

IEEE-SA Industry Connections - Convergence of Smart Home and Building Architectures

SmartAmerica Report
14 June 2014

SmartAmerica Challenge Expo

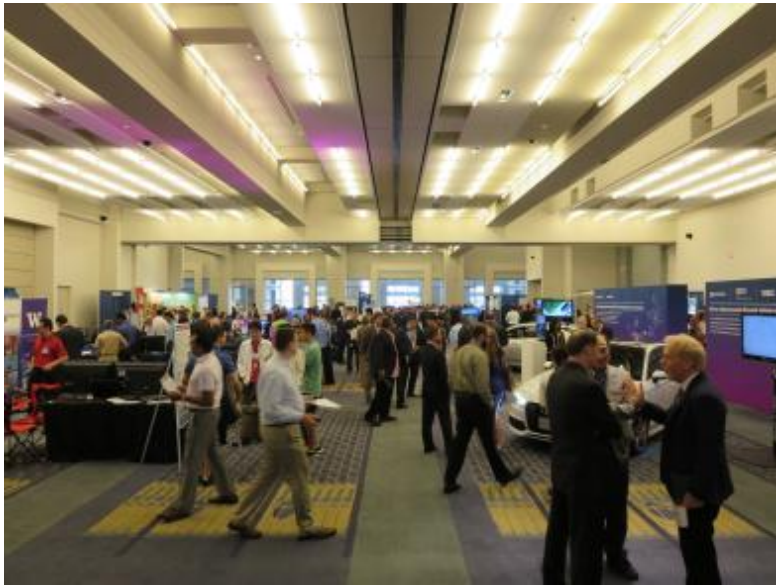
- 11 June 2014, Washington Expo Center, Washington DC USA
- 2 Demos
 - Infineon Secure SmartHome Demo
 - CISC and Lantiq - Controlling/Monitoring of Smart Devices using existing infrastructure
- Goal: show how the Cyber-Physical Systems (CPS) making up the Internet of Things (IoT) can help spur new business opportunities in the U.S., opening the door to greater economic prosperity.

SmartAmerica Challenge Expo



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SmartAmerica Challenge Expo



SmartAmerica Challenge Expo



Infineon Technologies



“Infineon Technologies AG appreciates that IEEE-SA has given us the opportunity of participating and presenting our research at the SmartAmerica Challenge Expo. This event was the perfect setting in order to discuss and exchange ideas and get in contact with related industrial and research companies. We particularly would like to thank Brenda Mancuso for the professional organization and support which helped making our participation successful.”

Rainer Matischek, Senior Research Engineer at Infineon Technologies Austria AG

CISC and Lantiq



“The SmartAmerica Challenge was an opportunity to get in contact with future co-operation partners as well as end customers. Especially end consumers confirmed the need for solutions which are simple to configure and have been excited by the idea of converging smart home appliances. The discussions with people working in the biomedical sector brought some new ideas for ambient assisted living and healthcare. Furthermore contacts to emergency network providers could be established, which might lead to co-operations for smart city solutions in the future.”

Christian Lederer, Senior Software Engineer, CISC

STMicroelectronics



“Participating in the SmartAmerica challenge provided two strong benefits: In addition to providing an outstanding forum for ST and its partners to showcase their Cyber-Physical/Internet of Things efforts to a receptive and excited audience, the conference and expo also brought to our attention a broad range of other leading actors in this rapidly growing arena. The technology and economic benefits of this activity will be significant.”

Francesco DODDO, IoT Excellence Center Manager, AMS&IPG, STMicroelectronics



SmartAmerica Challenge Expo

The IEEE-SA CSHBA Presentation...



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In Industry

In The Field

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together for mutual benefit**

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IEEE-SA Industry Connections (IC) Program

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- Produce shared results

<http://standards.ieee.org/develop/indconn/>



Security and configuration concerns in CPS (IoT)

User Experience

- Ease of Use is the key to the adoption of any technology
- Security and Configuration must be simplified for a seamless user experience

Security

- An authentication method should not rely on remembering lengthy or complicated passwords
- Secure communication channels have to be established
- Denial of Service attacks must be prevented

Configuration

- Enhanced comfort through minimized user interaction
- Automation of device properties configuration

Making SmartHome and IoT Network Security Easy



- Goal: Users can easily add their security-enhanced SmartHome devices to their network (still using high security level)
- Presented Concept (Demo): SmartHome devices equipped with one essential enhancement: A high-security-microcontroller incl. passive NFC-interface → exchange keys via secure channel(!) in secured storage
- Smart phone app makes it easy to set up encryption or device settings of any device in a secure manner, without typing long passwords (even unplugged devices, and devices without any user interfaces)

Smart Device Control and Monitoring leveraging existing infrastructure



- Existing internet infrastructure can be leveraged to monitor and control Smart Home appliances.
 - No additional hardware investment
- Seamless control of Smart Home appliances
- Flexible Access Control
- Simple visualization of power consumption related information

Socio-economic benefits

- Improved application security through NFC-based device provisioning
- Improved energy efficiency through intelligent power management of smart devices
- Leveraging existing hardware infrastructure for new applications and services

Thank You!

