Overview

• About the ASCH project
• The ASCH collections
• The project’s working methodology
• The ASCH model
• Outlook
About the ASCH project

- **Title:** Developing interoperable metadata standards for contextualizing heterogeneous objects, exemplified by objects of the provenance Baron von Asch (short ASCH)

- **Funder:** Deutsche Forschungsgemeinschaft (DFG)

- **Duration:** 01.09.2014 – 31.08.2017

- **Project Lead:**
  - State and University Library of Göttingen (SUB)
  - Institute of Social and Cultural Anthropology

- **Team:**
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Aim of the project

• Development of a metadata model for the description of:
  – different object types held in different cultural heritage collections
  – provenance information, i.e. evidence for these objects
  – relationships between entities
  → combination of various common and interoperable metadata standards

• Focus on:
  – provenance information
  → proving the reliability of provenance information via evidence (letters, labels, diaries, inventories etc.)
  → interlinking between item and evidence
Baron Georg Thomas von Asch and Göttingen

Georg Thomas v. Asch (1729-1807)

The Göttingen Royal Academic Museum (1773)
The object's routes to Göttingen

- University of Göttingen
- Aleutian Range
- Saint Petersburg
- Black Sea
- Kyakhta
The University Collections holding items of the provenance Baron v. Asch

- the Historic Printed Collections, Manuscripts and Rare Books at the Göttingen State and University Library
- the Ethnographic Collection at the Institute of Social and Cultural Anthropology
- the Skull Collection at the Department of Anatomy and Embryology, Centre for Anatomy, University Medical Centre Göttingen
- the Historical Collections at the Geoscience Centre
- the Coin Cabinet at the Department of Archaeology
- the Art Collection at the Department of Art History
- the Museum of Zoology
The dispersed Asch Collection
The 7 steps towards the ASCH model

1. Empirical survey, analysis and evaluation of gathered information
2. Formulating of use cases
3. Analysis of requirements
4. Identification of classes and relations between classes
5. Identification of properties
6. Development of application profiles; and
7. Testing the model’s functionality
Step One: Empirical survey, analysis and evaluation of gathered information

- one-on-one interviews and group discussions with:
  - representatives of different kinds of cultural heritage institutions
  - representatives of different scholarly disciplines
Step Two: Formulating of use cases

1. Case studies and scenarios

For his work on Russian-German relationships in the 18th century Hans needs to know more about Baron v. Asch and the items sent by him to the University of Göttingen. During his search he learns that these sendings from different parts of Asia and Siberia are dispersed over several academic collections. Hans finds bibliographical information about v. Asch, a list of terms categorizing the different items related to this person and information about the collections ‘holdings. For each item he gets a detailed description and a digital representation.
Step Two: Formulating of use cases

<table>
<thead>
<tr>
<th>ID</th>
<th>Case Study</th>
<th>Scenario ID</th>
<th>Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS1</td>
<td>For his work on Russian-German relationships in the 18th century Hans needs to know more about Baron Georg T. von Asch and the items he sent to the University of Göttingen. During his search he learns more about von Asch’s studies in Göttingen and that he sent items from different parts of Asia and Siberia to the University later on, which today are dispersed over several academic collections. Next to information about von Asch he finds a list of terms, categorizing the different items related to von Asch (Geology, Zoology, Ethnography, Literature, Letters, etc.) and information about the collections, holding these items today. For every item he gets a detailed description and a digital representation.</td>
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<td></td>
<td>Scenario 6</td>
<td>A user needs biographical information about life and work of an agent.</td>
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<td>Scenario 7</td>
<td>A user is searching for all items related to a person.</td>
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<td></td>
<td>Scenario 26</td>
<td>A user wants to know more about places related to an item.</td>
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<td></td>
<td>Scenario 43</td>
<td>A user found information about an item and wants to know how he/she may get access to the item.</td>
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<td></td>
<td>Scenario 14</td>
<td>Browsing the web a user has found information about a collection. He/she wants to know what sort of items he/she will find at the collection.</td>
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<td>Scenario 15</td>
<td>A user wants to qualify his/her search using values from a controlled vocabulary (e.g., a taxonomy or authority file).</td>
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<td>Scenario 13</td>
<td>Searching for an item a user uses a controlled vocabulary to get all items of the same class.</td>
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<td>Scenario 17</td>
<td>A user is identifying the item he/she needs by a digital representation of the item.</td>
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<td></td>
<td>Scenario 12</td>
<td>A user is searching for a resource known by different names. He/she uses one of the names for his/her search and gets all hits where one of the names is been used.</td>
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</tr>
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<td></td>
<td>Scenario 45</td>
<td>A user is searching for an item in an institution nearby. He/she gets a list of all institutions storing such item and wants to order the search by...</td>
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</tbody>
</table>
Step Two: Formulating of use cases

2. Scenarios and use cases

- find biographical information
- find items related to a person
- find places related to an item
- find information related to a collection and its items
- find information on a collection and its items
- find information on item and on access to it
- find digital representation
- find information on the lifecycle of resources
- access to resources
- identification of resources
- information about resources
- information about resources
Identified Use Cases

- UC 1: Information about resources
- UC 2: Identification of resources
- UC 3: Information about the history / lifecycle of resources
- UC 4: Change of use and reception of resources
- UC 5: Proof of information by evidence
- UC 6: Provenance of statements
- UC 7: Access to resources
- UC 8: Reuse of data
Step Three: Analysis of requirements

scenario 1: user needs information about an agent

goal 1: find information about an agent (when, where, what)

scenario 2: user needs information about an event

goal 2: get all items related to an agent

scenario ...

goal 3: ...

editor

aggregator

user

information about resources

requirement 1: agent descriptions must be machine readable

requirement 2: agents must be identified by unique, machine readable and persistent identifiers

requirement 3: agents must be identified by name and biographical information

requirement 4: ...
## Step Three: Analysis of requirements

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Scenario</th>
<th>Actor</th>
<th>Goal</th>
<th>Requirement ID</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>UC 1 Information about resources</td>
<td>Scenario 1</td>
<td>A user wants to know more about a collection and the items that belong or belonged to it.</td>
<td>user</td>
<td>Find information about a collection.</td>
<td>[Requirement 46] Collection descriptions must be machine readable</td>
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<tr>
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<td>Select a collection.</td>
<td>[Requirement 48] Collections must be identified by an explicit name</td>
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<td>Browse from item description to collection description.</td>
<td>[Requirement 51] Item descriptions must be assigned to 1:n collections</td>
</tr>
<tr>
<td>UC 1 Information about resources</td>
<td>Scenario 2</td>
<td>A user is searching for items in a collection.</td>
<td>user</td>
<td>Browse through resources related to a collection.</td>
<td>[Requirement 75] Items must be identified by identifiers that are unique, machine readable and persistent.</td>
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<td>[Requirement 52] All items of a collection must be interlinked with the collection using unique, machine readable and persistent identifiers.</td>
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<tr>
<td>UC 1 Information about resources</td>
<td>Scenario 3</td>
<td>A user needs to know when an item was related to another item (e.g. was part of another item).</td>
<td>user</td>
<td>Find information about the time an item was related to another item</td>
<td>[Requirement 12] The relation between two resources can be specified by the time this relation was valid.</td>
</tr>
<tr>
<td>UC 1 Information about resources</td>
<td>Scenario 4</td>
<td>A user needs information about an event.</td>
<td>user</td>
<td>Find information about an event</td>
<td>[Requirement 21] Event descriptions must be machine readable.</td>
</tr>
<tr>
<td>UC 1 Information about resources</td>
<td>Scenario 5</td>
<td>An editor describes the relation between an item and an agent.</td>
<td>editor</td>
<td>Characterize the link between an item and an agent.</td>
<td>[Requirement 20] Item descriptions must be interlinked with 1:n events (creation, modification, collection, etc.) the lifecycle of the item.</td>
</tr>
</tbody>
</table>
Step Three: Analysis of requirements

1. Requirements concerning the end-user:
   → context of usage

2. Requirements concerning the metadata:
   → properties of entities
   → relationships between entities

3. Requirements concerning the system:
   → functional settings
Step Four: Identification of classes and relations between classes
Conclusion
Conclusion

- Domain or type specific metadata descriptions of the item
  - e.g. description of a book using MODS, of a coin using nomisma.org, of a bird using DwC

- Cross-domain metadata description of the provenance of an item
  - provenance = all descriptions of activities/events in the lifecycle of an item (e.g. creation, finding, losing, destruction)
  - description of provenance using e.g. PROV-O, CIDOC-CRM, DCMI Metadata Terms

- Statements about provenance statements to prove the reliability of provenance information
  - e.g. by evidence like letters, diaries, label, inventories, etc.)
Outlook

Linked Data

common standards

requirements of end-users: domain-specific standards

LIDO, MODS, METS, EAD, ABCD-EFG, nomisma

requirements of Semantic Web: cross-domain use

DCMI dumb-down principle

DC, PROV-O, EDM, CIDOC CRM
Outlook

Relations between classes
Example 1: Description of a bird

Using
- Darwin Core
- PROV-O
Example 2: Description of a coin

Using

- Nomisma Ontology
- PROV-O
Outlook

• **Step Five:** Identification of properties and alignment with metadata standards
• **Step Six:** Development of application profiles
• **Step Seven:** Testing the model’s functionality in different systems
Thank you!