



EWSN 2019 BEIJING TRIP

David Janowsky



Day 1: Presentations and Tsinghua





Internet and IoT

- ▶ The Internet of Things (IoT) extends the Internet by connecting billions of devices beyond standard devices. Devices traditionally considered dumb devices, like lightbulbs, microwaves, cars, refrigerators, streetlights, pacemakers, are connected by IoT.
- ▶ A typical IoT device has various sensors and is connected by low power wireless networks so that it can be manufactured at a low cost and runs on a battery for months or years.
- ▶ IoT combines the traditional wireless sensor networks with the Internet. IoT devices communicate on the networks without intervention.





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TWL


Why 6LoWPAN?


- ▶ IPv4 address space is running out
- ▶ More and more smart objects, embedded systems, wireless devices
 - ▶ Need to run many on low power and with minimal resources
- ▶ Want to be able to use IP with these devices
 - ▶ Can integrate into IoT



INTRODUCTION CHALLENGES SOLUTIONS


Why 6LoWPAN for WSNs

WPAN 



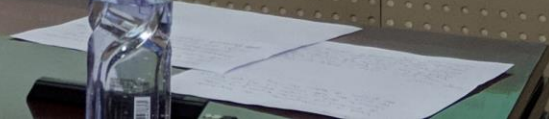
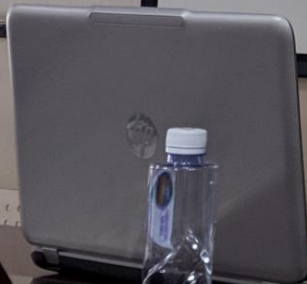
Julia Zydek

- IPv6 based
 - Solves the addressing issues when many embedded sensors share the same network
 - Easy to translate data to external IPv6 networks
 - Translation to legacy IPv4 networks available
 - Compliant to IEEE 802.15.4 PAN standard
- Low overhead OS implementations such as Contiki
 - Low resource demand, suitable for microcontrollers
 - Cross platform
 - Ultra low power consumption by keeping Wireless transceivers off 99% time[23]
- Increased momentum in the industry
 - Tech giants like Google and Samsung are using Thread, based on 6LoWPAN
 - Semiconductor companies like Texas Instruments support 6LoWPAN hardware



TI SensorTag with 6LoWPAN support

ZYDEK - ZHANG - YANG - AN IoT IMPLEMENTATION FOR MANUFACTURING USING W6LoWPAN AND MQTT - FEB 15, 2016 - EWSN 2016



Day 2: Great Wall and Baijia House













2019-2-26 19:34



Day 3: The Forbidden City and Jingshan Park









