

PROGRESS TO SUCCESS

CT4.1 Hardware Tools

Lead **AIT** AUSTRIAN INSTITUTE OF TECHNOLOGY

Partners:



Objectives

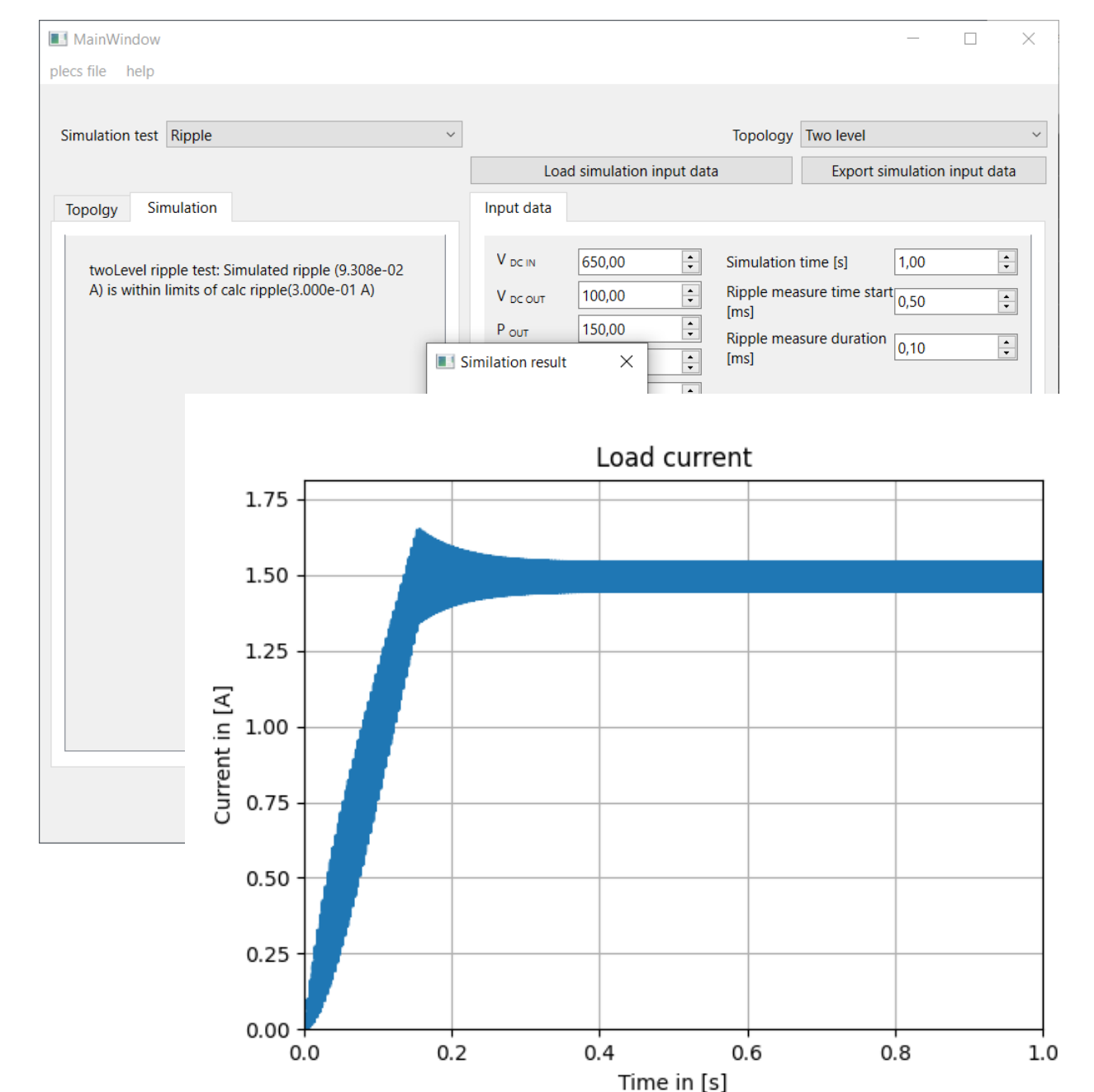
- Improvement of C-HIL environments
- Automated testing and reporting environment for DC/DC and AC/DC converters (AIT)
 - a) Test specification definition of requirements and consideration of relevant testing standards (AIT)
 - b) Benchmarking of automated PLEXIM C-HIL against a power electronics converter e.g. LED-driver (UC2.3) (AIT, PLEXIM, IFAG, SIGN)
- Development of a parametrizable SiC MOSFET model (PSC)

Methods

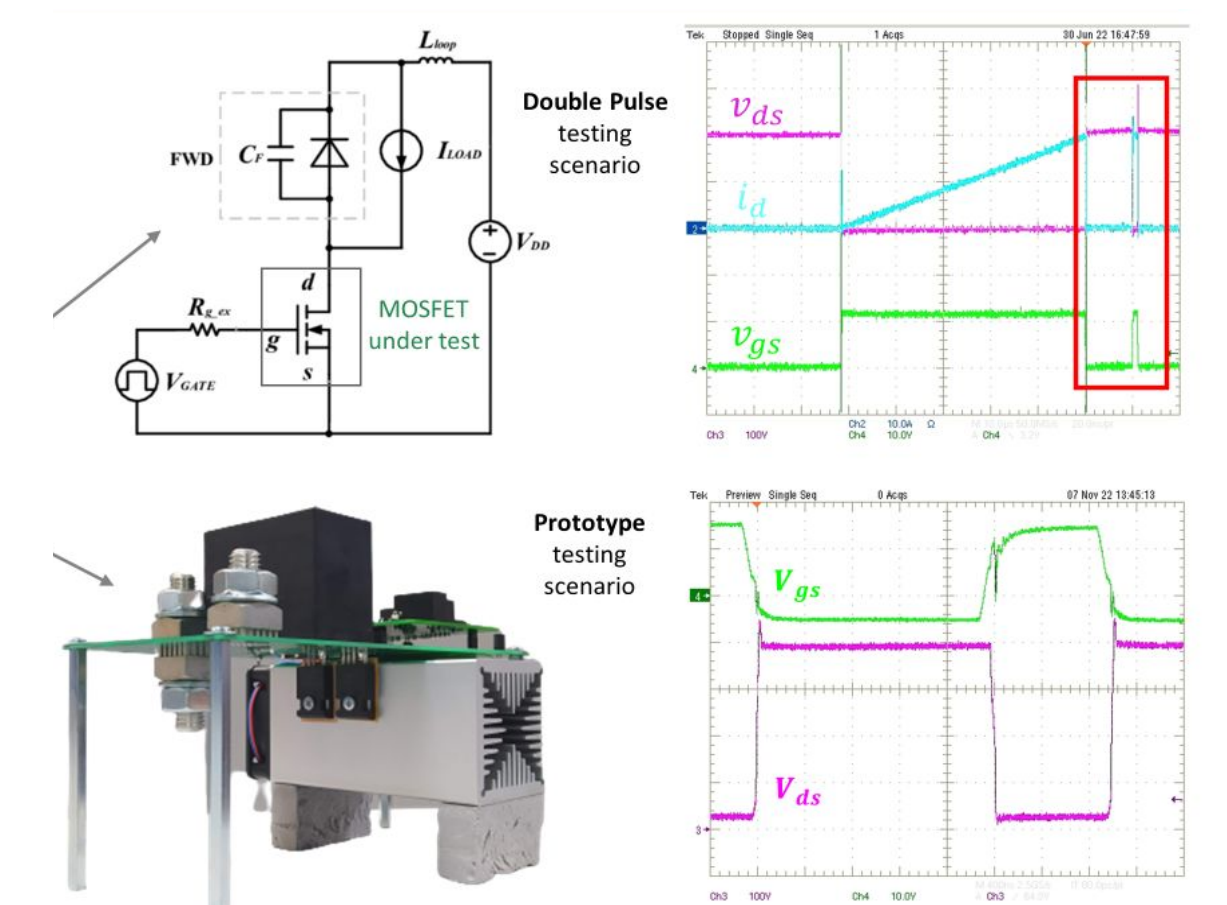
- Improvement of existing C-HIL systems and validation against offline simulation and prototype measurements
- Rapid control prototyping with PLECS code generation toolboxes for microcontrollers e.g. Infineon XMC

What are the main obstacles?

- Automated evaluation of simulation results (automated reporting system)
- Validation of simulation results and determination of accuracy



GUI of automated testing and reporting environment



Validation setup for parametrizable SiC MOSFET model

Motivation

Automated testing and reporting environment

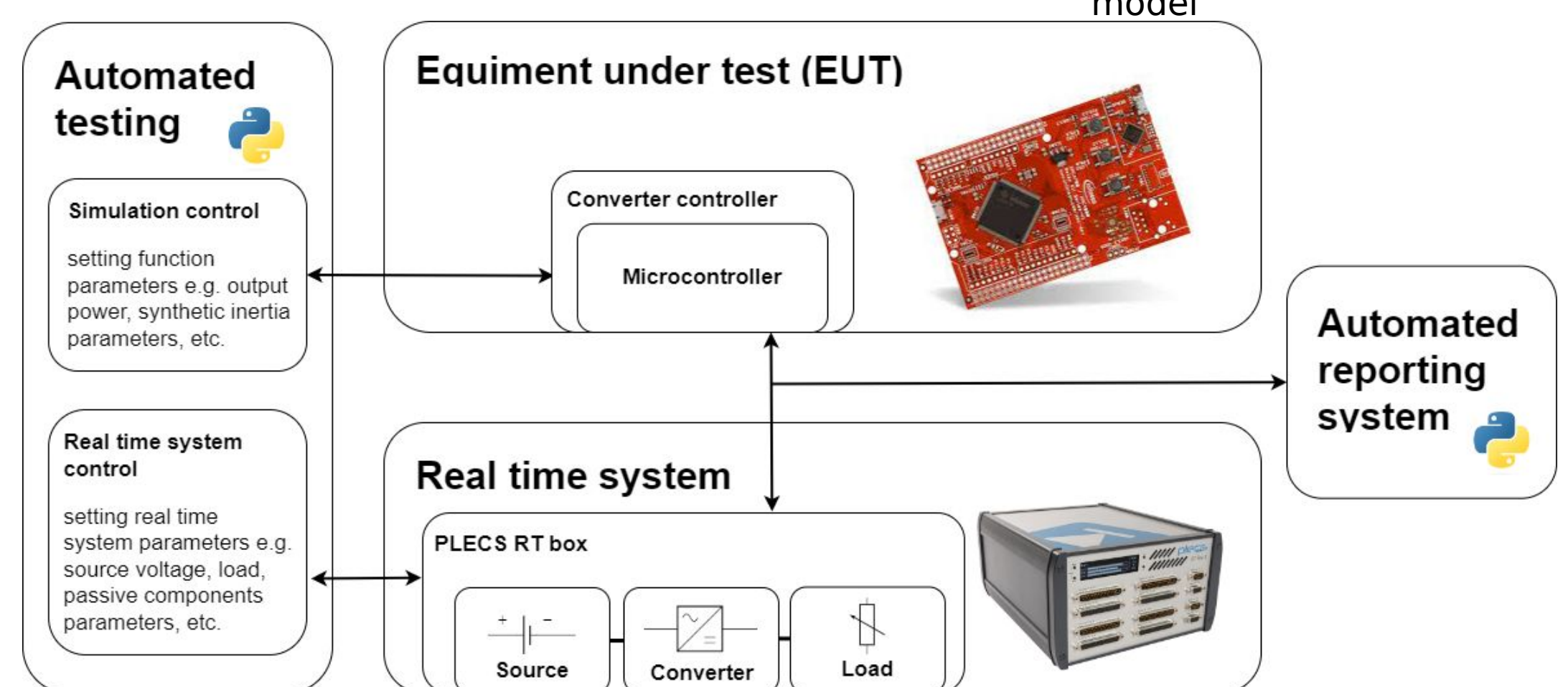
- *State of the art:* During the development of a power electronic converter, many different tests have to be simulated and analysed by hand
- *Project goal:* Test and simulation platform which enables automatic testing and corresponding reporting of e.g. controller hardware for power electronic converters

Development of a parametrizable SiC MOSFET model

- *State of the art:* MOSFETs and IGBTs are currently modelled as ideal switches for C-HIL environments-
- *Project goal:* Full SiC MOSFET model running on a real-time system

Relevance & Market

Make testing with C-HIL systems faster, more accurate and more cost-efficient



Automated testing and reporting environment based on PLECS RT Box and Infineon XMC

The project has been accepted for funding within the Key Digital Technologies Joint Undertaking (KDT JU), a public-private partnership in collaboration with the HORIZON Framework Programme and the national Authorities of Germany, Belgium, Spain, Sweden, Netherlands, Austria, Italy, Greece, Latvia, Finland, Hungary, Romania and Switzerland, under grant agreement number 101096387. Co-funded by European Union.

