Extended INSPIRE CP
on Cadastral Parcels

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Extending INSPIRE August 28, 2017
1 Introduction

2 Design of extension

3 Implementation

4 Data transformation
Brief history of land registration in the Czech Republic I.

- Domesday Book – first evidence of real estates (13th century)
- Rustical Cadastre – evidence for purpose of taxation of subjects land (since 1653)
- Joseph II. Cadastre – first measurements of the area (1785)
Brief history of land registration in the Czech Republic II.

- **Stable Cadastre** – based on scientific methods of large scale map work (1817 declared / 1860 finished)
- Cadastre of Real Estates – purpose from taxation to jurisdiction and economy (1927)
Brief history of land registration in the Czech Republic III.

- 1951 – building not part of land (renewed in 2014), cancellation of intabulation (renewed in 1993), evidence of private properties canceled
- Land registry – evidence of land used for planning and management of the economy, especially agriculture (1964)
Modern Cadastre of Real Estates

- **New Civil Code and Cadastral Law** – 1993
- **Digitalization** – 1998
- **INSPIRE CP** – unification of content and structure for sharing cadastral data across EU (implemented 2012)
INSPIRE content
Usage of view service
Missing information for parcels
Design of schema

- Application schema: Cadastral Parcels
  - Cadastral Parcel
  - Cadastral Boundary
  - Cadastral Zoning

- Application schema: Cadastral Parcels Extended
  - Cadastral Parcel
  - Cadastral Boundary
  - Easement
  - Original Geometry
  - Geodetic points
  - Other Feature

- Extended INSPIRE application schema
  - Inner drawing original geometry
  - Cadastral boundary original geometry
  - Cadastral parcel original geometry
  - Protected zone original geometry
  - Easement original geometry
  - Protected zone
  - Other building
  - Topographical name
  - Planimetry supplement
  - Inner drawing
Cadastral Parcel

Extended INSPIRE application schema
Cadastral Boundary
Easement

The basic feature model is given by the gml:AbstractFeatureType. The content model for gml:AbstractFeatureType adds two...

- EasementType
  - BaseType: gml:AbstractFeatureType
  - inspires:
    - Type: base:IdentifierPropertyType
  - beginLifepanVersion:
    - Type: Extension of dateTime
  - easementType:
    - Type: gml:ReferenceType
    - Note: values shall be within the code list range
  - geometry:
    - Type: gml:GeometryPropertyType
  - parcel:
    - Type: gml:ReferenceType
  - originalGeometry:
    - Type: gml:ReferenceType
    - Note: contains original geometry with the possibility of using arc segments
  - originalGeometryExists:
    - Type: boolean
  - originalGeometryType:
    - Type: gml:ReferenceType

Extended INSPIRE application schema
Geodetic point

Extended INSPIRE application schema
Other feature
Original geometry

Extended INSPIRE application schema
Analogue cadastral parcel
Technical implementation

- Unified Modeling Language (UML)
- XSD schema
- OGC (Open Geospatial Consortium)
- INSPIRE: Infrastructure for Spatial Information in Europe
- ISO
UML model

Extended INSPIRE application schema
## Extending feature types

<table>
<thead>
<tr>
<th>Name</th>
<th>CadastralParcelType</th>
</tr>
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<tbody>
<tr>
<td>Base Type</td>
<td>cp:CadastralParcelType</td>
</tr>
<tr>
<td>Derivation Method</td>
<td>extension</td>
</tr>
<tr>
<td>Content</td>
<td>complex</td>
</tr>
<tr>
<td>Mixed</td>
<td>false</td>
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<tr>
<td>Mixed</td>
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</tr>
<tr>
<td>Abstract</td>
<td>false</td>
</tr>
<tr>
<td>Block</td>
<td></td>
</tr>
<tr>
<td>Final</td>
<td></td>
</tr>
<tr>
<td>ID</td>
<td></td>
</tr>
<tr>
<td>Component</td>
<td>complexType</td>
</tr>
<tr>
<td>Namespace</td>
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</tr>
<tr>
<td>System ID</td>
<td>CadastralParcelsExtended.xsd</td>
</tr>
</tbody>
</table>
New feature types

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>AnalogueCadastralParcelType</td>
</tr>
<tr>
<td>Base Type</td>
<td>gml:AbstractFeatureType</td>
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<tr>
<td>Derivation Method</td>
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<tr>
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</tbody>
</table>
Map symbols

- **textPosition**
  - Type: cuzk:textPositionPropertyType
  - @ Attributes
  - textPosition

- **symbolPosition**
  - Type: cuzk:symbolPositionPropertyType
  - @ Attributes
  - symbolPosition

- **arrowPosition**
  - Type: cuzk:arrowPositionPropertyType
  - @ Attributes
  - arrowPosition

Extended INSPIRE application schema
Arrow position
New types – cuzkTypes
Geometry inheritance

Extended INSPIRE application schema
Original geometry
Other feature
Links to other themes
Results

THE CREATIVE PROCESS

- INSPIRATION
- WORK
- BINGE EATING
- DISCOURAGED NAPPING
- RANDOM INTERNET SURFING
Storage in the database
Transformation

Extended INSPIRE application schema
Thanks for attention

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