

Perspectives on Ontology Summit 2015

Mark Underwood and Michael Grüninger

Ontology Summit 2014 Symposium

April 13, 2015

Why Are We Here?

- The emergence of networks of intelligent devices which are constantly sensing, monitoring, and interpreting the environment is leading to the Internet of Things (IoT).
- Ontology Summit 2015 has provided an opportunity for identifying challenges (seamless semantic interoperability, recognition and reaction within situation awareness) for the Applied Ontology community within the broad range of IoT applications.
- We have taken the first steps towards demonstrating the utility of ontologies to the IoT community.

Focus Areas

Tracks:

- Ontology Integration in IoT
- Beyond Semantic Sensor Network Ontologies
- Decision Making in Different Domains
- Related Standards and Synergies for Emerging IoT Ontologies

Key Issues:

- Making the case for IoT ontologies
- How ontologies are used in IoT
- The challenge of scalability
- Ontology-based standards for IoT

What Have We Learned?

- IoT ontologies need to deal with dynamic time varying data vs. the often static Semantic Web. In particular, more work is needed on the development of event ontologies for targeted domains, building from core ontologies.
- We lack tools for a wide range of tasks, including for semantic annotation, ontology validation and integration.
- A more coordinated effort is required to compile IoT case studies which can serve as the basis for ontology reuse and the design of new ontologies. Key areas included Sensor integration, Smart Grid, and Smart Healthcare.

Concrete Outcomes of the Summit

- Communique
- Demonstrations of ontology-based IoT applications
- Collection of use cases

Through these resources, we will continue to identify

- efforts to coordinate the design and evaluation of IoT ontologies
- new applications for ontologies with IoT