NFDI4Memory – The Consortium for the Historically Oriented Humanities
(NFDI4Memory)

Spokesperson: Prof. Dr. Johannes Paulmann, Leibniz Institute of European History,
4memory@ieg-mainz.de

1. Research area
The NFDI4Memory consortium serves the historically oriented humanities, i.e. all humanities disciplines that make significant use of source materials produced in – or describing events from – the past, thereby requiring historical contextualisation and critical analysis. While focused on the historical discipline as such, it will also incorporate other disciplines – such as religious studies, historical philosophy and area studies – that rely upon historical data. Galleries, libraries, archives and museums (GLAM) are an integral part of historical research, both as places of digitization and as partners in the research process.

2. Relevant types of data
In the historically oriented disciplines "research data" includes all data collected, described, analysed, evaluated, generated and stored in machine-readable form for the purpose of maintaining the traceability of research results as well as for archiving, citation, contextualisation and further processing. Among this "data" one finds, for example, texts (handwritten or printed), images, objects, statistical databases, maps, audio recordings and films originating from different world regions and cultures. Much of this data consists of digitisation of analogue materials, but there is a growing amount of "digital-born" data. The interface between digital data and analogue material is highly relevant to historically oriented fields. Different types of data and research methods require modular, flexible solutions; however, many researchers have had to find their own answers to the challenges of working with historical research data, resulting in the creation of islands of project-oriented solutions.

3. Specific disciplinary RDM requirements
Beyond technical issues of digitisation and research data formats and standards – many common to other fields – historical data requires historical contextualisation, an issue at the heart of historical scholarship. Historical data are not only heterogeneous with regard to where, how and in what format they were produced but also in terms of when and by whom they were produced. The meanings of words, the names of places and even the underlying categories of knowledge production have changed – often substantially – across time. Accounting for space, time and historical actors is essential to the historical disciplines.

All of these factors – technical and conceptual – need to be made transparent and re-traceable in the presentation of historical data; moreover, the specificities of the historical contexts in which data were first created in the past and then collected in the (ever advancing) present have to be kept in mind. Those working in historically oriented fields employ strategies of source criticism that have long been effectively applied to analogue data: we are, however, still at the beginning of creating much needed forms of "digital source criticism" for new kinds of historical data.

4. Specific measures to introduce research data management and services
4Memory has the goals of further developing historically oriented scholarship to meet the challenges and opportunities of digitalization, safeguarding the critical functions and social relevance of the historical method and establishing systematic, sustainable links among research, memory and information infrastructures. It has developed a set of overall objectives for its task areas, thus ensuring 4Memory can contribute to the NFDI's key goals. We have summarized these *objectives* under the acronym **LINKAGE**, which, taken together provide a community-specific agenda for meeting the overall goals of the NFDI:

Linking research, memory institutions and infrastructures
Integrating historical source criticism into data management

Network of historically oriented research communities
Knowledge order for the digital future of the past
Advancing the analogue / digital interface of historical source material and data
Generating standards for historical research data and sustainability
Education and citizen participation

The **LINKAGE** objectives provide orientation for the specific measures and services adopted by the task areas in the 4Memory consortium to introduce, develop, refine and improve elements of research data management within its community of the historically oriented humanities:

1. **Improving data quality**: Surveying, evaluating and issuing recommendations for data and metadata quality standards and establishing a competence network on the topics of multilinguality, multiperspectivity and the temporal dimensions of data quality.
2. **Improving data connectivity**: Creating expert and interdisciplinary working groups on historical authority data and developing standards for research data descriptions in 4Memory-relevant repositories.
3. **Improving data services**: Implementing a 4Memory data space, knowledge graph and virtual index layer and identifying further key needs with regard to services for historical research data.
4. **Improving data literacy**: Developing networks, forums, working groups and consultation services to analyse current needs in data literacy in relevant disciplines, identifying the data literacy competencies necessary for historical research, and creating curricula and consultation services to meet these needs.
5. **Improving a discipline-specific data culture**: Initiating dialogues in the historically oriented humanities on digital methods and research data, encouraging the integration of good practices of data management (from technical considerations to ethical and legal issues) into the career-training, status and publishing structures of the relevant disciplines.

5. Experience with research data management
4Memory brings together the fields of research scholarship, the GLAM sector and information infrastructure institutions. Space limitations preclude a detailed listing of the extensive experience our co-applicant institutions have with regard to research data management. This experience covers the following main areas:

- The provision and long-term preservation of research data – as well as indexing, cataloguing and publishing it – are central activities of the participating archives, libraries, museums and information infrastructure institutions;
- The development of workflows and services tailored to historical research are key competence areas of the involved university service centres, research institutes and information infrastructures;
- In modelling the historical domain, the co-applicant data centres, libraries and departments of information science pool their respective expertise on metadata concepts;
- Training in Data Literacy as well as the development of digital methods are areas of expertise for our participating digital history departments and DH Labs;
- Initiatives on digital methods and data culture – as well as a decades' long experience with the needs and methods of our community – have been developed by working groups of the relevant professional societies of historians and archivists.

6. Relevant (international) partners and existing infrastructure that will be brought together
4Memory aims to establish systematic, sustainable links among research, memory institutions and information infrastructures. It combines the infrastructures of the participating universities, research institutes, galleries, libraries, archives, museums and informational infrastructure institutions. These organisations bring a substantial amount of existing

knowledge and experience to the 4Memory consortium. The 4Memory consortium also benefits from their existing international networks.

4Memory prioritises deepening and widening the reach of existing international networks by collaborating with international experts in digital humanities research and research data management (Getty, Wikidata). Among the relevant partners are German humanities institutions abroad, various national research institutes in Europe and the rest of the world and EU-level cooperation projects and initiatives (e.g. ESFRI, OPERAS, RDA, IFLA).

7. 4Memory in the NFDI

The most important points of connection that 4Memory sees with the NFDI as a whole include:

- Questions relating to data standards and quality and the broader issue of how we work with data across the data life-cycle: here, issues of sustainable re-usability in research data management (e.g. persistent identification);
- Basic technical components of research data infrastructures (e.g. authentication/authorisation, storage systems, long-term archiving);
- Interoperability between data collections and standards for interfaces;
- Approaches to problems of data accuracy and inaccuracy.

These issues are related to the overall mission of the NFDI, but are particularly important with regard to a cooperative approach to the other planned humanities consortia (4Culture; 4Objects and text+), with whom 4Memory has a Memorandum of Understanding. 4Memory has, furthermore, signed the "Leipzig-Berlin-Erklärung" on cross-cutting topics.

Our consortium sees the following cross-cutting topics as particularly relevant to the issues faced by our community:

- Terminologies, terminology management and services
- Data literacy
- Data ethics and law
- Data publication workflows
- Linking publications and research data

4Memory is the only currently planned consortium defined by its focus on the distinct challenges of historical research across a broad range of data types as defined above. The combination of distinct objectives and experience that the consortium brings together will enable 4Memory to make unique contributions to the following cross-cutting topics:

- Critiquing data / data criticism
- Provenance and contextualization of research data
- Community-driven / participatory authority files
- Data literacy concepts, materials, workflows

8. Our expectations of the NFDI Conference

We look forward to the NFDI conference and to finding out more concrete information from the NFDI directorate with regard to services they will provide for all consortia, including contractual, legal and technical issues. We are especially interested in information regarding governance and the planned interaction between the consortia, the NFDI Association and the Directorate.

We see a great opportunity in the NFDI conference to network with other consortia. We intend to identify mutual interest and potential fields of collaboration. We also expect to learn from the experience of those consortia that were involved in the first round (among them our fellow humanities consortia 4Culture and text+); in particular, we hope to gain a better overview of the current state of development of the various cross-cutting topics.

Vorgesehene Mitglieder des Konsortiums (Co-Sprecherinnen/Co-Sprecher und die weiteren, beteiligten Institutionen):

Spokesperson	
Prof. Dr. Johannes Paulmann Direktor Leibniz-Institut für Europäische Geschichte 4memory@ieg-mainz.de	Leibniz-Institut für Europäische Geschichte Alte Universitätsstraße 19 55116 Mainz
Co-Spokespersons	
Dr. Klaus Ceynowa Generaldirektor Bayerische Staatsbibliothek ceynowa@bsb-muenchen.de	Bayerische Staatsbibliothek Ludwigstr. 16 80539 München
Prof. Dr. Peter Haslinger Direktor Herder-Institut für historische Ostmitteleuropaforschung (Institut der Leibniz-Gemeinschaft) peter.haslinger@herder-institut.de	Herder-Institut für historische Ostmitteleuropaforschung Gisonenweg 5-7 35037 Marburg
Prof. Dr. Torsten Hiltmann Professur Digital History Institut für Geschichtswissenschaften Humboldt-Universität zu Berlin torsten.hiltmann@hu-berlin.de	Humboldt-Universität zu Berlin Philosophische Fakultät Institut für Geschichtswissenschaften Unter den Linden 6 10099 Berlin
Prof. Dr. Rüdiger Hohls Professur Historische Fachinformatik Institut für Geschichtswissenschaften Humboldt-Universität zu Berlin hohlsr@geschichte.hu-berlin.de	Humboldt-Universität zu Berlin Philosophische Fakultät Institut für Geschichtswissenschaften Unter den Linden 6 10099 Berlin
Prof. Dr. Ursula Lehmkuhl Professur Internationale Geschichte Universität Trier lehmkuhl@uni-trier.de	Universität Trier Fachbereich III Internationale Geschichte 54286 Trier
Prof. Dr. Gerald Maier Präsident Landesarchiv Baden-Württemberg gerald.maier@la-bw.de	Landesarchiv Baden-Württemberg Eugenstraße 7 70182 Stuttgart

Dr. Katrin Moeller Leiterin Historisches Datenzentrum Sachsen-Anhalt katrin.moeller@geschichte.uni-halle.de	Martin-Luther-Universität Philosophische Fakultät I Emil-Abderhalden-Str. 26/27 Institut für Geschichte 06099 Halle
Matthias Razum Head e-Research FIZ Karlsruhe – Leibniz-Institut für Informationsinfrastruktur GmbH matthias.razum@fiz-karlsruhe.de	FIZ Karlsruhe – Leibniz-Institut für Informationsinfrastruktur Hermann-von-Helmholtz-Platz 1 76344 Eggenstein-Leopoldshafen
Prof. Dr. Eva Schlotheuber Vorsitzende Verband der Historiker und Historikerinnen Deutschlands eva.schlotheuber@uni-duesseldorf.de	Verband der Historiker und Historikerinnen Deutschlands e.V. c/o Goethe-Universität Senckenberganlage 31 - 33 60325 Frankfurt am Main
Prof. Dr. Stefan Schmunk Professur Informationswissenschaft und Digitale Bibliothek stefan.schmunk@h-da.de	Hochschule Darmstadt Max-Planck-Straße 2 64807 Dieburg
Prof. Dr. Helmuth Trischler Leiter Bereich Forschung Deutsches Museum h.trischler@deutsches-museum.de	Deutsches Museum Museumsinsel 1 80538 München