Toward Croatian utility registration implementation model based on LADM

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Introduction

- Utility networks are valuable resource
- In the past utility networks were rarely registered
- Different approaches to utility registration
- Utility networks have legal and physical characteristics
- Try to unify and standardize utility registration through LADM
Utility registration in Croatia

- 1969. Rulebook on Methods and Mode of Operation in Surveying of Underground Installations and Objects
- 1973. Law on utility cadastre
- 1977. Rulebook on creation and maintenance of utility cadastre
- 1988. Law on utility cadastre
- 2008. Rulebook on utility cadastre
- 2009. Rulebook on changes to Rulebook on utility cadastre
- 2017. Rulebook on cadastre of infrastructure
- 2021. Rulebook on cadastre of infrastructure
Data in Croatian Utility cadastre

- Data about ground level, purpose, usage, location, managers, technical information
- Electric (voltage, type and number of cable)
- Electronic communication (cable number)
- Heat network (canal dimensions, type of material, pipe number and profile)
- Gas (type of pressure, type of material, and pipe profile)
- Water, oil, sewage (material and pipe profile)
LADM

- ISO standard
- Organized in 3 packages and 1 subpackage
- Can be implemented flexibly and extended for local needs
- Physical features of utility networks
LADM Instance diagram:

- IvanHorvat: LA_Party
  - name = Ivan Horvat
- Ownership: LA_Right
  - type = ownership
  - share = 1/1
- Parcel_1414/2: LA_BAUnit
- Parcel_1414/7: LA_SpatialUnit
  - label = k.c. 1414/7
  - area = Area (1400)
- MainLevel: LA_Level
  - Topological relation between land parcel and legal space of utility network.
- Minacro: LA_Party
  - name = Minacro
- Sufercie: LA_Right
  - type = superficie
- GasPipeline: LA_BAUnit
  - name = PC 224736
- GasPipeline: LA_LegalSpaceUtilityNetwork
  - dimension = 3D
  - label = PC 224736
  - status = in use
  - volume = Volume (600)
  - area = Area (300)
  - type = gas
- UtilityLevel: LA_Level
LADM and LandInfra
Utility registration model based on LADM
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Conclusion and future work

- Closer integration between different registers
- Utility infrastructure data collection
- Creating and populating database
- Testing