



DRAFT HOWTO - Handle Very Long Service Lists on a Receiver

This is a draft HOWTO Document. If you want to comment on it, please open it in [Google Docs](#) and add your comments.

Last Updated: 2014-08-18

Summary

The XSI and PI Documents allow a broadcaster to provide information on all the Services, Programmes and On-Demand Audio they provide.

This has the potential to dramatically increase the amount of content (live and on-demand) that can be offered to the listener, and make it much harder for listeners to find the Services they want to listen to.

This document explains some likely scenarios, and suggests some ways to present the large number of services and on-demand audio items to listeners. This document is not normative, and doesn't form part of the RadioDNS standards, but it is intended to provide some consistency for listeners.

Presenting Very Long Service Lists

A broadcaster may produce many radio services, across a mixture of broadcasting systems - FM, DAB, DAB+, HD or IP and in different cities/locations. It's possible that a single XSI file could contain hundreds of services.

Historically the Service List was created by scanning the broadcast band, and showing the listener what could be received. The XSI file was used only to add in additional meta-data like logos, descriptions and detailed genres. The Service List created by scanning would typically have 30-40 stations on FM, and up to 80 on digital (DAB, DAB+, HD).

However, there may be services defined in the XSI files that the listener wants to listen to. Those services may not have been found by scanning for a number of reasons:

- The service is broadcast on a platform not supported by the receiver - for example, an HD-only station can't be found on an FM receiver
- The service is an IP streaming service related to a broadcast service - for example, a sub-genre or alternative version of a broadcast service

If all the services defined in all the XSI documents are shown in a single list, it could run to hundreds of

services, which makes navigation much harder for the listener. In some countries, it would expose potentially confusing entries, such as multiple regional variations of the same radio station.

The XSI Document provides meta-data that can be used to present Service Lists more attractively and intelligently.

Elements that can help with Service List presentation are:

- Names and Descriptions
- Logos (at different sizes)
- Genre
- Keywords
- GeoLocation
- Groups
- Language

Filtering and Ordering the Service Lists

It may help the listener to create two lists of Services, which they can swap between.

The *primary* Services list can still be generated from scanning the dial for services - this will create the initial list for listeners to select services from, knowing all those services will be available on broadcast radio.

The *all* Services list contains the primary Services list, and those additional Services found by importing the XSI files. As these Services are all marked up using XSI, they can be filtered and searched using elements like Title, Genre and GeoLocation.

It's important that Services that would be streamed (because they can't be received on broadcast) are clearly identified to the listener.

Example:

The receiver only supports FM reception and IP streaming.

BBC Radio 1 is received during a scan of FM, and added to the *primary* Services list.

The BBC's XSI document is also found, which gives information on BBC Radio 2, BBC Radio 3, BBC Radio 4, BBC 5Live, 5Live Sports Extra, BBC 6 Music, BBC 4 Extra, BBC Asian Network, all of which are provided on DAB and IP. Only BBC Radio 2, BBC Radio 3, BBC Radio 4 are provided on FM.

The receiver would show:

BBC Radio 1 on the *primary* Services List

BBC Radio 1, BBC Radio 2, BBC Radio 3, BBC Radio 4, BBC 5Live, 5Live Sports Extra, BBC 6 Music, BBC 4 Extra, BBC Asian network on the *all* Services List

BBC Radio 5Live, 5Live Sports Extra, BBC 6 Music, BBC 4 Extra and BBC Asian Network would be shown with a 'IP Streaming Only' indication.

Service Groups

Services that have serviceGroup and serviceGroupMember elements can be 'collapsed' under the name of the serviceGroup, and expanded when the user selects the serviceGroup. This can be used to present a better navigation model for regional variations or genre variations of the same Service.

If one of the Services in a serviceGroup is received from broadcast, then it should be shown on the *primary* Service list, with an option to 'expand' it to show the name/description of the serviceGroup, and all the other services in that same serviceGroup.

If none of the Services in a serviceGroup is received from broadcast, then it should only be shown on the *all* Services list, using the serviceGroup name, and the option to expand it to show all the other Services in that same serviceGroup.

Broadcasters should put services into appropriate serviceGroups to help with navigation.

Example:

Heart Bristol is found from scanning the dial.

The XSI file has a serviceGroup containing Heart Bristol, Heart London, Heart Wiltshire and Heart Berkshire

Heart Bristol is shown on the *primary* Service List, with an option to expand it to show all the Heart services.

The serviceGroup Heart is shown on the *all* Service List, with an option to expand it to show all the Heart services.

This would allow the listener to switch to streaming a different regional variation of Heart.

Example:

Antenne Bayern is found from scanning the dial.

The XSI file has a serviceGroup Antenne containing Antenne Bayern, Rock Antenne, Antenne Hits and Antenne 80er,

Antenne Bayern is shown on the *primary* Service List, with an option to expand it to show all the Antenne services.

The serviceGroup Antenne is shown on the *all* Service List, with an option to expand it to show all the Antenne services.

This would allow the listener to switch to streaming a different Genre variation of Antenne Bayern.

Example:

The XSI file contains a serviceGroup definition of BBC Local Radio which contains a

number of BBC Local Radio services. The *all* Services list will show the BBC Local Radio group, which can be expanded to show all the BBC Local Radio services

This would allow the listener to find and switch to BBC Bristol, allowing the receiver to check for it on broadcast or streaming.

Presenting Large Amounts of On-Demand Audio

The PI documents can be used to provide access to large amounts of On-demand audio. That audio can be:

- On-demand versions of broadcast programmes
- On-demand audio not connected to broadcast programmes

On-demand audio is always associated with a Programme (which is in turn associated to one or more Services). A Programme can have scheduled broadcast times, or it can simply define an on-demand Programme.

This can create a really enormous list of available audio.

Offering Access to On-Demand Audio via an Electronic Programme Guide

If on-demand audio is related to a radio programme that was scheduled, one way of offering it is to provide an Electronic Programme Guide which lists the programmes on each service into the future but also into the past.

A listener must always be able to see the meta-data (title, description, images) associated with a programme. The access to the audio can vary with time:

programme or programmeEvent	Functionality
In the future	Set a timed recording Set a reminder Automatically start listening at the programme start time
Current	Start listening to the programme Start recording the programme Start listening to the programme from the beginning (if on-demand is shown as being available from the current time)
In the past	Listen on-demand (A programme without on-demand audio might be greyed out)

Offering Access to On-Demand Audio via the Service List

The Service List can indicate that one or more on-demand audio items is being provided by a Service. By selecting that option, the listener is presented with a list of all the on-demand audio associated with that Service.

It's possible the service does not exist as a broadcast/real-time service at all (has no location or bearer information), but is a virtual service for holding on-demand audio. These services should still be shown on the all services list so that listeners can access the on-demand audio associated with them.

You might want to provide a filter option on the all services list which shows only services which have on-demand content associated with them.

Offering Access on On-Demand Audio via List and Search

The a list of all on-demand material will be very long (possibly thousands of audio items) so consider using alphabetical grouping on title or service name, or similar UX techniques (jump to the next alphabetical letter etc.) to make navigation easier.

You should also provide an option to search the on-demand audio, and allow reordering of the list or search results by title, service, start date/time, genre, keywords, etc.

programmeEvents

Programmes can have zero or more programmeEvents within them.

You should be able to show the programmeEvents within a programme, maybe through an 'expand' option within the programme information. The actions for a programmeEvent should be the same as for a programme (e.g. record, timed alert, listen on-demand etc.).

Cancelling future recordings / alerts

You should provide a way for the listener to list all their future recordings / alerts and allow them to be cancelled.

Summary

The convergence of broadcast radio and IP has the potential to make many more radio stations and much more on-demand content available to listeners. For this additional choice to be useful, it needs to be organised and presented in a way that makes it easy and logical for listeners to find what they want to listen to. The meta-data in the XSI and PI file should be used to design such a User Interface.