

Digital Substation Automation Systems (DSAS) Initiative

DSAS Background

The usage and management of power transmission and distribution grids is changing dramatically as the world takes on the Energy Transition to more efficient digital systems. The control architecture for power grids needs to be adapted to take account of infeed at lower grid levels, higher dynamics in flow patterns, and more distributed controls - including internal controls as well as grid flexibility services from third parties.

In this context, transmission system operators (TSOs) and distribution system operators (DSOs) require a new generation of Digital Substation Automation Systems (DSAS), allowing for more dynamic protection settings and adaptive automation functions. Moreover, data management becomes a significant challenge for the administration of deployed automation and protection functions as well as the procurement and curation of operational grid data.

The design of the new DSAS requires a higher level of modularity, interoperability, and scalability compared to previous generations. Open source collaboration is an essential part of meeting those requirements in a cost-efficient way. Open source development enables the sharing of effort through a leveraged development approach, involving all stakeholders - from equipment manufacturers to end-users - and fosters vendor-agnostic implementations and convergence of utility practices.

DSAS Projects in LF Energy

The first project to launch under LF Energy's DSAS initiative is CoMPAS - **C**onfiguration **M**odules for **P**ower industry **A**utomation **S**ystems. CoMPAS

Name	Description
digital-substation	Special Interest Group for discussing Digital Substation initiatives
digital-substation-virt	This group corresponds to the Design Team carrying out preparatory works for the inception of an open source project aiming at developing a reference real-time platform that can run automation and protection applications in the digital substation.
digital-substation-conf	<p>This group corresponds to the Design Team carrying out preparatory works for the inception of an open source project aiming at developing software related to IEC 61850 model implementation and configuration.</p> <p>This SIG is now closed. The related works continue under the CoMPAS project.</p>