Universiti Malaysia Sarawak (UNIMAS)
Open Science
Research Data Management
Policy

CONTENT

UNIVERSITI MALAYSIA SARAWAK (UNIMAS)
OPEN SCIENCE RESEARCH DATA MANAGEMENT POLICY

1.   PREAMBLE

1.1   Open science (OS) is an approach to making scientific research, including publications, data, physical samples, software, and other things related, accessible to all levels of society, regardless of whether they are amateurs or professionals.

1.2   **Malaysia Open Science Platform (MOSP)** is a national initiative under the Science, Technology, and Innovation Policy 2021–2030 by the Ministry of Science, Technology, and Innovation (MOSTI). This initiative is to enable local researchers to share their research data, which is accessible to the public.

1.3   These initiatives are to promote and encourage open data sharing for technology development through research, development, commercialization, and innovation in research, industry players, and society.

1.4   The initiative has supported the importance of control and management of the potential impact of Open Science. The pilot initiative was launched on 7th November 2019.

1.5   Through the Academy of Sciences Malaysia (ASM), the Malaysia Open Science Alliance was formed to pave the way toward realizing MOSP as a strategic transformative initiative to strengthen the STI Collaborative Ecosystem for Malaysia.

1.6   This initiative aims:

(a)   To make Malaysia's research data a valuable national asset by developing a trusted platform that enables accessibility and sharing of research data aligned to national priorities and international best practices.

(b)   To encourage researchers in Malaysia to share their resources and use them optimally. This is one of the best platforms for local researchers to expand and strengthen their research networking and trans-disciplinary collaborations; and

(c)   To increase the research outputs and contribute the best solutions for various current issues in Malaysia. It helps to reduce the repetition or duplication of research in the future.

2.   OBJECTIVE

2.1   UNIMAS is committed to maintaining the highest standard of management of open science research data throughout the research lifecycle that meets the international standard of making research data "Findable, Accessible, Interoperable, and Reusable **(FAIR)** Data Principles" to ensure that research data and research-related records are managed and preserved in a systematic and comprehensive manner. Good implementation in data management is key to an efficient and effective research process to ensure the reinforcement of open scientific inquiry and integrity, accountability, long-term availability, promote open innovation, citizen science, as well as data-intensive research and appropriate sharing in compliance with the requirements of the funding agencies. Research data are assets that contribute to scientific advancements through their availability for sharing and create opportunities for future collaborations.

2.2   This UNIMAS Open Science Research Data Management Policy aims to promote good practice in open science research data management in the conduct of research projects at UNIMAS and to clarify the responsibilities of both individual researchers and the institution in relation to good open science research data management and support.

2.3   This policy will operate in conjunction with other related UNIMAS policies and guidelines, Malaysian laws, and government policies and guidelines.

3.   DEFINITIONS AND INTERPRETATIONS

Wherever used in this Policy, unless the context shall otherwise require, the following expressions shall have the following meanings:

"**Act**" means an Act or Act of Parliament used in conjunction with legislation, which carries the meaning of a law made by Parliament;

"**Authority**" means Federal Authority, the State Authority and the university;

"**Campus**" means the campus in relation to a university or university college, means the Campus or Branch Campus of the university or university college as specified in an Order made under the Incorporation and Establishment of a University; and the area together with all other buildings or structures thereon, whether in perpetuity or otherwise, by the university or the university college;

"**FAIR Data Principles**" means a set of principles to make data Findable, Accessible, Interoperable and Reusable for scientific management, data stewardship and Open Science framework;

"**Federal Constitution**" means the principal law of the Federation and any law passed after Merdeka Day (Independence Day) which is inconsistent with this Constitution, is invalid to the extent of such inconsistency or state law or regulation, state government policy;

"**Gold Open Access**" means makes the final published version of an article freely available and permanently accessible for everyone, immediately after publication;

"**Green Open Access**" means "self-archiving", it is "the practice of placing a version of an author's manuscript into a repository, making it freely accessible for everyone.". The version (pre-print or post-print) that can be deposited into a repository is dependent on the funder or publisher;

"**Higher Education Institution**" means an educational institution that provides higher education leading to the award of a diploma, degree or its equivalent;

"**Law of Incorporation**" means the federal law by which a statutory body is incorporated;

"**Metadata**" means "data about data". Metadata are the descriptors used for describing, tracing, use and management of the deposited item. Metadata describes characteristics such as content, quality, format, location and contact information;

"**Open Access**" means the access is freely availability on the public internet, permitting any users to read, download, copy, distribute, print, search or link to the full texts of these articles, crawl them for indexing, pass them as data to software or use them for any other lawful purpose without financial, legal or technical barriers other than those inseparable from gaining access to the internet itself;

"**Open Science**" means efforts by researchers, government, research funding agencies or the science or the scientific community itself to make the primary outputs of publicly funded research results-publication and the research data-publicly accessible of digital format with no or minimal restriction as means for accelerating research interest of enhancing transparency collaboration and fostering innovation.

"**Open Data**" means in essence, as data that can be freely used, re-used and redistributed by anyone. Besides being commonly associated with Open Government Data, Open Data also refers to Open Business Data and Citizen Generated Data. The main criteria for Open data are complete, primary, timely, accessible, machine-processable, non-discriminatory, non-proprietary and license-free;

"**Open Peer Review**" means a scholarly review mechanism where both the identities of the reviewer and the author are known to one another during the review and publication process;

"**PeTARY**" means Perpustakaan Tun Abdul Rahman Ya'kub;

"**Pre-print**" means to the version of an academic paper which is submitted by an author for peer review;

"**Post-print**" refers to the final version of an academic paper before publication, incorporating the revisions made as a result of the peer review process or as accepted for publication if no changes were made;

"**Research**" means as any creative and systematically performed work with the goal of furthering knowledge;

"**Research Data**" means any information that has been collected, observed, generated, or created to validate original research findings. Although usually digital, research data also includes non-digital formats;

"**Research Data Lifecycle**" means and consists of data acquisition, processing, analysis, curation, sharing and re-use. The data life cycle is divided into two domains i.e., private (green-colour coded) and public (blue-colour coded);

"**Research Data Management (RDM)**" means the concern of the organisation of data, from its entry to the research cycle through to the dissemination and archiving of valuable results. It aims to ensure reliable verification of results, and permits new and innovative research built on existing information;

"**Restricted Data**" means data that is restricted or prohibited from disclosure. Restricted data would include confidential data. In some circumstances, access to sensitive data can be restricted, depending on whether there is any express prohibition or policy discouraging its disclosure;

"**RIEC**" means Research, Innovation and Enterprise Centre (RIEC);

"**Staff**" means a person employed on a permanent, temporary or contract basis by a statutory body, and paid emoluments by the statutory body, and includes a person seconded to any subsidiary corporation or company of the statutory body or any other statutory body, Ministry, department or agency of the Federal Government or any department or agency of the Government of any State or any company in which the Federal Government or the Government of any state has an interest. In this context, the term 'staff' refers to academic staff and non-academic staff;

"**Statutory Body**" means a body, by whatever name mentioned, incorporated by federal law for the purposes of the Federal Government, excluded local authorities;

"**Student**" means a registered student, other than a student at an institution allied to the University or University College, who is following a course of study, instruction, training or research of any description at the undergraduate, postgraduate or post-doctoral level on a full time or part time basis in, by or from the University or University College, and includes distance-learning, off -campus, exchange and non -graduating student;

"**Sensitive Data**" means data that can be used to identify an individual, species, object, process, or location that introduces a risk of discrimination, harm, or unwanted attention. Under law and the research ethics governance of most institutions, sensitive data cannot typically be shared in this form, with few exceptions;

"**TAHODC**" means Tun Abang Haji Openg Digital Centre;

"**University Constitution**" means the Constitution of Universiti Malaysia Sarawak;

"**University**" means Universiti Malaysia Sarawak;

"**UNIMAS Community**" means citizens of UNIMAS, regardless of rank, including those in management, administration, academia, execution, and student body;

"**UNIMAS Open Science Data Repository**" means data submit for libraries to manage and curate institutional repositories where researchers can deposit their publications, data, and other research outputs, making them openly accessible; and

"**Vice-Chancellor**" means and in relation to a university, which refer to the Vice-Chancellor, President, Reactor or Director of that university and includes any other person, by whatever name called, who has been appointed as the chief executive officer of the university and "Deputy Vice-Chancellor" shall be construed accordingly.

4.   POLICY IMPLEMENTATION

The Research, Innovation, and Enterprise Centre (RIEC) is responsible for the dissemination and implementation of this Policy.

5.   APPLICATION AND COMPLIANCE

This Policy applies entirely to:

(a)   All university researchers defined as all academic staff and postgraduate research students;

(b)   All new Contractual Agreements for joint projects, studentship Agreements, and any other type of collaborative agreement with external bodies;

(c)   Cover all data collected during a research study, regardless of format or whether the research is funded internally or externally, including contract research;

(d)   Cover those who are involved in conducting research on behalf of the university and visiting researchers; and

(e)   Cover all data collected during the course of the data life cycle (before, during, and after).

6.   EXEMPTION

The Policy shall be exempted for:

(a)   Consultancy Services; and

(b)   Services are conducted for third party organizations using UNIMAS research facilities.

7.   PRINCIPLES

7.1   Ownership

(a)   All research data generated by UNIMAS academics or research postgraduate students, regardless of funding sources, is wholly owned by the university and will remain with the university in the event that the academic is no longer with the university.

(b)   In the following circumstances, an exception to 7.1 (a) may be made:

  (i)   Where the research funder retains ownership of the research data, UNIMAS may enter into an Agreement with the funder in relation to rights to access, use, and publish the research data; or

  (ii)   In joint projects, the Open Science Research Data Management Plans (OSDMP) shall address the creation, management, confidentiality, retention, and publication of data, both digital and non-digital.

(c)   The rights of the Principal Investigator (PI) and his or her designated researchers to use and publish research data arising from their project shall subject to the guidelines in the approval procedures based on different levels of security, such as PI leaves UNIMAS, grant condition, and age of the data.

7.2   Open Science Data Management Plan (OSDMP)

(a)   It is best practice to complete an open science data management plan (OSDMP) prior to the commencement of research, describing what data will be shared and/or made open and how it will be curated and preserved.

(b)   OSDMP should record how the research data arising from the research project will be handled during and after the research project is completed.

(c)   OSDMP must comply with relevant laws, rules, regulations and other government and Ministry policy that regulate access to and use of data.

7.3   Open Access to Publications and Deposition

(a)   The final research data used in establishing and validating research findings must be deposited in the UNIMAS Open Science Data Repository no later than the publication of the article.

(b)   The final research data, wherever relevant, may also be deposited in a recognized data repository that complies with the FAIR Guiding Principle for scientific data management and stewardship, the Digital Object Identifier (DOI), which provides a standard mechanism for retrieval of metadata about the object and generally a means to access the data object itself.(https://www.nature.com/articles/sdata201618). The URL link and access method to the dataset must be registered with UNIMAS.

(c)   The university encourages the deposit of all peer-reviewed scholarly publications in open access repositories. Researchers are expected to comply with any open access mandates attached to their research funding. The university library will provide resources and support services to assist researchers in identifying suitable open access journals and repositories, as well as navigating the open access publishing process.

7.4   Data Sharing

(a)   The final research data from projects carried out at UNIMAS shall be made available for sharing (via the UNIMAS Open Science Data Repository) UNLESS there are prior formal agreements with external collaborators, funding bodies, and other parties governing the nondisclosure or proprietary use of the said data.

(b)   In the following circumstances, additional criteria to (a) must be applied;

(i)   Consent must be obtained from all data subjects for all human data collected and must be anonymized before being deposited and published. The consent form must indicate the use of the data, if it is to be published and reused, and the type of third party who may have access to the data;

(ii)   For human data collected from data subjects under the age of eighteen years, consent must be obtained from the parent, guardian, or person who has parental responsibility for the data subject concerned;

(iii)   For data containing information intended for commercialization, it must not be deposited until the patent has been filed; or

(iv)   For data that concerns national security matters, it must receive clearance from an authorized body prior to deposition. Access to the data will be completely restricted.

7.5   Storage and Retention

(a)   All research data shall be stored in locations or devices owned and maintained by UNIMAS.

(b)   Reasonable steps shall be taken to ensure the security and integrity of all research data under retention.

(c)   All research data related to a research project shall be retained not more than **ten (10) years** after publication or after the completion of the project or last access to the dataset, whichever is later. A longer period of retention may be determined by an external research funder. Under both circumstances, the period of retention is subject to legal and regulatory requirements.

7.6   Disposal/Archive

Beyond the period of retention specified here, all research data must be archived. Any destruction of the research record, either whole or in part, shall follow the guidelines.

8.   OPEN RESEARCH DATA MANAGEMENT

Researchers are encouraged to develop data management plans outlining how research data will be collected, documented, stored, archived, and potentially shared. The university library will offer training programs and resources on data management best practices specific to different research disciplines. The university may also explore options for providing data storage and sharing infrastructure, either internally or through collaboration with external platforms.

9.   TRAINING AND SUPPORT

The university is committed to providing ongoing training programs on open science practices for researchers, faculty, and students. This will include workshops on data management, open access publishing, and responsible data sharing. A dedicated support team will be established within the university library to assist researchers with implementing open science practices.

10.   MONITORING AND EVALUATION

The university will monitor the implementation and effectiveness of this Open Science Research Data Management Policy. Metrics such as the number of open access publications, data deposited in repositories, and researcher participation in training programs will be tracked. The policy will be reviewed periodically to ensure its continued relevance and effectiveness in the evolving landscape of open science.

11.   ROLES AND RESPONSIBILITIES

11.1   UNIMAS Management

(a)   Familiarity with and adhering to legislation, regulatory requirements, contractual obligations, ethical approvals, funding bodies' policies, andother licenses and terms of use of research data;

(b)   Implement, coordinate, and review the execution of this Policy;

(c)   Ensure that the Open Science Research Data Management Policy is updated on a regular cycle to consider the latest funder requirements and national research directives, policies and guidelines;

(d)   Providing training, support, advice, and guidelines that promote a best-practice approach towards open science research data management;

(e)   Monitoring the compliance of its researchers with this policy and associated procedures;

(f)   Supporting researchers to plan for data management and write open science data management plans for grant applications;

(g)   Ensure up-to-date and secure facilities for the safe and secure storage of research data by providing infrastructure support; and

(h)   Ensure all UNIMAS researchers are informed about the Open Science Research Data Management Policy and any amendment made and in force from time to time.

11.2 Tun Abang Haji Openg Digital Centre (TAHODC)

(a) Responsible for making themselves familiar with and adhering to legislation, regulatory requirements, contractual obligations, ethical approvals, funding bodies' policies, and other licenses and terms of use of research data;

(b) Acting as IT Centre in providing or securing approved IT infrastructure for the safe and secure storage of research;

(c) Ensuring backup, archival, and monitoring processes are in place to prevent the loss of research data;

(d) Provide access to services and facilities for the storage, backup, registration, deposit, curation, and archiving of research data; and

(e) Provide technical support to maintain all systems, such as the UNIMAS open science data repository and OSDMP submission system required for compliance with this Policy.

11.3 Research, Innovation and Enterprise Centre (RIEC)

(a) Implement, coordinate, and review the execution of this Policy;

(b) Manage subscriptions to related software and applications and their operational funding to support effective open science research data management;

(c) Responsible for making themselves familiar with and adhering to legislation, regulatory requirements, contractual obligations, ethical approvals, funding bodies' policies, and other licenses and terms of use of open science research data;

(d) Ensure that this Policy is updated on a regular cycle to consider the latest funder requirements and national research directives and guidelines;

(e) Providing training, support, advice, and guidelines that promote a best-practice approach towards open science research data management;

(f) Monitoring the compliance of its researchers with this policy and associated procedures; and

(g) Supporting researchers to plan for management and write open science data management plans for grant applications.

11.4 Faculties, Institutes, and Centers

(a) Responsible for making the members of Faculties, Institutes, and Centers familiar with and adhering to legislation, regulatory requirements, contractual obligations, ethical approvals, funding bodies' policies, andother licenses and terms of use of research data;

(b) Ensure that all research projects include an OSDMP and that is attached to the relevant record in UNIMAS Institutional Repository; and

(c) Monitor compliance of PIs and researchers, with this Policy and associated rules, regulations, and procedures.

11.5 Perpustakaan Tun Abdul Rahman Ya'kub (PeTARY)

(a) Responsible for making the members of the library familiar with and adhering to legislation, regulatory requirements, contractual obligations, ethical approvals, funding bodies' policies, and other licenses and terms of use of research data;

(b) Responsible for providing guidance and training for UNIMAS's researchers in good open science data management practices, including open science data deposition and related metadata description, and good data governance in compliance with relevant legal and ethical obligations;

(c) Maintaining an institutional metadata catalog of research data;

(d) Facilitate the curation and preservation of data; and

(e) Advise researchers on the practices that support the reproducibility of research and ethical, policy, and legal considerations during data collection, processing, and dissemination.

11.6 Principal Investigators (PIs) and Researchers

(a) Familiarize with and adhere to legislation, regulatory requirements, contractual obligations, ethical approvals, funding bodies' policies, andother licenses and terms of use that pertain to their research data;

(b) Have overall responsibility for the proper and effective management of research data generated during the research project, in accordance with UNIMAS policy and guidelines;

(c) Ensuring research data is accurate, complete, authentic, and reliable;

(d) Keeping clear and accurate records of the research methods and data sources, including any approvals granted, during and after the research process;

(e)   Prepare an OSDMP using either the UNIMAS OSDMP template or that provided by the funding agency and submit it online on the platform specified by UNIMAS. PIs and researchers shall provide an updated version whenever there are substantive changes to the research project;

(f)   Submit the final research data to the UNIMAS Open Science Research Data Repository or an external open access repository no later than the first online publication of the article;

(g)   Ensure that formal agreements are reached with external collaborators and parties, if any, on the ownership, rights, use, and sharing of research data arising from the research project before the commencement of the project;

(h)   Provide a statement and justification (in the OSDMP) if there is a strong need to deviate from the UNIMAS open science research data policy, including the sharing of final research data. (Refer to the OSDMP template at the Appendix 1 of this Policy); and

(i)   Exclusive rights to reuse or publish research data should not be handed over to any external organization without retaining the rights to make thedata openly available for re-use, unless this is a condition of funding.

12.   NON-DISCLOSURED DATA

Even though open science platforms offer many benefits for research transparency and collaboration, there are limitations to data sharing which classified as sensitive or privacy, confidential and secret and national safety.

13.   NON-COMPLIANCE AND VIOLATION

Any failure or non-compliance to this Policy shall then be subject to action dueto copyright and intellectual property (IP) infringement, breach of confidentiality, accessing and misusing open data or plagiarism which can be punishable under the disciplinary action.

14.   LEGISLATIVE REFERENCE SOURCES

The reference sources are as follows:

(a)   Federal Constitutions of Malaysia 1957;
(b)   Universities and University Colleges Act (UUCA) 1971 (Amendment) 2009, 2012 and 2019 [Act 30];
(c)   Statutory Bodies (Discipline and Surcharge) Act 2000 [Act 605];
(d)   Constitutions of the Universiti Malaysia Sarawak 1998 (Amendment) 2010 and 2012;
(e)   Malaysia Open Science Platform and Malaysia Open Science Platform (MOSP) Pilot Initiative;
(f)   Malaysia Open Science Alliance Working Group on Guidelines;
(g)   The FAIR Guiding Principles for scientific data management and stewardship;

(h)   Guidelines on Open Science (OS) in Public Funded research; and

(i)   Other policy, circular and/or instructions from time to time issued by the Ministry of Science, Technology and Innovation (MOSTI), the Ministry of Higher Education and the Government of Malaysia.

15.   REVIEWS AND AMENDMENTS

This Policy is subject to amendment from time to time in accordance with changes in Malaysian Law, namely the Federal Constitution 1957, Universities and University Colleges Act (UUCA) 1971 (Amendment) 2009, 2012 and 2019, Constitution of the Universiti Malaysia Sarawak 1998 (Amendment) 2010 and 2012, Government Directives or Policies extended through circulars, circular letters or regulations in force.

16.   EFFECTIVE DATE

16.1   This Policy is fully effective commencing from the date of approval by UNIMAS Board of Directors Meeting (LPU) Bil. 03/2024 Ke-113 on 16 July 2024

16.2   With this, the Policy shall be applied comprehensively within the campus.

UNIMAS
OPEN SCIENCE DATA MANAGEMENT PLAN (OSDMP)

Project ID	
Project Title	
Principal Investigator Name	

Faculty		Funding Agency	
Project Start Date		Project End Date	

List of project members / co-researcher

No.	Name	Faculty
1.		
2.		
3.		
4.		

Date of first version		Date of last update	

Project summary	
Keywords (at least 5)	

1. Data summary
Purpose of the data collection and generation in relation to the objectives of the project	

Types and formats of data generated or collected Origin of the data Size of the data Data utility	

1. FAIR data
2.1 Making data findable, including provisions for metadata
Discoverability of data (metadata provision) Identifiability of data Naming convention to be used Search keyword Versioning Standards for metadata creation
2.2 Making data openly accessible
Which data will be made openly available? How will the data be made available? Methods or software tools to access the data Where will the data and associated metadata be deposited? Access to provide in the event of any restriction
2.3 Making data interoperable
What data and metadata vocabularies, standards, or methodologies will be followed to facilitate interoperability? Use of standard vocabulary for all types present in the data set

2.4 Increase data re-use (through clarifying licenses)	
Data licenses to permit the widest re-use possible Length of time for which the data will remain re-usable Data quality assurance processes	

2. Allocation of resources	
Estimated costs for making data FAIR Responsibilities for data management in the project Costs and potential value of long-term preservation	

3. Data security	
Data recovery Secure storage and transfer of sensitive data	

4. Ethical aspects	
Ethical or legal issues that can have an impact on data sharing	

Signature: Signature:

Prepared by Principal Investigator: Checked by Data Steward:

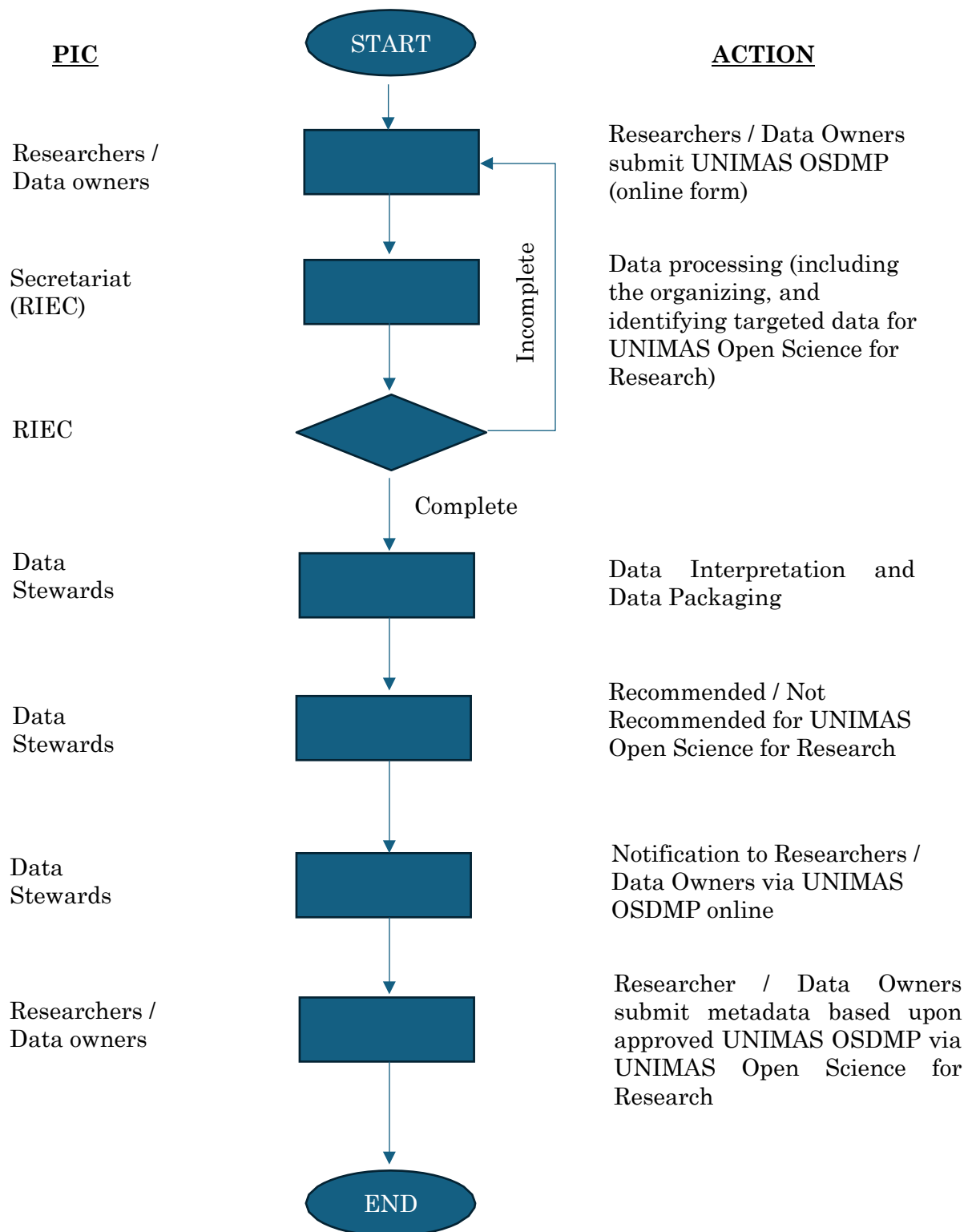Principal Investigator Name: Data Steward Name:

Figure 1: Work flow UNIMAS OSDMP Submission for UNIMAS Open Science for Research