

Introduction

Project

„Digitalization in Laboratory Didactics - DiLa“

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Motivation DiLa

- ♪ Teaching in laboratories is one of the core elements of engineering courses at universities of applied sciences.
- ♪ The interconnection between the teaching progress in the lectures and the laboratory sessions is not trivial: for organizational reasons, it is often not possible to offer the corresponding laboratory session immediately after the theory has been covered in the lectures.
- ♪ Student perspective: The laboratory experiments are unique. It is generally not possible to offer students who have successfully completed experiments repeat dates for in-depth study and exam preparation.



Example: Fundamentals or teaching/learning laboratory in electrical engineering

Motivation DiLa

- General demand for remote access and digitalization is increasing:
 - Pandemic conditions, international collaboration in industry and with partner universities.

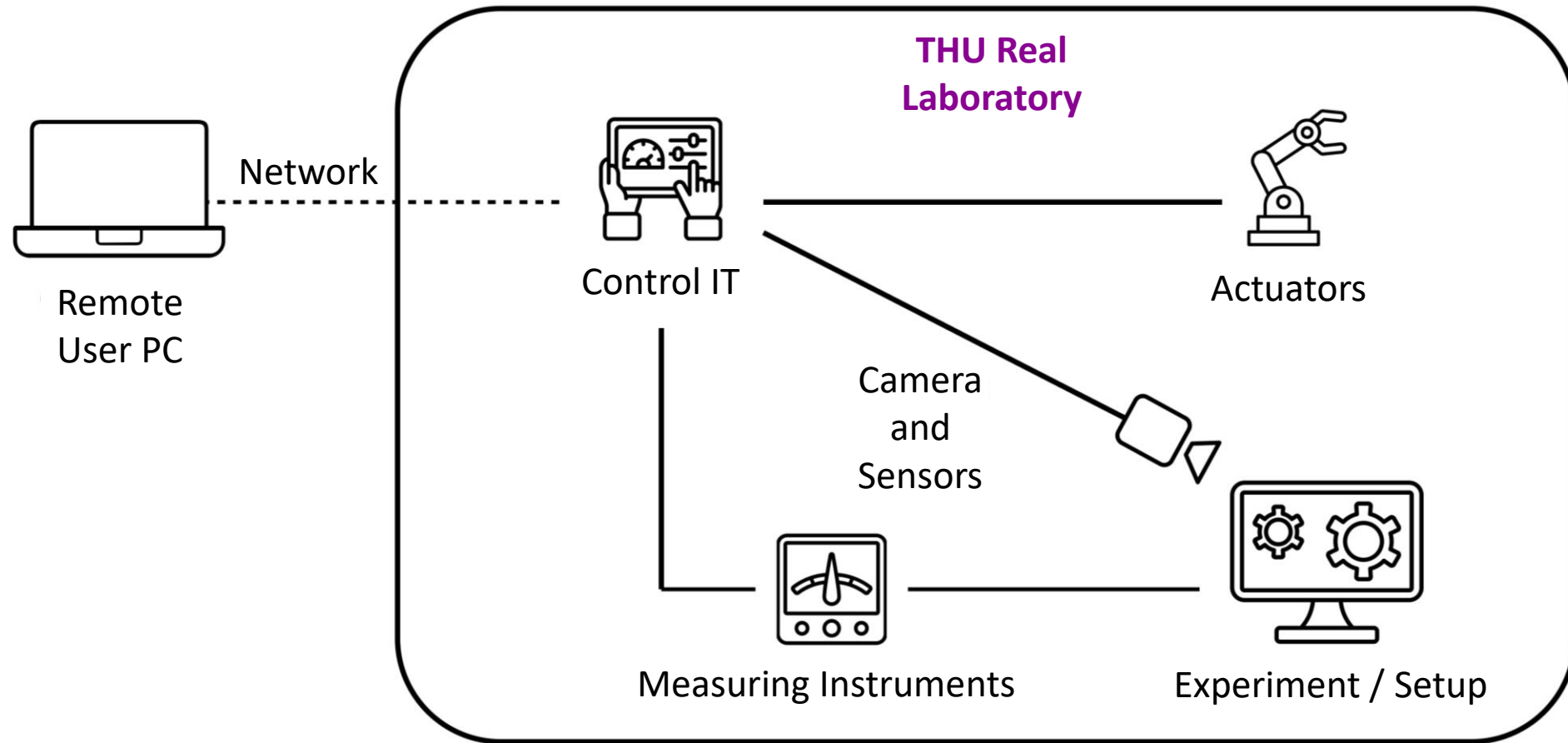


- Consistent with the university didactic principle of **Constructive Alignment**, we must ensure that students have the opportunity to develop the most up-to-date **remote engineering competencies**.



- The EU Digital Agenda and the Digital Education Action Plan identify XR as a high-potential technology for enhancing teaching and learning.

DiLa „Lab as a Service“ – remote control approach



DiLa Project from August 2021 to December 2025

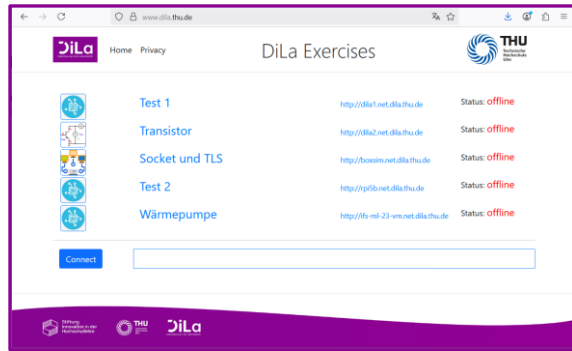
Funded by Stiftung Innovation in der Hochschullehre



DiLa Project results

- Successful internal collaboration across four THU institutes (**IKT**, **IFI**, **IFS** and **IHD**) and multiple THU faculties led to the following project results:

Web-based Access for LaaS



Remote Access for Heatpumps



Digitalization of Safety Instructions



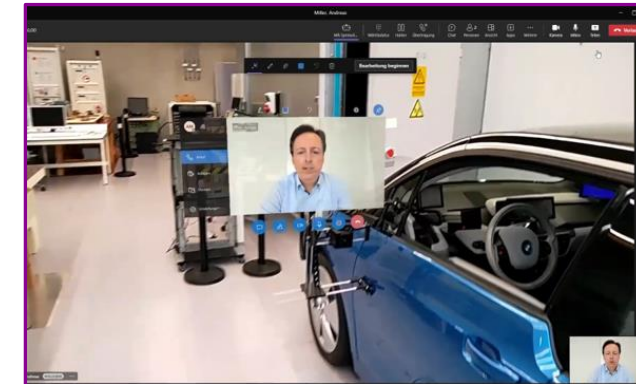
Remote Access Framework



AR Framework



Interaction for hybrid Experiments



and more...

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Digitalisierung in der Labordidaktik