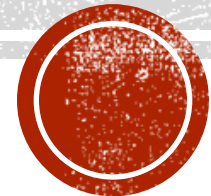


# DATA FOR RAW MATERIALS INTELLIGENCE CAPACITY

WP3

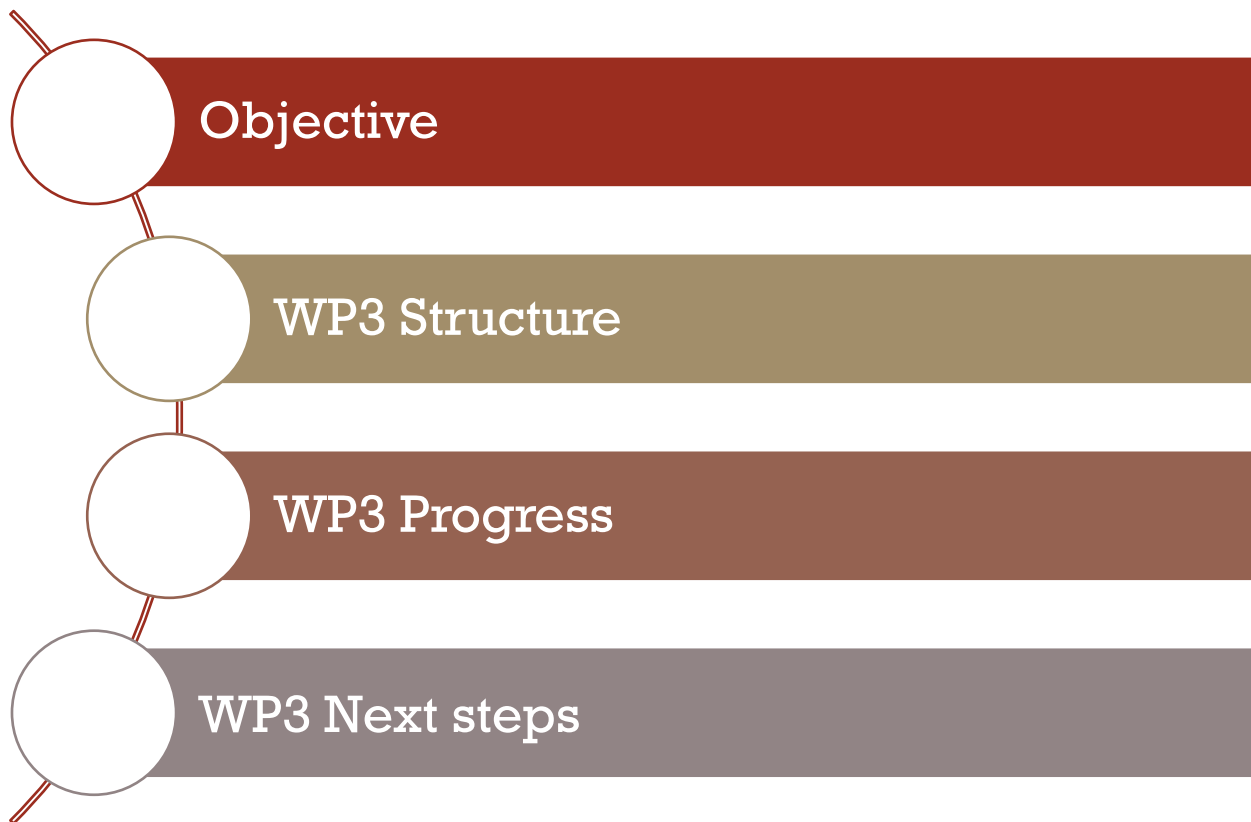


Evi Petavratzi  
MICA 2nd progress meeting  
14 June 2017

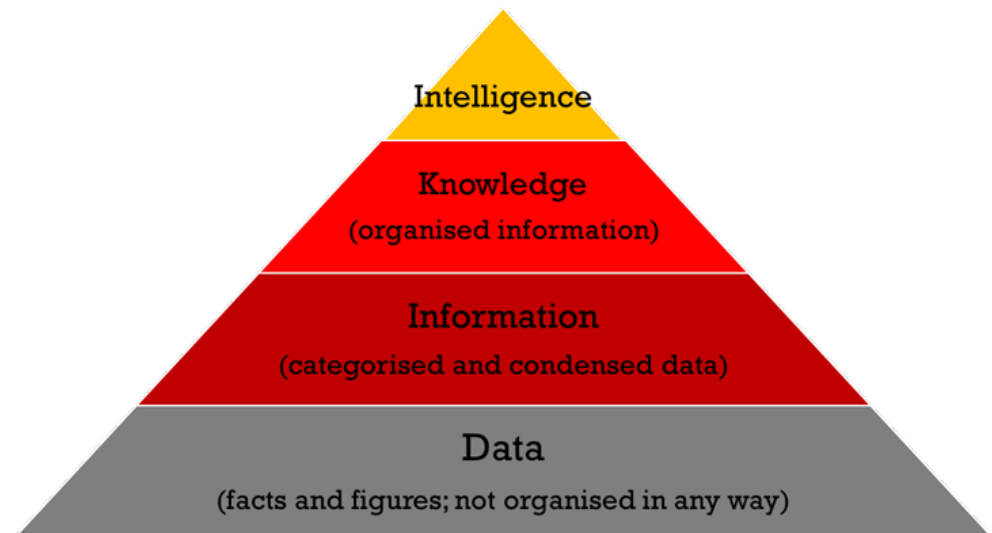


British  
Geological Survey  
NATURAL ENVIRONMENT RESEARCH COUNCIL

# CONTENT



To review and assess datasets relevant to raw materials that will provide the evidence, information and knowledge required by stakeholders.



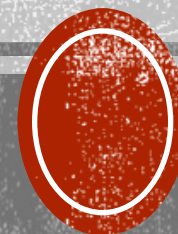




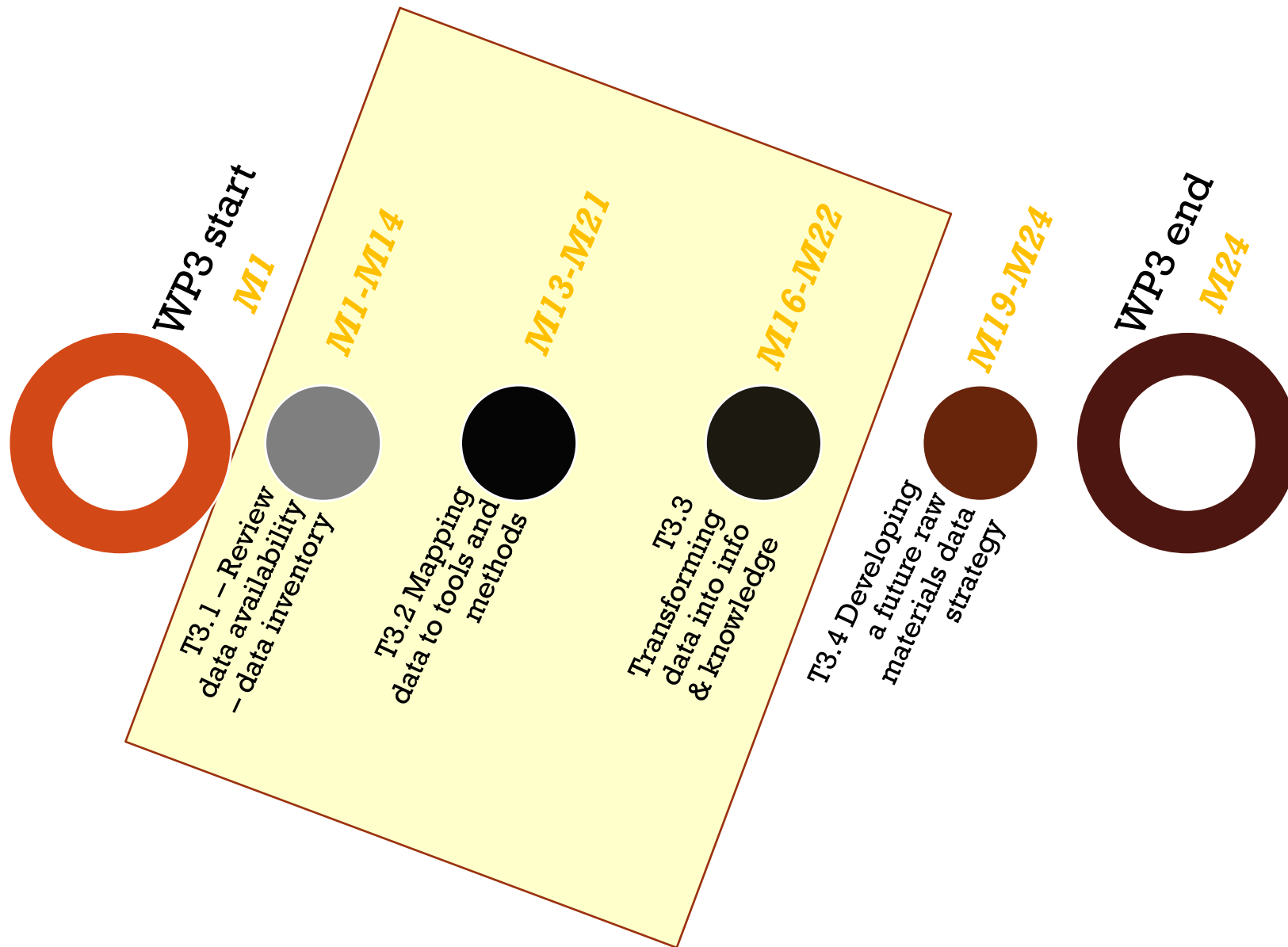
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Mineral Intelligence Capacity Analysis

# WP3-STRUCTURE



# WP3 TIMELINE



---

## Task 3.1 Data availability

- Task 3.1.1 Preliminary structure of data inventory ✓
- Task 3.1.2 Review existing datasets and data inventories ✓
- Task 3.1.3 Review additional datasets ✓
- Task 3.1.4 Quality assurance of the raw materials inventory ✓
- Task 3.1.5 Case studies on data uncertainty ✓

## Task 3.2 Mapping data to tools

Loading.....

## Task 3.3 Transforming data into knowledge

- Task 3.3.1 Consortium expert knowledge ✓
- Task 3.3.2 Workshop on data for mineral intelligence

Loading.....

## Task 3.4 Raw material data strategy

Loading.....

<b>Deliverable</b>	<b>Deliverable name</b>	<b>Due in</b>
D3.1	Draft data inventory	Month 14
D3.2	Final data inventory	Month 20
D3.3	Report on transformation of data into information	Month 22
D3.4	Raw material data strategy and report on data inventory	Month 24

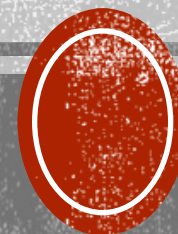




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# WP3-PROGRESS





# DELIVERABLE 3.1



## Deliverable D3.1

### Draft inventory of data on raw materials

<b>Project:</b>	Mineral Intelligence Capacity Analysis
<b>Acronym:</b>	MICA
<b>Grant Agreement:</b>	689468
<b>Funding Scheme:</b>	Horizon 2020
<b>Webpage:</b>	<a href="http://www.mica-project.eu">www.mica-project.eu</a>
<b>Work Package:</b>	Work Package 3
<b>Work Package Leader:</b>	Evi Petavratzi
<b>Deliverable Title:</b>	Draft inventory of data on raw materials
<b>Deliverable Number:</b>	D3.1
<b>Deliverable Leader:</b>	NERC
<b>Involved beneficiaries:</b>	NERC, GEUS, Fraunhofer, UL-CML, Minpol, BRGM, BRG, GTK, NTNU; Linked Third Parties: Swisstopo, GSI, GIR, LNEG
<b>Dissemination level:</b>	PU Public
<b>Version:</b>	Final
<b>Status:</b>	Submitted
<b>Authors:</b>	Evi Petavratzi, Teresa Brown, James Passmore
<b>Reviewed by:</b>	Teresa Brown, James Passmore, Jouni Vuollo, Eberhard Falck, Nynke Keulen, Lorenz Erdmann
<b>Approved by:</b>	Nynke Keulen

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 689468.

# Deliverable 3.1 submitted

- Metadata standard ISO 19115:2003/19139 has been used to structure the records
- **Step 1:** Started with the development of a spreadsheet form, which has been used for metadata gathering
- **Step 2:** Progressed with the development of an online metadata inventory using the spreadsheet form as a basis

## Metadata record

About the dataset



Access and  
constraints



About the data  
within the dataset



Links to MICA  
platform



About this  
metadata record

## About the dataset



- Dataset title
- Date of creation/ publication/ revision
- Edition
- Dataset abstract
- Status
- Dataset language
- Dataset web address
- Dataset contact
- Frequency of update
- Geographical coverage
- Commodities
- Temporal extend
- Dataset theme
- Information or Data class
- Information or Data type

## Access & Constraints



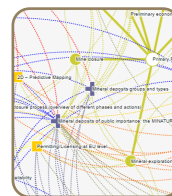
- Access
- Confidentiality
- Limitations

## About the data within the dataset



- Requirements for data generation
- Methods of data generation
- Purpose of data generation
- Data quality and Data uncertainty

## Links to MICA platform

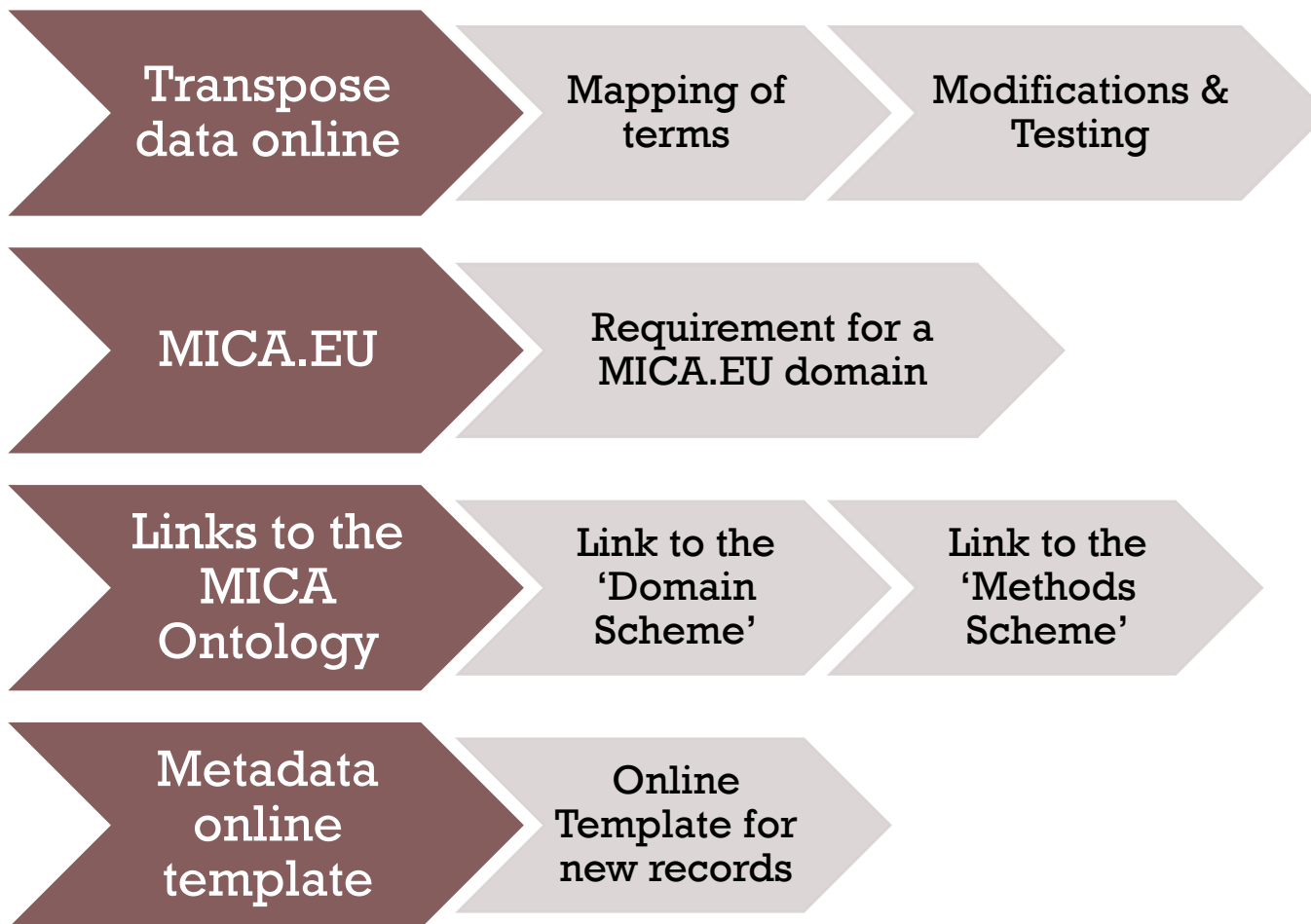


- Annotation to Domains and Concepts

## About this metadata record




- Date record created
- Data record reviewed






[Link to the online metadata inventory](#)


MICA inventory
 Search
 Sign in
 English

Back to search
 < Previous
 Next >


MineralsUK

Overview
 Associated
 Complete
 Identification
 Distribution
 Metadata
 ...

TYPE

KEYV

CON

PROV

YEAR

UPD/

File identifier
 ISO Language code
 Character Set
 Scope code
 Date stamp
 Metadata standard name
 Metadata standard ver...

bffd4588f-8aff-4d8c-995e-718fd74957e9
 eng
 MD\_CharacterSetCode\_utf8
 Dataset (e.g. an inventory, database or compilation of data)
 2017-05-05
 ISO19115
 2003/Cor.1:2006

General

Address

Data identification

Citation

Point of contact

General

OnLine resource

Organisation name
 Position name
 Role code

British Geological Survey
 Contact for the metadata
 pointOfContact

Electronic mail address

enquiries@bgs.ac.uk

Abstract

Purpose
 Progress
 ISO Language code
 Supplemental Informat...

MineralsUK is the British Geological Survey's Centre for Sustainable Mineral Development. This website has a wealth of information on mineral resources, mineral planning, policy and legislation, sustainable development, statistics and exploration.
 Various
 On going
 English
 A mixture

Title
 Citation identifier
 Other citation details

MineralsUK
 bffd4588f-8aff-4d8c-995e-718fd74957e9
 No additional information provided about the dataset

General

OnLine resource

Organisation name
 Position name
 Role code

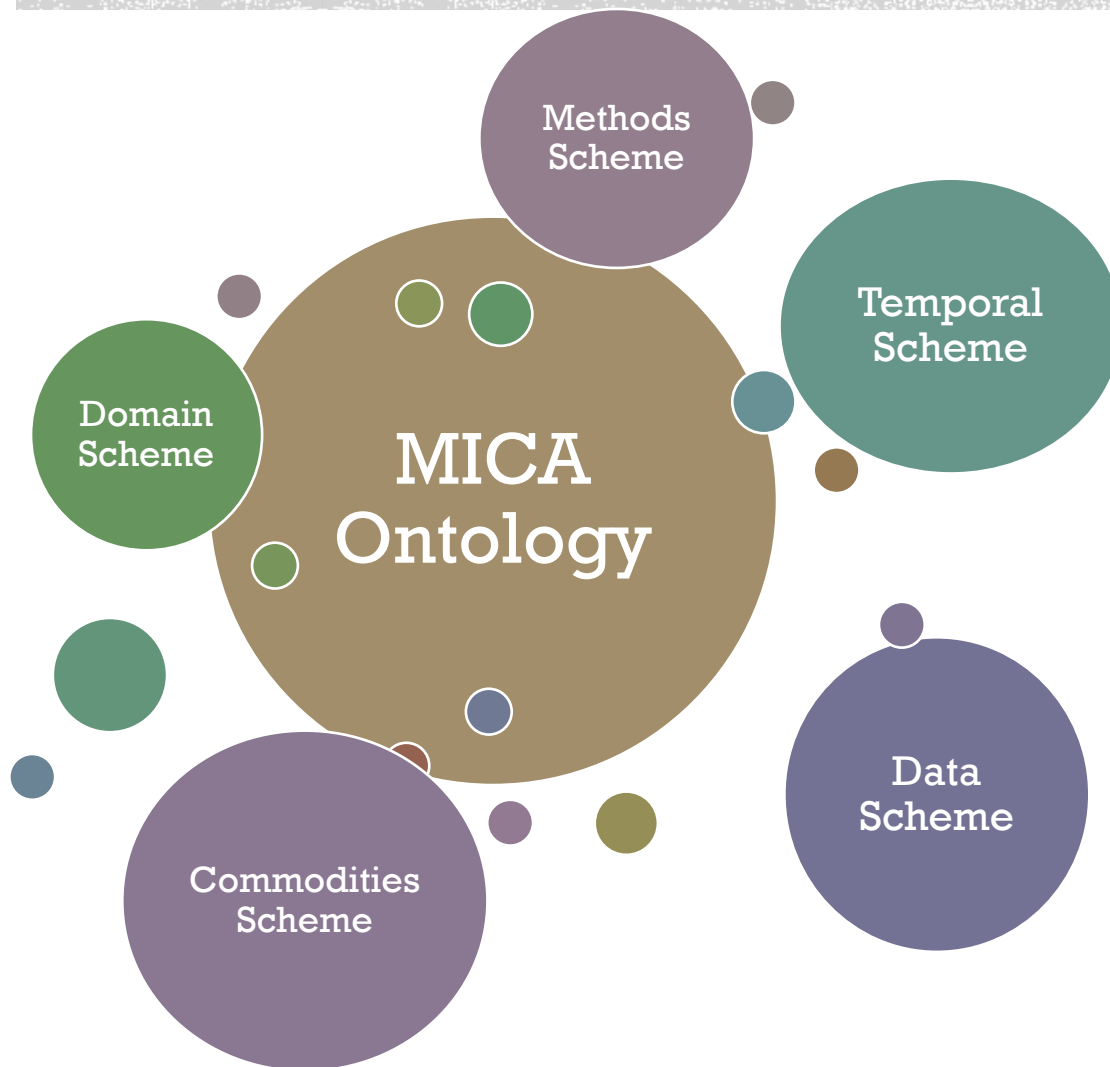
British Geological Survey
 Contact for the resource described by the metadata
 party that supplies the resource

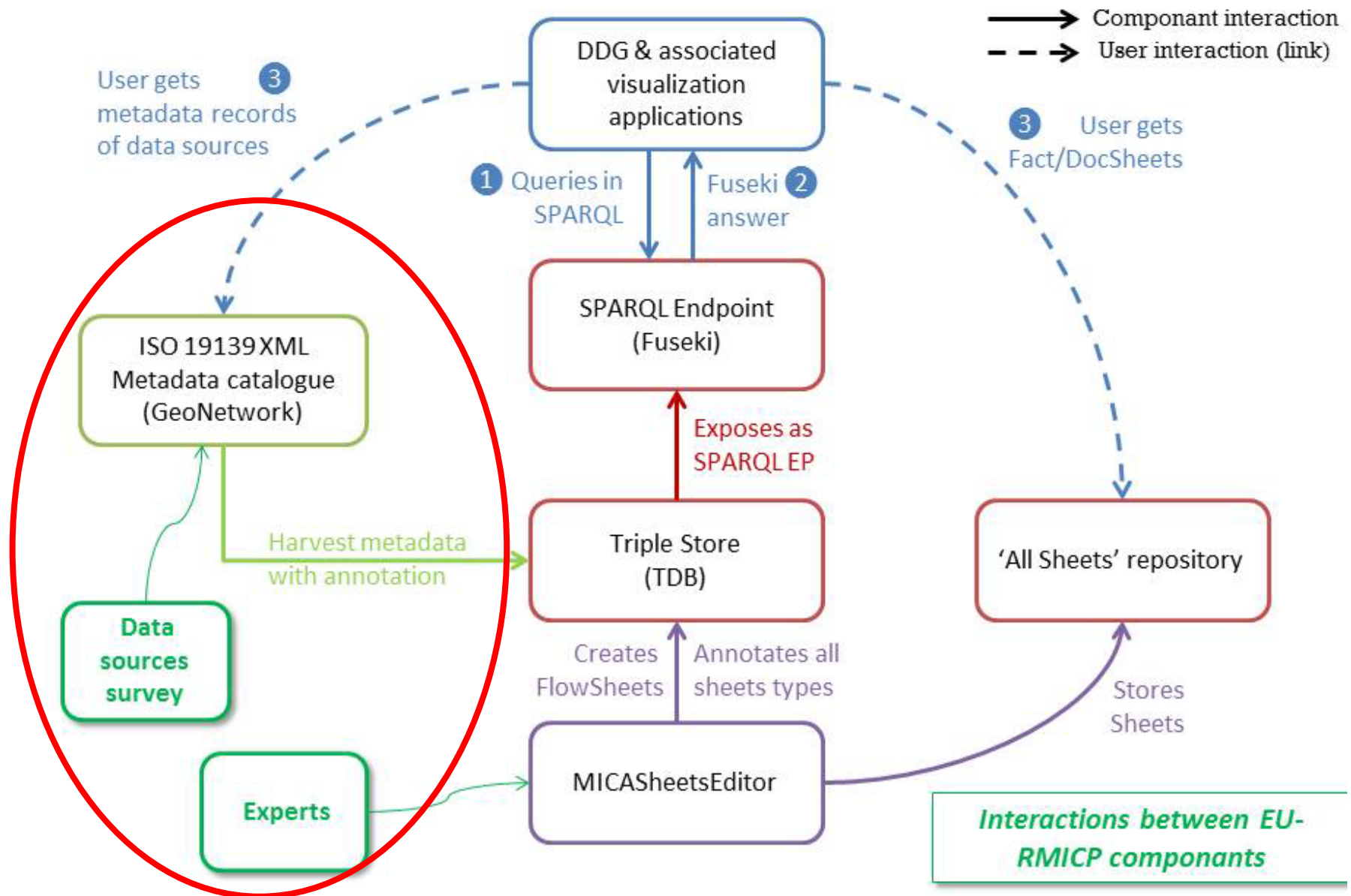
Linkage

http://www.bgs.ac.uk/mineralsuk/

Tellus is using harmonised, systematic
 The project, managed by the Geological

# LINKING TO THE MICA ONTOLOGY





# DATA GATHERING — PROCESS





## Datasets & Inventories

Contextual  
information

Articles

Reports

Websites

Legal  
documents

Maps

Projects

- Approx. 400 records have been identified (WP3 partners)
- 297 records have been populated already
- 97 records to be populated ASAP
- **Please use the template circulated to generate your records and send them back to BGS.**

Records from MICA partners	No of records	Records from MICA partners	No of records
BGS	252	GIR	10
BGR	27	GSD	1
CML	24	GTK	2
Fraunhofer ISI	16	LPRC	11
GEUS	7	Swisstopo	14
NTNU	6	<b>Thank you for your contribution!</b>	

- Several of the metadata records are from existing FactSheets/ DocSheets.
- **New Fact/DocSheets procedure:**
  - Data sources and information (e.g. key reports), which the author(s) identify as essential for the MICA Data Inventory should be added to the WP3 list of records.
  - Author(s) are responsible for developing the metadata records (to be communicated to BGS)
  - All datasets should become metadata records
  - BUT resources with DOI and weblinks can be LinkSheets instead.

# CASE STUDIES-DATA UNCERTAINTY

**Objective:** To gain insight on whether data users were concerned about uncertainty; how they manage it; new useful approaches

**Participants:** data users and data providers

## **Workshop I, BGS, 08 Feb 2017**

Implications of uncertainties in data from a geochemical survey for resources

## **Workshop I, BGS, 18 May 2017**

Uncertainty in mineral statistics

## **Conclusions**

When evaluating a dataset or developing a new one it is important to assess:

- whether data provide full context (e.g. in mineral stats data to be presented in a system context)
- the comprehensiveness and quality of the metadata
- whether uncertainty is communicated clearly to the users

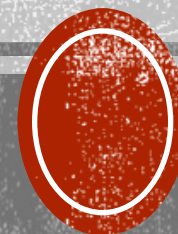




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# WP3-NEXT STEPS



- Workshop on mapping data and methods for mineral intelligence
- Deliverables 3.2 and 3.3
- Continue with the development of the online inventory
- Data gathering will continue until all Fact/Doc/FlowSheets are complete
- Start work on the raw materials data strategy – contribution by all partners



# International Workshop

*Mapping data and methods for mineral intelligence*

**Paris, June 15<sup>th</sup>, 2017**

Venue: FIAP Jean Monnet  
30 Rue Cabanis, 75014 Paris

 **MICA** Mineral Intelligence  
Capacity Analysis


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[www.mica-project.eu](http://www.mica-project.eu)

 **European Union**  
Ministry of Economic Affairs



# WP3 Metadata inventory list



Inventory ID	Name	Domain	Web link	Record Completed (Y)	Record added by (organisation)	Record added by (date)
IN0004	A computer movie simulating urban growth in the Detroit region.	Primary resources		Y	BGS	
IN0005	A framework and requirements for Life Cycle Impact Assessment (LCIA) models and indicators	Raw Materials Economics	<a href="http://epica.jrc.ec.europa.eu/uplo ads/ICD-Handbook-LCIA">http://epica.jrc.ec.europa.eu/uplo ads/ICD-Handbook-LCIA</a>	Y	BGS	
IN0006	A machine learning approach to geochemical mapping	Primary resources		Y	BGS	
IN0007	A Research Agenda for Improving National Footprint Accounts	Raw Materials Economics	<a href="http://www.footprintnetwork.org">www.footprintnetwork.org</a>	Y	BGS	
IN0008	A review of national resource strategies and research	Raw material policy and legal framework	<a href="http://www.gov.uk/government/uploads/system/uploads/attachm ents/data/uploads/attachment_ data/file/264116/20150601-060647813057950a37ba33fa387fe">http://www.gov.uk/government/u ploads/system/uploads/attachm ents/data/uploads/attachment_ data/file/264116/20150601-060647813057950a37ba33fa387fe</a>	Y	BGS	
IN0009	A study of cross-validation and bootstrap for accuracy estimation and model selection.	Primary resources		Y	BGS	
IN0010	A two-dimensional interpolation function for irregularly spaced data	Primary resources		Y	BGS	
IN0011	About regression-kriging: from equations to case studies	Primary resources		Y	BGS	
IN0012	Air Pollution in Europe 1997 (Figure 1: The DIPSR framework)	Future Methods	<a href="http://www.eea.europa.eu/public ations/92-9167-259-4">http://www.eea.europa.eu/public ations/92-9167-259-4</a>	Y	BGS	
IN0013	An introduction to geological structures and maps	Primary resources		Y	BGS	
IN0014	Analysis of existing Environmental Impact Assessment methodologies for use in Life Cycle Analytical Tools for Environmental Design and Management in a Systems Perspective. The Annex to the Report of Critical Raw Materials for the EU (2014)	Raw Materials Economics	<a href="http://epica.jrc.ec.europa.eu/uplo ads/ICD-Handbook-LCIA">http://epica.jrc.ec.europa.eu/uplo ads/ICD-Handbook-LCIA</a>	Y	BGS	
IN0015	Annex to the Report of Critical Raw Materials for the EU (2014)	Raw Materials Economics	<a href="http://ec.europa.eu/economy_finance/documents/11911/attachments/1/r">http://ec.europa.eu/economy_finance/documents/11911/attachments/1/r</a>	Y	BGS	
IN0017	Anthropogenic nickel cycle: Insights into use, trade, and recycling	Raw Materials Economics		Y	BGS	
IN0018	Anthropogenic losses of platinum group elements	Raw Materials Economics		Y	BGS	
IN0019	Application of the Crusta technique for porphyry copper alteration mapping: using ERM-data in ARIMA Models and the Bio-Linking Methodology: Applied Economics	Primary resources	<a href="http://www.sciencedirect.com/sci ence/article/pii/S136771000300022">http://www.sciencedirect.com/sci ence/article/pii/S136771000300022</a>	Y	BGS	
IN0020	ARIMA Models and the Bio-Linking Methodology: Applied Economics	Future Methods		Y	BGS	
IN0021	Australian code for reporting exploration results, mineral resources and ore reserves	Primary resources	<a href="http://www.pjrc.org/">http://www.pjrc.org/</a>	Y	BGS	
IN0022	Australian junior exploration reports, 2001-06, and	Primary resources	<a href="http://www.sciencedirect.com/sci">http://www.sciencedirect.com/sci</a>	Y	BGS	





**MICA** Mineral Intelligence  
Capacity Analysis



Co-funded by  
the European Union

# THANK YOU FOR YOUR ATTENTION



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Geological Survey  
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Evi Petavratzi

BGS

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