



NEWSLETTER

September 2026

Co-funded by the European Commission's Horizon Europe programme, "Enabling interoperability of multi-vendor high-voltage direct current (HVDC) grids" (InterOPERA) brings 22 European partners together to unlock the potential of HVDC grids and to enable the large-scale transition of the European energy sector.

CIGRE 2026 Symposium

InterOPERA participated in the CIGRE 2026 Paris Session, held from 23 to 28 August 2026, with several contributions across the programme. InterOPERA partners contributed five technical papers/poster presentations highlighting project-related work. On 25 August, InterOPERA contributed to the CIGRE Study Committee B4 HVDC Protection Workshop, with a presentation entitled "The DC-Protection Functional Framework for Competitive Multi-Vendor Tenders – InterOPERA", outlining progress on protection concepts, fault separation, DC Fault Ride-Through functional requirements, standalone conformity assessment, protection zoning for the InterOPERA demonstrator and early de-risking at tender stage.

Updates from Work Packages

Work Package 1 "Development of standardised interaction study processes and interfaces"

During Q2 2026, the laboratories continued parallel testing activities, advancing both the offline simulation environment and the real-time demonstrator. In the offline setup, all HVDC vendor converter models for the demonstrator have now been received, and the integration tests with multiple vendors are underway. The laboratories tested three converter stations from different vendors without the DC Grid Controller, as well as three converter stations from the same vendor coordinated by the DC Grid Controller.

The Power Park Module (PPM) models and the central DC switching station are being progressively integrated as well. The team is waiting for some anticipated model updates before the full interaction studies can begin.

In the real-time environment, the team completed almost all dry-run tests, de-risking the next steps toward the full demonstrator test campaign (expected in the coming weeks).

The group working on the lessons learnt and recommendations for Multi-Terminal Multi-Vendor interaction studies has started working on the next deliverable that will compile recommendations. They have brought the introductory chapters on the state of the art and study process, independent from the demonstrator activities, to a solid level.

Additionally, they discussed the lessons learned and recommendations from the real-time dry-run activities, focusing on the differences between the Hardware-in-the-Loop (HIL) and Software-in-the-Loop (SIL) solutions from both vendor and system integrator perspectives. This prompted discussion on possible intermediate approaches between SIL and HIL that could optimise the balance between model fidelity, implementation complexity and the overall test platform.

Work Package 1 is now preparing for the next milestone: the workshop in September 2026 where partners will consolidate the latest findings.

Work Package 3 “Multi-vendor multi-terminal demonstrator project”

Work Package 3 continues to move forward with the updated plan discussed with the European Commission in the last General Assembly in Ludvika in March 2026.

All participating HVDC vendor partners are officially on course to complete their physical control and protection (C&P) replicas. Meanwhile, the software models have already been successfully delivered and integrated into the initial test runs led by project partners in Work Package 2.

With this achievement in place, Work Package 3 now enters a new phase. The team’s focus shifts to collaborating with the testing laboratories and following the test campaigns carried out by RTE and TU Delft, to troubleshoot any interoperability challenges that appear during the execution of the tests.

Looking ahead, the actions taken to address interoperability issues and the lessons learnt during this testing phase will be formally documented in project reports planned for the second half of 2027.

Work Package 5 “Procurement Strategy and Future Projects Preparation”

Work Package 5 continued strengthening the procurement work across InterOPERA during the second quarter of 2026. The team introduced monthly deep-dive meetings bringing technical, legal and procurement experts together and helping everyone to see how their results connect. These sessions let the different strands of work converge, and they supported the finalisation of the procurement strategy. Partners reached internal consensus on the recommendations, and the team is now set to publish them online.

The team also advanced the contractual recommendations for future Multi-Vendor High-Voltage Direct Current (HVDC) projects. They examined how project owners, system integrators and suppliers could divide responsibilities when no single supplier controls the complete system. They explored governance, testing, intellectual property and the information that suppliers can formally rely on as a common basis for their designs. Clear rules for this data reduce uncertainty and reduce unnecessary duplication of verification by every supplier.

In parallel, Work Package 5 drafted the main chapters of a modular technical specification that future project owners can adapt for real tenders. These requirements translate InterOPERA's technical results into templates that support consistent procurement. The team uses the demonstrator specification as one of the main sources but keeps demonstrator-specific values out of the general requirements and retains them as practical examples.

The team also completed a structured assessment of 14 multi-vendor risks covering design, communication, control and protection. The work links these risks to possible mitigation measures, including clearer specifications, pre-qualification tests, contractual provisions and early coordination studies. And now it is investigating which data each party must provide and who should lead, support or approve these studies. Early coordination can reveal incompatible equipment assumptions before they cause redesigns, delays or restrictions during operation.

Next, the partners will connect all these results in a joint workshop in Paris in September 2026, where participants will examine how project owners, developers and suppliers could exchange reliable data and coordinate studies from early design through tender evaluation and contract award, to help shape practical procurement and tendering processes for the first commercial multi-vendor HVDC grids.

Get in touch with us:

Want to learn more about InterOPERA? Or have any questions about our work?

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