**Internet of Everything: Toward Smart Networked Systems and Societies**

We are witnessing a new revolution in computing and communication. The Internet, which has spanned several networks in a wide variety of domains, is having a significant impact on every aspect of our lives. 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)*. mPCDs are already equipped with a myriad of sensors, with regular updates of additional sensing capabilities. Additionally, 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*. And as local and wide area networks became almost secondary to the WWW (World-Wide Web), users and their usage patterns will become increasingly visible. This will have significant implications for both the market for advanced computing and communication infrastructure and the future markets – for nearly 4.5 billion people -- that net-centric societies will create.

Well-designed and constructed net-centric societies will result in better quality of life, reduced threat from external sources, and improved commerce. For example, assume a scenario where people at various locations suffer from flu-like symptoms. In a net-centric society, mPCDs will send vital signs and other associated information to appropriate laboratories and medical centers. These centers will analyze the information, including searching the Internet for potential solutions, and will aid in determining possible causes for this phenomenon. Based on the diagnosis, people will be directed to the nearest clinic for treatment. Here we have several types of information flowing through the net: data from mPCDs; location information; images; video; audio; etc.

Ontologies will play a significant role in the realization of SNSS. For 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.

Potential Tracks

Track 1: Vision of IoE Ontology Integration

Track 2: Beyond Semantic Sensor Network Ontologies to Multimodal ontologies

Track 3: Big Data and Ontologies (see Ontology Summit 2014)

Track 4a: Supporting Development of Domain-specific IoE Ontologies

Track 4b: From IoE Data Models to IoE Ontologies: SDLC Challenges

Track 5: Decision Making in Different Domains

Track 6: Related Standards and Synergies for Developing IoE Ontologies

Track 7: Case Studies in Healthcare, manufacturing, disaster resilience

Track 8: Industry-Government Panel on Research Funding