



TU München CoSES Lab V1.0

→ COMPISO User Story

User:

Technische Universität München
Lehrstuhl für Erneuerbare und Nachhaltige Energiesysteme (ENS)
CoSES Research Center, Forschungszentrum für Gekoppelte Intelligente Energiesysteme
Lichtenbergstr. 4a
85748 Dortmund

Installed System:

COMPISO System Unit CSU200-7GAMP4

Application:

The installed system is used for research in CoSES Research Center. It consists a 200kVA transformer for galvanic isolation, a 4-Quadrant Active Frontend for bidirectional energy flow and 7 groups of 4 COMPISO amplifiers (7GAMP4).

These 7 groups of 4 amplifiers can be flexible configured and independently used as prosumer emulators to emulate 5 single- and or multi-family-buildings and 2 groups are additional loads / generators located anywhere outside of these buildings.

All seven groups are directly connected to a real experimental 4 wire low voltage grid without any additional impedance in line.

The system is controlled by an external Real Time HIL and up to 7 researchers can independently decide electrical set-up of their building or external device (electrical energy - consumer, - provider or - prosumer)

This external HIL real time processors are adapted by a 5 Gbit optical SFP interface independent to each of the seven groups of amplifiers.

Benefits:

Freely configurable and flexible use of seven groups of four single amplifiers. Bidirectional energy flow for source or sink operations. Energy exchange between the groups through a shared DC bus. Overall energy demand or generated energy will be provided from or feed into the supplying grid via the bidirectional Active Front End /AFE).

Ultra-high bandwidth of up to 5 kHz full span sine wave voltage und up to 15 kHz harmonic frequencies. Wide range of amplifier configurations for current and future research activities in the CoSES Lab. All amplifier outputs are directly connected to a powered grid without any disturbances through in line impedances.