Ontology Summit 2015:
Internet of Things: Toward Smart Networked Systems and Societies
Virtual Panel Session 09 – March 12, 2015

Track A: Ontology Integration in the Internet of Things II

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Track A: Ontology Integration in the Internet of Things: **Goal**

- Billions of things will be connected to the Internet
- These things span a spectrum of cognitive abilities
  - From simple sensors to humans
- Ontologies will play a significant role in integrating these things at different abstraction levels

- ***Goal of Track:*** To discuss the various approaches being taken to address the integration and interoperability issues

Track A: Ontology Integration in the Internet of Things: **Mission**

- Present case studies of IoT
- Discuss current approaches in integration and interoperability
- Discuss gaps in current approaches
- Discuss issues of vertical integration and interoperability across layers of the IoT, including granularity
- Propose methods for achieving integration and interoperability through ontologies
- Propose a unified framework for integration and interoperability for multimodal (audio, text, video, etc.) interfaces

Speakers Today

- **Dr. Ram Sriram (NIST): Toward Internet of Everything: Internet of Things (IoT), Cyber Physical Systems (CPS), and Smart Networked Systems and Societies (SNSS)**
  - Emergence of a trusted, secure, reliable, and interoperable net-centric computing environment

- **Dr. Spencer Breiner (NIST) and Dr. Eswaran Subrahmanian (Carnegie Mellon University, NIST): Category Theory for Modular Design: An IoT Example**
  - Category-theoretical models can serve in the requirements definition of IOT components and as a substrate for learning algorithms using the data base to evolve the underlying behavioral models of components

- **Professor Krzysztof Janowicz (University of California, Santa Barbara): Ontology Virtualization For Smart Environments**
  - Introduces the notion of ontology virtualization, namely to abstracts from the underlying patterns and axiomatization to provide flexible plug-and-play style reconfiguration of patterns together with purpose-driven 'semantic views'