

Format Changes

A. Service Information

DAB EPG XML (TS 102 822 1.5)

```
<?xml version="1.0" encoding="UTF-8"?>
<serviceInformation xmlns="http://www.worlddab.org/schemas/epgSI/15"
xmlns:epg="http://www.worlddab.org/schemas/epgDataTypes/15"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.worlddab.org/schemas/epgSI/15
epgSI_15.xsd" version="1" creationTime="2001-02-28T00:00:00"
originator="BBC" serviceProvider="BBC" system="DAB" xml:lang="en">
  <ensemble id="e1.ce15">
    <epg:shortName xml:lang="en">BBC</epg:shortName>
    <epg:mediumName xml:lang="en">BBC National</epg:mediumName>
    <frequency type="primary" kHz="225648"/>
    <mediaDescription>
      <epg:shortDescription xml:lang="en">Digital Radio from the
BBC</epg:shortDescription>
    </mediaDescription>
    <mediaDescription>
      <epg:multimedia
url="http://www.bbc.co.uk/radio1/images/bbclogo.png"
type="logo_colour_rectangle"/>
    </mediaDescription>
    <mediaDescription>
      <epg:multimedia mimeType="image/png"
url="http://www.bbc.co.uk/radio/bbclogo_large.png"
type="logo_unrestricted" height="320" width="240"/>
    </mediaDescription>
    <CA type="none"/>
    <keywords xml:lang="en">Radio1, Radio2, Radio3, Radio4,
Radio5,Live</keywords>
    <link url="http://www.bbc.co.uk/radio/" mimeType="text/html"
description="BBC Radio homepage"/>
    <service format="audio" bitrate="160" version="1">
      <serviceID id="e1.ce15.c221.0" type="primary"/>
      <epg:shortName xml:lang="en">Radio 1</epg:shortName>
      <epg:mediumName xml:lang="en">BBC Radio 1</epg:mediumName>
      <mediaDescription>
        <epg:shortDescription xml:lang="en">Rock and pop music from
the BBC.</epg:shortDescription>
      </mediaDescription>
      <mediaDescription>
        <epg:multimedia url="r1logo32.png"
type="logo_colour_square"/>
      </mediaDescription>
      <mediaDescription>
        <epg:multimedia url="r1logo112.png"
type="logo_colour_rectangle"/>
      </mediaDescription>
      <mediaDescription>
        <epg:multimedia url="r1logo128.png" type="logo_unrestricted"
width="128" height="128" mimeType="image/png"/>
      </mediaDescription>
      <mediaDescription>
        <epg:multimedia url="r1logo320.png" type="logo_unrestricted"
width="320" height="240" mimeType="image/png"/>
      </mediaDescription>
      <mediaDescription>
```

Simplified namespace declaration.

Collapsed XSD to a single document. This means that we can simplify references to elements (i.e. not have to prefix common types with the epg namespace).

Removed **version** and **system** attributes (DAB specific).

Expanded **serviceProvider** to its own element (from IMDA).

Changed root element from **ensemble** (DAB specific) to **services**. Removed this and other related DAB specific elements (frequency).

Promoted the elements **shortDescription**, **longDescription**, **multimedia** to standalone elements. Deprecated the **mediaDescription** element. Removed **type** from multimedia. Made width and height mandatory for images.

Remove **ALL** Conditional Access references.

Renamed **mimeType** attribute to **mime** in order to make consistent.

Replace **serviceID** element with the more fully-featured **bearer** element, taking in Bearer URI format, and adding **cost**, **offset**, **mimeType** attributes.

Hybrid Radio EPG

```
<?xml version="1.0" encoding="UTF-8"?>
<serviceInformation xmlns="http://www.worlddab.org/schemas/epg"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.worlddab.org/schemas/epg
http://www.worlddab.org/schemas/epg/epg_16.xsd"
creationTime="2013-04-25T00:05:31+01:00" originator="Global
Radio"
xml:lang="en">
  <services>
    <serviceProvider>
      <shortName>Global</shortName>
      <mediumName>Global Radio</mediumName>
      <multimedia url="http://epg.musicradio.com/logos/global/320x240.png"
mime="image/png" height="240" width="320" />
      <multimedia url="http://epg.musicradio.com/logos/global/32x32.png"
mime="image/png"
height="32" width="32" />
      <keywords>
        radio, television, publishing, talent, charities & communities
      </keywords>
      <link uri="http://www.thisisglobal.com" mimeType="text/html"
description="Homepage" />
      <link uri="postal:Global%20Radio/30%20Leicester%20Square/London/WC2H%207LA"
/>
      <link uri="tel:+44-020-77666000" />
      <location>
        <country>GB</country>
        <point>51.473939 -2.508112</point>
      </location>
    </serviceProvider>
    <service>
      <bearer id="dab:gb.c185.c479.0" mimeType="audio/mpeg"
offset="2000" cost="20" />
      <bearer id="fm:gb.c479.09580" cost="30" />
      <bearer id="http://media-ice.musicradio.com/Capital"
offset="4000" mimeType="audio/aac" bitrate="48" cost="40" />
      <bearer id="http://media-ice.musicradio.com/CapitalMP3Low"
offset="4000" mimeType="audio/mpeg" bitrate="48" cost="40" />
      <shortName>Capital</shortName>
      <mediumName>Capital FM</mediumName>
      <longName>Capital London</longName>
      <shortDescription>The UK's No.1 Hit Music Station</shortDescription>
      <multimedia url="http://owdo.thisisglobal.com/2.0/id/25/logo/32x32.png"
height="32" width="32" />
      <multimedia url="http://owdo.thisisglobal.com/2.0/id/25/logo/112x32.png"
height="32" width="112" />
      <multimedia url="http://owdo.thisisglobal.com/2.0/id/25/logo/128x128.jpg"
height="128" width="128" />
      <multimedia url="http://owdo.thisisglobal.com/2.0/id/25/logo/320x240.jpg"
height="240" width="320" />
      <multimedia url="http://owdo.thisisglobal.com/2.0/id/25/logo/640x480.jpg"
height="480" width="640" />
```



```

    <epg:multimedia
url="http://www.bbc.co.uk/logos/r1logo640.png"
type="logo_unrestricted" width="640" height="360"
mimeValue="image/png"/>
  </mediaDescription>
  <genre href="urn:tva:metadata:cs:ContentCS:2002:3.6.7">
    <epg:name><![CDATA[ Rap/Hip Hop/Reggae]]></epg:name>
  </genre>
  <genre href="urn:tva:metadata:cs:ContentCS:2002:3.6.8">
    <epg:name><![CDATA[ Electronic/Club/Urban/Dance]]></epg:name>
  </genre>
  <genre href="urn:tva:metadata:cs:FormatCS:2002:2.5">
    <epg:name><![CDATA[ ARTISTIC PERFORMANCE]]></epg:name>
  </genre>
  <genre href="urn:tva:metadata:cs:IntentionCS:2002:1.1">
    <epg:name><![CDATA[ ENTERTAINMENT]]></epg:name>
  </genre>

  <epgLanguage xml:lang="en"/>

```

```

  <keywords xml:lang="en"> music, pop, rock, dance, hip-hop, soul
</keywords>
  <link url="http://www.bbc.co.uk/radio1/" mimeValue="text/html"
xml:lang="en"/>
  </service>
</ensemble>
</serviceInformation>

```

Simplified **genre** element.

Removed **epgLanguage** element in favour of a clearer and more consistent set of language declarations on documents and elements (using the **xml:lang** attribute).

Reworked the **link** element to accept any valid URI. Renamed the **url** attribute to **uri** and the **mimeValue** attribute to **mime** for consistency.

Added **location** information.

Added RadioDNS lookup parameters in the **radiodns** element.

Added service groupings using the **serviceGroupMember** element (equivalent of the **memberOf** element in RadioEPG XSI).

Added declaration of additional service grouping metadata in the **serviceGroups** element (equivalent of the **groups** element in RadioEPG XSI)

```

<multimedia url="http://owdo.thisisglobal.com/2.0/id/25/logo/800x800.jpg"
height="800" width="800" />

```

```

<genre href="urn:tva:metadata:cs:ContentCS:2004:3.6.10">
  Hit-Chart/Song Requests
</genre>
<genre href="urn:tva:metadata:cs:ContentCS:2004:3.6.8">
  Electronic/Club/Urban/Dance
</genre>
<genre href="urn:tva:metadata:cs:ContentCS:2004:3.1.1.11">
  Local/Regional
</genre>
<genre href="urn:tva:metadata:cs:ContentCS:2004:3.6.8.14">
  Dance/Dance-pop
</genre>
<genre href="urn:tva:metadata:cs:ContentCS:2004:3.1.4.12">
  Showbiz
</genre>

```

```

<keywords>London, music, pop, rock, dance, urban</keywords>

```

```

<link description="Text the Studio" uri="sms:83958" />
<link uri="http://www.capitalfm.com/london" mime="text/html" />

```

```

<location>
  <country>GB</country>
  <polygon>
51.524124 -2.709503 51.572803 -2.668304 51.616310 -2.572174
51.575363 -2.412872 51.504471 -2.379913
51.426613 -2.471924
51.400063 -2.460937 51.387211 -2.511749 51.328896 -2.708130
51.273087 -2.772675 51.238705
-2.938843 51.258476 -3.036346
51.376068 -3.026733 51.472401 -2.859879 51.524124 -2.709503
  </polygon>
</location>

```

```

<radiodns fqdn="www.capitalfm.com" serviceIdentifier="london" />

```

```

  <serviceGroupMember id="capital" />
</service>
</services>

```

```

<serviceGroups>
  <serviceGroup id="capital">
    <shortName>Capital</shortName>
    <mediumName>Capital FM</mediumName>
    <shortDescription>The UK's No.1 Hit Music Station</shortDescription>
    <link description="Capital on Wikipedia" mime="text/html"
      uri="http://en.wikipedia.org/wiki/Capital_(radio_network)" />
    <multimedia url="http://owdo.thisisglobal.com/2.0/id/153/logo/32x32.png"
      height="32" width="32" />
    <multimedia url="http://owdo.thisisglobal.com/2.0/id/153/logo/112x32.png"
      height="32" width="112" />
    <multimedia url="http://owdo.thisisglobal.com/2.0/id/153/logo/128x128.jpg"
      height="128" width="128" />
    <multimedia url="http://owdo.thisisglobal.com/2.0/id/153/logo/320x240.jpg"
      height="240" width="320" />
    <multimedia url="http://owdo.thisisglobal.com/2.0/id/153/logo/640x480.jpg"

```


B. Programme Information

DAB EPG XML (TS 102 822 1.5)

```
<?xml version="1.0" encoding="UTF-8"?>
<epg xmlns="http://www.worlddab.org/schemas/epgSchedule/15"
xmlns:epg="http://www.worlddab.org/schemas/epgDataTypes/15"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.worlddab.org/schemas/epgSchedule/14
epgSchedule_15.xsd" system="DAB" xml:lang="en">
  <schedule version="1" creationTime="2001-02-28T00:00:00"
originator="BBC">
    <scope startTime="2001-03-01T00:00:00"
stopTime="2001-03-02T18:00:00">
      <serviceScope id="e1.ce15.c221.0"/>
      <serviceScope id="e1.ce15.c224.0"/>
    </scope>
    <programme shortId="213456" id="crid://bbc.co.uk/4969758988"
recommendation="yes">
      <epg:mediumName>Gilles Peterson:</epg:mediumName>
      <epg:longName>Gilles Peterson: Worldwide</epg:longName>

      <epg:location>
        <epg:time time="2003-12-18T00:00:00" duration="PT2H0M0S"
actualTime="2003-12-18T00:00:00" actualDuration="PT2H0M0S"/>
        <epg:bearer id="e1.ce15.c221.0"/>
      </epg:location>

      <epg:mediaDescription>
        <epg:shortDescription><![CDATA[Gilles Peterson brings you two
hours of global beats and the best of cool. Including the Worldwide
family. KV5 are live from Maida Vale with special
guests.]]></epg:shortDescription>
      </epg:mediaDescription>
      <epg:genre href="urn:tva:metadata:cs:ContentCS:2002:3.6.7">
        <epg:name><![CDATA[ Rap/Hip Hop/Reggae]]></epg:name>
      </epg:genre>
      <epg:genre href="urn:tva:metadata:cs:ContentCS:2002:3.6.8">
        <epg:name><![CDATA[ Electronic/Club/Urban/Dance]]></epg:name>
      </epg:genre>
      <epg:genre href="urn:tva:metadata:cs:FormatCS:2002:2.5">
        <epg:name><![CDATA[ ARTISTIC PERFORMANCE]]></epg:name>
```

Simplified namespace declaration.

Collapsed XSD to a single document. This means that we can simplify references to elements (i.e. not have to prefix common types with the epg namespace).

Removed **version** and **system** attributes (DAB specific).

Removed **schedule** from being the root element. Moved attributes to the top-level **epg** element.

Simplified **scope** element to be just times, and removed any bearers.

Removed **shortId** and **recommendation** attributes from the **programme** element and made full CRID (**id** attribute) mandatory.

Remove **ALL** Conditional Access references.

Replaced **location** element with **schedule** and clarified behaviour.

Relaxed duration format to be any valid ISO8601 Period.

Redefined Bearer to be consistent with that defined against a service.

Promoted the elements **shortDescription**, **longDescription**, **multimedia** to standalone elements. Deprecated the **mediaDescription** element.

```
height="480" width="640" />
</serviceGroup>
</serviceGroups>
</serviceInformation>
```

Hybrid Radio EPG

```
<?xml version="1.0" encoding="UTF-8"?>
<epg xmlns="http://www.worlddab.org/schemas/epg/16 "
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.worlddab.org/schemas/epg/16
http://www.worlddab.org/schemas/epg/16/epg_16.xsd"
xml:lang="en"
creationTime="2013-04-11T01:20:00+01:00" originator="Global Radio">
  <scope startTime="2013-04-25T06:00:00+01:00"
stopTime="2013-04-25T13:00:00+01:00"/>
```

```
<programme id="crid://www.capitalfm.com/4772/1190223">
  <shortName>B'fast</shortName>
  <mediumName>Breakfast</mediumName>
  <longName>Capital Breakfast</longName>
```

```
<schedule>
  <time time="2013-04-25T06:00:00+01:00" duration="PT4H"
actualTime="2013-04-25T06:00:00+01:00" actualDuration="PT4H"/>
</schedule>
```

```
<shortDescription>Forget the coffee, Capital gives you the perfect morning
pick-me-up with a blend of the latest hits, travel news and incomparable morning
banter.</shortDescription>
```

```
<genre href="urn:tva:metadata:cs:ContentCS:2002:3.6.8">
  <![CDATA[ Electronic/Club/Urban/Dance]]>
</genre>
<genre href="urn:tva:metadata:cs:IntentionCS:2002:1.1">
  <![CDATA[ ENTERTAINMENT]]>
</genre>
```



```

</epg:genre>
<epg:genre href="urn:tva:metadata:cs:IntentionCS:2002:1.1">
  <epg:name><![CDATA[ ENTERTAINMENT]]></epg:name>
</epg:genre>
<epg:genre href="urn:tva:metadata:cs:ContentCS:2002:3.6.9">
  <epg:name><![CDATA[ World/Traditional/Ethnic/Folk
music]]></epg:name>
</epg:genre>

  <epg:memberOf shortId="1000"
id="crid://www.bbc.co.uk/WorldwideGroup"/>

  <epg:link url="mailto:gilles.peterson@bbc.co.uk"
description="Email:" />
  <epg:link url="http://www.bbc.co.uk/radiol/urban/peterson/"
description="Web:" />

  <epg:programmeEvent shortId="6353"
id="crid://www.bbc.co.uk;dab/BC81123456a" recommendation="yes">
  <epg:shortName xml:lang="en">Herbert</epg:shortName>
  <epg:mediumName xml:lang="en">Herbert Live</epg:mediumName>
  <epg:longName xml:lang="en">Live session from
Herbert</epg:longName>
  <epg:location>
  <epg:relativeTime time="PT45M" duration="PT15M"/>
  </epg:location>
  <epg:mediaDescription>
  <epg:shortDescription xml:lang="en">Live session from
Herbert, recorded at Cargo on 24/2/01</epg:shortDescription>
  </epg:mediaDescription>
  </epg:programmeEvent>
</programme>
</schedule>
</epg>

```

Simplified **genre** element.

Removed **shortId** attribute from **memberOf** element and made full CRID (**id** attribute) mandatory.

Reworked the **link** element to accept any valid URI. Renamed the **url** attribute to **uri** and the **mimeValue** attribute to **mime** for consistency.

Removed **shortId**, **recommendation** attributes from **programmeEvent** element and made full CRID (**id** attribute) mandatory.

```
<memberOf id="crid://www.capitalfm.com/4772"/>
```

```
<link url="mailto:capital.breakfast@capitalfm.com" description="Email the
Capital Breakfast team!" />
```

```
<link url="http://www.capitalfm.com/on-air/breakfast-show/" />
```

```
<programmeEvent id="crid://thisisglobal.com/4772/1190223/788946">
```

```
<shortName>Pun</shortName>
```

```
<mediumName>No.1 Pun</mediumName>
```

```
<longName>London's No. 1 Pun</longName>
```

```
<schedule>
```

```
<relativeTime time="PT3H10M" duration="PT25M"/>
```

```
</schedule>
```

```
<shortDescription>
```

```
Can you come up with London's No.1 Pun for our story of the day?
```

```
</shortDescription>
```

```
</programmeEvent>
```

```
</programme>
```

```
</epg>
```


C. Group Information

DAB EPG XML (TS 102 822 1.5)

```
<?xml version="1.0" encoding="UTF-8"?>
<epg xmlns="http://www.worlddab.org/schemas/epgSchedule/15"
xmlns:epg="http://www.worlddab.org/schemas/epgDataTypes/15"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.worlddab.org/schemas/epgSchedule/15
epgSchedule_15.xsd" system="DAB" xml:lang="en">

  <programmeGroups version="1" creationTime="2001-02-28T00:00:00"
originator="BBC">

    <programmeGroup shortId="1000"
id="crid://www.bbc.co.uk/WorldwideGroup" version="1" type="show"
numOfItems="206">
      <epg:mediumName xml:lang="en">Gilles Peterson</epg:mediumName>
      <epg:longName xml:lang="en">Gilles Peterson:
Worldwide</epg:longName>
      <mediaDescription>
        <epg:shortDescription xml:lang="en">Worldwide: Global
beats.</epg:shortDescription>
      </mediaDescription>
      <mediaDescription>
        <epg:longDescription xml:lang="en">Worldwide: Music from the
back room of Club Radio 1.</epg:longDescription>
      </mediaDescription>
      <genre href="urn:tva:metadata:cs:ContentCS:2002:3.6.7">
        <epg:name><![CDATA[ Rap/Hip Hop/Reggae]]></epg:name>
      </genre>
      <genre href="urn:tva:metadata:cs:ContentCS:2002:3.6.8">
        <epg:name><![CDATA[ Electronic/Club/Urban/Dance]]></epg:name>
      </genre>
      <genre href="urn:tva:metadata:cs:FormatCS:2002:2.5">
        <epg:name><![CDATA[ ARTISTIC PERFORMANCE]]></epg:name>
      </genre>
      <genre href="urn:tva:metadata:cs:IntentionCS:2002:1.1">
        <epg:name><![CDATA[ ENTERTAINMENT]]></epg:name>
      </genre>
      <genre href="urn:tva:metadata:cs:ContentCS:2002:3.6.9">
        <epg:name><![CDATA[ World/Traditional/Ethnic/Folk
music]]></epg:name>
      </genre>
      <memberOf shortId="100"
id="crid://www.bbc.co.uk/Radio1_Series"/>
    </programmeGroup>
  </programmeGroups>
</epg>
```

Simplified namespace declaration.

Collapsed XSD to a single document. This means that we can simplify references to elements (i.e. not have to prefix common types with the epg namespace).

Removed **version** and **system** attributes (DAB specific).

Made **programmeGroups** element to be the root, replacing the dual purpose of the **epg** element.

Removed **shortId** from the **programmeGroup** element and made full CRID (**id** attribute) mandatory.

Promoted the elements **shortDescription**, **longDescription**, **multimedia** to standalone elements. Deprecated the **mediaDescription** element.

Simplified **genre** element.

Removed **shortId** attribute from **memberOf** element and made full CRID (**id** attribute) mandatory.

Hybrid Radio EPG

```
<?xml version="1.0" encoding="UTF-8"?>

<programmeGroups xmlns="http://www.worlddab.org/schemas/epg/16"
xmlns:epg="http://www.worlddab.org/schemas/epg/16"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.worlddab.org/schemas/epg/16
http://www.worlddab.org/schemas/epg/16/epg_16.xsd"
xml:lang="en"
creationTime="2013-04-25T14:21:15+01:00" originator="Global Radio">
```

```
<programmeGroup id="crid://www.classicfm.com/shows/tour" type="show"
numOfItems="24">
  <mediumName>Musical Tour</mediumName>
  <longName>Classic's Magical Musical Tour</longName>
```

```
<shortDescription>Every Saturday night, join us on a Magical Musical Tour of
all things classical music.</shortDescription>
```

```
<genre href="urn:tva:metadata:cs:ContentCS:2009:3.6.1">
  <![CDATA[ Classical music]]>
</genre>
<genre href="urn:tva:metadata:cs:FormatCS:2002:2.5">
  <![CDATA[ ARTISTIC PERFORMANCE]]>
</genre>
<genre href="urn:tva:metadata:cs:IntentionCS:2005:1.1">
  <![CDATA[ ENTERTAINMENT]]>
</genre>
```

```
<memberOf id="crid://www.classicfm.com/shows/weekend"/>
```

```
</programmeGroup>
</programmeGroups>
```


Functional Changes and Clarifications

Images and Logos

The type enumeration has been removed from any image elements. The binary encoding will need to retrieve the signaled logos and verify their size, before encoding into MOT objects with the correct signaling, and applying the enumeration value that applies from the DAB Binary specification.

Certain image sizes are now mandatory, and image dimensions must be signalled with images.

Language

Clarifying guidance a little, each document has a document declaration in its root element. This defaults to English, and will define the 'default' language of elements within the document. If an element does not declare its own specific language, then this language will be assumed.

An element language defines the language of the content of the element. For textual descriptions, names, this will be the language used within the element. For linked resources, this will be the language of the linked resource's content.

Programme Times and Bearers

Now contained with a **schedule** element, the meaning of various combinations of **bearer** and **time** has been slightly extended, such that multiple **schedule** elements may be used to specify different combinations of bearers and times. Also, multiple bearers and times is now no longer ambiguous and refers to a programme or event being repeated across multiple bearers.

Bearers have more generally been redefined across SI and PI to hold Bearer URIs, of which different types have been defined (DAB, DRM, HD, IP).

Identifiers

Deprecated **shortId** when identifying programmes, programme events and groups in favour of a globally-unique CRID. Use of a CRID for identification is now mandatory.

Programme Information Scope

Clarified behaviour slightly, including a note for ingesting systems that if the signalled document interval range (scope) extends beyond the programmes indicated in the document, this should be taken as an instruction to 'clear' down the remaining gaps. Within the gaps between programmes, no programmes should be considered as being active.

Links

Expanded to cover any valid URI (and changing the attribute name). Clarified that a link description must not be used to infer machine-readable context.

Clarified link expiry behaviour, by adding that the absence of a previously signalled link in an updated document means that the link has expired.

