



**Protokoll zum 1. Arbeitstreffen Interoperabilität
„Forschungsdatenzentrum Archäologie und Altertumswissenschaften“**

ZENTRALE
IT-Referat
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Prof. Dr. Günther Görz, Universität Erlangen-Nürnberg
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Moderation: Dr. Felix Schäfer, DAI Berlin Zentrale

Verhindert: Prof. Dr. Gregory Crane, Tufts University
Prof. Dr. Monika Hagedorn-Saupe, Staatliche Museen zu Berlin
Prof. Dr. Eric Kansa, University of California/Berkeley
Undine Lieberwirth, TOPOI, Freie Universität Berlin
Sabine Thänert, DAI Berlin

TOP	Beschreibung	Akteure	To-Dos
1	Round of introduction		
1.1	welcome, practical issues	Schäfer	
1.2	presentation of the agenda	Schäfer	
1.3	protocol	Kolbmann	Kolbmann & Schäfer write and send protocoll

1.4	personal introduction	all	
2	Introduction to IANUS		
2.1	Presentation of the planned centre and the working-group within it	Schäfer	
3	Short Presentations of interoperability scenarios and approaches		
3.1	Archaeology and the Semantic Web	Isaksen	
	<p><i>Key issues:</i> benefits of the semantic technology for archaeology: linked open data will offer opportunities for enrichments and reuse</p> <p>social and technical requirements need to be considered</p> <ul style="list-style-type: none"> • the time and effort needed for translations is cost-intensive • maintenance and training should be provided • scepticism towards opening up data widespread at least in the UK 	Isaksen	
	<p><i>Discussion/Questions:</i> the question was raised whether there is a different attitude to be found in other countries concerning opening up the data -> needs further investigation</p> <p>the question was raised whether it is possible to make use of semantic techniques without right away opening up the data to the public -> needs further investigation</p>		
3.2	Interoperability in Geo-Sciences: The OGC and the INSPIRE-Initiative	Bruhn	
	<p><i>Key issues:</i> emphasized the importance of institutionalising standardization efforts – INSPIRE is a good example for standards becoming an enforced law</p> <p>OGC and INSPIRE-directive not focusing on semantics at all</p> <p>Geodateninfrastruktur (GDI) in Germany has a strong hierarchical structure</p> <p>Emphasized the user centric approach since it is not to be expected that archaeologists will ever become very technically affine</p> <p>Process and workflows from INSPIRE/OGC can be implemented in archaeology although these standards currently miss archaeology specific extensions. Ianus could lobby for such extensions in INSPIRE/OGC.</p>	Bruhn	

	<p><i>Discussion/Questions:</i> thanks to OGC-standards the geodata is good example for interoperability scenarios</p> <p>existing tools, specifications, services, infrastructures, etc. from OGC/INSPIRE/GDI could be good models for IANUS in technical terms, workflows, processes, responsibilities, etc.</p> <p>the lack of semantic information in geospatial data could be one field to adress within IANUS</p>		
3.3	The ADeX-Format of the Association of State Archaeologists of Germany	Göldner	
	<p><i>Key issues:</i> the specification of the ADeX standard took into consideration that:</p> <ul style="list-style-type: none"> • it should be easy enough to be used by non technicians • would not need too many resources or software/ software development to implement it • specifying information of find spots not objects <p>workgroup of the German Association of State Archaeologists is maintaining this standard; currently about 5-6 institutions use ADeX for data exchange</p> <p>No network interface / service implemented; data exchange by ad-hoc need and manual file transmission; exchange file format is CSV or the most popular GIS data format shape</p> <p>AdeX focuses on datastructure, not semantics, harmonisation of thesauroi is very difficult</p>	Gölder	
	<p><i>Discussion:</i> Q: What would be interesting services IANUS could offer to state archaeologist? A: Long terms preservation solutions for data are the most urgent need.</p> <p>Due to the legal constraints of monument protection it is questionable if state departments for archaeology will open up their data to a broader audience</p> <p>The ADeX-Format could be a datamodel for some data within IANUS (especially findspots); if testdata in ADeX-Format is available, a testbed could be defined on this (e.g. Webservices, IntOp with data which does not come from state offices)</p>		ask if there are state offices who can provide testdata (Göldner, Herzog)
3.4	Lightweight Information Describing Objects: Contributing Content to Cultural Heritage Repositories	Stein	
	<p><i>Key issues:</i> LIDO is an international harvesting standard based on standardization efforts from museumdat, CDWA and spectrum, developed to enable data exchange of museum objects.</p>	Stein	

	<p>There is a large number of already available archaeological data in LIDO</p> <p>For IANUS important to interface to museum content</p>		
	<p><i>Discussion:</i></p> <p>As LIDO describes (museum)-objects some archaeological information is missing (e.g. about contexts or find spots), thus the question how can it be changed/extended to describe scientific information -> needs further investigation</p> <p>Would it make sense for IANUS to support standards for different levels of descriptions, ADeX for finding places, LIDO for objects, other standards for features?</p>		
3.5	Interoperability in DARIAH-DE	Romanello	
	<p><i>Key issues:</i></p> <p>focus of DARIAH on long term preservation, bit preservation, API/protocols and Persistent Identifiers</p> <p>IANUS could make use of the services DARIAH is developing</p>	Romanello	
3.6	PELAGIOS - Interlinking Ancient World Research Resources Through Place	Simon	
	<p><i>Key issues:</i></p> <p>decentralized approach to work on linking together online resources that refer to places in the Ancient World</p> <p>it is useful to enrich legacy data with information on places</p> <p>Key-backbone for Pelagios are references to fixed (persistent) placenames (here: Pleiades Gazetteer) and the Open Annotation Concept</p> <p>importance of this project is to fill the gap of authority files/vocabularies that are linked data "ready" and ensure persistent identification</p>	Simon	
	<p><i>Discussion:</i></p> <p>organisational structure of the project interesting for IANUS, since partners are basically freely volunteering in this project</p> <p>less interesting for state institutions since they mostly rely on coordinates and polygons drawn in a GIS, which allow delimiting a site more accurately than a place name; place names are used in addition, however many of them are not unique</p> <p>Cultural Objects Name Authority Online (CONA) is an authority file for movable objects</p> <p>Possible use-case: send a point (coordinate) to a service and get information about the place(name) back.</p>		

3.7	The Levels of Interoperability in Europeana	Kolbmann	
	<p><i>Key issues:</i> necessary requirements before contributing to Europeana: XML data format, OAI-PMH, XSLT mapping from legacy data to EDM</p> <p>mandatory to provide rights information</p> <p>how could IANUS benefit from cooperation?: Increase of visibility of content and therefore also for the centre</p> <p>Europeana is only working together with aggregators not with single content providers, IANUS could lobby for interests of archaeology in Germany within the Europeana network since the DAI is already contributing to it via the CARARE project</p> <p>Europeana is developing tools to solve multilingual issue with content, IANUS could benefit by harvesting enriched data again</p>	Kolbmann	
3.8	The WissKI Scientific Communication Infrastructure	Görz	
	<p><i>Key Issues:</i> WissKI is a project for developing a virtual research environment for semantic annotation, knowledge processing and communication</p> <p>CIDOC-CRM, authority files and reasoning services as semantic backbone, Drupal and Triple Store as technical backbone</p>	Görz	
3.9	Interoperability scenarios and approaches. Related Projects at RGZM	Heinz	
	<p><i>Key Issues:</i> offering free, open services for correspondence analysis and seriation; web-based GeoNameService for internal use</p> <p>ten years of experience in developing applications in the field of archaeology at the RGZM, encountered issues are:</p> <ul style="list-style-type: none"> • proprietary software that doesn't get supported any more enforces the migration of data and in other cases the emulation of software environments to still run these applications • missing resources to maintain data and tools <p>centre like IANUS should host applications and needs to define strategies for migration of data and emulation</p>	Heinz	
3.10	Related IT-Projects at the Helms-Museum Hamburg	Merkel	
	<p><i>Key Issues:</i> heterogeneity of data - struggle to define one standard that fits all</p>	Merkel	

	<p>web accessibility of data as a requirement for the project</p> <p>no thesaurus available for archaeology specific terms, not a scientific focus or multilingual support</p> <p>encountered issues with who owns data</p> <p>museum content interesting for location based services</p> <p>interoperability with other administration units expected, for example to estimate the monetary value of collections for the state finance department</p>		
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4	Discussion: „Interoperability“ in the context of a research data centre		
4.1	Presentation	Schäfer	
	<p>IntOp within IANUS has to address</p> <ul style="list-style-type: none"> • structural properties (technical, semantic, legal, institutional) • workflows / data-life-cycles • data types and contents <p>Major challenge is the heterogeneity of data due to generic differences, different stakeholders and different entities</p> <p>Three general IntOp-scenarios</p> <ul style="list-style-type: none"> • data integration within projects with dynamic data (→ guidelines, recommendation, support, teaching, etc.) • data integration within a research data centre with static data (→ schema mapping, data transformation, controlled vocabularies, ontologies, etc.) • data integration with external data providers/users (→ standards, persistent identifiers, interfaces and services) 		
4.2	<p><i>Results of Discussion – IANUS in general:</i></p> <p>IANUS should focus on a common target, a product it can offer to its partners.</p> <p>One major issue is to develop a financially sustainable business plan for IANUS</p> <p>During the first 3 years of funding not only conceptual paperwork but also implementation of testbeds with limited data to test specific tools, workflows, services, etc.</p> <p>testbeds should be complementing facets of the total product „IANUS“ as practical proof of concepts and „appetisers“ for users</p>		<p>identify projects/ institutions willingly to offer testdata (workgroup)</p>
4.3	<p><i>Long Term preservation of data:</i></p> <p>The task with the highest priority as it is a challenge for all archaeological institutions in Germany</p> <p>Issues:</p> <ul style="list-style-type: none"> • first step: to store subsets of data made available by 		

	<p>already existing projects</p> <ul style="list-style-type: none"> • focus on writing guidelines how to provide data for import in and export out a longterm storage system • second step: address questions on how to reuse data <p>Use cases should be defined to establish a clearer vision of the product “long term preservation of archaeological data”.</p> <ul style="list-style-type: none"> • Comment: Modelling use cases in archaeology seems to be difficult to agree on, due to the need to stay flexible in means of adjusting the own research method to the excavation process 		<p>additional input is required (workgroup)</p> <p>proposal of scenarios & general use cases (Schäfer), afterwards annotated (workgroup)</p>
4.4	<p><i>Data quantity and quality</i></p> <p>Necessity to agree on which data IANUS will deal with – all data there is (e.g. including applications / software) or just selected data (e. g. only about finding places and objects)</p> <p>Issues:</p> <ul style="list-style-type: none"> • Define categories of data • versioning, validation and quality assurance of data • methods of persistent identification 		<p>additional input is required (workgroup)</p>
4.5	<p><i>Reuse / dissemination of archived data:</i></p> <p>In a second step dissemination of approved data for reuse via Web-Portals/Services, preferably as Linked Open Data (see services like Pelagios)</p> <p>Issues:</p> <ul style="list-style-type: none"> • enrichment of data with semantics • citation service: persistent identification of datasets that were used for research, containing new data and reused data of other collections to link to in publications • Establish a trusted repository to make data accessible via web <p>– before data can be published, obstacles (like legal issues, monument protection, researchers interests, copyrights, etc.) have to be investigated</p>		
4.6	<p><i>Dynamic Project data:</i></p> <p>Aspects of interoperability issues within project data (before the storage and dissemination process) have still to be specified.</p> <p>Issues:</p> <ul style="list-style-type: none"> • „stable“ references between changing / movable files and different applications • common data-modells for interoperable data exchange (e. g. ADeX for findspots, LIDO for museum objects, OGC-Standards for geoinformation) • semantic enrichment of data as a side-effect of normal scientific work 		

4.7	<i>Results:</i> Suggestions for testbeds: <ul style="list-style-type: none"> • implementing services and easy-to-use tools for persistent (global) identifiers • specified services for data reuse (adopting OGC recommendations for archaeology) • develop tools for easy usage of agreed data models (e.g. Export/Import-Interfaces for ADeX, LIDO, etc.) 		
4.8	specify subgroups, issues and next steps on IANUS-Website		(Schäfer)

All presentations are on the Project-Web-Plattform:
<http://it-zentrum-antike.dainst.org/documents/54>