Dealing with INSPIRE complexity

MIG proposal on alternative encodings

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Agenda

1. Basics
2. Rationales
3. MIG action 2017.2: scope and activities
4. Conclusion

Basics: Encoding rule

- See D2.7 Guidelines for encoding of spatial data
- An **encoding rule** is an identifiable collection of **conversion rules,** called the mapping , for converting data in the **instance data model to the exchange format**
- Is **applied** to data schema to produce **system-independent data structures.**
- **INSPIRE default encoding rule:** GML (ISO 19136) and ISO/TS 19139

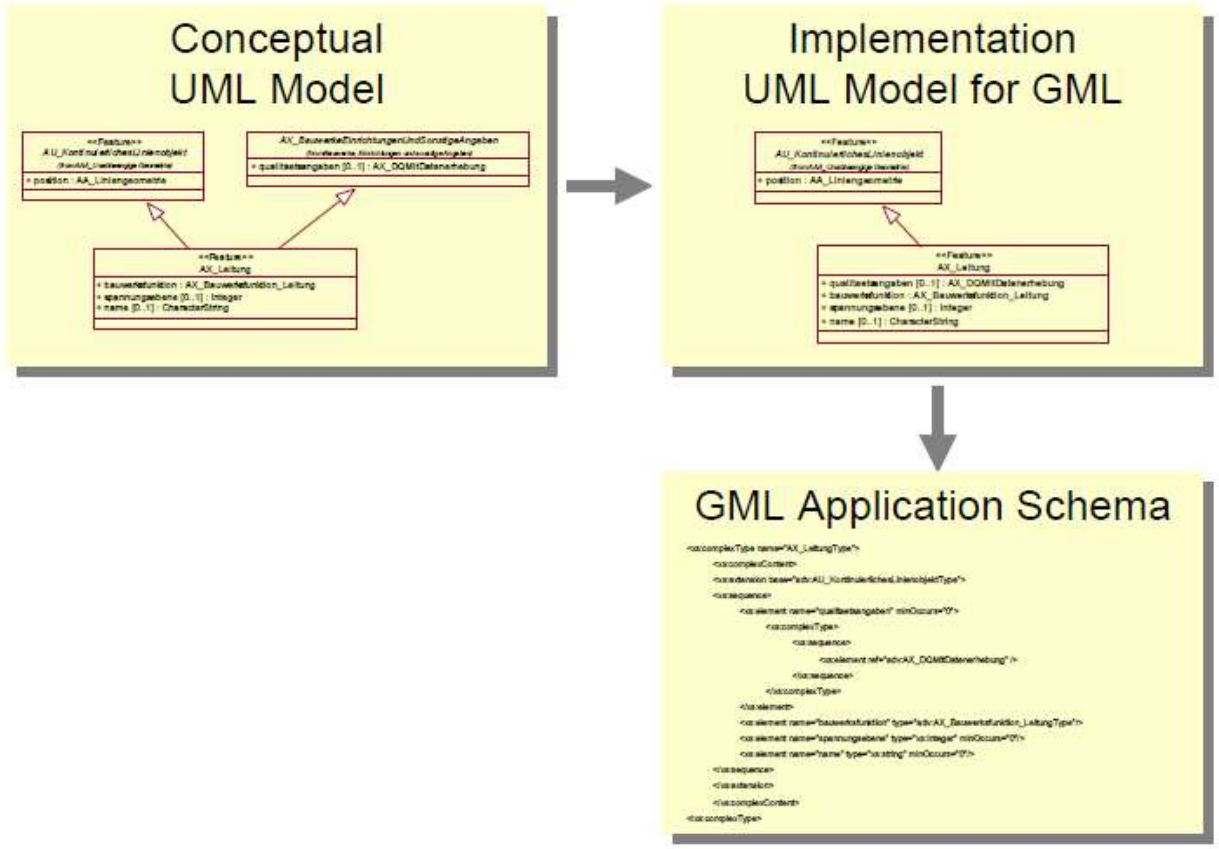

Figure 3 – Process of creating the GML application schema

Basics: Commission Expert Group

2013 - INSPIRE Maintenance and Implementation Group (MIG)

Tasks:

- exchange of **experience and good practice**
- identify and give advice about the **priority issues**
- prepare and regularly update the **work programme**

Supported by :

- one permament technical sub-groupe on technical aspects **(MIG-T)**
- Temporary sub-groups (specific actions)

Regular Meetings:

- montly webmeetings,
- physical meetings (2X/year)

MIG Platform

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Rationales: 05/2014, meeting on usage of GML in INSPIRE

Aim : detect the problems and recommend changes

Findings:

1) Complexity of the INSPIRE data models
   - Geographical names are deeply nested
   - not suited fo viewing application

2) Gap between (complex) INSPIRE schemas and what current tools can support
   - handling GML **big file sizes** (voidable attributes)
   - encoding or decoding **complex features**

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Rationales: 05/2014, meeting on usage of GML INSPIRE

Possible actions:

- Reducing the complexity of INSPIRE
- Encourage better support by vendors

Recommended changes:

- Don’t touch the conceptual schemas
- Create additional implementation schemas for simplified use cases
  - Flattening rules
  - Looking to alternative encoding rules, might differ between themes

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Action 2017.2 (dec17): Alternative encodings for INSPIRE data

Tasks

- Develop **concrete proposals for alternative encodings** (mainly for the purpose of viewing/analysis in mainstream GIS systems) for a number of selected application schemas and use cases.
- a template and **procedure for proposing** and endorsing additional **encoding rules in the future**.
- Aim to achieve **concrete results** within the remaining mandate of the action (**until the end of 2018**)

See: MIWP-2017.2 Alternative encodings.pdf

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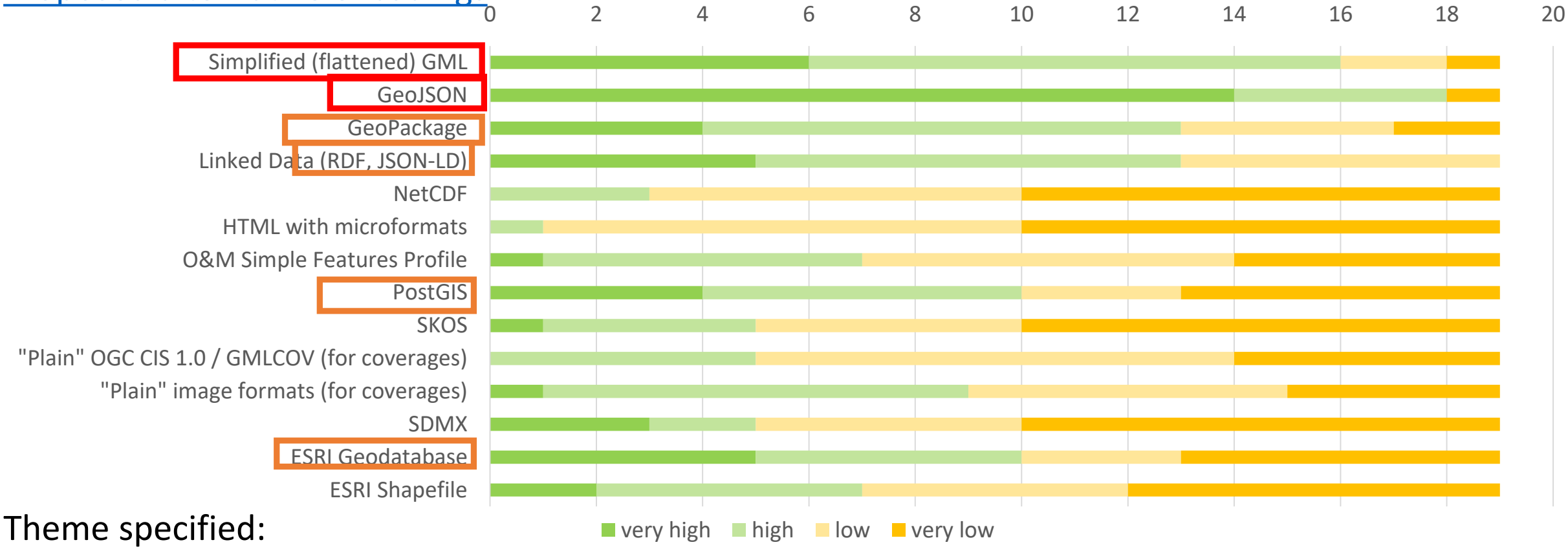
Action 2017.2: Survey on priorities on proposed alternative encodings (march 2018)

Proposed alternative encodings



Theme specified:

- SDMX for Statistics,
- GeoSciML for Geology, Mineral ressources

Action 2017.2: Survey on priorities on proposed alternative encodings (march 2018)

Comments:

- Please **focus on end-users and well-known standards**
- GeoJSON meets the same requirements as Simplified (flattened) GML. The same applies to O&M Simple Features Profile
- We use **intensively PostGIS and GeoJSON** is a flexible, easy-to-integrate format, already widely used
- It is **preferable to solve the INSPIRE complexity at the root** allowing simplified INSPIRE GML data models
- The INSPIRE feature catalog is a good framework for common understanding. Some respondents **doubt the effectiveness of setting up single data models and schemas that would fit all purposes.** Following the example of the Hydrography theme, we could **agree on several (simple) data schemas** for one theme **according to the usage** (mapping, spatial analysis and/or e-reporting)
- **ESRI formats** preferred but **with rather mixed views from data providers**. **For raster data GeoTIFF was also suggested.** Furthermore, ASCII format (e.g. marine data) was brought up as one preferred alternative.

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Action 2017.2: priorities

- developing **an encoding rule for GeoJSON** (as a first example) :clear definition of the purpose(s) the proposed GeoJSON encoding will be used for.
- **developing generic rules / approaches for flattening the INSPIRE data models** (which will be useful for a number of alternative encodings) an also generally simplification rules (needed **for the collected alternatives encodings**)
- **developing the overall procedure for** proposing and endorsing **additional encodings** (how whether a proposed alternative encoding fully or only partly meets the INSPIRE requirements)

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Action 2017.2: set-up working group (13 expert

- Peter Parslow (UK); James Passmore (UK);
- Paul Janssen (NL);
- Nicolas Hagemann (DE); Clemens Portele (DE);
- Karin Wannemacher (AT);
- Pawel Soczewski (PL);
- Jouni Vuollo (FI);
- Tom Ellett von Brasch (NO);
- Nathalie Delattre (BE);
- Ilkka Rinne (FI);
- Heidi Vanparys (DK);
- Marie Lambois (FR)

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Action 2017.2: WG activities

Meetings:

- Kick-off meeting : July 2018
- Monthly webinars
- One physical meeting: Dec 2018

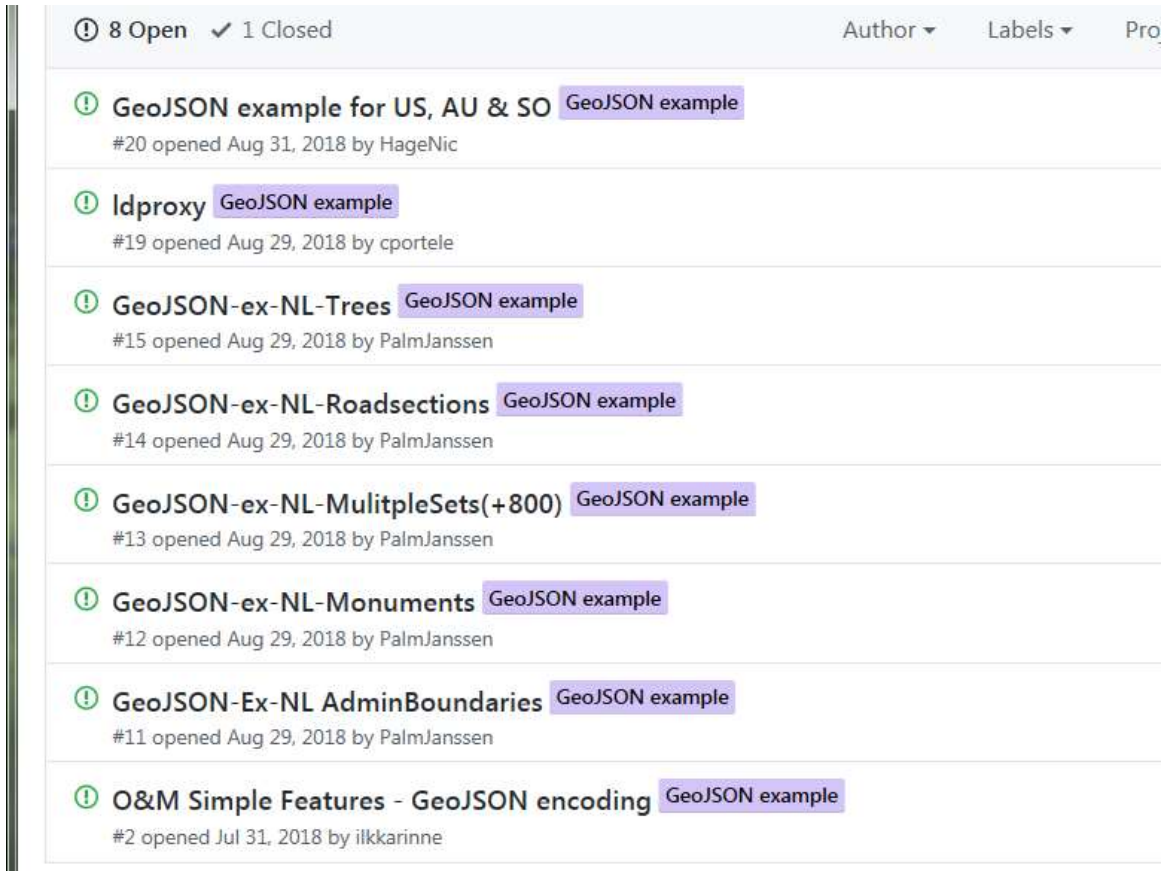
Actions:

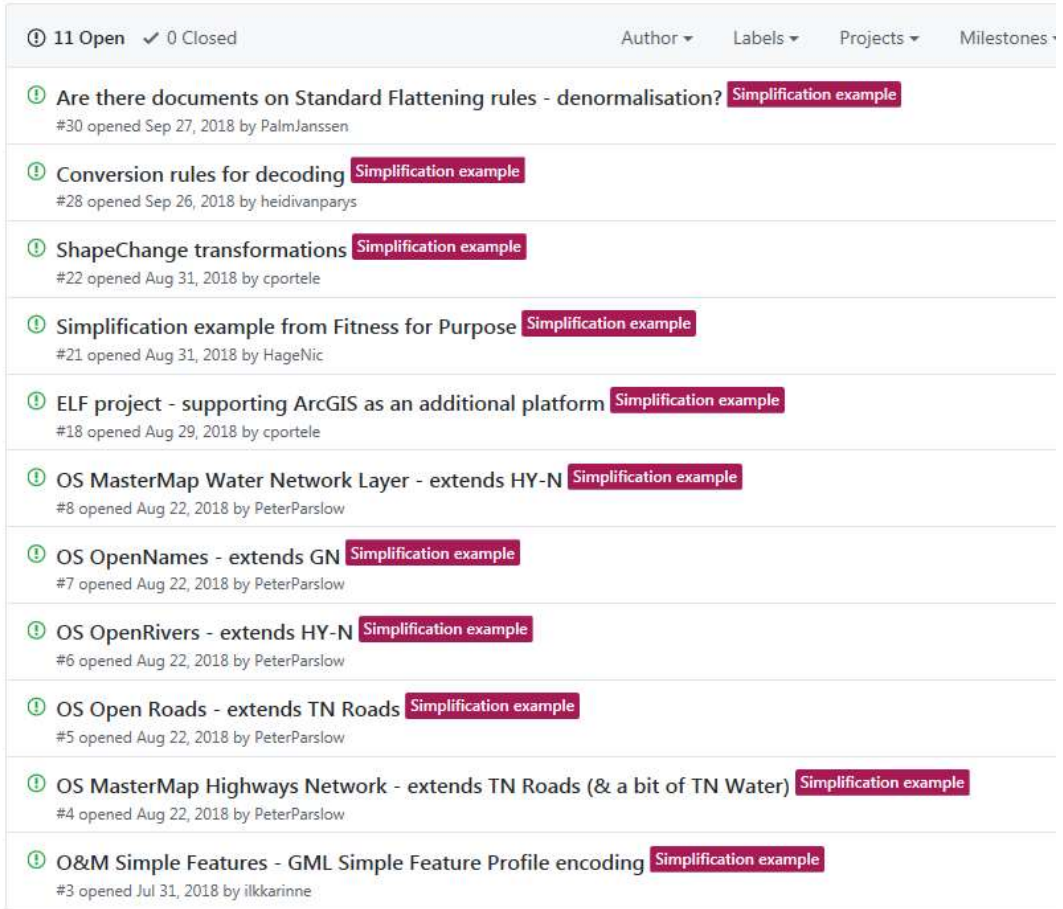
- Collecting best practices examples on data schema simplifications
- The approach for GeoJSON and/or the simplification rules used for a number of themes
  - Air Quality Directive, Adresses, Geographical names, Area Management

[See Wiki pages]

Action 2017.2: best practices examples

https://github.com/INSPIRE-MIF/2017.2/issues





Action 2017.2: discussions

Should the simplification rules include extensions?

- Additional properties were **used to simplify use** of the provided data, “extensions" should be added in the GP document on simplification rules that explains this aspect.

Should we include simplification based on UML implementation models? YES

- For intermediate simplification steps at the UML model level

Action 2017.2: discussions

Generic vs theme-specific rules (for which themes)? YES

- a list of generic simplification rules that can be applied to create an encoding and **specific to a theme**
- a default s**ubset** of these rules **applied to all themes** (wherever possible)

Should the GeoJSON encoding rules include simplification rules? YES

- To improve usability of INSPIRE data in standard GIS client applications

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Conclusions

- **Impact** of the potential changes in INSPIRE **still unknown**.
- DK proposal: consistent way of documenting conversion **rules for decoding.**
- INSPIRE tendances:
  - simplification
  - avoiding the burden of implementation
  - fit for purpose : environmental needs
  - better use and usage (adapted to new tools and technologie)

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