

ARKIVO Ontology Specification 0.2

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Abstract

ARKIVO is an ontology designed to accommodate the archival description, supporting archive workers by encompassing both the hierarchical structure of archival collections and rich metadata created during archive digitization, such as historical elements. The aim of arkivo is not only to provide a reference schema for publishing Linked Data about archival documents, but also to describe the historical elements contained in these documents, e.g., giving the opportunity to represent useful relationships between people, places, and events. Regarding underlying technology, ARKIVO ontology uses W3C's OWL 2 language.

Listing ARKIVO Classes and Properties

ARKIVO ontology has been integrated with several core ontologies and vocabularies, such as Dublin Core metadata elements (DCMI), Friend Of A Friend Vocabulary (FOAF), schema.org, the Bibliographic Ontology (BIBO), GeoNames Ontology and LODE. In the following, we pinpoint ARKIVO classes, specifying the prefix of concepts coming from our core ontologies, while **arkivo:** is the prefix of <http://purl.org/arkivo>.

bibo:Collection represents a set of documents or collections. Every instance of this class can have data properties such as **doi**, **isbn**, **issn**, **publisher** and **volume**. This class has six sub-classes:

arkivo:File is the class devoted to describe a file, which is an organized unit (collection) of items grouped together either for current use by

the creator or in the process of archival arrangement of the fonds, because they relate to the same subject, activity, or transaction.

arkivo:Fonds relates the whole of the records, regardless of form or medium, organically created and/or accumulated and used by a particular person, family, or corporate body in the course of that creator's activities and functions.

bibo:Journal describes a periodical of scholarly journal articles.

bibo:Magazine represents a magazine, namely a publication that is issued periodically.

arkivo:Series concerns documents arranged in accordance with a filing system or maintained as a unit because they result from the same accumulation or filing process, or the same activity. They have a particular form, or because of some other relationship arising out of their creation, receipt, or use. A series is also known as a records series.

arkivo:Date is the class containing dates mentioned in an item.

lode:Event is the class that describes an event. An event is an occurrence that brings about a change in the state of affairs for one or more people and/or other agents. Events are assumed to occur over a period of time and may not have precise start and end points. Every instance of this class has **lode:atTime**, **schema:startDate** and **schema:endDate** data properties, which indicate when an event is occurred.

arkivo:HistoricalEvent is a sub-class of **lode:Event** and it represents historical events that can be mentioned in the archival holdings.

foaf:Agent is used to describe any agent related to bibliographic items or to specific events. Such agents can be persons or organizations of any kind and they are represented by the following sub-classes:

foaf:Organization is used to describe an organization related to bibliographic items or to events.

foaf:Person represents people related to a bibliographic item or to a specific event. An individual of this class can have data properties such as **foaf:familyName**, **foaf:firstName**.

arkivo:HistoricalPeriod is used to represent a delimited era of history that have some distinctive features.

arkivo:Item represent the archival item, in other words the smallest intellectually indivisible archival unit. Individuals of **arkivo:Item** class can have some data properties, such as **dc:title**, **dcterms:created**, **schema:inLanguage**. It contains the following sub-classes:

bibo:AudioDocument is the class describing document in format of audio.

bibo:AudioVisualDocument represents audio-visual documents, such as film, video, and so forth.

bibo:Book describes a written or printed work, usually on sheets of paper fastened or bound together within covers.

bibo:BookChapter is used to represents a single chapter of a book.

arkivo:Document is one of the main class of the ontology which is used to describe a document. A documents is defined as a bounded physical representation of body of information designed with the capacity and usually intent to communicate. A document may manifest symbolic, diagrammatic or sensory-representational information. **arkivo:Document** include the following sub-classes:

bibo:Article represents a written composition in prose on a specific topic, forming an independent part of a book or other publication, as a journal or magazine.

arkivo:Decree describes a decree, i.e., an authoritative order having the force of law.

arkivo:Guidelines is the class that describe a set of principles put forward to set standards or determine a course of action.

arkivo:Instruction describes instruction, which is defined as a detailed directions about how to do something.

bibo:LegalDocument includes individuals in the form of legal document, for example, a court decision.

arkivo:List describes a list item, i.e., a series of names and words written or printed one after the other.

arkivo:Memorandum is the class that represents unsigned diplomatic communication well-known as memorandum.

bibo:PersonalCommunicationDocument represents personal communications. This class includes three sub-classes, as reported below:

bibo:Letter represents printed communications addressed to a person or organization and usually transmitted by mail.

bibo:Telegram includes message or communication sent by telegraph.

bibo:Email concerns messages sent or received by such a system.

arkivo:Poster is used to represent printed poster.

arkivo:Proclamation contains proclamation document, which sets the basis of authority and scope of activities of a commander in a given area and which defines the obligations, liabilities, duties, and rights of the population affected.

arkivo:Report includes report texts which give a detailed description of an event or situation.

arkivo:Resolution is the class that describe resolution, i.e., a formal expression of opinion or intention made by an organization or other group.

arkivo:Speech is the class used to describe documents that report a speech made on a formal occasion.

dcterms:Image represents graphical representations of the form of a person, object, place, etc.

arkivo:Map contains maps, namely representations of a location.

arkivo:Plan is used to represents a document describing the systematic arrangement of some elements.

schema:Place is the class that represents any place mentioned in an item or that is related to an event. Individuals of **Place** class have **geonames:geonamesID** data property, which allocate a geolocalization identifier to that place.

dc:Subject represents the topic described in a bibliographic resource. Typically, the subject will be represented using keywords or key phrases.

ARKIVO contains the following union of classes:

CreativeThing is a superclass which includes individuals that belong to **bibo:Collection**, **lode:Event** and **arkivo:Item** classes. It denotes thing created or named by people.

NamedThing refers to objects that can be listed or mentioned in **CreativeThing**, and it includes individuals in **schema:Place**, **arkivo:Date**, **foaf:Agent** classes.

Below, we describe the object properties implemented in ARKIVO. Names in parenthesis denote the related inverse object properties.

dcterms:creator is the relationship that shows who has created a specific item, connecting individuals in **arkivo:Item** class to individuals in **foaf:Agent** class.

schema:birthPlace (**arkivo:bornIn**) connects individuals in **foaf:Person** to individuals in **schema:Place**, i.e., the place where the person was born.

schema:deathPlace (**arkivo:deadIn**) highlights the relationship between individuals in **foaf:Person** to those in **schema:Place**, describing in which place a person is died.

schema:hasPart (**schema:isPartOf**) indicates that an individual in the class **arkivo:Item** is part of a collection, by linking that individual to another in the class **bibo:Collection**.

schema:mentions (**arkivo:isMentionedIn**) is useful to indicate that an instance of **NamedThing** is mentioned in an individual of the class **CreativeThing**.

`arkivo:cites` (`arkivo:isCitedBy`) indicates that an individual of `arkivo:Item` contains a reference to individual of `foaf:Agent` class.

`arkivo:createdDuring` indicates in which historical period has been created a specific item, connecting instances of `arkivo:Item` class to instances of `arkivo:HistoricalPeriod` class.

`arkivo:happenedDuring` shows in which historical period has occurred an event, by linking individuals that belong to `lode:Event` class to individuals in `arkivo:HistoricalPeriod` class.

`arkivo:involves` (`arkivo:isInvolvedIn`) indicates that an instance in `foaf:Agent` class has been involved in a specific event contained in `lode:Event` class.

`arkivo:isAbout` (`arkivo:isSubjectOf`) links instances of `CreativeThings` superclass to instances of `dc:Subject` class, in order to describe which are the topics of documents and historical events.

`isSectionOf` (`sectionOf`) connects instances of `arkivo:File` to instances of `arkivo:Fonds`.

`arkivo:reports` (`arkivo:isReportedIn`) is the object property that describes which places are cited in a document, connecting instances of `arkivo:Item` class to instances of `schema:Place` class.

`arkivo:repository` connects instances of `foaf:Organization` class to instances of `CreativeThing` class, in order to describe that an organization can be a repository of collections or items.

`arkivo:takesPlaceIn` (`arkivo:isSceneOf`) is useful to describe in which place is occurred an event, by linking individuals of the class `lode:Event` to individuals of the class `schema:Place`.