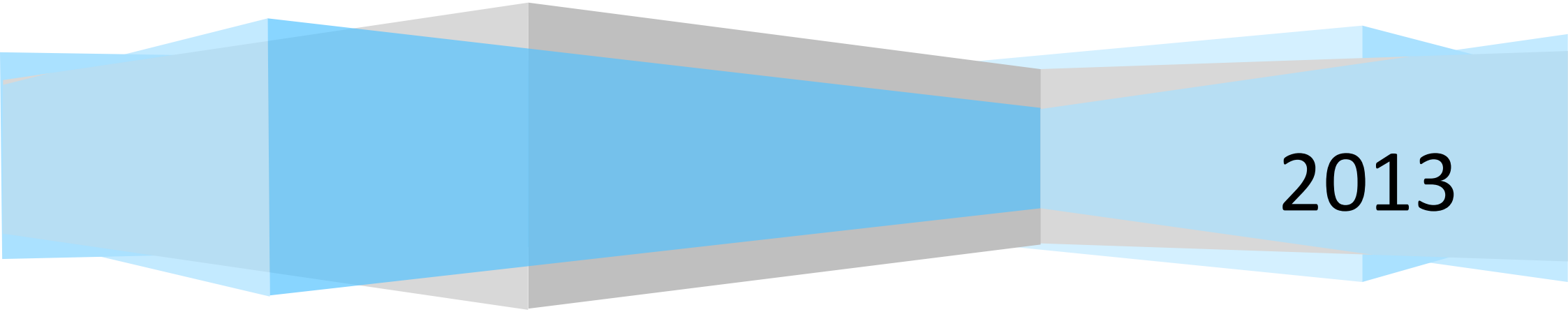
UK Radioplayer

Shared Metadata Specification

Version 1.1 - Revision E



2013

CONTENTS

1 Document History 5

2 Contributors 6

3 Introduction 7

4 Origins – DAB EPG 7

5 Companion Guide 8

6 XML Generation 8

6.1 Metadata File Types 8

6.2 File Naming Convention 9

6.2.1 SI File Naming 9

6.2.2 PI File Naming 10

6.2.3 OD File Naming 10

6.2.4 PE File Naming 11

6.3 Radioplayer Namespace 11

6.4 Examples 12

6.5 Radioplayer Unique Identifiers 12

7 Service Information 12

7.1 Specifying an Ensemble 12

7.2 Identifying a Service 13
7.2.1 Radioplayer unique identifier 14
7.2.2 Volume of services within an SI file 14
7.3 Defining Live Streams 14
7.3.1 Implementation 14
7.3.2 Defining Direct Audio Streaming Information 17
7.4 Service footprint geo information 21
7.4.1 Implementation 21
7.5 Grouping Services 23
7.5.1 Implementation 23
8 Linking to HTML Pages 24
8.1 Implementation 24
9 Specifying Social Identifiers 25
9.1 Implementation 25
10 Programme Information 25
10.1 Programmes linked to radio services 25
10.2 On-demand Audio 26
10.2.1 Implementation 26
10.2.2 Defining Direct Audio Streaming Information 27

10.3 Short Ids and Crids 31
10.4 Marking Event Types 31
10.4.1 Implementation 31
10.5 Marking Event Roles 33
10.5.1 Implementation 33
10.5.2 Table of additions to DAB EPG specification 36
10.5.3 References 37
10.6 Linking Tracks To External Sources 37
10.6.1 Implementation 37
10.6.2 References 39
10.6.3 References 39
10.6.4 Specifying logos and images 40
10.7 Implementation 40
10.7.1 Station Logo 40
10.7.2 Programme Image 40
10.7.3 Programme Event Image 40
10.8 Image Index 42
10.9 Series Linking 42
11 On-Demand, Off Schedule files 42

11.1 Implementation 42

1 DOCUMENT HISTORY

Version	Date	By who	Description
0.a	04/05/2010	PC	First draft for limited circulation and feedback.
0.b	27/05/2010	PC	Changes to on-demand, removed ranked keywords.
0.c	27/05/2010	PC	Changed geoFootprint to take between 3 and n lat/long pairs
0.d	28/05/2010	PC	Changed ondemand significantly after discussion with Global. Added territorial availability.
0.e	08/06/2010	PC	
0.f	21/07/2010	BP	
0.g	12/08/2010	BP	Changes resulting from metadata meeting on 05/08/2010
0.h	06/09/2010	GS	Clarification on changes from last document update. • Editorial updates to wording and examples • Entry level for new stations • Radioplayer namespace section created • Consistency on id/crid for unique id's • Replaced grouping container for 'player' attribute • Removed geoFootprint wildcards, all postcode values to be provided • File Name Configuration created • Off-schedule on-demand files created
1.1 Draft 1	21/05/2012	AC	• Changes to document format. • Change to document versioning scheme to align with XML schema version numbering. • Addition of audio stream related elements to service listenlive and programme ondemand elements. • Addition of duration to ondemand element. • Addition of type and index attributes to multimedia and link elements. • Addition of socialIdentifierType to allow services and programmes to specify associated social media
1.1 Draft 2	25/06/2012	AC	Changes resulting from feedback. • Clarification of file-naming convention date format. • Clarification of units for bit rate (bits-per-second).

1.1 RELEASE	03/08/2012	AC	Clarification of available Radioplayer Genres and link-types through the Radioplayer Metadata Companion Guide
1.1 Revision A	16/08/2012	AC	Corrections made to descriptions of audioStreamGroup and listenliveGroup elements
1.1 Revision B	04/10/2012	AC	Changed description of geoLocation element to clarify use of postal out codes rather than sectors.
1.1 Revision C	18/01/2013	AC	Fixed inaccurate description of location of serviceGroup element
1.1 Revision D	16/04/2013	AC	Fixed inaccurate use of content classification for programme events of type advert
1.1 Revision E	20/08/2013	AC	Updated to include details on the use of memberOf elements for series linking

2 CONTRIBUTORS

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3 INTRODUCTION

The Radioplayer partnership will deliver a standardised Radioplayer console, the general design of which will be shared amongst all the members of the partnership. The partnership will also deliver a number of 'connected applications' across platforms such as IP TV and mobile. To drive the radio content available in the player and across platforms a shared metadata specification is needed.

This document outlines that specification.

The bare minimum for a radio station to join Radioplayer is the provision of Service Information; descriptive data about your station and where to find associated assets, including streaming information.

All other aspects of the metadata specification are ever increasing amounts of detail that radio stations can provide to enhance their offering within Radioplayer.

This document is the definitive version of the Radioplayer metadata specification and includes and supersedes all previous documents on the subject.

4 ORIGINS – DAB EPG

The Radioplayer Shared Metadata Specification is largely based on the existing DAB EPG specification. The version of the specification referenced is:

- **ETSI TS 102 818 V1.4.1 (2008-06) Digital Audio Broadcasting (DAB);**
- **Digital Radio Mondial (DRM); XML Specification for Electronic Programme Guide (EPG)**

DAB EPG was chosen as it is widely used throughout the radio industry, openly available and many Radioplayer partners are already creating or ingesting data in this format.

This document focuses on the bespoke uses and changes to the DAB EPG that Radioplayer requires to enable the sharing of metadata between the partners.

The main areas of difference between standard DAB EPG and Radioplayer DAB EPG are:

- The inclusion of on-demand events
- Inclusion of media credits
- Inclusion of music identifiers
- Service footprint geo information
- Flagging non-music events (e.g. adverts)
- Separation of artist and track information
- Off-schedule on-demand audio
- Declaration of direct audio streaming information
- Declaration of social media identifiers
- Removal of Programme Group information

5 COMPANION GUIDE

To allow the Radioplayer metadata specification to support the changing requirements of client devices there are now attribute values which are not constrained through the XML schema but are instead documented through the Radioplayer Metadata Companion Guide, available at this time on request from UK Radioplayer alongside this document.

These attributes are the href attribute on the genre element and the type attribute on link element.

6 XML GENERATION

All generated XML will go through a validation process using XML Schemas. It is important to remember that the ordering of the elements within the XML will affect the validation. Ordering of attributes within an element will not affect validation.

6.1 METADATA FILE TYPES

There are four types of metadata file identified in this specification:

- Service Information (SI)
- Programme Information (PI)

- On Demand (OD)
- Programme Event (PE)

Service Information files contain the descriptive information about the radio services, their unique identifiers and geographical coverage. This is required by all partners with Radioplayer as a bare minimum.

Programme Information files contain, amongst other items, the descriptive information about individual programmes, their broadcast times and the segments within the programmes including song or advert information if desired.

On Demand files contain the descriptive information about individual items of on-demand content, the availability of that content and whether access to it is geographically restricted.

Programme Event files contain, amongst other items, a record of the current programme and song on-air now. When constructing a PE file it should contain a single programme and nested programme event representing the song on air now.

For a complete break-down of the content that is allowed within these three types please refer to the XML Schema.

6.2 FILE NAMING CONVENTION

For Radioplayer a new filename convention will be required for each type of file.

- <date> represents the generation date for the SI and OD files, but represents the 'day' (semantic scope of a single 'day') of the PI file. The date format required is YYYYMMDD. For example, 20120120 represents the 20th of January, 2012.
- <radioplayerId> is a unique identifier for each radio service.
- <station_group_name> refers to a unique name or Radioplayer identifier that will allow ingest for more then one radio service.

6.2.1 SI FILE NAMING

Single radio station Service Information Files

```
<date>_<radioplayerId>_SI.xml
```

Single Service Example:

`20100812_3002_SI.xml`

Multiple radio station Service Information Files

`<date>_<station_group_name>_SI.xml`

Multiple Service Example:

20100812_BBC_group_SI.xml

6.2.2 PI FILE NAMING

Programme Information Files

`<date>_<radioplayerId>_PI.xml`

Example:

`20100701_3006_PI.xml`

6.2.3 OD FILE NAMING

On Demand Files

`<date>_<radioplayerId>_OD.xml`

Example:

`2010024_3006_OD.xml`

6.2.4 PE FILE NAMING

Programme Event Files

`<date>_<radioplayerId>_PE.xml`

Example:

`2010024_3006_OD.xml`

6.3 RADIOPLAYER NAMESPACE

To support the new Radioplayer elements and attributes we have replaced the DAB EPG namespaces with corresponding Radioplayer namespaces and added the Radioplayer specific elements and attributes as required.

The Radioplayer namespace should be added to the declaration at the top of the SI and PI files. Incremental versions of the specification will provide new urls for the namespace as the url will define the version numbering of the specification. In the url a value of '11' equates to a version 1.1 of the specification.

The new EPG SI XSD v1.1 is here:

`http://www.radioplayer.co.uk/schemas/11/epgSI_11.xsd`

The new EPG Schedule XSD v1.1 is here:

`http://www.radioplayer.co.uk/schemas/11/epgSchedule_11.xsd`

The new EPG DataTypes XSD v1.1 is here:

`http://www.radioplayer.co.uk/schemas/11/epgDataTypes_11.xsd`

The Radioplayer DataTypes XSD v1.1 is here:

`http://www.radioplayer.co.uk/schemas/11/rpDataTypes_11.xsd`

6.4 EXAMPLES

Examples of XML files of each type - SI, PI, PE and OD - are available for download here:

`http://www.radioplayer.co.uk/metadata/examplesv11.zip`

6.5 RADIOPLAYER UNIQUE IDENTIFIERS

Radioplayer will assign stations and third parties with a unique identifier to be used for each station that they are responsible for generating metadata for.

7 SERVICE INFORMATION

This section describes the changes required to the Service Information (SI) file.

7.1 SPECIFYING AN ENSEMBLE

The core DAB EPG specification for Service Information (SI) files specify that all services must be contained with an **ensemble** element. Since the Radioplayer project covers services that do not necessarily have DAB simulcasts, the **ensemble** element is used strictly as a container for services, and not for any functional purpose.

Implementation

The **ensemble** element must be present, but the **id** attribute should use a dummy value for any and all services. This is specified as

`00.0000`

This value is chosen purely to satisfy the requirements of the DAB EPG specification.

The **shortName** and **mediumName** elements are required to create a valid **ensemble** however they may be left empty and will be ignored by Radioplayer systems.

Example Ensemble Element

```
<ensemble id="00.0000"/>
```

7.2 IDENTIFYING A SERVICE

A service must be identified by a unique identifier, which is used to refer to services and link programmes with services across the Service Information (SI) and Programme Information (PI) files.

Implementation

Radioplayer extends the SI file to allow for services which have no corresponding DAB service. It tries to follow the existing layout as much as possible, using dummy data as appropriate for attributes which are mandatory in the DAB EPG specification, but which have no direct relevance for Radioplayer.

A Service is identified in both the Service Information and Programme Information files by its Service ID. As the DAB EPG Service ID is formatted to apply only to DAB/DRM, a new attribute **radioplayerId** has been defined in this specification. It is recommended that the core DAB EPG **serviceID** element is optional as it has no universal meaning in this context and **radioplayerId** is mandatory.

For those radio services that do not have a DAB EPG identifier and wish to provide a value, a dummy value of is suggested:

```
<serviceId id="00.0000.0000.0"/>
```

DAB serviceId

Use the same format as specified in the core DAB EPG specification serviceID element.

```
<ecc>.<eid>.<sid>.<scids>
```

Where **ecc, eid, sid,** and **scids** are the standard DAB Service ID parameters. For example, Radio 2 would look like this:

```
<serviceId id="e1.ce15.c222.0"/>
```

7.2.1 RADIOPLAYER UNIQUE IDENTIFIER

The new **radioplayerId** element has the same purpose as the **serviceID** element, but its format is declared as a **StringType** and is thus essentially free-form. To avoid the possibility of clashing identifier, each radio service will be assigned a value by Radioplayer. Within the XML it should be placed below the **ensemble** element.

Example XML

The radioplayerId element must contain the **id** attribute:

```
<radioplayerId id="1500"/>
```

7.2.2 VOLUME OF SERVICES WITHIN AN SI FILE

It is possible to provide either a single service per SI file or multiple services per SI file.

If you are providing a single service per SI, please follow the normal filename convention. If you are providing a **serviceGroup** then you must follow the filename convention for multiple services per SI file.

7.3 DEFINING LIVE STREAMS

To support streaming of content over non-DAB bearers, the DAB EPG specification requires an extension to support linking to Radioplayer content. This also covers a specification of territorial availability.

7.3.1 IMPLEMENTATION

A new set of elements are added – the top level being the **listenliveGroup** element to act as a container for multiple **listenlive** elements. Underneath the listenlive element is a **player** element, *which is a fully qualified URL linking to an instance of the target Broadcaster's radio player with sufficient parameters to start playing the expected audio.*

The **listenliveGroup** must come immediately after the **radioplayerId** element in the SI file. The elements must be expressed in the order shown in the example.

Optionally, territorial restrictions can be specified within this section by specifying a single **restriction** element. This contains a comma-separated list of uppercase ISO 3166-1 alpha-2 country codes. If a restriction is defined, one **relationship** attribute in the **restriction** element of *allow* or *deny* should be used to define the form of restriction. Whilst a player may contain its own geo-locking and restriction, we ask that you provide this information.

Please note:

- A restriction of *allow* indicates the territories where the player is available, and is unavailable in all other territories – a blank list meaning that it is not allowed in any territory.
- A restriction of *deny* indicates the territories where the player is **not** available, and is available in all other territories – a blank list meaning that it is allowed in all territories.
- If no explicit restriction is defined, then the player is deemed to be available over all territories. It is acceptable to provide an empty restriction element.

The service can define multiple **listenlive** elements in order to provide functionality for different radio player instances in different territories. It is advised to avoid situations where restrictions would clash, or multiple Radioplayer instances made available for any one territory as this would lead to unpredictable results.

When defining more then one player element, an attribute called an **index** is used to specify preferred order. It is desirable to provide this attribute even if providing one **listenlive** element.

Only one **player** element should be included for live streams within a **listenlive** element. Similarly, only one **restriction** element should be used as a child element of the **player** element.

Example XML

Some simple examples are shown below:

A player instance available in the UK, Germany and France:

```
<listenliveGroup>
  <radioplayer:listenlive index="1">
   <radioplayer:player>
     http://www.capitalfm.co.uk/radioplayer
    </radioplayer:player>
    <radioplayer:restriction relationship="allow">UK, DE, FR</radioplayer:restriction>
  </radioplayer:listenlive>
```

```
</listenliveGroup>
```

A player instance allowed everywhere except Antarctica:

```
<listenliveGroup>
  <radioplayer:listenlive index="1">
    <radioplayer:player>
      http://www.capitalfm.co.uk/not_for_penguins
    </radioplayer:player>
  <radioplayer:restriction relationship="deny">AQ</radioplayer:restriction>
  </radioplayer:listenlive>
</listenliveGroup>
```

Multiple player instances, with an ordering attribute:

```
<listenliveGroup>
  <radioplayer:listenlive index="1">
    <radioplayer:player>
      http://www.capitalfm.co.uk/radioplayer
    </radioplayer:player>
    <radioplayer:restriction relationship="allow">UK, DE, FR</radioplayer:restriction>
  </radioplayer:listenlive>
  <radioplayer:listenlive index="2">
    <radioplayer:player>
      http://www.capitalfm.co.uk/america/radioplayer
    </radioplayer:player>
    <radioplayer:restriction relationship="allow">US</radioplayer:restriction>
```

```
  </radioplayer:listenlive>
</listenliveGroup>
```

7.3.2 DEFINING DIRECT AUDIO STREAMING INFORMATION

The service can define one or more audio streams that allow clients to connect to a service's audio stream either directly or via a play list in addition to the **player** element.

To accomplish this, a new optional element has been added that immediately follows the **restriction** element; the **audioStreamGroup**. The **audioStreamGroup** contains one or more **audioStream** elements which in turn contain the necessary data to allow a direct connection to be made to a service's audio streams.

To allow streaming clients to connect to a station's audio stream the **audioStream** element may define an rtmp server and application or a URL and mime value.

Example XML

Some examples showing multiple streaming formats are shown below.

A stream using RTMP available in the UK only:

```
<listenliveGroup>
  <radioplayer:listenlive index="1">
    <radioplayer:player>
    http://www.capitalfm.co.uk/radioplayer
    </radioplayer:player>
   <radioplayer:restriction relationship="allow">UK, DE, FR</radioplayer:restriction>
    <radioplayer:audioStreamGroup>
      <radioplayer:audioStream>
        <radioplayer:rtmpSource server="rtmp://server.cdn.com/capital" endpoint="capital-live"/>
        <radioplayer:audioFormat href="urn:mpeg:mpeg7:cs:AudioPresentationCS:2001:3" />
        <radioplayer:bitRate target="131072" variable="false"/>
        <radioplayer:restriction relationship="allow">UK</radioplayer:restriction>
      </radioplayer:audioStream>
    </radioplayer:audioStreamGroup>
  </radioplayer:listenlive>
```

```
</listenliveGroup>
```

A pair of streams, one RTMP, one at a lower bit rate using mp3 over http for transport:

```
<listenliveGroup>
  <radioplayer:listenlive index="1">
    <radioplayer:player>
        http://www.capitalfm.co.uk/radioplayer
    </radioplayer:player>
    <radioplayer:restriction relationship="allow">UK, DE, FR</radioplayer:restriction>
    <radioplayer:audioStreamGroup>
      <radioplayer:audioStream>
        <radioplayer:rtmpSource server="rtmp://server.cdn.com/capital" endpoint="capital-live"/>
        <radioplayer:audioFormat href="urn:mpeg:mpeg7:cs:AudioPresentationCS:2001:3" />
        <radioplayer:bitRate target="128000" variable="false"/>
        <radioplayer:restriction relationship="allow">UK</radioplayer:restriction>
      </radioplayer:audioStream>
      <radioplayer:audioStream>
        <radioplayer:audioSource url="http://mp3.cdn.com" mimeValue="audio/mp3"/>
        <radioplayer:audioFormat href="urn:mpeg:mpeg7:cs:AudioPresentationCS:2001:3" />
        <radioplayer:bitRate target="64000" variable="false"/>
        <radioplayer:restriction relationship="allow">UK</radioplayer:restriction>
      </radioplayer:audioStream>
    </radioplayer:audioStreamGroup>
  </radioplayer:listenlive>
</listenliveGroup>
```

A single stream using a pls playlist:

```
<listenliveGroup>
  <radioplayer:listenlive index="1">
    <radioplayer:player>
        http://www.capitalfm.co.uk/radioplayer
    </radioplayer:player>
    <radioplayer:restriction relationship="allow">UK, DE, FR</radioplayer:restriction>
    <radioplayer:audioStreamGroup>
      <radioplayer:audioStream>
        <radioplayer:audioSource url="http://pls.cdn.com/play.pls" mimeValue="audio/x-scpls"/>
        <radioplayer:audioFormat href="urn:mpeg:mpeg7:cs:AudioPresentationCS:2001:3" />
        <radioplayer:bitRate target="64000" variable="false"/>
        <radioplayer:restriction relationship="allow">UK</radioplayer:restriction>
      </radioplayer:audioStream>
    </radioplayer:audioStreamGroup>
  </radioplayer:listenlive>
</listenliveGroup>
```

A single stream using a smil playlist:

```
<listenliveGroup>
  <radioplayer:listenlive index="1">
    <radioplayer:player>
        http://www.capitalfm.co.uk/radioplayer
    </radioplayer:player>
    <radioplayer:restriction relationship="allow">UK, DE, FR</radioplayer:restriction>
    <radioplayer:audioStreamGroup>
      <radioplayer:audioStream>
        <radioplayer:audioSource url="http://myserver.com/playlist.php?s=capital" mimeValue="application/smil"/>
        <radioplayer:audioFormat href="urn:mpeg:mpeg7:cs:AudioPresentationCS:2001:3" />
        <radioplayer:bitRate target="64000" variable="false"/>
        <radioplayer:restriction relationship="allow">UK</radioplayer:restriction>
      </radioplayer:audioStream>
    </radioplayer:audioStreamGroup>
```

```
  </radioplayer:listenlive>
</listenliveGroup>
```

Table of additions to DAB EPG specification

Attribute or element	Required?	Change description
listenliveGroup	Mandatory	Element used as a container element for listenlive element.
listenlive	Mandatory	Element used to carry listen live information. There can be more than one specified and they can vary according to location and availability.
player	Mandatory	Fully qualified URL linking to an instance of the target Broadcaster's radio player with sufficient parameters to start playing the expected live audio.
Index	Mandatory	Order of listenlive attributes.
restriction	Optional	Territorial availability - must contain a comma-separated list of upper case ISO 3166-1 alpha-2 country codes. If not defined then the content is determined to be available over all territories.
relationship	Mandatory with **restriction** element	One of either ‘allow’ or ‘deny’
audioStreamGroup	Optional	Element used as a container for one or more audioStream elements.
audioStream	Mandatory within	Element used as a container for audioSource, audioFormat, bitRate, rtmpSource and restriction

	audioStreamGroup	elements.
audioSource	Choice: audioSource or rtmpSource	Has url for either streaming server or playlist file and mimeValue of the resource at the URL. The mimeValue indicates what kind of play list to expect, or whether to expect an MPEG audio stream transported over HTTP, such as ShoutCast.
audioFormat	Mandatory within audioStream	Element used to signal the audio format.
bitRate	Mandatory within audioStream	Element used to signal the target bitrate (in bits-per-second) for the audio stream and indicate whether it is a variable bit rate stream.
rtmpSource	Choice: audioSource or rtmpSource	Element used to identify the rtmp server and streaming application end-point.
restriction	Otional within audioStream	Element used to identify the territorial restrictions that apply to the audio stream. Use in the same way as the restriction element associated directly with the listenlive parent.

7.4 SERVICE FOOTPRINT GEO INFORMATION

Radioplayer partners wish to signal the geographical coverage of their service in the metadata that they share. This will enable a range of useful functionality for consumers when they are listening via IP streaming, rather than over the air service, such as the differentiation of locally-relevant content.

7.4.1 IMPLEMENTATION

The Radioplayer XML specification extends the **serviceType** element of the DAB EPG specification to include two new elements: **geoLocations** and **geoFootprint .** Both are mandatory.

The content of the **geoLocations** element should be populated with a list of comma-separated postal out codes (i.e. the first part of a postcode) and/or case-insensitive place names. Leading and trailing spaces should not be included and postcodes should not contain spaces, however place names may to delimit word values. There is no upper limit on the number of these that can be specified.

The content of the **geoFootprint** element should be populated with a list of comma-separated lat/long pairs (lat/long pairs are delimited by a space). There is no upper limit on the number of these that can be specified but they **must** be a closed path.

Example XML

Defining geoLocations:

```
<geoLocations>
  WC1,WC2,EC1,EC2,EC3,EC4,W1,W2,W3,Covent Garden,Holborn,Strand
</geoLocations>
```

Defining geoFootprint:

```
<geoFootprint>
54.043049 -3.057862,53.536823 -4.925538,52.505966 -5.277100,52.439045 -2.222901,53.432228 -2.003174,54.043049 -
3.057862
</geoFootprint>
```

Table of Additions to the DAB EPG Specification

Attribute or element	Required?	Description
geoLocations	Mandatory	The geographical locations in terms of postal out codes and place names that this service can be deemed locally-relevant.
geoFootprint	Mandatory	A comma-separated series of latitude/longitude pairs defining the coverage area of the service.

7.5 GROUPING SERVICES

It is desirable for Radioplayer partners to be able to specify a natural grouping of services and their relative position in a list in order for any search results shown to a user to follow branding guidelines, and to be of more practical use.

7.5.1 IMPLEMENTATION

Each Service Information (SI) file can contain an indication of the group that service(s) contained within belong to, and their place within this group.

A new element is added in the Radioplayer namespace: **serviceGroup**, which is a container for zero or more **serviceGroupId** elements. Each **serviceGroupId** represents a service within a group of services, and must specify a **radioplayerId** attribute linking to the identifying ID of that service, as well as optional **index** and **head** attributes.

The **index** attribute is an **integer** type containing a suggested index within a group of services. When a group of services is compared, services with lower indexes should appear at the top of a group although this functionality is not mandatory but suggested practise.

Of these services can also be given the attribute **head** with a value of **yes** or **no** (the default value). If a service within the group is given this attribute defined as **yes**, then it will be deemed the 'head' of the group. This is a hint to the user interface that this service is the master brand of this group and should represent any minimised group of stations in the User Interface.

In the XML, the **serviceGroup** element must come after the **ensemble** element in the SI file.

Example XML

The following example defines a group with 4 services, with one service defined as the head. The group also has a unique name and description field:

```
<serviceGroup>
  <radioplayer:serviceGroupId radioplayerId="123" head="yes" index="1"/>
  <radioplayer:serviceGroupId radioplayerId="543" head="no" index="2"/>
  <epg:shortName>Shrtnme</epg:shortName>
  <epg:mediumName>Medium Name</epg:mediumName>
  <radioplayer:mediaDescription>
    <epg:shortDescription>The short description</epg:shortDescription>
    <epg:longDescription>The long description</epg:longDescription>
  </radioplayer:mediaDescription>
  <radioplayer:mediaDescription>
    <epg:multimedia mimeValue="image/png" width="86" height="48"
url="http://downloads.co.uk/radio/ukradioplayer/r1_86x48.png"/>
  </radioplayer:mediaDescription>
</serviceGroup>
```

8 LINKING TO HTML PAGES

The metadata specification allows a **service**, **programme** and **programmeEvent** to contain **link** elements. Radioplayer applications on suitable devices will make use of the link element to select which HTML assets to display.

See the associated Radioplayer Metadata Companion document for a list of the available types.

8.1 IMPLEMENTATION

To support this linking it is necessary to include a 'type' attribute on the link so that a client may select the correct resource.

```
<link url="http://www.mystation.com/mobile.html" mimeValue="text/html" type="rp-handheld-station-view" index="1"/>
```

9 SPECIFYING SOCIAL IDENTIFIERS

The metadata specification allows a **service** and **programme** to specify social identifiers for associated social media, such as Facebook and Twitter. Radioplayer applications on suitable devices will make use of the **socialId** element to connect users to a service's presence on social media.

9.1 IMPLEMENTATION

To support social media a **socialIdentifierType** has been added to the schema. The use of this new type differs from Service Information to Programme Information.

Service Information Example XML

In a Service Information file the socialId elements are declared without the need for a namespace prefix, and positioned after the geoFootprint.

```
<socialId type="googleplus" uid="123645"/>
<socialId type="facebook" uid="123645"/>
<socialId type="twitter" uid="123645"/>
```

Programme Information Example XML

In a Programme Information or On-Demand file the socialId elements are declared within the epgSchedule namespace so will commonly appear like this:

```
<epg:socialId type="twitter" uid="123645"/>
```

10 PROGRAMME INFORMATION

This section describes the changes required to the Service Information (PI) file.

10.1 PROGRAMMES LINKED TO RADIO SERVICES

The **location** element for each programme has also been extended to include the link to the **radioplayerId** attribute within the **bearer** attribute. Please see the section 'Identifying a service' or more information.

Where a programme has the following **bearer** element in the DAB EPG:

```
<epg:location>
  <epg:time duration="PT4H30M" time="2010-08-27T02:00:00"/>
  <epg:bearer id="e1.c1a5.c0b8.0" />
</epg:location>
```

It should be modified look like this including the Radioplayer ID attribute:

```
<epg:location>
  <epg:time duration="PT4H30M" time="2010-08-27T02:00:00"/>
  <epg:bearer id="e1.c1a5.c0b8.0" radioplayerId="123"/>
</epg:location>
```

10.2 ON-DEMAND AUDIO

There is no support in the current DAB EPG specification for on-demand programmes - DAB EPG is designed to describe live broadcasts. The DAB EPG specification has therefore been extended to include on-demand programme information, including timed availability and territorial restrictions.

10.2.1 IMPLEMENTATION

A new set of elements are added – the top level being the **ondemand** element to act as a container for the rest. Underneath this is a **player** element, *which is a fully qualified URL linking to an instance of the target Broadcaster's radio player with sufficient parameters to start playing the expected ondemand audio.*

Availability can be restricted by using a single **availability** element which contains a single **scope** element, taken from the core DAB EPG specification. This defines the start and end times for availability of the content. Content outside this interval should be deemed to be unavailable. If no availabilities are defined, then the content is deemed to be available over all time.

Optionally, territorial restrictions can be specified within this section by specifying a single **restriction** element. This contains a comma-separated list of uppercase ISO 3166-1 alpha-2 country codes. If a restriction is defined, one **relationship** attribute in the **restriction** element of *allow* or *deny* should be used to define the form of restriction.

A restriction of *allow* indicates the territories where the player is available, and is unavailable is all other territories – a blank list meaning that it is not allowed in any territory.

A restriction of *deny* indicates the territories where the player is **not** available, and is available in all other territories – a blank list meaning that it is allowed in all territories.

If no explicit restriction is defined, then the player is deemed to be available over all territories.

The service can define multiple **ondemand** elements in order to provide functionality for different radio player instances in different territories, or for different availabilities. It is advised to avoid situations where restrictions would clash, or multiple radio player instance made available for any one territory as this would lead to unpredictable results. Overlapping intervals of availability can be considered to be merged into a single continuous interval.

When providing the **ondemand** elements within a **programme** element, place it at the end of the **programme** element.

Example XML

Some simple examples are shown below:

Ondemand content available between 2am on 22nd July 2010 and 2am on 5th August 2010, restricted to the UK, Germany and France.

```
<epg:ondemand>
  <radioplayer:player>http://www.bbc.co.uk/iplayer/episode/b00s4xxj</radioplayer:player>
  <radioplayer:restriction relationship=”allow”>UK,DE,FR</radioplayer:restriction>
  <radioplayer:availability>
    <radioplayer:scope startTime="2010-07-22T02:00:00+00:00" stopTime="2010-08-05T02:00:00+00:00"/>
  </radioplayer:availability>
</epg:ondemand>
```

10.2.2 DEFINING DIRECT AUDIO STREAMING INFORMATION

A programme can carry direct streaming information in a way very similar to a service. Within an **ondemand** element, in addition to the player url, restriction and availability information, a programme may define an **audioStreamGroup**. The **audioStreamGroup** contains one or more **audioStream** elements which in turn contain the necessary data to allow a direct connection to be made to the programme's on-demand audio.

The **audioStream** element may define an rtmp server and application or a URL and mime value.

Example XML

Some examples showing multiple streaming formats are shown below.

A stream using RTMP available in the UK only:

```
<epg:ondemand>
  <radioplayer:player> http://www.capitalfm.co.uk/radioplayer?odid=12345</radioplayer:player>
  <radioplayer:restriction relationship="allow">UK, DE, FR</radioplayer:restriction>
  <radioplayer:availability>
    <radioplayer:scope stopTime="2011-07-31T02:00:00+01:00"
      startTime="2011-07-29T02:00:00+01:00">
      <radioplayer:serviceScope id="e1.0000.0000.0" />
    </radioplayer:scope>
  </radioplayer:availability>
  <radioplayer:audioStreamGroup>
      <radioplayer:audioStream>
        <radioplayer:rtmpSource server="rtmp://server.cdn.com/capital" endpoint="capitalod:12345"/>
        <radioplayer:audioFormat href="urn:mpeg:mpeg7:cs:AudioPresentationCS:2001:3" />
        <radioplayer:bitRate target="2164000" variable="false" />
        <radioplayer:restriction relationship="allow">US;UK</radioplayer:restriction>
      </radioplayer:audioStream>
  </radioplayer:audioStreamGroup>
</epg:ondemand>
```

A pair of streams, one RTMP, one at a lower bit rate using mp3 over http for transport:

```
<epg:ondemand>
  <radioplayer:player> http://www.capitalfm.co.uk/radioplayer?odid=12345</radioplayer:player>
  <radioplayer:restriction relationship="allow">UK, DE, FR</radioplayer:restriction>
  <radioplayer:availability>
    <radioplayer:scope stopTime="2011-07-31T02:00:00+01:00"
      startTime="2011-07-29T02:00:00+01:00">
      <radioplayer:serviceScope id="e1.0000.0000.0" />
    </radioplayer:scope>
  </radioplayer:availability>
  <radioplayer:audioStreamGroup>
      <radioplayer:audioStream>
        <radioplayer:rtmpSource server="rtmp://server.cdn.com/capital" endpoint="capitalod:12345"/>
```

```
        <radioplayer:audioFormat href="urn:mpeg:mpeg7:cs:AudioPresentationCS:2001:3" />
        <radioplayer:bitRate target="2164000" variable="false" />
        <radioplayer:restriction relationship="allow">US;UK</radioplayer:restriction>
      </radioplayer:audioStream>
      <radioplayer:audioStream>
        <radioplayer:audioSource url="http://mp3.cdn.com/od123" mimeValue="audio/mp3"/>
        <radioplayer:audioFormat href="urn:mpeg:mpeg7:cs:AudioPresentationCS:2001:3" />
        <radioplayer:bitRate target="64000" variable="false"/>
        <radioplayer:restriction relationship="allow">UK</radioplayer:restriction>
      </radioplayer:audioStream>
  </radioplayer:audioStreamGroup>
</epg:ondemand>
```

Table of additions to DAB EPG specification

Attribute or element	Required?	Change description
ondemand	Mandatory	Element used to carry ondemand information. There can be more than one ondemand specified and they can vary according to location and availability.
player	Mandatory	Fully qualified URL linking to an instance of the target Broadcaster's radio player with sufficient parameters to start playing the expected ondemand audio.
availability	Optional	Datetimes between which the content is deemed to be available, and ready for ondemand consumption. Uses the core DAB EPG specification **scope** element.
restriction	Optional	Territorial availability - must contain a comma-separated list of upper case ISO 3166-1 alpha-2 country codes. If not defined then the content is determined to be available over all territories.

relationship	Mandatory with **restriction** element	One of either ‘allow’ or ‘deny’
audioStreamGroup	Optional	Element used as a container for one or more audioStream elements.
audioStream	Mandatory within audioStreamGroup	Element used as a container for audioSource, audioFormat, bitRate, rtmpSource and restriction elements.
audioSource	Choice: audioSource or rtmpSource	Has url for either streaming server or playlist file and mimeValue of the resource at the URL. The mimeValue indicates what kind of play list to expect, or whether to expect an MPEG audio stream transported over HTTP, such as ShoutCast.
audioFormat	Mandatory within audioStream	Element used to signal the audio format. The allowed range of options for audioFormat is defined in the Radioplayer Metadata Companion Guide.
bitRate	Mandatory within audioStream	Element used to signal the target bitrate for the audio stream and indicate whether it is a variable bit rate stream.
rtmpSource	Choice: audioSource or rtmpSource	Element used to identify the rtmp server and streaming application end-point.
Restriction	Optional within audioStream	Element used to identify the territorial restrictions that apply to the audio stream. Use in the same way as the restriction element associated directly with the listenlive parent.

10.3 SHORT IDS AND CRIDS

Because the context in which the DAB EPG specification is being used for Radioplayer differs from its original purpose, the rules around how Programmes and Programme Events are identified must differ.

The original specification identifies the **shortId** attribute on the **programme** and **programmeEvent** elements. This states that:

> *The sCRID shall only be unique within a single EPG Service...therefore a receiver must process it in some way on decoding to ensure that it is globally unique.*
>
> *The sCRID must not be re-used within that EPG service for a minimum of size months.*

Because the scope of the Radioplayer project reaches beyond these constraints, meaning that the numbering space for Short Ids may potentially be exhausted, it is required the **id** attribute be used as a unique identifier instead and is thus mandatory.

The **id** attribute should be used to uniquely identify that Programme or Programme Event *across all services within Radioplayer and over all time*.

The **shortId** attribute should still be specified to maintain a compatible document, but will be ignored for the purposes of Radioplayer. If a dummy value needs to be chosen to fulfil a generating requirement, then this should be specified as zero (0).

10.4 MARKING EVENT TYPES

Radioplayer partners wish to classify a type of event in order to provide a richer contextual experience for the user. This includes marking events as Music, Advertising, Promotional, etc.

10.4.1 IMPLEMENTATION

The marking of event type will be done using the core DAB EPG element **genre** with some minor clarifications.

An event can be marked with a genre using the TVA ContentCS classification scheme, with its **type** attribute set to **main**. This will indicate the event type and should be one of the following:

Advertising	urn:tva:metadata:cs:ContentCS:2009:3.1.10.1
Music	urn:tva:metadata:cs:ContentCS:2009:3.6

If the **main** genre type is neither of these, the event is assumed to be a more generic Chapter/Segment.

Any additional genre can be specified with a **type** of **secondary** in order to classify the genre or content of the Programme Event or provide further detail.

The 1.5.1 version of the TV Anytime specification with the 2009 namespace shall be used in the marking of a Programme Event.

Example XML

An example showing advertising:

```
<epg:programmeEvent id="crid://www.unique.com/2004a91e445e42d0b228835cb3e0179f"
  shortId="0" recommendation="no" broadcast="on-air">
  <epg:shortName xml:lang="en">Ad~</epg:shortName>
  <epg:mediumName xml:lang="en">Advert</epg:mediumName>
  <epg:location>
    <epg:relativeTime time="PT0H15M0S" duration="PT20S"/>
  </epg:location>
  <epg:genre href="urn:tva:metadata:cs:ContentCS:2009:3.1.10.1" type="main"/>
</epg:programmeEvent>
```

An example showing music (with media credit but no linking):

```
<epg:programmeEvent id="crid://www.unique.com/2004a91e445e42d0b228835cb3e0179e" shortId="0" recommendation="no"
broadcast="on-air">
  <epg:shortName xml:lang="en">Telephon</epg:shortName>
  <epg:mediumName xml:lang="en">Telephone</epg:mediumName>
  <epg:location>
    <epg:relativeTime time="PT32M44S" duration="PT30S"/>
  </epg:location>
  <epg:genre href="urn:tva:metadata:cs:ContentCS:2009:3.6" type="main"/>
  <epg:mediaCredit role="artist" scheme="urn:ebu">Lady Gaga and Beyoncé</epg:mediaCredit>
</epg:programmeEvent>
```

10.5 MARKING EVENT ROLES

The DAB EPG specification provides some simple mechanisms for providing additional information about a programme event; However, Radioplayer partners would like to provide more specific information about a programme event where it is available.

Better structuring of programme event metadata also delivers the benefit of normalising the artist and track details so they are no longer bundled together in the **mediaDescriptionType** elements.

The core DAB EPG fields for **programmeEvent** should still be used as they were originally intended, but the additions made for the Radioplayer specification serve to remove the need to provide **programmeEvent** titles in any proprietary structured fashion.

10.5.1 IMPLEMENTATION

The **programmeEvent** title should be used for the title of the event. For instance, for Music this would be the track title; For a segment/chapter this would be the summary title of that segment/chapter; For advertising, this would be the title of the advert.

The Radioplayer specification extends the **programmeEventType** with a new optional element, **mediaCredit** based loosely on the MediaRSS **credit** element. This uses attributes to identify what role the content refers to, allowing metadata to explicitly define artists, composers, interviewers, etc.

The roles are defined from the EBU Role List, and are expressed in lowercase as part of the **mediaCredit** element. Additional optional attributes exist to link these roles through to entries within certain content discovery sites (e.g. MusicBrainz, IMDB, etc.).

The list of roles include, but are not limited to:

artist	music arranger
composer	music group
conductor	musician
director	orchestra
editor	performer
graphic designer	photographer
grip	producer
illustrator	reporter
lyricist	vocalist

Example XML

Information required for an event to mark up a track only:

```
<epg:programmeEvent id="crid://www.unique.com/2004a91e445e42d0b228835cb3e0179e" shortId="0" recommendation="no"
broadcast="on-air">
  <epg:shortName xml:lang="en">Telephon</epg:shortName>
  <epg:mediumName xml:lang="en">Telephone</epg:mediumName>
  <epg:location>
    <epg:relativeTime time="PT32M44S" duration="PT30S"/>
  </epg:location>
  <epg:genre href="urn:tva:metadata:cs:ContentCS:2009:3.6" type="main"/>
</epg:programmeEvent>
```

A Music event played on a Classical station, marking up different mediaCredit roles:

```
<epg:programmeEvent id="crid://thisisglobal.com/1170663/15382308"
  shortId="15382308" recommendation="no" broadcast="on-air">
  <epg:shortName>'Jesu, ~</epg:shortName>
  <epg:mediumName>'Jesu, joy of m~</epg:mediumName>
  <epg:longName>'Jesu, joy of man's desiring'</epg:longName>
  <epg:location>
    <epg:relativeTime time="PT12M56S" duration="PT36S"/>
  </epg:location>
  <epg:genre href="urn:tva:metadata:cs:ContentCS:2002:3.6.1">
  </epg:genre>
  <epg:mediaCredit role="composer" scheme="urn:ebu">
    Johann Sebastian Bach
  </epg:mediaCredit>
  <epg:mediaCredit role="ensemble" scheme="urn:ebu">
    Choir of New College,Oxford
  </epg:mediaCredit>
</epg:programmeEvent>
```

10.5.2 TABLE OF ADDITIONS TO DAB EPG SPECIFICATION

Attribute or element	Required?	Change description
mediaCredit	Optional	Additional element added to represent a media credit, e.g. artist, composer, narrator etc.
role	Mandatory within **mediaCredit** element	The Media RSS role assigned to the credit. Only those roles defined by the European Broadcasting Union are accepted. This must be lowercase.
scheme	Mandatory within **mediaCredit** element	Must be URN:EBU
mbid	Optional	Music Brainz ID of the credit
dbpid	Optional	dbpedia ID of the credit
imdb	Optional	IMDb ID of the credit

10.5.3 REFERENCES

Attribute or element	Reference
role	http://www.ebu.ch/metadata/cs/web/ebu_RoleCodeCS_p.xml.htm

10.6 LINKING TRACKS TO EXTERNAL SOURCES

Radioplayer also adds elements in order to allow linking to databases containing records of physical recordings, such as MusicBrainz and ISRC. The elements are optional, but allow future use of any available linking data.

10.6.1 IMPLEMENTATION

Four new optional elements are added: **mbid, isrc, catalog** and **barcode**. One or more can be added to the **mediaCredit** element. Only the optional element **mbid** can be added to the **programmeEvent** element.

Example XML (with all four optional elements attached to programmeEvent and optional mbid attached to media credit):

```
<epg:programmeEvent id="crid://www.unique.com/2004a91e445e42d0b228835cb3e0179e" shortId="0" recommendation="no"
broadcast="on-air">
  <epg:shortName xml:lang="en">Telephon</epg:shortName>
  <epg:mediumName xml:lang="en">Telephone</epg:mediumName>
  <epg:location>
    <epg:relativeTime time="PT32M44S" duration="PT30S"/>
  </epg:location>
  <epg:genre href="urn:tva:metadata:cs:ContentCS:2009:3.6" type="main"/>
  <epg:mbid>d50d763f-8a3e-4a83-b15a-45b44ee967f1</epg:mbid>
  <epg:isrc>USMC16740591</epg:isrc>
  <epg:catalogue>2734706</epg:catalogue>
  <epg:barcode>602527347066</epg:barcode>
  <epg:mediaCredit role="artist" scheme="urn:ebu" mbid="d7713eda-42d1-40f9-97af-1e966586f6ae">Lady Gaga and
Beyoncé</epg:mediaCredit>
</epg:programmeEvent>
```

Table of additions to DAB EPG specification

Attribute	Required?	Change description
mbid	Optional	The MusicBrainz ID of the track
isrc	Optional	The ISRC number of the track
catalogue	Optional	The catalogue number of the track.
barcode	Optional	The barcode of the track.

10.6.2 REFERENCES

Attribute or element	Reference
mbid	http://wiki.musicbrainz.org/Track_ID
isrc	http://en.wikipedia.org/wiki/International_Standard_Recording_Code
catalog	http://en.wikipedia.org/wiki/Catalogue_number
barcode	http://wiki.musicbrainz.org/Barcode

10.6.3 REFERENCES

Attribute or element	Reference
EBU role codes	http://www.ebu.ch/metadata/cs/web/ebu_RoleCodeCS_p.xml.htm

10.6.4 SPECIFYING LOGOS AND IMAGES

The Radioplayer experience is enhanced both for the user and the Broadcaster when relevant images accompany pieces of content. To this end, your station, programmes and programme events can each have an associated image within your Metadata. The images required by Radioplayer are defined by the Style Guidelines of the Radioplayer console.

10.7 IMPLEMENTATION

Defining the image assets is achieved by using the standard **multimedia** element under the **mediaDescription** group for each **service, programme** and **programmeEvent**. This element shall be of the standard **multimediaType** as defined within the Radioplayer metadata XML schema declaration. The **logoType** attribute is optional however you must specify a width and height that matches the requirements of the Style Guidelines of the Radioplayer console, if you wish your image to be displayed. If you include more than one multimedia element then the first one that matches the correct sizes within the specification will be used in preference.

The **url** attribute in the element must be a fully qualified HTTP URL – all other protocols and formats will be ignored.

The following business rules will apply for defining images:

10.7.1 STATION LOGO

This is required, and should be specified within the **service** element in the Service Information (SI) file. It may be used as a fall-back for associated Programmes and Programme Events.

10.7.2 PROGRAMME IMAGE

This is optional but recommended, and should be specified within the **programme** element in the Programme Information (PI) file. It may be used as a fall-back for contained Programme Event images should no specific image exist.

10.7.3 PROGRAMME EVENT IMAGE

This is optional and should be specified within the **programmeEvent** element in the Programme Information (PI) file.

Example XML

Three sizes of station logo defined in the SI file:

```
<mediaDescription>
  <epg:multimedia mimeValue="image/png" url="http://downloads.co.uk/radio/ukradioplayer/r1_86x48.png" width="86"
height="48"/>
</mediaDescription>
<mediaDescription>
  <epg:multimedia mimeValue="image/png" url="http://downloads.co.uk/radio/ukradioplayer/r1_74x41.png" width="74"
height="41"/>
</mediaDescription>
```

A Programme image (e.g. Show Logo)

```
<epg:mediaDescription>
  <epg:multimedia mimeValue="image/jpg"
    url="http://mediaweb.musicradio.com/artwork/ses/3b8b8670-9974-471c-b236-dadad69348b6.png" width="86"
height="48"/>
</epg:mediaDescription>
```

A Programme Event image (e.g. Cover Art)

```
<epg:mediaDescription>
  <epg:multimedia mimeValue="image/jpg"
    url="http://a1.phobos.apple.com/us/r1000/006/Music/b7/9f/6f/mzi.maashwwg.170x170-75.jpg"
    width="86" height="48"/>
</epg:mediaDescription>
```

10.8 IMAGE INDEX

To allow multiple images to be specified of the same width and height an **index** attribute may be added that indicates to clients the preferred order of use. This allows clients to make multiple attempts to display an image in the event that the first attempt fails. The clients are expected to attempt to use the images in ascending order of index.

Example XML

```
<epg:mediaDescription>
  <epg:multimedia mimeValue="image/jpg"
    url="http://mediaweb.musicradio.com/artwork/ses/3b8b8670-9974-471c-b236-dadad69348b6.png" width="86" height="48"
index="1"/>
</epg:mediaDescription>
```

10.9 SERIES LINKING

You can include a single 'memberOf' element in your PI and OD files to allow you to identify which of your programmes belong to a series, and which series they belong to.

Although the DAB specification allows multiple memberOf elements per programme, **Radioplayer will process only the first memberOf element**. It is therefore **essential** that, should you already be generating memberOf elements in your PI files, you ensure that the **first memberOf is always the one that signifies the programme's series membership** as far as Radioplayer is concerned.

All memberOf elements that appear after the first within a given programme will be ignored.

11 ON-DEMAND, OFF SCHEDULE FILES

To accommodate on demand off-schedule content (such as podcast streams, special broadcasts etc) an additional file has been created to house the new content objects. Off-schedule content is linked to a radio service and has many similar attributes of a schedule and subsequent programme objects. The main difference between a broadcast programme with an on-demand element is that an off-schedule on-demand object does not have a broadcast time.

11.1 IMPLEMENTATION

The differences between a **programme** from a PI file and a **programme** in an OD file are;

- the OD file will not require a **location** or child **time** elements as the programme is not broadcast
- All programme objects in the OD file are linked to a radio station via the **radioplayerId** attribute in the **scope** element
- the **availability** element is required with the child element **scope** to show the availability of the on-demand file
- the **scope** of the document is representative not of the broadcast time of the programme objects, but the availability window

The **ondemand** element should include the **availability** element so that the on-demand availability window is shown to Radioplayer (and could be surfaced in search as an embargo time):

```
<epg:ondemand>
  <radioplayer:player>http://player.musicradio.com/heart/galaxy/audio/725466</radioplayer:player>
  <radioplayer:availability>
    <radioplayer:scope startTime="2010-09-14T01:00:00" stopTime="2010-16-14T01:00:00"/>
  </radioplayer:availability>
</epg:ondemand>
```

The **ondemand** element must occur after any **programmeEvent** elements that occur.

The **scope** element in a PI file is used to show the start of the first programme object until the end of the last programme object in the file. In the OD file, the scope should represent the start of the first availability window of the earliest programme object until the end of the latest programme object.

```
<scope startTime="2010-09-14T01:00:00" stopTime="2010-09-21T01:00:00">
```

A PI file that contains a single programme object has the following structure:

```
<?xml version="1.0" encoding="UTF-8"?>
<epg system="DAB" xml:lang="en" xmlns="http://www.radioplayer.co.uk/schemas/10/epgSchedule"
    xmlns:epg="http://www.radioplayer.co.uk/schemas/10/epgDataTypes"
    xmlns:radioplayer="http://www.radioplayer.co.uk/schemas/10/rpDataTypes"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.radioplayer.co.uk/schemas/10/epgSchedule epgSchedule_10.xsd">
  <schedule creationTime="2010-09-15T15:29:54" originator="Global Radio" version="1">
  <scope startTime="2010-09-14T01:00:00" stopTime="2010-09-15T01:00:00">
      <serviceScope id="00.0000.0000.0" radioplayerId=”1005”/>
  </scope>
    <programme id="crid://thisisglobal.com/1181144" shortId="1181144"
        version="1">
      <epg:shortName>Tom F.</epg:shortName>
```

```
      <epg:mediumName>Tom Ferguson</epg:mediumName>
      <epg:location>
          <epg:time duration="PT3H" time="2010-09-14T01:00:00"/>
          <epg:bearer id="00.0000.0000.0" radioplayerId="1005"/>
      </epg:location>
      <epg:mediaDescription>
          <epg:shortDescription><![CDATA[To get in touch text 'Tom' followed by your message to 82200 or call the
studio on 0845 14 82200. *Standard network charges apply. galaxyfm.com]]></epg:shortDescription>
      </epg:mediaDescription>
      <epg:genre href="urn:tva:metadata:cs:ContentCS:2009:3.6.8"/>
      <epg:ondemand>
          <radioplayer:player>http://player.musicradio.com/heart/galaxy/audio/1181160</radioplayer:player>
      </epg:ondemand>
    </programme>
  </schedule>
</epg>
```

An OD file that contains a single programme object has the following structure:

```
<?xml version="1.0" encoding="UTF-8"?>
<epg system="DAB" xml:lang="en" xmlns="http://www.radioplayer.co.uk/schemas/10/epgSchedule"
    xmlns:epg="http://www.radioplayer.co.uk/schemas/10/epgDataTypes"
    xmlns:radioplayer="http://www.radioplayer.co.uk/schemas/10/rpDataTypes"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.radioplayer.co.uk/schemas/10/epgSchedule epgSchedule_10.xsd">
  <schedule creationTime="2010-09-15T15:29:54" originator="Global Radio" version="1">
    <scope startTime="2010-09-14T01:00:00" stopTime="2010-09-21T01:00:00">
      <serviceScope id="00.0000.0000.0" radioplayerId=”1005”/>
    </scope>
    <programme id="crid://thisisglobal.com/1181144" recommendation="yes" shortId="1181144"
        version="1">
      <epg:shortName>Tom F.</epg:shortName>
      <epg:mediumName>Tom Ferguson</epg:mediumName>
      <epg:mediaDescription>
        <epg:shortDescription><![CDATA[To get in touch text 'Tom' followed by your message to 82200 or call the
studio on 0845 14 82200. *Standard network charges apply. galaxyfm.com]]></epg:shortDescription>
      </epg:mediaDescription>
      <epg:genre href="urn:tva:metadata:cs:ContentCS:2009:3.6.8"/>
```

```
      <epg:ondemand>
        <radioplayer:player>http://player.musicradio.com/heart/galaxy/audio/725466</radioplayer:player>
      <radioplayer:availability>
        <radioplayer:scope startTime="2010-09-14T01:00:00" stopTime="2010-09-21T01:00:00"/>
      </radioplayer:availability>
      </epg:ondemand>
    </programme>
  </schedule>
</epg>
```