GeoPackage

MIG-T

GeoPackage examples

will be updated in the near future

new since last time

Country	Theme	Comment
DK	Addresses	The Danish Agency for Data Supply has published a first draft of a GeoPackage file with all Danish addresses (11 GB). See the metadata at https://geodata-info.dk/srv/eng/catalog.search#/metadata/50b921ea-935e-d605-2287-4ee364046795, and see some background information in [the (updated) presentation from the 62nd MIG-T meeting](https://webgate.ec.europa.eu/fpfis/wikis/display/InspireMIG/62nd+MIG-T+meeting+2020-07-02?preview=/527439698/580880283/20201012%20MIG-T%20GeoPackage%20-%20updated.pptx). See also https://github.com/INSPIRE-MIF/gp-geopackage-encodings/issues/5
FI	topographic themes	Finnish topographic database is a geopackage, which consists of 120+ feature types (database layers). The size of geopackage is 73 GB (zipped 26 GB). All geometry columns are spatially indexed. Finnish topographic database is downloadable here: https://tiedostopalvelu.maanmittauslaitos.fi/tp/kartta?lang=en . See also https://github.com/INSPIRE-MIF/gp-geopackage-encodings/issues/7
FI	topographic themes	NLSFI has implemented experimental prototype serving topographic database content as Geopackage using OGC API Features. An example: http://xxxxx/mtkgml/collections/rakennus/**items?f=gpkg&limit=1000**&crs=http://www.opengis.net/def/crs/EPSG/0/3067 . Output: items.gpkg (attached): > [items.zip](https://github.com/INSPIRE-MIF/gp-geopackage-encodings/files/5499679/items.zip). See also https://github.com/INSPIRE-MIF/gp-geopackage-encodings/issues/8
EEA	Transport networks (roads, railways, airports), Area management, Human Health	The new Environmental Noise Directive (END) reporting mechanism includes alignment between the END reporting obligations and INSPIRE data specifications (INSPIRE Directive). The selected format for spatial data exchange is GeoPackage. In the scope of the END reporting, we developed encoding rules for GeoPackage format based on the previous work on INSPIRE alternative encodings and simplification. This would allow a transformation between GeoPackage and GML (INSPIRE) formats. The predesigned GeoPackage templates for the END reporting have been developed to facilitate the reporting data flows in Reportnet 3.0, data transformation and creation of GeoPackage files. More information is published at https://www.eionet.europa.eu/reportnet/docs/noise , including GeoPackage templates and data samples (mostly simulated data based on previously reported noise data) in GeoPackage format. END GeoPackage encoding guidelines: https://www.eionet.europa.eu/reportnet/docs/noise/guidelines/geopackage-encoding-rule-end.pdf GeoPackage templates: https://www.eionet.europa.eu/reportnet/docs/noise/templates

https://github.com/INSPIRE-MIF/gp-geopackage-encodings/blob/main/examples/overview.md

https://github.com/INSPIRE-MIF/gp-geopackage-encodings/issues/17

Standardise code list values

Issue

How to

- avoid repeating full URLs in a GeoPackage file
- ensure that the exact value from the code list is unambiguous

administrativeunit

nationallevel	…
1	…
2	…
2	…
…	…

gpkg_data_columns (table defined in GeoPackage schema extension)

table_name	column_name	…	constraint_name
administrativeunit	nationallevel	…	administrativehierarchylevel
…	…	…	…

gpkg_data_column_constraints (table defined in GeoPackage schema extension)

constraint_name	column_type	value	…
administrativehierarchylevel	codelist	https://inspire.ec.europa.eu/codelist/AdministrativeHierarchyLevel/	…
…	…	…	…

requires new/updated GeoPackage extension

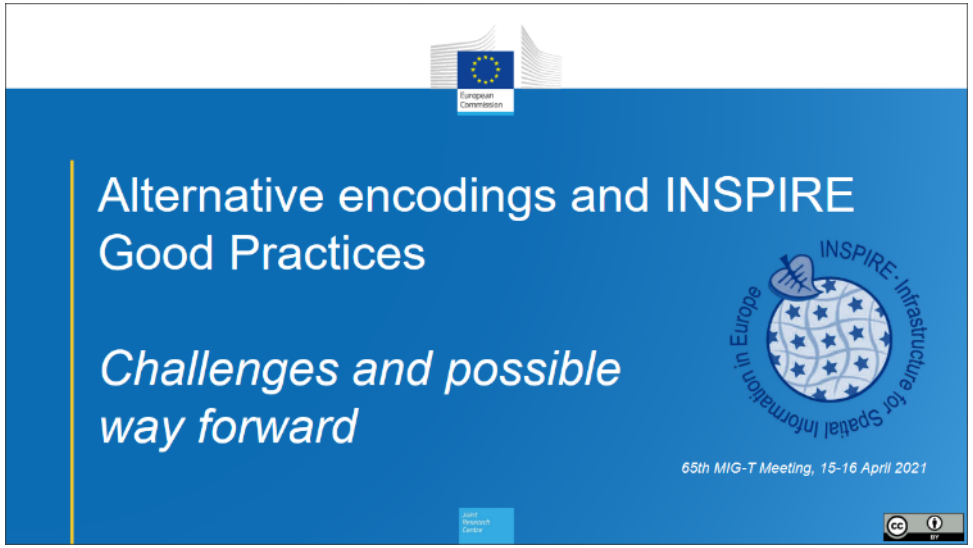
GPKG file

INSPIRE register

ID	Label	Notation	…
http://inspire.ec.europa.eu/codelist/AdministrativeHierarchyLevel/1stOrder	1st order	1	…
http://inspire.ec.europa.eu/codelist/AdministrativeHierarchyLevel/2ndOrder	2nd order	2	…
http://inspire.ec.europa.eu/codelist/AdministrativeHierarchyLevel/3rdOrder	3rd order	3	…
http://inspire.ec.europa.eu/codelist/AdministrativeHierarchyLevel/4thOrder	4th order	4	…
http://inspire.ec.europa.eu/codelist/AdministrativeHierarchyLevel/5thOrder	5th order	5	…
http://inspire.ec.europa.eu/codelist/AdministrativeHierarchyLevel/6thOrder	6th order	6	…

requires update of INSPIRE code list register content

Data encoding good practices



The issues

- The existing model and encoding-specific rules (e.g. for GeoJSON) are defined on a high level only
- Implementation decisions by following the rules can be very different
- Having 34 good practices per encoding is not feasible
- It is not feasible to replicate all the ETS for the Reference validator for all encodings

Possible way forward

Step 1. Data encoding

Data should be encoded through the alternative encoding (e.g. GPKG or GeoJSON) by following the provisions of the INSPIRE UML models and/or Application schemas. When encoding the data the following should be consulted:

1. Model transformation rules that are encoding-agnostic, and
2. Encoding-specific rules developed per each data encoding (e.g. for GeoJSON, GeoPackage, etc.)

Step 2. Describe the mapping to the default encoding

Once the data instances prepared in accordance with Step 1. are generated, mapping to the default INSPIRE encoding (XML) should be made available together with an example excerpt of a dataset on GitHub through at least one of the following means:

1. Executable transformation script, incl. software-specific approaches that can be replicated.
2. INSPIRE Matching tables. Ideally, this should be done on the level of physical/format level, e.g. through mapping of xpaths versus jsonpaths, e.g.:

GML	GeoJSON
Ad:Address/inspireId/localId	$.properties.inspireId_localId
Ad:Address/inspireId/namespace	$.properties.inspireId_namespace
...	...

Step 3. Data validation

Confirming the approach through the INSPIRE reference validator can be achieved through deriving and validating GML instances based on the mapping performed in Step 2. The GML instances and the test report from the INSPIRE reference validator (html) should be made available.

status of:

- model transformation rules
- INSPIRE UML-to-GeoJSON encoding rule
- UML-GeoPackage initial work

Feedback would be welcome

- code list values: https://github.com/INSPIRE-MIF/gp-geopackage-encodings/issues/17
- data encoding good practices (65th MIG-T meeting)

Data encoding good practices
• Challenges and Proposed approach (JRC)
• GeoPackage (DK, EEA)
	• The Challenges and a proposed approach for the evolution of alternative encodings in INSPIRE were presented by the JRC. The possible stepwise approach includes three consequent steps:
	  • Step 1. Data encoding,
	  • Step 2. Description of the mapping to the default encoding, and
	  • Step 3. Data validation.
	☐ MIG-T members to provide comments to the proposed approach for alternative encodings on GitHub through the means of Issues in the dedicated repository.
	• GeoPackage work is ongoing and could be followed on the corresponding GitHub repository.

Next steps

- Receive feedback
- Draft proposal regarding code lists, for submission to OGC
- Decoupling rules from END GeoPackage encoding into generic encoding rules
- Update INSPIRE code list register

(unless the feedback indicates otherwise of course)