifically to meet legal or regulatory requirements that are unique to the territory. A possible consequence of this is that certain multinational manufacturers may be unwilling or unable to supply products in that market, resulting in a reduction in consumer choice.

International technical standards therefore play a key role in ensuring the availability of compatible devices and displays in an open market. The importance of adopting open international standards is critical to maintaining an open and competitive consumer market and universal access to public service media.

2. Solution

Universal access can be achieved through the designation of certain services and applying regulation to them such that they are accessible through any compatible device or display.

This technical capability is now part of an open standard known as DVB-I, which complements existing DVB standards used for the delivery of traditional digital television services. It is also expected to support other delivery systems.

The DVB-I standard has been developed by the DVB Project, which has been responsible for the introduction of a suite of digital video broadcasting standards that are currently in use in Australia.

The importance of DVB-I is that it brings together many existing standards, including those currently used for terrestrial and satellite broadcasting, as well as the delivery of online services and applications.

Until now, there has been no recognised standard way for service providers to announce audiovisual media services online, or for application developers and consumer electronics manufacturers to discover them.

Central to DVB-I is the concept of a Service List that is used to announce available services and provide mappings to service instances, which can be transmission network identifiers or internet addresses.

DVB-I also supports a Regulated Service List for use in a particular territory or jurisdiction. This is intended to identify services that are approved by the relevant regulatory authority. This can include designated services with appropriate prominence and prioritisation, which can be supported by a numbering scheme to provide consistency of positioning across various diverse platforms.

Pilot projects using DVB-I are already on air in Germany and Italy, with other territories also evaluating the standard, including Australia. Notably, there is the potential to work with other international television standards and 5G mobile networks, providing for the first time the opportunity to establish a global standard for television service information.

Televisions are now becoming available that provide native support for DVB-I. The specification is also supported through existing devices that support the complementary HbbTV standard. Service Lists can be used by any device that can make a secure internet connection, including various television operating systems and devices in the iOS and Android ecosystems.

The DVB-I standard has been developed to support traditional television transmissions, over satellite, terrestrial, and cable networks, as well as linear channels and interactive applications that can be delivered online over fixed or wireless data networks. It can support traditional navigation of services, with logical channel numbers that can allow direct or simple selection using up and down buttons. It can also support other means of selection, including rich graphical user interfaces or voice control systems.

Fundamentally, DVB-I can provide a similar experience to users over any network, whether broadcast or over an internet connection. This is important, as many viewers may not have access to traditional broadcast reception. Over time, this may support a long-term transition of services to online delivery, which can offer many benefits to broadcasters and viewers.

3. Legislation

In Australia, the proposed *Communications Legislation Amendment (Prominence and Anti-Siphoning) Bill 2023* would amend the *Broadcasting Services Act 1992* to introduce a prominence framework to support the availability of free-to-view television services on internet connected television devices.

The prominence framework will require manufacturers of Regulated Television Devices supplied in Australia to ensure that these products carry Regulated Television Services and make them available to users through a Primary User Interface subject to Minimum Prominence Requirements.

Regulated Television Devices will include smart televisions, set-top-boxes, and plug-in products that are designed for the primary purpose of facilitating the viewing of audiovisual content. The obligations will only apply to devices manufactured 18 months after the legislation comes into effect. ACMA, the Australian Communications and Media Authority, will publish guidelines on what will constitute a Regulated Television Device.

Regulated Television Services will include national, commercial and community television broadcasting services, and broadcasting video on demand services provided free to the public by national and commercial broadcasters or other specified services.

The Primary User Interface is defined as the home screen or main screen of the device, or the main interface used to access broadcasting video on demand services. This will not include remote controls and similar ancillary hardware or equipment.

Minimum Prominence Requirements will be set out in separate Regulations, allowing them to be updated and amended in the future. These will establish Must Carry obligations that prevent any requirement for a provider of a Regulated Television Service to pay a fee, charge, or any other consideration, including share of advertising revenue or inventory, for, or in connection with, the device complying with minimum prominence requirements. This does not preclude payment of any consideration for additional visibility, such as appearing first in recommendations or search results.

The Regulations may prescribe requirements in relation to access to Regulated Television Services on the device, their display, location or positioning, the installation and updating or applications, and any electronic program guide on the device that provides information about or access to Regulated Television Services.

The requirement for prominence of a Regulated Television Service will continue until it is no longer offered, or until the software used on the device is no longer provided, updated, or supported by the manufacturer, or until a user moves or uninstalls a regulated television service from their device.

The focus of the proposed legislation is on the manufacturer of a regulated television device. As technology develops, a television device may be increasingly difficult to define.

The proposed definition is domestic reception equipment capable of connecting to the internet and providing broadcasting video on demand services and is designed for the primary purpose of facilitating the viewing of audiovisual content. The term reception is not defined in this context but appears to assume a radiofrequency broadcast.

It should be noted that there are likely to be devices and displays that do not include a traditional television tuner but that will nevertheless be capable of connecting to the internet and providing access to audiovisual media services.

It is also possible that the user interface will be provided by a software application that may not be under the control of the original equipment manufacturer.

4. Implementation

The proposed legislation is appropriately not prescriptive in stating how a Regulated Television Device should meet the Minimum Prominence Requirements, leaving that to separate Regulations. This leaves room for interpretation, which may or may not be desirable.

It should not be the role of legislators or regulators to impose specific technology standards that could inhibit innovation and open competition. They should instead set specific expectations that if met will ensure compliance.

The approach of the Service List Registry is to provide a solution to the problems of prominence and regulation that will enable consumer electronics manufacturers and application developers to conform to minimum requirements while allowing freedom to innovate and differentiate their products and services.

The Service List Registry has been designed to meet the needs of consumers, audiovisual media service providers, device and display manufacturers, and legislators and regulators.

It does this by supporting a Regulated Service List that can comprise Regulated Television Services. If employed by a Regulated Television Device, it can facilitate compliance with requirements for the prominence, availability, and accessibility of services.

A Regulated Service List can reference linear channels, whether they are broadcast over the air or delivered over the internet. It can include links to applications used to deliver online broadcasting video on demand services.

DVB-I is an open standard developed specifically for this purpose by a broadly-based industry body that has been responsible for television standards widely adopted and deployed in Australia. DVB-I offers a well-defined mechanism by which manufacturers can achieve conformance with the requirements of legislators and regulators.

This does not preclude other means by which an application, device or display may discover, access, or present services, with reference to some form of Regulated Service List or by some other system.

DVB-I is not a complete solution. It only deals with metadata describing services. It does not specify how these should be presented or displayed. A technology standard should not attempt to do so. This allows service providers and consumer electronics manufacturers to continue to innovate and differentiate their products and services.

The benefit of a Regulated Service List as an ordered set of audiovisual media services is that it can unambiguously indicate the intended prominence of a particular service. How that is visually presented to the user may be a matter of implementation, but the intent is clear. If a service is placed first in a Regulated Service List, it should be presented with appropriate prominence in any selection mechanism. If that selection mechanism involves an ordered list, it should be compliant by definition.

This considerably reduces the scope for ambiguity or misinterpretation in any associated regulations. It also minimises the burden on application developers and consumer electronics manufacturers in achieving compliance and reduces the risk of regulatory uncertainty.

Inclusion of a service in a Regulated Service List does not necessarily impose it upon a consumer, who should have the freedom to access the services of their choice. However, it does ensure its continuing availability to those that value access to such services, providing choice, convenience, and control, through simple service selection on any screen.

5. Regulation

The proposed amendments to the legislation in Australia appropriately delegate key aspects to regulation to be implemented by the Australian Communications and Media Authority, ACMA.

Much of the detail about how the legislation will be implemented in practice will be a matter of regulation. This is important to allow for the rapidly changing consumer and technology environment.

This is consistent with the approach being adopted in other territories such as the United Kingdom, where the communications regulator Ofcom will be responsible for the governance of certain aspects of the proposed Media Bill, in part through a revised *Code of Practice on Electronic Programme Guides*.

While legislation can define the intention in legal terms, factors such as Minimum Prominence Requirements may inevitably be subject to interpretation.

This is where a Regulated Service List can provide objective definition of the intent in well-specified technical terms. This can be unambiguous about the relative ordering, numbering, and prominence of services.

A Service List is an ordered list of services, which can include traditional television channels and online applications, including the name of the service, a reference to a brand image, and technical details enabling a compatible application, device or display to access the service over various available networks.

A Regulated Service List includes information about the target country and a field indicating that it represents a list of services that is regulated by the relevant national authority. The authenticity and authority of this data is reliant upon the trusted registry from which the list is received by the client device.

The information in the Regulated Service List can equally be transformed into other formats, including electronic or paper documents, and can be published in text form by the relevant regulator.

The regulator therefore must simply require that the presentation and access to services identified in the Regulated Service List reflect the priority and prominence of the services in the list. This is a relatively simple proposition to test and adjudicate.

The advantage of this is that any application developer or consumer electronics manufacturer can by simple inspection of the Regulated Service List determine the intended priority and prominence of the services it contains. This reduces the cost of compliance and the associated regulatory risk.

As a freely available open industry standard, DVB-I can be cost-effectively implemented internationally, providing compliance with different regulatory regimes without a requirement to develop specific products for national markets.

For the consumer, compatibility with the DVB-I standard provides an assurance of the availability and accessibility of services included in a Regulated Service List. As with many other technical standards, it provides a mark of interoperability. This can be indicated by manufacturers licensing the distinctive ‘R’ trademark of the Service List Registry as a sign of compliance and compatibility.

This system will substantially address the concerns of national, commercial, and community television service providers about ensuring consumer access to their services.

6. Recommendation

The Service List Registry recommends that the intent of the proposed legislative amendments be implemented through regulation by means of introducing of a Regulated Service List.

The Regulated Service List would include the Regulated Television Services specified in the proposed legislation and as designated by the relevant Minister. These would include the national television broadcasting services provided by the ABC and SBS, applicable commercial television broadcasting services, community television broadcasting services, and their relevant associated broadcasting video on demand services.

Notably, the Regulated Service List would specify the order of these services in the list, together with their logical channel numbers. It is anticipated that these would be derived from current industry practice, optimised to include slots for associated broadcasting video on demand services. This would preferably be determined through industry consensus, through an organisation such as Freeview Australia. In the event of dispute, the final arbiter through an evidence-based process of appeal should be ACMA.

The geography and system of television licensing in Australia is such that while there would be a national Regulated Service List, this would in practice require many regional variations. In each case, the Regulated Service List would include the technical parameters necessary for the reception of the relevant services over the air or online.

The Service List Registry is designed to support such a system of a national Regulated Service List with regional variations.

It is anticipated that the marginal cost of operating such a system would be recovered either through annual registry fees or preferably through the licensing of broadcast television services.

In framing its regulations, it is proposed that ACMA consider the following provisions:

- Any product or service that provides any form of user interface to facilitate access to any Regulated Television Service in a Regulated Service List must comply with the provisions of the regulations. This addresses the problem of defining a Regulated Television Device.

- Any service listed in a Regulated Service List must have a relevant licence from the regulator. This addresses the issue of services that may be delivered only over the internet without a traditional broadcasting licence.

- Any Designated Channel in a Regulated Service List must be made available on a must-offer and must-carry basis subject to any reasonable contractual carriage conditions. This addresses the requirement for equitable universal availability of Regulated Television Services.

- Any Regulated Service List must specify default channel numbering to allow numeric navigation. The numbering system should be developed as far as possible through industry consensus, based on established custom and practice to support consumer familiarity.

- Any Regulated Television Service must be presented within a user interface with appropriate prominence with respect to the priority and numerical order defined in the relevant Regulated Service List.

- Any product or service providing a user interface to access a Regulated Television Service will not be obliged to use numbers to identify services but those that do should adopt the default numbering and ordering scheme for the relevant Regulated Service List as far as practical.

7. Conclusion

The Service List Registry welcomes the proposed amendment to legislation to support the prominence of Regulated Television Services on Regulated Television Devices.

The implementation of this proposed legislation will be largely a matter of regulation through the Australian Communications and Media Authority, ACMA.

The introduction of a Regulated Service List of Regulated Television Services offers a practical mechanism by which the intent of the regulation can be objectively implemented by Regulated Television Devices.

The use of open industry standards that are already being adopted internationally will facilitate cost-effective compliance by application developers and manufacturers of consumer electronics devices and displays.

The DVB-I standard provides a simple and easily integrated mechanism for service announcement and discovery that can use a Regulated Service List to ensure the prominence, availability, and accessibility of designated services.

The Service List Registry welcomes the opportunity to support the legislative and regulatory requirements of the Australian market and would be pleased to demonstrate how such a system can work in practice.

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Annexes

The following documents are provided as separate annexes.

- **Service List Registry** — White paper introducing the Service List Registry platform proposition.

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.

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.

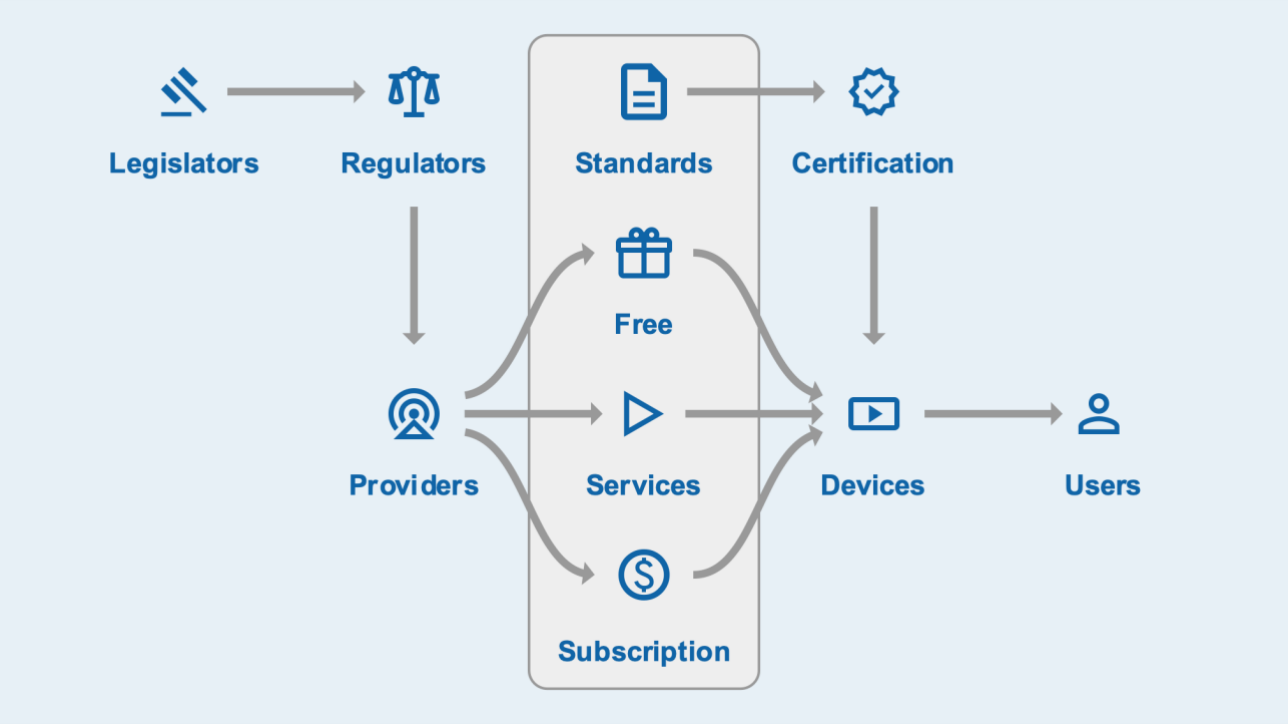
- **Providers** of media services can publish lists of services available by region across various delivery networks. They can promote their brands and retain control of the distribution of their services, with the option to prioritise different modes of delivery and offer higher quality audio and video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

 Service List Registry

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

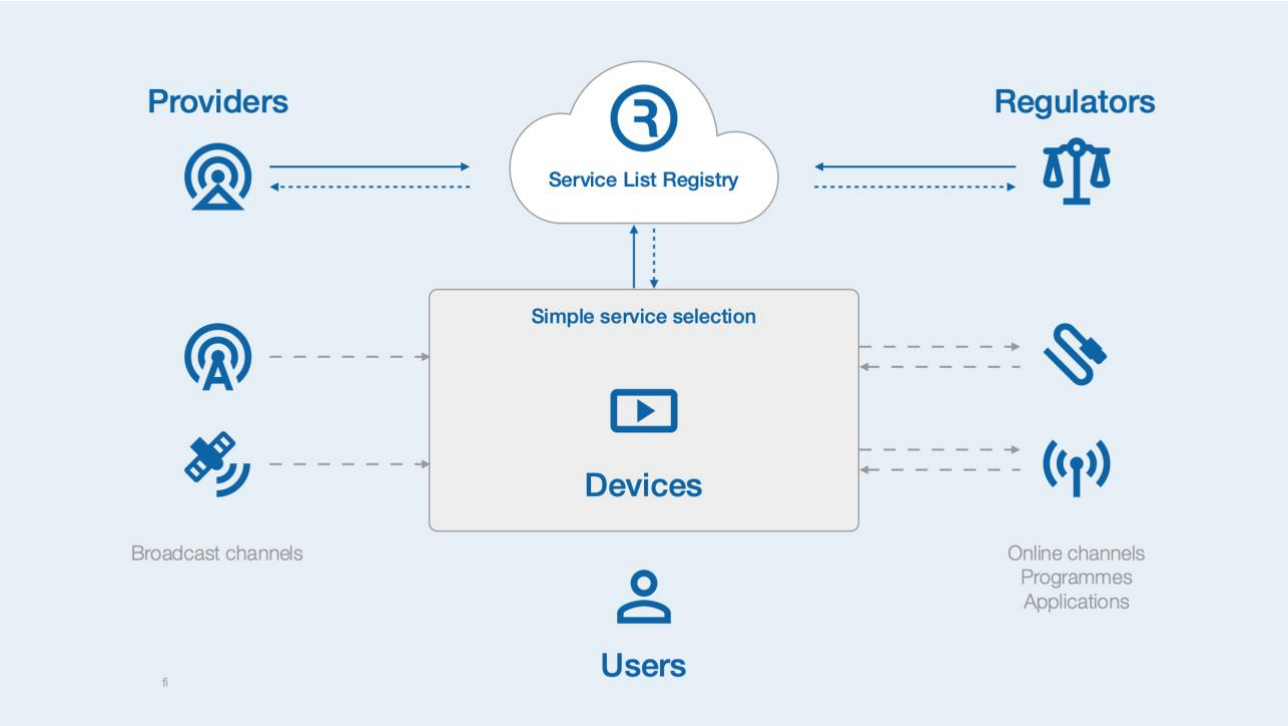
The Service List Registry enables the virtual aggregation of audiovisual media services across diverse delivery networks that can be accessed on any compatible device, display, or application.

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.

Data flows



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.