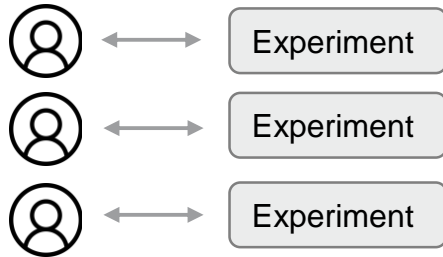


Second Life for Energiewende

Project Members:
Jan Dinkelbach
Iris Köster

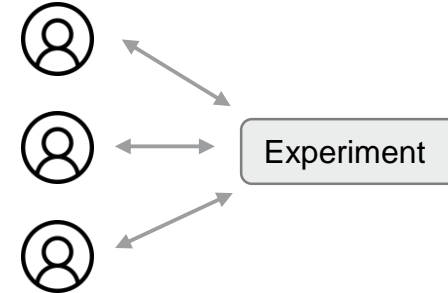
General Requirements from Proposal

■ Individual experiments



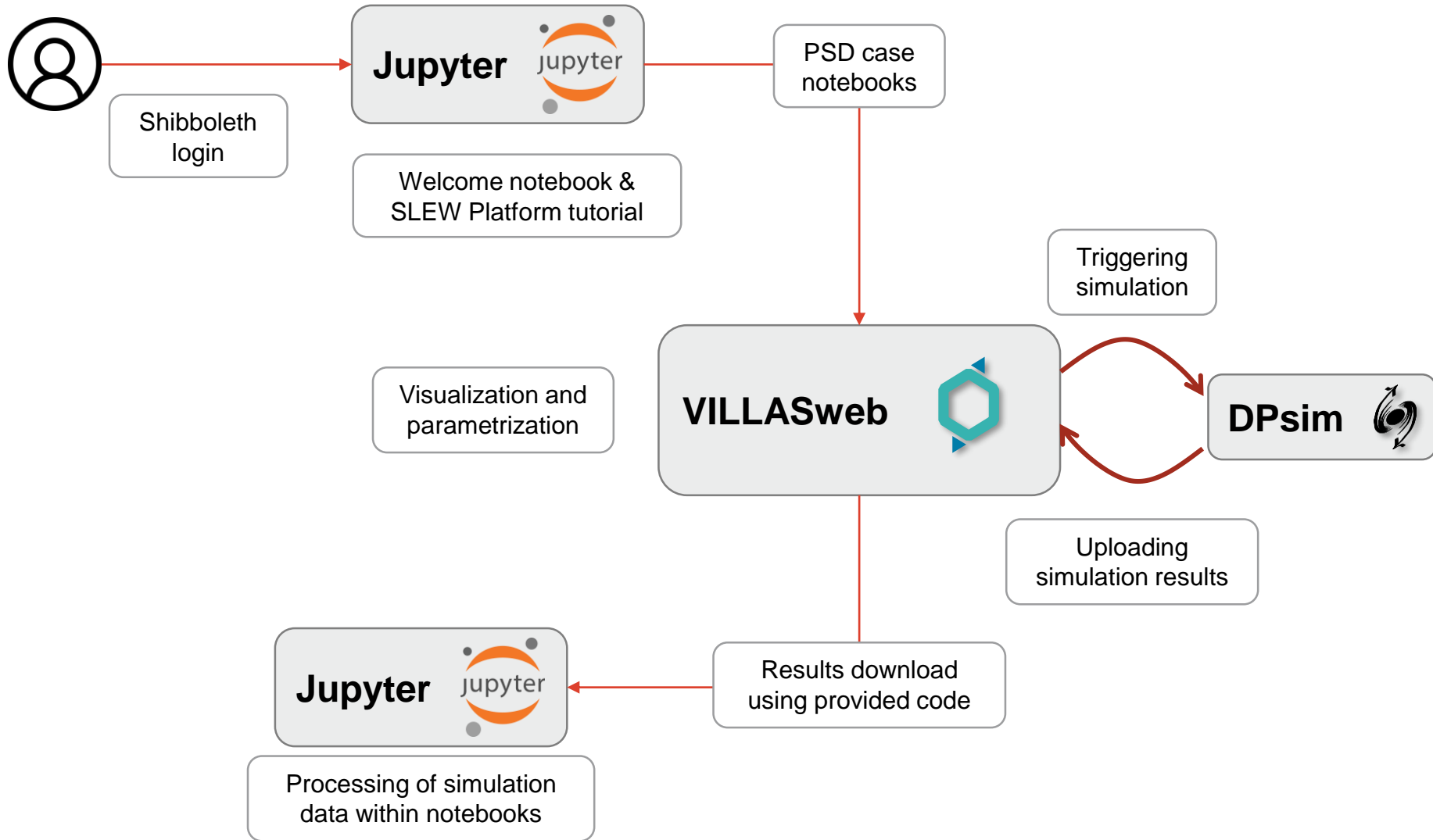
- = Individual (isolated) working space
- = Extract from experimental data the main information of a complex transient

■ Joint experiments



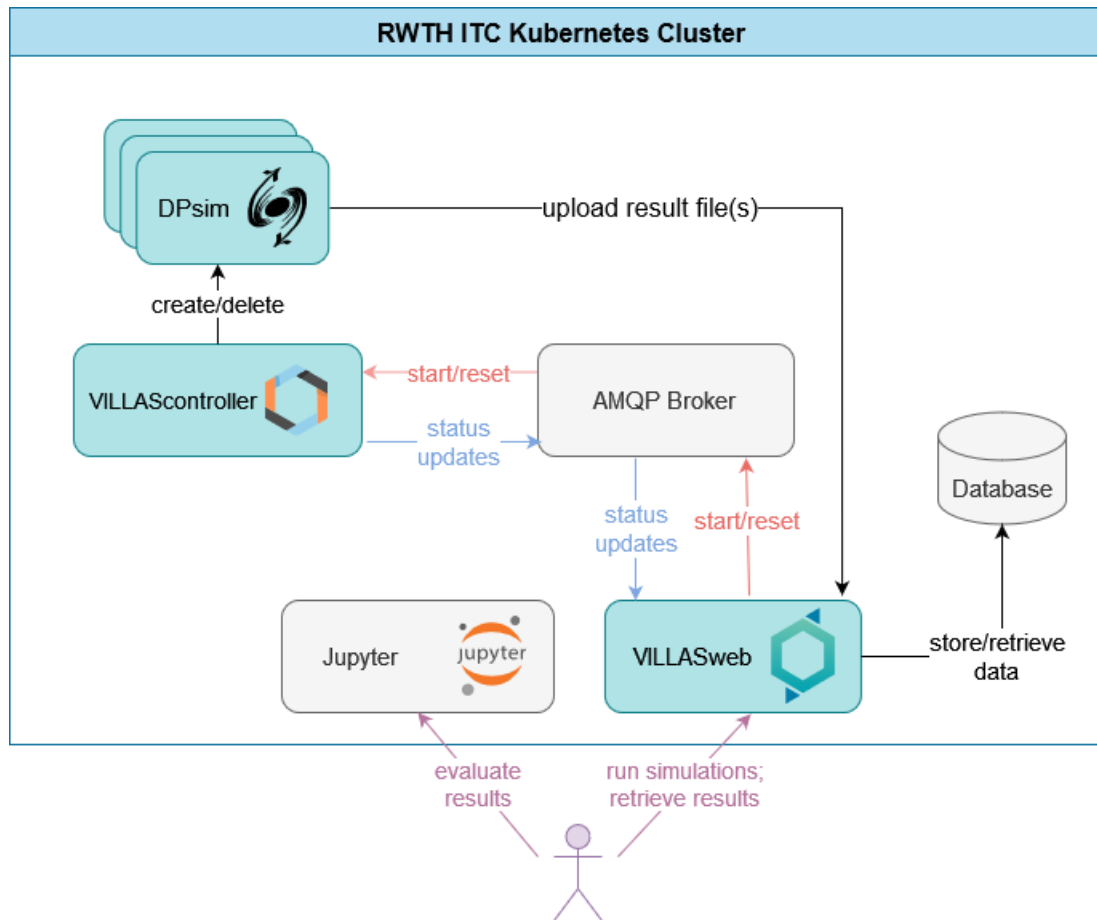
- = Shared working space
- = Measure in real-time, as in a virtual oscilloscope
- = Multiple events can be triggered by different students at the same time

Main Workflow - Individual Experiments

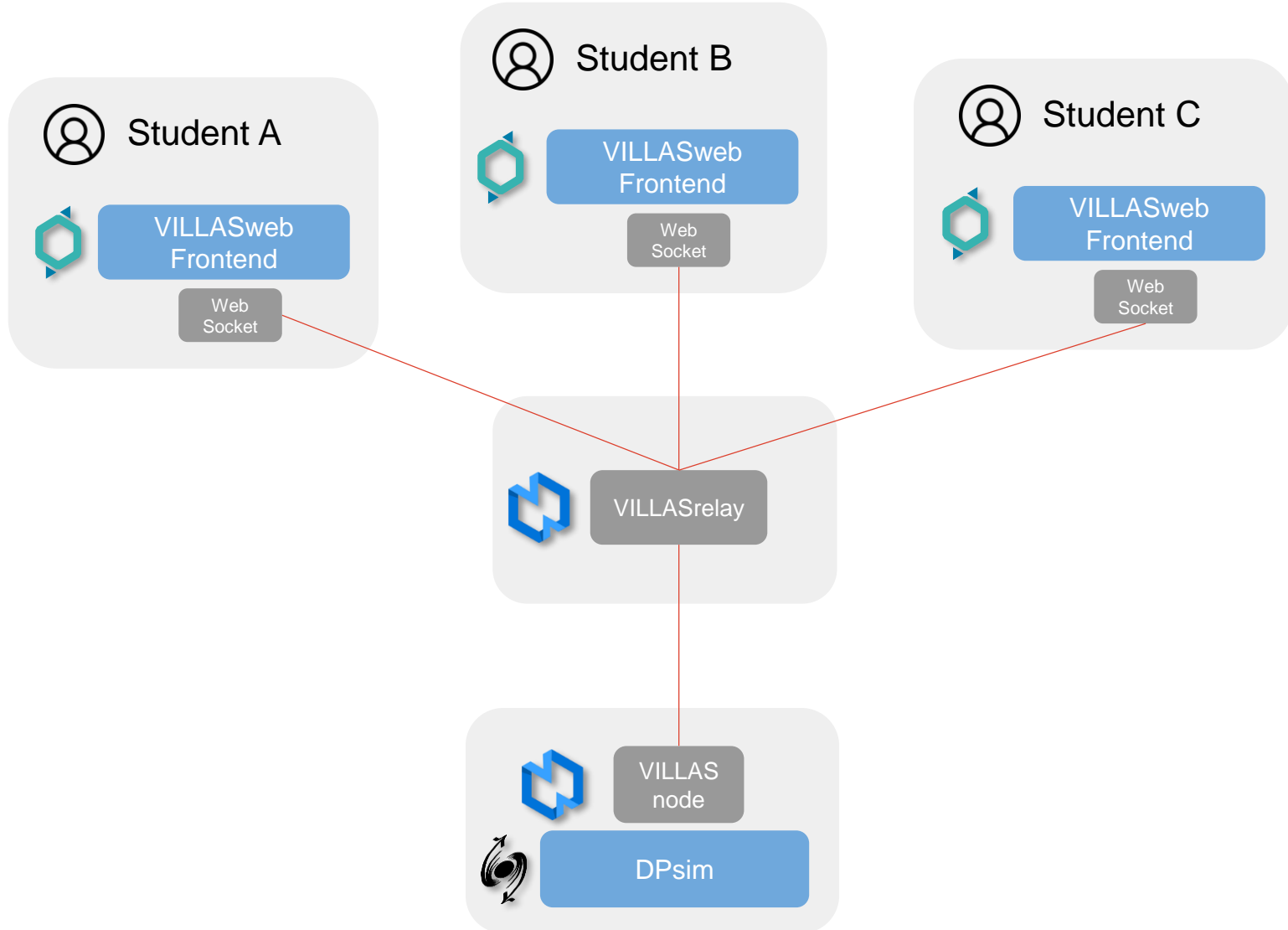


Individual Experiments - Platform Architecture

- Scalability using Kubernetes
- Deployment at RWTH ITC Cluster



Joint Experiment - Platform Architecture



Time for a demo...

SLEW Second Life for Energiewende X +

https://villas.k8s.eonerc.rwth-aachen.de/dashboards/5

SLEW - Second Life for Energiewende

SLEW Playground - Three Bus HV

Characteristics:

- Three-Bus High-Voltage network
- Synchronous generator model of 2nd order

DPsim Simulator: stopping
VILLASlabby: running

DPsim simulator

Synchronous Generator 2
Damping Coeff. 20.00

Fault at Bus 2
Fault status Trigger Fault
Fault duration 1.00 [s]

Fault at Bus 3
Fault status Trigger Fault
Fault duration 0.90 [s]

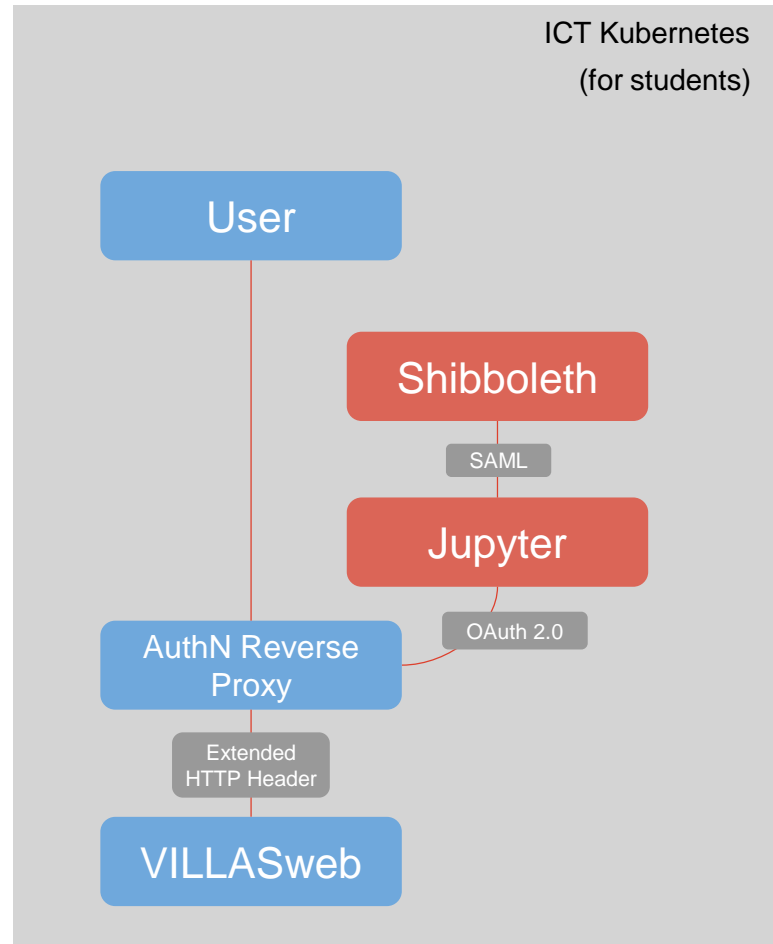
SG2.Delta - SG1.Delta

SG1.Omega [rad/s] SG2.Omega [rad/s] SG1.P_elec [W] SG2.P_elec [W]

SG1.Vmag [V] SG2.Vmag [V] SG1.Imag [A] SG2.Imag [A]

Log-in Architecture

- Log-in to the platform by using the regular TIM account



Outlook: Jupyter4Power

- Design of Future Power Systems using Jupyter Notebooks
- Collaboration with Politecnico di Milano, Italy and Comillas University, Spain
- Funded by RWTH's International Cooperation Online (ICON) competition
- Authentication of RWTHjupyter will be extended to DFN-AAI / eduGAIN federations
- Allow access to RWTHjupyter for selected external users
 - ≡ e.g. summer schools

