illuMINEation
THE FUTURE OF MINING

DATA MANAGEMENT PLAN

Deliverable D1.3 as required by and defined in the Grant Agreement

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Abstract:	The main purpose of this Data Management Plan is: a) to encourage good data handling within the *illuMINEation* project and b) to provide instructions on naming conventions, metadata structure, storing of research data and how public data should be made available.

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Executive Summary

This deliverable addresses the overall data management within the *illuMINEation* project and targets the following main aspects:

- Communication infrastructure including technical and non-technical aspects needed to exchange data and related requirements.
- Data handling including the framework for secure data exchange and related responsibilities.
- Cybersecurity and Data privacy embracing data integrity, data privacy and data protection.

In addition to that, this Deliverable provides an overview on research data the project is expected to generate, the types and formats of the particular data, and how the data is processed and stored in order to make them findable, accessible, interoperable and reusable (according to the principles of FAIR data management). The purpose of the Data Management Plan (DMP) is to contribute to effective data handling during the project's lifetime.

The DMP is a living document and will be regularly updated according to the needs of the particular development status of the project. Day-to-day data management and monitoring will be carried out using the internal communication platform BSCW (please refer to Deliverable D1.1, submitted in September 2020).

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1 Introduction

1.1 Purpose of this document

This document is designed to provide the project position in respect to data management and support the project partners to deal with data management issues that may arise in the multidisciplinary project *illuMINEation*.

Due to its nature, this report will be treated as a living document, and will be regularly updated during the lifetime of the project. This in particular refers to the sources of the data that might be generated during the project lifetime and related future implications in regards to legal regulations.

1.2 Scope of this document

In short, this document covers the following main topics:

1. Guiding principle and legal framework;
2. Data summary;
3. FAIR data management;
4. Connection to the Raw Materials Information System (RMIS); and
5. Data security.

1.3 Related Documents

This document is in close relation with the following *illuMINEation* Deliverables:

- D1.1 Internal Communication Platform BSCW (has already been submitted in September 2020)
- D1.2 Quality Assurance and Risk Management Plan (has already been submitted in December 2020)
- D7.3 Fully integrated *illuMINEation* multi-level IIoT platform including services for advanced big data analytics and security (due in June 2023)
- D10.1 Recruitment of research participants & informed consent procedure/templates (due in February 2021);
- D10.2 Data Protection Officer & Data Protection Policy (due in February 2021)
- D10.3 Environmental protection, health & safety (due in February 2021);
- D10.4 Analysis of ethics issues & independent Ethics Advisor (has already been submitted in January 2021).

Those related deliverables are describing several important aspects relevant to the data management plan including the quality assurance of the data or ethics aspects. This means that some important aspects of a data management plan have already been covered in detail in other Deliverables and are therefore not described again in this document.

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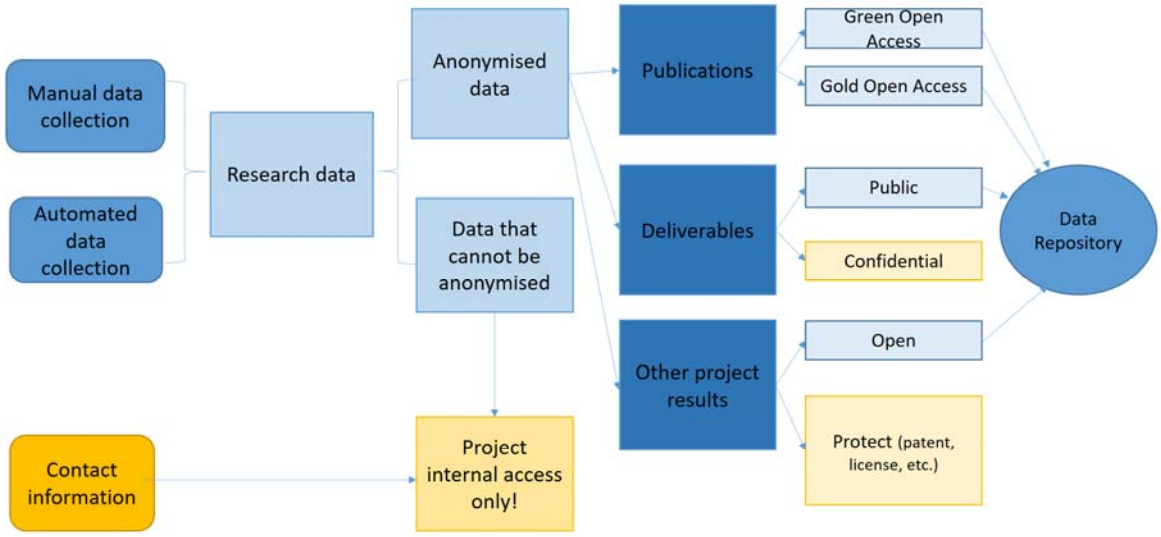
2 Guiding Principle and Legal Framework

2.1 Guiding Principle

The guiding principle of the *illuMINEation* project is to perform the project activities in an open and transparent manner. However, if one or more partners sense a business opportunity based on the project results, the project consortium will take the necessary steps to adequately protect the associated project results and intellectual property. All relevant dissemination and exploitation activities will be closely monitored by the project internal Exploitation and Dissemination Committee headed by WP-9 leader Maite Garcia (WSENS).

The following figure mirrors the project procedures used in order to ensure open access to research data and publications.



To protect the privacy of individuals participating in either of the 5 use case scenarios or project related training activities, only data that can be anonymised to the degree that it is impossible to identify the corresponding individual will be shared publicly. Non-anonymised data will be used for internal project purposes only.

Public deliverables, publications and anonymised datasets will be shared openly through an open research data repository.

2.2 Legal Framework

There are two legal regulations relevant to *illuMINEation.* Those are the General Data Protection Regulation (GDPR) and the Convention 108 with the Protocol 223 Council of Europe Treaty Series – Protocol amending the Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (10.X.2018).

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From May 2018, the GDPR is applicable and in force in all EC Member States. The GDPR regulates the processing of personal data of individuals including the most important rights of a data subject:

- Right of access to personal data (Article 15 GDPR);
- Right of rectification of personal data (Article 16 GDPR);
- Right of erasure of personal data (Article 17 GDPR);
- Right to restriction of processing (Article 18 GDPR);
- Right to be notified regarding the rectification or erasure of personal data or the restriction of processing (Article 19 GDPR).

It also regulates other aspects related to data relevant in the project such as:

- Article 4(7) of GDPR that defines the data controller;
- Article 4(8) of that defines the data processor;
- Article 26 of GDPR that defines the data joint controllers;
- Article 89 of GDPR - safeguards relating to processing for archiving purposes in the public interest, scientific or historical research purposes or statistical purposes;
- Article 22 GDPR. Automated individual decision-making.

The project will strictly follow the applicable regulations and any potential future implications, if arising during project lifetime, will be documented.

Convention 108 with the Protocol 223 basically does not go beyond the requirements laid out in the GDPR. In its Article 5, the Convention 108 defines the basic principles for automated processing and governs the principle of data minimisation (e.g. the processing must be Fair and transparent, etc).

2.3 Collection and handling of personal data

All data collected from research participants and/or stakeholders will be processed in accordance with ethical standards and requirements and in line with applicable rules and regulations on privacy and data protection. The ethics Deliverable D10.2 Data Protection Officer & Data Protection Policy gives a very detailed and comprehensive overview of the current legislation and the resulting implications for the project activities.

3 Data Summary

Annex I provides a list of all datasets currently expected to be generated in the *illuMINEation* project, including their planned accessibility. The consortium is aware of the fact that this list will grow substantially over time as the project progresses.

3.1 Origin of data

illuMINEation will collect data mainly from the project partners themselves and from people who are directly or indirectly connected to the project, such as the High-level Advisory Board members, important stakeholders from the mining (equipment) industry, national authorities, amongst others. Depending on the type of data, there will be various methods of data collection involved.

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The main origin of data collected will be:

- Interviews with groups and individual participants taking part in the five use case scenarios or project related training activities;
- Feedback from High Level Advisory Board Members, Ethics Advisor and/or other important stakeholders at project events;
- Data and measurements acquired in relation with the five use case scenarios
- Market surveys;
- Literature study/review and open data (re-use of existing data);
- RMIS and other statistical data.

3.2 Purpose of data generation and collection

The overall motivation for data collection in *illuMINEation* is to enable a joint learning process towards a stepwise application of digital solutions within the mining (equipment) industry. This includes for example the evaluation of proposed digital and other technical solutions in the five use case scenarios. In this context, input and feedback from mining staff will be gathered in order to improve these solutions, increase user acceptance and encourage a change in work processes (if indicated).

Exclusively data that is necessary for the project performance will be collected, and as far as possible, no participants will be asked to provide personal data.

3.3 Data types and formats

3.3.1 Categorisation of data

Data collected in *illuMINEation* can be assigned to the categories stated below. There may be different ways of data categorisation in this project.

In respect to the legislation on privacy and data protection, data can be categorised in respect to the privacy point of view.

For the data/datasets that are not containing any personal data:

- Open data,
- Confidential data (mainly due to IPR issues), and
- Anonymised data.

For the data/datasets that are containing personal data:

- Private data, and
- Public data.

Furthermore, data and datasets may also be divided depending on the way or mode of data collection:

- Manually collected data, and
- Automated collected data.

3.3.2 Types of data

In this subsection, details regarding the expected types of the data are presented.

1. Manually collected data:
    - Data on user acceptance;
    - Data collected through the interaction within people inside and outside of the project consortium;

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- Pictures, audio and video (from use case scenarios, project activities, workshops and other project relevant events); and
- Project documentation.

2. Data automatically collected through technology:
   - Data collected in relation with tailings dam monitoring;
   - Data on electric mining vehicle charging;
   - Data collected from sensors;
   - Data collected from drones;
   - Data collected from mining equipment;
   - Data collected from rock bolts; and
   - Maintenance logs.
3. Private data:
   - Project team of each partner organisation;
   - High level Advisory Board members and Ethics Advisor;
   - Other staff members from project partners who voluntarily participate in use case scenarios or project related training activities.
4. Open/public data:
   - Research data in relation with (public) project deliverables, published scientific and technical papers, posters and presentations.
5. Confidential data:
   - Data in order to protect project related IPR and trade secrets;
   - Data which is connected with the development of project related business models;
   - Market data (from project partners) not available for the public.

3.3.3 Data formats

A dataset frequently consists of different types of formats. For example, a manual collected dataset concerning user acceptance might comprise written interview notes, pictures from use case scenarios, audio files from interviews, etc. All automatically collected data is intended to be anonymised.

Possible formats which might be used for data generation, are:

- Documents/Reports/Publications: .pdf, .docx
- Spreadsheets: .xlsx
- Audiofiles: .mp3
- Pictures: .jpg
- Video: .mp4

3.3.4 Internal Communication Platform and corresponding metadata

Within *illuMINEation,* the consortium uses an internal communication and collaboration platform called BSCW (a web-based groupware tool for efficient collaboration). All project related internal documents and data are being stored and archived on this platform.

The below list contains metadata that is used to describe the corresponding dataset:

- File name
- File type
- Date and Version
- Description
- Work Package (WP) number
- Responsible person
- Lead partner
- Dissemination level

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3.4 Instructions for uploading datasets to the Internal Communication Platform

Project partners are requested to follow the following guidelines whenever data is uploaded to the Internal Communication Platform:

a) Please upload all public datasets in the BSCW folder called “Research Data” and use the naming convention as described in Section 4.1.4 of this document.
b) Make sure to use the same file name when uploading later versions.
c) Please add the requested metadata on your data set in addition to the unique data identifier which can be taken from a list in the same BSCW folder.

3.5 Instructions for uploading scientific publications, public Deliverables and public datasets to Zenodo

illuMINEation aims to use Zenodo[1] as the standard open research data repository to comply with the H2020 Open Access obligation.

In order to upload scientific publications, public deliverables and public datasets in Zenodo (https://zenodo.org/), the following steps have to be undertaken:

- Creation of a profile in Zenodo to be able to upload files;
- Click on the “Upload” button;
- Enter the requested description of content and pre-reserve your DOI;
- Submit to finalise your upload and publish.

Uploading of the intended publications shall happen as soon as possible. Data Controllers are responsible for uploading the datasets generated by them.

Remark: Zenodo accepts any file format. However, the lead partner of the publication is responsible to take care that all copyright and license conditions are met before the corresponding file is being uploaded!

4 FAIR Data Management

One project focus is to foster access to research data generated by the project in order to raise the overall degree of digital innovation within the mining (equipment) industry sector. In this connection, the guidelines on FAIR (findable, accessible, interoperable and reusable) Data Management in HORIZON 2020 will be taken as basis. At the same time, there will be datasets, or parts of datasets generated by this project that will not be shared in order to protect:

A) the privacy of research participants in the five use case scenarios and/or training activities;
B) project results which are intended to be commercially exploited.

4.1 Making data findable, including processing for metadata

4.1.1 DOI number

To ensure data is findable, all data (which are made available) will be identified with a “data object identifier” (DOI) number. The DOI system has been standardised through the

[1] Zenodo is a research data repository that enables researchers, scientists, EU projects and institutions to share research results.

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International Standards Organisation – ISO as "ISO 26324, Digital Object Identifier System". In any publication of the *illuMINEation* project, the DOI number of the data set(s) shall be stated, to ensure data is findable.

4.1.2 Metadata in Zenodo

Another important topic for making data findable and accessible is the definition of metadata (metadata template) for each data set, providing information on persons/institutions involved, in data collection mode and methods, timing and duration of data collection, as well as abstract on the nature, generation and processing of data.

Metadata associated with each published dataset in Zenodo will be by default as follows:

- Digital Object Identifiers (DOI)
- Version numbers
- Bibliographic information
- Keywords
- Abstract/Description
- Associated community
- Associated publications and reports
- Language

Additionally, the *illuMINEation* consortium will add the project name and H2020 GA number.

4.1.3 Keywords

In addition, the consortium has defined a set of general keywords that should be applied to all public datasets, scientific publications and public deliverables. These general keywords are listed below:

- Digital mine
- Digital transformation of the mining industry
- Raw materials
- Industrial Internet of Things
- Environment, resources and sustainability
- Sustainable raw materials extraction
- Minerals and mining
- Resources efficiency
- Geological engineering, geophysical engineering, mining, geotechnical engineering
- Wireless sensor networks
- Wireless communication
- Predictive maintenance
- Additive manufacturing
- Drones
- Occupational Health & Safety
- Environmental protection
- Digital skills and capabilities
- Virtual reality / augmented reality
- Digital twin
- Pioneering innovations
- Data analytic & Cyber security
- Cloud / edge computing

4.1.4 Naming conventions

Datasets will be identified using the following naming conventions:

DS_UseCase/WP_DataCategoryNo_DataController_Description_H2020_Acronym_UniqueDataNo

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- "DS" refers to dataset
- "UseCase" or "WP" refers to either one of the five use case scenarios or one of the 10 project related work packages
    - Use Case 1: U1MDO
    - Use Case 2: U2RHIM
    - Use Case 3: U3KGHM
    - Use Case 4: U4BOL
    - Use Case 5: U5EPI
    - WP1, WP2…..WP10
- "DataCategoryNo" refers to the following data category:
    - 1=Manually collected data
    - 2=Automatically collected data
    - 3=Contact information
- "Data Controller" refers to the short name of the project partner responsible for the dataset
- "Description" refers to a short description of the dataset (see example)
- "UniqueDataNo" is the next number of the research metadata list which can be accessed on the project internal communication platform

Example: *DS_WP1_3_MUL_HighLevelAdvisoryBoard_H2020_illuMINEation_0001*

4.1.5 Versioning

Zenodo (for example) provides a DOI versioning system for all uploaded datasets, which allows the *illuMINEation* consortium to edit and update the uploaded datasets after they have been published.

4.2 Making data openly accessible

The *illuMINEation* project participates in the open access research data pilot and aims at making generated research data accessible with as few restrictions as possible, while at the same time also taking care that personal or sensitive data, due to privacy concerns and/or commercial/security reasons, will be adequately protected.

4.3 Making data interoperable

Zenodo (for example) uses JSONS schema[2] as internal representation of metadata and offers export to other popular formats such as Dublin Core or MARCXML. The metadata related to a given dataset will use vocabularies applied by Zenodo. Any external metadata will get a reference as URL.

4.4 Increase data re-use

The usage of DOI will support the reuse of *illuMINEation* data. This implies that the consortium will also announce on the project webpage which kind of data are available and promote the usage of *illuMINEation* data. Hence, the *illuMINEation* project will allow third parties to access, mine, exploit and disseminate (free of charge for any users) all public data sets, and regulated via Creative Common Licences.[3]

[2] https://json-schema.org/

[3] Creative Commons licenses give everyone from individual creators to large institutions a standardized way to grant the public permission to use their creative work under copyright law; https://creativecommons.org/about/cclicenses/

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5 Link to the Raw Materials Information System

The Raw Materials Information System (RMIS)[4] is the Commission's knowledge sharing platform on raw materials.

5.1 RMIS goal and scope

According to the JRC Technical Report on the Raw Materials Information System (RMIS): 2019 Roadmap & Progress Report/Section 1.3, the RMIS goal & scope is summarised as follows:

> The RMIS is the EC's reference web-based knowledge platform on non-fuel, non-agriculture raw materials from primary (extracted/harvested) and secondary (recycled/recovered) sources. The RMIS responds to the need of strengthening the European Union Raw Materials Knowledge Base (EURMKB) and acts as the core access point to such knowledge and as interface for policy support. The knowledge accessible through RMIS is, to the extent possible, made available for the European Union (from regional, national and EU data), with the ambition of providing it in a harmonized way.
>
> The RMIS aims at facilitating:
>
> - The availability, coherence, and quality of knowledge required by specific EU raw materials policies and EC services;
> - The knowledge needs of the EU criticality assessment, the Raw Materials Scoreboard, trade, defence, Circular Economy, due diligence/conflict minerals and other raw materials specific policies;
> - Access to key raw materials information from the EURMKB, within and beyond Europe, which complements the knowledge currently essential for policy support.
>
> Fulfilling these objectives requires establishing networks with Member States' experts and industry associations, but also bilateral agreements with other key European and international knowledge providers. Continuous efforts are being made to strengthen networking, cooperation and knowledge exchange with most relevant stakeholders within and beyond the European raw materials sector.
>
> As presented in this report, key features of the RMIS facilitate the provision of structured knowledge on material flows & stocks, social & environmental sustainability and trade & economic considerations. These contribute to developing e.g. country & material specific profiles that are available in the RMIS.

5.2 Using the Raw Materials Knowledge Gateway (RMKG)

The *illuMINEation* consortium will use the template[5] provided by RMKG in order to provide project relevant information & results to RMIS. In addition, MUL as project coordinator will get in contact with the responsible RMIS contact person in order to discuss and plan further project contributions to RMIS.

[4] https://rmis.jrc.ec.europa.eu/

[5] JRC – Technical Reports "Raw Materials Information System (RMIS): 2019 Roadmap & Progress Report, Annex I. Template for inclusion of knowledge providers into the RMIS tile "Raw Materials Knowledge Gateway".

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6 Data Security

In this section, the security characteristics of the research data infrastructure are described.

6.1 Data security as specified for the project internal communication platform

The project management established an internal communication platform and data repository in order to ensure an efficient communication and data exchange within the *illuMINEation* consortium and between all project partners. The cloud-based groupware called BSCW (Basic Support for Collaborative Work) is deployed as safe and secure archive of all project related research data, documents and reports generated during the project. It is only accessible by partner representatives of the *illuMINEation* consortium. As a baseline, all project related data and documents will be stored for at least 7 years, unless otherwise agreed in contracts.

6.2 Important Cyber Security aspects[6]

illuMINEation is attempting to collaboratively solve secure digitalisation challenges faced by the mining industry by breaking down barriers to digital technologies' adoption on the one hand, and by focussing on the deep understanding of the mining end-user partners' needs on the other hand.

A specific task in WP7 is dedicated to addressing the challenges of designing appropriate cybersecurity measures to protect the next generation of smart mining systems.

Multiple cybersecurity aspects relevant to mining digital platforms will be considered throughout the *illuMINEation* project, including security-by-design techniques for ensuring integrity, confidentiality, and availability of data and services, as well as methods and tools for operational protection of the systems at runtime, and for rising alarms in case of cyber incidents or attacks. By leveraging security-by-design techniques and continuous risk assessment methods, cybersecurity services for the multi-level IIoT platform will guarantee holistic security to data services. Cybersecurity threats such as risk of intrusions, hacking, data breaches, malware attacks and loss of data will be analysed and means designed to detect and protect the mining system against them.

A comprehensive cyber risk analysis model will consider all layers of the IIoT environment (devices, Edge-layer, Cloud-layer, application) for enabling continuous threat analysis and cyber risk assessment, driving the selection and tuning of required defences at runtime. As part of the defence strategy, *illuMINEation* will offer the required security services and methods enabling continuous security situational awareness to improve cyber intelligence on the IIoT platform. An initial risk analysis will help to determine the most relevant threats to the IIoT system and the required security protections in each layer. Continuous security monitoring techniques such as multi-layered SIEM (Security Information and Event Management) will be enhanced with ML techniques and tailored to the particularities of mining IIoT platforms to ensure availability, confidentiality and integrity of service data at all times.

[6] Contribution by Tecnalia.

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7 Conclusions

This document is interrelated with all other *illuMINEation* work packages, but specifically with WP1, WP7 and WP9 activities and tasks, as well as with the four ethics deliverables of WP-10.

MUL as coordinator of the *illuMINEation* project will take care (in collaboration with the rest of the consortium) that any data management issues which might arise during the project will be managed properly in a transparent & fair way.

Formal approval and release of this Deliverable within the *illuMINEation* consortium is seen as official commitment by all project partners to adhere to the data management strategy and the procedures and guidelines described in this document. If this document is officially approved by the EC, then the *illuMINEation* consortium assumes that the data management processes described herein and adhered to by the project partners, are adequate.

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8 References

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- OpenAIRE - https://www.openaire.eu/
- Raw Materials Information System (RMIS), https://rmis.jrc.ec.europa.eu/
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9 Glossary

Abbreviation	Explanation
Anonymised data	Data items that do not allow the identification of individuals in the data material, neither directly through names or personal ID number, nor indirectly through background variables, such as connection keys, encryption formulas or codes.
BSCW	Web-based groupware tool for efficient collaboration. The *illuMINEation* consortium uses BSCW as project internal communication and collaboration platform. https://www.bscw.de/en/
CRM	Critical Raw Material
Creative Common Licences	Creative Commons licenses give everyone from individual creators to large institutions a standardised way to grant the public permission to use their creative work under copyright law; https://creativecommons.org/about/cclicenses/
Data Controller	Data Controller refers to the project partner responsible for the particular dataset
DMP	Data Management Plan
DoA	Description of Action
DOI	Digital Object Identifier
EC	European Commission
FAIR data	Findable, Accessible, Interoperable, Re-usable data
GA	Grant Agreement
GDPR	General Data Protection Regulation https://gdpr-info.eu/
Gold Open Access	Open access publishing (gold open access) means that an article is immediately provided in open access mode on the publisher or journal's webpage. Most publishers charge Article Processing Chargers (APCs) to make articles publicly available.
Green Open Access	Self-archiving (green open access) means that a published article or the final peer-reviewed manuscript is archived in an online repository before, in parallel or after its publication. In some cases, the author can delay access to the article (embargo period). However, H2020 regulations stipulate that embargo periods cannot exceed six months.
Personal data	Personal data is any information that relates to an identified or identifiable living individual.
RMIS	Raw Materials Information System https://rmis.jrc.ec.europa.eu/
RMKG	Raw Materials Knowledge Gateway in relation with the Raw Materials Information System
Zenodo	Zenodo is a catch-all research data repository that enables researchers, scientists, EU projects and institutions to share research results. Zenodo

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Abbreviation	Explanation
	is harvested by the OpenAIRE portal and hosted by the CERN cloud infrastructure. https://zenodo.org/ Zenodo is an open repository, enabling researchers from all disciplines to share and preserve their research outputs, regardless of size or format. Free to upload and free to access, Zenodo makes scientific outputs of all kinds citable, shareable and discoverable for the long term. Zenodo is the name derived from Zenodotus, the first librarian of the ancient library of Alexandria and father of the first recorded use of metadata, a landmark in library history.

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10 Annex I – Expected Datasets

WP	Name of dataset	Description	Format	Responsible Partner	Origin	Class (PU/CO)	Comments
1	Project documentation	Meeting agendas, minutes of meetings, progress reports, etc.	.pdf .xlsx .docx	MUL	Project Consortium	CO	Data are used for efficient high quality project coordination
3	Age tests results data	Data resulting from the age tests performed to validate the embedded IoT and sensor combination. The data collected from the sensors will be analysed for deviations over time of the readings.	.csv .xlsx	WSENS	IoT devices	CO	This data will provide information regarding the devices. The data from the actual testbeds will come later from the testing and validation phase that will take place in WP2.
4	Rock bolt status	Data acquired by rock bolts, geotechnical and environmental condition of mine	Txt, csv, database	Use case partners, MUL	Use case partners	CO	Data at the heart of the project, status of mines in terms of geotechnic and environmental safe zones,
4	Mining machine status	Status of mining machines, i.e positioning, and people in the vicinity	Not known yet	EPI	EPI	CO	Data used for connecting man and machine for positioning, tracking and proximity detection
4	Environmental sensors	Data on ground water, acidity, temperature, etc.	csv,xlsx, txt, database	CUP / KGHM	CUP / KGHM	CO	Data from environmental monitoring, mainly focused on groundwater quality and level. They will be used to assess the impact of the mining industry on the environment.

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WP	Name of dataset	Description	Format	Responsible Partner	Origin	Class (PU/CO)	Comments
4	Tailings damn monitoring	Water line, pore water pressure, etc including processed data on stability	Not known yet	GEO / KGHM	GEO / KGHM	CO	
6	Machine data predictive maintenance	Machine status, operator behavior and environmental conditions.	Not known yet	TECN	EPI, CUP, LTU, RHIM, CUP	CO	
6	Battery data	Battery performance and status data, etc Voltage current temperature isolation.	Not known yet	EPI	EPI,JRS,TECN	CO	Understanding the battery performance.
6	Maintenance logs	Logs of what components that has been replaced and for what reason.	Not known yet			CO	To be able to predict failures we need to understand when they occur
7	Log Files of *illuMINEation* platform during operation	This dataset contains the log file of the use of the different components on the edge/fog/cloud level	Not known yet	JRS	Project Consortium	CO	Data is used for the operation of the platform. The data is generated during the deployment phase within *illuMINEation*.
9	Communication, dissemination & exploitation material	Public web page, social media groups like linked-in, twitter; youtube, project video and other PR material	.html .pdf .mpeg	WSENS	Project Consortium	PU	Promotion of the project work to the scientific community, the mining (equipment) industry and other relevant stakeholders
10	Project related ethics issues	Ethics Deliverables with the corresponding templates	.pdf .docx	MUL	Project Consortium	CO	Data & Templates are used to fulfil the ethics requirements

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