

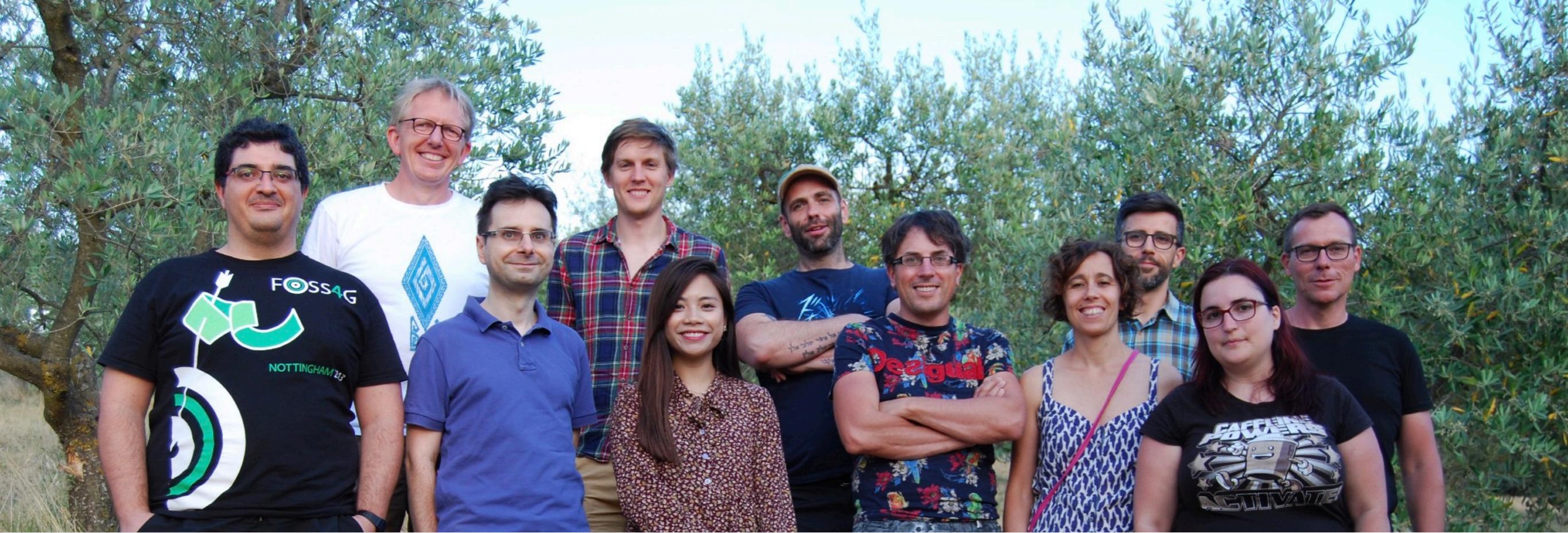


SLD+OWS Context extensie voor GeoPackage om projecten uit te wisselen tussen GIS platformen

geocat.net/bridge

Anton Bakker, Paul van Genuchten





- 11 medewerkers NL en ES
- Oprichter van het GeoNetwork project
- Diensten rond de OSGeo Stack
- Dit jaar 10 jarig jubileum







EN EXPORTEREN NAAR QGIS?

GEOPACKAGE

- Enkel bestand voor diverse data lagen en gerelateerde zaken
- OGC standaard
- Opslag voor Vector, Raster en Tile sets
- Gebaseerd op SQLite, dus hoge mate van ondersteuning
- Extensie mechanisme
- Official metadata extension
- Reeds ondersteund door GeoCat Bridge voor transport naar Geoserver

GeoPackage



An Open Format for Geospatial Information

GeoPackage is an open, standards-based, platform-independent, portable, self-describing, compact format for transferring geospatial information.

The GeoPackage Encoding Standard describes a set of conventions for storing the following within an SQLite database:

- vector features
- tile matrix sets of imagery and raster maps at various scales
- attributes (non-spatial data)
- extensions

To be clear, a GeoPackage is the SQLite container and the GeoPackage Encoding Standard governs the rules and requirements of content stored in a GeoPackage container. The GeoPackage standard defines the schema for a GeoPackage, including table definitions, integrity assertions, format limitations, and content constraints. The required and supported content of a GeoPackage is entirely defined in the standard. These capabilities are built on a common base and the extension mechanism provides implementors a way to include additional functionality in their GeoPackages.



GeoPackage Extensions

This page lists GeoPackage extensions that are not currently part of the GeoPackage Encoding Standard. Often these are developed outside of OGC. It is often preferable to use an existing extension (even if it is proprietary) instead of developing your own. Extensions that have widespread adoption will be considered for OGC approval.

Related Tables

This extension provides a mechanism for associating tables with existing feature or attribute tables in a GeoPackage. Among other things, it can be used to establish a many-to-many relationship between features and multimedia files. It was originally developed by Compusult and the plan is to test it during an upcoming OGC Interoperability Experiment.

Feature Tile Link

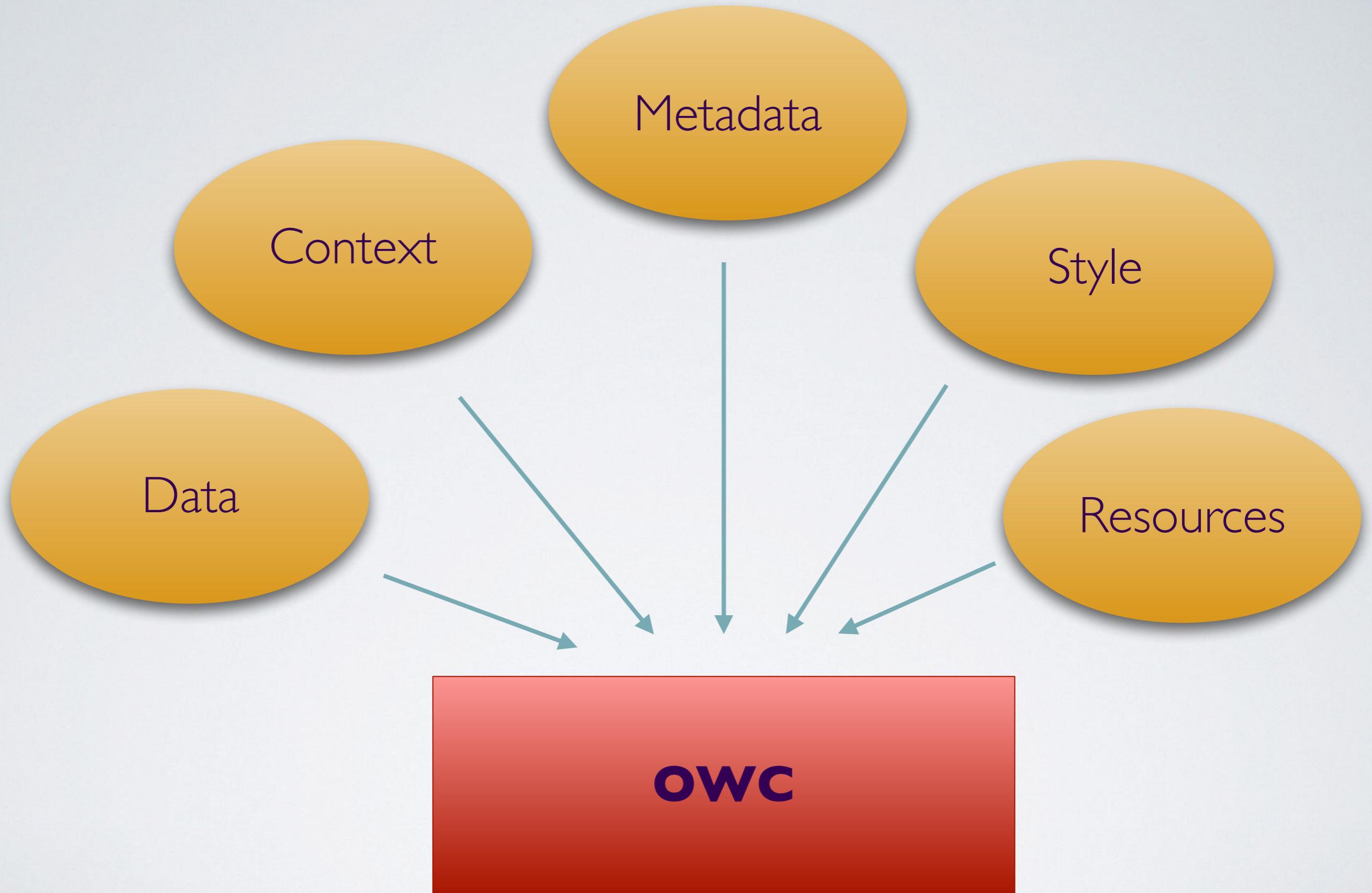
This extension creates a link between a feature and tile table. A tile table containing tiles that represent or were generated from features can be linked to the feature table. The link enables feature queries when dealing with tiles representing features.

Geometry Index

This extension defines a SQLite version agnostic way to index user feature table geometries by their bounding envelopes for fast ranged searches. Mobile implementations, including Android and iOS, use earlier versions of SQLite and can not rely on the R*Tree Module implementation. Each geometry in a feature table is indexed by its geometry id and x, y, z, and m value ranges. The geometry index can be queried for fast retrieval of only geometries overlapping a desired envelope bounds.

Aspatial Support (Legacy)

Support for aspatial data (ie. SQLite tables/views without a geometry column), potentially with associated metadata. This was used in GDAL 2.0 and GDAL 2.1, before the introduction of the 'attributes' data_type of GeoPackage v1.2. Starting with GDAL 2.2, 'attributes' will be used by default instead.



OWS-CONTEXT

- OGC standaard voor uitwisselen context
(laag volgorde, groepen, uitsnede, projectie)
- 3 encodings (XML, Atom & json (draft))
- Uitbreiding om te kunnen refereren naar
locale tabellen.

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  <id>http://www.geocat.net/maps//layers/Zettingsgevoeligheid</id>
  <title>Zettingsgevoeligheid</title>
  <updated>2017-07-19T20:28:44</updated>
  <category
    scheme="http://www.opengis.net/spec/owc/active"
    term="true" />
  <owc:offering
    code="http://www.opengis.net/spec/owc-atom/1.0/req/gpkg">
    <owc:content
      type="application/x-sqlite"
      href="#table=Zettingsgevoeligheid" />
    <owc:styleSet>
      <owc:name>Zettingsgevoeligheid</owc:name>
      <owc:title>Zettingsgevoeligheid</owc:title>
      <owc:content
        href="#table=owc_style&name=Zettingsgevoeligheid"
        type="application/sld+xml" />
    </owc:styleSet>
  </owc:offering>
</entry>
```

METADATA

- Officiële extensie van GeoPackage
- Uitbreiding om locale resources te refereren
(thumbnails, pdf's etc)

STYLED LAYER DESCRIPTOR

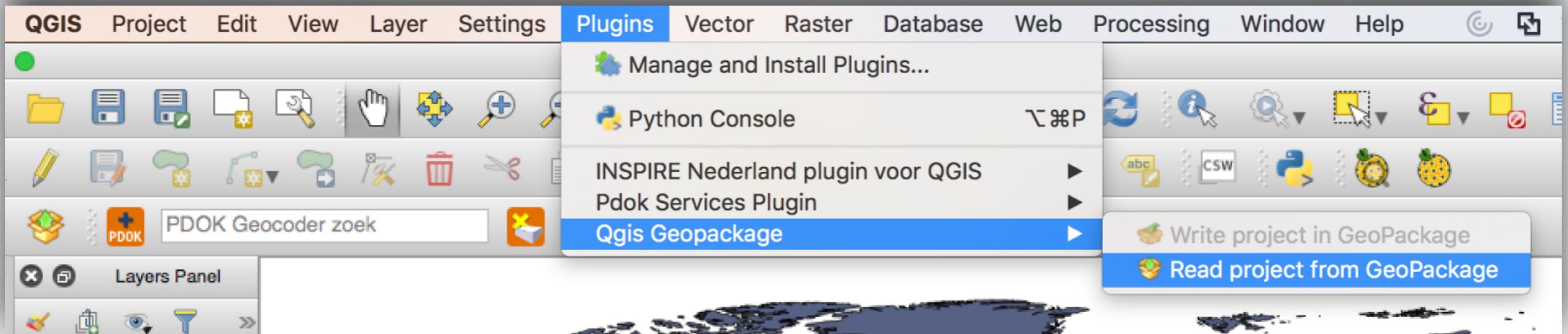
- OGC standaard
- Support in QGIS, Geoserver, deegree en OpenLayers
- SLD reeds in basis van Bridge

OWC EXTENSIE

- ▶ gpkg_contents
- ▶ gpkg_geometry_columns
- ▶ gpkg_metadata
- ▶ gpkg_metadata_reference
- ▶ gpkg_spatial_ref_sys
- ▼ owc_context
 - name
 - abstract
 - author
 - timestamp
 - language
 - mime_type
 - content
- ▼ owc_style
 - name
 - abstract
 - mime_type
 - content
 - timestamp

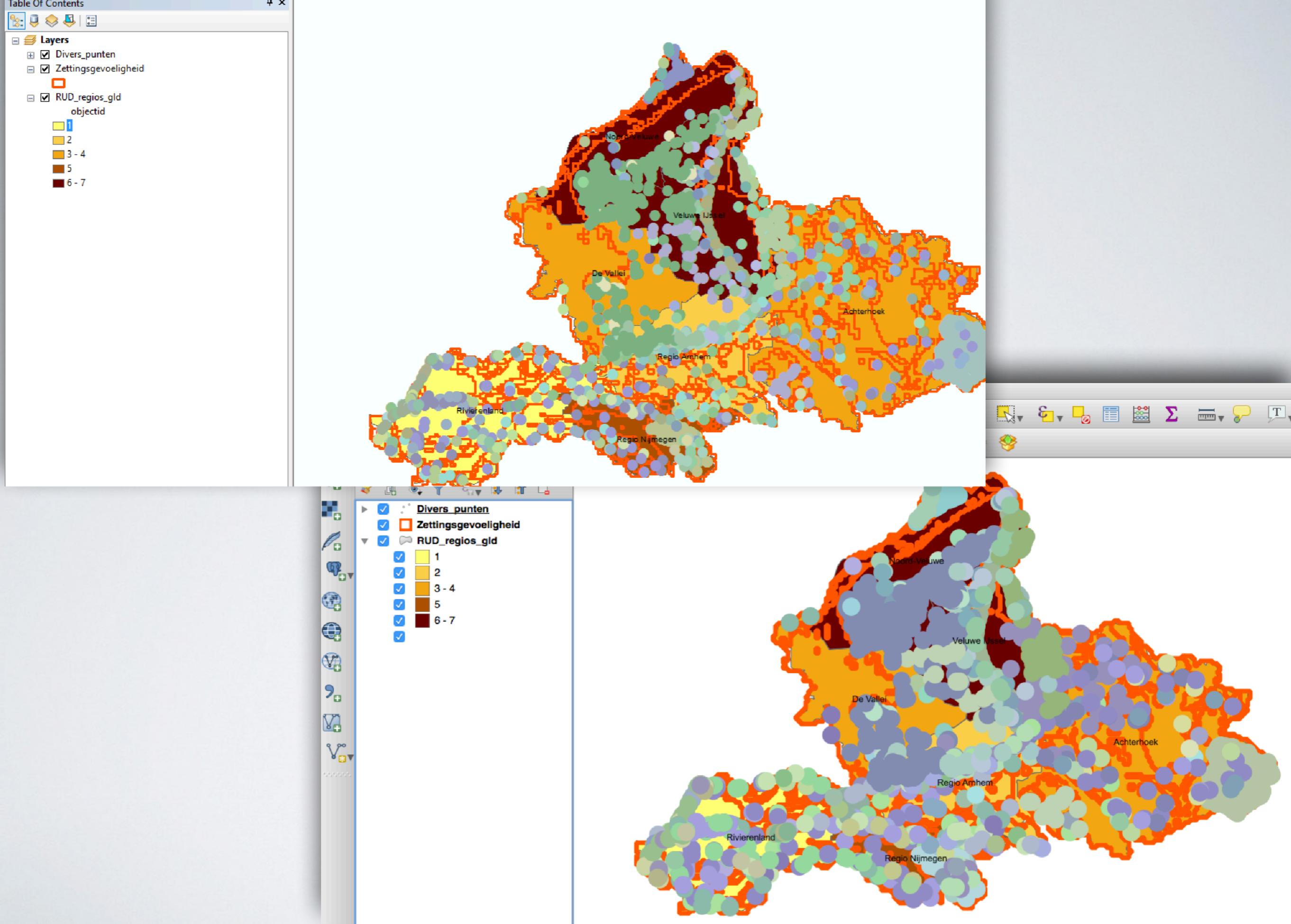
QGPKG

- QGIS plugin door Pirmin Kalberer
- Uitgebreid voor support van de OWC extensie
- Momenteel alleen 'lezen'



DEMO

<https://www.youtube.com/watch?v=CM9LSnMUfQU>



MOGELIJKE USE CASES

- GeoNetwork; exporteer een kaart of selectie metadata records als een GeoPackage om te openen in een (offline) Desktop GIS of mobiele device
- QGIS; Package een QGIS project voor gebruik op een mobiele device
- QGIS; Package een QGIS project voor publicatie in een GeoNetwork/GeoServer server omgeving

UITDAGINGEN

- SLD Implementatie in Geoserver en QGIS;
afwijkende versie, kent vendor extensies en/
of is onvolledig
- Hoe om te gaan met fonts en afbeeldingen
- SLD standaard niet volledig dekkend

REFERENTIES

- geocat.net/bridge
- github.com/pka/qgpkg
- github.com/geocat/qgpkg
- geopackage.org
- owscontext.org
- opengeospatial.org/standards/sld