

# Common Track API

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## Project Overview

### Problem:

- A large number of sensors and modalities exist for tracking targets and sharing data
- Difficult to correlate track information due to varying data formats and standards
- A complex systems of systems architecture must handle legacy and evolving data formats

### Solution:

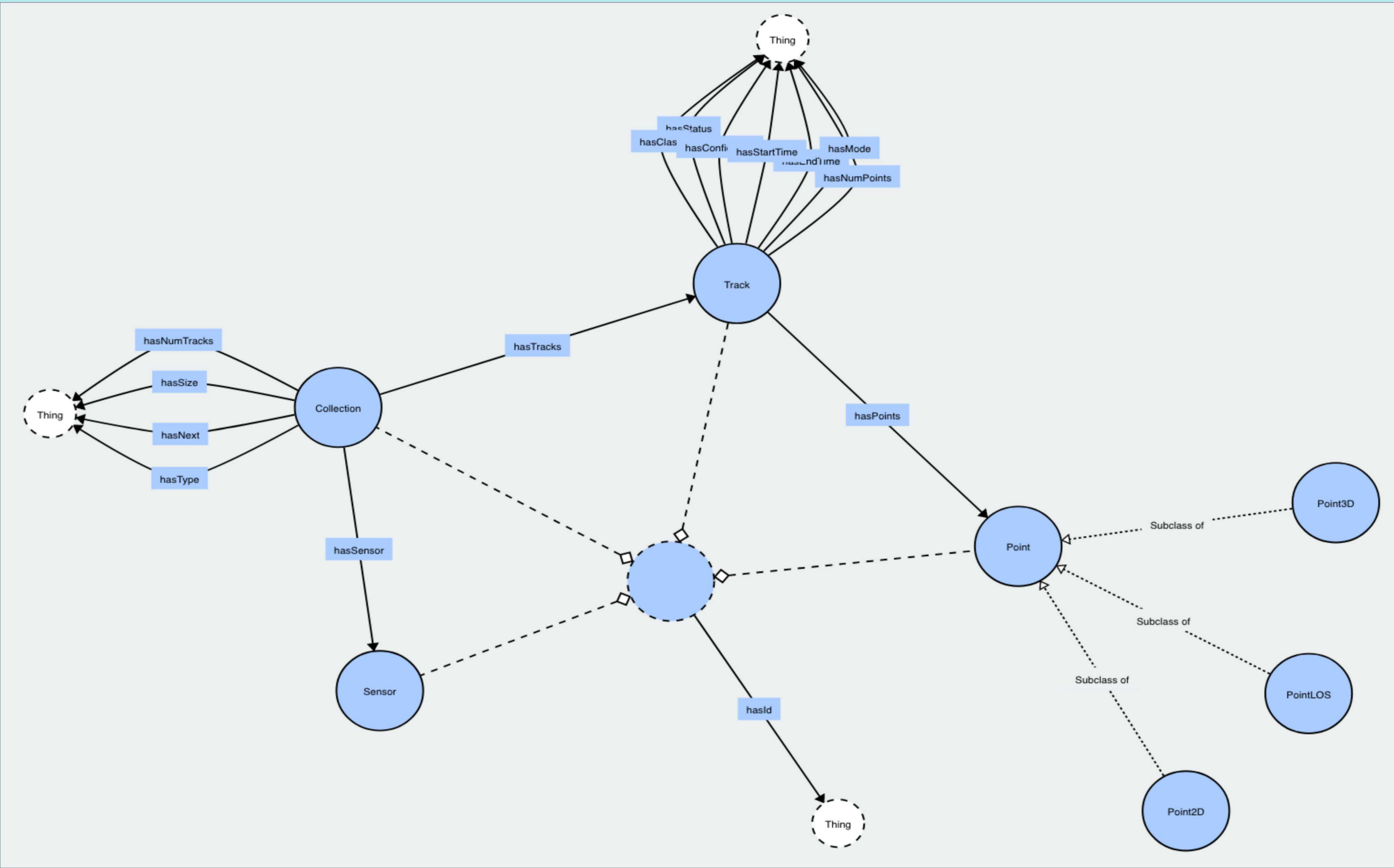
- Develop a scalable software architecture and prototype implementation for transforming track data
- Pursue a common, generalized, representation that consolidates internal and external data formats
- Represent data using an ontology-based approach for transformation and correlation

### Benefits:

- Data fusion support resulting in increased track data confidence and coverage (multi-source)
- New opportunities to transform and share track data across systems
- Ontological representations support knowledge sharing and improved contextual information across domains

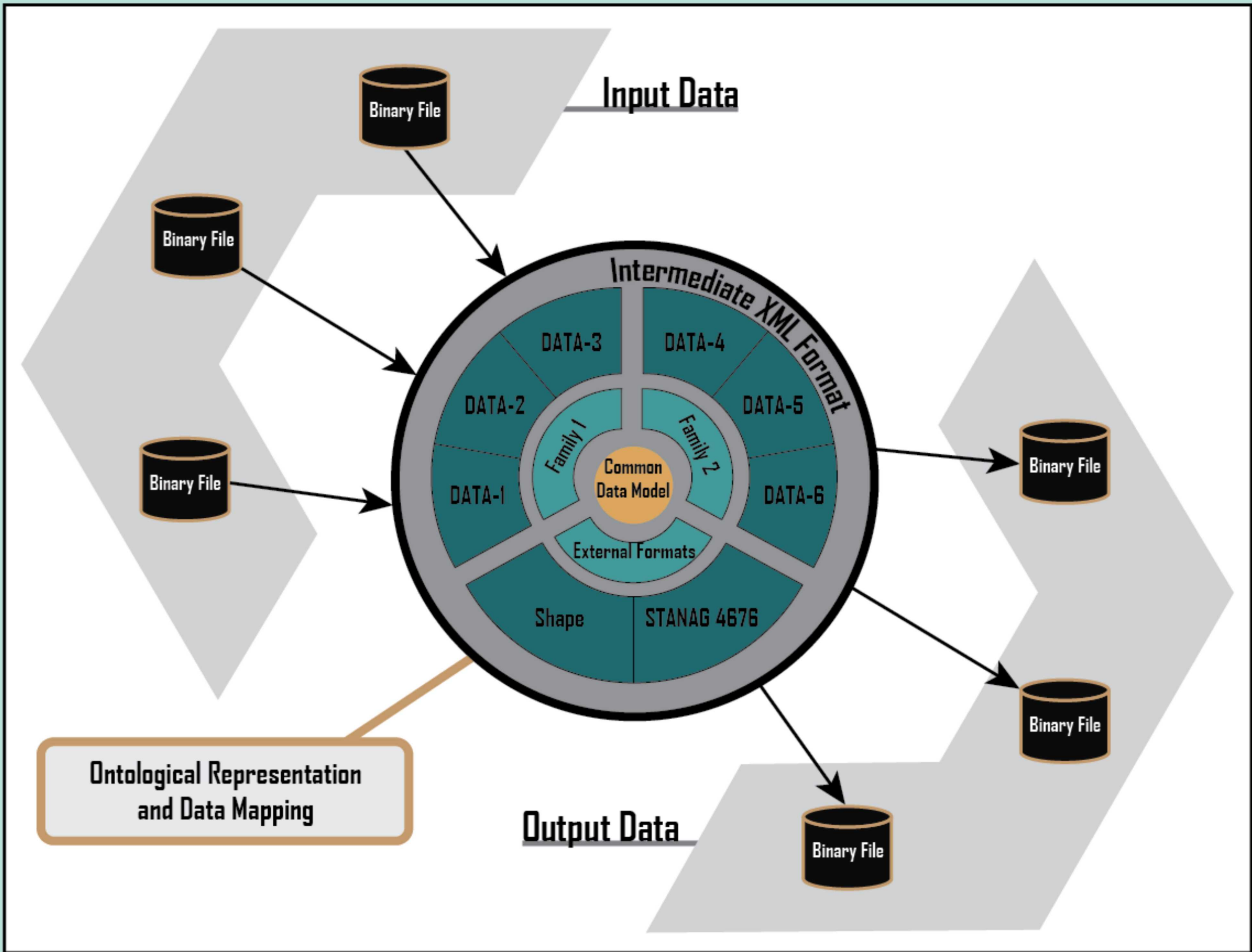
## Knowledge Representation

The SADIE team transformed track data using detailed and generalized knowledge representations. The resulting ontologies may be shared and incorporated into existing and new ontologies.



## Track Data Transformation

Software prototype utilizes the track ontology for transformations: input to output data formats



## Summary of Accomplishments

- Reviewed six internal track data formats and two external data formats for differentiating and common fields
- Developed ontology-based knowledge representations, detailed and generalized, to support data transformation and correlation
- Designed an object-oriented software architecture that may be extended to support additional data formats
- Implemented a Python software prototype and demonstrated transforming data formats across internal and external formats