Geodetic data Grid eXchange Format (GGXF)

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Agenda

- What is GGXF
- Project Team
- Features
- Encoding
- Current status

What is GGXF?

- The Geodetic data Grid eXchange Format (GGXF) is an OGC format for the encoding and exchange of gridded geodetic data
- GGXF can serve most geodetic applications requiring interpolation of regularly gridded data
- Examples include:
  - Transformations between coordinate reference systems
  - Conversion between ellipsoidal and geoidal heights
  - Description of coordinate changes due to deformation

GGXF Project Team

GGXF Features (1)

- Self-defining and descriptive header
  - *Everything* about the file is in the header!
- Multi-resolution
  - Multiple levels of data resolution in a single file
- Multi-dimensional
  - One or more parameters at each grid node
- Computationally efficient
  - Simple to populate by producers
  - Efficient consumption by developers

GGXF Features (2)

- Accommodates
  - 2D and 3D data
  - Geographic and projected interpolation CRS
  - Multiple grids
  - Nested grids
  - Parameter uncertainties
  - Digital Object Identifier for datasets
  - And more…

GGXF Encoding

- YAML encoding (**Y**et **A**nother **M**arkup **L**anguage)
  - Used for header creation
  - ASCII text encoding for small grids
- Unidata Network Common Data Form (NetCDF) encoding
  - Primary carrier for GGXF grids
  - Binary encoding and data compression
  - Essential for large grids

GGXF Current Status

- Draft specification completed this month
- Will be submitted to OGC for SWG (Standards Working Group) status
- If accepted, SWG will be a closed WG
  - Interested participants to SWG please contact:
    - Roger Lott (EPSG): epsg.rl@btinternet.com
    - Kevin M. Kelly: Kevin_Kelly@esri.com
- GGXF Github repository:

  https://github.com/opengeospatial/CRS-Gridded-Geodetic-data-eXchange-Format