Lightweight Information Describing Objects

LIDO v1.1

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&
LIDO-DE Working group

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CIDOC LIDO Working Group
LIDO – Lightweight Information Describing Objects

What’s new in LIDO v1.1?
  • Question time

LIDO Terminology Recommendation
  • Question time

LIDO Profiles
LIDO & Linked Open Data

Discussion
Links
https://pad.gwdg.de/RlikcUEKQbeasJq0LNzGIA#
LIDO
Lightweight Information Describing Objects
- **XML schema** for sharing metadata in repositories and online services
- Integrates and extends CDWA Lite with CIDOC-CRM elements
- Defines an explicit **format for providing (museum) object information** in a standardized form
- Intended to represent the **full range of descriptive information about museum objects**, e.g. art, cultural, technology and natural science.
- It supports **multilingual** environments.

https://lido-schema.org
LIDO Record Identifier (mandatory)

**DESCRIPTIVE METADATA**

Object Classifications
- Object / Work Type (mandatory)
- Classification

Object Identifications
- Title / Name (mandatory)
- Inscriptions
- Repository / Location
- State / Edition
- Object Description
- Measurements

Events
- Event Set

Relations
- Subject Set
- Related Works

**ADMINISTRATIVE METADATA**

Rights
Record (mandatory)
Resource
LIDO Record Identifier (mandatory)

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ADMINISTRATIVE METADATA

Rights

Record (mandatory)

Resource
**Basic structure**

LIDO Element

- Display
- Index

ID
- Name Set
  - *other sub-elements*

E.g.

LIDO Actor

- displayActor
- actor
  - actorID
  - nameActorSet
  - vitalDatesActor ...

XSD complexType
lido:actor
Basic structure

actorComplexType

Description

Defines identifying and indexing information about an actor.

type attribute

An attribute indicating whether the actor is an individual person or a group of persons, such as a an organization or a family.

Structure

Sequence
actorID
owl:sameAs as defined in OWL namespace
nameActorSet (required)
nationalityActor
vitalDatesActor
vitalPlaceActor
genderActor

actorComplexType

Event
actor (in actorInRoleComplexType)

Object Relations / Subject
actor (in actorSetComplexType)
Basic structure

1. Descriptive Metadata
   I. Object Classification
   II. Object Identification
   III. Events
   IV. Object Relations

2. Administrative Metadata
   I. Rights
   II. Record
   III. Resource

- XSD complexType lido:concept
- XSD complexType lido:appellation
- XSD complexType lido:actor
- XSD complexType lido:object
- XSD complexType lido:date
- XSD complexType lido:event
- XSD complexType lido:place
LIDO Record Identifier (mandatory)

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ADMINISTRATIVE METADATA

Rights

Record (mandatory)

Resource
<table>
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<tr>
<th>Event Identifier</th>
<th>Event Type</th>
<th>Event Name</th>
<th>Event Actor</th>
<th>Culture</th>
<th>Event Date</th>
<th>Event Place</th>
<th>Event Method</th>
<th>Materials / Technique</th>
<th>Thing Present</th>
<th>Event Related</th>
<th>Event Description</th>
</tr>
</thead>
</table>
LIDO – Background and history
**Background**

**CDWA** Categories for the Description of Works of Art  
set of guidelines for the description of art, architecture, and other cultural works

**CIDOC-CRM** Conceptual Reference Model  
formal domain ontology for cultural heritage information

**Spectrum**  
collections management standard
2006
The harvesting format CDWA Lite is published

2007
Generalization into museumdat to be applicable for all kinds of objects

2008
CDWA Lite / museumdat Working Group: Aims at establishing one common, single schema

2009
ATHENA Project: SPECTRUM community joins CIDOC Working Group established

2010
LIDO v1.0 Release during ICOM-CIDOC Conference
2010
Release v1.0 during ICOM-CIDOC Conference

2014
LIDO Terminology Working Group

2016
Release of first set of LIDO Terminology

2017
Requirements for LIDO follow-up version

2019
KONDA project allows for further development

2020
LIDO v1.1 Public beta release at CIDOC Conference
LIDO v1.1 –
Released in December 2021!
LIDO v1.1 –
Backwards compatible with v1.0!
LIDO v1.1 XML Schema Definition (XSD):
www.lido-schema.org/schema/v1.1/lido-v1.1.xsd

LIDO v1.1 Documentation (HTML):
www.lido-schema.org/schema/v1.1/lido-v1.1.html

What is new in LIDO v1.1?

LIDO v1.1 example records

LIDO Terminology Recommendation (HTML)

<lido:lidoRecID lido:source="Deutsches Dokumentationsobjekt00154983"></lido:lidoRecID>

<lido:objectPublishedID lido:type="http://terminology.prima vera"></lido:objectPublishedID>

<lido:objectPublishedID lido:type="http://terminology.prima vera"></lido:objectPublishedID>

<lido:category></lido:category>

<lido:descriptiveMetadata xml:lang="de">
  <lido:objectClassificationWrap>
    <lido:objectWorkTypeWrap>
      <lido:objectWorkType lido:type="Work">
        <lido:classificationWrap>
          <lido:classification lido:type="http://terminology.lido">
            <lido:conceptID lido:type="http://terminology.lido:Thesaurus">48835800</lido:conceptID>
          </lido:classification>
        </lido:classificationWrap>
      </lido:objectWorkType>
    </lido:objectWorkTypeWrap>
  </lido:objectClassificationWrap>
</lido:descriptiveMetadata>
LIDO v1.1 Example
Peter Paul Rubens and Isabella Brant in the Honeysuckle Bower
https://doi.org/10.11588/data/CHEPS6/FQ3GP5
(LIDO Profile Painting & Sculpture)
What’s new in LIDO v1.1?
What’s new in LIDO v1.1?

- HTML Documentation revised and extended
- New elements and attributes
- Content model extension
- New namespaces
- LIDO goes Gitlab
- Schematron
- LIDO Terminology Recommendation
LIDO v1.1 Documentation (HTML)

XSD complex types

actorComplexType

Description

Defines identifying and indexing information about an actor.

Type attribute

An attribute indicating whether the actor is an individual person or a group of persons, such as an organization or a family.

Structure

Sequence
actorID
owl:sameAs as defined in OWL namespace
nameActorSet (required)
nationalityActor
vitalDatesActor
vitalPlaceActor
genderActor

Technical information

Attributes
type

Used for
actor (in actorInRoleComplexType)
actor (in actorSetComplexType)

Data values
-
### XSD complex types

#### actorComplexType

**Description**

Defines identifying and indexing information about an actor.

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An attribute indicating whether the actor is an individual *person* or a *group of persons*, such as a *organization* or a *family*.

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**Technical information**

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<th>Attributes</th>
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<th>Data values</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>actor (in actorInRoleComplexType)</td>
<td>actor (in actorSetComplexType)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>--</td>
</tr>
</tbody>
</table>
<earliestDate>

Description

An index element for the expression of an exact or estimated date, for instance:

type attribute

An attribute for the kind of earliest date, whether it is exact or estimated.

Further information

References and further reading
CDWA Definitions 4. CREATION
CDWA Guidelines 4.2.1. Earliest Date

Terminology/Format recommendation
For the element:
ISO 8601: Representation of dates and times.

For the type attribute:
LIDO Terminology for Type of Earliest Date
<earliestDate>

Description
An index element for the expression of an exact or estimated date, for instance:

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Hierarchical navigation

Tree view

Below the LIDO XML structure can be explored in a hierarchical view. Please note that this view starts at the administrative and descriptive metadata level. The LIDO root element must still be specified.

Expand all  Collapse all

- descriptiveMetadata
  - objectClassificationWrap
    - objectWorkType
      - skos:Concept
        - conceptID
        - term
  - classificationWrap
    - classification
      - skos:Concept
        - conceptID
        - term
LIDO v1.1 New elements/attributes

https://cidoc.mini.icom.museum/working-groups/lido/lido-overview/about-lido/what-is-new-1-1/new-elements/
Criteria for extensions

- Requirement is generic and in the scope of LIDO v1.0
- Suggestion is based upon a known use case from practical LIDO applications
- Suggestion requires modification of the schema, e.g. there is no way to express the information in the LIDO v1.0 schema
- Suggestion can be implemented in a backwards compatible way with LIDO v1.0
## LIDO v1.1

### New elements and attributes

<table>
<thead>
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</tr>
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<tbody>
<tr>
<td>applicationProfile</td>
<td>An identifier for a LIDO application profile that has been developed by an institution or project.</td>
</tr>
<tr>
<td>collection</td>
<td>A set of elements for the collection the object/work in focus is gathered into, introduced to enable an unambiguous reference to a collection.</td>
</tr>
<tr>
<td>displayRelatedWork</td>
<td>A free text element to present information about a related object/work in a syntax suitable for display to the end-user, including any necessary nuance.</td>
</tr>
<tr>
<td>displayRepository</td>
<td>A free text element to present information about the institution of custody in a syntax suitable for display to the end-user, including any necessary nuance.</td>
</tr>
<tr>
<td>eventObjectsMeasurements</td>
<td>A set of elements to describe measurements, of an object/work with respect to an event, complementing the element Object Measurements as defined in LIDO Version 1.0.</td>
</tr>
<tr>
<td>objectDescriptionRights</td>
<td>A set of elements to allow for setting separate rights information for the object description.</td>
</tr>
<tr>
<td>objectMaterialsTechSet</td>
<td>A set of elements to describe materials and techniques as detected in an object/work at hand, complementing the element Event/Materials Techniques as defined in LIDO Version 1.0.</td>
</tr>
<tr>
<td>objectMaterialsTechWrap</td>
<td>A wrapper element to hold a set of elements describing materials and techniques as detected in an object/work.</td>
</tr>
<tr>
<td>sourceActorInRole</td>
<td>A text element identifying the source of the provided information about an actor and the role or attribution of this actor related to the event in focus.</td>
</tr>
<tr>
<td>vitalPlaceActor</td>
<td>An index element for places relevant to the biography or history of an actor, introduced to enable data enrichment from secondary sources.</td>
</tr>
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New elements (and why they have been introduced)

- **applicationProfile**: Serves as an identifier for a LIDO application profile which has been developed by an institution or project.

- **conceptElementsSet**: Increases the schema’s modularity.

- **displayRelatedWork**: A display element displayRelatedWork for the relatedWorkSet allows for transferring specific relationship information for presentation purposes while for the actual relationship type element (lido:relatedWorkRelType) terms from the LIDO Terminology should be used.

- **displayRepository**: A free-text description for designation of the institution of custody and, possibly, a descriptive indication of the exact location of the object while for repositoryName and repositoryLocation authorities should be used.

- **eventObjectMeasurements**: Indicates the dimensions or other measurements of the object/work as determined with respect to the described event, for instance a part addition or removal.

- **objectDescriptionRights**: Allows for setting separate rights information for the object description.

- **objectMaterialsTechSet/objectMaterialsTechWrap**: Allows for materials/technique information (meant like a physical characteristic of the object) outside of events.

- **sourceActorInRole**: Allows for providing source information about an actor in a certain role.

- **sourceRelatedWorkSet**: Allows for providing source information about a related work.

- **sourceRepositorySet**: Allows for providing source information about a current or former repository.

- **textAttributesSet**: Increases the schema’s modularity.

- **vitalPlaceActor**: Allows for providing the birth/death/activity place of an actor.
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<td>An attribute to indicate the group of measurements given in multiple <code>Measurements Set</code> elements. Of relevance for the EODEM application profile.</td>
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<td><code>mostNotableEvent</code></td>
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LIDO v1.1 – Content model extension
Concept model extended from free text elements to controlled terms where appropriate.
<lido:measurementType>width</lido:measurementType>

--<lido:measurementType>
--<skos:Concept rdf:about="http://www.wikidata.org/wiki/Q208826">
  <skos:prefLabel xml:lang="en">height</skos:prefLabel>
  <skos:prefLabel xml:lang="de">Höhe</skos:prefLabel>
  <skos:mappingRelation>http://vocab.getty.edu/aat/300055644</skos:mappingRelation>
</skos:Concept>
</lido:measurementType>
Used for

- attributionQualifierActor
- extentActor
- extentMaterialsTech
- extentMeasurements
- extentSubject
- formatMeasurements
- genderActor
- measurementType
- measurementUnit
- qualifierMeasurements
- scaleMeasurements
- shapeMeasurements
LIDO v1.1 – New namespaces

https://cidoc.mini.icom.museum/working-groups/lido/lido-overview/about-lido/what-is-new-1-1/namespaces/
Embedding of skos:Concept from the SKOS namespace to enable a seamless and lossless representation of authority data within a LIDO record.

3. The skos:Concept Class
3.1. Preamble

```xml
<skos:Concept rdf:about="http://www.wikidata.org/wiki/Q208826"
    skos:prefLabel xml:lang="en">height</skos:prefLabel>
<skos:prefLabel xml:lang="de">Höhe</skos:prefLabel>
<skos:mappingRelation>http://vocab.getty.edu/aat/300055644</skos:mappingRelation>
</skos:Concept>
```

[For more examples of identifying and describing concepts, see KOS-PRIMER]
The sameAs property from the Web Ontology Language namespace is used to express that two named entity identifiers refer to the same individual in the real world.

5.2.1 owl:sameAs

The built-in OWL property `owl:sameAs` links an individual to an individual. Such an association indicates that the URI of one individual is equivalent to the URI of another individual:

```xml
<owl:sameAs>http://www.wikidata.org/entity/Q5599</owl:sameAs>
```

In OWL Full, where a class can be treated as instances of (meta)classes, we can use the `owl:sameAs` construct to define class equality, thus indicating that two concepts have the same intensional meaning. An example:
LIDO v1.1 – Schematron

Quality assurance mechanism based on Schematron introduced
Schematron rules

ComplexType allows only owl:sameAs from OWL

Rule ID
sch/owl

Description
Asserts that only owl:sameAs and not any other property or class for equivalence in instances of LIDO elements contained in actorComplexType, placeComplexType, rightsHolderComplexType.

Rule
not(owl:*[not(self::owl:sameAs)])

Error or warning thrown
Only owl:sameAs should be used as embedded property of [the element]

LIDO v1.1
Schematron

```xml
<sch:pattern>
  <sch:title>Either free text or index element</sch:title>
  <sch:p>
      In LIDO v1.1 some text elements are extended to
      <tei:ref target="#conceptComplexType">conceptComplexType</tei:ref>
      in order to foster controlled indexing in the future. To enable backwards compatibility either elements of
      <tei:ref target="#textComplexType">textComplexType</tei:ref>
      or elements of
      <tei:ref target="#conceptComplexType">conceptComplexType</tei:ref>
      are allowed. Note that the elements are defined to be mutually exclusive.
  </sch:p>
  <sch:rule abstract="true" id="sch_MixedContent">
      <sch:assert role="fatal" test="(skos:Concept or lido:conceptID or lido:term) and not(text()[not(normalize-space(.)
            = "") or @xml:lang or @lido:encodinganalog or @lido:label) or (text()[normalize-space(.) != "] and
            not(skos:Concept or lido:conceptID or lido:term)) or (not(*) and (not(text()) or normalize-space(.) = "") )">
          Asserts that either an element based on
          <tei:ref target="#textComplexType">textComplexType</tei:ref>
          or an element based on
          <tei:ref target="#conceptComplexType">conceptComplexType</tei:ref>
          is used for
          <sch:name/>
          , but not both at the same time.
      </sch:assert>
  </sch:rule>
</sch:pattern>
```

http://www.lido-schema.org/schema/v1.1/lido-v1.1.xsd
LIDO v1.1 – LIDO goes GitLab

https://gitlab.gwdg.de/lido/development
LIDO v1.1 –
LIDO Terminology Recommendation

- LIDO Terminology
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LIDO Terminology Recommendation (HTML)
What’s new in LIDO v1.1?

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QUESTION TIME!
LIDO Terminology Recommendation

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LIDO Terminology Recommendation (HTML)
Accompanying document with terminology recommendations allows for dynamic extension

Extended LIDO Terminology

- for existing elements and attributes, e.g. for properly referencing IIIF resources through resource representation type
- for new elements and attributes, e.g. for the related work relationship type or the collection element
LIDO Terminology Recommendation

The Terminology Recommendation document is part of the LIDO accompanying documents. For a number of schema elements and attributes, it contains links to recommended terms from the LIDO Terminology, or suggests the usage of descriptors from other linked open vocabularies, such as the Art & Architecture Thesaurus (AAT), Union List of Artist Names (ULAN), or Wikidata items.

The Art & Architecture Thesaurus® is the most elaborate and reliable source for indexing in the cultural heritage domain. Therefore, whenever possible, a link to suitable AAT terms for a LIDO element or attribute is provided. The link leads to the top-most concept of an AAT hierarchy serving as an access point to a list of appropriate subordinate descriptors that can be perused. AAT vocabulary items referenced by their URI are suitable for processing in any Linked Data application or environment.

The Terminology Recommendation document complements terminology or format proposals in the set of Getty Editorial Guidelines, including Categories for the Description of Works of Art (CDWA), and Cataloging Cultural Objects (CCO).

LIDO was originally introduced for the purpose of harvesting and merging metadata from local catalogs. The release of these terminology recommendations addresses the difficulties arising from a lack of alignment between users of the LIDO schema. To this end, the principal goal of the terminology recommendations is to achieve consistency in indexing not only within an institution, but also across portals and aggregators. Such consistency is expected to have a profound impact on retrieval quality with respect to the full range of cultural heritage information.
LIDO Terminology Recommendation

**relatedWorkRelType**

Go to the schema documentation for relatedWorkRelType

**Terminology recommendations**

For the Related Work Relationship Type element choose a LIDO Term URI from the Related Work Relationship Type Vocabulary.

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**repositoryName**

Go to the schema documentation for repositoryName

**Terminology recommendations**

For the Repository Name element choose a concept URI from the ISIL- and Library Codes Agency or a linked open authority file aggregated in VIAF, or in Wikidata.

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http://lido-schema.org/documents/terminology-recommendation.html
LIDO Terminology
LIDO Terminology supplements LIDO specification with controlled vocabulary for specific LIDO elements and attributes

Available as LOD Service
- Webinterface: http://terminology.lido-schema.org/
- SPARQL: http://terminology.lido-schema.org/sparql
- Documentation
- aims to improve interoperability
- supports:
  - Data production and indexing
  - Data mappings
  - Portal functionalities
  - LOD publication

Avoiding "LIDO dialects"
LIDO Terminology

Person: http://terminology.lIDO-schema.org/lido00163
Organization: http://terminology.lIDO-schema.org/lido00413

```xml
<lidO:actor>
  <lidO:type "http://terminology.lIDO-schema.org/lido00163">
    <lidO:actorID" lIDO-source "Bildindex-KUE-Datei"
    lIDO:pref "http://terminology.lIDO-schema.org/lido00170"
  lIDO:type "http://terminology.lIDO-schema.org/lido00100" per
  11002142</lidO:actorID>
</lidO:actor>
```

LIDO Terminology

URI: http://terminology.lIDO-schema.org/lido00099
Local Identifier: http://terminology.lIDO-schema.org/lido00100
LIDO Terminology @type (attribute)

http://terminology.lido-schema.org/actor_type
LIDO Terminology relatedWorkRelType (element)

Details: has physical part (en)

Persistent URI
http://terminology.lido-schema.org/lido00256

Type
LIDO Term

In Vocabulary
http://terminology.lido-schema.org/relatedWorkRelType

Status
Finalized

Label
has physical part
has as part physical object
is composed of (Physical object)
hat physischen Teil
hat als Teil physisches Objekt
hat Teil (physisch)

Broader
has part (en) (lido00573)

Associated with
inverse of
is physical part of (lido00255)
distinguished from
has conceptual part (lido00571)
related to
Item-level record (lido00141)

Definition (de)
has physical part, as a value for the LIDO Related Work Relationship Type element, designates an asymmetric, hierarchical whole-part relationship between a
Further Terminology Recommendations
Terminology Recommendations

For the **Period/Style** element choose a concept URI from the **Styles and Periods** hierarchy of the Art & Architecture Thesaurus, or another linked open vocabulary.

See also recommendations in CDWA 5.2. Styles/Periods Indexing Terms – TERMINOLOGY/FORMAT

For the **Place** element choose a concept URI from a linked open authority files, for example, one of those aggregated in VIAF or in Wikidata.

See also recommendations in CDWA 29. Place/Location Authority – TERMINOLOGY/FORMAT
LIDO Terminology Recommendation

- LIDO Terminology
- Further Terminology Recommendations

LIDO Terminology Recommendation (HTML)
QUESTION TIME!
LIDO Profiles are connected with specific use cases and may consist of:

- Further mandatory elements
- „Mandatory if available“-Recommendations
- Restrictions which elements to use
- Terminology recommendations
- Extensions of provided LIDO Terminology

But always have to be compliant with the schema!
LIDO Profiles currently in development:

- EODEM
- Painting and Sculpture
- Quality Assurance

May 22 16:00-17:30 (EET) / 15:00-16:30 (CET)

LIDO Profiles
Registration:
https://events.gwdg.de/e/CIDOC-WG-LIDO-Profiles
LIDO & Linked Open Data
LIDO & Linked Open Data

- URIs LIDO elements
  http://lido-schema.org/schema/v1.1/lido-v1.1.html#eventType
  http://lido-schema.org/schema/latest/lido.html#eventType

- URIs LIDO Terms
  http://terminology.lido-schema.org/lido00012

- LIDO Terminology LOD Interface
  Web Interface: http://terminology.lido-schema.org/
  SPARQL: http://terminology.lido-schema.org/sparql
  Documentation
LIDO & Linked Open Data

- RDF Namespace **skos**: skos:Concept
- RDF Namespace **owl**: owl:sameAs
https://doi.org/10.3390/heritage2010066
May 24 16:00-17:30 (EET) / 15:00-16:30 (CET)
Linked Art WG and LIDO WG
Registration:
https://events.gwdg.de/e/CIDOC-WG-LIDO-Linked Art

In this session the state of work of the Linked Art WG and the LIDO WG concerning the adoption of LIDO data to Linked Art is presented and possible future ways of collaboration of the WGs are discussed.
QUESTION TIME & DISCUSSION
Lightweight Information Describing Objects

Feedback welcome!

lido-feedback@sub.uni-goettingen.de

www.lido-schema.org