Internet of Things Meets Augmented Reality in Laboratories

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UEF //

3 campuses
JOENSUU
KUOPIO
SAVONLINNA

4 faculties
Philosophical Faculty
JOENSUU | SAVONLINNA
Faculty of Science and Forestry
JOENSUU | KUOPIO
Faculty of Health Sciences
KUOPIO
Faculty of Social Sciences and Business Studies
JOENSUU | KUOPIO | SAVONLINNA

15,000 degree students
20,000 adult education students
2,700 staff members

UNIVERSITY OF EASTERN FINLAND
Scientific infrastructures are very expensive and utilization rates are low, funding is decreasing.

How to maximize the utilization of the existing laboratories and infrastructures?

Idea = Remotely controllable laboratories, open 24/7, connected to an IoT cloud.
Sm4rtLab Maximizing the usage

Internet IoT cloud
Sm4rtLab 24/7 around the globe
**Sm₄rtLab** - What is it?

- **Sm₄rtLab** is a remote controlled virtual and real laboratory

- **Sm₄rtLab** can be controlled by a web browser or Hololens

- **Sm₄rtLab** data can be uploaded to an IoT cloud for storage and analysis

- **Sm₄rtLab** concept can be extended basically to any type of laboratory
**SmartLab** - Components

- MS HoloLens native app
- IoT platform
- Data analysis

**SmartLab** WebGL application

**SmartLab** ”things” (instruments, lasers, lights, cameras etc)
// ARE YOU READY FOR THE 4TH REALITY OF SCIENCE?
Sm4rtLab - Demonstration