



**Graduate Seminar (EEL 6936)**  
**Department of Electrical Engineering**  
**[http://ee.eng.usf.edu/Grad\\_Seminar](http://ee.eng.usf.edu/Grad_Seminar)**

**Dr. Daniel Engels**

Associate Professor

Computer Science and Engineering Department, Southern Methodist University

Friday, April 11<sup>th</sup>, 2014, 3:30-4:30 p.m.  
Engineering Building B (ENB) Room 118

## **RFID: The Shark or the Goldfish?**

### **Abstract**

Radio frequency identification (RFID) technologies pervade our world in a myriad of ways. Access control systems, automated tolling systems, supply chain management systems, and personal identification systems are just a few of the systems that have embraced RFID technologies in the last decade. Their adoption has enabled tremendous benefits in these and other systems with streamlined operations, reduced costs, and enhanced security being the primary drivers of adoption. The adoption of RFID systems will continue across a broader and more diverse range of applications until, eventually, all of our things, at least those that matter, will be tagged and connected to the Internet. The question is: are these RFID technologies, and more broadly the Internet of Things, our friend, or are they here to eat us? The answer, so far, has been that RFID technologies are our friend, but we have already seen the early signs of troubling behavior and some early nibbles. Keeping RFID technologies from eventually eating us depends on us, our actions, and our view of the world. But, the answer begins and ends with the security capabilities of the RFID systems themselves. In this talk we take a paranoid walk through the heart of RFID security and privacy and explore the security of the new Gen2v2 passive UHF (Ultra High Frequency) protocol.

### **Biography**



Dr. Daniel W. Engels is an Associate Professor in the Computer Science and Engineering Department at Southern Methodist University, Dallas, TX. He was the Chair of the IEEE Technical Committee on RFID in 2011 and 2012. Dr. Engels is the former Director of Research of the Auto-ID Labs at MIT and is an original member of the research team started in 1998 that founded the Auto-ID Center at MIT. Dr. Engels is one of the principal architects of the Networked Physical World EPC System, the foundation of the Internet of Things, developed under the Auto-ID Center and licensed to the Uniform Codes Council, now GS1, and adopted by governments and industries around the globe. He received his Ph.D. from the Massachusetts Institute of Technology. He has over 80 peer reviewed publications and 5 issued patents in RFID, RFID applications, security, embedded computing, and computer-aided design. Dr. Engels is a member of AIDC 100 and is a Senior Member of IEEE.