CPS: SYNERGY: COLLABORATIVE RESEARCH: MAPPING AND QUERYING UNDERGROUND INFRASTRUCTURE SYSTEMS

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Description

Objectives

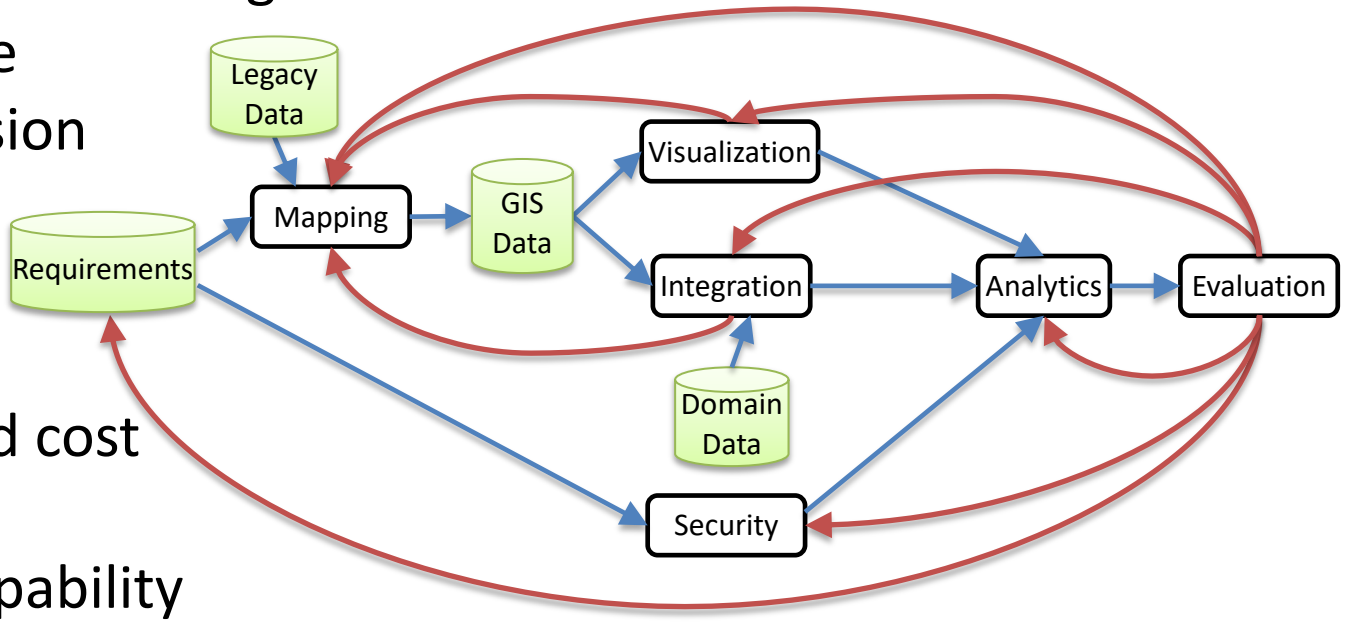
- Data management tools for **mapping**, **visualization**, **querying**, and **secure sharing** of underground infrastructure
- Stakeholders' involvement

Motivation and Enablers

- Poor state of US underground infrastructure
- Smart city vision
- IoT

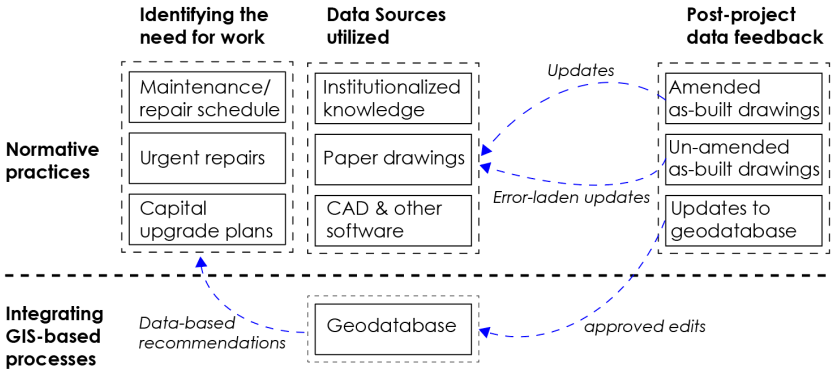
Evaluation and Validation

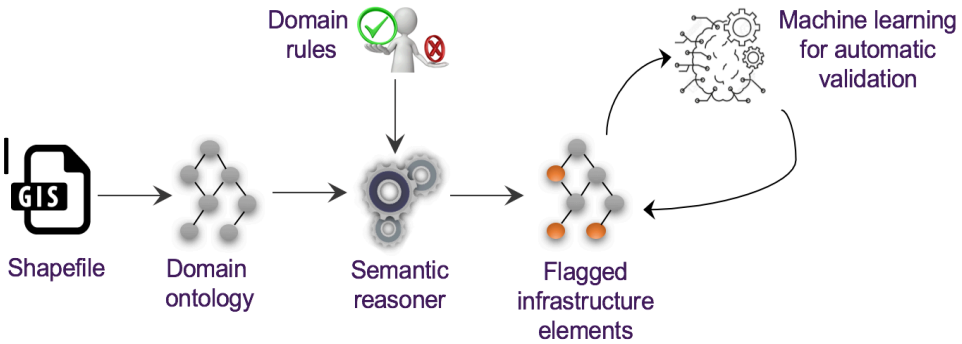
- Efficiency and cost savings
- Predictive capability

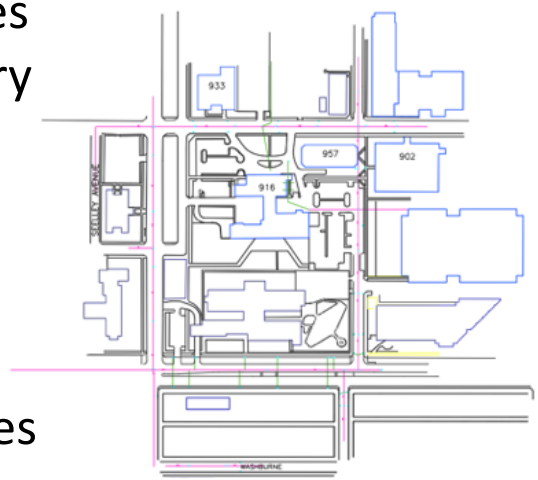


Findings

- Municipal adoption of GIS
  - Qualitative challenges to leveraging GIS for water, sewer and stormwater lines
- Conversion of CAD to GIS
  - CAD-to-GIS conversion protocol and machine learning tools
- Context-aware pre-processing
  - Resolve inaccuracies in sources of infrastructure data with very high accuracy
- Secure queries
  - Geospatial queries on encrypted infrastructure networks based on access rules







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