DDEX Standard

Recording Information Notification (RIN)

(Version 1.1)

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1 Introduction

This standard was developed by the member organisations of the Digital Data Exchange, LLC (DDEX) and provides a file format that gives a uniform mechanism to enable the capture, storage and communication of "recording information", i.e. information about recordings between studios – including any places where music is being recorded, mixed or mastered – and companies that make use of such information.

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2 Scope

2.1 Introduction

The process of creating a recording is complex and iterative, with many production stages between capturing sound and releasing a finished recording. Every stage in this cycle can lead to new audio creations, be they a new composition, a new guitar track, a new mix, etc. In each of these "studio events", there are a number of metadata elements that may be worth capturing. Who performed which musical work? Who played which instrument? When and where was this performance recorded? Who was the sound engineer? Which recording components (or, in studio parlance: tracks) were used to create a specific mix? And which sections of these recording components have been used? These pieces of information are important for several reasons, including to attribute credits and royalties to the correct people and because the richer the data provided to retailers, the better they can market the products - which can potentially increase the audience and, thus, the revenue generated.

The Recording Information Notification is a metadata file format that can capture and communicate such data. RIN is designed for machine-to-machine communication. It is not designed to be read by humans. Interpretation of RIN XML files will be performed by many front-end processor systems, including digital audio workstations and metadata collection applications.

2.2 Organisation of the Document

This standard has six clauses and one annex. Clauses 1-4 provide an introduction the scope as well as normative references and definitions that form part of this standard. Clauses 5 and 5 then defines the details of the RIN format before Annex A provides the allowed values used in RIN.

2.3 Release Notes

Version 1.1 of the RIN standard contains minor changes from Version 1.0; they include:

- Ability to communicate how artist information should be displayed as part of a title;
- Ability to communicate display credits;
- A file-naming convention;
- Correction of errors in artists role codes; and
- A series of smaller changes to closer align the RIN file format with messages defined in other DDEX Standards, particularly ERN and MLC.

3 Normative References

The following normative documents contain provisions, which through reference in this text constitute provisions of this Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the latest version applies.

- DDEX Data Dictionary Standard. Latest Version
- DDEX Party Identifier (DPID) Standard. Latest Version
- IETF RfC 5646, Tags for Identifying Languages. Latest Version.
- IETF RfC 3275. XML-Signature Syntax and Processing
- ISO 639-1988, Code for the representation of the names of languages
- ISO 3166-1:1997 Codes for the representation of names of countries and their sub-divisions – Part 1: Country codes
- ISO 3901:2001, Information and documentation – International Standard Recording Code (ISRC)
- ISO 8601:2004, Data elements and interchange formats – Information interchange – Representation of dates and times[1]
- W3C. XML Schema Part 1: Structures. Second Edition. 2004
- W3C. XML Schema Part 2: Datatypes. Second Edition. 2004

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[1] Information on ISO 8601 can be found in Annex D of Part 2 (Datatypes Second Edition) of the XML Schema standard (http://www.w3.org/TR/xmlschema-2/#isoformats).

4 Terms and Abbreviations

4.1 Introduction

When implementing this standard, it should be borne in mind that the definitions of some terms may well differ from the way in which they are defined and used in different parts of the music industry and/or as they may be defined in different legislations around the world. One such example is "producer" which is sometimes defined to be the company that initiates the production of a sound recording (usually a record company) and sometimes defined to be the individual person that directs the recording process. To avoid this issue, DDEX is using the term " Initial Producer" for the former meaning and "Studio Producer" for the latter (see Clause 4.2).

Implementers/users of this standard must make sure that they map the terms used in their application/domain to the appropriate term defined herein to ensure consistent semantic interoperability.

4.2 Terms and Definitions

Digital Audio Workstation (DAW)

A Digital Audio Workstation (DAW) is an electronic device or computer software application for recording, editing and producing audio files such as songs, musical pieces, human speech or sound effects.

Data Carrier

The physical entity created during the recording project. Data Carriers can be linked to more than one Project, Session, Sound Recording, or set of Recording Components.

Element

A unique permutation of the Sound Recording. Elements can contain the original Recording Components ("Multitrack Master"), sub mixes of these components into common themes (Stems), or single mix files created from the combining of recording components (Master Mix, Instrumental Mix). A specific SKU or UPC can be set for each element.

File

A Resource stored as a single unit, normally in a file system on disk or magnetic tape. (From the DDEX Data Dictionary)

Initial Producer

A Party that initiates the creation of a Sound Recording or Resource and is sometimes referred to as a commissioning rights holder. An Initial Producer may be a person or an Organisation and the term contrasts with the role of a Studio Producer.

Studio Producer

A Party who directs, and has overall creative and technical oversight of, the entire recording project and the individual recording sessions that are a part of the project. The Producer participates in and/or supervises the recording session and works directly with the Artist, Musicians and Engineers. The Studio Producer makes creative, technical and aesthetic decisions that realize the goals of both the Artist and the Sound Recording Copyright Holder in the creation of musical content. The Studio Producer may perform direct Performances, choose final takes or versions, and oversees the selection of songs, Musicians, singers, Arrangers, studios, etc. The Studio Producer in collaboration with the artist, assigns credits to Performers and technical personnel, and is responsible for supplying accurate crediting information to the record label or media company as official documentation. Other duties of the Studio Producer may include, but are not limited to, overseeing other staffing needs, keeping budgets and schedules, adhering to deadlines, supervising mastering and overall quality control.

Note: A Studio Producer is a person and thus may contrast with the role of an Initial Producer.

Project

A Project combines together many Sound Recordings, Recording Components, Sessions, Musical Works and Data Carriers. A project might be a 12 song album, or it might simply be a remix. A project could be a compilation of older recordings from different projects. And a project

could also be a "Various Artists" type of compilation.

Recording Component

The combining of individual files into a common groupings within a multitrack recording. Examples include "Snare Drum", "Lead Vocal Comp", "Lead Guitar" or "Percussion"

RIN File

An XML file created in accordance with this standard.

RIN Processor

A device or computer software application that ingests, creates or processes RIN Files.

Session

The location where musical works are recorded. During the creation of a Sound Recording, sessions may take place in many locations, including the recording studio as well as live venues, remote locations and the like.

4.3 Abbreviations

AMEP	Automated Message Exchange Protocol
ACA	Appointed Certification Agency
AVS	Allowed Value Set
BP	Business Profile
CISAC	Confédération internationale des sociétés d'auteurs et compositeurs, the International Confederation of Societies of Authors and Composers (see cisac.org)
CA	Certification Agency
CT	Conformance Tester
DAW	Digital Audio Workstation
DDEX	Digital Data Exchange
DSIG	Digital Signature
DSP	Digital Service Provider (incudes Mobile Service Providers)
DSR	Digital Sales Reporting
ERN	Electronic Release Notification
FTP	File Transfer Protocol (FTP specifically includes SFTP)
GRid	Global Release Identifier
HTTP	Hypertext Transport Protocol (HTTP specifically includes HTTPS)
HTTPS	Secure Hypertext Transport Protocol
IEC	International Electrotechnical Commission (see iec.ch)
ISO	International Organisation for Standardisation (see iso.org)
MIME	Multipurpose Internet Mail Extensions
MLC	Music Licensing Company
MWL	Musical Works Licensing
MWN	Musical Works Notification
MRBV	Multi-Record-Block Variant

PCA	Private Certification Agency
PDF	Portable Document Format
REST	REpresentational State Transfer
RIN	Recording Information Notification
SFTP	Secure FTP
SRBV	Single-Record-Block Variant
TIS	Territory Information System (a CISAC Standard)
TLS	Transport Layer Security
UGC	User-generated content
URL	Uniform Resource Locator
XML	eXtensible Markup Language
XSD	XML Schema Definition
W3C	World Wide Web Consortium (see w3c.org)
WS	Web Service

5 Technical Details of the RIN File Format

5.1 Overview

A RIN File is an XML file that validates against the XML Schema Definition file for one of the profiles defined in this standard. RIN Files are used to communicate recording information from one device or application to another device or application. This communication may be within an organisation or between different organisations.

5.2 RIN Profiles

The RIN format is provided in two profiles:

1. The **Full RIN Profile** provides the full feature set to communicate recording information.

2. A second profile defines a data set that focuses on essential information such as who contributed to a recording and what role did that person play. This profile is referred to as the **Minimal RIN Profile**.

5.3 Namespace

The full namespace for the XML Schema documents for this Standard are as follows:

Namespace for the Minimal RIN Profile
`http://ddex.net/xml/m-rin/11`

Namespace for the Full RIN Profile
`http://ddex.net/xml/f-rin/11`

All messages and file formats developed within DDEX are based upon a common set of elements and their definitions. These are contained in the DDEX Data Dictionary available from ddex.net.

5.4 Allowed-value Sets

All messages defined in this standard make intensive use of allowed-value sets. These allowed value sets are shared between all DDEX standards and DDEX provides a XML Schema Definition file for all of these allowed values. These values are also contained in the DDEX Data Dictionary available from ddex.net.

The full namespace for the XML Schema document for the allowed-value sets is

```
http://ddex.net/xml/avs/avs
```

DDEX may regularly extend this list of allowed-value sets. Any such extensions to this list are issued on a date later than the date on which this Standard is issued form part of this Standard. Thus the list of allowed-value sets provided Annex A contains the list of allowed-value sets valid on the data of issuance of this Standard.

5.5 Proprietary Identfiers

Identifiers are essential for accurate data exchange. Therefore, RIN supports a range of identifiers for different entities. Examples include ISRCs for sound recordings, ISWCs for musical works and ISNIs for parties such as writers, recording artists and sound engineers.

However, many such entities are also identified by proprietary identifiers. These identifiers can also be included in a RIN file and are expressed in two parts: the organisation that is responsible for allocating the identifier (the identifier's "namespace") and the identifier itself.

If a company that has allocated a proprietary identifier has been allocated a DDEX Party ID (DPID), and if the RIN Processor adding this proprietary identifier into the RIN File knows of this DPID, the namespace shall be the DPID.

Otherwise the RIN Processor shall be using a mnemonically sensible string to identify the company allocating a proprietary identifier. Below are two examples of this:

```
<ProprietaryId Namespace="PADPIDA1234567890">PropId</ProprietaryId>
<ProprietaryId Namespace="CompanyX">PropId</ProprietaryId>
```

5.6 Digitally Signing RIN files

5.6.1 Overview

Determining the authenticity of a RIN File – and thus being able to judge the reliability of the contained data – is a crucial element of handling RIN Files. This can be achieved by identifying the device or software application that was used to generate a RIN File, the user that triggered the generation of the RIN File, on whose behalf the RIN File was generated, and by digitally signing a RIN File.

The process of signing a RIN File is in accordance with IETF RfC 3275 (XML-Signature Syntax and Processing):

Before signing a RIN File, the RIN Processor needs to be in possession of the private key of the signing entity. Before evaluating the signature of a RIN File, the RIN Processor needs to be in possession of the public key of the signing entity. The process by which these keys are generated and distributed/shared is out of scope for this standard.

5.6.2 Signing

The process of digitally signing a RIN File is as follows:

1. The RIN Processor to generate the RIN File shall assemble the RIN File – with the exception of the Signature composite in the `MessageHeader` – and, typically, save it to a permanent storage medium;
2. The RIN Processor shall calculate a hash sum over the saved RIN File;
3. This hash sum shall then be encrypted using the private key of the signing entity;
4. The Signature composite in the `MessageHeader` shall then be compiled and be added into the RIN File, which then can be stored and shared.

5.6.3 Evaluating a Signature

The process of digitally evaluating a signed RIN File is as follows:

1. The RIN Processor to evaluate the signature of a RIN File shall open the RIN File and remove the Signature composite from the `MessageHeader`;
2. The RIN Processor shall then decrypt the Signature element from the Signature composite using the public key of the entity listed as being the generator of the RIN File, using the algorithm indicated in the Signature composite from the `MessageHeader`;
3. The RIN Processor shall also generate a hash sum of the RIN File without the Signature composite from the `MessageHeader`, using the algorithm indicated in the Signature composite from the `MessageHeader`;
4. The RIN Processor shall then compare the decrypted signature with the calculated hash sum:
   a. If they are the same, the entity listed as being the generator of the RIN File can be deemed to have generated the RIN File
   b. If they are not the same, the entity listed as being the generator of the RIN File cannot be deemed to have generated the RIN File

5.7 Linking RIN files and DAW Audio Files

There is no formal link between a RIN File and the files saved by Digital Audio Workstations.

Note: DDEX expects that such a link may be added in the future. For the time being, however, it is recommended that users of RIN Processors and DAWs use sensible file naming convention to keep their RIN Files and DAW projects aligned.

5.8 RIN Filename (informative)

RIN Files are XML files and, therefore can be opened with any XML editor. However, as opening a RIN File with a generic XML editor is of limited use to most users of RIN Files who would instead prefer that RIN File are opened with a RIN Processor.

To allow computers to automatically launch such a RIN Processor when a user wants to access a RIN File, it is recommended that RIN File carry the file ending `.rin` and not `.xml`.

6 Message Definition

6.1 Introduction

This Clause contains the file formats defined in the Recording Information Notification Standard in a tabular form. The full technical specification includes the XML Schema files accompanying this standard.

The Standard comprises two file formats of the `RecordingInformationNotification`, one in each profile defined herein.

The hierarchical structure of the format is provided through indentation. On the File Header for example, the `PartyName` is a child of `FileCreator`. Thus, a `FileCreator` contains a `PartyName` (plus a `PartyId`).

Looking at the `FileHeader` it shows that exactly one `FileID` needs to be provided. This is shown in the cardinality column with a "1". Other possible cardinality entries are: "0-1" (for none or one), "1-n" (for one or more) or "0-n" (for none to multiple). Elements shown in italics are represented in the XML Schema as XML Attributes. In several places within the messages, the Message Sender may need to make a choice between using two or more XML elements. These instances are marked in the tabular representation of the messages below with the keyword `XmlChoice`. This keyword is not part of the messages; instead exactly one of the "branches" below the `XmlChoice` keyword has to be used.

In addition to the tabular description of the message, which should always be read in conjunction with the XML Schema files, additional conformance rules, which go beyond XML Schema validation, are provided where necessary. The general conformance rules for all messages within this Standard are provided in Clause 6.2.

Specific business processes between sender and recipient may require even further conformance rules. These are, however, not part of the standard and will need to be agreed between business partners. Rules relating to the authority of business partners to unilaterally change the standard in this way are set out in the current version of the Procedures for the Development and Maintenance of DDEX Standards which forms part of the overall governance of the DDEX Standards.

The syntax as well as the semantics of the various elements in the messages is provided in this Clause. They are taken from the current version of the DDEX Data Dictionary as defined through, and maintained in accordance with, the DDEX Data Dictionary Standard.

6.2 General Conformance Rules

6.2.1 Schema Validation

A message is conformant to this specification only when it validates against the set of XML Schema files provided.

6.2.2 Allowed Value Lists

The allowed values are listed, defined and provided through the DDEX Data Dictionary Standard in accordance with its latest version. Other values are not possible unless by using the mechanism described below:

This Standard does not explicitly list allowed values. The XML Schema files contain the allowed values at the time of writing of this Standard (see Annex A). Some of the allowed value sets contain a provision to either use a User Defined Value instead of a DDEX-defined value (in that case the `MessageSender` has to select the value "UserDefined" from the AVS and provide its own value in the XML attribute "`UserDefinedValue`") or to augment a DDEX-defined value (in that case the `MessageSender` may not select the value "UserDefined" from the AVS but shall provide its additional information in the XML attribute "`UserDefinedValue`"). In either case the `Namespace` attribute shall be used to indicate where the `UserDefinedValue` is defined and maintained.

6.2.3 Allowed Values for `Namespace` Attributes

The `Namespace` attributes can be used to allow message parties to use proprietary value lists.

The allowed value for the `Namespace` attribute which is recommended to be used is the DDEX Party Identifier of the party controlling the proprietary allowed value, as defined in, and administered in accordance with the latest version of the DDEX Party ID Standard.

6.2.4 Indicating Unknown Values

When the sender of a message is required to provide a data element but cannot do so, the following values shall be entered:

- In fields of type xs:string: "#unknown#" ;
- In fields of type xd:date: "9999-01-01";
- In fields of type xs:datetime: "9999-01-01T99:01:01"; and
- In fields of type xs:duration: "PT99H01M01S".

The circumstances under which such behaviour is permissible may be limited in the specific business relationship between message sender and message recipient.

6.2.5 Character Coding

All messages shall be sent in UTF-8.

6.3 Syntax and Semantics of Messages

The tabular rendering of the messages is provided in a separate document. See the blue box here.

Annex A (normative) Allowed-Value Sets

Table 2 lists all allowed value sets with their allowed values and definitions that are valid within this standard. Note, the allowed-value sets are maintained outside of this Standard and DDEX may add to the list below.

Table 2 — Allowed-Value-Sets used in the Electronic Release Notification Message Suite Standard

> The Table of AVSs is provided in a separate document. See the blue box here.