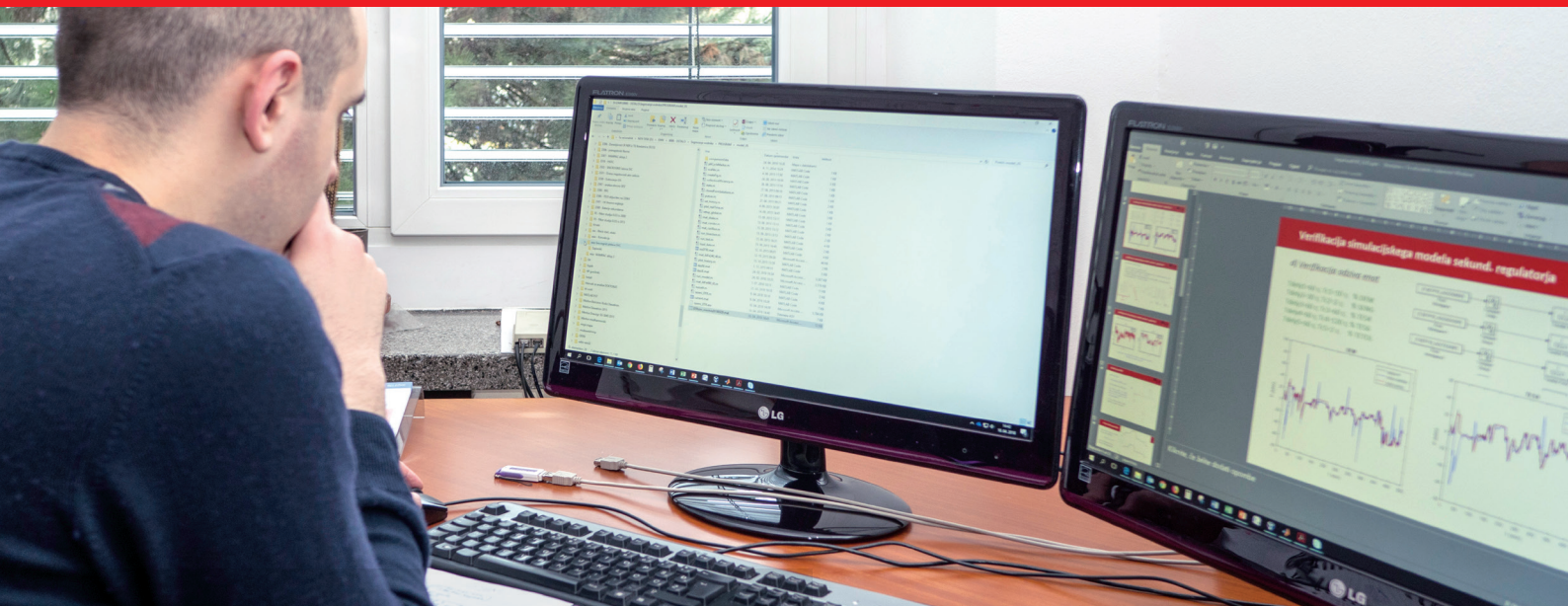


Electric Power System Control and Operation Department



Experts at the Electric Power System Control and Operation Department research the electric power system operation and control as well as smart grids, and have introduced the SCALAR system (system for automatic localisation of atmospheric discharges), which is part of the Euclid European network, co-founded by the EIMV. We collaborate with local and international expert audiences, cooperate in technical committees of the Slovenian Standardisation Institute and with the IEC.

By collaborating in the NEDO Slovenian and Japanese project as well as other international projects like Horizon 2020 MIGRATE, FutureFlow, TDX-ASSIST and Sincro.Grid, we are co-shaping a modern electric power system. We are also engaged in the technological platform for smart grids, which is linked to the industry and a framework for the preparation of major pilot projects.

The innovative SCALAR system services that are the result of our know-how, are offered in Slovenia and the western Balkans.

ELECTRIC POWER SYSTEM CONTROL AND OPERATION

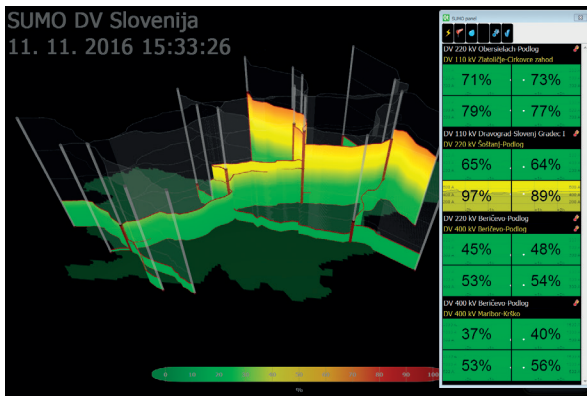
- ▶ Dynamic and steady state network analyses
- ▶ Distributed generation connection and operation
- ▶ Systems for assessing power system's operation limits (Dynamics Thermal Rating)
- ▶ Power quality and quality of supply
- ▶ Power generation operation
- ▶ Ancillary services
- ▶ Relay protection
- ▶ Control centres (SCADA/EMS/DMS)
- ▶ Economic analyses

SMART GRIDS

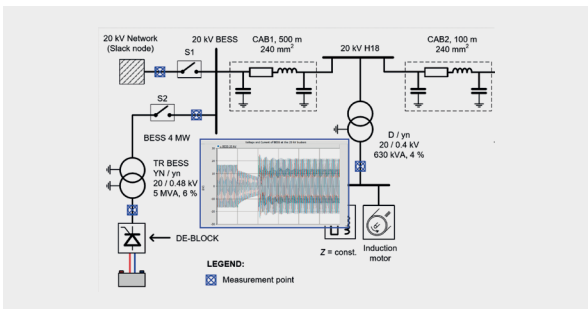
- ▶ Concepts
- ▶ Technologies
- ▶ Regulation
- ▶ Pilot projects
- ▶ EU projects
- ▶ Information technologies
 - ▶ Semantic technologies
 - ▶ Systems integration
 - ▶ Big data analytics and AI
 - ▶ Software design and development
- ▶ Information and communication technologies
- ▶ Advanced metering infrastructure



www.eimv.si



Advanced visualisation of the electric power system



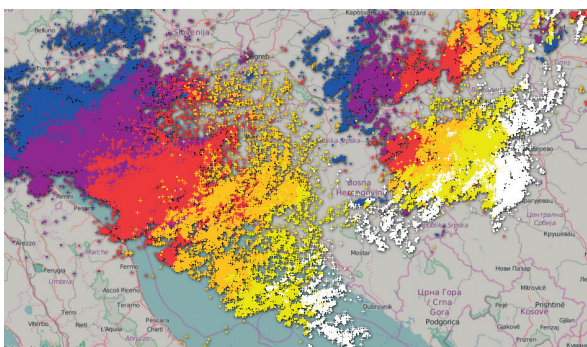
Dynamic analyses of the electric power system

SCALAR

The system for automatic localisation of atmospheric discharges (SCALAR) has been in operation since 1997. The system covers the territory of the western Balkans and is part of Euclid network - the European Cooperation for Lightning Detection. SCALAR uses the core detection technology produced by Vaisala. The system detects atmospheric discharges and utilize these data in advanced services which have been developed and operated by EIMV.

Technological solutions enabled by the SCALAR system are developed in collaboration with customers and adapted to their business processes.

www.scalar.si



Storm visualisations (ScalarFlashClient)

SCALAR SYSTEM SERVICES



ScalarFlashClient

monitors and visualizes atmospheric discharges in real time and from archives.



Outage correlator

provides information about overhead power lines outages caused by atmospheric discharges in real time.



FlashAlarm

notifies customers about atmospheric discharges in their areas of interest.



CompositeDisplay

enables monitoring of atmospheric discharges in combination with other weather data such as precipitation radar image, cloudiness satellite images, etc.



mScalar

enables monitoring of atmospheric discharges and other SCALAR system services on mobile devices.



FlashFinder

allows for accessing the archives of atmospheric discharges by location and time.



FlashStat

enables the review of statistical data on atmospheric discharges.



SKAT

enables risk calculations according to the SIST EN 62305-2 standard (Protection against lightning: Risk management).



StormFinder

enables online services for accessing the number of storm days on the area of interest.



ELEKTROINŠTITUT MILAN VIDMAR

Hajdrihova 2, 1000 Ljubljana, Slovenia

Tel.: +386 1 474 36 01, e-mail: info@eimv.si