

A view on the EERAdata platform:

Supporting the FAIRification of energy research databases



- Introduction
- FAIRification Process
- Viewpoints
- Mini-Workshop Retrospective
- Use Case Working Session Outlook



Introduction

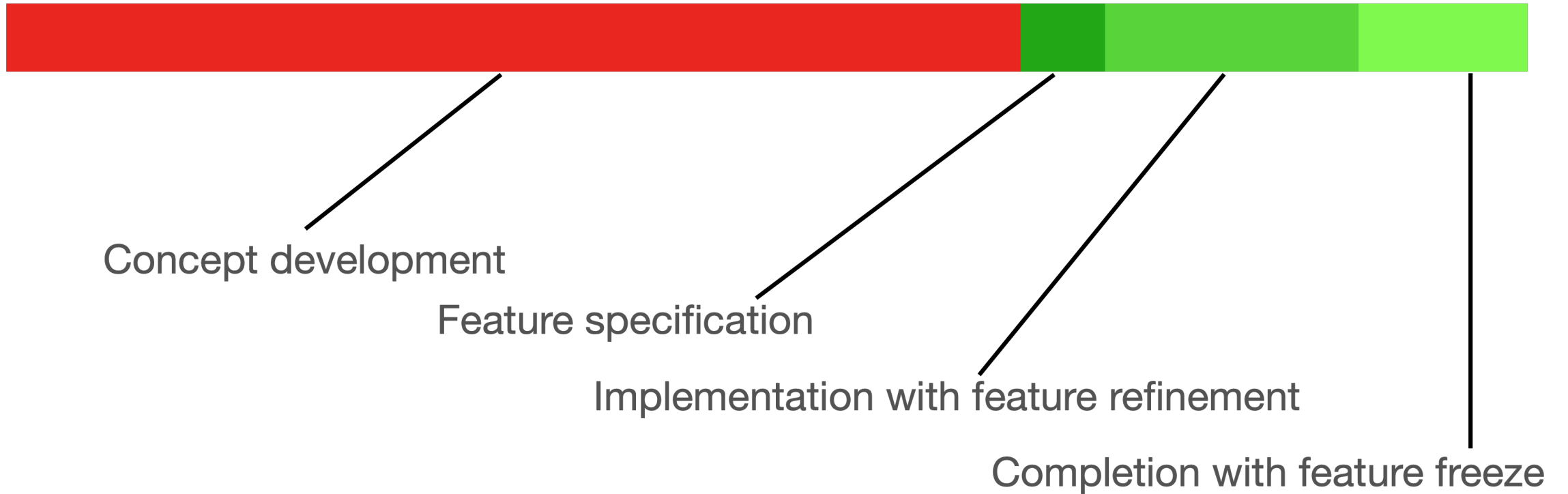
- EERAdata platform envisioned as a tool for FAIRification
- We need to turn that vision into a concrete set of features—let's be creative!
- Platform features must be realizable in the course of the project—let's also be realistic!



Main Constraint

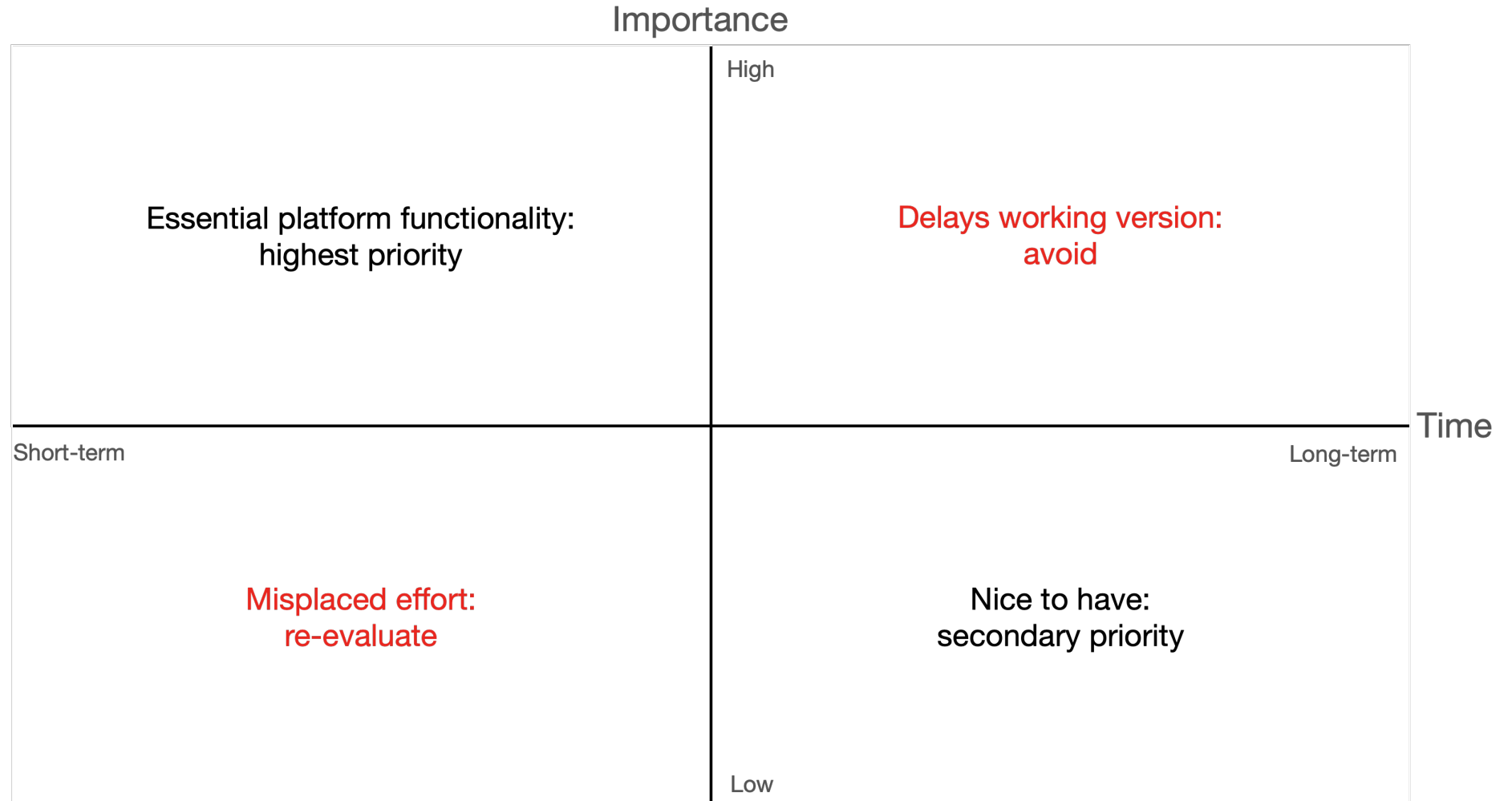
- The platform is a project deliverable
- We must have a working platform by the end of the project
- Features must be specified early enough to allow their implementation and promotion to potential users

Implementation Phases





Prioritizing Features



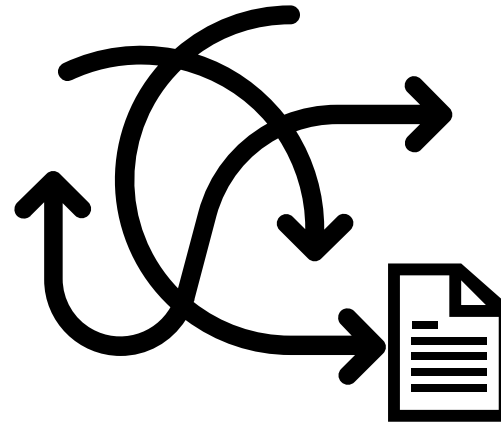
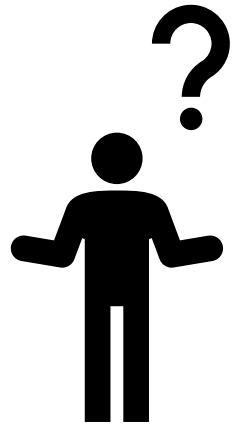


User Acquisition

- What features are necessary to attract users?
- When to begin?
- Where?
 - Conferences
 - Seminar series
 - Specialized training?

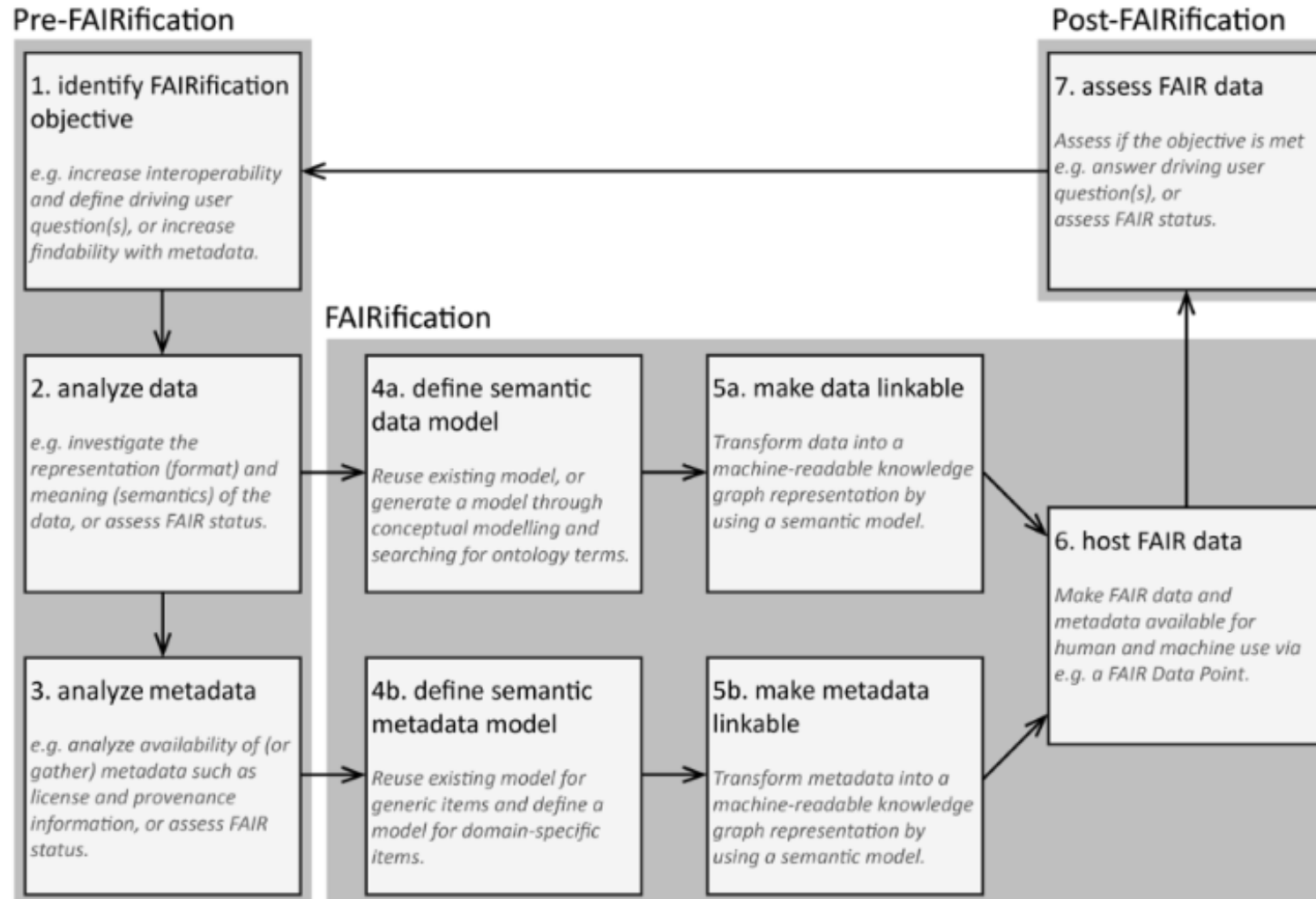
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- Supporting the FAIRification of energy research databases



FAIRification

Jacobsen, A., R. Kaliyaperumal, L. O. B. da Silva Santos, B. Mons, E. Schultes, M. Roos and M. Thompson (2020). "A Generic Workflow for the Data FAIRification Process." *Data Intelligence* 2(1-2): 56-65.



Platform Process



- Platform
- Navigate dataset
- Find relevant data

Platform Process



Hotmaps - General schema Hotmaps - DublinCore

Select to filter:

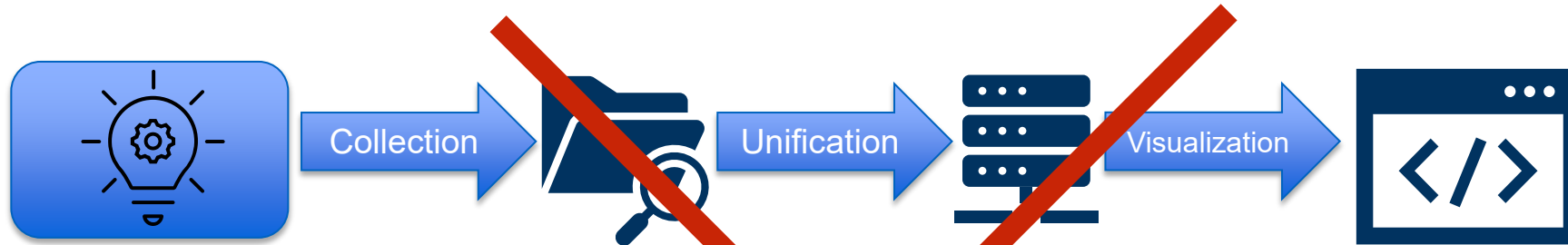
Filter CATEGORY

Dublin core schema

Please click on the "Original JSON" button to get the original data:

| Coverage | Identifier | Format | Title | Subject | Description | Creators | Rights | Date | Original JSON | Source |
|----------|---|--------|---|---|--|--|----------------------------------|---------------------|--|----------------------|
| general | Name: building_footprint_tot_curr ID: 0e61cfe9-5ed8-36e5-a644-e3b311f2c5c5 | tif | Building footprint density map of buildings in EU28 + Switzerland, Norway and Iceland for the year 2015 | EU28 EUROPE building footprint map (m2/10.000 m2) unit raster | The map shows the building footprint of buildings in each ha with m2/ha | Contributor: Andreas Mueller Mail: mueller@eeg.tuwien.ac.at Role: author Organization: e-think / tu wien | Creative Commons Attribution 4.0 | 2019-07-17 04:31:57 | <input type="button" value="Original JSON"/> | Link |
| climate | Name: CDD_ha_curr ID: d81e844f-fbc0-3264-a907-1ed19bc4182b | tif | Cooling Degree Days (CDD) for the reference period 2002-2012 | EU28 EUROPE cooling degree days cell with [Kd] unit raster | The maps show the calculated cooling degree (22.0/22.0) days in each hectare | Contributor: Andreas Mueller Mail: mueller@eeg.tuwien.ac.at Role: author Organization: e-think / tu wien | Creative Commons Attribution 4.0 | 2019-01-29 00:38:22 | <input type="button" value="Original JSON"/> | Link |
| climate | Name: Heating and cooling degree days ID: 81a33a1d-1181-4212-94ed-62281e4d3873 | csv | Monthly average of heating and cooling degree days | climatic data heating cooling degree days | Data show the average of heating and cooling degree days in the EU28 at NUTS2 level. | Contributor: Pietro Zambelli Mail: Pietro.Zambelli@eurac.edu Role: author Organization: Eurac Research Contributor: Chiara Scaramuzzino Mail: Chiara.Scaramuzzino@eurac.edu Role: author Organization: Eurac Research | Creative Commons Attribution 4.0 | 2017-11-16 | <input type="button" value="Original JSON"/> | Link |

Platform Process



Hotmaps - General

Hotmaps - DublinCore

Select to filter

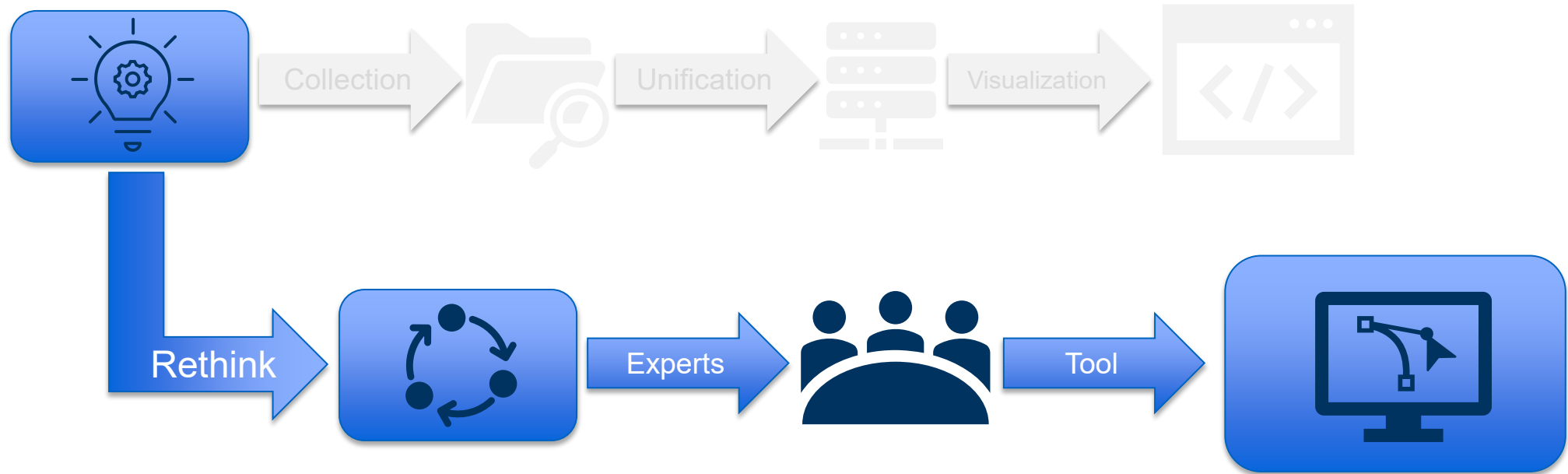
Filter: QUERY

main core scheme

Please click on the "Original JSON" button to get the original data:

| Coverage | Identifier | Format | Title | Subject | Description | Creators | Rights | Date | Original JSON | Source |
|----------|---|--------|---|---|--|---|----------------------------------|---------------------|--|----------------------|
| general | Name: building_footprint_tot_curr ID: 0e61cfe9-5ed8-36e5-a644-e3b311f2c5c5 | | Building footprint density map of buildings in EU28 + Switzerland, Norway and Iceland for the year 2015 | EU28 EUROPE | The map shows the building footprint of buildings in each ha with m2/ha footprint map (m2/10.000 m2) unit raster | Contributor: Andreas Mueller Mail: mueller@eeg.tuwien.ac.at Role: author Organization: e-think / tu wien | Creative Commons Attribution 4.0 | 2019-07-17 04:31:57 | <input type="button" value="Original JSON"/> | Link |
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Platform Process





New Approach

- What if we are not alone with these issues?
- FAIRification
- Tools that help the FAIRification process
- We noticed: that is our view, from developers.
 - What other views are there?
 - How can we support these other views?

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Viewpoints

- Database Holder
- Database User
- Machine User



Viewpoints

- Database Holder
 - Making data FAIR
 - Use of tools
- Database User
- Machine User



Viewpoints

- Database Holder
- Database User
 - Accessibility
 - Visualization
- Machine User



Viewpoints

- Database Holder
- Database User
- Machine User
 - Accessibility
 - Autonomous tools

Workflow

- Keypoints identifiable
- Metadata mapping

| Data | Value |
|-------------|-------|
| Title | 1 |
| Descriptor | 2 |
| Contributor | 3 |
| Category | 4 |



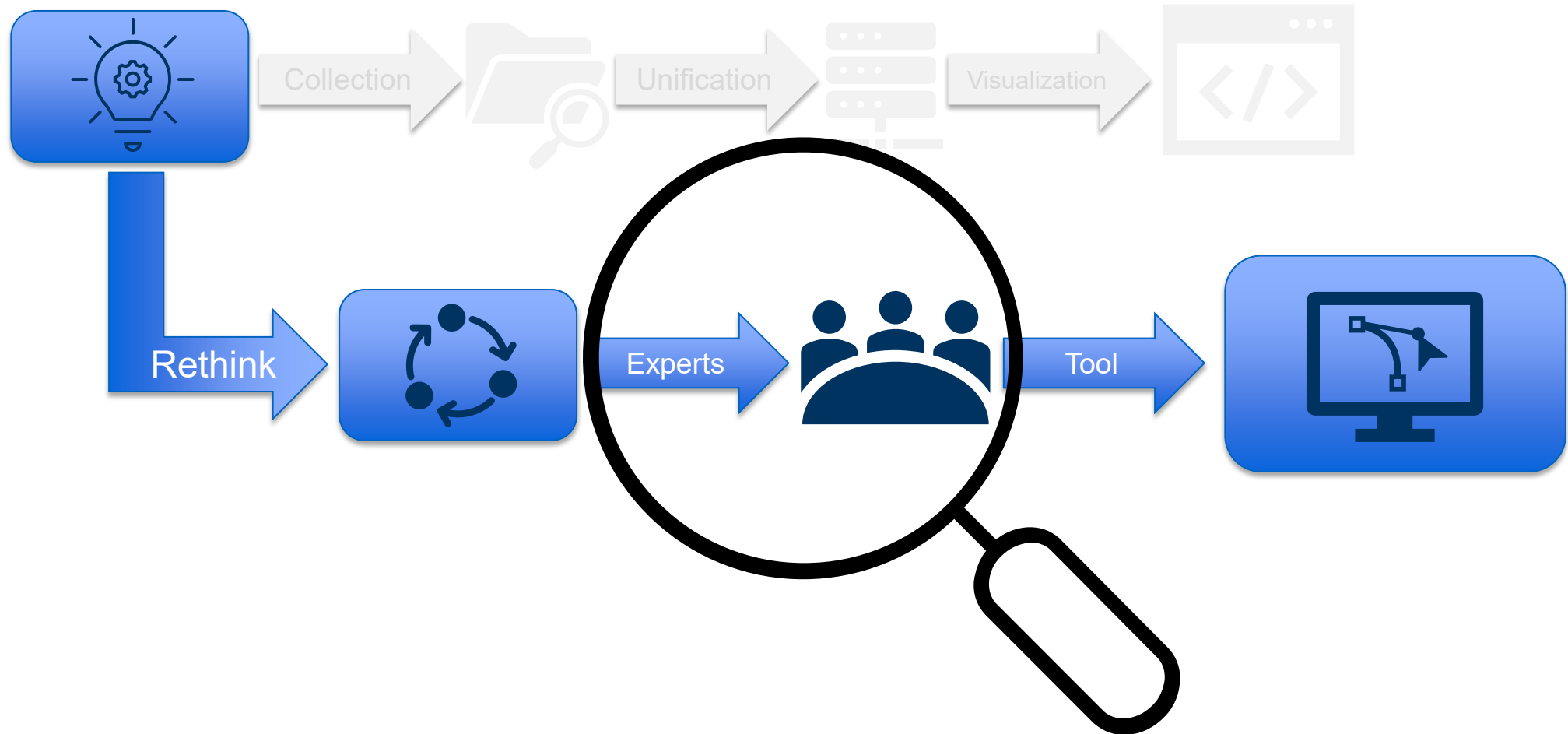
Please upload a file you want to map:

Choose File datapackage.json

| Original | DublinCore | Value |
|--------------|-------------|--|
| Organization | Creator | e-think / tu wien |
| Contributors | Contributor | e-think / tu wien author mueller@eeg.tuwien.ac.at Andreas Mueller |
| | Publisher | |

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Workshop Retrospective

- "Mini-Workshops" in December
- Databases from previous Workshops
- Mapping utilizing expert knowledge
- Tool creation

Workshop Retrospective

Data

| ADMINISTRATIVE / INTELLECTUAL PROPERTY (DUBLIN CORE TERMINOLOGY) | | | |
|--|------------------------|--------------|---------|
| CREATOR | CONTRIBUTOR | PUBLISHER | RIGHTS |
| edited_by/owner | contributors | edited_by | license |
| Recode by ID | ors organized by 'fami | Recode by ID | |

```
for root, dirs, files in os.walk(folder):
    for name in files:
        jsonfile = open(root+"/"+name)
```

| contributor | coverage | creator | date |
|--|----------------|--------------|----------------|
| {'organization': 'e-think / tu wien', 'role': 'author', 'email': 'mueller@eeg.tuwien.ac.at', 'titl | {'start': '201 | [e-think / t | 1/29/2019 0:38 |
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| {'organization': 'e-think / tu wien', 'role': 'author', 'email': 'mueller@eeg.tuwien.ac.at', 'titl | {'start': '201 | [e-think / t | 1/29/2019 0:38 |
| {'title': 'Chiara Scaramuzzino', 'email': 'Chiara.Scaramuzzino@eurac.edu', 'role': 'author', | {'start': '20 | [Eurac Res | 11/16/2017 |

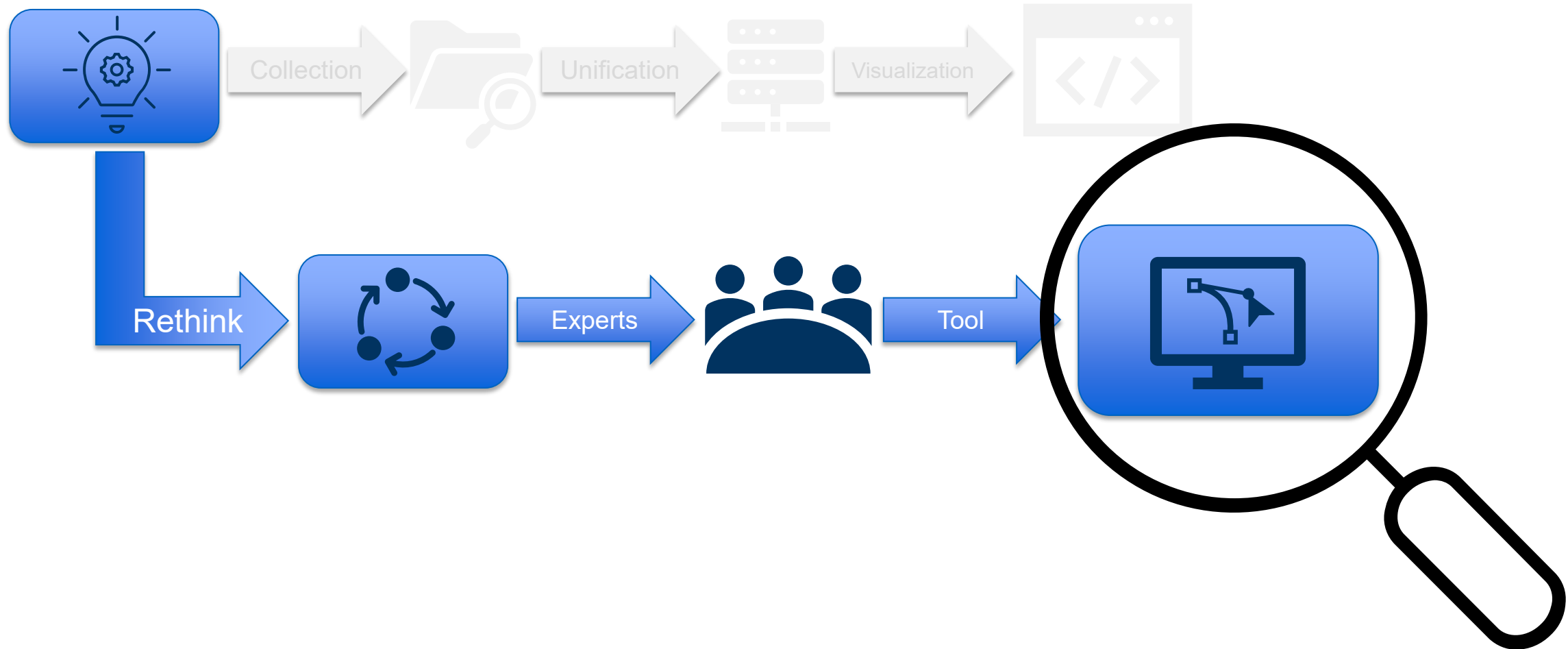
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  "format": "[ 'tif' ]",
  "identifier": "d81e844f-fbc0-3264-a907-1ed19bc4182b",
```

Workshop Retrospective

- Tool
 - Learning tool
 - Mapping
 - Platform implementation
- Goals
 - Short term: Mapping tool and visualization
 - Long term: FAIRification process
- Testing phase

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Platform Process



Workshop Outlook

- Session (umformulieren): integrating Use Case results

Program - 16 March 2022

We adopt the perspective of database users who encounter a non-FAIR database and intend to improve on the FAIR status of the database to increase visibility and reuse potential.

| Morning Session 09:00 - 12:00 (CET) | | |
|--|---|--------------------------------|
| Session Chair: Demet Suna, AIT | | |
| 09:00 - 10:00 | A focus on the user: Design of a questionnaire survey | Aleksandra Zgórska, GIG (tbc.) |
| 10:00 - 10:15 | Break | |
| 10:15 - 11:00 | FAIR Platforms? Experience with the European Building Stock Observatory (tbc.) | Ezilda Costanzo, ENEA |
| 11:00 - 12:00 | Working Session: Workflows and tools for buildings efficiency data (Use Case 1) | Moderation: Astrid Unger, AIT |

12:00 - 13:00 Lunch Break

| Afternoon Session 13:00 - 16:00 (CET) | | |
|--|--|-------------------------------|
| Session Chair: N.N. | | |
| 13:00 - 14:00 | Working Session: Workflows and tools for energy materials data (Use Case 3) | Moderation: Astrid Unger, AIT |
| 14:00 - 14:15 | Break | |
| 14:15 - 15:15 | Working Session: Workflows and tools for energy efficiency policies (Use Case 4) | Moderation: Astrid Unger, AIT |
| 15:15 - 16:00 | Plenary Discussion: Use Case-specific needs and cross-Use-Case learning potentials | Session Chair moderator |



Workshop Outlook

- Tool testing
- Analysis:
 - What are the different problems?
 - What are the obstacles?
 - Are there any specific type of data in the UC?
 - Get insight into each UC
- Discussion

Conclusion

- WS4 goals
- Discussions
- Testing
- Definition of next steps



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www.eeradata.eu

THANK YOU!



TOWARDS A FAIR AND OPEN DATA
ECOSYSTEM IN THE LOW-CARBON
ENERGY RESEARCH COMMUNITY

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