**General Problem Statement**

- Various decisions throughout the lifecycle of a facility need the integration of data and operations done in the geospatial and Architecture, Engineering, Construction, and Infrastructure Management (AEC/IM) domains.
- Integration of the heterogeneous GIS platforms and CAD systems at the semantic level is required.

**Motivating Developments**

- Standard data exchange standards are being developed with GIS and AEC/IM communities:
  - GML is being developed by OGC
  - IFC is being developed by IAI

**Research Goals**

- To understand the appropriate level of semantics needed to enable interoperability among heterogeneous GIS and CAD platforms.
- To explore approaches and models that will support the level of semantics to be determined in the first research objective and hence will enable the interoperability between GIS and CAD to support AEC/IM related tasks.
- To formalize a set of methodologies and algorithms for semantically interoperable infrastructure software systems.

**Evaluation of Need for CAD/GIS Integration during the Lifecycle of a Facility**

**Expected Contributions**

- An ontology-based formalism to enable interoperability between GIS and CAD systems.
- An overview of different tasks and decisions, and corresponding detailed use case scenarios depicting the requirement of CAD and GIS integration throughout the life-cycle of a facility.