

Metadata Manual for the Management and Utilization of Publicly Funded Research Data (Version 1.0)



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**Secretariat of Science, Technology and Innovation Policy
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Revision History

Version #	Revised Date	Details
Ver. 1.0	30/07/2024	<ul style="list-style-type: none">Created the first version

About this Document

- This document is to provide a supplementary explanation about 'Common Metadata Elements to National Policy on the Management and Utilization of Publicly Funded Research Data'(hereinafter, 'Common Metadata Elements').
- This document is prepared based on the operation of the 'Metadata Manual for The Moonshot Research and Development Program', which was prepared to explain the metadata elements in the Moonshot Research and Development Program.
- The content may be updated to reflect the discussions with related parties (In such case, it will be managed by changing the version and keeping the record of revision history).
 - As for the version, the versions are managed by a whole number for the changes made in common metadata elements, and by decimal points for other revisions

About Common Metadata Elements

- In accordance with the “National Policy on the Management and Utilization of Publicly Funded Research Data” (decided by the Council for the Promotion of Integrated Innovation Strategy on April 27, 2021), metadata must include at least 'Common Metadata Elements' (of which mandatory items) .
- 'Common Metadata Elements' indicate items that should be commonly used in publicly funded R&D in Japan, and more detailed metadata items, categories, etc. can be defined according to the actual conditions of each organization or project. It is desirable to introduce 'Common Metadata Elements' by seizing appropriate opportunities for system modification or system change at each institution or project.

'National Policy on the Management and Utilization of Publicly Funded Research Data'

<Main contents>

- Position the research data infrastructure system (NII Research Data Cloud) as a core platform and establish a system that enables retrieval of metadata (data consisting of information to explain the data) for broad utilization in industry, academia and government. (by FY2023)
- Institutions conducting R&D will formulate data policies and promote the inclusion of research data in institutional repositories.※ 1
- Introduce a system to provide metadata for all new applications for publicly solicited research funds. (by FY2023)※ 2
- Based on the data policy of the institution to which the researcher belongs and the standards of the funding agency for publicly solicited research funds, the scope of managed data will be defined, metadata will be assigned and registered so that it can be searched on the Research Data Infrastructure System.
- Others (development of human resources and support systems, evaluation of efforts, coordination with other data platforms, etc.)

*1: National university corporations, Inter-University Research Institute Corporation, and National Research and Development Institutes are required to formulate data policies by 2025 in the National Policy. For national research and development institutes, it excludes Japan Agency for Medical Research and Development (AMED), Japan Science and Technology Agency (JST), and New Energy and Industrial Technology Development Organization (NEDO), which are fund allocating organizations.

*2: Competitive research funds are covered by agreement between the relevant ministries and agencies.

Definitions (1/3): Conceptualization of Research Data

Research Data

It refers to all data generated in the process of publicly funded research and development and are manageable in electromagnetic form. It includes research notes and memos, raw data and processed data obtained directly from experiments, observations, simulations, etc., and data that are the evidence of papers.

Managed Data

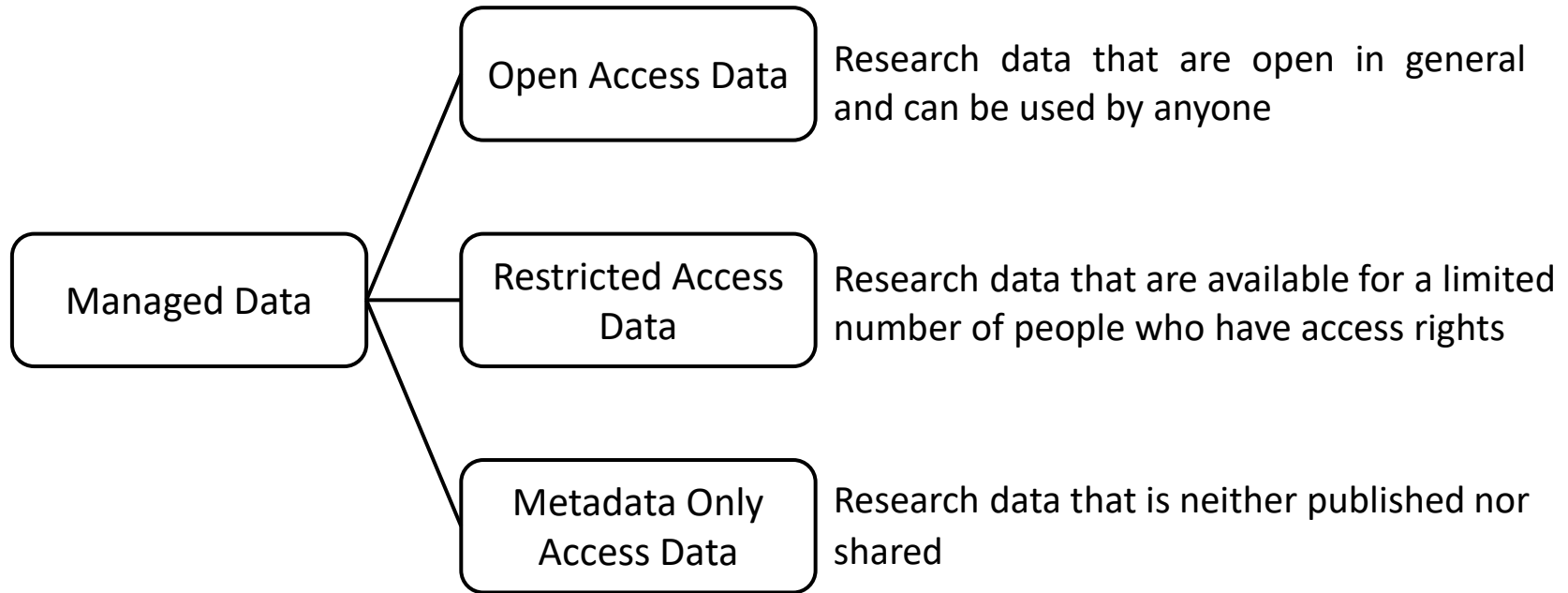
It is defined as the scope of data, among the research data, which should be managed/controlled/utilised by a researcher himself/herself according to the rules of the researcher's affiliated institution that conducts the R&D or the funding agencies.

Correspond

Metadata

It refers to data consisting of information to describe managed data. It includes the title, description, data manager and their contact and location of the research data, and the policies for storing, publishing and sharing of the research data, etc.

Definitions (2/3): Classification for Open and Restricted Access of Managed Data



* Summary from *National Policy on the Management and Utilization of Publicly Funded Research Data*

- ✓ It is necessary to consider the characteristics of research fields, etc., and the characteristics of institutions that manage data, such as universities, inter-university research institute corporations, and national research and development agencies, and to make a decision on open access, restricted access or metadata only access.
- ✓ Research data that requires attention from the aspect of personal information, confidential corporate information, novelty of the research, security of our country, etc. should not be made public as they may include important data for maintaining Japan's industrial competitiveness and/or scientific/academic advantages.
- ✓ It is also necessary to set an appropriate embargo (publish after a certain period of time) period by taking into consideration of the balance between promoting the use by making data available and maintaining industrial competitiveness and scientific/academic advantages.
- ✓ It is necessary to comply with relevant laws and regulations and to pay sufficient attention to the consistency with other countries' internal laws and EU regulations regarding the handling of data as well as international rules and practices such as the FAIR principle, which is the principles of data management.

Definitions (3/3): Classification for Open and Restricted Access of Metadata

- The classifications for metadata are also set as: open access; restricted access; and metadata only access.
- ➔ The following table shows the combinations of access rights for metadata and managed data
- The access right of metadata is not included in the metadata elements listed on the next page and is to be managed separately (If metadata is registered using the research data infrastructure system, the access right of the metadata is managed on GakuNin RDM).

	Combinations of Open Access and Restricted Access					
Metadata	A1 Open Access			A2 Restricted Access		A3 Metadata Only Access
Managed Data	B1 Open Access	B2 Restricted Access	B3 Metadata Only Access	B4 Restricted Access	B5 Metadata Only Access	B6 Metadata Only Access

Common Metadata Elements to National Policy on the Management and Utilization of Publicly Funded Research Data

	Elements	Mandatory/ Optional	Remarks
1	Funder	Mandatory*	The name of the funding agency (including ministries) providing public research funds (English abbreviation allowed)
2	Funding Stream Code in Japan Grant Number	Optional	In the case of public research funds, the code for "Agency Code" and "Program Specific Code" in the Japan Grant Number. No entry required except for public research funds.
	Program Name	Optional	The name of the competitive research funding program
3	Japan Grant Number	Mandatory*	In the case of public research funds, the Japan Grant Number assigned to each research grant. No entry required except for public research funds.
	Project Name	Mandatory*	The name of the scope of R&D under the PM (e-Rad Project Name, etc.). If there is no official name, enter this according to the rules of the researcher's affiliated institution.
4	Data No.	Mandatory	The number to identify the managed data
5	Title	Mandatory	Avoid ambiguous titles such as 'Conference Materials', 'Report Materials', 'Measurement Results', etc.
6	Date (Issued/Updated)	Mandatory	The date on which metadata was published or updated
7	Description	Mandatory	Describe the contents in a simple and clear manner
8	Research Field	Mandatory*	e-Rad research field (main field). This will be automatically entered in cooperation with e-Rad.
9	Data Type	Mandatory	Specify 'dataset' etc.
10	File Size	Optional	The approximate data volume or value output from the system for the managed data
11	Data Utilization and Provision Policy	Mandatory	Describe terms and conditions of use and any restrictions, including license information
	Access Rights	Mandatory	Select from open access/ restricted access/ metadata only access/ embargoed access
	Available Date	Mandatory	If the embargoed access is selected, enter the Available Date.
12	Repository Information	Mandatory	Current repository information or repository information after the project
	Repository URL/DOI Link	Optional	Enter this if there is information
13	Creator Name	Optional	The name of the researcher who created the managed data.
	Creator Name Identifier (e-Rad)	Optional	e-Rad Researcher Number of the creator of the managed data
14	Hosting Institution	Mandatory	The legal name of the R&D institution that manages each data
	Hosting Institution Code	Optional	The code of the Hosting Institution
	Data Manager	Mandatory	The name of the department or person who manages the managed data in the Hosting Institution
	Data Manager Identifier (e-Rad)	Optional	Not required if the Data Manager does not have a Researcher Number or if it is an organization. It is mandatory unless the e-Rad Researcher Number is to be kept private.
	Contact of Data Manager	Mandatory	The address, telephone number, email address, etc. of the Data Manager's affiliated institution
15	Remarks	Optional	

*In the case of publicly funded research activities 8

1. Funder

Element Name (Japanese)	資金配分機関情報
Element Name (English)	Funder
Mandatory/Optional	Mandatory
Languages	-
Remarks	<ul style="list-style-type: none">• The name of the funding agency(English abbreviation allowed) providing public research funds.• No entry required except for public research funds.

2. Funding Stream Code in Japan Grant Number

Element Name (Japanese)	体系的番号におけるプログラム情報コード
Element Name (English)	Funding Stream Code in Japan Grant Number
Mandatory/Optional	Optional
Languages	-
Remarks	<ul style="list-style-type: none">• The code of up to 5 alphanumeric characters, which is the combination of "Agency Code" and "Program Specific Code" in the Japan Grant Number (The structure of the Japan Grant Number varies depending on the competitive research funding program, so leave this blank if there is no corresponding code).• No entry required except for public research funds

2. Program Name

Element Name (Japanese)	プログラム名
Element Name (English)	Program Name
Mandatory/Optional	Optional
Languages	Japanese / English
Remarks	<ul style="list-style-type: none">• In the case of public research funds, the name of the competitive research funding program• If there is no official name, enter this according to the rules of the researcher's affiliated institution.

3. Japan Grant Number

Element Name (Japanese)	体系的番号
Element Name (English)	Japan Grant Number
Mandatory/Optional	Mandatory
Languages	-
Remarks	<ul style="list-style-type: none">• In the case of public research funds, the Japan Grant Number assigned to each research grant• No entry required except for public research funds.

3. Project Name

Element Name (Japanese)	プロジェクト名
Element Name (English)	Project Name
Mandatory/Optional	Mandatory
Languages	Japanese / English
Remarks	<ul style="list-style-type: none">• The name of the scope of R&D under the Principal Investigator. Enter the e-Rad Project Name, if there is one.• If there is no official name, enter this according to the rules of the researcher's affiliated institution

4. Data No.

Element Name (Japanese)	データNo.
Element Name (English)	Data No.
Mandatory/Optional	Mandatory
Languages	-
Remarks	<ul style="list-style-type: none">• The number assigned to identify the managed data• If specified by the funding agency or Hosting Institution, align with their specification.

5. Title

Element Name (Japanese)	データの名称
Element Name (English)	Title
Mandatory/Optional	Mandatory
Languages	Japanese / English
Remarks	<ul style="list-style-type: none">• Enter a title that indicates the characteristics of managed data• Avoid ambiguous titles such as 'Conference Materials', 'Report Materials', 'Measurement Results', etc. <p><e.g.,></p> <ul style="list-style-type: none">• Data taken from the sensor and related data in the XX validation test• Simulation data of XX

6. Date (Issued/Updated)

Element Name (Japanese)	掲載日・掲載更新日
Element Name (English)	Date (Issued / Updated)
Mandatory/Optional	Mandatory
Languages	-
Remarks	<ul style="list-style-type: none">• The date on which metadata was issued/updated• Enter the date in 'YYYY-MM-DD'. <e.g.,> 2021-04-26

7. Description

Element Name (Japanese)	データの説明
Element Name (English)	Description
Mandatory/Optional	Mandatory
Languages	Japanese / English
Remarks	<ul style="list-style-type: none">• Enter the contents of managed data, including the conditions and methods of acquiring the managed data, the results, etc. <e.g.,><ul style="list-style-type: none">• The image data of the road captured by the sensor in the XX validation test• The simulation data of XX obtained under the conditions of XX• The expression profile information for the genome analysis of XXXX, which is expected to be applied to XX, and for its efficient production of compounds.

8. Research Field

Element Name (Japanese)	データの分野
Element Name (English)	Research Field
Mandatory/Optional	Mandatory
Languages	Japanese / English
Remarks	<ul style="list-style-type: none">• Enter one of the following research contents based on the research field (main) registered in e-Rad. If the data field is different from the research field of the project, enter the data field.<ul style="list-style-type: none">➤ Life Science➤ Informatics➤ Environmental Science➤ Nanotechnology/Materials➤ Energy Engineering➤ Manufacturing Technology➤ Social Infrastructure➤ Frontier Technology➤ Humanities & Social Sciences➤ Natural Science➤ Others

9. Data Type

Element Name (Japanese)	データ種別
Element Name (English)	Data Type
Mandatory/Optional	Mandatory (Selective)
Languages	-
Remarks	<ul style="list-style-type: none">Recommended to enter “dataset” or select one of the following detail elements

Dataset*

- dataset
- aggregated data
- clinical trial data
- compiled data
- encoded data
- experimental data
- genomic data
- geospatial data
- laboratory notebook
- measurement and test data
- observational data
- recorded data
- simulation data
- survey data

*Dataset: a collection of related facts and data encoded in a defined structure

Reference: Extracted the elements for research data from the JPCOAR Schema Guidelines, *Resource Type Vocabulary*: https://schema.irdb.nii.ac.jp/en/2.0/resource_type_vocabulary

10. File Size

Element Name (Japanese)	概略データ量
Element Name (English)	File Size
Mandatory/Optional	Optional
Languages	-
Remarks	<ul style="list-style-type: none">• Select the approximate size of managed data from the following:<ul style="list-style-type: none">➤ <1GB➤ 1-10GB➤ 10-100GB➤ >100GB• If the system allows outputting the data-size value, you may set the value of the data size itself.

11. Data Utilization and Provision Policy

Element Name (Japanese)	管理対象データの利活用・提供方針
Element Name (English)	Data Utilization and Provision Policy
Mandatory/Optional	Mandatory
Languages	Japanese / English
Remarks	<ul style="list-style-type: none">• Describe license information. Enter the terms of use (fee-based /free or license) that the data provider requires from the user<ul style="list-style-type: none">- To ensure accessibility, it is preferable to use URL notation instead of abbreviations like CC BY. (e.g., https://creativecommons.org/licenses/by/4.0/)- Free text input is also allowed (e.g., Free of charge, provided that credit and prior notification are given)• Enter any restrictions related to the policies of your affiliated institution or the use of personal data (e.g., URL of the terms of use page)• Enter this even if there are no restrictions or terms of use (e.g., https://creativecommons.org/publicdomain/zero/1.0/)

* For further details on how to describe 'Data Utilization and Provision Policy', please refer to below: Guidelines for Specifying Conditions for the Publication and Utilization of Research Data (Subcommittee on Research Data Licensing, Research Data Utilization Forum) https://doi.org/10.11502/rduf_license_guideline

11. Access Rights

Element Name (Japanese)	アクセス権
Element Name (English)	Access Rights
Mandatory/Optional	Mandatory (Selective)
Languages	-
Remarks	<ul style="list-style-type: none">• For the access rights of managed data, select from the following:<ul style="list-style-type: none">➤ Open access: data that are open to the public➤ Restricted access: data shared for the purpose of use by the limited stakeholders➤ Metadata only access: data that is neither open access or restricted access➤ Embargoed access: ‘metadata only access’ data that will be changed to open access after a certain period of time* If ‘embargoed access’ is selected, enter the Available Date (mandatory). The date should be described in ‘YYYY-MM-DD’. <e.g.,> 2021-04-26* For data that has reached the Available Date, the Data Manager is responsible for making it open access on a repository, etc.

Appendix: Access Rights of Managed Data

- In case the data is currently "metadata only access" but to be made "open access" after a certain period of time:
 - The "access rights" should be "embargoed access" and the date should be indicated as the planned release-date.
- In case the data is currently "metadata only access" but to be made "restricted access" after a certain period of time:
 - The "access rights" should be "restricted access"
 - The planned release date for "restricted access" should be stated in the "Data Utilization and Provision Policy"
- For other data with special circumstances, the policy should be described in the "Data Utilization and Provision Policy"

12. Repository Information

Element Name (Japanese)	リポジトリ情報
Element Name (English)	Repository Information
Mandatory/Optional	Mandatory
Languages	Japanese / English
Remarks	<ul style="list-style-type: none">Enter the current repository information or the repository information after the project has completed <p><e.g.,></p> <p>The UTokyo Repository, The Life Science Database Archive, inhouse repository, etc.</p>

12. Repository URL / DOI Link

Element Name (Japanese)	リポジトリURL・DOIリンク
Element Name (English)	Repository URL/ DOI Link
Mandatory/Optional	Optional
Languages	-
Remarks	<ul style="list-style-type: none">• This must be entered if there is any information• If a DOI has been assigned, enter the DOI link. If no DOI has been assigned, enter the URL of the landing page for the managed data (When entering the access URL, update the metadata whenever the URL is changed following the differences, updates, etc.)

Reference: Guidelines for Registering DOIs for Research Data (JaLC). https://doi.org/10.11502/rd_guideline_2e_ja

If you are a regular or associate member of JaLC, you can register a JaLC DOI for research data. For details, please contact the person in charge of the repository at your institution. <https://support.irdb.nii.ac.jp/ja/application/jalc>

* JaLC:
Japan Link Center. An institution jointly operated by the Japan Science and Technology Agency (JST) and the National Institute for Materials Science (NIMS), the National Institute of Informatics (NII), the National Diet Library (NDL) . As it is one of the DOI registrars, you can register a JaLC DOI by registering it in the JaLC system.

13. Creator Name

Element Name (Japanese)	データ作成者
Element Name (English)	Creator Name
Mandatory/Optional	Optional
Languages	Japanese / English
Remarks	<ul style="list-style-type: none">• Enter the name of the researcher who created each managed data• For Japanese, enter the full name in <i>kanji</i> (no space between first and last name) in the Japanese field, and the full name in English (a single-byte space between first and last name) in the English field• For non-Japanese, enter the full name in English (a single-byte space between first and last name) in both Japanese and English fields• If there are multiple data creators, separate them with a semicolon (;) <p><e.g.,></p> <p>Japanese: 山田太郎; 鈴木花子; John Smith</p> <p>English: Taro Yamada; Hanako Suzuki; John Smith</p>

13. Creator Name Identifier (e-Rad)

Element Name (Japanese)	データ作成者のe-Rad研究者番号
Element Name (English)	Creator Name Identifier (e-Rad)
Mandatory/Optional	Optional
Languages	-
Remarks	<ul style="list-style-type: none">• Enter the e-Rad registered researcher number of the researcher who created each managed data (unless the researcher wishes to keep his/her e-Rad researcher number private)• If there are multiple e-Rad researcher numbers for data creators, enter them in the same order as 'Creator Name (Japanese)' but separate each with semicolons so that they can be corresponded.

14. Hosting Institution

Element Name (Japanese)	データ管理機関
Element Name (English)	Hosting Institution
Mandatory/Optional	Mandatory
Languages	Japanese / English
Remarks	<ul style="list-style-type: none">• Enter the name of the institution managing each managed data that conducts research and development.• In principle, the name of the institution should not be abbreviated (Also include Corporation, National University Corporation, General Incorporated Association, etc.)• Update the Hosting Institution if the Data Manager moves to another institution and the data is transferred subsequently.

14. Hosting Institution Identifier

Element Name (Japanese)	データ管理機関コード
Element Name (English)	Hosting Institution Identifier
Mandatory/Optional	Optional
Languages	-
Remarks	<ul style="list-style-type: none">The Research Organization Registry (ROR) code of the Hosting Institution (pointing to "https://ror.org/xxxxxxxx")

*Research Organization Registry: <https://ror.org/>

14. Data Manager

Element Name (Japanese)	データ管理者
Element Name (English)	Data Manager
Mandatory/Optional	Mandatory
Languages	Japanese / English
Remarks	<ul style="list-style-type: none">• Enter the name of the person who manages each managed data in the Hosting Institution• For Japanese, enter the full name in <i>kanji</i> (no space between first and last name) in the Japanese field, and the full name in English (a single-byte space between first and last name) in the English field.• For non-Japanese, enter the full name in English (a single-byte space between first and last name) in both Japanese and English fields.• Update the metadata element if the Data Manager moves to another institution and the Data Manager is changed to another person. <p><e.g.> (Japanese field) Information System Office (English field) Information System Office (Japanese field) John Smith (English field) John Smith</p>

14. Data Manager Identifier (e-Rad)

Element Name (Japanese)	データ管理者のe-Rad研究者番号
Element Name (English)	Data Manager Identifier (e-Rad)
Mandatory/Optional	Optional
Languages	-
Remarks	<ul style="list-style-type: none">• This must be entered if the e-Rad researcher number is registered unless the researcher wishes to keep his/her e-Rad researcher number private• Not required if the Data Manager does not have a researcher number or if the Data Manager is an institution

14. Contact of Data Manager

Element Name (Japanese)	データ管理者の連絡先
Element Name (English)	Contact of Data Manager
Mandatory/Optional	Mandatory
Languages	Japanese / English
Remarks	<ul style="list-style-type: none">• Enter the name of the affiliated institution, telephone number, email address, etc. of the Data Manager (Email address is mandatory, and others are optional. If there is no email address, the name of the affiliated institution [e.g., department name within a corporate body], address, and telephone number are mandatory.)• It is preferable to use the contact information of an organization rather than an individual, in order to protect personal data and ensure that those interested in the managed data can reach the Data Manager. <p><e.g.> E-Mail: xxx@xxxx XX Section, XX Department, XX Research Institute TEL: XX-XXXX-XXXX</p>

15. Remarks

Element Name (Japanese)	備考
Element Name (English)	Remarks
Mandatory/Optional	Optional
Languages	Optional
Remarks	<ul style="list-style-type: none">• Use this as a note for FA and Data Manager• This is not displayed on CiNii Research, etc.,