



TERBINE METADATA SPECIFICATION

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FORWARD

This forward is not part of the Terbine Metadata Specification; it is included for information only.

ABOUT THIS SPECIFICATION

This specification is the “*private draft*” version of the Terbine Metadata Specification v.0.9.6 for review and discussion.

This at the moment is a working document and subject to change. In the near future Terbine will declare this as a public version and changes will be versioned and either backward compatible or a detailed migration path will be outlined.

AUDIENCE

This document is intended for anyone who will interact with the Terbine system, where buyer or seller. This will allow an overview of what metadata is collected and the organization used for discovery and indexing of content within Terbine.

HOW THIS DOCUMENT IS ORGANIZED

This document is organized within these main sections.

- Metadata Definition - specific of the individual entities and their elements.
- Domain Types - standard reference types
- Metadata Elements - organization of the entities, their cardinality within the larger metadata structure.

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CONVENTIONS USED IN THIS DOCUMENT

Entities will have a label, name, comment and list of elements (fields). Label is descriptive title for human consumption, name is a title for machine processing and a comment provides a long text explanation of the element.

TYPES

Types will be either concrete or referenced.

If a concrete type it will be one of the following.

- UUID
- TEXT
- CHAR
- NUMERIC
- DECIMAL
- CURRENCY
- ID – id to a domain type in numeric format such as 1 or 2.
- DATE
- DATETIME
- TIME
- FLAG - 1 is true and 0 as false
- BOOLEAN – true or false
- YESNO – yes or no

If referenced they will be of two variations

- **type** - this means the entire type as defined is included in the current definition. Example is **type:createupdate** where all fields defined as belonging to createUpdate type are included in this definition.
- **ref** - this means a reference to the unique identifier for that type is included in the current definition. Example is **ref:createupdate** where only the identifier that references an instance of an createUpdate information is included in this definition.
- **domain** – this refers to a domain type, these are listed under the section Domain Types. Example is **domain:sensorType** where one of the ID values defined for that type will be included here.

MANDATORY OR OPTIONAL

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Elements can be defined as mandatory or optional. Mandatory fields are required to have a valid value as defined by the element type. Default is mandatory if not specified. See Cardinality for further information.

CARDINALITY

Elements can have a defined cardinality which is the number of elements. This also can be used to show a mandatory vs. optional relationship.

- Fixed - fixed occurrence. Default is 1 if not specified.
- 0 .. 1 - Item is optional, can have zero or 1 elements.
- 1 - Item has 1 element and is mandatory
- 0 .. N - an element can have 0 to N number of elements. Denotes optional elements.
- 1 .. N - an element can have 1 to N number of elements. Denotes mandatory attribute.

WHAT THIS DOCUMENT DOES NOT COVER

This document does not cover certain aspects of metadata in relation to the contributors organization.

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OVERVIEW

This document is the official specification for the Terbine Metadata Definition.

RELATED DOCUMENTS

- Terbine Marketplace V1 Requirements
- Terbine API Overview

USES OF METADATA

Metadata is collected, tracked and analyzed within Terbine for a variety of reasons. These include the following:

- Provide unique identity.
- Provide ownership information.
- Track data lifecycle information (provenance).
- Provide contributor information.
- Allow identifying group and organizational information.
- Provide source information, including geospatial identification.
- Track grading (quality) information.
- Track transferring of ownership (provenance)
- Store schema and type information.
- Allow identifying data with predefined and user supplied categories and tags.
- Track data aggregation and filtering information.

The world of IoT or sensor-born data introduces many unique challenges within the realm of metadata. These include that the Machine to Machine (M2M) communication will rely on automatic update and discovery of metadata elements. Also, within IoT it is important to track two types of relationships within the data.

- **Container:** Another aspect of IoT is that often data is delivered within a larger ecosystem of related sensors used to track an entire environment. The value of the information often lies in the ability to identify and track this relationship. Metadata within Terbine allow storing and updating this relationship. Example of this are a group of sensors measuring various readings within a large HVAC system. Note the HVAC system could also be part of a larger monitoring system for an entire building.
- **Similarity:** Finally, relationships that track similar data sources from disparate providers is required to allow cross referencing and identification of these links.

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Example of this is temperature sensors of a specific type across all same HVAC systems in all buildings.

TYPES OF METADATA

Metadata is generally divided into two overarching types.

- **Structural** - defining the organization of container for the data.
- **Descriptive** - defining the content or context of the data

Terbine metadata specification is designed to cover both of these types and allows a complete description of the form, structure, content and context of the data.

SOURCE OF METADATA

Metadata in Terbine is created from one of these sources.

- **User supplied** – metadata is entered through the Terbine API before or after ingestion of the associated data stream.
- **Data generated** – under certain conditions metadata may be machine generated from ingested or sample data.
- **Migrated** – metadata migrated from other source systems containing their own metadata. In this manner the attributes of the data can be transferred over and reflected within Terbine.

CONTENT VS. METADATA

There can be gray areas where the same information could be treated as content or metadata, depending on the workflow. In general, metadata should have value on its own without regard for the content. For example, if there is following record delivered to Terbine, this would be content.

```
2015-03-14T01:01:01,23.1,TEMPERATURE
```

The value “TEMPERATURE” which describes a sensor reading value is considered content.

If within the description of the data a user would enter the following tags to describe that record.

```
SENSOR;DAILY;TEMPERATURE
```

The tag “TEMPERATURE” would be considered metadata.

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Note also metadata can be delivered embedded in or part of the delivery and will be treated as such. This can be used to create a new metadata record or update an existing one. An example of this is as follows.

```
1:  DATE, READING, TYPE
2:  2015-03-14T01:01:01, 23.1, TEMPERATURE
3:  2015-03-14T01:03:11, 17.1, TEMPERATURE
```

Here the first line is considered metadata which is used to describe the data and all lines following (in this example lines 2 and 3) are actual content.

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METADATA DEFINITION

The following top level sections can be found in the Terbine Metadata Specification definition section.

- Internal Types – these are definitions for types that are used within definition of entities. Generally these have a child relationship to an owning entity (example address).
- Meta – this is information about the metadata record.
- Identifier
- Source
- Container - this section contains a reference to an owning entity.
- Delivery
- Ownership
- Category
- Legal
- Schema
- Relation
- Events
- Grading
- Domain Types – these are definition of standard domain or reference data. These are predefined types that have an id, code and associated description.

INTERNAL TYPES

These are defined types that only have an instance with another identifiable piece of content. These types have no identifier.

CREATE INFO

Label:	CreateUpdate		
Name:	createupdate		
Comment:	This is a standard type used to hold created date and update information. Generally updated internally in the system and used for display purposes.		
Elements			
createdate	Mandatory	DATETIME	Timestamp of creation
createuser	Mandatory	ref:user	Reference to user responsible for creating entity

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updatedate	Optional	DATETIME	Timestamp of last update
updateuser	Optional	ref:user	Reference to user responsible for updating entity

LEGAL INFORMATION

Label:	Legal Info		
Name:	legalInfo		
Comment:	This is a standard type used to hold information about rights, legal information or copyright information.		
Elements			
type	Mandatory	domain:legalType	Type of legal info
externalUrl	Optional	TEXT	An external URL with additional legal information.
comment	Optional	TEXT	Name of party or organization containing legal rights of content.
startDate	Mandatory	DATETIME	If not provided defaults to current date/time
endDate	Optional	DATETIME	

REGULATORY INFORMATION

Label:	Regulatory Info		
Name:	regulatoryInfo		
Comment:	This is a standard type used to hold information about regulatory information.		
Elements			
type	Mandatory	domain:regulatoryType	Type of regulatory info
comment	Optional	TEXT	Additional Information pertaining to the regulatory information.
startDate	Mandatory	DATETIME	If not provided defaults to current date/time
endDate	Optional	DATETIME	

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LOCATION INFORMATION

Label:	Location Info		
Name:	locationInfo		
Comment:	This is a standard type used to hold information about location information.		
Elements			
type	Mandatory	domain:locationType	Type of location info
latitude	Optional	TEXT	
longitude	Optional	TEXT	
altitude	Optional	TEXT	
address	Optional	TEXT	Address designated with labels such as “county” or “zip” or “country”, “state”
startDate	Optional	DATETIME	If not provided defaults to current date/time
endDate	Optional	DATETIME	

SENSOR INFORMATION

Label:	Sensor Info		
Name:	sensorInfo		
Comment:	This is a standard type used to hold information about sensor information.		
Elements			
type	Mandatory	domain:sensorType	Type of sensor info
make	Optional	TEXT	
model	Optional	TEXT	
comment	Optional	TEXT	

SCHEMA INFORMATION

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Label:	Schema Info		
Name:	schemaInfo		
Comment:	This section contains information about schema of the content. This is highly dependent on the type.		
Elements			
format	Mandatory	type:formatType	Type of format of data when delivered
type	Mandatory	type:schemaType	Type of schema if schema is present in body element.
properties	Optional	TEXT	additional properties as needed, for instance if specific character separator.
body	Optional	TEXT	Schema information, dependent on type.
createupdate	Mandatory	type:createupdate	Create and update information for schema information record. This is the create and update date of this record holding schema information.

- Note schema may have versions, but this concept is not reflected in the metadata specification but is the function of the Terbine Application.

META

Label:	Meta		
Name:	meta		
Comment:	This contains information about the metadata. This is considered metamodel information.		
Elements			
name	Optional	TEXT	Name for Metadata. Also known as search name.
imageUrl	Optional	TEXT	An optional image to be used for this metadata configuration for display purposes.
description	Optional	TEXT	Description of the metadata in long form. Allowable 2500 characters.
version	Mandatory	TEXT	Version of Metadata

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startDate	Mandatory	DATETIME	If not provided defaults to current date/time
endDate	Optional	DATETIME	Not required
createupdate	Mandatory	type:createupdate	Create and update information for organization

IDENTIFIER

Label:	Identifier		
Name:	identifier		
Comment:	This section contains information that is used as an unambiguous reference to the information, title and description.		
Elements			
id	Mandatory	UUID	Global unique identifier
extId	Mandatory	TEXT	External Identifier, link to external metadata identifier
urn	Optional	TEXT	
uri	Optional	TEXT	
createupdate	Mandatory	type:createupdate	Create and update information for organization

DATASET

Label:	Dataset		
Name:	dataset		
Comment:	This section contains information that is used to describe the dataset of the associated content the metadata is describing.		
Elements			
id	Mandatory	UUID	Global unique identifier
extId	Optional	TEXT	External identifier for this source.
type	Mandatory	domain:datasetType	ID that references the type of source (see DatasetType domain data)
sensorInfo	Optional	type:sensorInfo	Information on sensor is the source of the content if applicable and available.
schemaInfo	Mandatory	type:schemaInfo	Information on schema for this dataset
comment	Optional	TEXT	

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createupdate	Mandatory	type:createupdate	Create and update information for datasetinformation. This is create and update information on the dataset data record.
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CONTAINER

Label:	Container		
Name:	container		
Comment:	This section contains information relevant to the data container. This is the parent entity, not that this container may have links to another container through the parentId. This information will be stored on time and reused across metadata instances		
Elements			
id	Mandatory	UUID	Global unique identifier
type	Mandatory	domain:containerType	ID that references the type of container (see Container Type domain data)
parentId	Optional	UUID	Reference to a parent container.
extId	Mandatory	TEXT	This is an identifier used externally for the item.
location	Mandatory	type:locationInfo	This is the location of the container, section is mandatory even if location information is unknown. See locationType.
name	Optional	TEXT	
description	Optional	TEXT	
startDate	Mandatory	DATETIME	If not provided defaults to current date/time
endDate	Optional	DATETIME	

DELIVERY

Label:	Delivery		
Name:	delivery		
Comment:	This section contains information about the delivery method for the data.		

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Elements			
id	Mandatory	UUID	Global unique identifier
type	Mandatory	ID	ID that references the type of delivery (see Delivery Type domain data)
size	Optional	NUMERIC	Size of data
hash	Optional	TEXT	Hash of the data
deliveryDate	Mandatory	DATETIME	Date delivered

OWNERSHIP

Label:	Owner		
Name:	owner		
Comment:	This section contains information about the ownership for the content.		
Elements			
id	Mandatory	UUID	Global unique identifier
type	Mandatory	ID	ID that references the type of owner (see Owner Type domain data)
startDate	Mandatory	DATETIME	If not provided defaults to current date/time
endDate	Optional	DATETIME	
comment	Optional	TEXT	Comment about this ownership record
createupdate	Mandatory	type:createupdate	Create and update information for ownership information. This is not the ownership date, but the create and update date for the record about ownership.

CATEGORY

Label:	Category		
Name:	category		
Comment:	This section contains information about category and associated tags for the content		
Elements			

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type	Mandatory	domain:category Type	1..N category types. Terbine defined category type.
tag	Optional	TEXT	0..N tags. User defined tag for this content.

LEGAL

Label:	Legal		
Name:	legal		
Comment:			This section contains information about legal and copyright information related to the content.
Elements			
id	Mandatory	UUID	Unique identifier for this rights information.
legalInfo	Mandatory	type:legalInfo	Legal information internal type.
createUpdate	Mandatory	type:createupdate	

REGULATORY

Label:	Regulatory		
Name:	regulatory		
Comment:			This section contains information about regulatory information.
Elements			
id	Mandatory	UUID	Unique identifier for this rights information.
regulatoryInfo	Mandatory	type:regulatoryInfo	Regulatory information internal type.
createUpdate	Mandatory	type:createupdate	

RELATION

Label:	Relation		
Name:	relation		

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Comment:	This section contains information about related content.		
Elements			
id	Mandatory	UUID	Identifier for this relationship.
refid	Mandatory	UUID	identifier for related content that links to the id in the “identifier” section.
type	Mandatory	type:relationType	
comment	Optional	TEXT	Comment about related information
createupdate	Mandatory	type:createupdate	Create and update information for relation information record. This is the create and update date of this record holding relation information.

EVENT

Label:	Event		
Name:	event		
Comment:	This section contains information about events related to content.		
Elements			
id	Mandatory	UUID	id of event.
type	Mandatory	type:eventType	
eventTime	Mandatory	DATETIME	Timestamp for event occurrence.
comment	Optional	TEXT	Comment about event

GRADING

Label:	Grading		
Name:	grading		
Comment:	This section contains information about grading information for content.		
Elements			
id	Mandatory	UUID	id of grading info.
type	Mandatory	type:gradingType	Type of grading system used.
grade	Mandatory	INTEGER	The highest level will consist of data generated by sensors that are calibrated

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			and maintained by humans whose job it is to do so. Terbine will use a four-level scale, with each level being an order of magnitude more 'certain' than the one below it.
comment	Optional	TEXT	Comment about grading.
createupdate	Mandatory	type:createupdate	Create and update information for grading information record. This is the create and update date of this record holding grading information.

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DOMAIN TYPES

Note that the values provided is not an exhaustive list and in most cases is meant to show an example of the type of domain data.

DATASET TYPE

Label:	Dataset Type
Name:	datasetType
Domain	3
Type Id:	
Comment:	This is a designator for type of dataset.
Values:	

ID	CODE	DESCRIPTION
30	SENSOR	Sensor sourced dataset
31	EXTERNAL	External generic sourced dataset
32	PLATFORM	Dataset is from a data platform
33	OTHER	Dataset is from human data entry

SENSOR TYPE

Label:	Sensor Type
Name:	sensorType
Domain	4
Type Id:	
Comment:	This is a designator for sensor type.
Values:	

ID	CODE	DESCRIPTION
40	ACOUSTIC	Acoustic, sound, vibration

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41	AUTOMOTIVE	Automotive, transportation
42	CHEMICAL	Chemical
43	ELECTRIC	Electric current, electric potential, magnetic, radio
44	FLOW	Flow, fluid velocity
45	IONIZING	Ionizing radiation, subatomic particles
46	NAVIGATION	Navigation instruments
47	POSITION	Position, angle, displacement, distance, speed, acceleration
48	OPTICAL	Optical, light, imaging, photon
49	PRESSURE	Pressure
400	FORCE	Force, density, level
402	THERMAL	Thermal, heat, temperature
403	PROXIMITY	Proximity, presence

FORMAT TYPE

Label:	Format Type
Name:	formatType
Domain	5
Type Id:	
Comment:	This is a designator for format type.
Values:	

ID	CODE	DESCRIPTION
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500	CSV	Comma Separated
501	TAB	Tab Separated
502	JSON	JSON Format
503	XML	XML Format
504	POSITIONAL	Format of a record is defined by start and end position
505	CHARACTER	Non comma separated records such as semicolon
506	XLS	XLS Format
507	DOC	DOC/DOCX Format
508	PDF	PDF Format
509	ZIP	Zip
510	TAR	Tar
511	TARGZ	Tar Zipped
512	UNKNOWN	Unknown Format
513	KMZ	Keyhole Markup Language Zipped
514	KML	Keyhole Markup Language

DELIVERY TYPE

Label:	Delivery Type
Name:	deliveryType
Domain	2
Type Id:	
Comment:	This is a designator for delivery type.
Values:	

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ID	CODE	DESCRIPTION
21	API	Data was delivered via Terbine Ingestion API
22	UPLOAD	Data was delivered via batch upload.
23	MQTT	Data was delivered via Terbine MQTT Transport.
24	OTHER	Other method/unknown

OWNER TYPE

Label:	Owner Type
Name:	ownerType
Domain	6
Type Id:	
Comment:	This is a designator for owner type.
Values:	

This is a designator for owner type.

ID	CODE	DESCRIPTION
60	ORGANIZATION	Owner is a public or private organization
61	INDIVIDUAL	Owner is an individual
62	GOVERNMENT	Government owned data
63	NONPROFIT	Owner is a non profit business
64	EDUCATION	Owner is an educational institution

CONTAINER TYPE

Label:	Container Type
Name:	containerType
Domain	7
Type Id:	
Comment:	This is a designator for container type.

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Values:

This is a designator for container type.

ID	CODE	DESCRIPTION
70	SYSTEM	Container is part of a larger system.
71	SUBSYSTEM	Container is a subsystem of a larger system.

CATEGORY TYPE

Label:	Category Type
Name:	categoryType
Domain	1
Type Id:	
Comment:	This is a designator for category type.
Values:	

ID	CODE	DESCRIPTION
1000	AGRICULTURE	Algriculture Category
1001	GOVERNMENT	Government Category
1002	MINING	MINING, QUARRYING, AND OIL AND GAS EXTRACTION
1003	UTILITIES	Utilities Category
1004	CONSTRUCTION	
1005	MANUFACTURING	
1006	WHOLESALE TRADE	
1007	RETAIL TRADE	
1008	TRANSPORTATION	

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1009	INFORMATION	
1010	FINANCE AND INSURANCE	
1011	REAL ESTATE	
1012	PROFESSIONAL SERVICES	
1013	MANAGEMENT	
1014	ADMIN SUPPORT	
1015	EDUCATIONAL	
1016	HEALTH CARE	
1017	ARTS	
1018	ACCOMODATION	
1019	OTHER SERVICES	
1020	PUBLIC ADMINISTRATION	
1021	ENVIRONMENT AND WEATHER	

SCHEMA TYPE

Label:	Schema Type
Name:	schemaType
Domain	8
Type Id:	
Comment:	This is a designator for schema type.
Values:	

ID	CODE	DESCRIPTION
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80	JSON	JSON Schema definition
81	AVRO	Avro Schema
82	XSD	XML Schema Definition
83	NONE	
84	UNKNOWN	

EVENT TYPE

Label:	Event Type
Name:	eventType
Domain	9
Type Id:	
Comment:	This is a designator for event type. This is an interaction that causes a change of state of ingested content.

Values:

ID	CODE	DESCRIPTION
90	INGESTED	Content Ingested
91	PERSIST	Content persisted
92	TAG	User defined tag added
93	EXPORT	Content exported
94	FAVORITED	Content was favorited
95	PURCHASED	Content was purchased

LEGAL TYPE

Label:	Legal Type
Name:	legalType

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Domain **10**

Type Id:

Comment: This is a designator for legal type. This is a designator for a party or organization that had or has legal rights for the content.

Values:

ID	CODE	DESCRIPTION
100	PATENTED	Content is under a patent.
101	GOVERNMENT	Government controlled data.
102	COPYRIGHT	Copyrighted content.
103	PROPRIETARY	Proprietary controlled data, public or private data.
104	OPENSOURCE	Open source licensed data.

REGULATORY TYPE

Label: **RegulatoryType**

Name: **regulatoryType**

Domain **14**

Type Id:

Comment: This is a designator for regulatory type.

Values:

ID	CODE	DESCRIPTION
140	SARBANES	Content is covered by Sarbanes Oxley.
141	PRIVACYSHIELD	Content is covered by Privacy Shield.
142	PACTRADE	Content is covered by Pac Trade Regulation.

RELATION TYPE

Label: **Relation Type**

Name: **relationType**

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Domain **11**

Type Id

Comment: This is a designator for relation type.

Values:

ID	CODE	DESCRIPTION
110	INDIVIDUAL	Data from same individual source
111	ORGANIZATION	Data from same organization
112	TYPE	Different source but same type of data

GRADING TYPE

Label: **Grading Type**

Name: **gradingType**

Domain **12**

Type Id:

Comment: This is a designator for grading type.

Values:

ID	CODE	DESCRIPTION
120	BRONZE	Bronze Level Grading
121	SILVER	Silver Level Grading
122	GOLD	Gold Level Grading
123	PLATINUM	Platinum Level Grading

LOCATION TYPE

Label: **Location Type**

Name: **locationType**

Domain **13**

Type Id:

Comment: This is a designator for location type.

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Values:

ID	CODE	DESCRIPTION
130	FIXED	Fixed location
131	MOVING	Moving or mobile location
132	OTHER	Other or unknown

METADATA ELEMENTS

Section Name	Occurrence **	Description
Meta	1	Summary information about the metadata.
Identifier	1	Identifying information about the metadata.
Dataset	1	Dataset information about the metadata.
Container	1..N	Container information related to larger systems of which the deliver is part of. These can link to other containers providing a hierarchy.
Delivery	1..N	Delivery information about the metadata. At least one record of delivery. Since data can be appended to, there may be more than one delivery.
Ownership	1..N	Ownership information about the metadata. Content may have multiple owners or a chain of ownership that needs to be tracked.
Category	1	This possibly contains reference to multiple categories and multiple tags within the single Category section.
Legal	0..N	Optional information pertaining to legal information.
Relation	0..N	Optional related data information.
Events	0..N	Optional events related to change of state or actions taken on the content.
Quality	0..N	Optional information related to quality of the data

** For an explanation of the Occurrence column see the section in the Preface titled **Cardinality**.

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SAMPLE METADATA

Below is a complete example metadata instance.

```
{
  "id": "c325fe24-5351-407b-9544-17730920f34b",
  "identifier": {
    "id": "c325fe24-5351-407b-9544-17730920f34b",
    "extId": "ID_EXT_ID",
    "urn": "urn:sensorDate",
    "uri": "www.sensordata.com/schemaInfo",
    "createUpdateInfo": {
      "createUser": "SYSTEM_USER",
      "createDate": "2015-11-18T06:18:23Z",
      "updateUser": null,
      "updateDate": null
    }
  },
  "meta": {
    "name": "Test Metadata",
    "description": "Test Metadata Description",
    "version": "1.0",
    "imageUrl": "http://somehost.com/image/someimage.jpg",
    "startDate": "2015-11-18T06:18:23Z",
    "endDate": null,
    "createUpdateInfo": {
      "createUser": "SYSTEM_USER",
      "createDate": "2015-11-18T06:18:23Z",
      "updateUser": null,
      "updateDate": null
    }
  },
  "dataset": {
    "id": "6a6a80f8-a9b5-473a-b1ac-863f093ed345",
    "extId": "SRC_EXT_ID",
    "type": 30,
    "sensorInfo": {
      "type": 44,
      "make": "make 123",
      "model": "model 123",
      "comment": "Specific sensor comment"
    }
  },
  "schemaInfo": {
    "id": "71b821af-fe2e-442a-b07d-d8fdf8ee02d5",
    "format": 6,
    "type": 81,
    "property": ";",
    "body": null,
    "createUpdateInfo": {
      "createUser": "SYSTEM_USER",
      "createDate": "2015-11-18T06:18:23Z",
      "updateUser": null,
      "updateDate": null
    }
  },
  "comment": "Comment on sample dataset information",
  "createUpdateInfo": {
    "createUser": "SYSTEM_USER",

```

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```
"createDate": "2015-11-18T06:18:23Z",
"updateUser": null,
"updateDate": null
},
"containers": [
  {
    "id": "f6c8f665-0f58-4ad1-93ed-82b1c04fa7d4",
    "type": 130,
    "parentId": null,
    "extId": "CONT_EXT_ID",
    "legaTtype": null,
    "latitude": "40.078521",
    "longitude": "-74.078974",
    "altitude": "N/A",
    "address": "zip:08742",
    "startDate": "2015-11-18T06:18:23Z",
    "endDate": null,
    "name": "Container name",
    "description": "Container long description",
    "createUpdateInfo": {
      "createUser": "SYSTEM_USER",
      "createDate": "2015-11-18T06:18:23Z",
      "updateUser": null,
      "updateDate": null
    }
  }
],
"deliveries": [
  {
    "id": "8da51760-a07b-47c7-a8c1-b15c46cb2c14",
    "type": 22,
    "size": 32032223232,
    "hash": null,
    "deliveryDate": "2015-11-18T06:18:23Z"
  }
],
"owners": [
  {
    "id": "87d77111-e11d-4823-9fab-575a4a21c150",
    "type": 60,
    "comment": "Ownership comment",
    "startDate": "2015-11-18T06:18:23Z",
    "endDate": null,
    "createUpdateInfo": {
      "createUser": "SYSTEM_USER",
      "createDate": "2015-11-18T06:18:23Z",
      "updateUser": null,
      "updateDate": null
    }
  }
],
"categories": [
  {
    "name": "Utilities",
    "id": 1003
  },
  {
    "name": "Information",
    "id": 1008
  }
]
```


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```
}
],
"tags": [
  {
    "name": "Voltage",
    "id": 0
  },
  {
    "name": "Sensor Data",
    "id": 0
  }
],
"legal": [
  {
    "id": "ca91ab15-2c1b-4fd5-98c0-137fa74ac97e",
    "type": 102,
    "externalUrl": "http://somehost.com/legal/legalinfo.html",
    "comment": "Legal Information for COPYRIGHT",
    "startDate": "2015-11-18T06:18:23Z",
    "endDate": null,
    "createUpdateInfo": {
      "createUser": "SYSTEM_USER",
      "createDate": "2015-11-18T06:18:23Z",
      "updateUser": null,
      "updateDate": null
    }
  },
  {
    "id": "e46d1eb4-74e0-42cc-abe9-1966529759a8",
    "type": 101,
    "comment": "Legal Information for GOVERNMENT",
    "startDate": "2015-11-18T06:18:23Z",
    "endDate": null,
    "createUpdateInfo": {
      "createUser": "SYSTEM_USER",
      "createDate": "2015-11-18T06:18:23Z",
      "updateUser": null,
      "updateDate": null
    }
  }
],
"regulatory": [
  {
    "id": "7ff9924a-580c-435e-96d4-d3c2c321a84e",
    "type": 141,
    "comment": "Regulatory Information for SAFEHARBOR",
    "startDate": "2015-11-18T06:18:23Z",
    "endDate": null,
    "createUpdateInfo": {
      "createUser": "SYSTEM_USER",
      "createDate": "2015-11-18T06:18:23Z",
      "updateUser": null,
      "updateDate": null
    }
  }
],
"relations": [
  {
    "id": "d386807f-500f-4e5b-925e-7d572d4a6e0f",
    "type": 112,
```

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```
"referenceId": "90c2a940-f949-427a-830e-e864aa7622f1",
"comment": "Relationship Sample",
"createUpdateInfo": {
  "createUser": "SYSTEM USER",
  "createDate": "2015-11-18T06:18:23Z",
  "updateUser": null,
  "updateDate": null
}
],
"events": [
  {
    "id": "ba19ef55-232a-428e-80e5-9f5a84718db0",
    "eventType": 90,
    "comment": "Event set for type INGESTED",
    "eventDate": "2015-11-18T06:18:23Z"
  },
  {
    "id": "508f603e-3a0d-4070-b738-0cea45314e53",
    "eventType": 91,
    "comment": "Event set for type PERSIST",
    "eventDate": "2015-11-18T06:18:23Z"
  }
],
"gradings": [
  {
    "id": "631e32e7-8552-4124-9da0-3c2cd7290a1c",
    "type": 120,
    "grade": "Gold",
    "comment": "Sample grading information",
    "createUpdateInfo": {
      "createUser": "SYSTEM USER",
      "createDate": "2015-11-18T06:18:23Z",
      "updateUser": null,
      "updateDate": null
    }
  }
]
]
```

Terbine Metadata Specification

APPENDIX A - GLOSSARY

Attribute - named characteristic of an Entity.

Category -

Channel – Unique delivery within an organization. An organization can have many channels and each channel has a metadata instance related to it.

Company - *See organization.*

CSV -

Dictionary - list of terms and possibly their occurrence.

Entity - person, place, thing, or event about which data is stored.

Extract - subset of data that is pulled a main data set.

Group -

Instance - an actual concrete example of

Join - combining data based on a common attributes or defined set of attributes.

JSON -

Lifecycle -

Metadata - detailed description of the instance data, format, content, source, and modification history. Within Terbine this is used to track all information about content delivered to the Terbine Ingestion API , Persisted within Terbine and displayed within the Terbine Marketplace.

MIME - Internet Media Types

Namespace - The use of namespaces avoids conflict between properties in different schemas that have the same name but different meanings. For example, two metadata entities might have an Owner property: in one, it might mean the person who owns a resource; in another context, the application used to create the resource.

Organization -

Owner – current parent of the data generally a group or organization.

Terbine Metadata Specification

Schema -

Subtype -

Tag -

Type -

URI -

URN -

UUID -

XML -

Terbine Metadata Specification

APPENDIX B - REVISIONS

Version	Date	Name	Description
Draft	2015/10/02	Brian Enochson	For Review
Draft	2015/10/20	Brian Enochson	Added Regulatory Section
Draft	2016/01/30	Brian Enochson	Updated with recent additions for Meta and Legal sections.
Draft	2016/03/01	Brian Enochson	Updated Reference Domain Information.
Draft	2016/03/30	Brian Enochson	General Updates