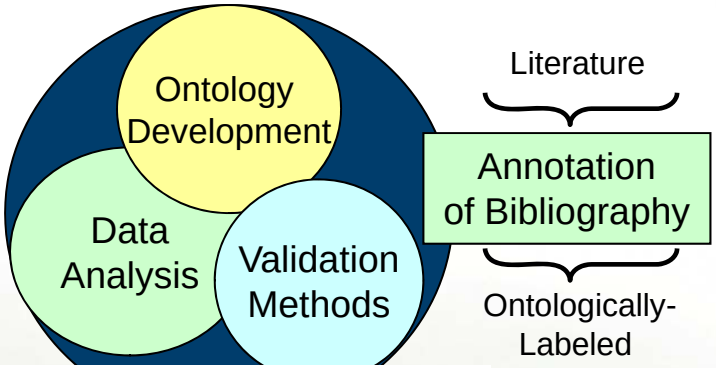
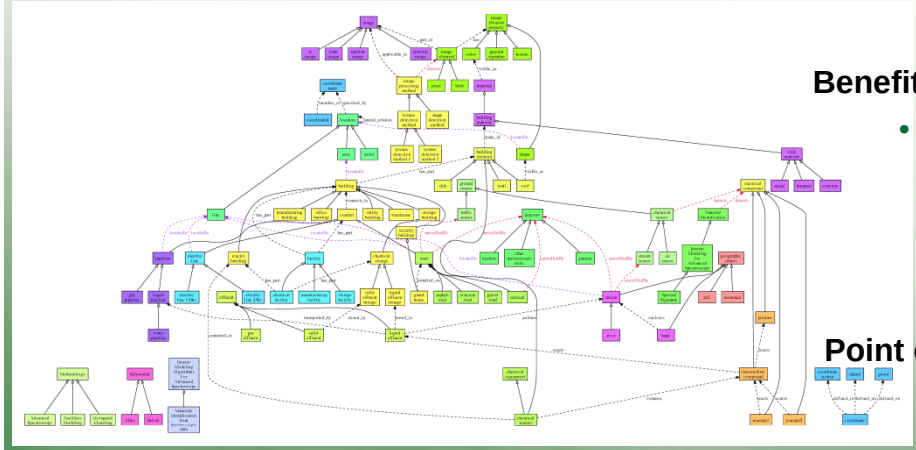
An Ontology for the Simulation, Algorithms, and Modeling (SAM) Office of NA-22

Modeling and Simulation Group

Computational Sciences & Engineering Division



SAM Ontology Project



Problem Statement:

- **The Office of Nonproliferation and Verification R&D (NA-22) needs an ontology to support various activities including bibliographic annotation, modeling, and testing of detection algorithms.**

Technical Approach:

- **To support bibliographic annotation, ORNL led the Data Analysis team in applying data mining tools for extracting keywords from literature.**
- **To support testing of algorithms for detecting special nuclear materials, ORNL will use inferencing from ontologies combined with geographical data sources to improve the variety and complexity of testing scenarios.**

Benefits:

- **The NA-22 SAM office will have ontology-based tools and methodologies which will support a broad range of activities at other DOE/NNSA offices of nuclear nonproliferation, contributing to enhancing safeguards and reducing the threat of nuclear proliferation.**

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