da|ra Metadata Schema: Version 3.1

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da|ra Metadata Schema

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Contents

1   Introduction

1.1   The Registration Agency da|ra

da|ra operates as the registration agency for social science and economic data jointly run by GESIS (http://www.gesis.org) and ZBW (http://www.zbw.eu). da|ra pursues the goal of long-term, persistent identification and availability of research data via allocation of DOI names. In keeping with the ideals of good scientific practice there is a demand for open access to existing primary data so as to not only have the final research results but also be able to reconstruct the entire research process. GESIS and ZBW therefore offer a registration service for social and economic research data in cooperation with DataCite (http://www.datacite.org), an international consortium pursuing the goal of supporting the acceptance of research data as independent citable scientific objects. This infrastructure lays the foundation for long-term, persistent identification, storage, localization and reliable citation of research data.

Benefits of DOI names:

- **Permanent, persistent identification:** Each DOI name uniquely, unequivocally and permanently identifies the assigned object.
- **Availability of information on the web:** Via the Handle System, each DOI refers to one or more webpages assigned by the publication agent.
- **Semantic Interoperability:** The metadata associated with a DOI name enable direct, precise communicating – with each user, from every location, at every point in the production/distribution chain – with regard to every detail of the objects related with one another.

The DOI name is comprised of a unique alphanumeric character string; a prefix and suffix, whereby the prefix always begins with "10" and prefix and suffix are separated by a forward slash. Prefixes are assigned by the International DOI Foundation (IDF http://www.doi.org) via DataCite. Each data centre is assigned its own prefix thus permitting an unlimited number of DOI names. The suffix is agreed by the publication agent in conjunction with da|ra.

Each DOI name permanently identifies the assigned object as an entity regardless of whether the storage location changes. Updated, structured metadata is assigned to the resource using the DOI name. The allocation of DOI names to the objects transpires automatically following successful transmission of the metadata per object to be registered.

In 2013, da|ra began to develop value-added services. These included preparations for the extension of the registration service to other resource types. As social science and economic research produces not only datasets, but also other resource types it was a logical step. da|ra Metadata Schema Version 3.0 was therefore expanded for the registration of the resources Collection, Text, Image, Video, Audio and Interactive Resource.

1.2   The Metadata Schema

The da|ra Metadata Schema is a list of core metadata properties chosen for the identification of data and retrieval purposes. Each DOI name is linked to a set of metadata, a collection of bibliographical and content information, which describe in detail the registered resources (title, author, publication date, copyright etc.) and present the properties of resources, their structure and contextual relations.

The da|ra Metadata Schema provides a determined number of mandatory elements – core properties –, that have to be submitted by the publication agent at the time of data registration. Publication agents may also choose to use optional properties to identify their data more clearly.

For all metadata properties the respective names, definitions, attributes, conditions, cardinality (maximum occurrence) as well as value domains are defined. Some properties comply with ISO norms. These norms determine e. g. which code for a language or geographic coverage has to be applied. Controlled vocabularies such as thesauri and classifications are applicable. These vocabularies are complemented by da|ra controlled terms.

Although da|ra complies with the official DataCite Metadata Schema, it has broadened the DataCite metadata by adding some specific properties related to the social sciences and economics.

Please note that da|ra reserves the right to share metadata with information indexes and other entities.[1] da|ra metadata are subject to Creative Commons CC0 license.

1.3   Version 3.1 Update

The current Version 3.1 is based on the Version 3.0 of the da|ra Metadata Schema and has been further developed in line with the DataCite Metadata Schema, Version 3.1, to achieve greater exposure of social and economic research data outputs for all resource types.

Version 3.1 of the da|ra Metadata Schema introduces some notable changes:

Addition of:

10.1	Internal Resource Identifier *
23.2.3	Contributor Affiliation *
23.2.4	Contributor Affiliation ID *
23.2.4.1	Vocabulary of Contributor Affiliation ID *
23.2.4.2	URI Name Authority Record *
38	Publication Place (optional for all resource types) *

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[1]   See da|ra Service Level Agreement and Policy in its respective current form http://www.da-ra.de/en/about-us/da-ra-policy/

*   Properties and sub-properties marked with a star (*) were already implemented in the previous Version 3.0, which was unfortunately forgot to list in the Technical Report 2014|07. Therefore, they are still listed as an update here.

Addition of new values to controlled lists:

23.1	Contributor Type: *DataCurator*
24	Collection Mode (see Appendix 3.1.7)
31.1	Relation Type: *IsReviewedBy, Reviews, IsDerivedFrom, IsSourceOf*
31.2	Identifier Type: *arXiv, bibcode*

Documentation:

The documentation of Version 3.1 of the da|ra Metadata Schema includes the following changes:

- Documentation for

    - the sub-property Internal Resource Identifier

    - the affiliation attributes for Contributor

    - the new Contributor Type DataCurator

    - the new Collection Modes (see Appendix 3.1.7)

    - the four new Relation Types IsReviewedBy, Reviews, IsDerivedFrom, IsSourceOf

    - the two new Identifier Types arXiv and bibcode

    - version changes

- Better indication of recommended metadata

- Addition of more detailed XML examples on the da|ra website

- Deletion of documentation for administrative properties DOI name, publication agent and registration agency, as they are not part of the metadata set submitted by the publication agent

Please note that da|ra Metadata Schema Version 3.0 is still valid and can also be used.

1.4   A Note about da|ra DOI Registration

da|ra obtains the DOI names via the GESIS membership in DataCite. DataCite is accredited as an official DOI registration agency within the DOI foundation (IDF http://www.doi.org).

TIB Hanover (http://www.tib.uni-hannover.de) acts as a managing agent of DataCite and organizes the control of prefixes and the connection to IDF. The figuration of the suffixes is done by the publication agents and is determined in the Service Level Agreement.

da|ra governs the assignment of DOI names. It functions as the DOI allocation agency and is not commercially oriented. Besides the DOI allocation, da|ra is responsible for the elaboration of the service agreement (Service Level Agreement) together with the publication agents as well as for the administration of metadata. For both the maintenance and the storage of metadata the data centres are responsible.

Ensuring that metadata is persistent does not exclude its modifiability: data producers have the opportunity to amend the metadata whenever and as often as needed.

2 da|ra Metadata Properties

2.1 Overview

The tables below display in a simple manner the mandatory and optional properties of the metadata schema. Chapter 2.3 of this documentation provides more information about these properties. The documentation applies to all resource types. The properties listed in Table 1 *must* be supplied when submitting metadata. The optional properties listed in Table 2 *may* be supplied when submitting metadata. **We strongly encourage submitting recommended optional properties in addition to mandatory properties to enhance the prospects that metadata can be found, cited and linked to original research.**

Table 1: da|ra Mandatory Properties

No.	da|ra Property[2]
0	General Resource Type
1	Title
4	Creator
8	URL
12	Publication Date
28	Availability (controlled)

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2 The details on the publication agent and registration agency are generated from the user account and the da|ra database, respectively. The DOI name is assigned by the Publication Agent and da|ra once a user account has been created. It is not part of the metadata set submitted by the publication agent.

Table 2: da|ra Recommended and Optional Properties

No.	da|ra Property	Recommended
2	Other Titles	
3	Collective Title	
9	DOI Proposal	x
10	Version	x
11	Language	x
13	Alternative Identifier	x
14	Classification Internal	x
14A	Classification External	x
15	Keywords (controlled)	x
16	Keywords (free)	
17	Description	x
18	Geographic Coverage (all sub-properties)	x
19	Sampled Universe	
20	Sampling	
21	Temporal Coverage (all sub-properties)	
22	Time Dimension (all sub-properties)	
23	Contributor	x
24	Collection Mode (controlled)	
25	Collection Mode (free)	
26	Dataset (selected sub-properties)	x
27	Notes	
29	Availability (free)	
30	Rights	
31	Relation (with type and relation type sub-properties)	x
32	Publications	
38	Publication Place	

2.2   Citation

Please use the citation output generated via the da|ra metadata system. Furthermore, you can find information about the citation of resources in our Best Practice Paper "Citation of resources" (version 2.0), which can be found at
http://www.da-ra.de/en/about-us/da-ra-policy/best-practice/.

2.3   da|ra Properties

Table 3 below provides a detailed description of mandatory properties which must be submitted to da|ra by the publication agents. For an example of how to make a submission in XML format, please see the XML examples for all resource types provided on the da|ra website http://www.da-ra.de/en/technical-information/doi-registration/.
Table 4 provides a detailed description of da|ra recommended and optional properties.

The third column, Occurrence (Occ), indicates cardinality/quantity constraints for the properties as follows:

0-n =	optional and repeatable
0-1 =	optional, but not repeatable
1-n =	required and repeatable
1 =	required, but not repeatable

Note:

Metadata describing a resource can be provided in English as well as in German. We recommend the use of both languages to increase international visibility. When providing metadata in English and in German, it is important that the mandatory title property is given in both languages.

The XML Schema provides a <language> element for description of language dependent properties within the da|ra Metadata Schema. Allowed values are "en" and "de" according to ISO 639-1. For all language dependent properties the metadata language sub-property is mandatory. In addition, each language dependent property must be unique with respect to the metadata language in use.

To describe the language of a resource itself the property resourceLanguage has to be used.

The following properties and sub-properties are language dependent:

No.	da|ra Property
0.1	Resource Type
1	Title
2	Other Titles
3	Collective Title
4.1.2	Affiliation
4.2	Institution
14A	Classification External
16	Keywords (free)
17	Description
18	Geographic Coverage
19	Sampled Universe
20	Sampling
21	Temporal Coverage
22	Time Dimension
23	Contributor
23.2.3	Contributor Affiliation
25	Collection Mode (free)
26	Dataset
27	Notes
29	Availability (free)
30	Rights

For better readability XML elements which only act as a parent container for the metadata content are not listed in the tables below. The schema file (XSD) contains annotations with documentation for the elements in detail and is available for the validation of XML files at
http://www.da|ra.de/fileadmin/media/da|ra.de/Technik/dara_v3.1_de_en.xsd.

doi:10.4232/10.mdsxsd.3.1

Please also refer to the XSD file for the sequence of properties when writing the XML.

Please note that da|ra Metadata Schema Version 3.0 is still valid and can also be used.

Table 3:   Expanded da|ra Mandatory Properties[3, 4]

No.	da|ra Property	Definition	Occ	Examples, allowed values, other constraints
0	General Resource Type	The general type of a resource.	1	da|ra controlled list (see Appendix 3.1.1 for definition).
0.1	Resource Type	A description of the resource. The format is open, but the preferred format is a single term of some detail so that a pair can be formed with the property "General Resource Type"; with language sub-property.	0-2	Recommended for use. Example: Text/Article; Image/Animation
1	Title	The title of a resource; with language sub-property.	1-2	Example: EVS - European Values Study 1999 - Germany
4	Creator	The name of the principal investigator or author. May be a corporate/institutional or a personal name. Either 4.1 or 4.2 or both.	1-n	
4.1	Person	The name of the person (First name, Middle name, Last name).	1	Example: Heiko Peters First name and last name are mandatory, middle name is optional. Non-Latin types according to ALA/LC (http://www.loc.gov/catdir/cpso/roman.html).
4.1.1	Person ID	Unique identifier of the person. May be supplemented by da|ra if not submitted.	0-n	Recommended for use. Example: ISNI ID: 5859 1764 (Heiko Peters)
4.1.1.1	Vocabulary of Person ID	The name of the person ID scheme.	1	Required if 4.1.1 is used. Examples: Virtual International Authority File (VIAF) http://viaf.org/; International Standard Name Identifier (ISNI http://www.isni.org)
4.1.1.2	URI Name Authority	The URI of the name	0-1	http://www.isni.org

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3   Recommended sub-properties are highlighted in grey.

4   The details on the publication agent and registration agency are generated from the user account and the da|ra database, respectively. The DOI name is assigned by the Publication Agent and da|ra once a user account has been created. It is not part of the metadata set submitted by the publication agent.

No.	da|ra Property	Definition	Occ	Examples, allowed values, other constraints
	Record	identifier scheme.		
4.1.2	Affiliation	The institutional affiliation of the person; with language sub-property.	0-2	Example: Institute for Market Research
4.1.2.1	Affiliation ID	Unique identifier of the affiliation according to various schemes. May be supplemented by da|ra if not submitted.	0-n	Example: ID 2014108-7
4.1.2.1.1	Vocabulary Affiliation ID	The name of the institution ID scheme.	1	Required if 4.1.2.1 is used. Example: GND (Gemeinsame Normdatei/Universal Authority File)
4.1.2.1.2	URI Institution Authority Record	Persistent identifier of the name of the institution ID scheme.	0-1	Example: http://www.dnb.de/gnd
4.2	Institution	The name of the institution; with language sub-property.	1-2	Example: Institute for Market Research
4.2.1	Institution ID	Unique identifier of the institution according to various schemes. May be supplemented by da|ra if not submitted.	0-n	Recommended for use. Example: ID 2014108-7
4.2.1.1	Vocabulary of Institution ID	The name of the institution ID scheme.	1	Required, if 4.2.1 is applied. Example: GND (Gemeinsame Normdatei/Universal Authority File)
4.2.1.2	URI Institution Authority Record	Persistent identifier of the name of the institution ID scheme.	0-1	Example: http://www.dnb.de/gnd
8	URL	Each DOI name has an URL to which it resolves (landing page).	1-n	Example: http://info1.gesis.org/dbksearch13/sdesc2.asp?no=4975&db=D
12	Publication Date	The publication date of the resource submitted by the Publication Agent; possible are format sub-properties date; monthyear or year.	1	ISO 8601 format: YYYY, YYYY-MM or YYYY-MM-DD
28	Availability (controlled)	Conditions governing the access to primary re-	1	da|ra controlled list; Keywords in combination

No.	da|ra Property	Definition	Occ	Examples, allowed values, other constraints
		source.		with traffic light symbols (see Appendix 3.1.3).

Table 4:   Expanded da\|ra Recommended[5] and Optional Properties

No.	da|ra Property	Definition	Occ	Examples, allowed values, other constraints
2	Other Titles	Further titles; with language sub-property.	0-n	A title in another language, subtitles.
2.1	Title Type	The type of other titles.	0-n	Required, if 2 is used, da|ra controlled list (see Appendix 3.1.2 for definitions).
3	Collective Title	A title of a book series, working paper series, etc.; with language sub-property.	0-2	Example: Schriftenreihe des Bundesinstituts für Bevölkerungsforschung
3.1	Numbering	Indication of the source: volume count - journal number - page numbers.	0-1	Example: Vol. 2
9	DOI Proposal	The Publication Agent may suggest a DOI name, if an automatically generated DOI name is not required.	0-1	Recommended for use. Example: doi:10.1787/unesco-2011
10	Version	The version number of the registered resource to which the metadata record refers. It will be generated automatically if not submitted by the Publication Agent.	0-1	Recommended for use. Example: Version 1.0.0
10.1	Internal Resource Identifier	Internal identifier of the resource originating from the Publication Agents system. Together with the version property it is used to generate the DOI suffix, if no DOI Proposal is stated. It will be generated automatically if not submitted by the Publication Agent.	0-1	Recommended for use. Example: 14588V1 (openICPSR Identifier)
11	Language	The language in which the resource is available at the Publication Agent.	0-1	Recommended for use according to ISO 639-2. Example: eng; ger

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5   Recommended properties and sub-properties are highlighted in grey.

No.	da|ra Property	Definition	Occ	Examples, allowed values, other constraints
13	Alternative Identifier	An identifier other than the primary identifier of the registered resource. This may be an identifier from the information system of the Publication Agent as well as from other information systems.	0-n	Recommended for use. The dataset number or a Handle from Dataverse. Example: hdl:1902.5/71M0016XC B_F_1999
13.1	Alternate Identifier Type	The type of the alternative identifier.	1	Required, if 13 is used; For examples see da|ra controlled list for Identifier Type (see [Appendix 3.1.10](#)).
14	Classification Internal	Subject class from GESIS-Classification, ZA-Classification and JEL (Journal of Economic Literature) Classification.	0-n	Recommended for use. To support the Publication Agent, three classifications are provided. Example: Demography
14.1	Class ID	Unique identifier of the subject class.	0-1	Recommended for use. For each class only one identifier. Example: 10300 (Demography GESIS-Classification)
14.2	Vocabulary	The name of the applied subject classification system.	1	Required, if 14.1 is used. Example: GESIS-Classification
14.3	URI Classification Authority Record[6]	The URI of the subject identifier scheme.	0-1	Example: GESIS-Classification http://www.gesis.org/en/services/research/thesauri-und-klassifikationen/klassifikation-sozialwissenschaften/
14A	Classification External	Subject class from the classification system of the Publication Agent; with language sub-property.	0-n	Recommended for use. Example: Social Policy
14A.1	Vocabulary	The name of the applied classification system of the	1	Required, if 14A is used. Example:

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6   URI Classification Authority Record is not part of the metadata set submitted by the publication agent and is provided by da|ra.

No.	da|ra Property	Definition	Occ	Examples, allowed values, other constraints
		Publication Agent.		SOEP-Classification
15	Keywords (controlled)	Controlled keywords (thesauri or controlled vocabulary lists) that describe the content of the resource in detail.	0-n	Recommended for use. da|ra provides two thesauri: Thesaurus for the Social Sciences (TheSoz) and Thesaurus for Economics (STW). Example: Agricultural Statistics (STW)
15.1	Keyword ID	A unique identifier of the keyword.	1	Recommended for use. For each keyword one identifier only. Example: 451923902 (STW)
15.2	Vocabulary of Keyword ID	The name of the applied thesauri or controlled vocabulary lists.	1	Required, if 15.1 is used, e. g. STW, TheSoz
15.3	URI Keyword Authority Record	Persistent identifier of the name of the applied thesauri or controlled vocabulary lists.	0-1	Example: STW – http://zbw.eu/stw/versions/latest/thsys/70012/about
16	Keywords (free)	Free keywords describing the content of the resource; with language sub-property.	0-n	Example: health care reform
17	Description	Description of the resource content; with language sub-property.	0-n	Recommended for use.
17.1	Description Type	The type of the description.	1	Required, if 17 is used. da|ra controlled list (see Appendix 3.1.4).
18	Geographic Coverage	Generic term for 18.1 and 18.2; with language sub-property.	0-n	
18.1	Geographic Coverage (controlled)	Spatial region or named place where the data was gathered or on which the data is focused. ISO 3166 (Parts 1, 2 and 3) is commonly accepted international standard.	0-1	Recommended for use. ISO 3166-2/3. Example: DE / Germany, DE-BY (Bayern)

No.	da|ra Property	Definition	Occ	Examples, allowed values, other constraints
18.2	Geographic Coverage (free)	Geographic units on which the resource focuses. The option to indicate certain units, in case they cannot be found in the controlled vocabulary list.	0-1	Recommended for use. Labelling of the next related higher-level standard unit in the linked field 18.1 (e. g. Germany) is required. Example: Northern Germany or FRG without West Berlin
18.3	Geographic Location Point	A point location in space.	0-1	Recommended for use. A point contains a single latitude-longitude pair, separated by whitespace. Example: 31.233000 -67.302000
18.4	Geographic Location Box	The spatial limits of a place.	0-1	Recommended for use. A box contains two white space separated latitude-longitude pairs, with each pair separated by whitespace. The first pair is the lower corner (normally south west), the second is the upper corner (normally north east). Example: 41.090000 -71.032000 42.893000 -68.211000
19	Sampled Universe	Elementary units about which inferences are to be drawn and to which analytic results refer; with language sub-property.	0-1	Example: Adults in Eastern and Western Germany
20	Sampling	The type of the sample and sample design used to select the survey respondents to represent the population; with language sub-property.	0-2	Example: Stratified sample or quota sample
21	Temporal Coverage	Generic term for 21.1 and 21.2; with language sub-property.	0-n	
21.1	Temporal Coverage	Temporal coverage refers to	0-2	Calendar function,

No.	da|ra Property	Definition	Occ	Examples, allowed values, other constraints
	(controlled)	a time period during which the data was collected or observations made or to a time period that an activity or collection is linked to intellectually or thematically.		option to leave the day and/or month open. Example: 1990-10-05 - 1991-10-09; 2002-12; 2005
21.2	Temporal Coverage (free)	Provides the possibility to indicate the temporal coverage, if the calendar mode cannot be applied or as a supplement to 21.1.	0-1	Information on survey waves, seasons, etc. Example: autumn 1989
22	Time Dimension	Generic term for 22.1-22.3; with language sub-property.	0-n	
22.1	Time Dimension (controlled)	Describes the time dimension of the data collection.	0-1	da|ra controlled list (see Appendix 3.1.5).
22.2	Time Dimension (free)	Describes the time dimension of the data collection.	0-1	Provides the possibility to describe the time dimension if there are no equivalent terms in the controlled vocabulary.
22.3	Frequency	The time frequency at which data is collected at regular intervals.	0-1	Example: annually
23	Contributor	The person and/or institution responsible for collecting, managing, distributing, or otherwise contributing to the development of the resource; with language sub-property.	0-n	Recommended for use. Example: Smith, John Non-Latin types according to ALA/LC
23.1	Contributor Type	The type of contributor of the resource.	1	Required, if 23 is used. da|ra controlled list (see Appendix 3.1.6).
23.2	Contributor ID	Uniquely identifies an individual or legal entity, according to various schemes. May be supplemented by da|ra if not submitted.	0-n	Recommended for use. Example: ISNI 0000 0000 3894 2993 (John Smith)
23.2.1	Vocabulary Contributor ID	The name of the contributor ID scheme.	1	Required, if 23.2 is used. Example: International Standard Name Identifier (ISNI)
23.2.2	URI Name Authority	The URI of the name of the	0-1	http://www.isni.org

No.	da|ra Property	Definition	Occ	Examples, allowed values, other constraints
	Record	contributor ID scheme.		
23.2.3	Contributor Affiliation	The institutional affiliation of the contributor (person); with language sub-property.	0-2	Recommended for use. Example: Institute for Market Research
23.2.4	Contributor Affiliation ID	Unique Identifier of the affiliation according to various schemes. May be supplemented by da|ra if not submitted.	0-n	Recommended for use. Example: ID 2014108-7
23.2.4.1	Vocabulary of Contributor Affiliation ID	The name of the institution ID scheme.	1	Required if 23.2.4 is used. Example: GND (Gemeinsame Normdatei/Universal Authority File)
23.2.4.2	URI Institution Authority Record	Persistent identifier of the name of the institution ID scheme.	0-1	Example: http://www.dnb.de/gnd
24	Collection mode (controlled)	The method used to collect the data.	0-1	da|ra controlled list (see Appendix 3.1.7).
25	Collection mode (free)	The method used to collect the data; with language sub-property.	0-2	Possibility to describe the collection mode if there are no appropriate terms in the controlled vocabulary.
26	Dataset	Generic term for 26.1 - 26.9; with language sub-property.	0-n	
26.1	Type of Units	Describes the entity being analysed or observed in the resource.	1	Required if 26.2 is used; da|ra controlled list (see Appendix 3.1.8).
26.2	Number of Units	The number of units being analysed or observed in the resource.	0-1	Example: 3759
26.3	Number of Variables	The number of variables used in the resource.	0-1	Example: 210
26.4	Type of Data	The type of collected data.	0-1	Example: aggregated data, clinical data
26.5	File Name	The name of the file of the resource to which the respective fingerprint (see 26.8) refers (if necessary indicating the name of the directory).	0-n	An identified object can contain multiple files with related separated fingerprints. Allocation via file name. Example:

No.	da|ra Property	Definition	Occ	Examples, allowed values, other constraints
				brpr91os99_pd.txt
26.6	File Format	The technical format of the data file.	0-n	Example: STATA, SPSS, SAS, CSV, TXT
26.7	Size	Size information on the data file.	0-n	Recommended for use. Example: 5 MB
26.8	Data Fingerprint	The checksum which confirms the authenticity of the file.	0-n	Recommended for use. Example: 00994e0caa89bc6bf39 4c12d9a2e72e6
26.9	Method Fingerprint	Technical procedure generating data fingerprints (if necessary indicating the name of the directory).	0-n	Recommended for use. Example: MD5
27	Notes	References to further relevant information on a resource; with language sub-property.	0-2	Example: number of cases per geographic unit, etc.
29	Availability (free)	Additional specification of data availability; with language sub-property.	0-2	Example: Data usage is subject to written data privacy agreement
30	Rights	Any rights information for the resource; with language sub-property.	0-2	Example: Copyright
31	Relation	Identifier of related resources.	0-n	Recommended for use. Example: urn:nbn:de:bsz:21-opus-2971
31.1	Kind of Relation	The relationship of the resource being registered and the related resource.	1	Required, if 31 is used, da|ra controlled list (see Appendix 3.1.9).
31.2	Identifier Type	The type of the related identifier.	1	Required, if 31.1 is used. da|ra controlled list (see Appendix 3.1.10).
31.3	Name of Metadata Scheme	The name of the metadata scheme.	0-1	Use only with this relation pair: Has metadata/Is metadata for
31.4	URI of Metadata Scheme	The URI of the related metadata scheme.	0-1	Use only with this relation pair: Has metadata/Is metadata for
31.5	Type of Metadata Scheme	The type of the related metadata scheme, linked with the scheme URI.	0-1	Use only with this relation pair: Has metadata/Is metadata for Examples:

No.	da|ra Property	Definition	Occ	Examples, allowed values, other constraints
				XSD, DDT, Turtle
32	Publications	Scientific publications relating to the registered resource in terms of content.	0-n	
32.1	Structured recording of publications	Structured recording of publications relating to the registered resource in terms of content.	0-n	
32.1.1	Author	The name of the author(s) or of the editor(s).	0-n	Example: Peter Karl Wellenberg Non-Latin types according to ALA/LC Either the author or the editor name has to be submitted.
32.1.2	Editor	The name of the institution(s) or person(s).	0-n	Either the author or the editor name has to be submitted.
32.1.3	Title	The title of the publication.	1	Example: East Germans and West Germans in the mirror of three questionnaire tests
32.1.4	Year	The year of publication.	0-1	Example: 2004
32.1.5	Publisher	The name of the publisher.	0-1	Example: Springer
32.1.6	Publication Place	The place of publication.	0-n	Example: Heidelberg, Berlin
32.1.7	Journal/Series	The name of the journal/series.	0-1	Example: The European Journal of Social Science Research
32.1.8	Volume	The volume of the journal/series.	0-1	Example: 3
32.1.9	Issue	The issue of the journal/series.	0-1	Example: Jg. 3-4
32.1.10	Anthology	The name of the anthology.	0-1	Example: in: Jahrbuch für Wirtschaftsgeschichte
32.1.11	Page	The number of pages.	0-1	Example: 258 p. or pp.135-167
32.1.12	ISBN	International Standard Book Number.	0-1	Example: 978-3-8329-0905-5
32.1.13	ISSN	International Standard Serial Number.	0-1	Example: 10131-469 (print)

No.	da|ra Property	Definition	Occ	Examples, allowed values, other constraints
				10131-470 (online)
32.1.14	Document Type	The type of the publication.	0-1	da|ra controlled list (see [Appendix 0](#))
32.1.15	sowiport ID	The internal sowiport identifier used to import and display literature metadata from SOLIS, SSOAR, etc. May be supplemented by da|ra if applicable.	0-1	The internal element in da|ra, repeatable in line with the complex 32.
32.1.16	PID	Further persistent identifier related to the publication.	0-n	Example: DOI, URN, Handle, PURL
32.1.16.1	Identifier Type	The type of a further persistent identifier.	1	Required, if 32.1.16 is applied. da|ra controlled list (see [Appendix 3.1.10](#)).
32.2	Unstructured Recording of Publication	Unstructured bibliographic information.	0-n	
32.2.1	PID	Further persistent identifier related to publications.	0-n	Example: DOI, URN, Handle, PURL
32.2.1.1	Identifier Type	The type of a further persistent identifier.	1	Required, if 32.2.1 is used. da|ra controlled list (see [Appendix 3.1.10](#)).
38	Publication Place	The geographical location, where the resource is/was published, produced and/or distributed. Note: Publication Place is not language dependent. We recommend the language of the country, in which the resource is published (according to bibliographical standards[7]).	0-n	Example: Berlin; Zürich and München; Zürich; München; Warszawa

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7   Bibliographical standards encompass the [International Standard Bibliographic Description (ISBD)](#), the [Resource Description and Access (RDA)](#) and the [Rules for alphabetical cataloguing in academic libraries (RAK-WB)](#).

2.4   XML Example

Examples for various resource types can be found at:
http://www.da-ra.de/en/technical-information/doi-registration/

2.5   XSD

The XML Schema is available here:
http://www.da-ra.de/en/technical-information/doi-registration/
doi: 10.4232/10.mdsxsd.3.1
Note that the schema and this documentation will always have the same version number.
Please also note that da|ra Metadata Schema Version 3.0 is still valid and can be used.

2.6   Other da|ra Services

For information about other da|ra services that pertain to da|ra metadata records, including the Metadata Upload, the da|ra web service (API), Metadata Search and the Service Level Agreement (SLA), please visit the da|ra homepage at http://www.da-ra.de.

3 Appendices

3.1 Appendix 1: da|ra Controlled Vocabulary Definitions

3.1.1 General Resource Type

Identifier	Type	Definition[8]
1	Collection	An aggregation of resources of various types. If a collection exists of a single type, use the single type to describe it.
2	Dataset	Data encoded in a defined structure. Structured information encoded in lists, tables, databases, etc., which will normally be in a format available for direct machine processing. Unstructured numbers and words are usually registered as text.
3	Text	A resource consisting primarily of words for reading. Note that facsimiles or images of texts are still of the genre text.
4	Video	The recording, reproducing, or broadcasting of moving visual images.
5	Image	A visual representation other than text. Note that facsimiles or images of texts are still of the genre text.
6	Audio	A resource whose content is primarily audio or intended to be realized in audio.
7	Interactive Resource	A resource requiring interaction from the user to be understood, executed, or experienced.

3.1.2 Title Type

Identifier	Type	Definition[9]
1	Alternative Title	An alternative identifying name given to the resource.
2	Translated Title	The translation of the title into another language.
3	Subtitle	A secondary, usually explanatory title of the resource.
4	Original Title	A former title, if there was a change of title.

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8   da|ra General Resource Type definitions have been borrowed from the DCMI Type Vocabulary. See: http://dublincore.org/documents/dcmi-terms/#H7

9   Definitions originate from the Oxford English Dictionary http://www.oxforddictionaries.com/

3.1.3 Availability controlled

Identifier	Type	Definition
1	Download	Data and documents are released for everybody.
2	Delivery	Data and documents can be delivered.
3	On-site	Data and documents can be used on-site only.
4	Not available	Data and documents are not available.
5	Unknown	No information is provided.

3.1.4 Description Type

Identifier	Type	Definition[10]
1	Abstract	A brief description of the resource and the context in which the resource was created.
2	Series Information	Information about a repeating series, such as volume, issue, number, pages.
3	Table of Contents	A listing of a table of contents.
4	Methods	The technology methodology employed for the study or research.
5	Other	Other description information that does not fit into an existing category.

3.1.5 Time Dimension

Identifier	Descriptor	Definition[11]
1	Longitudinal	Data collected repeatedly over time to study change in a population.
2	Longitudinal: Cohort/Event-based	Data collected over time about a group of individuals that are connected in some way or have shared some significant experience within a given period. Examples: birth, disease, education, employment, family formation, participation in an event.
3	Longitudinal: Trend/Repeated cross-section	Studies different samples/different groups of people from the same population at several points in time, using the same set of questions/variables.

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10 da|ra definitions of Description Type have been borrowed from the DataCite Metadata Schema descriptions. See: http://schema.datacite.org/meta/kernel-3.1/doc/DataCite-MetadataKernel_v3.1.pdf (last updated October, 2014)

11 da|ra definitions of Time Dimension have been borrowed from the DDI Controlled Vocabulary for Time Method. See: http://www.ddialliance.org/Specification/DDI-CV/TimeMethod_1.1.html

Identifier	Descriptor	Definition[11]
		Conclusions are drawn for the population. Examples: public opinion polls, elections studies, etc.
4	Longitudinal: Panel	Data collected over time from, or about, the same sample of respondents.
5	Longitudinal: Panel: Continuous	Reports from the panel are collected on a regular basis.
6	Longitudinal: Panel: Interval	Measurements are taken only when information is needed.
7	Time Series	Data collected repeatedly over time to study change in observations. These are typically "objective" measurements of phenomena that can be observed externally, as opposed to attitudes/opinions or feelings. Examples may include economic/financial indicators, natural/meteorological phenomena, vital statistics, etc.
8	Time Series: Continuous	Phenomena are measured at every instant in time. Examples: lie detectors, electrocardiograms, etc.
9	Time Series: Discrete	Measurements are taken at (usually regularly) spaced intervals. Examples: macroeconomics (weekly share prices, monthly profits, sales); meteorology (hourly temperature); measurements of individuals (blood pressure, weight, height); sociology (crime figures, employment figures), etc.
10	Cross-section	Data about a population are obtained only once.
11	Cross-section ad-hoc follow-up	Data collected at one point in time to complete information collected in a previous cross-sectional study; the decision to collect follow-up data is not included in the study design.
12	Other	Use if the time method is known, but not found in the list.

3.1.6 Contributor Type

Type	Definition[12]	Identifier
Contact Person	Person with knowledge of how to access, troubleshoot, or otherwise field issues related to the resource.	1
Data Curator	Person tasked with reviewing, enhancing, cleaning, or standardizing metadata and the associated data submitted for storage, use, and maintenance within a data center or repository.	22
Data Collector	Person/institution responsible for finding, gathering/collecting data under the guidelines of the author(s) or Principal Investigator (PI).	2
Data Manager	Person (or organization with a staff of data managers, such as a data center) responsible for maintaining the finished resource.	3
Distributor	Institution tasked with responsibility to generate/disseminate copies of the resource in either electronic or print form.	4
Editor	A person who oversees the details related to the publication format of the resource.	5
Funder	Institution that provided financial support for the development of the resource.	6
Hosting Institution	Typically, the organization allowing the resource to be available on the Internet through the provision of its hardware/software/operating support.	7
Producer	Typically a person or organization responsible for the artistry and form of a media product.	8
Project Leader	Person officially designated as head of project team or sub-project team instrumental in the work necessary to development of the resource.	9
Project Manager	Person officially designated as manager of a project. Project may consist of one or many project teams and sub-teams.	10
Project Member	Person on the membership list of a designated project/project team.	11
Registration Agency	Institution/organization officially appointed by a Registration Authority to handle specific tasks within a defined area of responsibility.	12
Registration Authority	A standards-setting body from which Registration Agencies obtain official recognition and guidance.	13
Related Person	A person without a specifically defined role in the development of the resource, but who is someone the author wishes to recognize.	14
Researcher	A person involved in analyzing data or the results of an experiment or formal study. May indicate an intern or assistant to	15

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12 da|ra definitions of Contributor Type have been borrowed from the DataCite Metadata Schema descriptions. See: http://schema.datacite.org/meta/kernel-3.1/doc/DataCite-MetadataKernel_v3.1.pdf (last updated October, 2014)

Type	Definition[12]	Identifier
	one of the authors who helped with research but who was not so "key" as to be listed as an author.	
Research Group	Typically refers to a group of individuals with a lab, department, or division; the group has a particular, defined focus of activity.	16
Rights Holder	Person or institution owning or managing property rights, including intellectual property rights over the resource.	17
Sponsor	Person or organization that issued a contract or under the auspices of which a work has been written, printed, published, developed, etc.	18
Supervisor	Designated administrator over one or more groups/teams working to produce a resource or over one or more steps of a development process.	19
Work Package Leader	A Work Package is a recognized data product, not all of which is included in publication. The package, instead, may include notes, discarded documents, etc. The Work Package Leader is responsible for ensuring the comprehensive contents, versioning, and availability of the Work Package during the development of the resource.	20
Other	Any person or institution making a significant contribution to the development and/or maintenance of the resource, but whose contribution does not "fit" other controlled vocabulary for contributorType.	21

3.1.7 Collection Mode

Descriptor	Definition[13]	Identifier
Interview	The purpose of a research interview is to collect information to be used in the answering of a research question.	1
Interview: Face-to-face	An interview in which an interviewer and a respondent are in a direct face-to-face interaction.	2
Interview: CAPI	Computer Assisted Personal Interviewing	6
Interview: PAPI	Paper-and-pencil interviewing. The interviewer uses a traditional paper questionnaire to read the questions and enter the answers.	25
Interview: Telephone	An interview in which an interviewer and a respondent communicate per telephone.	3
Interview: CATI	Computer Assisted Telephone Interviewing	5
Interview: E-mail	A method of data collection that consists of sending	4

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13 da|ra descriptions of Collection Mode have partially been borrowed from the DDI Controlled Vocabulary for Mode of Collection http://www.ddialliance.org/Specification/DDI-CV/ModeOfCollection_1.1.html.

Descriptor	Definition[13]	Identifier
	questionnaire to a respondent by email.	
Interview: Web-based	An interview conducted via the Internet. Examples include interviews conducted within online forums or using web-based audio-visual technology enabling the interviewer(s) and interviewee(s) to communicate in real time.	26
Self-completed questionnaire	Self-completed questionnaires are surveys that respondents complete for themselves.	7
Self-completed questionnaire: Fixed form	The questionnaire is not interactive and remains the same regardless of the responses given to prior questions. Use the broader term if the method is not described by any of the narrower terms. For example, for PDF and diskette questionnaires.	27
Self-completed questionnaire: E-mail	Questions are presented to the respondent in the text body of an e-mail, not as an attached electronic questionnaire or as a link to a web-based questionnaire.	28
Self-completed questionnaire: Paper/pencil	Questionnaire handed directly to the respondent who completes it on the spot and hands it back.	8
Self-completed questionnaire: SMS/MMS	The questions and answers are incorporated in SMS (text messages) or MMS (messages including multimedia content) sent to, and from mobile phones.	29
Self-completed questionnaire: Web-based	Questionnaires completed on the Web.	9
Self-completed questionnaire: Interactive	Self-administered questionnaire in which the question sequence is not fixed, being managed by computer software. Some of the questions, as well as the order in which they are asked, are contingent to responses given to previous questions.	30
Self-completed questionnaire: CASI	Computer assisted self-interviewing (CASI) is a technique for survey data collection in which the respondent uses a computer to complete the survey questionnaire without an interviewer administering it to the respondent.	10
Self-completed questionnaire: VCASI	Video computer-assisted self-interview. Earliest method of computer-assisted self-interviewing, in which respondents view the questions on a computer screen and typically enter answers using the computer keyboard, mouse, or touchscreen. (Thomas Harmon, et al. "Impact of T-ACASI on Survey Measurements of Subjective Phenomena". Public Opinion Quarterly, vol. 73, issue 2, pp. 255-280)	31
Self-completed questionnaire: ACASI	ACASI is designed as a self-administered questionnaire on a computer. The computer displays the text of each question and its answer alternatives while presenting a pre-recorded interviewer's voice, which reads these to the respondent, who listens privately through headphones. Respondents answer by touching the appropri-	11

Descriptor	Definition[13]	Identifier
	ate response option on the computer monitor.	
Self-completed question-naire: TACASI	Telephone audio computer-assisted self-interview. TACASI adds telephone capabilities to a standard audio-CASI system, thereby allowing ACASI interviews to be conducted over the telephone, with the telephone's touchtone keypad serving as the input device. (Thomas Harmon, et al. "Impact of TACASI on Survey Measurements of Subjective Phenomena". Public Opinion Quarterly, vol. 73, issue 2, pp. 255-280).	32
Self-completed question-naire: CAWI	Computer-assisted Web interview. The administration of the questionnaire completion is managed by a specifically designed program. Questions can be tailored to previous question responses, enabling routing plans. Answers are stored directly on the main database which is accessible through the Web, using a password-secured webpage.	33
Focus Group	A special type of group in terms of purpose, size, composition, and procedures. A focus group is typically composed of seven to twelve participants who are unfamiliar with each other and conducted by a trained interviewer. These participants are selected because they have certain characteristics in common that relate to the topic of the focus group.	23
Focus Group: Face-to-face	The focus group participants meet in person to conduct the discussion.	34
Focus Group: Telephone	The focus group discussion is conducted over the telephone.	35
Focus Group: Online	The focus group discussion is conducted over the Internet in an interactive manner.	36
Self-administered writings and/or diaries	Narratives, stories, diaries, and written texts created by the research subject.	37
Self-administered writings and/or diaries: E-mail	Narratives, stories, diaries, and written texts submitted via e-mail messages.	38
Self-administered writings and/or diaries: Paper/pencil	Narratives, stories, diaries, and written texts created and collected in paper form.	39
Self-administered writings and/or diaries: Web-based	Narratives, stories, diaries, and written texts gathered from Internet sources, e.g. websites, blogs, discussion forums.	40
Observation	Observational studies attempt to understand cause-and-effect relationships.	18
Observation: Field	Field observations are a method where people are observed in 'real' locations and situations, such as workplaces, homes, etc.	19

Descriptor	Definition[13]	Identifier
Observation: Field participant[14]	Type of field observation in which the researcher interacts with the subjects and often plays a role in the social situation under observation.	21
Observation: Field non-participant	Observation that is conducted in a natural, non-controlled setting without any interaction between the researcher and his/her subjects.	41
Observation: Laboratory	Observation that is conducted in a controlled, artificially created setting.	20
Observation: Laboratory participant	Type of laboratory observation in which the researcher interacts with the subjects and often plays a role in the social situation under observation. Example: Observation of children's play in a laboratory playroom with the researcher taking part in the play.	42
Observation: Laboratory non-participant	Type of laboratory observation that is conducted without any interaction between the researcher and his/her subjects.	43
Observation: Computer-based	Type of observation in which data regarding computer usage are being collected by software (like cookies, etc.) that is built into, or applied to local or online computer programs. Information may be collected about the ways in which users interact with the programs, how much time they spend on a page, how they use specific sections of applications, how they navigate from page to page or from one application to another, etc.	44
Experiment	An experiment is a controlled study in which the researcher attempts to understand cause-and-effect relationships. The study is "controlled" in the sense that the researcher controls (1) how subjects are assigned to groups and (2) which treatments each group receives.	22
Experiment: Laboratory	Research method involving the manipulation of some or all of the independent variables included in the hypotheses.	45
Experiment: Field/Intervention	An experiment conducted in a natural, uncontrolled setting, in which the researcher manipulates one or several independent variables. Intervention/clinical studies are one example of field experiments.	46
Experiment: Web-based	An experiment conducted in the virtual setting of the World Wide Web, in which experimental materials are programmed to implement artificial situations or events to be investigated in a distributed environment.	47
Recording	Registering by mechanical or electronic means, in a form that allows the information to be retrieved	16

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14 Observation: Participant from da|ra Metadata Schema 3.0 was now changed to Observation: Field participant for better compatibility with DDI Controlled Vocabulary. The intent remains the same.

Descriptor	Definition[13]	Identifier
	and/or reproduced. For example, images or sounds on disc or magnetic tape.	
Content coding[15]	As a mode of secondary data collection, content coding applies coding techniques to transform qualitative data (textual, video, audio or still-image) originally produced for other purposes into quantitative data (expressed in unit-by-variable matrices) in accordance with pre-defined categorization schemes.	12
Transcription	Transcription is a specific kind of data entry that means turning oral language into written form. This means listening to an audio or video recording (or possibly live speech in real-time transcription) and then typing it as a written transcript.	13
Compilation	The raw data must be compiled so that the taxonomic analysis can be performed and data can be broken up into respective parts and segments.	14
Synthesis	The combination of elements into a whole.	15
Summary	Presentation of information in a condensed form, by reducing it to its main points. Example: Abstracts of interviews or reports are published and used as data rather than the full-length interviews or reports.	48
Aggregation	Statistics that relate to broad classes, groups, or categories. The data are averaged, totalled, or otherwise derived from individual-level data, and it is no longer possible to distinguish the characteristics of individuals within those classes, groups, or categories. For example, the number and age group of the unemployed in specific geographic regions, or national level statistics on the occurrence of specific offences, originally derived from the statistics of individual police districts.	49
Simulation	Simulation involves creation of an artificial situation similar to the actual life situation.	17
Measurements and tests	Assessing specific properties (or characteristics) of beings, things, phenomena, (and/or processes) by applying pre-established standards and/or specialized instruments or techniques.	50
Measurements and tests: Educational	Assessment of knowledge, skills, aptitude, or educational achievement by means of specialized measures or tests.	51
Measurements and tests: Physical	Assessment of physical properties of living beings, objects, materials, or natural phenomena. For example, blood pressure, heart rate, body weight and height, as well as time, distance, mass, temperature, force, power, speed, GPS data on physical movement and other	52

15   Coding from da|ra Metadata Schema Version 3.0 was now changed to Content coding for better compatibility with DDI Controlled Vocabulary. The intent remains the same.

Descriptor	Definition[13]	Identifier
	physical parameters or variables, like geospatial data.	
Measurements and tests: Psychological	Assessment of personality traits or psychological/behavioral responses by means of specialized measures or tests. For example, objective tests like self-report measures with a restricted response format, or projective methods allowing free responses, including word association, sentence or story completion, vignettes, cartoon tests, thematic apperception tests, role play, drawing tests, inkblot tests, choice ordering exercises, etc.	53
Other	Use if the collection mode is known, but not found in the list.	24

3.1.8 Type of Units

Identifier	Type	Definition[16]
1	Individual	Any individual person, irrespective of demographic characteristics, professional, social or legal status, or affiliation.
2	Organization	Any kind of formal administrative and functional structure - includes associations, institutions, agencies, businesses, political parties, schools, etc.
3	Family	Two or more people related by blood, marriage (including step-relations), adoption or fostering and who may or may not live together. For example, used when researching the extent to which people provide support and assistance for their relatives.
4	Family: Household family	A more specific term, refers only to related people who live in the same household at a point in time. If not known whether the analysis unit is "Family" or "Household family", use "Family".
5	Household	A person or a group of persons who share the same dwelling unit and common living arrangements. These common living arrangements may include pooling some, or all, of their income and wealth, and consuming certain types of goods and services collectively, mainly housing and food.
6	Housing Unit	A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intend-

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16 da|ra definitions of Type of Units have been borrowed from DDI Controlled Vocabulary for Analyses Unit
    http://www.ddialliance.org/Specification/DDI-CV/AnalysisUnit_1.0.0.html

Identifier	Type	Definition[16]
		ed for occupancy) as separate living quarters.
7	Event/Process	Any type of incident, occurrence, or activity. Events are usually one-time, individual occurrences, with a limited or short duration. Examples: criminal offenses, riots, meetings, elections, sports competitions, terrorist attacks, natural disasters like floods, etc. Processes typically take place over time, and may include multiple "events" or gradual changes that ultimately lead, or are projected to lead, to a particular result. Examples: court trials, criminal investigations, political campaigns, medical treatments, education, athletes' training, etc.
8	Geographic Unit	Any entity that can be spatially defined as a geographic area, with either natural (physical) or administrative boundaries.
9	Time Unit	Any period of time: year, week, month, day, or bimonthly or quarterly periods, etc.
10	Text Unit	Books, articles, any written piece/entity.
11	Group	Two or more individuals assembled together or having some unifying relationship.
12	Object	Anything material, but inanimate, that has an independent existence and may be perceived by the senses. Examples: objects of art (paintings, sculptures, etc.) or weapons, or vehicles, etc.
13	Other	Use if the unit of analysis is known, but not found in the list.

3.1.9 Kind of Relation

Description of the relationship of the resource being registered (A) and the related resource (B).[17]

Identifier	Type	Definition[18]
1	Is cited by	indicates that B includes A in a citation Example: http://doi.org/10.1093/glycob/cwn088 is cited by http://doi.org/10.4123/SIDR.000006E.RP

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17 Primarily examples from registered resources of da|ra. In case there existed thitherto no examples in da|ra they were taken from DataCite resources.

18 da|ra definitions of Kind of Relation have been borrowed from the DataCite Metadata Schema descriptions. See: http://schema.datacite.org/meta/kernel-3.1/doc/DataCite-MetadataKernel_v3.1.pdf (last updated October, 2014)

Iden-tifier	Type	Definition[18]
2	Cites	indicates that A includes B in a citation Example: http://doi.org/10.4123/SIDR.000006E.RP cites http://doi.org/10.1093/glycob/cwn088
3	Is supplement to	indicates that A is a supplement to B Example: http://doi.org/10.4123/SIDR.000003I.RP is supplement to http://doi.org/10.1182/blood-2008-10-187179
4	Is supplemented by	indicates that B is a supplement to A Example: http://doi.org/10.1182/blood-2008-10-187179 is supplemented by http://doi.org/10.4123/SIDR.000003I.RP
5	Is continued by	indicates that A is continued by the work B Example: http://doi.org/10.7803/377.02.2.2.10 is continued by http://doi.org/10.7803/577.11.2.2.10
6	Continues	indicates A is a continuation of the work B Example: http://doi.org/10.7803/203.12.1.1.10 continues http://doi.org/10.4232/1.11336
7	Is new version of	indicates A is a new edition of B, where the new edition has been modified or updates Example: http://doi.org/10.4232/1.11005 is new version of http://doi.org/10.4232/1.4804
8	Is previous version of	indicates A is a previous edition of B Example: http://doi.org/10.4232/1.4804 is previous version http://doi.org/10.4232/1.11005
9	Is part of	indicates A is a portion of B; may be used for elements of a series Example: http://doi.org/10.12764/30785_p1 is part of http://doi.org/10.12764/30785
10	Has part	indicates A includes the part B Example:

Iden- tifier	Type	Definition[18]
		http://doi.org/10.11588/nbdpfbw.2013.4 has part http://doi.org/10.11588/nbdpfbw.2013.4.12736
11	Is referenced by	indicates A is used as a source of information by B Example: http://doi.org/10.6092/INGV.IT-AHEAD is referenced by http://doi.org/10.13117/GEM.GEGD.TR2013.01
12	References	indicates B is used as a source of information for A Example: http://doi.org/10.13117/GEM.GEGD.TR2013.01 references http://doi.org/10.6092/INGV.IT-AHEAD
13	Is documented by	indicates B is documentation about/explaining A Example: http://doi.org/10.5156/FWS.1999.M.001 is documented by http://doi.org/10.5156/FWS.1999.D.006
14	Documents	indicates A is documentation about/explaining B Example: http://doi.org/10.5156/FWS.1999.D.006 documents http://doi.org/10.5156/FWS.1999.M.001
15	Is compiled by	indicates B (and other resources) is used to compile or create A [No existing example available]
16	Compiles	indicates B is the result of a compile or creation event using A (and other resource). [No existing example available]
17	Is variant form of	indicates A is a variant or different form of B, e. g. calculated or calibrated form or different packaging Example: http://doi.org/10.12765/CPoS-2013-19en is variant form of http://doi.org/10.12765/CPoS-2013-19de
18	Is original form of	indicates A is the original form of B Example: http://doi.org/10.5156/DEAS.2011.D.001 is original form of http://doi.org/10.5156/DEAS.2011.D.002
19	Has metadata	indicates A relates to an external file of additional metadata B Example: http://doi.org/10.4232/1.11005 has metadata

Iden-tifier	Type	Definition[18]
		http://doi.org/10.4232/2.4804.54500
20	Is metadata for	indicates A is additional metadata for a work or resource B Example: http://doi.org/10.4232/2.4804.54500 is metadata for http://doi.org/10.4232/1.11005
21	Is identical to	indicates that A is identical to B, for use when there is a need to register two separate instances of the same resource Example: http://doi.org/10.12759/hsr.39.2014.1.144-162 is identical to http://web.b.ebscohost.com/ehost/detail?vid=2&sid=dc58a94a-e52e-4c59-bfb8-2bf5084670ed%40sessionmgr110&hid=117&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=sih&AN=94509757
22	Is reviewed by	indicates that A is reviewed by B Example: http://doi.org/10.12688/f1000research.4001.1 is reviewed by http://doi.org/10.5256/f1000research.4288.r5134
23	Reviews	indicates that A is a review of B Example: http://doi.org/10.5256/f1000research.4288.r5134 reviews http://doi.org/10.12688/f1000research.4001.1
24	Is derived from	indicates B is a source upon which A is based; IsDerivedFrom should be used for a resource that is a derivative of an original resource. Example: http://doi.org/10.6078/M7DZ067C is derived from http://doi.org/10.6078/M7PC3083
25	Is source of	indicates A is a source upon which B is based; IsSourceOf is the original resource from which a derivative resource was created. Example: http://doi.org/10.6078/M7PC3083 is source of http://doi.org/10.6078/M7DZ067C

3.1.10 Identifier Type

Type	Definition[19]
ARK	Archival Resource Key; URL designed to support long-term access to information objects. In general, ARK syntax is of the form (brackets indicate [optional] elements): [http//NMA/]ark:/NAAN/Name/[Qualifier]
arXiv	arXiv identifier; arXiv.org is a repository of preprints of scientific papers in the fields of mathematics, physics, astronomy, computer science, quantitative biology, statistics, and quantitative finance.
bibcode	Astrophysics Data System bibliographic codes; a standardized 19 character identifier according to the syntax yyyyjjjjjvvvvmppppa. See http://info-uri.info/registry/OAIHandler?verb=GetRecord&metadataPrefix=reg&identifier=info:bibcode/
DOI	Digital Object Identifier; a character string used to uniquely identify an object. A DOI name is divided into two parts, a prefix and a suffix, separated by a slash.
EAN13	European Article Number, now renamed International Article Number, is a 13-digit barcoding standard which is a superset of the original 12-digit Universal Product Code (UPC) system.
EISSN	Electronic International Standard Serial Number; ISSN used to identify periodicals in an electronic form (eISSN or e-ISSN).
Handle	A handle is an abstract reference to a resource.
ISBN	International Standard Book Number; a unique numeric book identifier. There are two formats: a 10-digit ISBN format and a 13-digit ISBN.
ISSN	International Standard Serial Number; a unique 8-digit number used to identify a print or electronic periodical publication.
ISTC	International Standard Text Code; a unique number assigned to a textual work. An ISTC consists of 16 numbers and/or letters.
LISSN	The linking ISSN of ISSN-L enables collocation or linking among different media versions of a continuing resource.
LISD	Life Science Identifiers; a unique identifier for data in the Life Science domain. Format: urn:lsid:authority:namespace:identifier:revision
PMID	PubMed identifier; a unique number assigned to each PubMed record.
PURL	Persistent Uniform Resource Locator. A PURL has three parts: (1) a protocol, (2) a resolver address, and (3) a name.
UPC	Universal Product Code is a barcode symbology used for tracking trade items in stores. Its most common form, the UPC-A, consists of 12 numerical digits.

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19   da|ra definitions of Identifier Type have been borrowed from the DataCite Metadata Schema descriptions. See: http://schema.datacite.org/meta/kernel-3.1/doc/DataCite-MetadataKernel_v3.1.pdf (last updated October, 2014)

Type	Definition[19]
URL	Uniform Resource Locator, also known as web address, is a specific character string that constitutes a reference to a resource. The syntax is: scheme://domain:port/path?query_string#fragment_id.
URN	Uniform Resource Name; is a unique and persistent Identifier of an electronic document. The syntax is: urn:<NID>:<NSS> The leading **urn:** sequence is case-intensive, **<NID>** is the namespace identifier, **<NSS>** is the namespace-specific string.

3.1.11 Document Type

Identifier	Type	Definition[20]
1	Working Paper	A preliminary scientific or technical paper released for input and critique (most often grey literature).
2	Article	A nonfictional literary composition that forms an independent part of a publication e. g. in a journal or magazine.
3	Report	A written account of something that one has observed, heard, done, or investigated and that is prepared on ad hoc, periodic, recurring, regular, or as required basis.
4	Book/Monograph	A set of written, printed, illustrated or blank sheets that conjoin into one literary work. A monograph is a non-serial publication on a single subject or an aspect of a subject, usually by a single author.
5	Manuscript	A book, document, or other composition written by hand as well as text submitted to the publisher or printer in preparation for publication, regardless of the format.
6	Reference Book	A book, such as a dictionary or encyclopaedia, to which one can refer for authoritative information and intended primarily for consultation rather than for consecutive reading.
7	Review	An evaluation of e. g. a publication, theory or synthesis of research on a topic at that moment in time.
8	Series	A (regularly) sequence of publications like books or journal articles that have (roughly) the same subject.
9	Journal	Newspaper or magazine that deals with a particular subject or professional activity and that is issued in a regular cycle.
10	Newspaper	A printed publication (usually issued daily or weekly) consisting of folded unstapled sheets and containing news, articles, advertisements and correspondence.

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20   Definitions originate from the Oxford English Dictionary http://www.oxforddictionaries.com/.

3.2 Appendix 2: Mappings

3.2.1 da|ra Version 3.0 to da|ra Version 3.1[21, 22]

No.	Property (da|ra 3.0)	XSD-element (da|ra 3.0)	No.	Property (da|ra 3.1)	XSD-element (da|ra 3.1)
0	General Resource Type	resourceType	0	General Resource Type	resourceType
0.1	Resource Type	typeName	0.1	Resource Type	typeName
1	Title	titleName	1	Title	titleName
2	Other Titles	titleName	2	Other Titles	titleName
2.1	Title Type	titleType	2.1	Title Type	titleType
3	Collective Title	titleName	3	Collective Title	titleName
3.1	Numbering	numbering	3.1	Numbering	numbering
4	Creator	creator	4	Creator	creator
4.1	Person (First Name, Middle Name, Last Name)	person (firstName, middleName, lastName)	4.1	Person (First Name, Middle Name, Last Name)	person (firstName, middleName, lastName)
4.1.1	Person ID	identifier	4.1.1	Person ID	identifier
4.1.1.1	Vocabulary of Person ID	identifierSchema	4.1.1.1	Vocabulary of Person ID	identifierSchema
4.1.1.2	URI Name Authority Record	schemaURI	4.1.1.2	URI Name Authority Record	schemaURI
4.1.2	Affiliation	name	4.1.2	Affiliation	name
4.1.2.1	Affiliation ID	identifier	4.1.2.1	Affiliation ID	identifier
4.1.2.1.1	Vocabulary Affiliation ID	identifierSchema	4.1.2.1.1	Vocabulary Affiliation ID	identifierSchema
4.1.2.1.2	URI Institution Authority Record	schemaURI	4.1.2.1.2	URI Institution Authority Record	schemaURI
4.2	Institution	name	4.2	Institution	name
4.2.1	Institution ID	identifier	4.2.1	Institution ID	identifier
4.2.1.1	Vocabulary of Institution ID	identifierSchema	4.2.1.1	Vocabulary of Institution ID	identifierSchema
4.2.1.2	URI Institution Authority Record	schemaURI	4.2.1.2	URI Institution Authority Record	schemaURI
8	URL	dataURL	8	URL	dataURL
9	DOI Proposal	doiProposal	9	DOI Proposal	doiProposal
10	Version	currentVersion	10	Version	currentVersion

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21 The details on the publication agent and registration agency are generated from the user account and the da|ra database, respectively. The DOI name is assigned by the Publication Agent and da|ra once a user account has been created. It is not part of the metadata set submitted by the publication agent.

22 Contributor Affiliation properties were already implemented in the previous Version 3.0, which was unfortunately forgotten to list in the Technical Report 2014|07.

No.	Property (da|ra 3.0)	XSD-element (da|ra 3.0)	No.	Property (da|ra 3.1)	XSD-element (da|ra 3.1)
10.1	Internal Resource Identifier	identifier	10.1	Internal Resource Identifier	identifier
11	Language	resourceLanguage	11	Language	resourceLanguage
12	Publication Date	publicationDate	12	Publication Date	publicationDate
13	Alternative Identifier	identifier	13	Alternative Identifier	identifier
13.1	Alternate Identifier Type	type	13.1	Alternate Identifier Type	type
14	Classification Internal	classificationInternal	14	Classification Internal	classificationInternal
14.1	Class ID	identifier	14.1	Class ID	identifier
14.2	Vocabulary	schema	14.2	Vocabulary	schema
14.3	URI Classification Authority Record	-	14.3	URI Classification Authority Record	-
14.A	Classification External	term	14.A	Classification External	term
14.A.1	Vocabulary	schema	14.A.1	Vocabulary	schema
15	Keywords (controlled)	controlledKeyword	15	Keywords (controlled)	controlledKeyword
15.1	Keyword ID	identifier	15.1	Keyword ID	identifier
15.2	Vocabulary of Keyword ID	schema	15.2	Vocabulary of Keyword ID	schema
15.3	URI Keyword Authority Record	-	15.3	URI Keyword Authority Record	-
16	Keywords (free)	keyword	16	Keywords (free)	keyword
17	Description	freetext	17	Description	freetext
17.1	Description Type	type	17.1	Description Type	type
18	Geographic Coverage	geographicCoverage	18	Geographic Coverage	geographicCoverage
18.1	Geographic Coverage (controlled)	geographicCoverageControlled	18.1	Geographic Coverage (controlled)	geographicCoverageControlled
18.2	Geographic Coverage (free)	freetext	18.2	Geographic Coverage (free)	freetext
18.3	Geographic Location Point	geoLocationPoint	18.3	Geographic Location Point	geoLocationPoint
18.4	Geographic Location Box	geoLocationBox	18.4	Geographic Location Box	geoLocationBox
19	Sampled Universe	sampled	19	Sampled Universe	sampled
20	Sampling	method	20	Sampling	method
21	Temporal Coverage	temporalCoverage	21	Temporal Coverage	temporalCoverage
21.1	Temporal Cover-	startDate/date||	21.1	Temporal Cover-	startDate/date|| monthyear|| year

No.	Property (da|ra 3.0)	XSD-element (da|ra 3.0)	No.	Property (da|ra 3.1)	XSD-element (da|ra 3.1)
	age (controlled)	monthyear|| year &&|| endDate/date|| monthyear|| year		age (controlled)	&&|| endDate/date|| monthyear|| year
21.2	Temporal Coverage (free)	temporalCoverageFree	21.2	Temporal Coverage (free)	temporalCoverageFree
22	Time Dimension	timeDimension	22	Time Dimension	timeDimension
22.1	Time Dimension (controlled)	timeDimensionControlled	22.1	Time Dimension (controlled)	timeDimensionControlled
22.2	Time Dimension (free)	timeDimensionFree	22.2	Time Dimension (free)	timeDimensionFree
22.3	Frequency	frequency	22.3	Frequency	frequency
23	Contributor	person/firstName|| middleName|| lastName || institutionName/name	23	Contributor	person/firstName|| middleName|| lastName || institutionName/name
23.1	Contributor Type	contributorType	23.1	Contributor Type	contributorType
23.2	Contributor ID	identifier	23.2	Contributor ID	identifier
23.2.1	Vocabulary of Contributor ID	identifierSchema	23.2.1	Vocabulary of Contributor ID	identifierSchema
23.2.2	URI Name Authority Record	schemaURI	23.2.2	URI Name Authority Record	schemaURI
23.2.3	Contributor Affiliation	name	23.2.3	Contributor Affiliation	name
23.2.4	Contributor Affiliation ID	identifier	23.2.4	Contributor Affiliation ID	identifier
23.2.4.1	Vocabulary of Contributor Affiliation ID	identifierSchema	23.2.4.1	Vocabulary of Contributor Affiliation ID	identifierSchema
23.2.4.2	URI Institution Authority Record	schemaURI	23.2.4.2	URI Institution Authority Record	schemaURI
24	Collection Mode (controlled)	collectionModeControlled	24	Collection Mode (controlled)	collectionModeControlled
25	Collection Mode (free)	modeFree	25	Collection Mode (free)	modeFree
26	Dataset	dataSet	26	Dataset	dataSet
26.1	Type of Units	unitType	26.1	Type of Units	unitType
26.2	Number of Units	numberUnits	26.2	Number of Units	numberUnits
26.3	Number of Variables	numberVariables	26.3	Number of Variables	numberVariables
26.4	Type of Data	dataType	26.4	Type of Data	dataType
26.5	File Name	name	26.5	File Name	name
26.6	File Format	format	26.6	File Format	format
26.7	Size	size	26.7	Size	size

No.	Property (da|ra 3.0)	XSD-element (da|ra 3.0)	No.	Property (da|ra 3.1)	XSD-element (da|ra 3.1)
26.8	Data Fingerprint	fingerprint	26.8	Data Fingerprint	fingerprint
26.9	Method Fingerprint	fingerprintMethod	26.9	Method Fingerprint	fingerprintMethod
27	Notes	text	27	Notes	text
28	Availability (controlled)	availabilityControlled	28	Availability (controlled)	availabilityControlled
29	Availability (free)	availabilityText	29	Availability (free)	availabilityText
30	Rights	rightsText	30	Rights	rightsText
31	Relation	identifier	31	Relation	identifier
31.1	Kind of Relation	relationType	31.1	Kind of Relation	relationType
31.2	Identifier Type	identifierType	31.2	Identifier Type	identifierType
31.3	Name of Metadata Scheme	relatedMetadataSchema	31.3	Name of Metadata Scheme	relatedMetadataSchema
31.4	URI of Metadata Scheme	schemaURI	31.4	URI of Metadata Scheme	schemaURI
31.5	Type of Metadata Scheme	schemaType	31.5	Type of Metadata Scheme	schemaType
32	Publications	publication	32	Publications	publication
32.1	Structured Recording of Publication	structuredPublication	32.1	Structured Recording of Publication	structuredPublication
32.1.1	Author	author/firstName|| middleName|| lastName	32.1.1	Author	author/firstName|| middleName|| lastName
32.1.2	Editor	name	32.1.2	Editor	name
32.1.3	Title	title	32.1.3	Title	title
32.1.4	Year	year	32.1.4	Year	year
32.1.5	Publisher	publisher	32.1.5	Publisher	publisher
32.1.6	Publication Place	places	32.1.6	Publication Place	places
32.1.7	Journal/Series	journal	32.1.7	Journal/Series	journal
32.1.8	Volume	volume	32.1.8	Volume	volume
32.1.9	Issue	issue	32.1.9	Issue	issue
32.1.10	Anthology	anthology	32.1.10	Anthology	anthology
32.1.11	Pages	pages	32.1.11	Pages	pages
32.1.12	ISBN	isbn	32.1.12	ISBN	isbn
32.1.13	ISSN	issn	32.1.13	ISSN	issn
32.1.14	Document Type	doctype	32.1.14	Document Type	doctype
32.1.15	sowiport ID	sowiportID	32.1.15	sowiport ID	sowiportID
32.1.16	PID	ID	32.1.16	PID	ID
32.1.16.1	PID Type	pidType	32.1.16.1	PID Type	pidType

No.	Property (da|ra 3.0)	XSD-element (da|ra 3.0)	No.	Property (da|ra 3.1)	XSD-element (da|ra 3.1)
32.2	Unstructured Recording of Publication	freetext	**32.2**	Unstructured Recording of Publication	freetext
32.2.1	PID	ID	**32.2.1**	PID	ID
32.2.1.1	PID Type	pidType	**32.2.1.1**	PID Type	pidType
38	Publication Place	glPlace	**38**	Publication Place	glPlace

3.2.2 da|ra Version 3.1 to DataCite Version 3.1

No.	XSD-element (da|ra 3.1)	No.	DataCite 3.1
0	resourceType	10.1	resourceTypeGeneral
0.1	typeName	10	ResourceType
1	titleName	3	Title
2	titleName	3	Title
2.1	titleType	3.1	titleType
3	titleName	17	Description (descriptionType: SeriesInformation 17.1)
3.1	numbering	17	Description (descriptionType: SeriesInformation 17.1)
4	creator	2	Creator
4.1	firstName, middleName, lastName	2.1	creatorName
4.1.1	identifier	2.2	nameIdentifier
4.1.1.1	identifierSchema	2.2.1	nameIdentifierScheme
4.1.1.2	schemaURI	2.2.2	schemeURI
4.1.2	name	2.3	affiliation
4.1.2.1	identifier	2.3	affiliation
4.1.2.1.1	identifierSchema	2.3	affiliation
4.1.2.1.2	schemaURI	2.3	affiliation
4.2	name	2.1	creatorName
4.2.1	identifier	2.2	nameIdentifier
4.2.1.1	identifierSchema	2.2.1	nameIdentifierScheme
4.2.1.2	schemaURI	2.2.2	schemeURI
8	dataURL	–	–
9	doiProposal	–	–
10	currentVersion	15	Version
10.1	identifier	–	–
11	resourceLanguage	9	Language
12	publicationDate/date‖ monthyear‖ year	5	PublicationYear
13	identifier	11	AlternateIdentifier
13.1	type	11.1	alternateIdentifierType
14	classificationInternal	6	Subject
14.1	identifier	6.1	subjectScheme
14.2	schema	6.1	subjectScheme
14.3	–	6.2	schemeURI
14A	term	6	Subject
14A.1	schema	6.1	subjectScheme
15	controlledKeyword	6	Subject
15.1	identifier	6.1	subjectScheme
15.2	schema	6.1	subjectScheme
15.3	–	6.2	schemeURI

No.	XSD-element (da|ra 3.1)	No.	DataCite 3.1
16	keyword	6	Subject
17	freetext	17	Description
17.1	type	17.1	descriptionType
18	geographicCoverage	18	GeoLocation
18.1	geographicCoverageControlled	-	-
18.2	freetext	-	-
18.3	geoLocationPoint	18.1	geoLocationPoint
18.4	geoLocationBox	18.2	geoLocationBox
19	sampled	17	Description (descriptionType:methods 17.1)
20	method	17	Description (descriptionType:methods 17.1)
21	temporalCoverage	-	-
21.1	startDate/date|| monthyear|| year &&|| endDate/date|| monthyear|| year	8	Date (dateType 8.1 -collected)
21.2	temporalCoverageFree	8	Date (dateType 8.1 -collected)
22	timeDimension	-	-
22.1	timeDimensionControlled	-	-
22.2	timeDimensionFree	-	-
22.3	frequency	-	-
23	person/firstName|| middleName|| lastName &&|| institutionName/name	7.2	contributorName
23.1	contributorType	7.1	contributorType
23.2	identifier	7.3	nameIdentifier
23.2.1	identifierSchema	7.3.1	nameIdentifierScheme
23.2.2	schemaURI	7.3.2	schemeURI
23.2.3	name	7.4	affiliation
23.2.4	identifier	7.4	affiliation
23.2.4.1	identifierSchema	7.4	affiliation
23.2.4.2	schemaURI	7.4	affiliation
24	collectionModeControlled	17	Description (descriptionType:methods 17.1)
25	modeFree	17	Description (descriptionType:methods 17.1)
26	dataSet	-	-
26.1	unitType	-	-
26.2	numberUnits	-	-
26.3	numberVariables	-	-
26.4	dataType	-	-
26.5	name	-	-
26.6	format	14	Format
26.7	size	13	Size

No.	XSD-element (da|ra 3.1)	No.	DataCite 3.1
26.8	fingerprint	–	–
26.9	fingerprintMethod	–	–
27	text	–	–
28	availabilityControlled	–	–
29	availabilityText	–	–
30	rightsText	16 16.1	Rights rightsURI
31	identifier	12	RelatedIdentifier
31.1	relationType	12.2	relationType
31.2	identifierType	12.1	relatedIdentifierType
31.3	relatedMetadataSchema	12.3	relatedMetadataScheme
31.4	schemaURI	12.4	schemeURI
31.5	schemaType	12.5	schemeType
32	publication	–	–
32.1	structuredPublication	–	–
32.2	freetext	–	–
38	glPlace	18.3	geoLocationPlace

3.2.3 da|ra Version 3.1 to DDI Version 3.2

No.	XSD-element (da|ra 3.1)	DDI 3.2
0	resourceType	–
1	titleName	s:StudyUnit/r:Citation/r:Title
2	titleName	s:StudyUnit/r:Citation/r:SubTitle s:StudyUnit/r:Citation/r:AlternateTitle s:StudyUnit/r:Citation/r:AlternateTitle/String@xml:lang
2.1	titleType	–
4	creator	wrapping element
4.1	person/ firstName|| middle-Name|| lastName	s:StudyUnit/r:Citation/r:Creator OR a:Archive/a:OrganizationScheme/a:Individual/r:Name
4.1.1	identifier	a:Archive/a:OrganizationScheme/a:Individual/a:IndividualIdentification/a:ResearcherID/xs:ResearcherIdentification
4.1.1.1	identifierSchema	a:Archive/a:OrganizationScheme/a:Individual/a:IndividualIdentification/a:ResearcherID/r:TypeOfID
4.1.1.2	schemaURI	a:Archive/a:OrganizationScheme/a:Individual/a:IndividualIdentification/a:ResearcherID/a:URI
4.1.2	name	a:Archive/a:OrganizationScheme/a:Organization/a:OrganizationName
4.1.2.1	identifier	a:Archive/a:OrganizationScheme/a:Organization/r:UserID
4.1.2.1.1	identifierSchema	a:Archive/a:OrganizationScheme/a:OrganizationSchemeName/r:UserID@typeOfUserID
4.1.2.1.2	schemaURI	a:Archive/a:OrganizationScheme/a:OrganizationSchemeName@context
4.2	name	s:StudyUnit/r:Citation/r:Creator/r:Name or s:StudyUnit/a:Archive/a:OrganizationScheme/a:Organization
4.2.1	identifier	a:Archive/a:OrganizationScheme/a:Organization/r:UserID
4.2.1.1	identifierSchema	a:Archive/a:OrganizationScheme/a:OrganizationSchemeName/r:UserID@typeOfUserID
4.2.1.2	schemaURI	a:Archive/a:OrganizationScheme/a:OrganizationSchemeName@context
8	dataURL	pi:PhysicalInstance/pi:DataFileIdentification/pi:DataFileURI
9	doiProposal	–
10	currentVersion	IF Version syntax is like n.n.n: pi:PhysicalInstance/r:Version
10.1	identifier	–
11	resourceLanguage	s:StudyUnit/r:Citation/r:Language
12	publicationDate/date|| monthyear|| year	s:StudyUnit/r:Citation/r:PublicationDate/r:SimpleDate
13	identifier	s:StudyUnit/r:UserID OR s:StudyUnit/a:Archive/a:ArchiveSpecific/a:Item/a:CallNumber
13.1	type	s:StudyUnit/r:UserID@typeOfUserID
14	classificationInternal	s:StudyUnit/r:Coverage/r:TopicalCoverage/r:Subject
14.1	identifier	s:StudyUnit/r:Coverage/r:TopicalCoverage/r:Subject

No.	XSD-element (da|ra 3.1)	DDI 3.2
14.2	schema	s:StudyUnit/r:Coverage/r:TopicalCoverage/r:Subject
14A	term	s:StudyUnit/r:Coverage/r:TopicalCoverage/r:Subject
14A.1	schema	s:StudyUnit/r:Coverage/r:TopicalCoverage/r:Subject@codeListID
15	controlledKeyword	s:StudyUnit/r:Coverage/r:TopicalCoverage/r:Keyword
15.1	identifier	s:StudyUnit/r:Coverage/r:TopicalCoverage/r:Keyword
15.2	schema	s:StudyUnit/r:Coverage/r:TopicalCoverage/r:Keyword@codeListID
16	keyword	s:StudyUnit/r:Coverage/r:TopicalCoverage/r:Keyword
17	freetext	s:StudyUnit/r:Abstract/r:Content
17.1	type	-
18	geographicCoverage	-
18.1	geographicCoverageControlled	s:StudyUnit/r:Coverage/r:SpatialCoverage
18.2	freetext	s:StudyUnit/r:Coverage/r:SpatialCoverage/r:Description
19	sampled	s:StudyUnit/r:UniverseReference/r:ID With ID pointing to Universe: c:ConceptualComponent/c:UniverseScheme/c:Universe/r:Description
20	method	s:StudyUnit/dc:DataCollection/dc:Methodology/r:SamplingProcedure
21	temporalCoverage	-
21.1	startDate/date|| monthyear|| year || endDate/date|| monthyear|| year	s:StudyUnit/r:Coverage/r:TemporalCoverage/r:ReferenceDate/r:StartDate OR r:EndDate
21.2	temporalCoverageFree	s:StudyUnit/r:Coverage/r:TemporalCoverage/r:ReferenceDate/r:StartDate OR r:EndDate
22	timeDimension	-
22.1	timeDimensionControlled	s:StudyUnit/dc:DataCollection/dc:Methodology/dc:TimeMethod
22.2	timeDimensionFree	s:StudyUnit/dc:DataCollection/dc:Methodology/dc:TimeMethod
22.3	frequency	s:StudyUnit/d:DataCollection/d:CollectionEvent/d:DataCollectionFrequency/a:IntendedFrequency
23	person/firstName|| middle-Name|| lastName &&|| institutionName/name	s:StudyUnit/r:Citation/r:Contributor/r:ContributorName and additionally (s:StudyUnit/a:Archive/a:OrganizationScheme/a:Individual OR s:StudyUnit/a:Archive/a:OrganizationScheme/a:Organization) OR (s:StudyUnit/a:Archive/a:OrganizationScheme/a:Individual AND s:StudyUnit/a:Archive/a:OrganizationScheme/a:Organization AND s:StudyUnit/a:Archive/a:OrganizationScheme/a:Relation/a:OrganizationReference AND s:StudyUnit/a:Archive/a:OrganizationScheme/a:Relation/a:IndividualReference)

No.	XSD-element (da|ra 3.1)	DDI 3.2
23.1	contributorType	s:StudyUnit/r:Citation/r:Contributor/r:ContributorRole
23.2	identifier	s:StudyUnit/a:Archive/a:OrganizationScheme/a:Organization/r:UserID type="DataCollectorID">
23.2.1	identifierSchema	a:Archive/a:OrganizationScheme/a:OrganizationSchemeName
23.2.2	schemaURI	a:Archive/a:OrganizationScheme/a:OrganizationSchemeName@context
23.2.3	name	a:Archive/a:OrganizationScheme/a:Organization/a:OrganizationIdentification/a:OrganizationName
23.2.4	identifier	a:Archive/a:OrganizationScheme/a:Organization/r:UserID
23.2.4.1	identifierSchema	a:Archive/a:OrganizationScheme/a:OrganizationSchemeName
23.2.4.2	schemaURI	a:Archive/a:OrganizationScheme/a:OrganizationSchemeName@context
24	collectionModeControlled	s:StudyUnit/dc:DataCollection/dc:CollectionEvent/dc:ModeOfCollection
25	modeFree	s:StudyUnit/dc:DataCollection/dc:CollectionEvent/dc:ModeOfCollection
26	dataSet	(wrapper)
26.1	unitType	s:StudyUnit/r:AnalysisUnitsCovered
26.2	numberUnits	s:StudyUnit/pi:PhysicalInstance/pi: GrossFileStructure/pi:CaseQuantity
26.3	numberVariables	s:StudyUnit/l:LogicalProduct/l:DataRelationship/l:LogicalRecord@VariableQuantity
26.4	dataType	s:StudyUnit/r:KindOfData
26.5	name	s:StudyUnit/pi:PhysicalInstance/l:DataFileIdentification/r:Location
26.6	format	s:StudyUnit/pd:PhysicalDataProduct/pd:PhysicalStructureScheme/pd:PhysicalStructure/pd:FileFormat OR a:Archive/a:ArchiveSpecific/a:Item/a:ItemFormat
26.7	size	s:StudyUnit/<pi:PhysicalInstance/pi:GrossFileStructure/pi:CaseQuantity OR (if unit "datafile" is known) a:Archive/a:ArchiveSpecific/a:Item/a:DataFileQuantity
26.8	fingerprint	s:StudyUnit/pi:PhysicalInstance/pd:Fingerprint/pd:Value
26.9	fingerprintMethod	s:StudyUnit/pi:PhysicalInstance/pd:DataFingerprint/pd:AlgorithmSpecification
27	text	s:StudyUnit/a:Archive/r:Note
28	availabilityControlled	s:StudyUnit/a:Archive/a:Access/a:AccessConditions/a:AccessType
29	availabilityText	s:StudyUnit/a:Archive/a:Access/a:AccessConditions/a:AccessType
30	rightsText	s:StudyUnit/r:Citation/dc:accessRights
31	identifier	s:StudyUnit/OtherMaterial/r:UserID
31.1	relationType	s:StudyUnit/OtherMaterial/r:Relationship/r:RelationshipDescription
31.2	identifierType	s:StudyUnit/OtherMaterial/r:UserID@typeOfUserID

3.2.4 da|ra Version 3.1 to DDI Lite (core elements 3.0)

No.	XSD-element (da|ra 3.1)	DDI Lite (core elements 3.0)
1	titleName	s:StudyUnit/r:Citation/r:Title
4.1	person/ firstName|| middle-Name|| lastName	s:StudyUnit/r:Citation/r:Creator
4.2	name	s:StudyUnit/r:Citation/r:Creator
8	dataURL	pi:PhysicalInstance/pi:DataFileIdentification/pi:URI
10	currentVersion	IF Version syntax is like n.n.n: pi:PhysicalInstance version=""
12	publicationDate/date|| monthyear|| year	s:StudyUnit/r:Citation/r:PublicationDate/r:SimpleDate
14	classificationInternal	s:StudyUnit/r:Coverage/r:TopicalCoverage/r:Subject
14.1	identifier	s:StudyUnit/r:Coverage/r:TopicalCoverage id="Notation"
14.2	schema	s:StudyUnit/r:Coverage/r:TopicalCoverage/r:Subject
17	freetext	s:StudyUnit/s:Abstract/r:Content
18.1	geographicCoverageControlled	s:StudyUnit/r:Coverage/r:SpatialCoverage
18.2	freetext	s:StudyUnit/r:Coverage/r:SpatialCoverage/r:Description
19	sampled	s:StudyUnit/r:UniverseReference/r:ID
20	method	s:StudyUnit/d:DataCollection/d:Methodology/d:SamplingProcedure/r:Content
21.1	startDate/date|| monthyear|| year &&|| endDate/date|| monthyear|| year	s:StudyUnit/r:Coverage/r:TemporalCoverage/r:ReferenceDate/r:StartDate OR s:StudyUnit/r:Coverage/r:TemporalCoverage/r:ReferenceDate/r:EndDate
22.1	timeDimensionControlled	s:StudyUnit/d:DataCollection/d:Methodology/d:TimeMethod/r:Content
23	person/firstName|| middle-Name|| lastName &&|| institutionName/name	s:StudyUnit/r:Citation/r:Contributor role="Role_of_contributor_useCV" affilia-tion="Contributor_affiliation">Name of Contributor
24	collectionModeControlled	s:StudyUnit/d:DataCollection/d:CollectionEvent/d:ModeOfCollection/r:Content
26.1	unitType	s:StudyUnit/r:AnalysisUnit
26.2	numberUnits	s:StudyUnit/pi:PhysicalInstance/pi:GrossFileStructure CaseQuan-tity="Number_of_units"
26.3	numberVariables	s:StudyUnit/l:BaseLogicalProduct/l:DataRelationship/l:LogicalRecord VariableQuantity="Number_of_variables"
26.4	dataType	s:StudyUnit/s:KindOfData
27	text	s:StudyUnit/c:ConceptualComponent/r:Note/r:Content

3.2.5 Data Citation Index to da|ra Version 3.1

DCI-elements in bold are mandatory elements.

No.	Data Citation Index Element	No.	XSD-element (da|ra 3.1)
1	**Record ID**	33	resourceIdentifier / identifier
2	**Date provided**	–	– (system generated by Thomson Reuters)
3	**Title**	1	titleName
4	**Repository name**	–	da|ra
5	**Author**	4	creators / creator / person / firstName || middleName || lastName ЕЕ|| creators / creator / institution / institutionName / name
6	Author role	–	–
7	**Owner**	5	publicationAgentName
8	**Source**	5	publicationAgentName
9	**Source URL**	7	doi or dataURL
10	**Published Year**	12	publicationDate / year
11	Version	10	currentVersion
12	Rights/Licensing	30	rightsText
13	Cited References	31	identifier, if 31.1 relationType == 2
14	**Abstract**	17	freetext
15	Parent record reference	31	identifier, if 31.1 relationType == 9
16	Document Type	0	resourceType
17	Data Type	0.1	typeName
18	Accession Number	–	–
19	Language	11	resourceLanguage
20	Author Keywords	16	keyword
21	Addresses	–	–
22	E-mail Address	5.3	emailPublisher
23	Funding Text	23	Contributor, if 23.1 contributorType == 6 "Funder"
24	Geospatial	18.4	geoLocationBox
25	Time	21	temporalCoverages / temporalCoverage /
26	Methodology	20	samplings / sampling / method
27	Named person	–	–
28	Citations	32	publications / publication
29	Subject Area	14.A	term
30	Miscellaneous	27	text

3.3   Appendix 3: Version changes

3.3.1   da|ra Version 3.0 changes[23]

Addition of:

0.1	Resource Type
3	Collective Title*
3.1	Numbering*
18.3	Geographic Location Point
18.4	Geographic Location Box
23.1	Contributor Type
31.3	Name of Metadata Scheme
31.4	URI of Metadata Scheme
31.5	Type of Metadata Scheme

Addition of new values to controlled lists:

0.1	Resource Type: *Audio, Video, Interactive Resource*
17.1	Description Type: *Methods*
23.1	Contributor Type: *DataCollector, DataManager, Distributor, Editor, Funder, HostingInstitution, Producer, ProjectLeader, ProjectManager, ProjectMember, RegistrationAgency, RegistrationAuthority, RelatedPerson, Researcher, ResearchGroup, RightsHolder, Sponsor, Supervisor, WorkPackageLeader, Other*
31.1	Relation Type: *Has Metadata, Is Metadata for, Is identical to*
31.2	Identifier of Type: *ISTC, PMID*

Deletion of:

38	Editor (in Version 3.0 as a Contributor Type, see 23.1)

Renaming of:

0	General Resource Type (Version 2.2.1 - Resource Type)
4	Creator (Version 2.2.1 - Principal Investigator)
23	Contributor (Version 2.2.1 Data Collector)

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23   Properties and subproperties marked with a star (*) were applied in Version 2.2.1 for grey literature.

Documentation:

- Provision of greater detail, explanatory material and definitions for controlled lists

- Indication of recommended metadata, in addition to mandatory and optional

- Addition of more and more varied XML examples on the da|ra website

- Removal from documentation of information about administrative metadata (it is not part of the metadata set submitted by the publication agent).

3.3.2   da|ra Version 2.2.1 changes

New Properties:

4.1.1 Person ID

4.1.1.2   URI for authority record Person ID

4.2.2.2   URI for authority record Institution ID

6.4   Registration agency ID

14A   Classification External

14A.1 Vocabulary

17.1   Kind of description

22.1   Time dimension (controlled)

22.2   Time dimension (free)

22.3   Frequency

26   Dataset

26.1   Type of Units

26.2   Number of Units

26.4   Type of Data

26.4   File Name

32.1   Kind of Relation

32.2   Identifier Type

33.1.16.1   PID Type

Omitted Properties:

- Links (element 28 in Version 1.0)

Renaming of Properties:

2   alternative title = other titles

18   Geographic coverage = Geographic coverage (generic term) (in Version 1.0 the property
            16 - population)

Documentation:

The documentation contains new XML examples: a short version with mandatory properties and a long version with mandatory and optional properties. The XSD file is attached.

Definitions:

The definitions of the properties of the Metadata Schema Version 2.2.1 have been revised and modified for increased clarity.