



NFDI4Objects

Research Data Infrastructure
for the Material Remains of
Human History

TRAIL 4.1:

Development of an interface for sites, monument and restoration and conservation data

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Summary

To make the enormous stock of heterogeneous monument-related data, which is often held in country- or institution-specific systems, more accessible and searchable in the future, the TRAIL is developing a standard/interface for addressing monuments, sites, and work on them such as restorations/conservations.

Based on the practical experience of the participants, the TRAIL will develop a white or blue paper to specify a standard/interface to simplify the exchange of monument, site, restoration and conservation data across institutions for subsequent updating by the

project's expert community within the consortium. Thus, this TRAIL addresses the following areas of the research data lifecycle: documentation, collecting, analysing, protecting, storing and sharing.

Description

The agencies responsible for heritage management in Germany have an enormous stock of unpublished data on archaeological sites and monuments. The data contain basic information on the type (e.g. grave, church, settlement, fortification), the dating (e.g. Migration Period, Alamannic, 5th century BC), the georeference and description of the monument, and the measures taken to conserve it (e.g. the type and period of the activity, what was done, who was responsible, where to find information or documentation). These data are often located exclusively in the IT systems of the competent bodies, which are subject to the conditions and specifications of the respective federal state or the competent organisation (office, ministry, etc.). They are "living" data collections that are constantly changed and supplemented by heritage management work. The same applies in the field of restoration/conservation. Here, many university and non-university institutions keep data in different (mostly proprietary) IT solutions.

In order to make these databases more accessible to researchers in the future, especially at universities, but also to make it easier for the data-holding authorities to provide them, we are creating an interface to exchange data on sites/monuments/restoration/conservation, including any existing georeferences. This interface builds on the ADeX standard of the Verband der Landesarchäologen to define central (generally valid) and optional fields and their types, and to specify the expected field content so that data providers and users can implement the interface in their own systems. If vocabularies are exchanged in the process, they should be semantically linked using the methods described in TRAIL 4.2.

Relevance

The standard/interface to simplify the exchange of monument, site restoration and conservation data between institutions is highly relevant as it addresses all aspects of the research data lifecycle (documentation, collecting, analysing, protecting, storing and sharing). It is a fundamental prerequisite for all participants, both data providers and data recipients, to collaborate accessibly and interoperably.

TRAIL 4.1 will take partners' data on Salian castles in southern Germany and exchange it between the participant institutions, who will use it to work out regional characteristics. At present, data providers (e.g. heritage offices) and data recipients (e.g. university research institutes) have to define bilaterally in each individual case which information (e.g. on the monument itself, its restoration/conservation, or excavations) should be exchanged for this purpose.

Currently, the data provider must first export the data manually (e.g. as csv or xml) for the data recipient to import it. The same effort is required again after completion of the project, when the revised data is transferred back to the original data provider.

By defining an N4O community standard/interface, data should no longer have to be compiled and reformatted every time it is exchanged. If both systems have implemented the interface, they will be able to exchange such data bilaterally.

The interface constitutes a central building block within the NFDI, as it can be combined with the data of all other TAs from N4O or other consortia such as NFDI4Culture and Text+. This is useful: for example, features or excavation data (TA1), finds or collection objects (TA2) or analysis data (TA3) can be combined with basic attributes of the site or monument (e.g. location, dating, address, description), to enable a query for bone artefacts in certain features of Salian castles.

The interface is relevant for the entire consortium and beyond, in particular for scientists, data curators, infrastructure providers, system integrators, university teachers, authorities and decision-makers. It will be created right at the beginning of the funding period within the framework of this TRAIL.

All elements of FAIR are fully addressed [F4:RDA-F4-01M, A1.1:RDA-A1.1-01M, I1:RDA-I1-01M, R1.3:RDA-R1.3-02M]. The community standard to be developed here is findable, accessible, interoperable and reusable.

Deliverables

Within the TRAIL, the interface/standard will be defined, modelled and tested in participants' own systems. This will lay the foundation for the feasibility study envisaged in M4.1. The results and best practice will be published in a white paper and blue paper, then updated by the expert community.

Work plan

- Year 1, Month 1–6: Coordination with data-holding (e.g. heritage offices) and data-processing (e.g. universities and research institutes) institutions
- Year 1, Month 5–8: Definition of field types and names
- Year 1, Month 9–10: Implementation in the systems of participating institutions
- Year 1, Month 10–11: Test phase
- Year 1, Month 11: Evaluation
- Year 1, Month 12: White and blue papers published

*FAIR*¹ F4:RDA-F4-01M; A1.1:RDA-A1.1-01D; I1:RDA-I1-01D; R1.3:RDA-R1.3-02D

TRAILS related with TRAILS 4.2, 4.3, 2.1, 2.3

¹ Nach Tabelle 1 von Bahim, C., Casorrán-Amilburu, C., Dekkers, M., Herczog, E., Loozen, N., Repanas, K., ... Stall, S. (2020). The FAIR Data Maturity Model: An Approach to Harmonise FAIR Assessments. *Data Science Journal*, 19(1), 41. DOI: <http://doi.org/10.5334/dsj-2020-041> cc by 4.0