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ARIA Retail Charts

Sales/Streaming Specification

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Abstract

This document outlines the procedure for the submission of retail sales/streaming data to ARIA for the provision of the ARIA charts.

ARIA Retail Charts

Sales/Streaming Specification

AUSTRALIAN RECORDING INDUSTRY ASSOCIATION

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ARIA Retail Charts

Sales/Streaming Specification

AUSTRALIAN RECORDING INDUSTRY ASSOCIATION

1. Introduction

This document describes the process for submitting retail music sales and streaming data to ARIA for inclusion in the ARIA Charts System. The processing of electronic sales and streaming has now reached maturity, and as a result, v1.1 has become the new version.

2. Dictionary

Following is a simple dictionary that clarifies common terms used within the document.

Term	Description
Bundle Sale	The sale of a collection of tracks. For electronic sales, this is anything other than a Track Sale. For physical stores, then this will most likely represent any musical product that is sold (singles, albums, music videos, etc.)
Chain Store	A collection of physical stores operating under the same name. Typically more specialized than a department store.
Department Store	A collection of physical stores operating under the same name. Typically more general than a chain store.
DSP	A "Digital Service Provider". An online retailer who sells electronic copies of products.
eTailer	An online retailer who sells physical copies of products that are then shipped to the customer.
Physical Retail Store	Any store, physical or internet based that sells tracks, collections of tracks, to end consumers.
Roaming Store	A store that is not a permanent store, such as one that operated from a subset of fixed locations, or is truly mobile.
Streaming Service Provider	An online subscription based music provider who provides live music streams to customers.
Track Sale	A single musical track. This is not a "Single" in the physical product sense.

3. Rules for data

- Only retail sales data for fully purchased retail product is to be submitted.
- Multiple Regions are supported for Streaming Service Providers.
- Multiple Payment Thresholds for reporting of success play are supported for Streaming Service Providers.
- Multiple play lengths that trigger royalty payments are supported for Streaming Service Providers, by having a separate region, with
- Data should be provided in XML format. The version of XML to be used is XML Version 1.0. It should be encoded using UTF-8.

  N.B. This is not the same as writing an ASCII file and placing UTF-8 in the XML document header. As best practice an XML DOM (such as XmlDocument in .NET, or Xerces in Java) should be used to ensure multi-lingual characters are encoded correctly. In addition to correct encoding, properly escaped "special characters" will be gained with little effort by using a suitable XML DOM. Examples of special reserved XML characters include (<, > ', ", &)
- Only well-formed XML which meets the schema can be processed. Data providers should ensure the XML is well formed XML Document (with XML declaration) and validates against the schema **before** sending the file. Well-formed XML ensures that the XML syntax has been used correctly, i.e. XML tags have been closed properly <ELEMENT></ELEMENT>. In any such case where the XML is not well formed then the file cannot be processed. Again, by using a suitable XML DOM library, this requirement should happen largely automatically.
- If an Attribute is specified as specific format (e.g a field for specifying a date); then if no value is provided the Attribute must not be included in the file. (ie sending APN = "" will fail schema validation and cannot be processed). These same rules apply for other types of attributes, such as integer values. **Blank/Empty attribute values are not valid** and the corresponding attribute should be omitted. If any value attribute value is present, then it will need to pass the appropriate validation that appears within the XSD document.
- Validation for each of the test cases provided should be performed before sending the first files for verification by ARIA. For a full list of suggested test cases, please see section 9 - Test Cases.

3.1. Rules Specific to Physical Retail Stores

Following is a list of rules that apply to Physical Stores selling physical product:

- Store sales should be reported as a Location Element, and not via a Region element. Each store is to be reported under its own uniquely identified Location element.
- Physically Scanned product will typically be reported as Bundle Sales.
- If fields such as Record Company are not present for Physical barcode scanning, they can be omitted in this case.

3.2. Rules Specific to Multi-Location Store Organisations (such as Chain or Department Stores)

Following is a list of rules that apply to Chains or Department stores

- Multiple Store sales should be reported as multiple location elements and not via a Region Element. Each store is to be reported under its own uniquely identified Location element.
- Stores with no sales for that period, should be reported as a Location Element, but should not contain sub Elements (e.g. BundleSales) to indicate no sales occurred.
- Stores where communications problems occurred and a particular store has not reported for the current period, should NOT be referenced within the file. i.e. The Location Element is absent for that store.
- Physically Scanned product will typically be reported as Bundle Sales.
- If a reported field is not available, and marked as optional in this specification (e.g. Record Company) for Physical barcode scanning, those optional fields can be omitted in this case. If the field is available, then is should still be reported, even though the field is optional. This allows ARIA to identifier sales that do not match better.

3.3. Rules Specific to eTailers

Following is a list of rules that apply specifically to eTailers selling Physical Product online:

- Store sales that ship from a single location to geographically dispersed end customers should be reported as Region elements, not Location Elements. The Region Element should be repeated for each Region to which purchased product is shipped.
- Multiple Regions may be present in the single file.
- Physical product will typically be reported as a BundleSale element.

3.4. Rules Specific to DSPs

Following is a list of rules that apply specifically to DSPs:

- Sales that are downloaded are reported in Region elements, not Location Elements. Region Elements should be repeated for each Region in which download purchases have been recorded.
- Multiple Regions may be present in the single file.
- Individual Track and Individual Music Video Track Sales require an ISRC code for inclusion within the charts.
- All other product types (Albums, Singles, etc.) are reported as a Bundle Sales

3.5. Rules Specific to Streaming Service Providers

Following is a list of rules that apply specifically to Streaming Service Providers:

- Streaming Track Plays that are streamed are reported as a Region element, not a Location Element. The Region Element should be repeated for each Region in which the purchased/played product is streamed.
- Multiple Regions may be present in the single file.
- Each "TrackPlays" Element can be repeated within any given Region; however each Threshold attribute with a specific quantity may only be reported once per Region (e.g. you cannot have 2x Threshold="30" within the same Region). The Threshold value determines the number of seconds that is required to be played before it triggers a royalty payment on the corresponding play of the track. It is possible that there be multiple thresholds given there are multiple rights holders, if that is the case, multiple Thresholds are specified through the inclusion of multiple TrackPlays Elements within the same region. TrackPlay elements per specific Track, may only appear within a single TrackPlays element for that region once. The Threshold for that track should be the minimum required threshold for that track, which triggers the royalty payment. E.g. If the TrackPlay triggers a royalty at 30 seconds, then the track should be included (for example) a TrackPlays element with a Threshold value equal to 30, but not a track Play threshold element (if one exists within the file), of 20 seconds, or 35 seconds.
- When a particular region cannot be resolved and is indeterminate, but known to be within the territory of Australia, then the played instance should be reported under the "Australia" Region element.
- Individual Track and Individual Music Video Track Streams require an ISRC code for inclusion within the charts, if no ISRC is present or is invalid, the play should not be included within the XML Files.

- Additional Streaming Provider specific Track Identification can also be supplied along with the TrackPlay element. By providing a round trip capability, ARIA can create custom ARIA Charts out the back end of the charting process that facilitates the creation of Streaming Provider specific playlists (for example). This ExternalReference value can be used to capture an internal unique reference from the Streaming Service Provider. **N.B.** The ExternalReferenceType value is allocated by ARIA on a provider-by-provider basis.
- At this point in time, the concept of streaming a collection of tracks (e.g. a complete album) is not supported. Therefore BundlePlay elements generally will not apply to Streaming Service Providers unless they also sell tracks.
- **If a Streaming Service Provider also sells tracks and bundles, then those sales should be referenced as TrackSale entries during the period that they are sold. Any Tracks that is subsequently owned by the subscriber should continue to be reported in the streamed totals going forwards, is to be reported under the PurchasedPlays attribute of the TrackPlay.**

3.6. Hybrid Rules

The following details how to represent those retailers who perhaps do electronic sales, along with physical sales, or a roaming store.

- Any sale of physical product from a fixed location may be represented as either a Region Element, or a Location Element (whichever is most appropriate)
    a. If a store is a roaming store to a FIXED set of locations, then each location could be represented as a unique location (e.g. Venue sales)
    b. If a store ships from one or more locations to geographically dispersed end customers, then those sales should be mapped to a Region element.
    c. If a store is roaming, but the location is variable (e.g. a store/stall/display moving around shopping centres, etc.) then sales should be mapped to a Region Element.
- Where a hybrid store performs a mix of sales, then it may be that some sales are represented as Regions, whilst others are represented as Locations within the same file, for the entire organisation. Please contact ARIA for guidance on how this should be implemented in your particular situation.
- Where a store has multiple locations, then when a location does not sell product, the empty Location or region should still be present within the file. No TrackSales or BundleSales elements would be present under the Location or Region element in file when it is known that zero sales has occurred. This is different to a failed reporting due to communications failures from remote offices. In these cases, where communications has failed, the region or location is to be omitted.

4. Information when is Unavailable

Some fields within this specification are listed as optional. This should be interpreted as "only if the data is not present", not "I don't need to send this data".

The reason behind this is due to this specification being utilized by many different organizations, and as such, the available data is different from each of those businesses. The schema provides a "lowest-common-denominator" approach to the different organizations. Fields that are specified as required is the minimum benchmark needed for processing by ARIA.

To facilitate faster, more reliable processing by the Chart Team, all available information should be provided within the file.

If the information is not present or nonsensical, then the corresponding element/attribute should not be present within that record. In this case, the "Optional" aspect means, that the data is missing, empty or nonsensical (e.g. Product barcodes which are not valid, etc.), it should not be provided, and those attributes in the XML should be omitted. **The term "Optional", does not mean submission of the value is optional. It should be submitted in all cases where the data is available.**

5. Frequency of Sales Data

- Sales files and Streaming Play files to be submitted on a daily basis
- Next day 5am cut off time for previous days sales (i.e. provider will have till 5am Tuesday morning to send in Monday's sales data).
- If the above options are not possible, then please contact the ARIA Team to discuss the available options. See Section 8 - Contacts below.

6. Getting sales or streaming play files to ARIA

- Sales/Streaming data will be delivered via ftp (with sftp being available soon). The ftp site is ftp://ftp1.aria.com.au. A username and password will be provided by ARIA to each retail provider. To ensure security, users will only have access to their own ftp location.
- Each retailer will have a designated security protected folder in which they are to drop their respective sales/streaming data.

7. Naming the sales files

- <SalesOrStreamingProviderName>_YYYYMMDDnn.xml – nn represents the instance of the file submitted ranging from 01 to 99.

  This ensures that if more than one file is submitted for a particular day, the files can be differentiated. The date used in the file name should represent the period on which sales occurred, not the date on which the data file is generated or transmitted.

  N.B. The latest/highest "nn" numbered file will be the data set included in the chart calculations. Typically, this will be the "01" file, as generally only one file would be submitted, except where issues arise.

  E.g. mystore_2012012801.xml is the first file from MyStore containing sale data from 28/01/2012. If MyStore has reason to send an amended file for the corresponding day's sales, then it would normally be named mystore_2012012802.xml. Files that are amended replace any previous sales data received for the sales period.

8. Contacts

All Technical enquiries regarding data submission.	All other enquiries.	Chart Related Enquiries
Dilip Bajaj IT Development 02 8569 1194 specifications@aria.com.au	Stephen Conway ARIA Manager, Information Technology 02 85691192 sconway@aria.com.au	Ian Wallace ARIA Chart Manager 02 8569 1158 iwallace@aria.com.au

9. Test Cases

During file development, before submission of files to be tested by ARIA, samples files should be tested against a number of cases to ensure that the files are being correctly encoded.

The following show a minimum set of tests that need to be performed against a significant number of sample files.

9.1. Validation of Escaping reserved characters

XML v1.0 contains 5 reserved characters. These are described in the following table.

Character	Escaped	Description
&	&amp;	This character is escaped because it forms part of the escaping sequence.
<	&lt;	Escaped due to being part of the opening and closing tags of XML elements.
>	&gt;	Escaped due to being part of the opening and closing tags of XML elements.
'	&apos;	XML allows for single and double quotes to be used to quote strings. This escaped version of the apostrophe is used within text and attribute areas of XML.
"	&quot;	XML allows for single and double quotes to be used to quote strings. This escaped version of the double quotation is used within text and attribute areas of XML.

An important point to note regarding escaping of characters is that if the developer is using a suitable XML DOM library to read and write XML files, along with a suitable "data stream" code object that reads and writes the files, then escaping of characters should not be an issue, since the DOM should perform the escaping automatically when the XML elements and attributes are being written to disk.

To validate that the file is correct, title, track and artist names (as a minimum) should be tested with each of the above values contained within the name component of the title or track.

N.B. This test equally applies to all data items, not just Title or Track names. Any text that is being encoded within the XML file should perform the correct encoding. An XML DOM should generally handle this automatically.

9.2. Encoding of characters that are difficult to type

Due to data feeds that may originate overseas, it is possible that data within the system may exist that is difficult to type, or represent within standard characters that can be typed in an English environment. Some examples of these are shown below.

For some useful background reading on issues arising from incorrectly encoded XML documents, please see: *"The Absolute Minimum Every Software Developer Absolutely, Positively Must Know About Unicode and Character Sets (No Excuses!)"* (http://joelonsoftware.com/articles/Unicode.html)

Example	Escaped	Comments
Michael Bublé	None typically needed	Often, XML files are written using ASCII streams. This is incorrect. XML files should always be written as binary streams (or streams that understand how to encode XML). The problem with the accented e in "Michael Bublé" is that it is often written using the character map of ASCII, which only contains 128 characters. Extended characters of ASCII (i.e. 128-255) are defined differently for different countries. So whilst "Michael Bublé" might work when typed in the US and transmitted to Australia, it may also not, because the PC in the US may have a different code page defined to the PC in Australia. Taking this further, the same applies to UTF-8. UTF-8 has the advantage of being able to encode ANY Unicode character. It provides a mechanism to escape characters being written, and as a result, can encode all characters available in the UNICODE alphabet. Because of this fact, when XML files are written using a suitable DOM and stream, you can be sure that the file will be corrected encoded, and all escaped characters are also correctly present within the file.
Non-European Languages	May be encoded using explicit representations of digits.	In addition to characters that can be typed easily on an English keyboard, there exist characters that do not fall into this category. An example of these sorts of characters would be many Asian and Arabic names. These characters could be encoded in one of 2 ways; natively (since an XML file is binary with encoding such as UTF-8), or escaped using a direct character encoding such as #x20 (space) syntax. Again, if a suitable DOM and Xml compatible file stream is used to write the XML file, then this sort of issue should not really exist.

9.3. Other Items to Test

Whilst a DOM and suitable XML aware stream will ensure that the file is encoded correctly, it is important to note that the output file will only be as good as the data being fed into the DOM.

A developer should also be aware of potential issues in the data types that are used within the code to represent values temporarily as they are reused and written into the DOM.

An example of this would be storing a value read from a SQL database (encoded as NCHAR or NVARCHAR), but subsequently storing that value in a non-UNICODE variable (such as a char). In the process of reading and writing, there may be character coding issues as the data is read as stored.

This issue will vary depending on the technology being used. An example would be the C/C++ language does not natively support UNICODE characters (although defined types may), whilst .NET languages only represent characters using UNICODE.

For this reason, the developer should be aware of any character encodings, and also know about how to use suitable OS or library functions to preserve or map character sets from one "alphabet" to another.

9.4. Testing Tools

Basic tools have been developed and are available from ARIA to verify correctness before initial sending of files. These files are written as .NET 2.0 command line tools, and are distributed using an MSI installer program. The installation includes both a compiled version of the tool and all files needed to build the tool in Visual Studio 2005 or later.

The tools will install documentation and schemata for various file formats used by ARIA. This document details the schemata found in the "Retail Sales" directory found under the installation path once the tool is installed.

In addition, provided the tools are available, Visual Studio 2005 or later contains a XML editor that can validate against a schema. Visual Studio 2005 and later also add IntelliSense editing by using the schema. This is achieved by setting the schemas on the XML document being edited.

Acquiring the Test Tool and Source Code

The installer package for the tools can be requested by sending an email to the Technical contact listed under Section 8 - Contacts above.

The tool set provides the following:

- Executable tool that is useful for validating XML files using an XSD Schema and a Schematron rule validator.
- 2 XSD Files that correspond to common types, and structure of the File. The Type definition file may be extended independently of the main schema in situations where additional enumerated values are accepted.
- 1 Schematron XSL file.
- 1 Sample File
- Source Code for the Tool, and Visual Studio Project to build.

Running the Test Tool

The XMLValidate tool command line options are:

```
Usage: XMLValidate [OPTIONS]+ <XSDFile> <XMLFile> [XMLFile...]
Validates a list of XML Files against an XSD file. Accepts wildcard characters * and ? for file
only.

Options:
  -v, --verbose              Enable verbose output. Specify -v multiple times
                               for more verbose debugging
  -r, --recursive            Recursivly process directories.
  -h, -?, --help             Shows this help.
  -s, --Schematron           Disable Schematron validation (enabled by
                               default)
  -x, --schema               Disable XSD validation (enabled by default)
  -f, --filter=VALUE         Filter schematron output containing filtervalue in diagnostic name
      --svrl                 Output Schematron report as SVRL instead of
                               formatted text
```

Option	Examples	Comments
Help	-h	Shows the usage of the tool.
Verbosity	-v -vv -vvv	Optional Parameter. When not specified, status messages are produced for reporting the number of items valid or invalid, along with the name of any invalid files as detected by the XSD validation or the Schematron validation.
Recursive	-r	Recursively process the directory.
Schematron	-s (enable Schematron. Default) -s- (disable Schematron)	Enables or disables Schematron validation. Attempts Schematron is a matching XSL file is found with the same prefix as the XSD.
Schema	-x (enable XSD Validation. Default) -s- (disable XSD Validation)	Enables or disables XSD Schema validation.
Filter	-f=VALUE	Filter Schematron diagnotics output where the diagnostic contains the name specified by VALUE. Use –svrl option to see errors in SVRL format to determine rule names specified in diagnostic attribute.
SVRL Output	-svrl	If Schematron is enabled, then output Schematron SVRL format instead of the human readable report.
Input	**Examples**	**Comments**
XSD Schema	ARIA-Chart-DSP-Sales.xsd	The root level schema against which to validate XML files. If the XSD Schema imports or includes any additional files, then these are referenced relative to the location of the XSD. For this tool, ARIA-Chart-DSP-Sales.xsd, ARIA-Chart-Type and ARIA-Chart-Common-Types.xsd should reside in the same directory.
XML Filespec	. (current directory, *.xml assumed) *.xml (wildcard * and ? accepted) C:\XMLFiles (A directory, *.xml assumed for xml files) C:\XMLFiles\xxx201005*.xml (Process any xml files with that specified pattern)	The tool will automatically include *.xml files if a directory is specified. Alternatively, you can specify a wildcard or exact filename when validating. If a wildcard is used, then the tool will give a report on how many files succeeded or failed validation. N.B. You can specify multiple items on a single command line.
Schematron XSL	ARIA-Chart-DSP-Sales.xsl	Must have the same name as the XSD Schema. The tool accepts a pre-generated Schematron item only. Schematron ISO reference implementation has been included with the source code and is built automatically as part of the build process. NXSLT2 has also been included for convenience.

Examples: XMLValidate –vvv –s+ ARIA-Chart-DSP-Sales.xsd XXX201007*.xml

Validates files with the Prefix "XXX201007" (i.e. All files for July 2010) and an XML extension in the current directory. Provides most verbose output messages (including Schematron errors), enables Schematron output (which is default anyway) and applies the ARIA-Chart-DSP-Sales.xsd and ARIA-Chart-DSP-Sales.xsl schema and Schematron files (respectively) against any detected files.

9.5. Schematron Validation

Schematron is an additional layer that extends schema validation. Schematron is an ISO standard and expresses assertions using XPath query syntax.

The Schematron ISO reference implementation is available for download for free from http://www.schematron.com and is implemented as a series of XSLT style sheets.

The following lists the Schematron Assertions that are provided as part of the testing tool.

Assertion - General	**Description**
Sales have been reported with an invalid mix of Retailer values.	To facilitate the ability to providedaggregated sale services to different store fronts, a single file may represent the same Retailer (all the Retailer values are the same, or absent within the file), or multiple retailers are specified (no Retailer value is absent within file). An entry is duplicated if both entries have NO retailer, but the same ISRC, or 2 or more entries exist within the same Region or Location with the same Retailer value and ISRC.
Assertion – Track Sales	**Description**
Invalid ISRC	Validation checks are performed against ISRCs
ISRC is duplicated within the Track Sales Element, sales are different. Title and Artist are different to previous entries with the same ISRC per Retailer.	The ISRC should only appear once within the region section of a TrackSale per Retailer. Often, due to SQL coding, and multiple entries, there may be duplicates present. This should be resolved by aggregating all sales and customers, and picking the first track name, artist name combination. The selection of the first name should be consistent, so choosing an order by MIN(ID) should mean that names report consistently across multiple files.
ISRC is duplicated and the sales are the same as a previous entry per Retailer.	This is a more severe version of the above, and separated out so as to be able to find duplicates in any SQL queries (through multiple linking). This helps to ensure that sales values are not being reported more than once per Retailer. The solution suggested above should be applied if applicable.
ISRC is duplicated, sales are different, and the artist is the same per Retailer.	This is a variation on the theme on detecting unusual data. Again the ISRC should never appear duplicated per Retailer. The solution suggested above should be applied if applicable.
ISRC is duplicated, sales are the same, and the artist is different per Retailer.	This is a variation on the theme on detecting unusual data. Again the ISRC should never appear duplicated per Retailer. The solution suggested above should be applied if applicable.
The Number of Customers > Number of Sales	This shouldn't be possible. What we would expect to see is that the Customers <= Sales. Typically it will be Customers = Sales for DSPs. At times, customers purchase multiple copies. We use this to determine if the correct behavior is occurring at the DSP.
Assertion – Track Plays	**Description**
Invalid ISRC	Validation checks are performed against ISRCs
ISRC is duplicated within the TrackPlays Element, plays are different. Title and Artist are different per Retailer.	The ISRC should only appear once within the Region section (Including all TrackPlays under that Region). Often, due to SQL coding, and multiple entries, there may be duplicates present per Retailer. This should be resolved by aggregating all plays and customers, and picking the first track name, artist name combination. The selection of the first name should be consistent, so choosing an order by MIN(ID) should mean that names report consistently across multiple files.
ISRC is duplicated and the plays are the same per Retailer.	This is a more severe version of the above, and separated out so as to be able to find duplicates in any SQL queries (through multiple linking). This helps ensure that sales values are not being reported more than once per Retailer. The solution suggested above should be applied if applicable.
ISRC is duplicated, plays are different, and the artist is the same per Retailer.	This is a variation on the theme on detecting unusual data. Again the ISRC should never appear duplicated per Retailer. The solution suggested above should be applied if applicable.
ISRC is duplicated, plays are the same, and the artist is different per Retailer.	This is a variation on the theme on detecting unusual data. Again the ISRC should never appear duplicated per Retailer. The solution suggested above should be applied if applicable.

The Number of Customers > Number of TotalPlays	This shouldn't be possible. What we would expect to see is that the Customers <= Plays. At times, customers repeat play tracks, so we use this to determine if the correct behavior is occurring at the Streaming Service Provider.
Threshold is not unique within the Region.	Only a single TrackPlays Element with the same Threshold value is allowed to be within the same Region.
Assertion – Bundle Sales	**Description**
Invalid GRID/APN/Catalogue Number	Validation checks are performed against Catalogue Numbers, APNs and GRIDs **N.B. This actually performs the check digit calculations for APN and GRID codes!**
At least an APN, GRID or Catalogue was specified. A minimum of one is required.	If no APN, GRID or catalogue Number was specified, then this is an error.
Duplicated APN, Barcode or Catalogue Number within the Bundle Sale Section per Retailer. (Same Sales or Different Sales)	An APN, GRID or Catalogue Number can appear only on 1 item per Region or Location element per Retailer. If any of the codes are duplicated, then this is an error. This is most likely the same issues that occur in the track sales above. If applicable, then the same solution should be applied.
The Number of Customers > Number of Sales	This shouldn't be possible. What we would expect to see over time is that there are times when the Customers < Sales. Typically it will be Customers = Sales. At times, customers purchase multiple copies, so we use this to determine if the correct behavior is occurring at the DSP.

When Schematron Assertions are triggered, the location within the document where the error occurred is specified. To facilitate easy identification of the error location, corresponding identifier values are presented with the custom assertion error message at the same time.

This information can then be used to locate the error efficiently, and any coding corrections can occur.

10. File Structure

For a detailed view of the schema please refer to the xml schema file provided. In all cases, file correctness should be measured against the XML Schema. Sample testing tools that are referred to within this document are available upon request and should be used to verify that sample files are correct as part of the development process.

The XML schema file is broken up into logical sections. These sections ensure the data is captured in a logical and structured manor.

The sections are as follows:

Provider – The parent element under which all the XML data is stored. Also specifies the Name of the Provider, FromDate and ToDate for which the file represents.

- Region – Specifies the region for which the sales represent. If using a tool like GeoIP, then sales can be mapped from IP addresses to regions. Valid regions can be found in Section 13.1 RegionType below.
  - TrackSales – Element that contains all individual Track Sales (which are identified by ISRC - Applicable to DSP retailers only).
    - TrackSale – Contains individual Track Sale information.
  - TrackPlays – Element that contains all individual Track Plays (which are identified by ISRC and an optional external reference - Applicable to Streaming Service Providers only).
    - TrackPlay – Contains aggregated Track Play information for a specific individual Track, for the parent region specified.
  - BundleSales – Element that contains all Bundle Sales (which are identified by APN, Grid or Catalogue Number).
    - BundleSale – Contains aggregated Bundle Sale information for a specific individual bundle.
- Location – Specifies the name (or code) of the Physical Location for the physical store. Any unique name is valid; however it cannot correspond to the valid region names of the states of Australia, or Australia itself. A suitable list of store codes/mappings will need to be provided to ARIA whenever stores are added or removed (i.e. Closed)
  - TrackSales – Element that contains all individual Track Sales (which are identified by ISRC)
    - TrackSale – Contains aggregated Track Sale information for a specific individual track.
  - BundleSales – Element that contains all Bundle Sales (which are identified by APN, Grid or Catalogue Number).
    - BundleSale – Contains aggregated Bundle Sale information for a specific individual bundle.

11. XSD Schema Section and Field Reference

11.1. Schema Version

All elements within the XML file belong to the schema namespace of "urn:aria-raps:etl-dsp-sales:1.0".

11.2. Provider Section

Comprised of the following element:-

Provider Element – Required (minOccurs=1, maxOccurs=1)

The provider element is the top level element within the XML sales file. The root provider element details the times that cover all the sales within the file as well as the name of the provider that was assigned by ARIA.

This is the root element and it is always required. This element has 3 required attributes.

N.B. When a file is submitted daily, the FromDate and ToDate are the same day.

Element	Attribute	Data Type	Use	Description	Notes
Provider	Name	String	required	Contains the unique provider name as assigned by ARIA. The provider should always use the value assigned by ARIA when transmitting the file.	All invalid names will be rejected.
	FromDate	Date	required	The Date where sales start. This is sales	xs:date format. CCYY-MM-

				from 00:00 Hrs (midnight)	DD
	ToDate	Date	required	The Date where sales finish. This is sales to 23:59:59 Hrs i.e. Before midnight the next day.	If a retail store reports daily then the FromDate and ToDate values should be the same.

11.3. Region Section

Comprised of the following elements:-

Region Element – Optional (minOccurs=0, maxOccurs=unbounded)

This section describes the region where sales/streams occurred. The section contains 1 attribute. If no sales occurred within the Region, then the region element is to be empty, but still reported.

The region element contains all of the sales data for that entire region. Each region has a name or identifier. The region is an optional element (if sales cannot be reported due to errors in transmission of data before being aggregated and sent to ARIA).

N.B. When no sales have occurred to the Region being reported, then an empty region Element should still be included.

If a sales/streams for a Region cannot be reported (e.g. failed communications), then the Region Element for that region should not be present. This indicates that there was an error associated with reporting, as opposed to no actual sales.

Only in situations where customer's specific region cannot be determined, should the region be set to the top level region (Australia) where sales/plays can occur. There should be a single Region element for each region where sales data is being provided. Whenever available, the state or territory should be used as the finest granular level.

If an eTailer is providing sales to multiple regions, then all sales should be reported under the corresponding Region to which the product is shipped.

If a DSP is making a sale within Australia, but cannot determine the regional location of a particular customer, then the sale information should be set to "Australia" for that sale. The provider should attempt to resolve the customer region and report at the finer granular level. This process ensures that there is a suitable fall-back option for sales which are known to be within Australia, but for whatever reason, the State cannot be determined.

If a Streaming Service Provider is performing a track play within Australia, but cannot determine the region of the current stream, then the play information should be set to "Australia" for that sale/play. This process ensures that there is a suitable fall-back option for track plays which are known to be within Australia, but for whatever reason, the State cannot be determined.

N.B. If sales/stream is known to have occurred outside Australia, then these sales should be excluded from the file.

Determining Region based on IP Address

Region information can be looked up using free databases like the GeoLite City from http://www.maxmind.com/app/geolitecity.

It is free for commercial applications and provides enough resolution for ARIA's charting needs. The tool has extensive APIs for multiple platforms and languages, and is very easy to use.

The GeoLite City mapping takes the client IP address, and returns basic regional information about it. This information can be used to construct the regions within the Retails Sales File.

Following is a small example C# snippet of how the GeoLite City library can be used to map an IP Address to its corresponding state or region.

```
using System;
using System.IO;
class Appa0{
  public static void Main(String[] args){
    //open the database
    try {
        // Create the Service
        LookupService ls = new LookupService(String.Format(@"{0}\GeoLiteCity.dat",
Directory.GetCurrentDirectory()), LookupService.GEOIP_STANDARD);

        // Lookup your Addresses in NSW
        // Location l = ls.getLocation("117.120.16.131");
        // Lookup your Addresses in ACT
        Location l = ls.getLocation("202.14.250.0");
```

```
        if (l != null)
        {
          // 1. AU for Australia
          Console.Write("country code " + l.countryCode + "\n");
          //Console.Write("country name " + l.countryName + "\n");
          // 2. Contains "02". YOU CANOT USE THIS BECUASE ACT ALSO IS 02!!!
          //Console.Write("region " + l.region + "\n");
          //Console.Write("city " + l.city + "\n");
          //Console.Write("postal code " + l.postalCode + "\n");
          //Console.Write("latitude " + l.latitude + "\n");
          //Console.Write("longitude " + l.longitude + "\n");
          //Console.Write("metro code " + l.metro_code + "\n");
          //Console.Write("area code " + l.area_code + "\n");
          // 3. Contains "New South Wales"/Australian Capital
          Console.Write("region name " + l.regionName + "\n");
        } else {
          Console.Write("IP Address Not Found\n");
        }
    } catch (System.Exception e) {
      Console.Write("Error" + e.Message + "\n");
    }
  }
}
```

Figure 1. Example code for looking up (State) Region. Uncommented lines are all that is needed.

Element	Attribute	Data Type	Use	Description	Notes
Region	Name	String - Enum	required	An identifying region where the digital sales have occurred.	Please see section 13.1 RegionType below.

11.4. Location Section

Comprised of the following elements:-

Location Element – Optional (minOccurs=0, maxOccurs=unbounded)

This section contains the sales that occurred from a single store of a multi-store organisation. The section contains 1 attribute. If no sales occurred within the location, then the Location element is to be empty. If there are communications issues associated with a particular location (but sales are known to have occurred), then the location should be omitted.

The location element contains all of the sales data for that single physical location. Each location has a name or identifier. The Location is an optional element.

N.B. When a store belongs to a Chain, Department, etc., and no sales occurred for the sales period, then an empty Location Element should still be included.

If a store fails to report (e.g. failed communications), then the Location Element for that store should not be present. This indicates that the store did not report sales as opposed to no actual sales.

There should be a single location element for each physical-location where sales data can be provided. If stores are closed, then the Location element for the corresponding store should be removed. New stores may be added as needed. ARIA will need to be informed of the new store information, so that it can be provisioned within the chart processing system.

Element	Attribute	Data Type	Use	Description	Notes
Location	Name	String	required	An identifying store code or name where the digital sales have occurred. Once selected, for a store, then this value should not change.	As new stores open, new Locations can be added. When stores close, those locations should be removed. ARIA (Chart Manager) will need to be informed of new store codes as they are assigned.

11.5. TrackSales Section

N.B. This Element only applies to DSPs or Streaming Service Providers for Tracks that are sold. Please see the TrackPlays Section below.

The TrackSales element contains a collection of TrackSale elements. A Track Sale is a single digital download sale from a DSP that has been purchased in a financial transaction. An example recording would be a single musical song.

Bonus songs, or tracks that have been given away, or bundled with other tracks **SHOULD NOT** be included as sales. Tracks that are not purchased are NOT eligible for charting.

If there are no Track Sales, then this entire TrackSales Element should not be included within the sales file. There must only be a single TrackSales element per Region or Location.

Comprising of the following elements:

TrackSales Element – Optional (minOccurs=0, maxOccurs=1)

The TrackSales element provides a wrapper for individual TrackSale elements. Track sale information is aggregated sales information.

A TrackSales Element contains at least the following element:

TrackSale Element – Required (minOccurs=1, maxOccurs=unbounded)

This element contains individual sales data for a track being sold.

Element	Attribute	Data Type	Use	Description	Notes
TrackSale	ISRC	String – RegEx - ISRCType	required	The ISRC (International Standard Recording Code) code for the sale. Must meet the regular expression format as specified by the rapstype:ISRCType definition	Please see Section Appendix II – Regular Expression Validations below
	Title	String - nonemptystring	required	The name of the Track Title that was sold. If the ISRC does not match to a title within the ARIA catalogue, then this attribute will assist in an accurate identification. This attribute is required	
	Artist	String - nonemptystring	required	The name of the artist of the track. If the ISRC does not match to a title within the ARIA catalogue, then this attribute will assist in an accurate identification. This attribute is required	
	Customers	Integer - nonNegativeInteger	required	Contains the **DISTINCT** number of customers who purchased this recording. If a customer purchased the same track multiple times, then the customer will only be counted once for this value. This attribute is required.	
	Sales	Integer - nonNegativeInteger	required	The number of times that the recording was sold. This value is for the total number of times that the track was sold, regardless of being purchased multiple times by the same customer or not. N.B. This will at times be a different value to the number of customers, as customers sometimes purchase multiple times.	**ARIA monitors for differences between the customer count and the sales count. The customers should always be <= sales.**

				This is expected behaviour.	
	Retailer	String - nonemptystring	optional	The name of the retailer that is actually selling the music. **N.B.** If a DSP or Streaming Provider services multiple clients, then the Retailer field becomes **Required**. You cannot have an ISRC with no Retailer attribute set, mixed with TrackSales with the Retailer Attribute Set.	This could be different to the provider. The provider may be an aggregator of store fronts. This field represents the retailer.
	RecordCompany	String – nonemptystring	optional	The name of the record company that released the track	This information is used to resolve ambiguity in matching if required.
	RecordLabel	String – nonemptystring	optional	The name of the associated record label	This information is used to resolve ambiguity in matching if required.
	RecordingType	String – nonemptystring	optional	Defines the recording type. The two values that should be used here are: • Audio • Video	Please see Section 13.2 RecordingType below. **Do not deviate from the 2 available values.**
	FormatType	String – nonemptystring	optional	Specifies the type of file format. Examples of file format are: • wma • wmv • mp3 • mov • mpg	Please see section 13.3 FormatType below
	MediumType	String – nonemptystring	optional	The delivery method. The two options to be used here are: • Internet • Mobile	Please see section 13.4 MediumType below. **Do not deviate from the 2 available values.**
	ExternalReference	String – nonemptystring	optional	Contains the unique TrackPlay Identifier that can be used to link a particular item back to the DSP or Streaming Service Provider for playlist generation.	This value contains a unique Track Identifier that can be used to round trip playlist information back to a DSP or Streaming Service Provider. If this field is

					present, then the corresponding ExternalReferenceType field (below) must also be specified. It is optionally provided in addition to ISRC.
	ExternalReferenceType	String – nonemptystring	optional	Contains the name (as assigned by ARIA) for any additional identifying values that are used for round tripping back to the Streaming Service provider.	This value contains the Name of the unique Track Identifier that can be used link playlist information back to a DSP or Streaming Service Provider. The value reported within this field is allocated by ARIA on a Provider by Provider basis. If this field is present, then the corresponding ExternalReference field (above) must also be specified. It is optionally provided in addition to ISRC.

11.6. TrackPlays Section

N.B. When single track play is being streamed by the Streaming Service Provider, Each track that is streamed, must be reported as a TrackPlay. There is no equivalent BundleStream that corresponds to the BundleSale. Each stream is reported individually.

The TrackPlays element contains a collection of TrackPlay elements. A Track Play is a single digital stream played by the customer from a Streaming Service Provider. An example would be a single musical song.

All Track Plays that occur (e.g. Subscription, Free, etc.) should be reported on the corresponding quantity field within the TrackPlay attributes.

If there are no Track Plays, then the entire TrackPlays Element should not be included within the file. There may be multiple Track Play elements per Region, but each TrackPlays element must contain a unique minimum duration of play (see below)

Comprising of the following elements:

TrackPlays Element – Optional (minOccurs=0, maxOccurs=unbounded)

The TrackPlays element provides a wrapper for individual TrackPlay elements. Track play information is aggregated play information per region, per minimum duration of play requirement.

N.B. The Threshold attribute contains the number of seconds that are needed for the tracks to trigger a royalty payment. As multiple agreements may exist between the Streaming Service Provider and The Record Companies/Labels, then is is possible that there will be multiple TrackPlays elements; one for each threshold being reported. Each TrackPlays within the data file must have a unique Threshold value for each Region, and an ISRC must be unique to the entire region. This provides suitable robustness of data checking within the reported data.

Element	Attribute	Data Type	Use	Description	Notes
TrackPlays	Threshold	Integer - nonNegativeInteger	required	Contains the minimum number of play seconds required for inclusion within this TrackPlays Set. Multiple Thresholds may be included within the file. If a TrackPlay qualifies for multiple durations, then the TrackPlay should be reported only a single time, against the Track Plays with the highest duration. Please contact technical support if there are any questions regarding the usage of this attribute.	**If or when the Threshold changes, then the corresponding Threshold value within this attribute would be updated to reflect the newly agreed minimum payment threshold.**

A TrackPlays Element contains at least the following element:

TrackPlay Element – Required (minOccurs=1, maxOccurs=unbounded)

This element contains individual sales data for a track being sold.

Element	Attribute	Data Type	Use	Description	Notes
TrackPlay	ISRC	String – RegEx - ISRCType	required	The ISRC (International Standard Recording Code) code for the sale. Must meet the regular expression format as specified by the rapstype:ISRCType definition	Please see Section Appendix II – Regular Expression Validations below
	Title	String - nonemptystring	required	The name of the Track Title that was played. If the ISRC does not match a trackwithin the ARIA catalogue, then this attribute will assist in an accurate identification. This attribute is required	
	Artist	String - nonemptystring	required	The name of the artist of the track. If the ISRC does not match to a title within the ARIA catalogue, then this attribute will assist in an accurate identification. This attribute is required	
	Customers	Integer - nonNegativeInteger	required	Contains the **DISTINCT** number of customers who played this recording. If a customer played the same track multiple times, then the customer will only be counted once for this reporting period. This attribute is required.	
	TotalPlays	Integer - nonNegativeInteger	required	The number of times that the recording was played. This value is for the total number of times that the track was played, regardless of being	**ARIA monitors for differences between the customer count and the plays count. The**

				purchased, subscribed, ad supported, or otherwise. This value should be the sum of the other 4 Play quantities below.	**aggregated customers should always be<= aggregated track plays.**
	PurchasedPlays	Integer - nonNegativeInteger	required	The number of plays registered in the period against a recording that had been previously purchased by the customer. This value, plus the sum of the three following, should equal the total plays above. If this value is 0, then a 0 should be specified in this field.	
	FreePlays	Integer - nonNegativeInteger	required	The number of times that the recording was played for free (without purchase, subscription, or being ad supported) e.g. Streaming that includes advertisements. This value, plus the sum of the two following and one preceding, should equal the total plays above. If this value is 0, then a 0 should be specified in this field.	
	SubscriptionPlays	Integer - nonNegativeInteger	required	The number of times that the recording was played through a subscription based model (without purchase outright, or being ad supported) e.g. A Premium Serivce. This value, plus the sum of the previous two plays and following play , should equal the total plays above. If this value is 0, then a 0 should be specified in this field.	
	OtherPlays	Integer - nonNegativeInteger	required	The number of times that the recording was played through some other mechanism than the 3 previous plays (i.e. Some sale mechanism not yet existing, or one that doesn't meet the above groupings) This value, plus the sum of the three previous plays, should equal the total	

				plays above. If this value is 0, then a 0 should be specified in this field.	
	Retailer	String - nonemptystring	optional	The name of the retailer that is actually selling or streaming the music. **N.B.** If a Streaming Provider services multiple clients, then the Retailer field becomes **Required**. You cannot have an ISRC with no Retailer attribute set, mixed with TrackSales with the Retailer Attribute Set.	This could be different to the provider. The provider may be an aggregator of store fronts. This field represents the retailer.
	RecordCompany	String – nonemptystring	optional	The name of the record company that released the track	This information is used to resolve ambiguity in matching if required.
	RecordLabel	String – nonemptystring	optional	The name of the associated record label	This information is used to resolve ambiguity in matching if required.
	RecordingType	String – nonemptystring	optional	Defines the recording type. The two values that should be used here are: • Audio • Video	Please see Section 13.2 RecordingType below. **Do not deviate from the 2 available values.**
	FormatType	String – nonemptystring	optional	Specifies the type of file format. Examples of file format are: • wma • wmv • mp3 • mov • mpg	Please see section 13.3 FormatType below
	MediumType	String – nonemptystring	optional	The delivery method. The two options to be used here are: • Internet • Mobile	Please see section 13.4 MediumType below. **Do not deviate from the 2 available values.**
	ExternalReference	String – nonemptystring	optional	Contains the unique TrackPlay Identifier that can be used to round trip a particular item back to the Streaming Service Provider for playlist generation.	This value contains a unique TrackPlay Identifier that can be used to round trip playlist information back to a Streaming Service Provider.

					If this field is present, then the corresponding ExternalReferenceType field below must also be specified. It is optionally provided in addition to ISRC.
	ExternalReferenceType	String – nonemptystring	optional	Contains the name (as assigned by ARIA) for any additional identifying values that are used for round tripping back to the Streaming Service provider.	This value contains the Name of unique TrackPlay Identifier that can be used to round trip playlist information back to a Streaming Service Provider. The value reported within this field is allocated by ARIA on a Provider by Provider basis. If this field is present, then the corresponding ExternalReference field above must also be specified. It is optionally provided in addition to ISRC.

11.7. BundleSales Section

N.B. This Element does not apply to Streaming Service Providers. Please see the TrackPlays Section above.

The release sales element contains a collection of BundleSale elements. A bundle digital download is a sale that contains a collection of songs/recordings. The release must also have been purchased in a financial transaction. An example release would be a download of an entire album.

Physical retailers should report all sales as BundleSales (It is assumed that physical stores do not sell individual tracks. "Physical Singles" are not individual tracks, and should be reported under the Bundles element).

Bonus songs, releases, or track have been given away, or bundled with other releases, songs or tracks **SHOULD NOT** be included as sales. Releases that are not purchased are NOT eligible for charting.

If there are no Bundle Sales, then this entire element should not be included within the sales file. There should only be a single BundleSales element per region.

Comprising of the following elements:

BundleSales Element – Optional (minOccurs=0, maxOccurs=1)

The Bundle sale element contains the aggregated sales information for the release for the region.

The BundleSales element provides a wrapper for individual BundleSale elements. If there are no BundleSales, then this element (and child elements) can be omitted.

A BundleSales Element contains at least one of the following element:

BundleSale Element – Required (minOccurs=1, maxOccurs=unbounded)

This element contains individual sales data for bundles (multiple tracks) being sold.

Element	Attribute	Data Type	Use	Description	Notes
BundleSale	CatalogueNumber	String – nonemptystring	optional	Contains the catalogue number for the bundle if available.	**N.B. At least 1 GRid, CatalogueNumber or APN must be specified.**
	APN	String – RegEx - APNType	Preferred	Contains a valid APN/Barcode number. The APN must pass a barcode validation check to be considered. If the bundle has been assigned is own APN/UPC code, then report that code. If the bundle has not been assigned it's own APN/UPC, and the bundle is the electronic equivalent of a physical Album/Single, then it is also permissible to report the physical APN code in this field also.	**N.B. At least 1 GRid, CatalogueNumber or APN must be specified.** Appendix II – Regular Expression Validations below.
	GRid	String – RegEx - GRIDType	optional	Contains a valid GRid (Global Release Identifier) code. The GRid should pass the GRid validation function.	**N.B. At least 1 GRid, CatalogueNumber or APN must be specified.** Please see Appendix II – Regular Expression Validations below.
	Title	String - nonemptystring	required	The name of the title that was sold. If other identifier values do not match within the ARIA catalogue, then this attribute will assist in an accurate identification.	
	Artist	String - nonemptystring	required	The name of the artist of the bundle. If other identifier values do not match within the ARIA catalogue, then this attribute will assist in an accurate identification.	
	Customers	Integer - nonNegativeInteger	required	Contains the **DISTINCT** number of customers who purchased this release during this period. If a customer purchased the same release multiple times, then the customer will only be counted once for this value.	
	Sales	Integer - nonNegativeInteger	required	The number of times that the release was sold. This value is for the total	**ARIA monitors differences between the**

				number of times that the release was sold, regardless of whether it was purchased multiple times by the same customer. The number of sales of the bundle. N.B. This will at times be a different value to the number of customers, as customers at times purchase multiple times. This is expected behaviour.	**customer count and the sales count. The customers should always be <= sales.**
	Retailer	String - nonemptystring	optional	The name of the retailer that is actually selling the music. **N.B.** If a Retailer services multiple clients, then the Retailer field becomes **Required**. You cannot have a bundle sale with no Retailer attribute set, mixed with BundleSales with the Retailer Attribute Set.	This may be different to the provider. The provider may be an aggregator of store fronts. This field represents the retailer.
	RecordCompany	String – nonemptystring	optional	The name of the record company that released the bundle.	This information is used to resolve ambiguity in matching if required.
	RecordLabel	String – nonemptystring	optional	The name of the associated record label	This information is used to resolve ambiguity in matching if required.
	RecordingType	String – nonemptystring	optional	Defines the recording type. The two values that should be used here are: • Audio • Video	Please see Section 13.2 RecordingType below **Do not deviate from the 2 available values.**
	FormatType	String – nonemptystring	optional	Specifies the type of file format. Examples of file format are: • wma • wmv • mp3 • mov • mpg Applicable to DSP sales only.	Please see section 13.3 FormatType below N.B. This is not an exhaustive list. If other Formats are available, then those names can be used. The field is a generic string attribute.
	MediumType	String – nonemptystring	optional	Specifies the delivery method. The two options to be used here are: • Internet • Mobile	Please see section 13.4 MediumType below **Do not deviate**

				Applicable to DSP sales only.	**from the 2 available values.**
	ExternalReference	String – nonemptystring	optional	Contains the unique BundleSale Identifier that can be used to round trip a particular item back to the DSPs/Streaming Service Provider for playlist generation.	This value contains a unique BundleSale Identifier that can be used to round trip playlist information back to a DSPs/Streaming Service Provider. If this field is present, then the corresponding ExternalReferenceType field below must also be specified. It is provided in addition to an APN/GRid or Catalogue Number.
	ExternalReference Type	String – nonemptystring	optional	Contains the name (as assigned by ARIA) for any additional identifying values that are used for round tripping back to the DSPs/Streaming Service provider.	This value contains the Name of unique TrackPlay Identifier that can be used to round trip playlist information back to a Streaming Service Provider. The value reported within this field is allocated by ARIA on a Provider by Provider basis. If this field is present, then the corresponding ExternalReference field above must also be specified. It is provided in addition to an APN/GRid or Catalogue Number.

12. Data Protocols

12.1. General

Case

Combination of Upper & Lower Case. To be entered as you would type a document normally or as specified within this document. N.B. XML attribute and element names are case sensitive.

Special Characters

Should be used as supplied with the exception of diacritic accents above/below a letter (E.g. grave accents, umlauts) which should not be used unless they are encoded correctly in the UTF-8 character set.

N.B. Implementation of XML file generation using a suitable XML DOM and matching file stream should ensure that encoding of special characters is not an issue.

Punctuation

Should be included, but needs to be escaped as per XML encoding standards.

13. Appendix I - Pre-Defined Values

This section will outline the pre-defined values for types that can be specified in the Enum string fields. The Enum fields are implemented within the schema using a restriction on strings.

In the event where there is a predefined value on the transmitting system that doesn't appear on these pre-defined lists below, then the organisation concerned will need to get in touch with ARIA Technical Support. ARIA staff will then add the item to the processing system and update the schema and re-issue the schema file.

Items that are requested to be added to the schema must make sense in the greater music community due to the shared nature of these specifications. In situations where a field is uncommon or obscure, it makes more sense to map the field type to a more common variant.

All values within sub sections below are case sensitive.

13.1. RegionType

Following is the complete list of valid Regions (and descriptions).

Region	Description
Australia	Australia
AUSTRALIA	Synonym for above (Compatibility)
ACT	Australian Capital Territory
NSW	New South Wales
NT	Northern Territory
QLD	Queensland
SA	South Australia
TAS	Tasmania
VIC	Victoria
WA	Western Australia

13.2. RecordingType

Following is a list of the currently excepted RecordingType values. **Do not deviate from the available options**

- Audio
- Video

13.3. FormatType

N.B. FormatType values only apply to DSPs

The following are some suggestions for values of FormatType. This field is freeform, and may be extended without consultation to contain other formats as they become available.

- wma
- wmv
- mp3
- mov
- mpg

13.4. MediumType

N.B. FormatType values only apply to DSPs

Following is a list of the currently excepted MediumType values. **Do not deviate from the available options.**

- Internet
- Mobile

14. Appendix II – Regular Expression Validations

Following is a list of the regular expressions that must be met for different fields listed above. These regular expressions are enforced within the Schema.

N.B. All fields within the XML file should be trimmed of leading and trailing white space.

Field Type	Regular Expression	Description
Date	^[0-9]{4}-[0-9]{2}-[0-9]{2}$	Must be in the format YYYY-MM-DD. E.g 2010-02-15
GRiD	^A1[-]?[A-Z0-9]{5}[-]?[A-Z0-9]{10}[-]?[A-Z0-9]{1}$	Formatted GRiD code. Optional to include – characters. In addition to the regular expression, the GRiD also must pass the GRiD validation function.. A GRiD must start with "A1", followed by an optional hyphen, 5 alphanumeric digits, followed by an optional hyphen, 10 alphanumeric digits, followed by an optional hyphen, 1 alpha character. **N.B. It is preferred that hyphens not be transmitted as they do not follow recommendations for transmission and storage.**
APN	^[0-9]{14}$	14 digits in length, (must be padded with leading 0 characters when shorter than 14 digits in length). In addition to the regular expressions, APN codes are also checked using the standard barcode checksum algorithm.
ISRC	^[A-Za-z]{2}[-]?[0-9A-Za-z]{3}[-]?[0-9]{2}[-]?[0-9]{5}$	An ISRC must not have any trailing space, and must be formatted as 2 letters, optional hyphen , 3 alpha numeric, optional hyphen, 2 digits, optional hyphen, 5 digits. **N.B. It is preferred that hyphens not be transmitted as they do not follow IFPI recommendations for transmission and storage.**