Opportunities & Challenges of OGC SensorThings API and Wearables

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Steve Liang, Ph.D., Founder/CEO, SensorUp Inc.
Associate Professor, University of Calgary
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Think about some Thing
Your Parking

Every sensor in the ground is in constant communication with nearby relays.
Your Drink
Your Cat
Your Baby
Your Pacifier
Your Inhaler

Smarter man for asthma air

FIND OUT HOW
Your Shirt

HEXOSKIN
WEARABLE BODY METRICS
Location Technology Evolution

Region-Centric
Geospatial Information
1980s

Feature-Centric
Geospatial Information
1990s

Human-Centric
Geospatial Information
2000s

Device-Centric
Geospatial Information
2010s
System of Systems

• The real potential of the Internet of Things

Network Effect:
The value of a network is proportional to the square of the number of users of the system ($n^2$).
Today’s IoT Silos

Application A
Network A
Thing A

Application B
Network B
Thing B

Application C
Network C
Thing C

Application D
Network D
Thing D
“77% of surveyed IoT experts claimed that **Interoperability** is the biggest challenge currently facing the Internet of Things.”
What is IoT Interoperability?

• Interoperability is the ability of two or more (IoT) systems or components to exchange information and to use the information that has been exchanged (IEEE).

• Two components X and Y are interoperable if X can send requests R for services to Y, based on a mutual understanding of R by X and Y, and if Y can similarly return mutually understandable responses S to X (Brodie, 1993).
OGC SensorThings API

The OGC SensorThings API is an OGC standard specification for providing an open and unified way to interconnect IoT devices, data, and applications over the Web. The SensorThings API is an open standard, builds on Web protocols and the OGC Sensor Web Enablement standards, and applies an easy-to-use REST-like style. The result is to provide a uniform way to expose the full potential of the Internet of Things.

Standard Specification

An PDF version of the standard will be available on OGC web site soon. An HTML version of the standard will be available at THIS LINK SOON.

About

- Editor: Dr. Steve Liang
- Co-editors: Tania Khalafbeigi, Dr. Chih-Yuan Huang
“OGC specifications are outdated and difficult to use…”

Wrong!

Someone at FOSS4G N.A.
Case Study - Smart Citizen Sensors

Steve Liang
- Barb
- Steve
- Bow View Lodge Lobby
- Banff Centre
- CCIT Building, University of Calgary

There are unclaimed devices.
Case Study - Arctic Citizen Sensors

Arctic Citizen Sensors
A platform that enables all citizens in Canada’s north to use open source sensors and build innovative Internet of Things applications.

TAKE TOUR
GET STARTED

There are unclaimed devices. Do they belong to you?
GET STARTED
Case Study - Citizen Sensing in Taiwan

Air Quality in Taiwan

Working with the Maker community, and using SensorThings API to provide more than 500 near real-time air quality sensors.
SensorThings Playground

http://pg.sensorup.com