Making data better by adding some meta(data)

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Metadata

What is metadata?

- Literally ‘data about data’
- Information that helps you work with other information

- Context determines whether something is data or metadata

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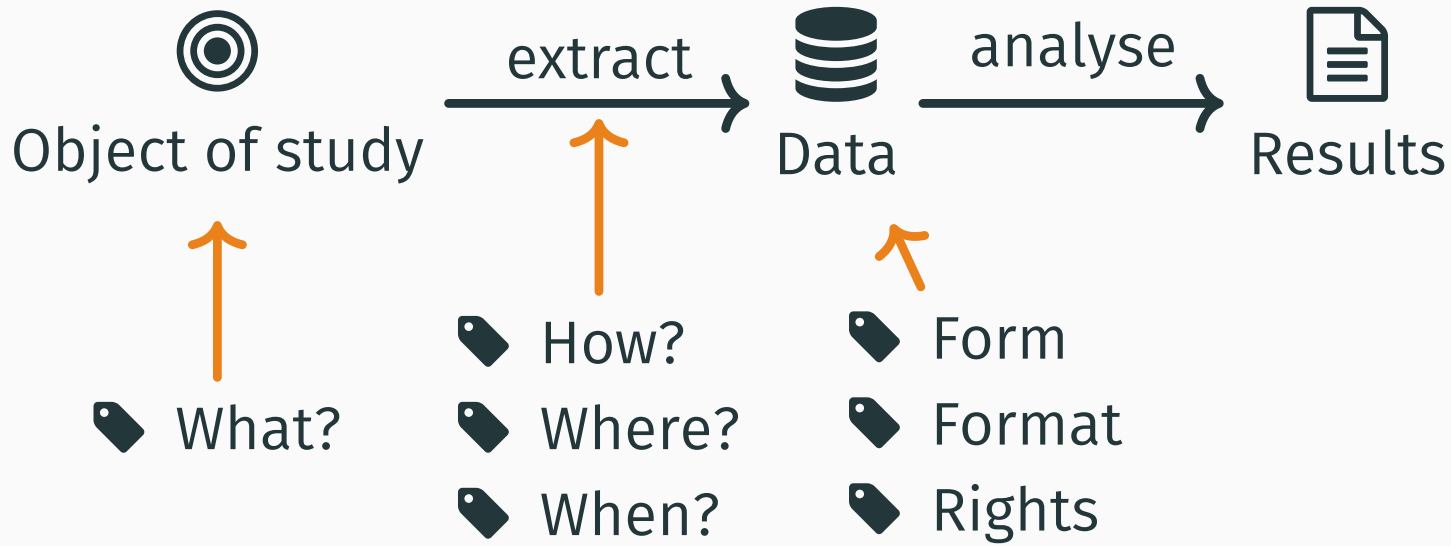
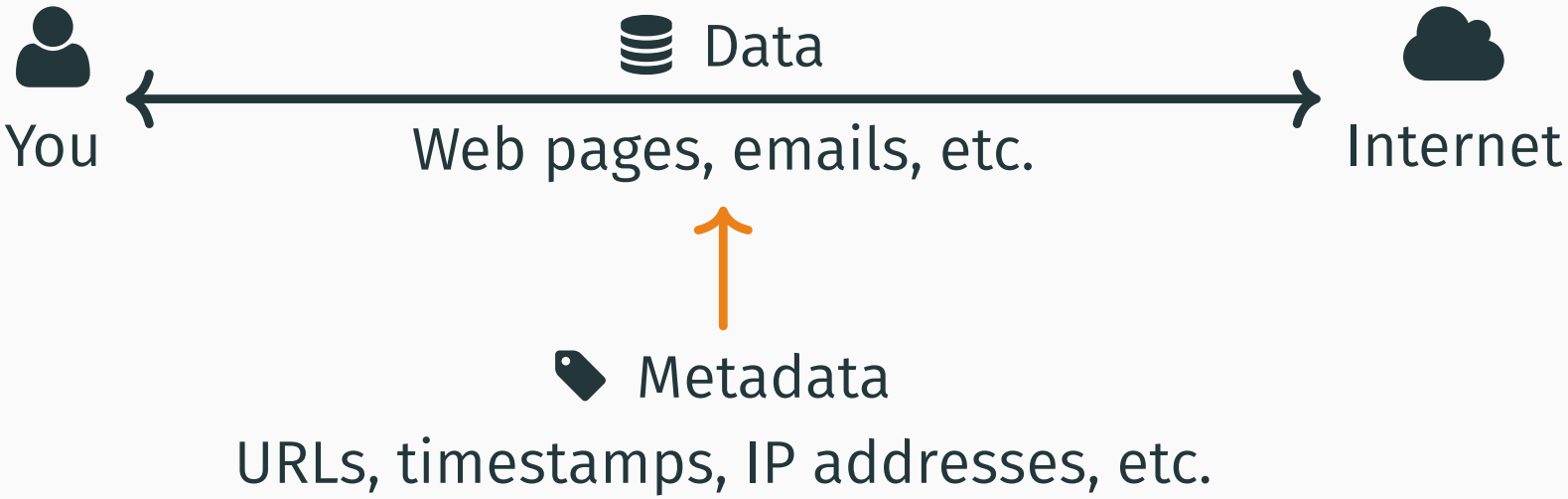


- Context determines whether something is data or metadata

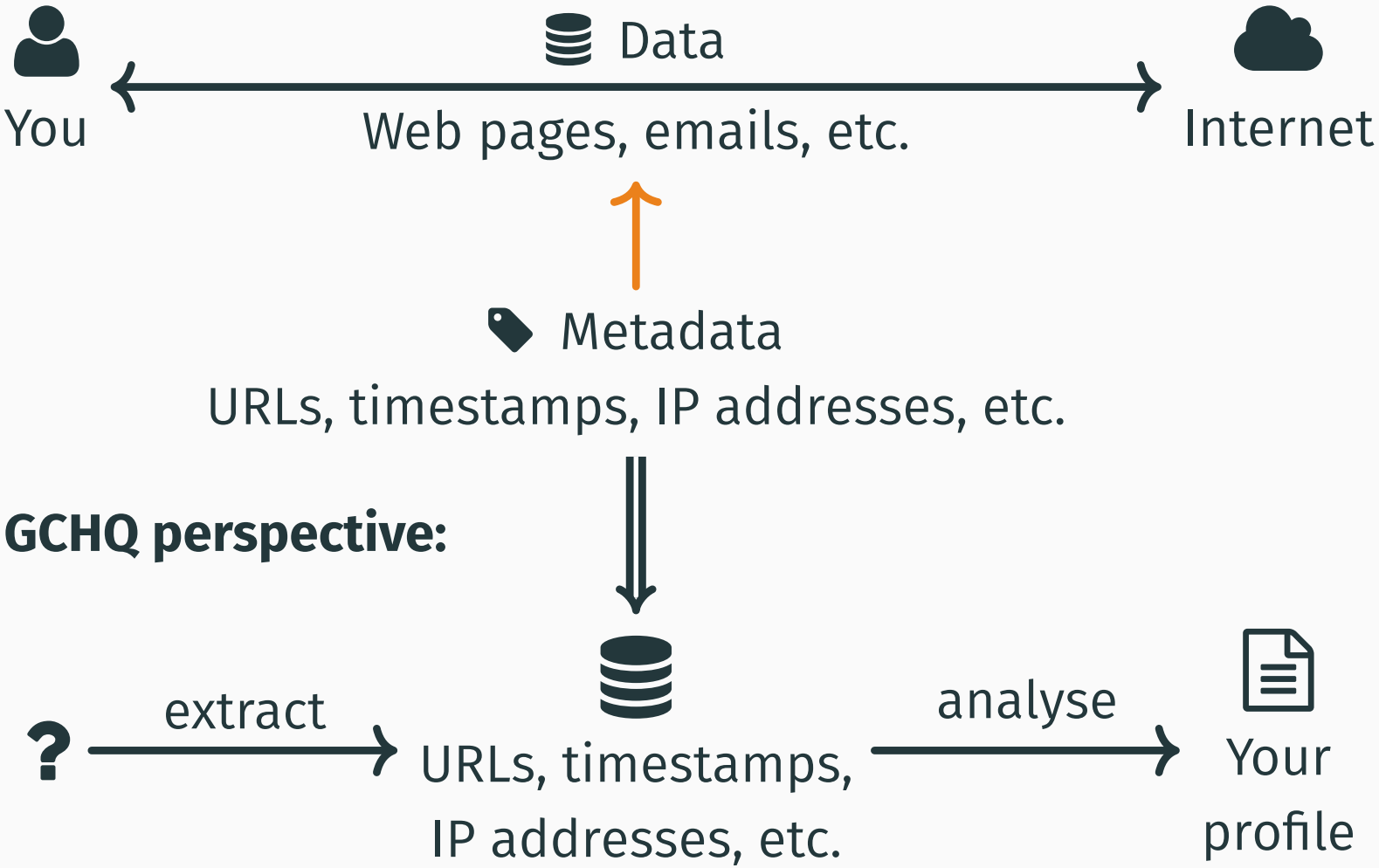
Example: Internet traffic

Your perspective:



Example: Internet traffic

Your perspective:



GCHQ perspective:

Types of metadata

Metadata is defined by what you are using it to achieve:

Reference	Identifying, citing, searching for a known resource
Descriptive	Speculative searching
Provenance	Assessing authenticity or trustworthiness
Contextual	Understanding a resource (externally)
Rights	Securing data against unauthorized/illegal actions
Packaging	Arranging components of a resource
Fixity	Checking integrity
Structural	Loading/opening a file
Semantic	Understanding a resource (internally)

Types of metadata

As a researcher, you are mostly concerned with

- Discovery metadata – help other researchers find the data, give you credit, increase your impact
- Contextual metadata – keep your institution and funder happy
- Discipline-specific metadata – ensure you yourself (later), your colleagues and your peers can understand and use/reuse the data

Data Discovery Services

About the DCS
Search for data
Results

Search for data

Please use one or more of the options below to search the catalogue. Alternatively, try our advanced text search.

Free text

Please enter your search terms below or leave blank to match everything (help)

Search | Clear

Only return records with an online resource

Date range

Match data overlaping the period (help)
From To

Search | Clear

Dates should be in the format YYYY-MM-DD or YYYY

Geographic search

The map display lets you draw a box to define an area of interest and only returns records that intersect the box. We also offer predefined areas below (help)

Countries

Select a country... Search Clear area

Define the search box coordinates - input order is most westerly, southerly, easterly, northerly

You are searching for...

everything in the catalogue.
2130 *results returned in* ***0.16*** *seconds.*

Shortcut search

Click to search records for

Atmosphere
Oceans
Biota
Geo-scientific Information
Inland waters
Environment

Bookmark with:

Welcome to the INSPIRE geoportal

The INSPIRE Directive requires the Commission to establish a community geo-portal and the Member States shall provide access to their infrastructures through the geo-portal as well as through any access points they themselves decide to operate.

More...

Discovery / Viewer

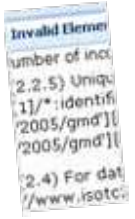
Search, discover and access geographic information provided by European governmental, commercial, and non-commercial organizations.

More ...

Validator

The purpose of the INSPIRE Metadata Validator is to test the compliancy of INSPIRE metadata with the INSPIRE Metadata Regulation.

More ...

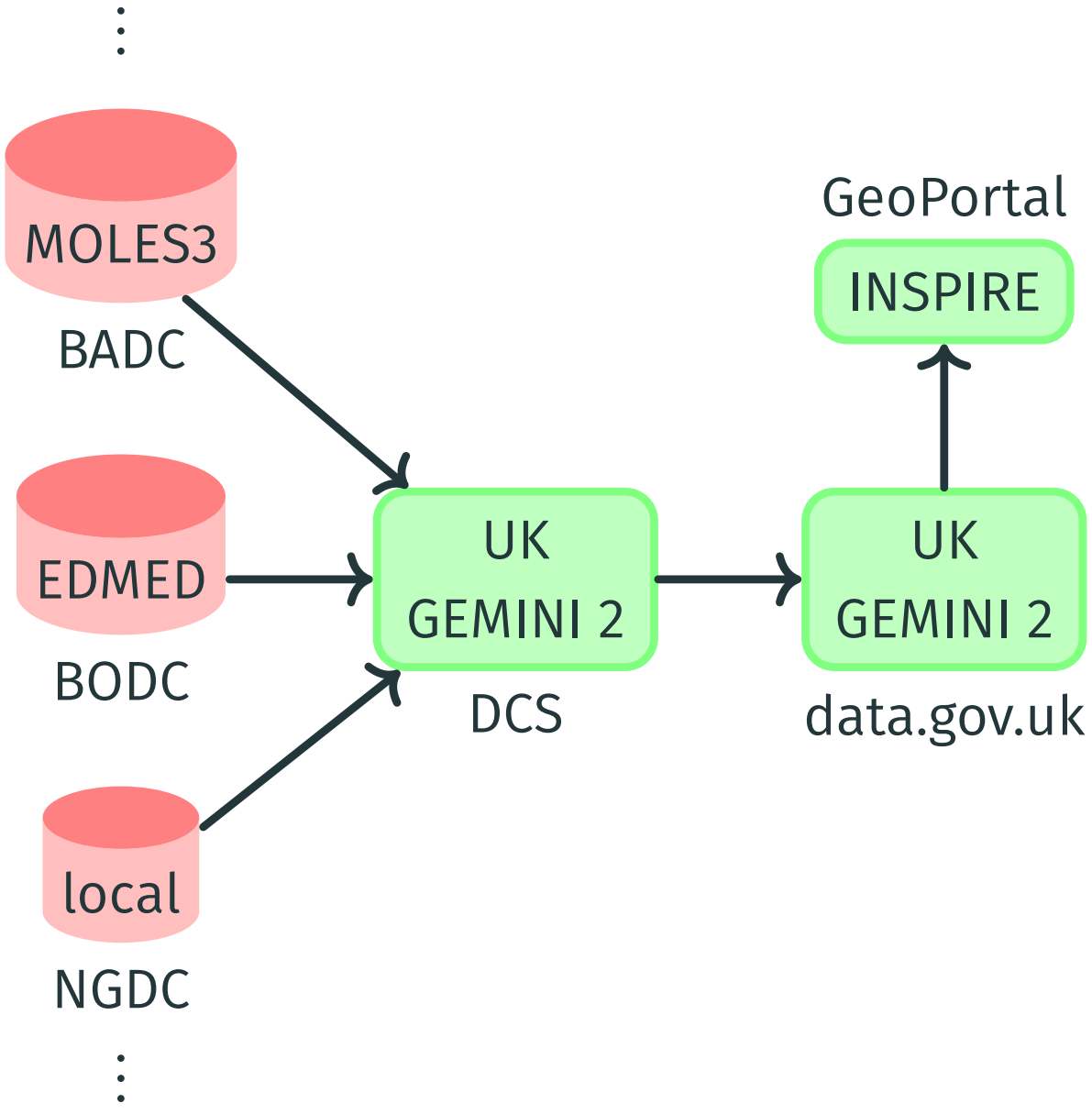


Metadata Editor

Create metadata according to the INSPIRE implementing rules.

More ...

Geospatial data: ISO 19115, ISO 19139



CESSDA Catalogue
- Browse by Topic
- Browse by Keyword
- Browse by Data Publisher

The CESSDA Catalogue

- Provides a seamless interface to datasets from social science data archives across Europe
- May be searched via a free text search from the top search box
- Browsed via the options in the left hand side menu
- Can be viewed in any of nine languages. The default language is dependant on the regional setting of the computer user
- The language can be switched at any time by selecting the relevant language from the drop down list above. **Please note:** changing the language will take the user back to this CESSDA Catalogue home page
- **In the free text search:**
  1. * truncation is supported
  2. '?' wildcards are supported

CESSDA Data Publishers

(9140 studies available)

APIS (27 studies)
ADPSS-Sociodata (59 studies)
CSDA (1009 studies)
DANS (124 studies)
ADP (1087 studies)
FORS (754 studies)
FSD (2010 studies)
NSD (1034 studies)
ISSDA (97 studies)
LiDA (423 studies)
NSD Metadata (1034 studies)
SND (196 studies)
ESSDA (15 studies)
UKDA (642 studies)
GESIS ZACAT (629 studies)

DDI Specification

For the most up-to-date news on the development process of DDI (summary), please visit **the DDI Collaboration Wiki**.

Latest version

DDI Lifecycle 3.2

DDI-Lifecycle is designed to document and manage data across the entire life cycle, from conceptualization to data publication and analysis and beyond. It encompasses all of the DDI-Codebook specification and extends it. Based on XML Schemas, DDI-Lifecycle is modular and extensible.

Read more about DDI 3.2...

Online field level documentation

XSD Schema entry point

Download documentation

DDI Codebook 2.5

DDI-Codebook is a more light-weight version of the standard, intended primarily to document simple survey data. Originally DTD-based, DDI-C is now available as an XML Schema.

Read more about DDI 2.5...

Online field level documentation

XSD Schema entry point

Download documentation

http://www.ddialliance.org/Specification/

Find data for research

Find, access, and re-use data for research - from over one hundred Australian research organisations, government agencies, and cultural institutions

All Fields Search for Data Search

Advanced Search Map Search

Publicly accessible online

Explore

Themed Collections

Explore selected resources by theme

Services and Tools

Access data-related services and tools

Open Data

Find open data that is reusable

Grants and Projects

Search for research grants and projects

At a glance

Dataset Type

Unknown (611)

Dataset Language

English (101)
German (2)

Funder

European Commission (4)

Funding Stream

Capacities (4)

Scientific Area

INFRA (4)

Publication Year

2013 (1)

Access Mode

UNKNOWN (608)
Open Access (3)

Datasource

Datacite (597)
Zenodo for Research D... (14)

Filter

allocator
datacentre
prefix
resourceType
contributor
creator
publicationYear
publisher
language

No active filters. Use the sidebar to filter search results.

10 documents found in 177ms
Page 1 of 1

1. Die hundertjährige Translationsfeier der beiden Wettinger Katakombenheiligen Marianus und Getulius
doi:10.5169/SEALS-115655
Felder, Peter
title: Die hundertjährige Translationsfeier der beiden Wettinger Katakombenheiligen Marianus und Getulius

2. Integration eines Freihandzeichen-Tools in das Trainings- und Prüfungssystem CaseTrain
doi:10.3205/10CBT27 Text : ConferencePaper
Ifland, Marianus • Hörnlein, Alexander • Ott, Julian • Puppe, Frank
creator: Ifland, Marianus

3. Konzeption und Evaluation eines fallbasierten Trainingssystems im universitätsweiten Einsatz (CaseTrain)
doi:10.3205/MIBE000086 Text : JournalArticle
Hörnlein, Alexander • Ifland, Marianus • Klügl, Peter • Puppe, Frank
creator: Ifland, Marianus

4. Akzeptanz medizinischer Trainingsfälle als Ergänzung zu Vorlesungen
doi:10.3205/ZMA000754 Text : JournalArticle
Hörnlein, Alexander • Mandel, Alexander • Ifland, Marianus • Lüneberg, Edeltraud • Deckert, Jürgen • (et. al.)
creator: Ifland, Marianus

5. Aufwandsanalyse für computerunterstützte Multiple-Choice Papierklausuren
doi:10.3205/ZMA000767 Text : JournalArticle
Mandel, Alexander • Hörnlein, Alexander • Ifland, Marianus • Lüneburg, Edeltraud • Deckert, Jürgen • (et. al.)
creator: Ifland, Marianus

6. Die bildlichen Darstellungen im Atlas Marianus des Wilhelm Gumppenberg und eine Wallfahrtsbilderreihe in der Bischöflichen Sammlung Freiburg
doi:10.5169/SEALS-339455
Ronner, Christel
title: Die bildlichen Darstellungen im Atlas Marianus des Wilhelm Gumppenberg und eine

7. Data from: Contrasting insights provided by single and multispecies data in a regional comparative phylogeographic study
doi:10.5061/DRYAD.M7RC3 Dataset : DataPackage

DataCite Metadata Schema 3.1

XML Schema

Documentation

Examples

- Full DataCite XML example
- Example for a simple dataset
- Example with complicated values
- Example with DataCollector as Contributor and a geoLocation box
- Example with GeoLocation
- Example with HasMetadata as related resource
- Example with IsIdenticalTo as related resource
- Example with ResearchGroup as Contributor and Methods as Description
- Example with Collection as ResourceType
- Example with Video as ResourceType
- Example for a workflow ResourceType

DataCite Metadata Schema 3.1

October 16, 2014

XML Schema:
https://doi.org/10.5438/0011

Documentation:
https://doi.org/10.5438/0010

DataCite Metadata Schema

Mandatory elements

- Creator
- Title
- Publication Year
- Publisher
- Identifier

Optional elements

- Contributor (with type)
- Date (with type)
- Alternate identifier
- Subject, Description
- Type, Format, Version
- Rights, Size, Language
- Geo-location
- Related identifiers

Metadata for Reuse

Documenting data for reuse

You will know you have documented your data well if

- should you need to repeat the work, you can
- a peer researcher can understand the data without consulting you
- a peer researcher can replicate/verify your results
- you can defend what you did to a reviewer
- in ten years' time, you can still understand the data

Think how you would explain to a new team member

- how you gathered/processed your data
- how you recorded/encoded your data
- which files are which

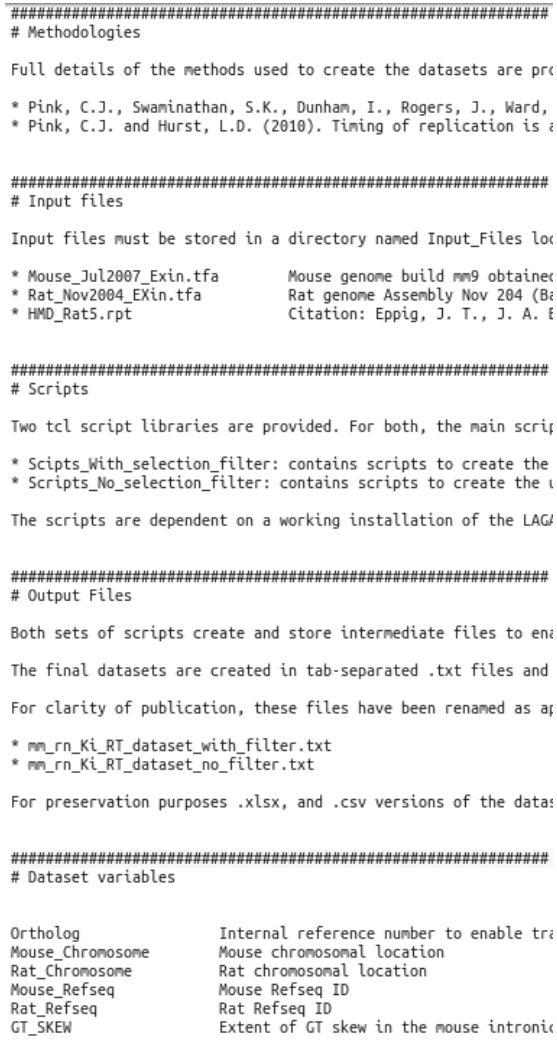
Basic level: unstructured metadata

Readme files: plain text documents with the following sections:

- Methodology
- Third-party inputs
- Workflow
- Outputs
- File structure and conventions

When ready to archive data, add the following:

- Inventory of files
- Citation information
- Licence information
- Relationships



```
############################################################
# Methodologies

Full details of the methods used to create the datasets are pro

* Pink, C.J., Swaminathan, S.K., Dunham, I., Rogers, J., Ward,
* Pink, C.J. and Hurst, L.D. (2010). Timing of replication is a


############################################################
# Input files

Input files must be stored in a directory named Input_Files loc

* Mouse_Jul2007_Exin.tfa        Mouse genome build mm9 obtainec
* Rat_Nov2004_EXin.tfa          Rat genome Assembly Nov 204 (Ba
* HMD_Rat5.rpt                  Citation: Eppig, J. T., J. A. E


############################################################
# Scripts

Two tcl script libraries are provided. For both, the main scrip

* Scipts_With_selection_filter: contains scripts to create the
* Scripts_No_selection_filter: contains scripts to create the u

The scripts are dependent on a working installation of the LAGA


############################################################
# Output Files

Both sets of scripts create and store intermediate files to ena

The final datasets are created in tab-separated .txt files and

For clarity of publication, these files have been renamed as ap

* mm_rn_Ki_RT_dataset_with_filter.txt
* mm_rn_Ki_RT_dataset_no_filter.txt

For preservation purposes .xlsx, and .csv versions of the datas


############################################################
# Dataset variables


Ortholog                Internal reference number to enable tra
Mouse_Chromosome        Mouse chromosomal location
Rat_Chromosome          Rat chromosomal location
Mouse_Refseq            Mouse Refseq ID
Rat_Refseq              Rat Refseq ID
GT_SKEW                 Extent of GT skew in the mouse intronic
```

Source: Pink, C., Hurst, L., Lercher, M., (2015). doi:10.15125/BATH-00091

Structured metadata for survey data

The accepted standard for survey data is DDI.

- DDI Codebook 2.5: `http://www.ddialliance.org/Specification/DDI-Codebook/2.5/`

Outline

- *Document description* (describing the record itself)
- *Study description*
  - **Citation information**
  - **Study information**: abstract, keywords, spatiotemporal coverage, unit of analysis
  - **Methodology/processing**: collection mode, sampling, weighting, cleaning, . . .
  - **Data access**: archive, conditions of access
  - **Other study description materials**: related resources

Structured metadata for survey data

Resources to help

- **HASSET** (Humanities And Social Science Electronic Thesaurus): `https://hasset.ukdataservice.ac.uk/`
- **Colectica Designer**: `http://www.colectica.com/software/designer`
- **Easy DDI Organizer**: `http://csrda.iss.u-tokyo.ac.jp/international/ddi/edo/`, `https://github.com/Easy-DDI-Organizer/EDO`
- **CED^{2}AR** (Comprehensive Extensible Data Documentation and Access Repository): `https://github.com/ncrncornell/ced2ar`

Structured metadata for sensor data

For describing sensors, there is Sensor Model Language: `http://www.sensorml.com/`

- Minimal record provides a description and identifier of the sensor, its output (what it measures), and its location.
- Can extend it with classifications, constraints, capabilities, and links to further documentation

Resources to help

- **SWEET** (Semantic Web for Earth and Environmental Terminology): `http://sweet.jpl.nasa.gov/`
- **SensorML Ontology Registry and Repository** `http://www.sensorml.com/ontologies.html`

Structured metadata for sensor data

MOLES 3 (Metadata Objects for Linking Environmental Sciences): `https://epubs.stfc.ac.uk/work/65066`

- Based on ISO 19156 Observations and Measurements: `http://www.opengeospatial.org/standards/om`
- Compatible with ISO 19115
- Complex scheme with multiple entities:
  - Observation Collection, Observation, Observation Process
  - Observable Property, Feature of Interest
  - Acquisition, Computation, Result
  - Project, Utilities (citation information)

Structured metadata for photographs and models

For photographs of buildings, there is VRA Core:
`http://www.loc.gov/standards/vracore/`

Can be used for both the image and the real thing, e.g.

- agent (architect, photographer)
- dates (designed, built, taken)
- measurements
- technique
- worktype
- relation (e.g. image of . . .)

Specification recommends ontologies for certain elements, and has optional controlled vocabularies for others.

Structured metadata for photographs and models

For models, less clear separation between data and metadata:

- gbXML exchange format: `http://www.gbxml.org/`
- ISO 16739 Industry Foundation Classes: `http://www.buildingsmart-tech.org/specifications/ifc-overview`

Enough to use standard data format and generic discovery metadata?

Conclusions

Take-away tips

What metadata should you collect? Depends . . .

- Who will ask for it?
- What will they use it for?

When should you collect it?

- As soon as you can – don't wait until the end!

How should you collect it?

- Extract/copy, try to avoid retyping
- Keep central 'master' copies of metadata you will reuse across datasets

Take-away tips

How should you record it?

- Use existing standards where you can – local profile?
- Look at the Metadata Standards Directory: `http://rd-alliance.github.io/metadata-directory/`
- Be consistent
- If in doubt, use a README file – transform it later?

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Thank you for listening

Questions?