

Ontology Summit 2015
Internet of Things: Toward Smart Networked Systems
and Societies

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January 15, 2015

Internet of Things

- The next generation of networks will utilize a wide variety of resources with significant sensing capabilities. Such networks will extend beyond physically linked computers to include multimodal information from biological, cognitive, semantic, and social networks.
- This paradigm shift will involve symbiotic networks of people, intelligent devices, and mobile personal computing and communication devices (mPCDs), which will form net-centric societies or smart networked systems and societies (SNSS).
- We are witnessing the emergence of intelligent devices, such as smart meters, smart cars, etc., with considerable sensing and networking capabilities. Hence, these devices and the network – will be constantly sensing, monitoring, and interpreting the environment this is sometimes referred to as the Internet of Things.

Ontologies and the Internet of Things

- Example: A considerable amount of data passes through the network and should be converted into higher abstractions that can be used in appropriate reasoning.
 - ▶ This requires the development of standard terminologies which capture objects and events.
 - ▶ Creating and testing such terminologies will aid in effective recognition and reaction in a network-centric situation awareness environment.
 - ▶ This would involve identifying a methodology for development of terminologies for multimodal data (or ontologies), developing appropriate ontologies, developing testing methods for these ontologies, demonstrating interoperability for selected domains (e.g., healthcare, situational awareness), and using these ontologies in decision making.

Content Tracks

- Track A: Ontology Integration in IoT
 - ▶ Ram Sriram, LeoObrst
- Track B: Beyond Semantic Sensor Network Ontologies
 - ▶ Torsten Hahmann, Gary Berg-Cross
- Track C: Decision Making in Different Domains
 - ▶ Michael Gruninger
- Track A: Related Standards and Synergies for Emerging IoT Ontologies
 - ▶ Mark Underwood

Discussion Questions

- What do we want to achieve for this Summit?
- How can the Applied Ontology community engage the IoT community?
- What challenges within IoT can be addressed by the application of ontologies and ontological analysis (with respect to both content and technologies)?
- What are the low-hanging fruit?
- What are the defining challenge problems?

Schedule of Summit Events

- January 22: Track D
- January 29: Track B
- February 5: Track A
- February 12: Track C
- February 19: Synthesis I and Communique discussion
- ...
- April 13-14: Symposium

<http://ontolog-02.cim3.net/wiki/OntologySummit2015>

Ontology Summit 2015 Team

- General Co-Chairs: Michael Gruninger, Mark Underwood
- Symposium Co-Chairs: Ram Sriram
- Co-organizers: NCO-NITRD, NIST, NCOR, NCBO, IAOA
- Content Track and Support Team Champions
- Advisory Committee
- Co-Sponsors (who support this endeavour)
- Participants

Today's Agenda

- Introduction to the topics and tracks for this year's theme
 - ▶ Track Co-Champions
- Symposium overview and visions
 - ▶ Ram Sriram (Symposium Co-chair)
- Q & A and open discussion on what the community wants to achieve in this Summit
- Conclusion / Follow-up / Next Session