Development of Multipurpose Land Administration Warehouse

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Surveying the world of tomorrow - From digitalisation to augmented reality
Outline

- DEMLAS project
  - Required data loaded into MLAS warehouse
- Project location for the field measurements
- Data organized into predefined folder structure and database
- Workflow for publishing data and metadata
- Developed web portal for searching, browsing and downloading data
DEMLAS project
Why we developed MLAS warehouse

• Data on land
  – A lot of unrelated registers with various restrictions on access and usage
  – Redundancy of data in different (or even within the same) registers/institutions
• We acquired the data from various registers for project location
  – Developed prototype of land administration infrastructure
• Basis for scientific research without restrictions in order to fulfill project goals
Project location – Stari Grad Plain (UNESCO cultural landscape)
Data types

• Spatial datasets loaded into MLAS warehouse:
  – official and historical digital cadastral plan
  – scanned georeferenced historical cadastral plan
  – ortho photos
  – elevation model

• Non-spatial datasets
  – Property sheets and other alphanumerical content
Logical model

- Thematic groups of data
  - Cadastral parcels (CP)
  - Land cover (LC)
  - Orthoimagery (OI)
  - Elevation (EL)
  - Observations and Measurements (OM)
- Data stored in database
Data/Metadata publishing workflow

**Data producers**
- CP images
- OI images
- LC images
- Other images
- CP features
- Other features

**Thematic data storage**

**Web GIS server**
- GeoServer
  - workspaces
  - data stores
  - layers
  - features
  - coverages
  - data services

**WMS endpoints**
- GeoNetwork
  - categories
  - harvesting tasks
  - metadata management
  - metadata services
  - metadata crosswalks

**MLAS catalogue**
- dataset_main.xsl
- service_main.xsl
- cp_dataset.xsl
- oi_dataset.xsl
- lc_dataset.xsl
- other_dataset.xsl
- cp_service.xsl
- oi_service.xsl
- lc_service.xsl
- other_service.xsl

**Geospatial web**
Warehouse data/metadata viewer

Metadata info

You clicked here: 43° 10' 41" N 16° 36' 42" E

<table>
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<th>Title</th>
<th>Metadata</th>
<th>Action</th>
</tr>
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<td>XML</td>
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</tr>
<tr>
<td>cp_building</td>
<td>XML</td>
<td>Download Geotiff</td>
</tr>
</tbody>
</table>
Displaying the search results
Downloading the data

- Most of the data can be accessed and downloaded through standardised OGC service
Conclusion

• Warehouse prototype implemented (https://demlas.geof.unizg.hr/)
  – Access to actual official data without any restrictions
  – Stakeholders are able to find, download and upload back the data
  – It will be upgraded according to the needs of stakeholders and scientific research results

• What we have learned so far?
  – Data are unrelated
  – A lot of redundancy
  – Data needs harmonization, standardization, integration
Thank you for your attention!

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DEMLAS project
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