Increasing FAIRness by sustainable modelling of interactions of parties with land administration systems

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Overview

- Introduce interactions into LADM
- FAIR data
- Extending LADM to support interactions
- Technological developments
- OGC API
- Example implementation with OGC API
Interactions with LAS

- Types of interactions
  - Data manipulation (Creating/Updating/Deleting)
  - Retrieval of raw data
  - Retrieval of processed data (i.e. extracting information from the data)

- Further classification of interactions
  - Read-write
    - Data manipulation (Creating/Updating/Deleting)
  - Read-only
    - Retrieval of raw data
    - Retrieval of processed data (extracting information from the data)
Extending LADM to support interactions – as is

- Vranić et al (2018) added the association between LA_SpatialUnit and LA_Source
- LADM Edition II generalizes this approach and added the association between LA_Source and VersionedObject
- All other LADM classes inherit this association as a descendant of the class VersionedObject
- Here lies the challenge we are trying to address
Extending LADM to support interactions – proposed model

- LA_Source as a descendant of the class LA_Interaction
- New association between the class VersionedObject and LA_Interaction
Technological introduction

Growth in API Collections

- Static Web sites
- AJAX paradigm
- Gmail and Google Maps
- WebAPIs
- OGC API Features
• Built on top of legacy OGC WxS standards

• resource-centric APIs
  • adopting the modern web development practices
  • not making references to any of existing web technologies

• Some of OGC API standards:
  • Features (ex WFS),
  • Maps (ex WMS),
  • Processes (ex WPS),
  • Coverages (ex WCS),
  • Records (ex CSW)

• Requirement classes
  • Core (mandatory, does not mandate a specific encoding or format)
  • HTML,
  • GeoJSON,
  • Geography Markup Language (GML), Simple Features Profile, Level 0
  • Geography Markup Language (GML), Simple Features Profile, Level 2
Implementing interactions with OGC API

- Geoportals – usual way of making available processed data retrieval interaction to the general public
  - Complex and expensive to implement and maintain
- Geospatial services - implemented to make available both raw and processed data retrieval interactions
- OGC API based services
  - Simple hierarchical structure of API endpoints
  - Datasets published as collections (e.g. parcels in JSON, GML, etc.)
Implementing interactions with OGC API - example
• Overall aim of this paper
  • generic framework for modelling interactions which can be specialized further in any LAS

• OGC API provide a modern means for standard-based dissemination of LAS data, i.e. implementing interactions

• Simpler methods for using and exploiting datasets

• OGC API is compatible with LADM

• Interactions can be easily introduced in LADM Edition II

• OGC API is in the process of creation (LADM as well)

• We should participate in OGC hackathons and other activities
  • Promote LAS domain
  • Increase the applicability of OGC API within LAS
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