



IoT Workshop Highlights

Fons Rademakers

CERN openlab Chief Research Officer



Motivation

Learn About Smart Technologies and the Internet of Things

- CERN is lacking in Smart developments and deployments
- There are initiatives in many different corners and areas
- But not coordinated and mostly not aware of each other
- Get an idea of what the state of the art of academic research in these areas is
- Get an idea of what industry is developing in these areas
- Try to create collaborations between CERN, industry and academics
- We have a beautiful campus that can benefit from many of these developments

November 7 - CERN openlab IoT Workshop

- One day workshop
- 110 participants
- 16 presentations
 - 4 academic
 - 6 industry
 - 6 CERN
- <https://indico.cern.ch/event/669690/timetable/#20171107>

Academic Talks

Outlining the State of the Art

- Talks on Smart developments in areas of
 - Smart cities
 - Smart campus
 - Smart mobility
 - Smart destination
 - RFID security

Industry Talks

Discussing Industry Developments

- Talks covering a wide range of developments in networking and security
 - Core IoT technologies from 5G to Machine Intelligence - Ericsson
 - The fusion of Cloud and Fog to enable IoT networking - Cisco
 - LoRa WAN developments and performance - Orbiwise, Swisscom
 - Security fingerprints for smart physical and digital identities - 3Doxides

CERN Talks

Presenting the Different CERN Smart and IoT Initiatives

- Distributed network of sensors for monitoring radioactive waste
- Smart mobility, managing the CERN car pool and car parks
- Smart buildings, managing temperature and light based on occupancy
- Smart monitoring of LHC machine parameters
- Smart networking using LoRa
- IoT security considerations

What We Learned

- There is a great interest in these developments
- There are many industry solutions we can benefit from
 - Smart id cards, presence, mobility, destinations, buildings, network, etc.
- To benefit fully we need to combine the solutions, aim for vertical solutions to unleash the real power of Smart technologies
- Ongoing standardisation allows for interoperability of IoT technologies

Plans

- Try to set up a number of pilot projects with direct benefit for the user community
 - Smart management of the CERN car pool
 - Smart destinations to make visiting CERN more attractive
 - ...