gesis Leibniz Institute for the Social Sciences

Georeferenced Survey Data at the GESIS Data Archive

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Member of the Leibniz Association

EDDI

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2. DDI and Georeferenced Survey Data
3. The Future? Archiving 'real' spatial data
4. Outlook


ONE DOES NOT
SIMPLY
GEOREFERENCE SURVEY DATA

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High efforts

Conceptual

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High efforts

Conceptual

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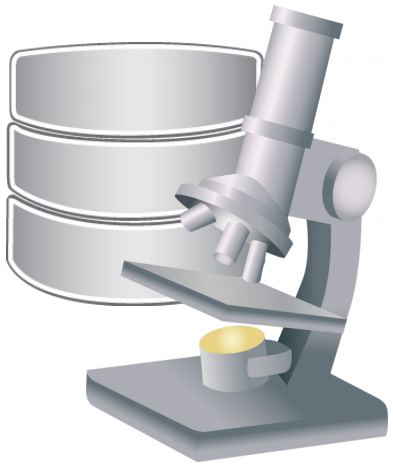
High efforts



Conceptual

Technical

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High efforts

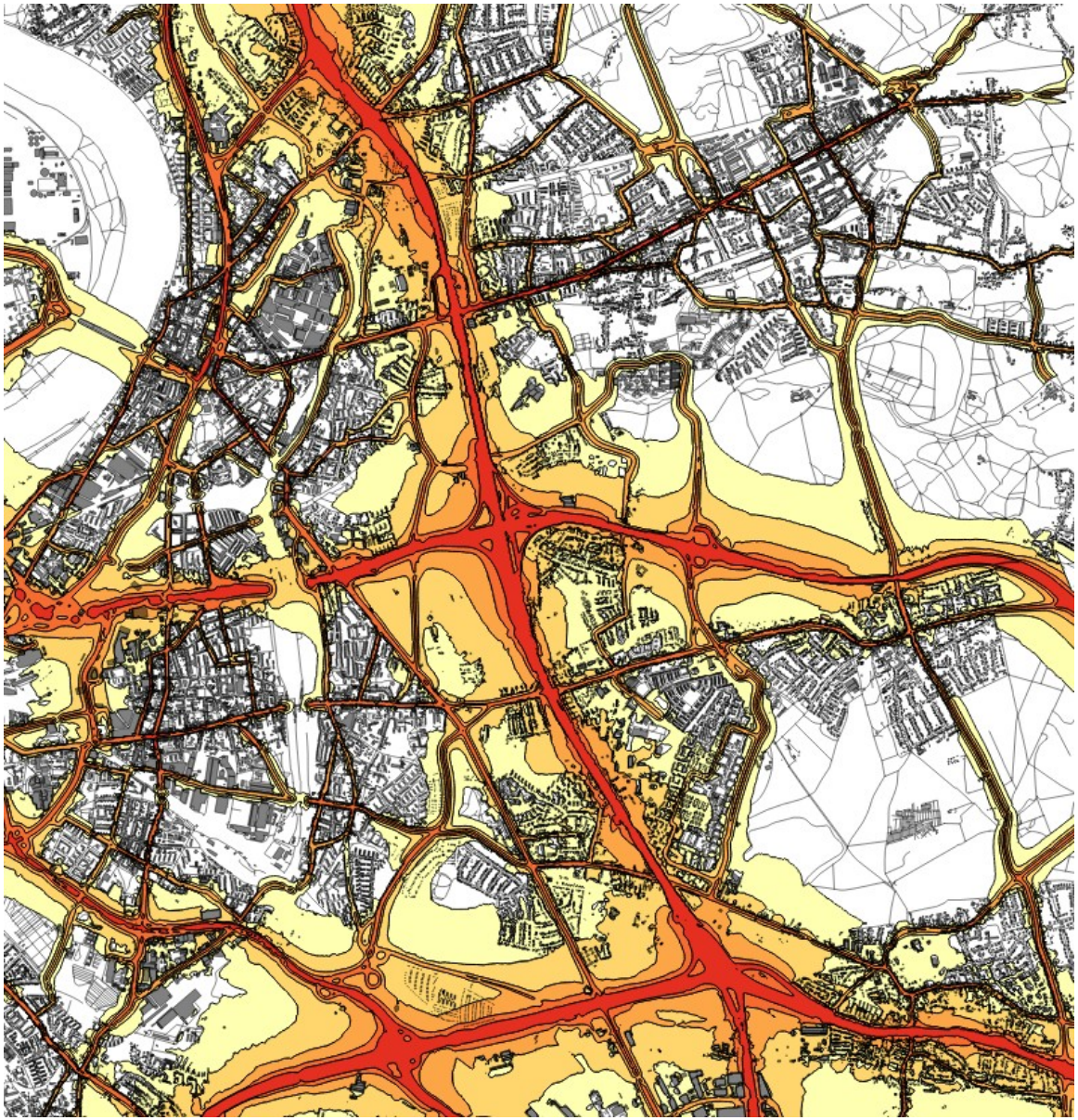
Conceptual

Technical

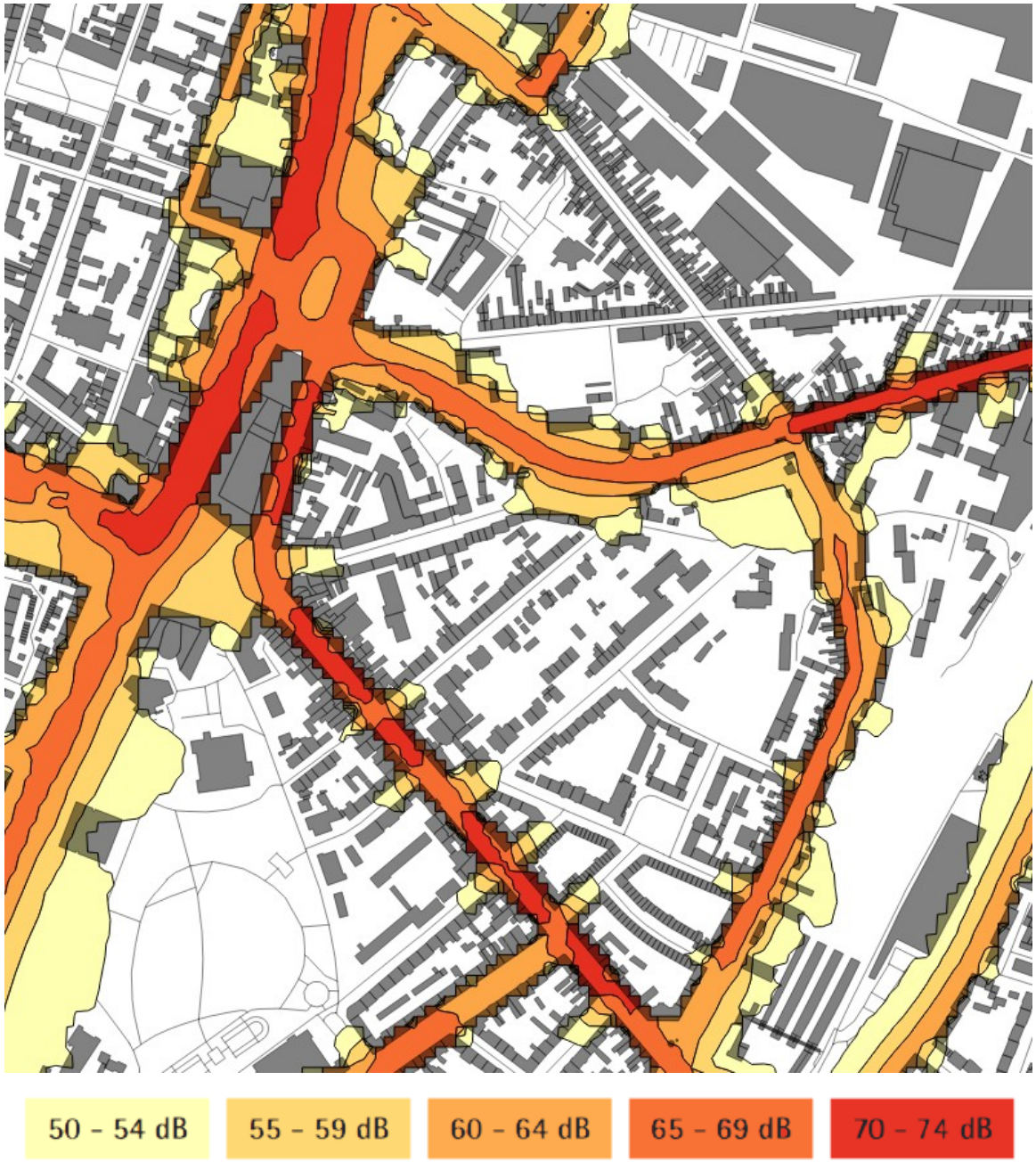
Documentary

The project: GeorefUm

- Geocoding and georeferencing
- Building a database of available spatial data
- Disseminating in a secure environment
- Consult and guide



Road traffic noise in Cologne, Source: EIONET Central Data Repository (CDR) and OpenStreetMap



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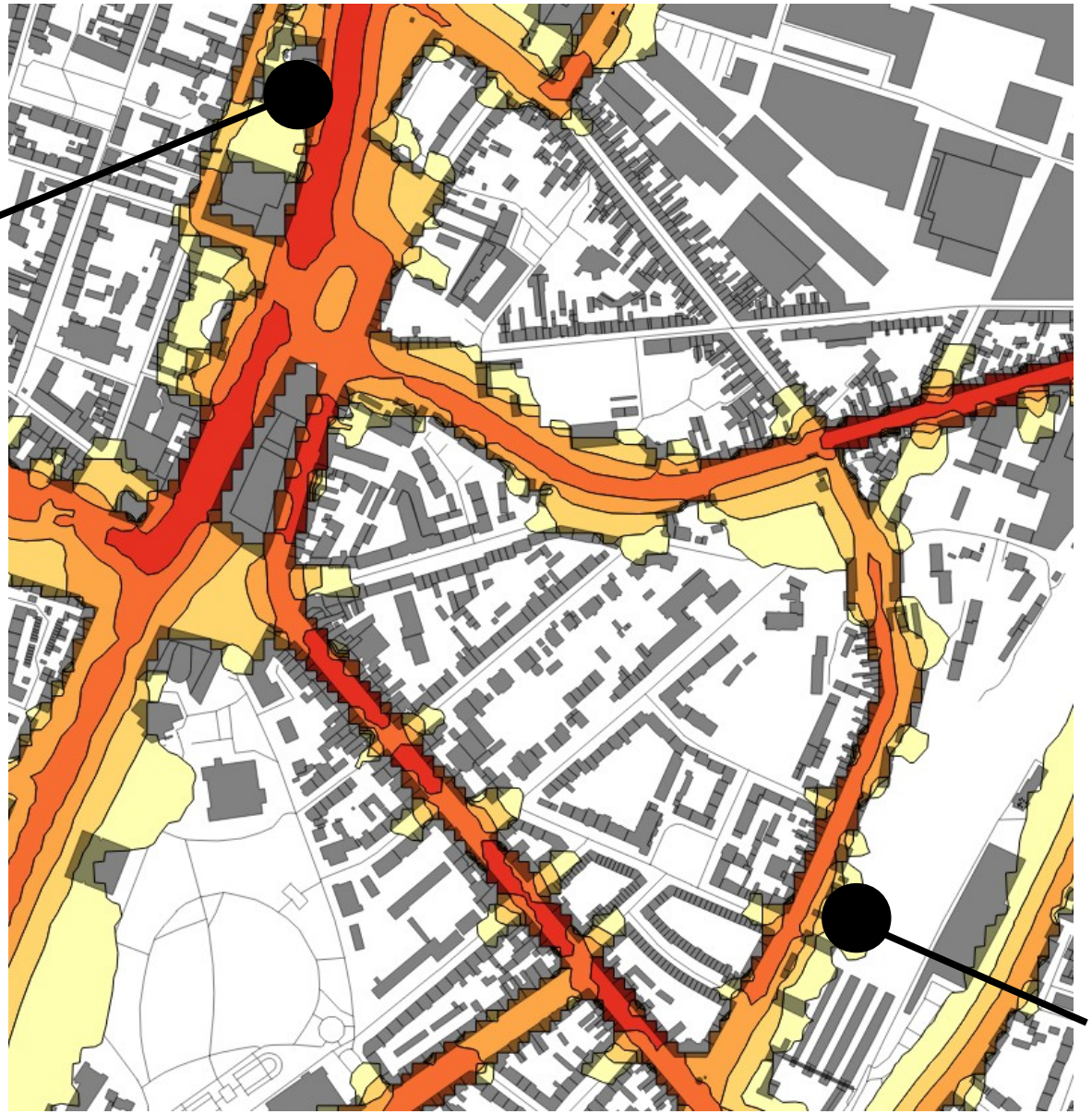
60 – 64 dB

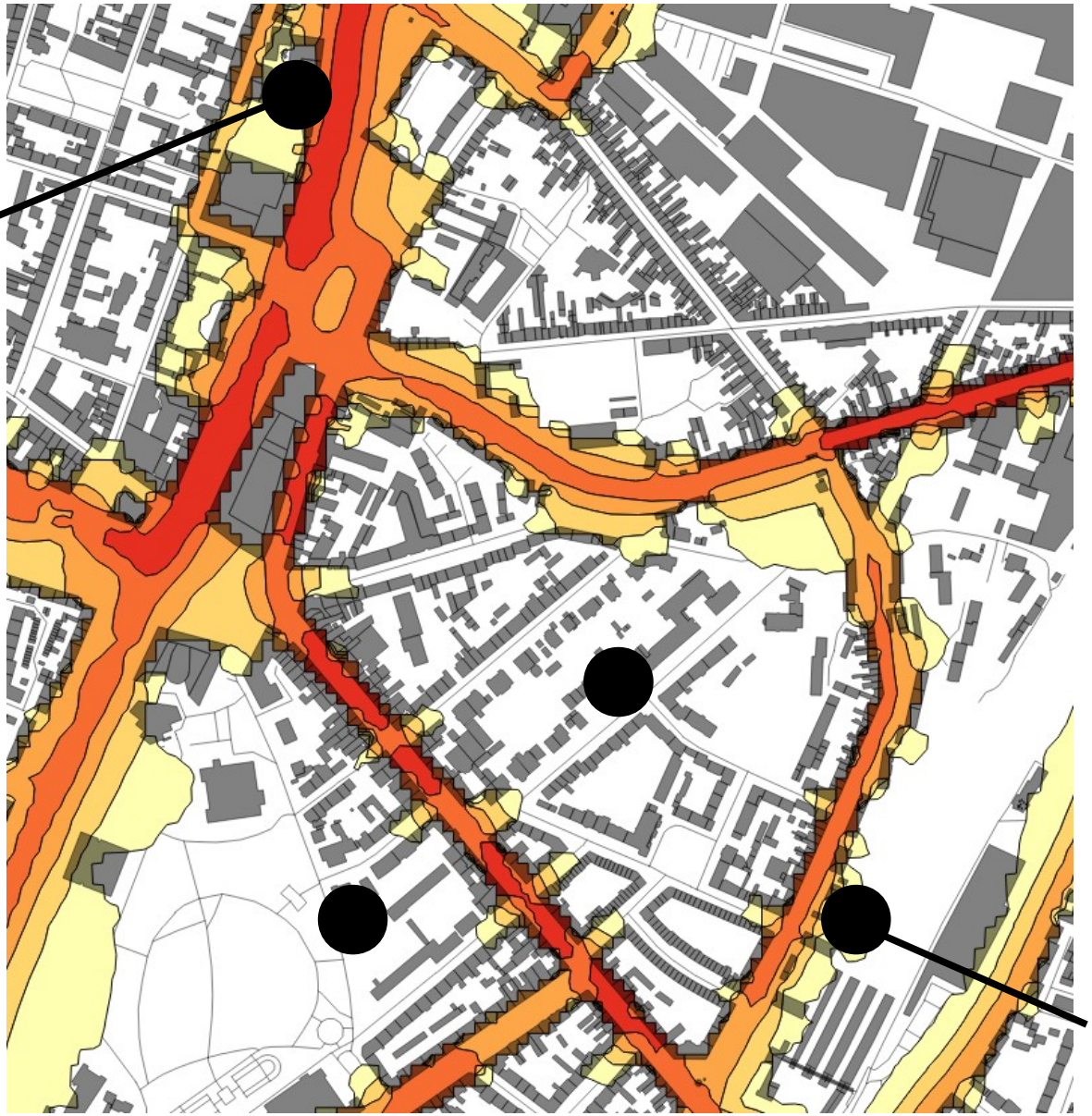


50 – 54 dB

50 - 54 dB | 55 - 59 dB | 60 - 64 dB | 65 - 69 dB | 70 - 74 dB

Road traffic noise in Cologne, Source: EIONET Central Data Repository (CDR) and OpenStreetMap

60 – 64 dB



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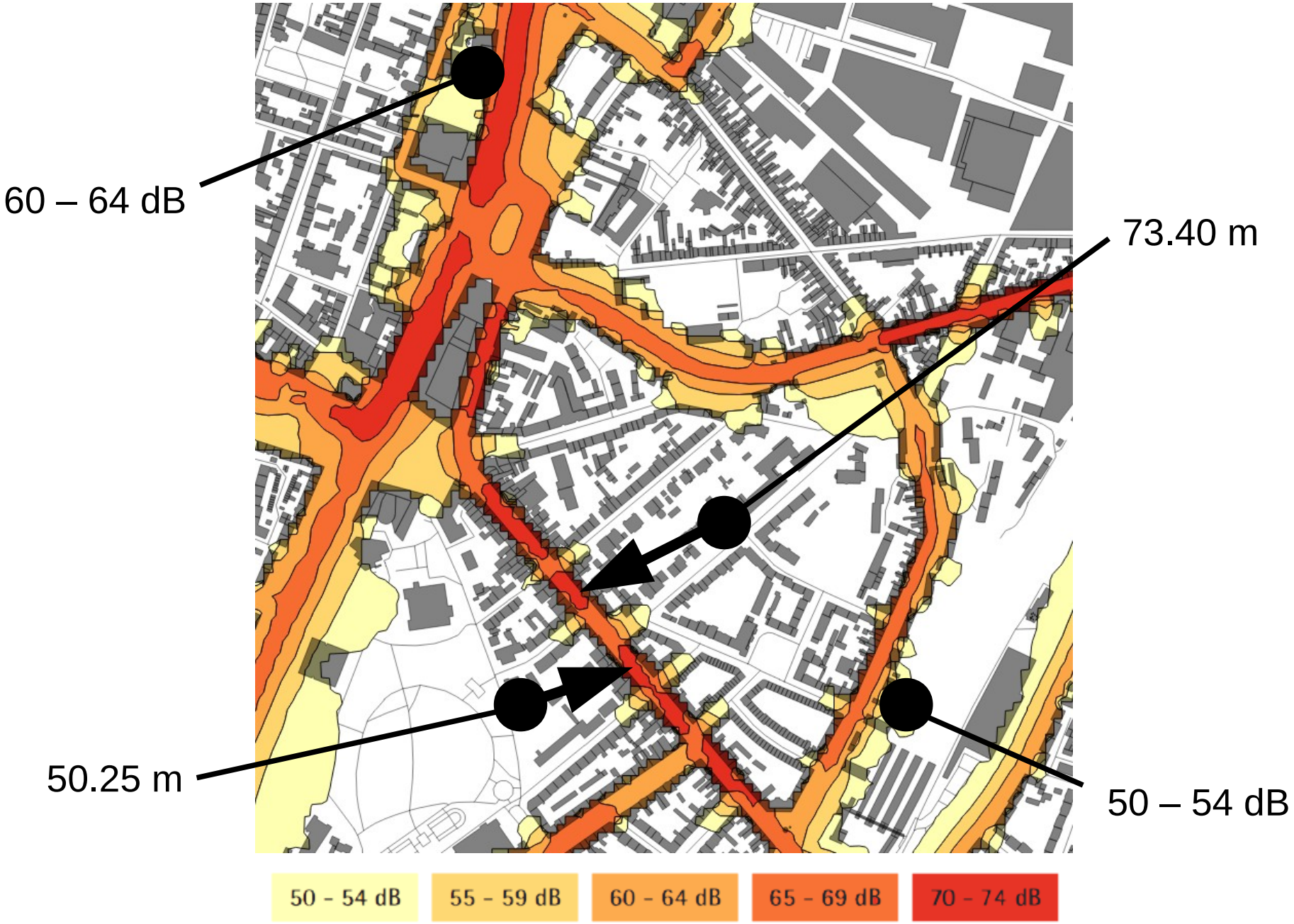

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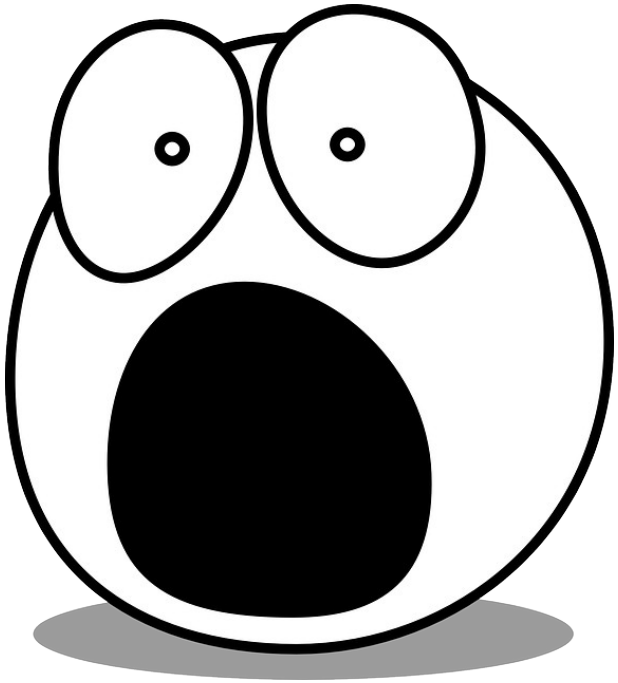

Source: pixabay.com

New data types, formats, contents etc.

...new documentary demands!

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Actually, not that different data

ID	...	ROAD_DEN	ROAD_N	DIST_ROAD_DEN	DIST_ROAD_N
1	...	55	50	24.56	0
2	...	75	60	0	0
...	...	...	...	...	...
3146	...	0	0	6.23	10.76

Still, we need new metadata

Different standards or frameworks:

- ISO 19118, 19115, 3166 and INSPIRE

Different purposes:

- cataloging
- usage
- structure and meaning
- preservation

Source: pixabay.com

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ISO 19115 wishlist

- Abstract
- CitedResponsibleParty
- Extent
  - spatial
  - temporal
- SpatialRepresentationType

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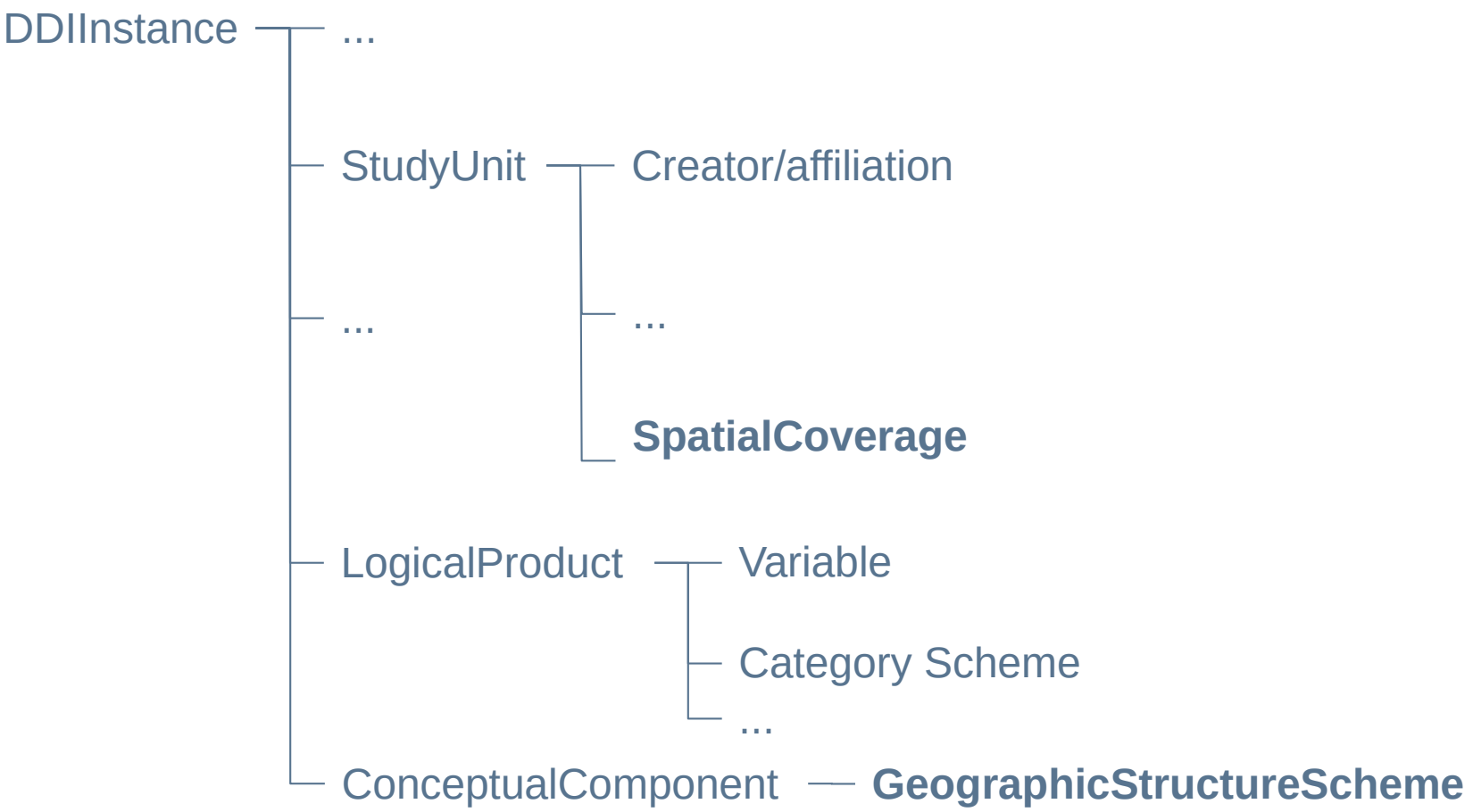
GESIS DDI Lifecycle Snippet



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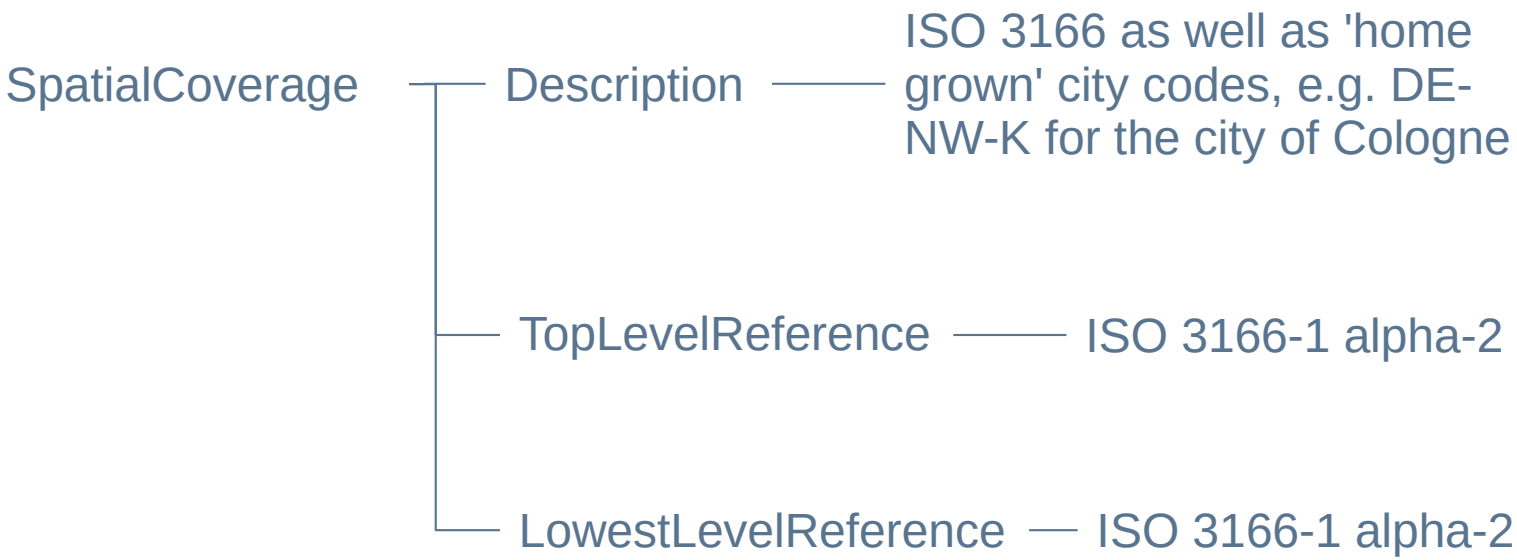
Study Level (as is)



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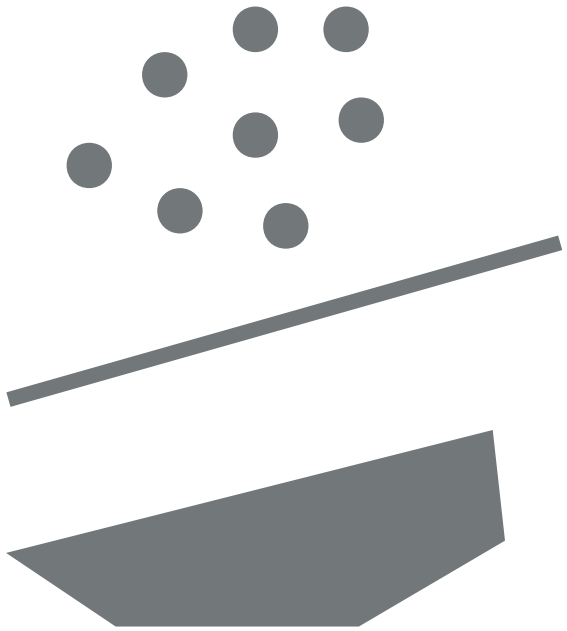
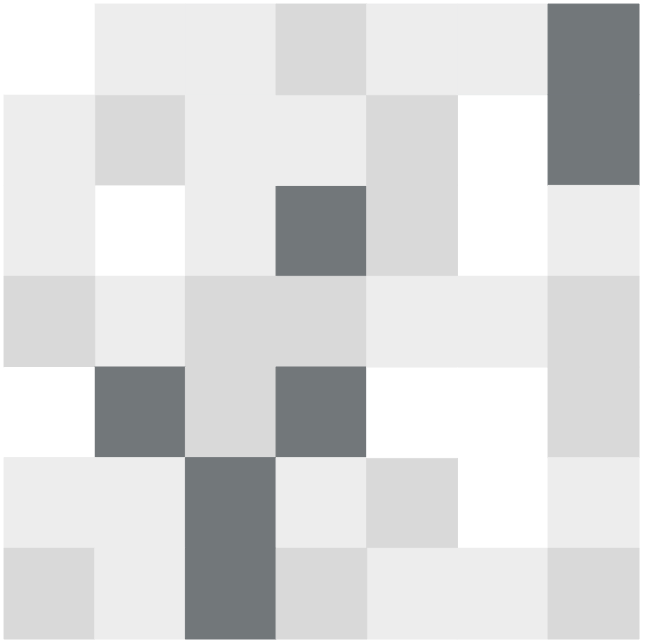
Study Level (as could be)

Structure of spatial data



Vector data



Raster data

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Structure: raster data

GeographicStructure

Hello. I am raster data, based on 1km INSPIRE compliant grids. This is important as I am not serving straight to the point information. Use me when georeferenced variables were produced with data from the same grid structure.

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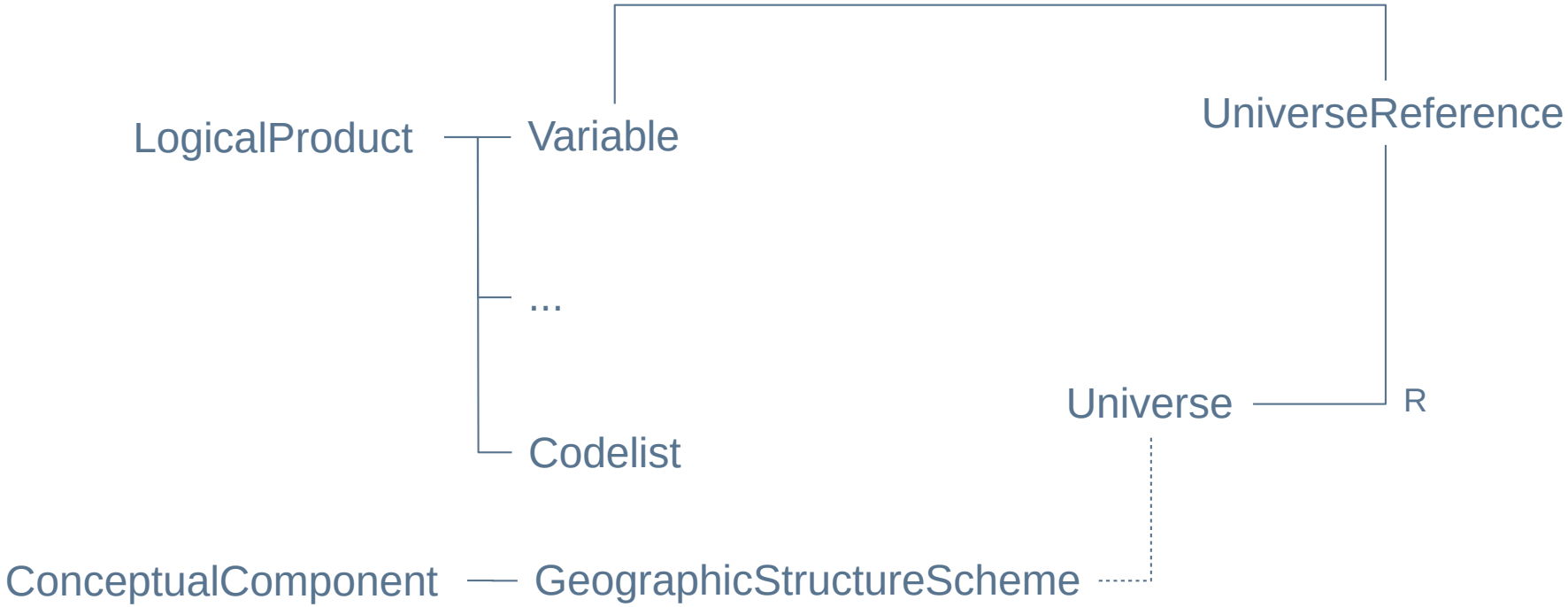
Variable Level ('whole' story I)



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Structure as Universe?

Universe

Hello. I am raster data, based on 1km INSPIRE compliant grids. This is important as I am not serving straight to the point information. Use me when georeferenced variables were produced with data from the same grid structure.

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A shortened example

```
<l:Variable>
    ...
    <l:VariableName>
        <r:String>road_lden</r:String>
    </l:VariableName>
    <r:Label>
        <r:Content>Road Traffic Noise (DEN) in decibels</r:Content>
    </r:Label>
    </r:Description>
        <r:Content>Road traffic noise that was measured at the
respondent's dwelling in context of EG (2002). </r:Content>
    </r:Description>
    <r:UniverseReference>
        <r:ID>INSPIRE_grid_1km</r:ID>
    </r:UniverseReference>
    ...
</l:Variable>
```

'Whole' story II

- Create one study unit for each geographic structure
  - e.g. one for every 1km grid structure

SU I:

'Ordinary' survey variables

SU II:

Variables extracted from rasters

SU III:

Variables extracted from polygons

What's left?

- Actual implementation
- Final mapping to ISO 19115
- Using DDI-RDF and controlled vocabulary

- What about 'real' spatial data?

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'Real' spatial data: base data

Cologne's 'Veedel', Source: City of Cologne

Different understandings of these data

- Administrative borders (e.g. Switzerland)
- Shapes of cadasters, buildings, roads as well as administrative borders (e.g. Germany)

Archiving 'real' spatial data

Great, because:

- Important to document data collection process or to visualize results
- Makes data linking easier

However:

- Pitfall of redundant archiving
- DDI uncommonly used format

Outlook

- Georeferencing survey data is costly
  - This is why we do it
- New documentary demands
  - e.g. ISO 19115 and INSPIRE compliance
  - Indeed, we use DDI for that
    - Variable level is tricky
- 'Real' spatial data
  - Future is uncertain, depends on demand

Thanks to:

Wolfgang Zenk-Möltgen and Stefan Schweers as well as to Julia Klinger, Katharina Kinder-Kurlanda and Pascal Siegers