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DATA SERVICE INFRASTRUCTURE FOR THE SOCIAL SCIENCES AND HUMANITIES

# A Common Metadata Understanding for the Three DASISH Survey Tools


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# Outline

- The three tools of DASISH task 3.2
- Requirements for a common metadata understanding for the three tools
- A common metadata understanding for the three tools - content and agreements

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# The three tools of DASISH task 3.2

Three software tools are under development under the Data Service Infrastructure for the Social Sciences and Humanities (DASISH) project, Work Package 3.2 are:

a) The Questionnaire Design and Development Tool (QDDT);
b) the Translation Management Tool (TMT);
c) and the Question Variable Data Base (QVDB).

These tools are currently under development as individual tools that should be able to communicate with each other.

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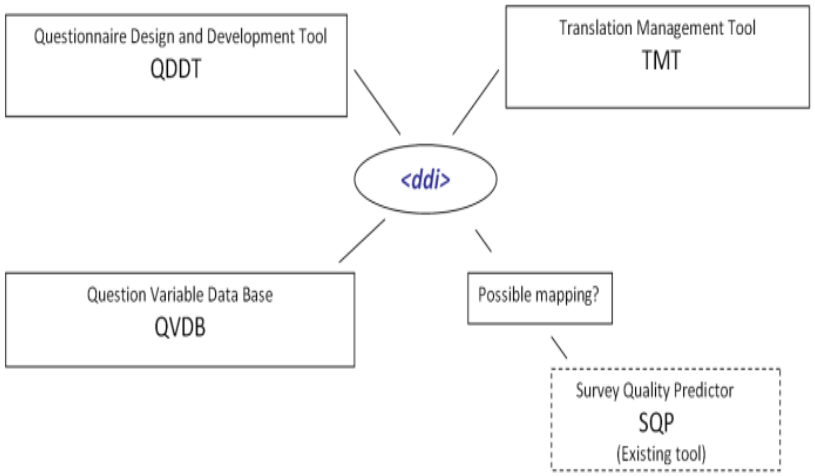
# Interoperability between the tools using DDI




- Interoperability between the three tools will allow reuse of metadata across survey lifecycle business processes
- Will facilitate transfer of metadata developed in the QDDT and the TMT to the QVDB for storage of copies, search and reuse by a broad public
- A common metadata understanding of the three tools facilitates interoperability

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# A common metadata understanding for the three tools

Requirements for a common, DDI-L based metadata model*

- Which metadata elements will be used in the transfer between the three tools?
- Mapping between the metadata elements and the DDI
- The direction for the flow of metadata elements between the three tools, as well as the steps in the work processes at which metadata components are exchanged
- Administrative ownership of metadata
- A common identification and versioning system, including a versioning policy
- How the exchange of DDI metadata takes place, which type of DDI instances or fragments that will be transported, and which type of web service will be used

* The requirements were also presented in EDDI 2013

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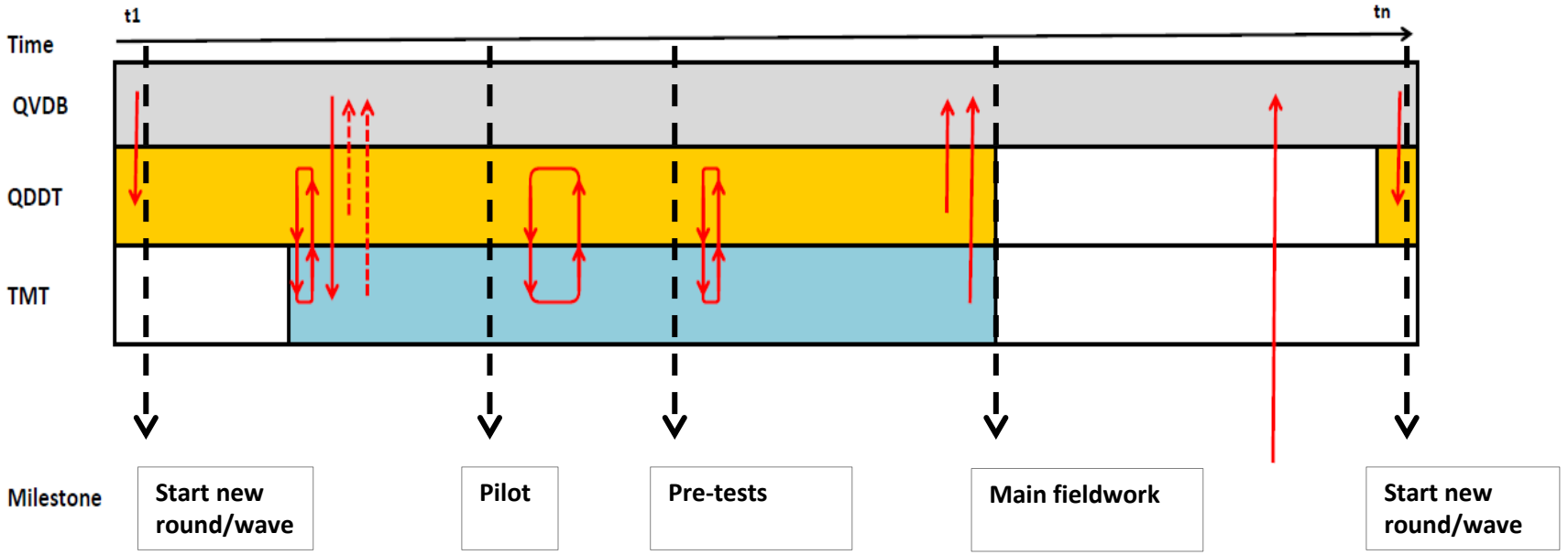
# Which metadata elements are developed, maintained and stored in which tool (high level)?

| | **Development and maintenance** (storing, and updating - add, change, delete) | **Storing of copies** |
|---|---|---|
| **Concept and concept hierarchies** | QDDT | QVDB, TMT |
| **Questions and questionnaire related metadata elements for source questionnaires/modules** | QDDT | QVDB, TMT |
| **Translations of questionnaire related metadata elements** | TMT | QVDB |
| **Represented (reusable) variable Variables** | QVDB | QDDT, TMT |
| **Classification or coding schemes/ classification code-lists** | QVDB | QDDT, TMT |

# Possible metadata flow between the tools between milestones, generic example



# Mapping to DDI – structuring of metadata elements

- Agreed exchange format: DDI 3.2
- Current focus: DDI profile for the metadata exchange between the tools
- Next step: DDI profiles for each of the three tools

```
141    <pr:Used isRequired="false" fixedValue="false" xpath="/d:QuestionItem"/>
142    <pr:Used isRequired="false" fixedValue="false" xpath="/d:QuestionItem/URN"/>
143    <pr:Used isRequired="false" fixedValue="false" xpath="/d:QuestionItem/UserID"/>
144    <pr:Used isRequired="false" fixedValue="false" xpath="/d:QuestionItem/UserAttributePair"/>
145    <pr:Used isRequired="false" fixedValue="false" xpath="/d:QuestionItem/UserAttributePair/AttributeKey"/>
146    <pr:Used isRequired="false" fixedValue="false" xpath="/d:QuestionItem/UserAttributePair/AttributeValue"/>
147    <pr:Used isRequired="false" fixedValue="false" xpath="/d:QuestionItem/VersionResponsibility"/>
148    <pr:Used isRequired="false" fixedValue="false" xpath="/d:QuestionItem/VersionRationale"/>
```

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# Mapping to DDI – structuring of metadata elements (2)

## How we work:

- Work out ideas and policies
- Meetings
- Discussions
- Expert consultancy
- DDI work, tasks below:

Mapping of metadata elements to DDI


Develop DDI element hierarchies

| | | |
|---|---|---|
| r:UserAttributePair | | |
| | r:AttributeKey | xs:string |
| | r:AttributeValue | xs:string |
| r:VersionResponsibilityReference | | |
| r:VersionRationale | | |
| | r:RationaleDescription | xs:string |
| | r:RationaleCode | xs:string |
| r:BasedOnObject | | |
| | r:BasedOnReference | |
| | r:BasedOnRationaleDescription | xs:string |
| d:QuestionText | d:LiteralText | d:Text |

Develop example DDI Instances

```
2 ▽ <ddi:FragmentInstance xmln
3 ▽     <ddi:TopLevelReference
4         <r:URN type="URN"
```

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# Mapping to DDI – structuring of metadata elements (3)

Two issues:

Reusability:

How to structure metadata in DDI to maximise the reusability of metadata elements in different contexts and by different surveys?

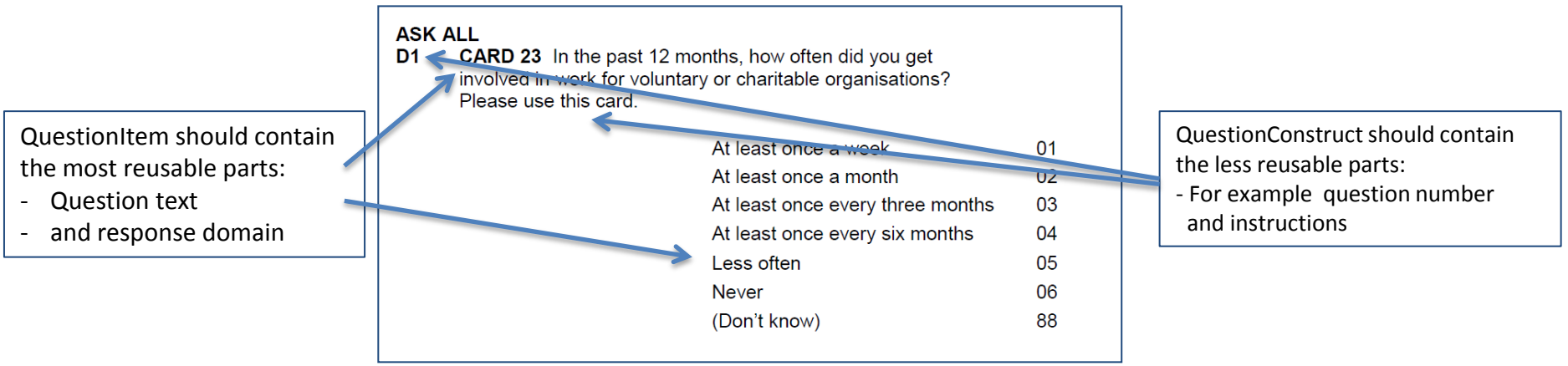
Handling of translations:

Should source questions and translations be regarded as compound - or separate elements?

# Mapping to DDI – structuring of metadata elements (4)

Reusability:

Aim to develop and maintain reusable variants of questions and variables



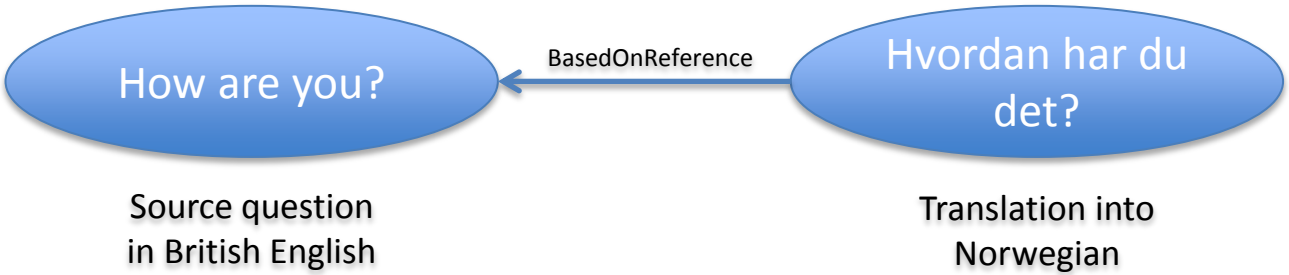

Issue:

How to handle reusability in relation to complex question structures?

# Mapping to DDI – structuring of metadata elements (5)

Handling of translations of a source or master question:

- A translation can change across waves even if the source questionnaire remains the same
- Therefore source or master questions need to be treated as separate objects
- Translations should have a BasedOn reference to the source or master question it is translated from



# Identification system

Identification system:

- DDI 3.2 Canonical URN will be used for identification:

urn:ddi:agency:ID:Version

- The ID of the canonical URN will be a Universally Unique Identifier (UUID).

- Local identifiers can be stored as UserID in DDI

# Versioning system

- Main purpose:
  - Enable humans and machines to distinguish changes in metadata elements that are important from those that are not so important
  - Track provenance

- Technical versioning vs. business versioning:

  Technical versioning – how to keep track of revisions?
  - A system external to DDI could take care of the technical versioning
  - Each tool host should decide regarding the technical versioning
  - The identifier of an external versioning system could be stored as a UserID in DDI

  Business versioning is used to flag a version for a particular business purpose

# Versioning system - business versioning

- DDI is used for the business versioning
- The system should allow three versioning levels
- The user should assign a new version on the appropriate level according to the versioning policy, according to some versioning rationale decided by the versioning policy
- VersionRationale in DDI will be used to document version changes
  - RationaleCodes for describing different types of changes to a metadata object will be developed.
  - Goal: The user chooses a RationaleCode from a list to indicate what kind of change has been made, and the system automatically assigns either a major or minor change in the version number, according to the code chosen.
  - RationaleDescription will be allowed in the tool, but usage will be optional
- LateBound references should be allowed in the tool. Usage should be optional

# Versioning system – business versioning (2)

- Each business version which should be made available to partners or to the general public should be flagged by the DDI attribute ‘isPublished’
- UserAttributePair in DDI should additionally be used to distinguish between elements that are not published, as well as between internal and external publications

UserAttributePair usage:
Example controlled vocabulary for publication status for the QDDT

**Code values for QDDT (ESS and possibly other surveys)**

**Suggested values for the drop-down list:**

**Development.NotPublished**
**InternalPublication.AvailableForDesignTeam**
**InternalPublication.ExportToSQP**
**InternalPublication.AvailableForNationalTeams**
**InternalPublication.ExportToTMT**
**ExternalPublication.ExportToQVDB**
**ExternalPublication.ExportToPublic**

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# Versioning policy

- All versionable DDI elements that are used should be versioned
- Business versioning should start when an object is available for search and archive
- Two versioning levels will be used: Major and Minor
  Minor change is typos or minor wording changes that do not change the meaning.
  All other changes are Major changes
- Batch versioning: User can choose two or more RationaleCodes, if more than one type of change is made to the element at one go, to describe all changes

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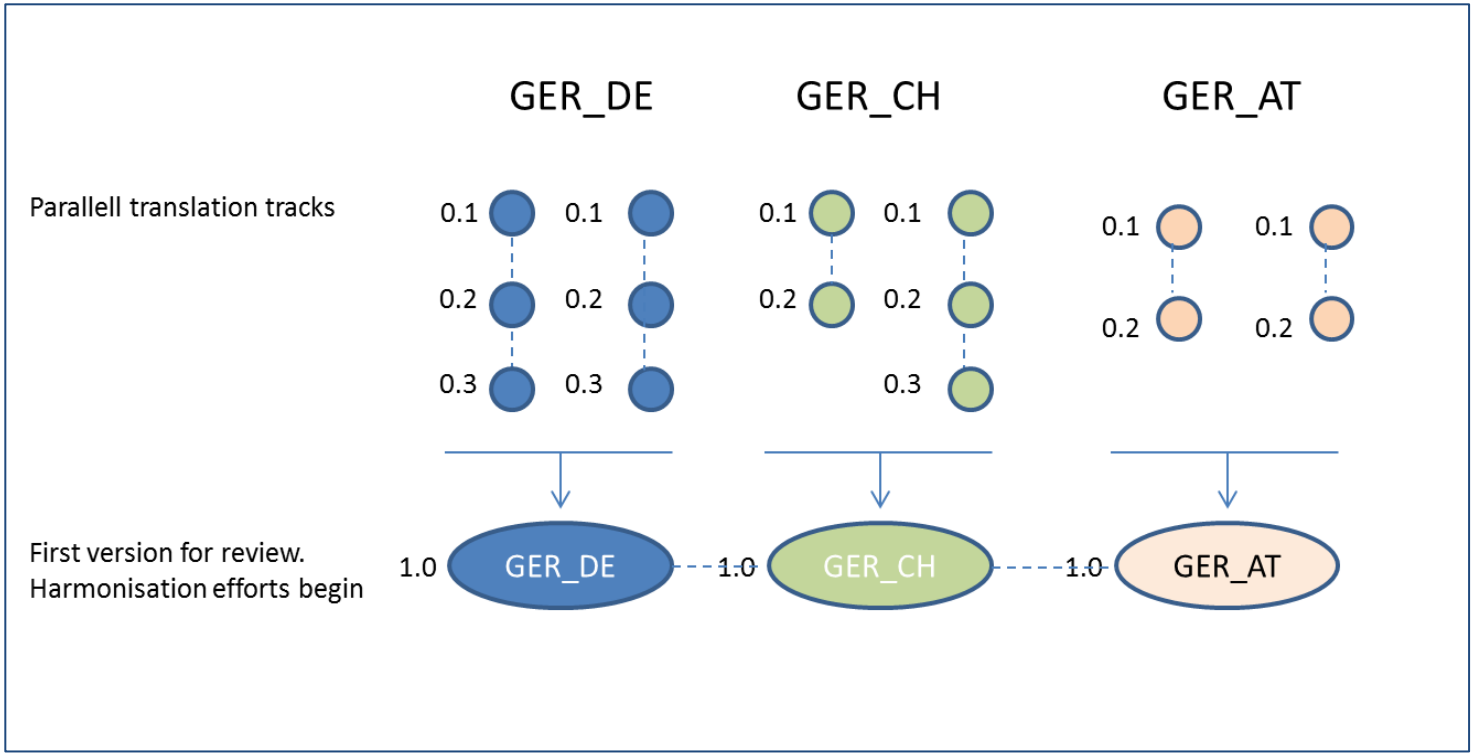
# Versioning policy, translations

**Example of parallel translation tracks by language (German) and country (Germany, Switzerland, Austria)**




- Translations are versioned by country and language
- Reuse of metadata elements should be allowed within and between countries
- International administrator coordinates the versioning of shared languages

# Metadata exchange between the tools

- Full questionnaire modules as well as single questions will be exchanged between the tools
- Tools should be able to communicate via web services
  Goal: To develop REST API web services for the communication between the tools
- Possible further work: Communication between the three tools and SQP

# Proposed DDI domain names for the DASISH surveys:

- European Social Survey (ESS): **int.esseric**
- Survey of Health, Ageing and Retirement in Europe (SHARE): **int.shareeric**

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## Thank you for your attention!

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