thingworx®

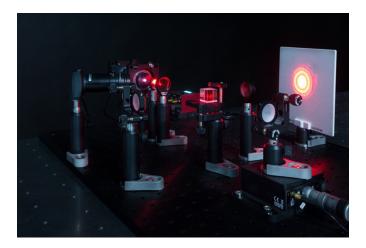# University of Finland Uses ThingWorx® at Remote Controlled Sm4rtLabs

The Institute of Photonics at the University of Eastern Finland is one of the leading optics and photonics research and education centers in Europe. One of the main challenges in optics and photonics is the high cost of the equipment in both research and education. To address this, the university has developed the remote controlled laboratory concept, Sm4rtLab, which enables anyone in any location to use the laboratory devices.

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The Sm4rtLab is a new, revolutionary augmented reality (AR) laboratory. Sm4rtLab is connected to an IoT cloud service that stores research data for later analysis.

ThingWorx is a central part of the Sm4rtLab concept as it links the physical devices and the virtual user interface in an efficient way. ThingWorx allows users to save important measurement data to cloud services and allows open access to the data.

During further development of the Sm4rtLab concept, University of Eastern Finland is providing training for building remote controlled IoT based laboratory systems. The concept started with the optics and photonics equipment and has expanded to biology laboratories. The application in a biology laboratory typically lasts several weeks, and the automation of data collection is crucial.

IoT based remote labs allow different university departments and institutions to leverage University of Eastern Finland's laboratory equipment for both research and education purposes. One of the first laboratory setups was remotely operated between different campuses.

> ThingWorx allowed us to build the Sm4rtLab concept and prepare laboratory exercises that can be leveraged from various campuses. The application saves money and allows the university to give more experimental practice for students in places where it is impossible to obtain a physical setup."

Pasi Vahimaa, Photonics Professor at UEF

UNIVERSITY OF EASTERN FINLAND

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