

INSPIRE Extensions

Expert & Advisory Meeting, Ispra

Thorsten Reitz

21.04.2016

Meeting Introduction

Objectives

Agenda

Meeting Objectives

- Ensure a common understanding of the goals of the project among stakeholders
- Get high-quality constructive input on structure and methodological aspects of the study
- Get contributions to build a resource that provides value to experts and the wider INSPIRE community

Agenda

- Project Introduction (Jandirk, Thorsten)
- Expert Introduction presentations (All , *Moderator Jandirk*)
- Survey Summary and initial inventory presentations (Thorsten)
- Discussion: Survey Summary and Inventory (All, *Moderator Jandirk*)

- Design Studio: INSPIRE Extension Methodology (All , *Moderator Thorsten*)
- Model Presentations (Paul, Stefania, ?)
- Pattern Identification and Naming (All , *Moderator Thorsten*)
- Conclusion & Summary

Introduction Outline

- Project Status
- Project Methodology
- Project Implementation

INSPIRE Extensions Project

Project Status

Project Timeline

1. Kickoff Workshop (Amersfoort) – 9th of March ✓
2. Model Extensions Inventory Delivery – 20th of April ✓*
3. Advisory Board Meeting (Ispra) – 21st of April ✓*
4. Extension Methodology Draft – 30th of April
5. Full Pattern Catalogue and Tool Chain How-to's – 30th of May
6. Tutorial Project and Running Example Documentation – 17th of June
7. Advisory Board Review Meeting (TBD) – 22nd to 23rd of June (TBC)
8. Final Report – 20th of July
9. Workshop at INSPIRE Conference (Barcelona) – 26th of September

INSPIRE Extensions

Methodology

Methodology Overview

1. Perform a Survey
 1. Understand main needs of the community
 2. Create an inventory of extension models to ground patterns in samples
 3. Raise awareness
2. Describe Extension Methodology
3. Identify and describe Patterns
4. Provide Tutorial and accompanying resources
5. Share via INSPIRE conference workshop
6. Long-Term: Maintain and evolve study

The Survey

- Find out about expertise and background, existing models, planned models, and interest in participation
- Total Questions: 31
- Maximum length: 26
- Minimum length: 8
- Implemented with Google Forms

The screenshot shows a survey form titled "Extending INSPIRE Data Models". At the top, there are tabs for "FRAGEN" (Questions) and "ANTWORTEN" (Answers), with a counter showing "66". The main text explains that INSPIRE is the European Directive establishing an Infrastructure for Spatial Information in the European Community, and that it provides a large number of data models. It then states that wetransform and Geonovum are currently researching the patterns that are emerging for such model extensions. The survey aims to identify best practices coming from existing modelling approaches and to provide good quality reference documentation on how data models can be extended in a consistent way across INSPIRE. To help this process, they are building an inventory of existing models. A call to action asks participants to fill in the survey to help promote the data models they have built. A disclaimer states that the information gathered in this survey will only be used for the purpose of the "Extending INSPIRE Models" project. Below this, there is an "Introduction" section that says "In this section we would like to know about your background and your work related to standards." The first question is "1.1 In what areas do you consider yourself an expert?". It asks participants to check any that apply. There are four checkboxes: "Data Analysis, including Geoprocessing", "Data Visualisation, including Cartography", "Data Publishing", and "Data Modelling".

FRAGEN ANTWORTEN 66

Extending INSPIRE Data Models

INSPIRE, the European Directive establishing an Infrastructure for Spatial Information in the European Community, provides a large number of data models. While these cover many core use cases, they often need to be extended to serve specific business needs.

wetransform and Geonovum are currently researching the patterns that are emerging for such model extensions. Our goals are to identify best practices coming from existing modelling approaches and to provide good quality reference documentation on how data models can be extended in a consistent way across INSPIRE. To help this process, we are building an inventory of existing models.

Fill in our survey to help promote the data models you have built!

The information gathered in this survey will only be used for the purpose of the "Extending INSPIRE Models" project. Before we publish anything, we will come back to you to check you are happy with how your work will be presented.

Introduction

In this section we would like to know about your background and your work related to standards.

1.1 In what areas do you consider yourself an expert?

Check any that apply.

- ☐ Data Analysis, including Geoprocessing
- ☐ Data Visualisation, including Cartography
- ☐ Data Publishing
- ☐ Data Modelling

Model Inventory

- Provide a „Dashboard“ for each Model
- Show which INSPIRE models it integrates and how
- Link to relevant documentation

INSPIRE Data Specification Extensions

- [1. Introduction](#)
- [2. Results of the Survey](#)
- [3. Inventory of Model Extensions](#)
 - [i. Browse by Tag](#)
 - [ii. Browse by Date](#)
- [4. Introduction to the INSPIRE Model-Driven Methodology](#)
- [5. The Pattern Catalogue](#)
- [6. An End-to-End Tutorial Project](#)
- [7. Summary and Conclusions](#)

GeoSmartCity Extended Utility Networks


20.04.2016 • Stefania Morrone • EPSILON Italia srl

Overview	
Schema language:	XSD
Spoken Language:	English
Schema Tool:	
License:	Open (Unrestricted or attribution-only licenses such as CC-BY, BSD or Apache)

Maturity	
Status:	Used in pilots or testbeds
Latest Version:	2.2
Next Version:	At least one more version planned
Released Versions:	2-4

INSPIRE Integration	
Referenced Models:	• inspireEN30
Reference Types:	• inherit

Statistics	
Number of Types:	10
Number of Properties:	63



This project is maintained by [wettransform](#).

[View the Project on GitHub](#)
wettransform/inspire-extensions

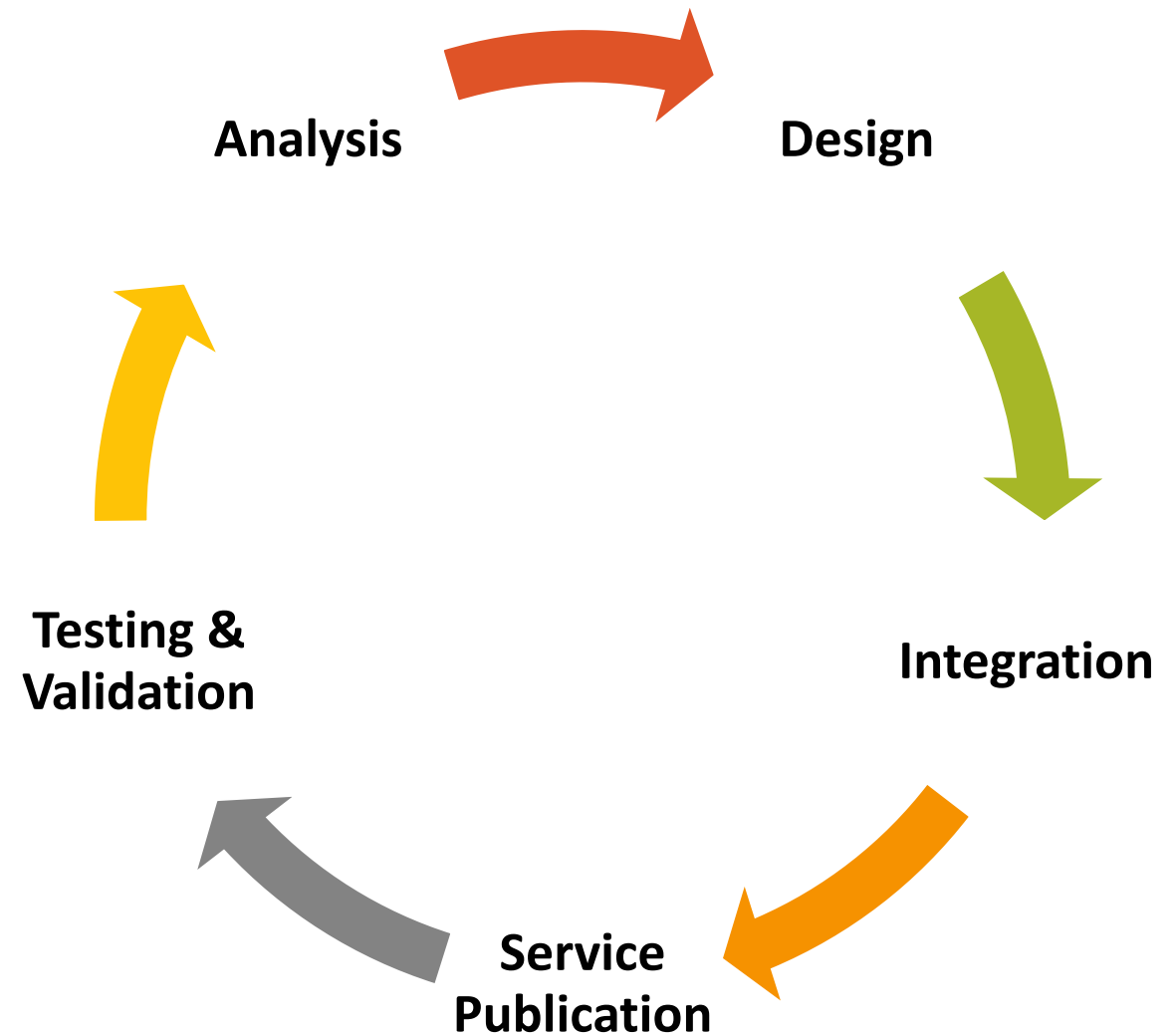
An extended INSPIRE data model for Utility Networks has been created in the frame of the [GeoSmartCity](#) EU funded project.

It extends the INSPIRE core Utility Networks schemas, re-using some elements of the extended schemas present in the INSPIRE draft schema repository and adding new elements (FeatureTypes, DataTypes, Codelists, Associations) needed to match data modelling requirements collected in use cases related to the management of underground networks.

We structured the data modelling requirements on the base of the use requirements specified by the clients involved in the project.

Extension Methodology

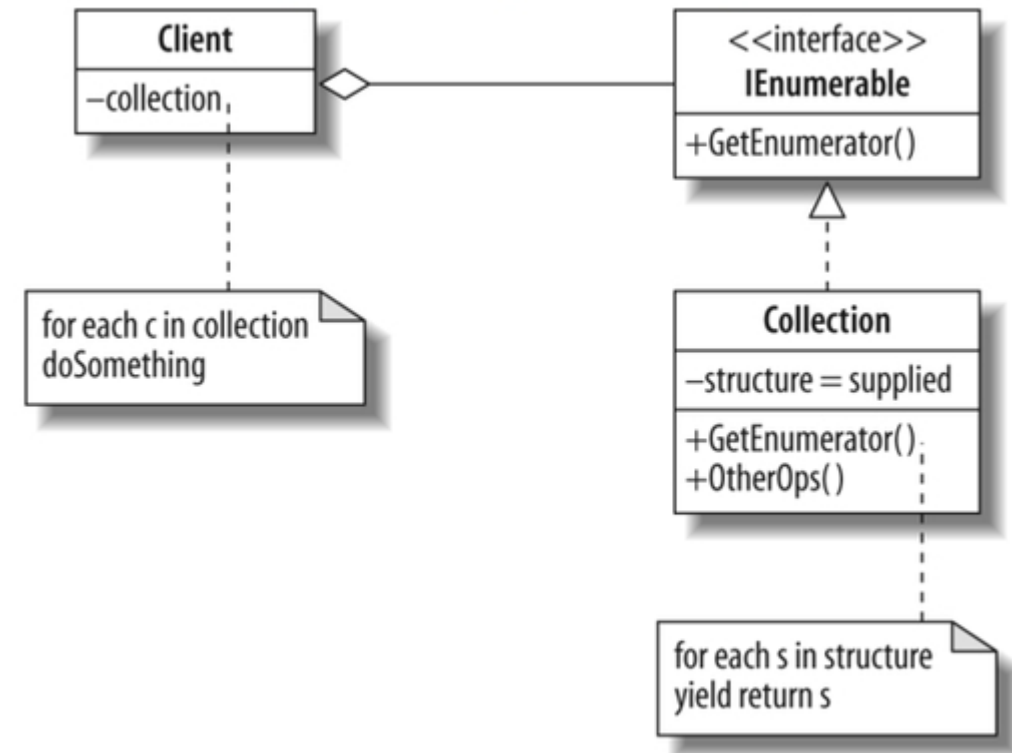
- Provide clear best practices
 - Work Agreements
 - Work Organisation
 - Required Expertise
- Describe a workflow from conceptual model to implementation
- Build on existing documentation
 - ELF Modelling Guidelines
- Describe which resources and communities are available for support
- „You can only improve what you can measure“



Patterns

- Name
- Description
- Simplified UML diagram
- Maintenance considerations
- Implementation considerations
 - Transfer of pattern to logical schema languages
 - Instance size and complexity
- Examples for the pattern from Inventory
- Recommendations on when to use the pattern, and when not to use it

Figure 9-3. Iterator pattern UML diagram



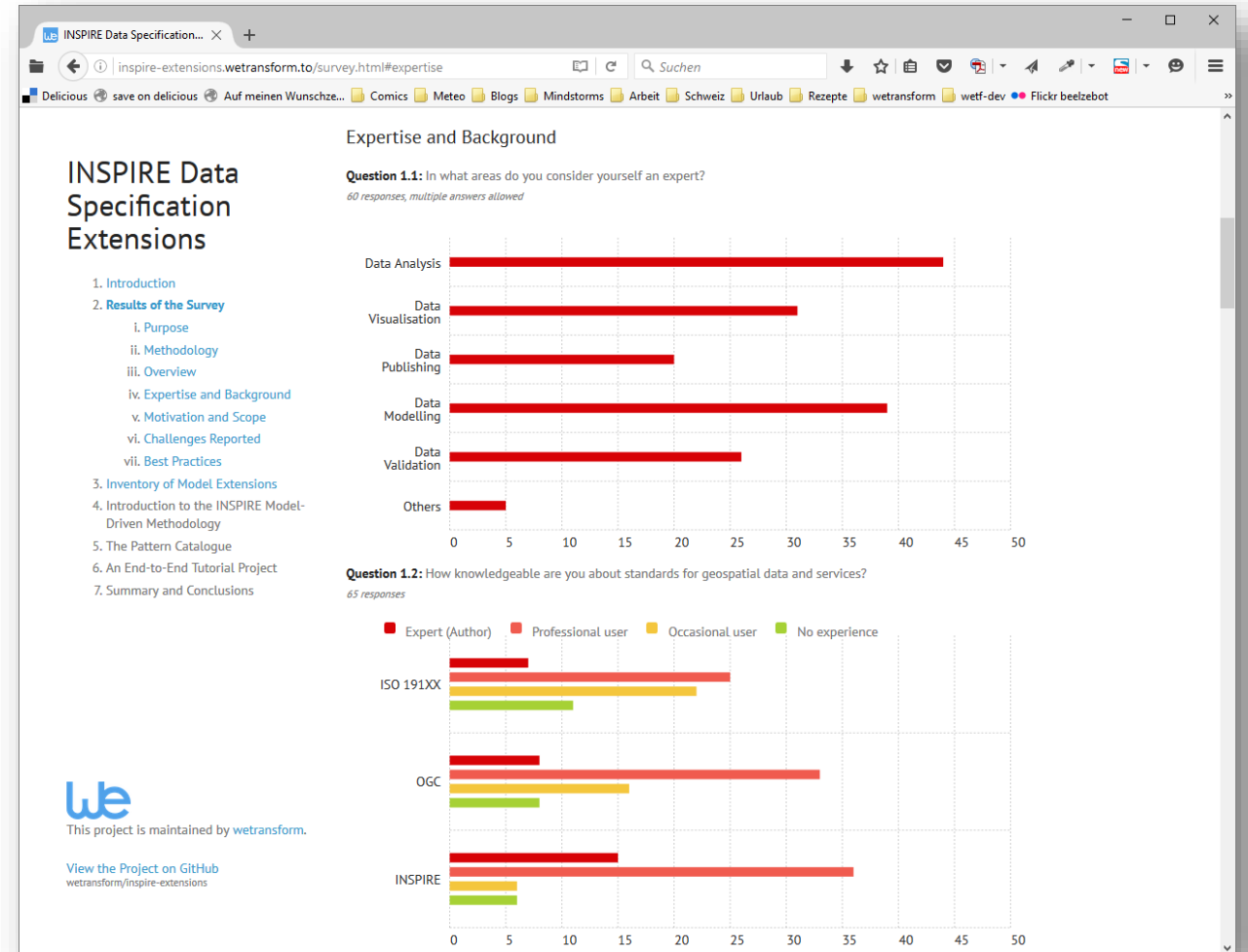
© Judith Bishop, C# 3.0 Design Patterns, O' Reilly, 2008

INSPIRE Extensions

Implementation

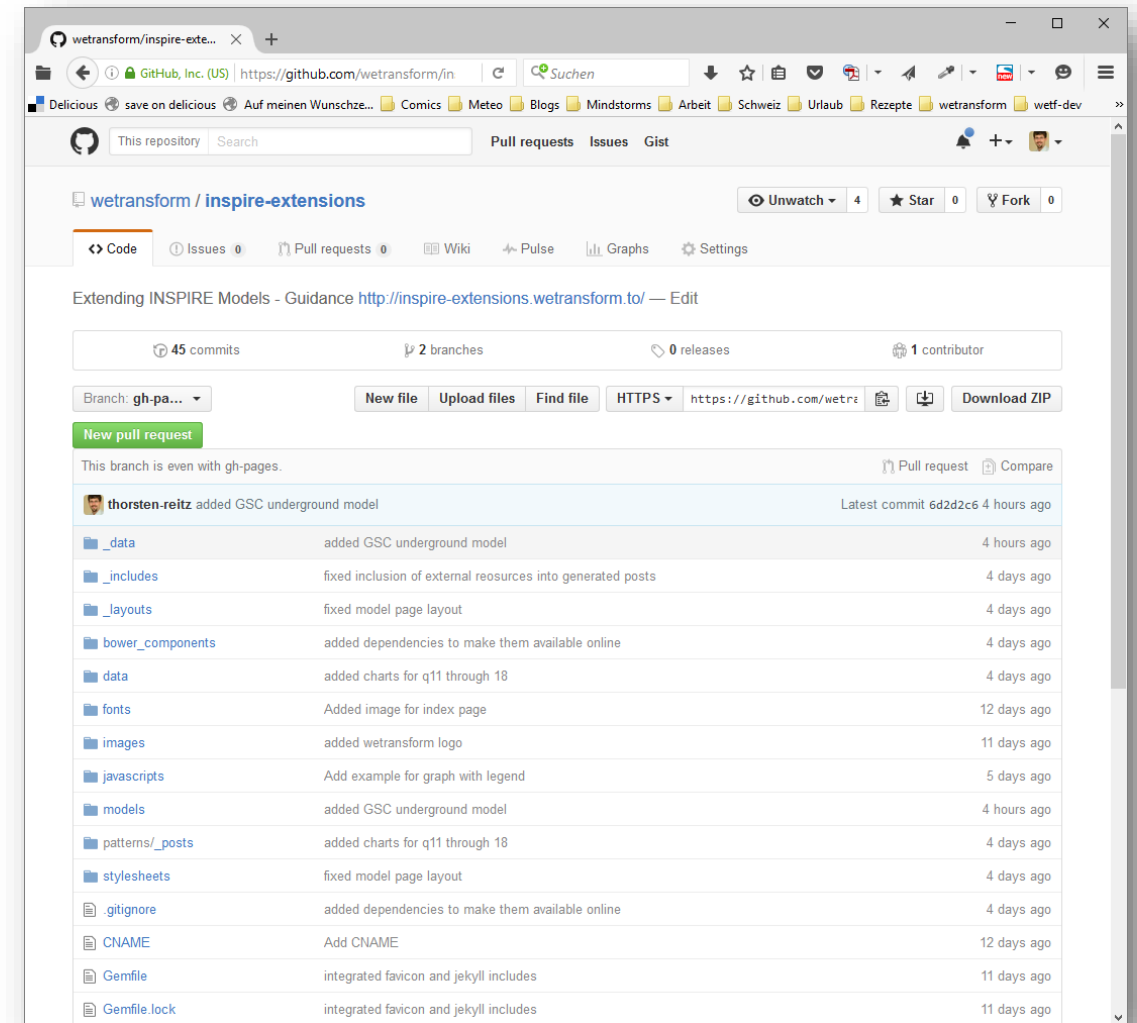
Project implementation

- Study is delivered as an interactive website and uses...
 - Jekyll
 - Chartist
 - Lots of Markdown, HTML and CSS
- The tutorial project/sandbox will use additional resources...
 - inspire»gis services
 - Download Service
 - View Service



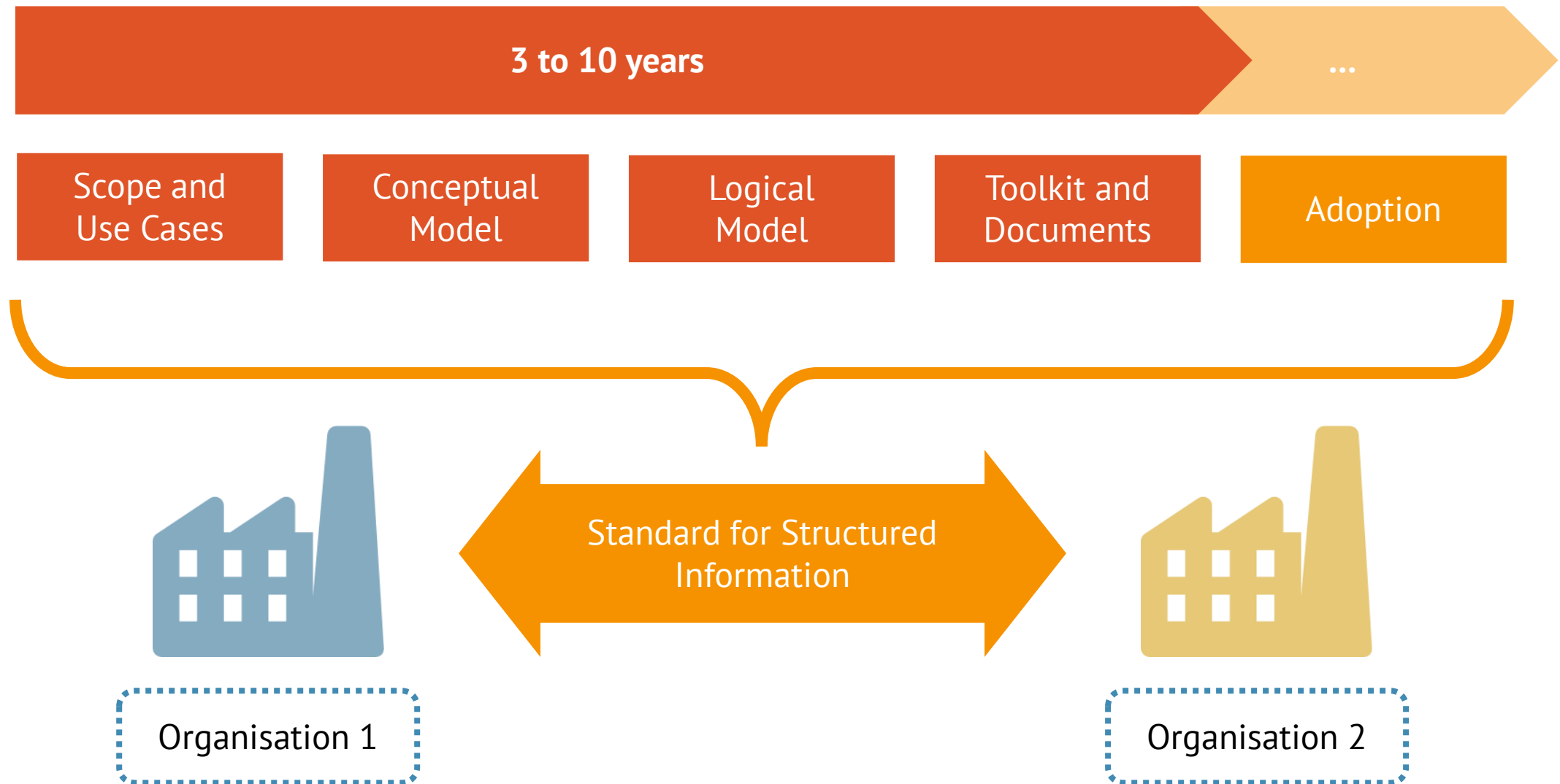
Community Contributions

- Entire study is hosted as a Github page
 - Open by default
 - Study is public from day 1!
- Content License: TBD
- Contribution Process:
 - Fork
 - Edit (Online/Offline)
 - Save *or* Commit & Push
 - Pull Request
 - Merge
 - Deploy



About Agile Standardisation

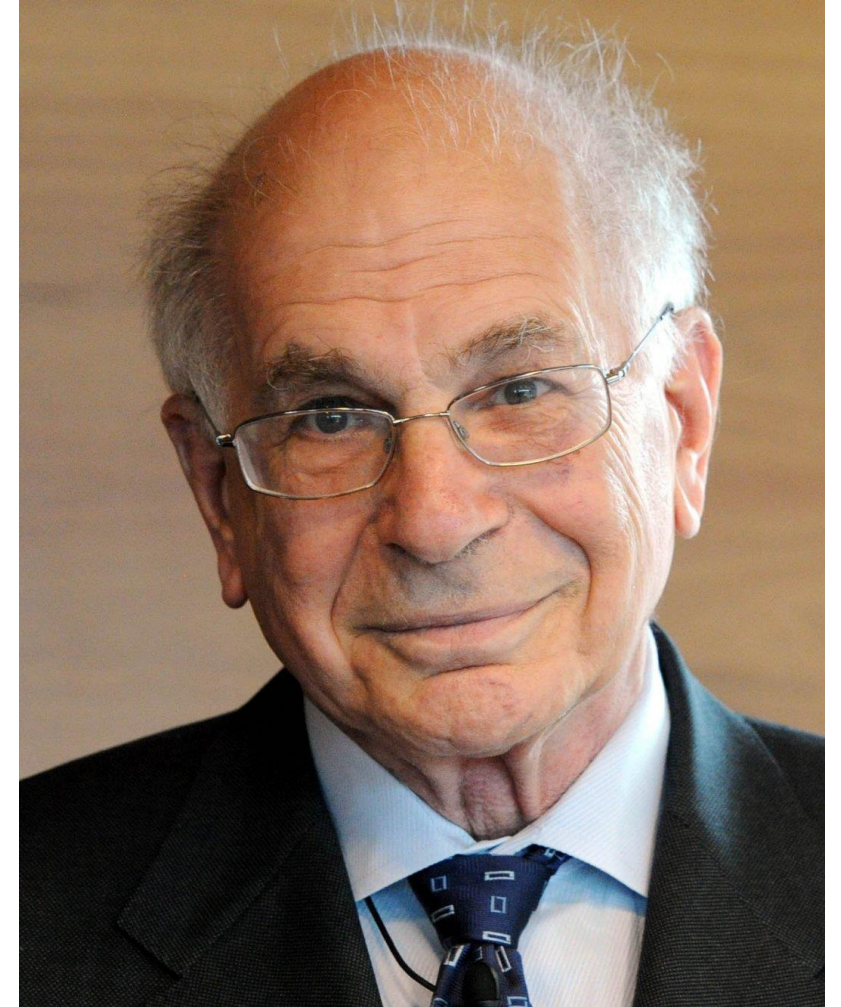
What wetransform does

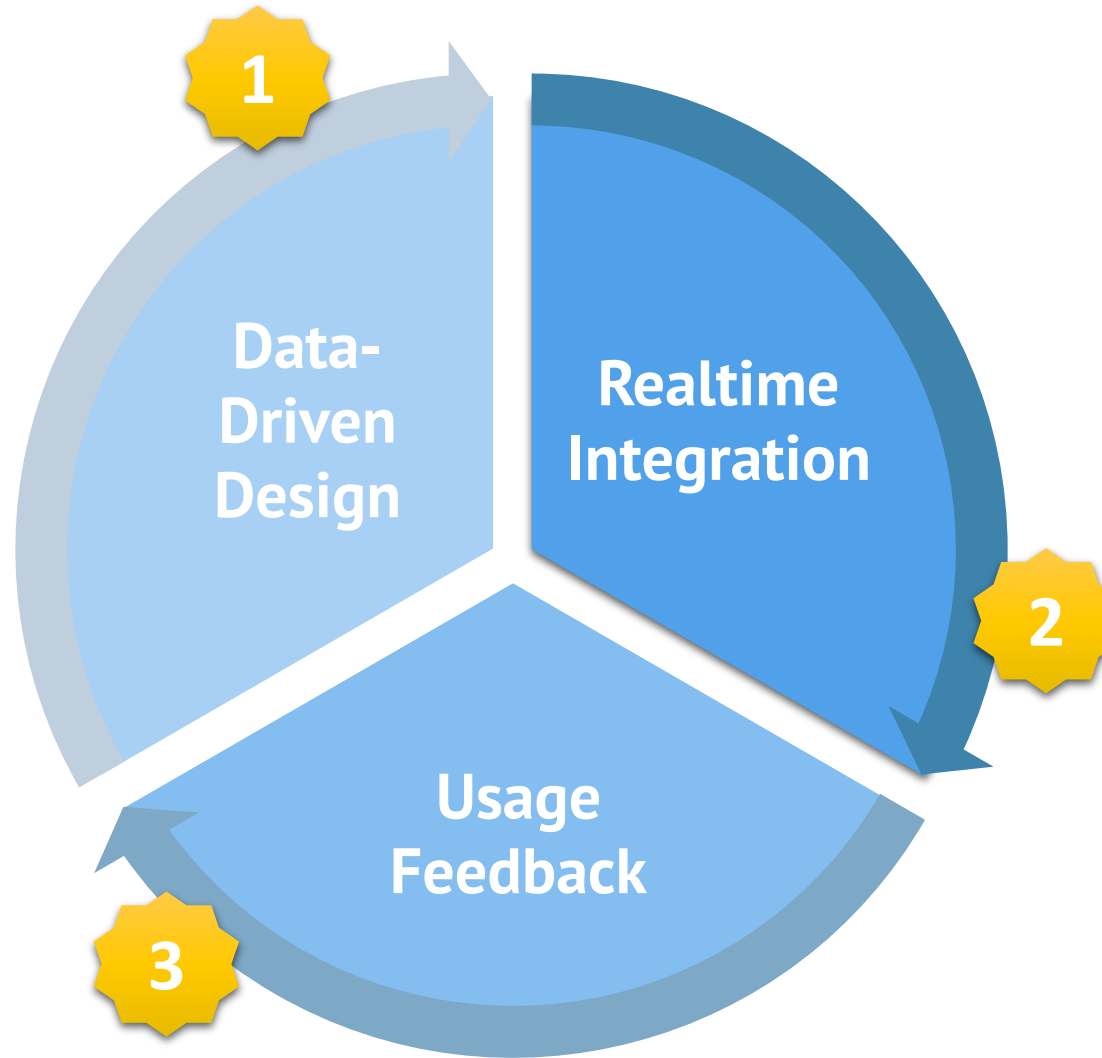


Q: When can Experts make (design) decisions effectively?

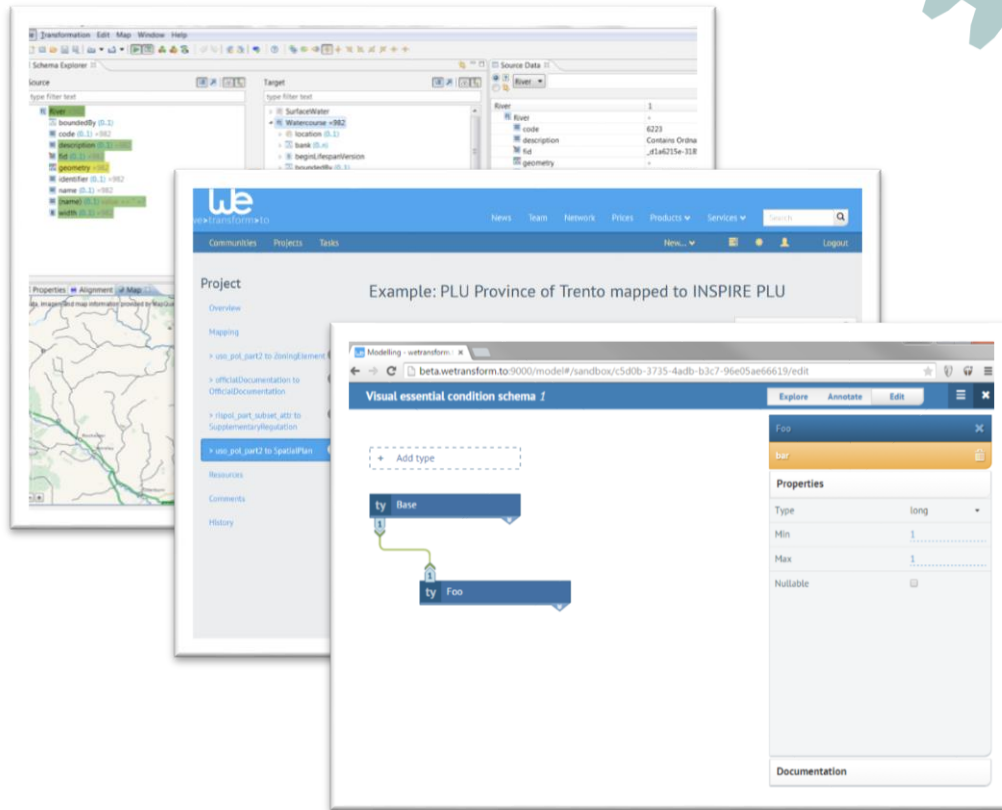
A: They can do so if they are provided with fast feedback.

Daniel Kahneman
Nobel Prize in Economics 2002





The Platform



Transform
Author with real-time feedback

Analyse
Learn how data models are used

Explore
Understand even the most complex data models

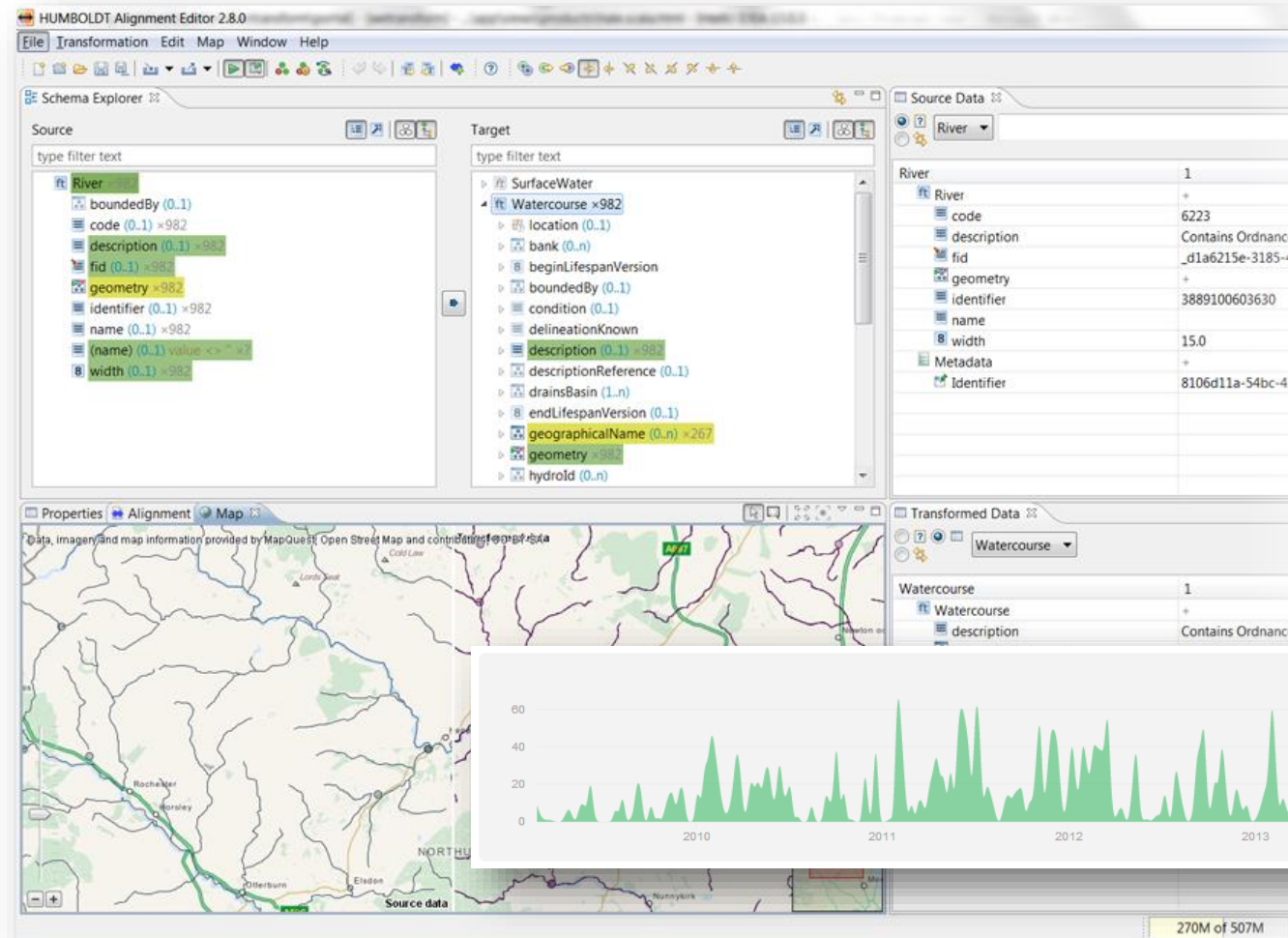
Manage
Integrated workflow from data modelling to transformation and sharing

Design
Create your information model from scratch or start from one of the 5.000+ supported schemas

Publish
Provide data as services and exchange models with your community

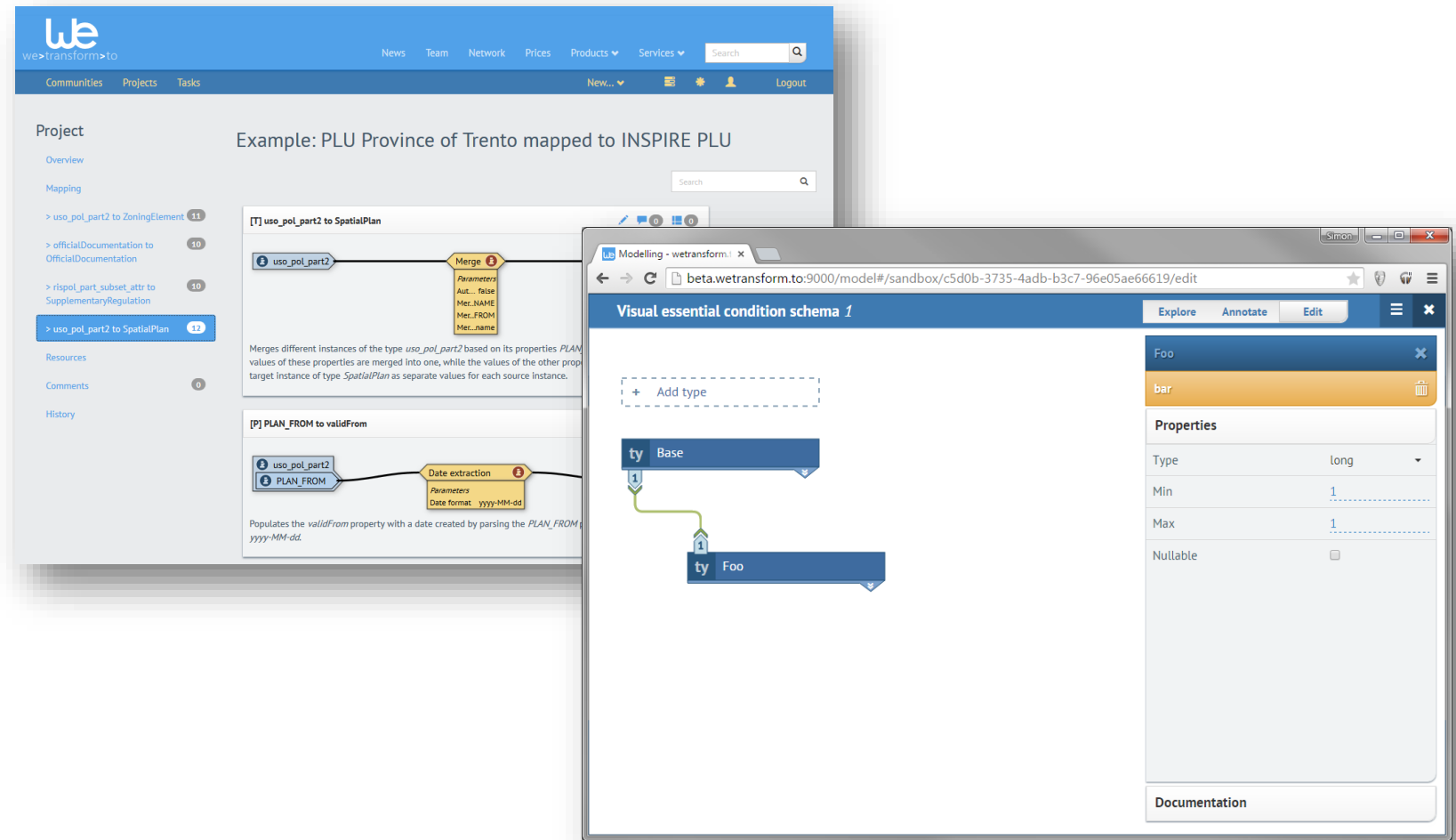
hale»studio

- Explore complex models and data
- Author efficient transformation mappings based on declarative technology
- Get real-time preview, validation and publishing
- Open Source
- Open Platform



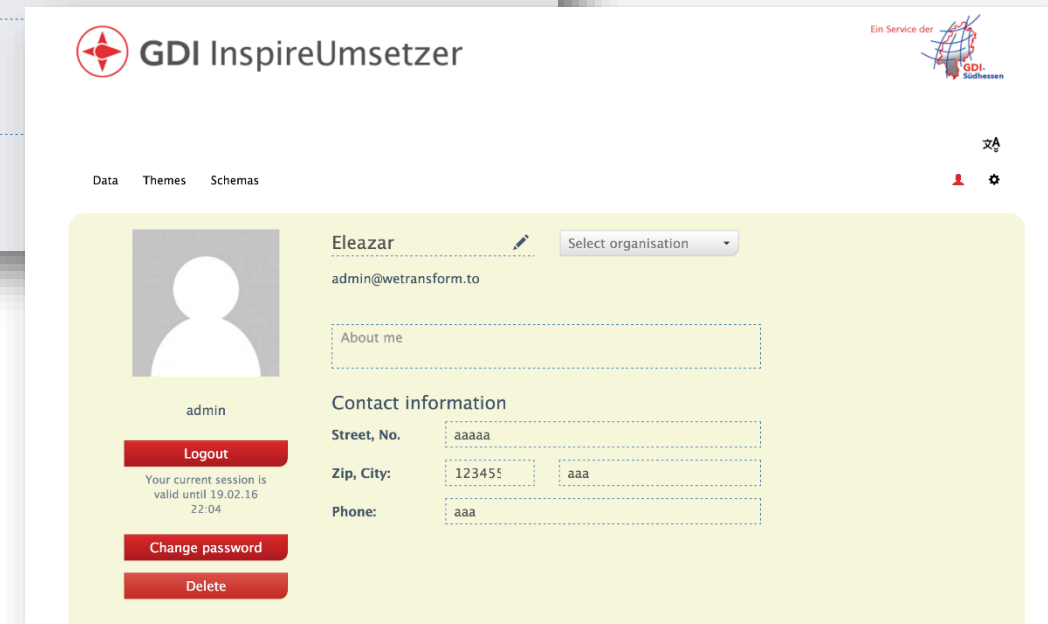
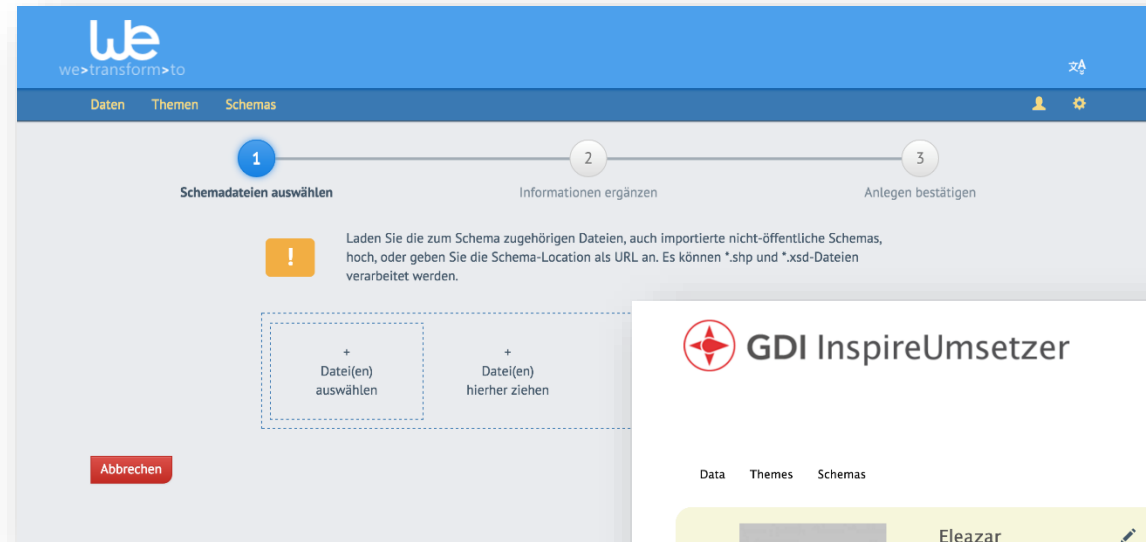
hale»connect

- Re-use and extend of standard models with the explorative Model Editor
- Design – Transform – Publish in one integrated Workflow
- Create Transformation Mappings together with Fork, Diff, Merge, Comment, Discuss
- Use On-Demand scalable Transformation and Download Services
- Foundation for **INSPIRE»GIS**

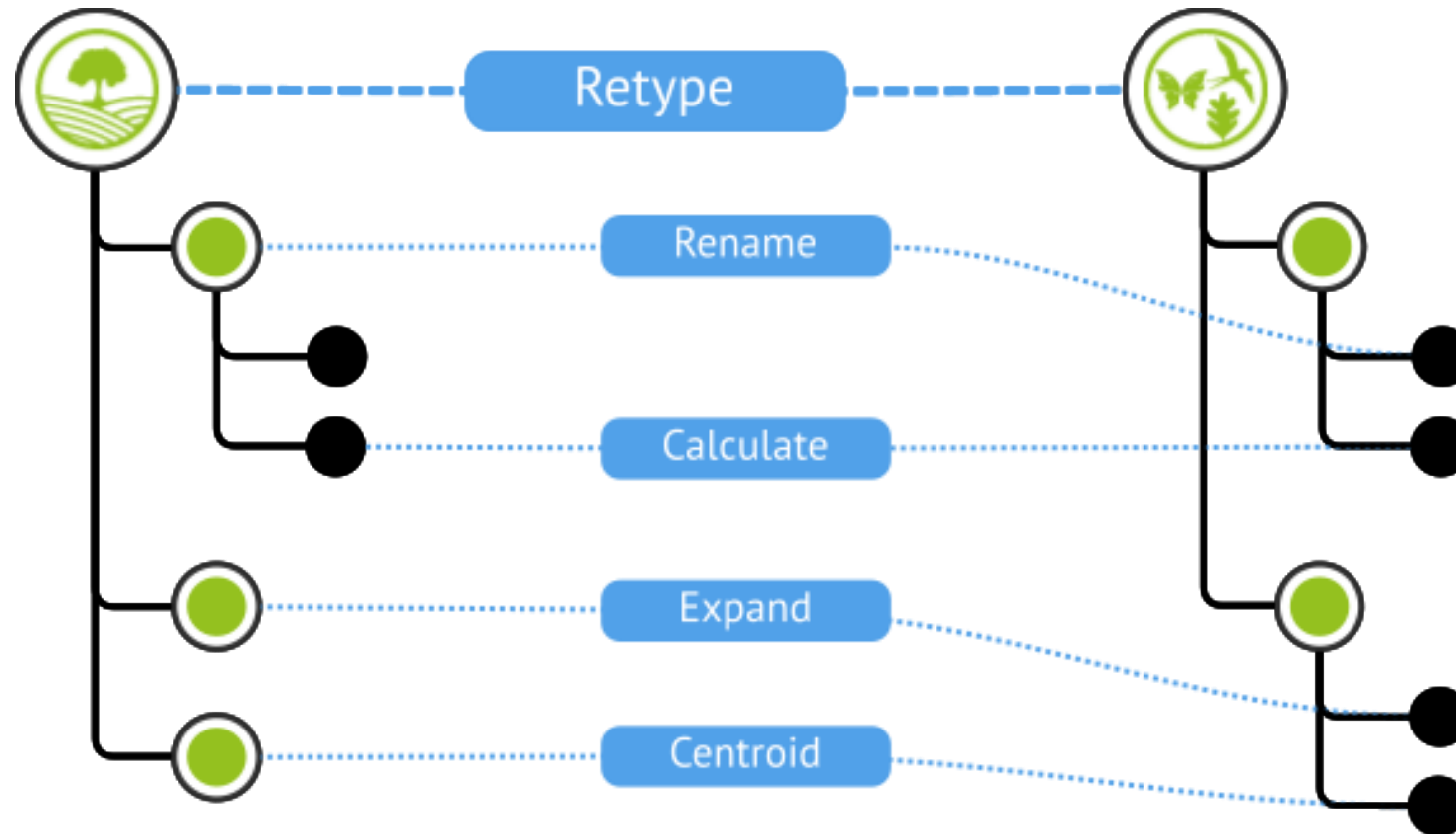


inspire»gis

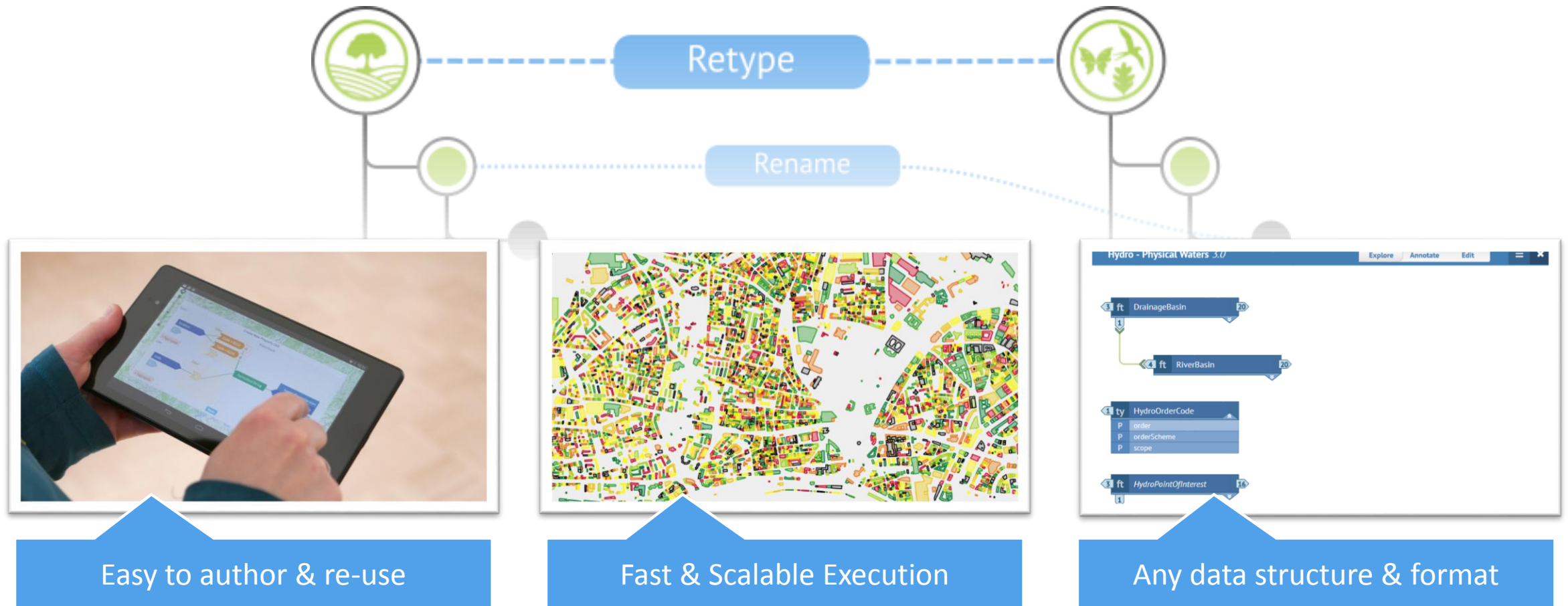
- Private/Public Cloud solution to fulfill INSPIRE obligations
- Complies with INSPIRE Performance rules, European Data Protection Guidelines and ISO 27001
- Constantly updated with new INSPIRE versions
- Metadata integration and publishing
- Highly Cost Effective



The Secret Sauce: Declarative Mapping



The Secret Sauce: Declarative Mapping



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https://twitter.com/tr_xsd