

# Fingerprint Metadata

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## 1 INTRODUCTION

Studios provide metadata to fingerprint vendors as part of the fingerprinting process. Vendors can then use this information for displays and reports.

MovieLabs has reviewed metadata from several sources. MovieLabs has developed this specification to serve as a single format for the delivery of descriptive metadata from studios to fingerprinting companies. This complements and is compatible with other MovieLabs specifications such as Content Rules and Rights (CRR) ([www.movie labs.com/CRR](http://www.movie labs.com/CRR)).

MovieLabs has developed a Common Metadata document and XML schema that defines metadata exchange data elements. Fingerprint metadata leverages off the more general Common Metadata ([www.movie labs.com/md](http://www.movie labs.com/md)).

### 1.1 Document Organization

This document is organized as follows:

1. Introduction—Provides background, scope and conventions
2. [TBS]

### 1.2 Document Notation and Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119]. That is:

- “MUST”, “REQUIRED” or “SHALL”, mean that the definition is an absolute requirement of the specification.
- “MUST NOT” or “SHALL NOT” means that the definition is an absolute prohibition of the specification.
- “SHOULD” or “RECOMMENDED” mean that there may be valid reasons to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.
- “SHOULD NOT” or “NOT RECOMMENDED” mean that there may be valid reasons when the particular behavior is acceptable, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.
- “MAY” or “OPTIONAL” mean the item is truly optional, however a preferred implementation may be specified for OPTIONAL features to improve interoperability.

Terms defined to have a specific meaning within this specification will be capitalized, e.g. “Track”, and should be interpreted with their general meaning if not capitalized.

Normative key words are written in all caps, e.g. “SHALL”

## 1.2.1 XML Conventions

XML is used extensively in this document to describe data. It does not necessarily imply that actual data exchanged will be in XML. For example, JSON may be used equivalently.

This document uses tables to define XML structure. These tables may combine multiple elements and attributes in a single table. Although this does not align with schema structure, it is much more readable and hence easier to review and to implement.

Although the tables are less exact than XSD, the tables should not conflict with the schema. Such contradictions should be noted as errors and corrected.

### 1.2.1.1 Naming Conventions

This section describes naming conventions for Common Metadata XML attributes, element and other named entities. The conventions are as follows:

- Names use initial caps, as in InitialCaps.
- Elements begin with a capital letter, as in InitialCapitalElement.
- Attributes begin with a lowercase letter, as in InitialLowercaseAttribute.
- XML structures are formatted as Courier New, such as `md:rightstoken`
- Names of both simple and complex types are followed with “-type”

### 1.2.1.2 Structure of Element Table

Each section begins with an information introduction. For example, “The Bin Element describes the unique case information assigned to the notice.”

This is followed by a table with the following structure.

The headings are

- Element—the name of the element.
- Attribute—the name of the attribute
- Definition—a descriptive definition. The definition may define conditions of usage or other constraints.
- Value—the format of the attribute or element. Value may be an XML type (e.g., “string”) or a reference to another element description (e.g., “See Bar Element”). Annotations for limits or enumerations may be included (e.g., “int [0..100]” to indicate an XML `xs:int` type with an accepted range from 1 to 100 inclusively)
- Card—cardinality of the element. If blank, then it is 1. Other typical values are 0..1 (optional), 1..n and 0..n.

The 1<sup>st</sup> header of the table is the element being defined here. This is followed by attributes of this element. Then it is followed by child elements. All child elements (i.e., those that are direct descendents) are included in the table. Simple child elements may be full defined here (e.g., “Title”, “”, “Title of work”, “string”), or described fully elsewhere (“POC”, “”,

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“Person to contact in case there is a problem”, “See POC Element”). In this example, if POC was to be defined by a complex type would be handled defined in place (“POC”, ““, “Person to contact in case there is a problem”, “POC Complex Type”).

Optional elements and attributes are shown in italics.

Following the table is as much normative explanation as appropriate to fully define the element.

Examples and other informative descriptive text may follow.

### 1.3 Common Metadata

Common Metadata is defined MovieLabs report TR-META-CM, currently in draft and available upon request. The current structures are pretty well established, but the documenting is rapidly being expanded and some corrections are being made.

Common Metadata is defined to be a collection of commonly used structures that can be incorporated into other specifications. A fingerprint vendor metadata spec will be developed specifically for this application. Common Metadata contains means of communicating descriptive information, data about encoded tracks, packaging information and business rules. Only those portions that apply will be included.

### 1.4 Normative References

*Common Metadata, ‘md’ Namespace, Motion Picture Laboratories, Technical Report, TR-META-MD, ...*

*Common Metadata ‘md’ namespace schema: <http://www.movie labs.com/md/md.xsd>*

### 1.5 Informative References

CRR

### 1.6 Terms, Definitions and Acronyms

[TBS]

## 2 COMMON METADATA DERIVED TYPES

MovieLabs' Common Metadata includes elements that cover typical definitions of media, particularly movies and television. Basic Metadata includes descriptions such as title and artists. It describes information about the work independent of encoding. Physical metadata describes information about individual encoded audio, video and subtitle streams, and other media included. Package and File Metadata describes one possible packaging scenario and ties in other metadata types. Ratings and Parental Control information is described.

Common Metadata is designed to provide definitions to be inserted into other metadata systems.

The following type is derived directly from Common Metadata:

Fingerprint (fpmd) Type	Common Metadata (md) Type
fpmd:BasicMetadata-type	md:BasicMetadata-type

### 2.1 Fingerprint Metadata-specific Usage Rules

[TBS]

## 3 CONTENT RULES AND RIGHTS (CRR) DERIVED TYPES

MovieLabs' Content Rules and Rights (CRR), found at [www.movielabs.com/CRR](http://www.movielabs.com/CRR), describes actions to be taken upon detection. This is an optional portion of fingerprint metadata.

The following type is identical to the CRR RuleList element, except that it is defined as a type.

Element	Attribute	Definition	Value
CRRRuleList-type	version	Current version is 1	Integer
	revision	Current revision is 1	Integer
RuleListName		Name for this set of rules; intended for incorporation into human-readable logs and statistical analysis	String
	version	Optional version number for this list of rules; no default	Integer
	revision	Optional revision number for this list of rules; no default	Integer
RuleListCreationTime		Creation time for this RuleList	XML DateTime
RuleListID		Identifier for this RuleList internal to the supplier of the list. It is intended to be	String

		something that is easier to use in automated handling of notifications and ingestion status than the RuleListName	
<i>RuleListValidDuration</i>		Period for which this RuleList applies. If not present, the RuleList is always valid.	See TimeInterval element
<i>SiteConcerned</i>		Informational field describing the site for which the rules are intended (if known.)	URI
<i>Owner</i>		Information about the content owner.	crr:Owner
<i>AssetList</i>		Contains one or more assets to which the Rules apply. The file is valid if this is not present. See the Templates section.	crr:Asset
<i>Rule</i>		One or more individual Rule elements.  If no rules are specified, no actions are taken on detection. This makes it possible to accept original assets that don't require detection rules without requiring a different ingestion path – everything has a rules file.	crr:Rule

#### 4 FINGERPRINT-UNIQUE TYPES