

## Archaeology Data Protocol

### 1. Data description and collection or reuse of existing data

#### 1.a. How will new data be collected or produced and/or how will existing data be reused?

1a.1. The research team has checked whether previous data on the subject of the research exist that can be reused. If this is the case, such data will be reused, respecting licenses and applicable constraints, including intellectual property rights.

Comply

In case of non-compliance: explain why existing data can/will not be reused:

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1a.2. The provenance of reused data will be duly described and in publications the original data owners will be gracefully acknowledged.

Comply

Optional: Describe where existing data come from and how they can be accessed.

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1a.3. For fulfilling the research objectives, the data collection uses methods and tools appropriate for the research design, and will follow good practices in archaeology.

Comply

Describe methods and tools for data collection or production.

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#### 1.b. What data (for example the kinds, formats, and volumes) will be collected or produced?

1b.1. The research team will make sure that the hardware and software needed for the data storage and processing are available

Comply

Provide an estimate of the volume of data to be collected/processed

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1b.2 The types of data to be collected and their associated formats will comply with widely used standards in archaeology

Comply

Describe or list what data types will be generated (for example numeric, textual, audio, or video) and their associated data formats

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1b.3. The research team will make sure that any proprietary file formats can be converted to non-proprietary and open formats (or 'preferred formats' in accordance with requirements of the repository where the data will be stored for sharing).

Comply

Case of non-compliance: provide details on proprietary formats

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## 2. Documentation and data quality

### 2.a. What metadata and documentation will accompany the data?

2a.1. The data will be described by metadata and documented in sufficient detail for other researchers to identify, discover and understand the data, so that replication of the research results and reuse of the data will be possible.

Comply

Outline the documentation needed to enable data reuse

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2a.2. The data description and additional documentation will comply with metadata standards that are widely used in archaeology, or with the metadata guidelines and schema of the repository where the data will be stored.

Comply

- Provide reference to the metadata standard used
- State where the metadata and documentation will be recorded
- Indicate how the data will be organised during the project

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### 2b. What data quality control measures will be used?

2b.1 To guarantee data quality, the research team will apply community approved national and international quality norms or, where these are absent, the team will apply a well-established general quality assurance method and adhere to standard guidelines to implement these.

Comply

Describe (or refer to) quality norms, good practices and/or methods that guarantee the quality of the data collection and processing

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2b.2. Quality targets and guidelines for data collection will be explicitly formulated and documented by the research team.

Comply

Specify (or refer to) quality targets and guidelines to guarantee quality of data collection and processing

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2b.3. In case sampling or selection methods of research areas or other units apply, the sampling/selection design will be carefully documented, including any departures in the field, so that users will be well-informed about a possible bias in the results of the data collection.

Comply

If applicable, specify sampling or selection methods to be used

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### **3. Storage and backup during the research process**

#### **3a. How will data and metadata be stored and backed up during the research?**

3a.1. During the research process, data will be organised and stored in line with good professional practices in archaeology and/or with the institutional guidelines for RDM of the home institution.

Comply

In case of non-compliance, explain why institutional storage guidelines can/will not be used and specify storage locations, media, and procedures for data that will be used during the research activities.

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3a.2. A version control mechanism will be used and all changes to the raw data will be duly documented.

Comply

In case of non-compliance, explain how modifications of the raw data will be documented.

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3a.3. The research team will determine and implement a data backup and recovery plan, making an informed choice of backup media and mechanisms.

Comply

Outline the backup and recovery plan, indicating how often backups will be made.

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3b.1. The research team will implement the data security policy and guidelines for data protection of the home institution.

Comply

Provide reference to institutional data security/protection policies, or, in case these are not available, provide a brief description of data security and protection policies to be implemented, specifying how data can be recovered after an incident.

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3b.2. The research team will define how access to data is controlled, paying special attention to the protection of sensitive and/or personal data (if applicable).

Comply

Specify who will be authorized to access which data during the research, describing security measures to ensure that sensitive/personal data will be safely stored and transferred.

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## 4. Legal and ethical requirements, codes of conduct

### 4a. If personal data are processed, how will compliance with legislation on personal data and security be ensured?

4a.1. The research team confirms that any personal data obtained, stored, processed, and shared will be in compliance with the General Data Protection Regulation (GDPR) and other applicable privacy legislation or data protection laws.

Comply

If available, provide references to policies and/or guidelines with respect to the handling of personal data to be followed.

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4a.2. The research team will seek informed consent for the collection, processing and possible reuse of personal data from research subjects (or their guardians/legal representatives), stating clearly for which purpose(s) the data will be (re-)used.

Comply

4a.3. If no consent for deposit and preservation or sharing of personal data after/outside the project is obtained, personal data will be anonymized before it will be deposited for preservation or data sharing after/outside the project, and the identifying information (names, addresses, etc.) will not be shared or

deposited.

Comply

**4b. How will other legal issues, such as intellectual property rights and ownership, be managed? What legislation is applicable?**

4b.1. The protection of rights on databases created for the research or of the investment in data collection will be in line with the European Database Directive (96/9/EC).

Comply

Provide motivation if intellectual property rights or *sui generis* protection are claimed on the basis of the European Data Directive (96/9/EC).

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4b.2. Access to the research data will be in line with the European legislation on open data and the reuse of public sector information, governed by the Open Data Directive and related national law and/or policies on open science or open data.

Comply

4b.3. The research team has established the ownership of the data, meaning in practice the entity that will have the rights to control access to the data.

Comply

Specify who will have the rights to control access to the data.

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4b.4. The research team has explicitly specified the access rights to the research data during the data collection and active research (complying with the data security requirements of section 3b and the privacy requirements of section 4a).

Comply

Specify who has access rights during data collection and active research.

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**4c. What ethical issues and codes of conduct are there, and how will they be taken into account?**

4c.1. The research team is aware of the ethical risks involved with the data collection, storage, transfer, use, sharing and/or preservation, and pledges to have taken sufficient measures to avoid or minimise misuse of the data (as specified in section 3b. on data security) and thus to avoid or minimise risks of harm to people and/or archaeological heritage (including the related environment).

Comply

Provide additional information on ethical risks, and describe which measures will be taken to prevent data abuse and risks of harm to people and/or cultural heritage.

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4c.2. The research team confirms that it will comply with all ethics review procedures required by law, by the funder of the data collection, by the home institution, or by any other institution actively involved in the research project.

Comply

If applicable, provide information about or references to ethics (self) assessment procedure (committee and documents).

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4c.3. The research team pledges to follow any applicable code of conduct (disciplinary, national and/or international) and/or institutional ethical guidelines.

Comply

Provide information on or reference to applicable codes of conduct (disciplinary, national and/or international) and/or institutional ethical guidelines.

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## 5. Data sharing and long-term preservation

### 5a. How and when will data be shared? Are there possible restrictions to data sharing or embargo reasons?

5a.1. Data will be shared through deposit in a Trustworthy Digital Repository (TDR - further details in section 5b) or via the infrastructure of the home institution of the research project (further details below in this section 5a).

Comply

Explain where, how, and for how long the data will be preserved, and how they will be discoverable and shared, providing a reference to the place where data will be available.

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5a.2. The data will be made available for sharing as openly as possible, and as restricted as necessary (in accordance with data security requirements of section 3b., and in accordance with legal and ethical requirements as described in section 4) within three months after the first publication of the research results.

Comply

- Indicate who will be able to use the data and specify whether access restrictions apply to certain persons or groups, explaining how such restrictions will be minimised.
- Describe the potential reuse of the data and for which user communities it may be interesting.
- Specify when the data will be made available, indicating the expected timely release.
- Provide a motivation if exclusive use of the data will be claimed for an embargo period of more than 3 months, and for how long this will be.

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5a.3. Reviewers of publications on the data and researchers challenging the validity/reliability of the data, or seeking replication of the research results, will be granted access to the data on request at any time.

Comply

Explain why access to the data for review or replication will not be granted.

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5a.4. The metadata and further data documentation will be openly accessible for review or reuse to everyone without restriction, even if there are access restrictions to the research data itself.

Comply

Explain why the metadata and data documentation will not be openly accessible for review or reuse to everyone without restriction.

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## **5b. How will data for preservation be selected, and where data will be preserved long-term (for example a data repository or archive)?**

5b.1. The research team will select all data, documentation and software code for long-term preservation that are necessary for the transparency (review, reuse and/or replicability) of the research results.

Comply

Provide details of which (versions of) data, documentation and software code will be selected for long-term preservation.

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5b.2. In case data must be destroyed after a specified time for contractual, legal, or regulatory reasons, the de-selected data and their destruction will be motivated. The metadata and data documentation will continue to exist as a “tombstone record”, specifying when and why the data was destroyed.

Comply

If applicable, motivate which data needs to be destroyed and specify the time period over which they will be retained, taking into consideration:

- funder, institutional, or national policies;
  - legislation, contractual requirements, regulatory purposes;
  - community standards.
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5b.3. The research team will deposit the data and accompanying documentation for long-term preservation and data sharing in a Trustworthy Digital Repository (TDR).

Comply

Provide the name of or reference to the archive or trustworthy repository where the data will be deposited for long-term preservation. Alternatively, if the data will not be deposited in an archive or trustworthy repository, explain how the data will be managed in a sustainable way beyond the lifetime of the research project or grant, describing the ways in which the data will be curated and preserved.

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5b.4. The research team confirms that the repository's data preservation and sharing policies and procedures (including any metadata standards, and costs involved) have been checked and found to be in accordance with the expectations and budget of the project.

Comply

### **5c. What methods or software tools are needed to access and use data?**

5c.1. The software tools to collect, process or analyse the data (including specific scripts, routines, codes or algorithms developed during the project), which potential users may need to access, interpret and (re-)use the data or to replicate results, will be documented and stored so that they are findable, accessible and reusable.

Comply

Indicate which software tools (including scripts, codes, or algorithms) potential users may need to access, interpret and (re)use the data.

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### **5d. How will the application of a unique and persistent identifier (such as a Digital Object Identifier - DOI) to each data set be ensured?**

5d.1. In case a persistent identifier (PID) to data will not be assigned routinely by the repository where the data is deposited for long-term preservation and sharing, the research team itself will arrange the assignment of a persistent identifier to the data, and include it in the metadata/documentation.

Comply

- If persistent identifiers are not assigned by the organisation where the data will be stored, specify how a PID will be obtained.
- If persistent identifiers will not be applied, explain how links to the data and data citations will remain

valid over time.

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## 6. Data management responsibilities and resources

### 6a. Who (for example role, position, and institution) will be responsible for data management?

6a.1. The research team will appoint a data management supervisor or data steward at the start of the project, who will be responsible for supervising and coordinating all data stewardship/management tasks.

Comply

### 6b. What resources (for example financial and time) will be dedicated to data management and ensuring that data will be FAIR (Findable, Accessible, Interoperable, Re-usable)?

6b.1. The research team declares it has identified the research data management tasks occurring throughout the lifespan of the research.

Comply

6b.2. The research team declares It has budgeted for sufficient resources to cover the costs to complete these data management tasks.

Comply

Provide clear estimates of the costs of data management and describe how these costs will be covered.

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Version of the Domain Protocol:

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