An ontology defines a common vocabulary for people who need to share information in a domain. It includes machine-interpretable definitions of basic concepts in a domain and relations among them. It provides a way of integrating data from multiple sources.

The ATU infrastructure asset ontologies define main concepts describing utilities (e.g., pipes), soil, roads, as well as their relationships with the natural environment (e.g., rain) and human activities (e.g., maintenance).

The ATU infrastructure asset ontologies reuse the top-level concepts from the SWEET ontology (https://sweet.jpl.nasa.gov) developed by NASA and specify them for different infrastructure assets.

The ATU infrastructure asset ontologies are used together in the ATU decision support system to help users understand:
- how different assets affect each other;
- how asset properties and processes affect each other;
- possible causes and effects of asset defects or failures;
- possible consequences of maintenance/repair activities.

Visualization of the OSP ontology using Protégé

The concepts and relation statements are created based on:
- the knowledge of domain experts,
- the SWEET ontology developed by NASA.