NEWSLETTER

April - June 2023

Second edition

Co-funded by the European Commission's Horizon Europe programme, "Enabling interoperability of multi-vendor high-voltage direct current (HVDC) grids" (InterOPERA) brings 21 European partners together to unlock the potential of HVDC grids and to enable the large-scale transition of the European energy sector.

Join the InterOPERA Stakeholder Committee!

Follow the link and apply now!

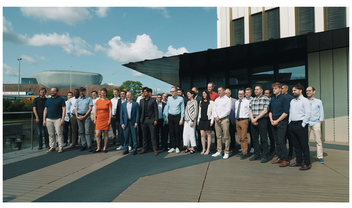
InterOPERA is launching a call for interest for external parties to join the project's Stakeholder Committee.

Selected experts in this committee will be given regular updates on the project's status and results. And they will be able to provide feedback and contribute to shaping InterOPERA deliverables. The Stakeholder Committee will meet five times across the project in exclusive technical workshops.

Applications are open until **30 September 2023**.

Are you interested in joining InterOPERA's Stakeholder Committee? You can find more information and fill out the application form here.

InterOPERA 1st General Assembly



On 26-27 June InterOPERA project partners met in Brussels for the first General Assembly.

Project partners heard from three external keynote speakers and had a chance to exchange views with them as well.

Reynaert Jelle from Elia Group, the host of the General Assembly, underscored the ambitious EU offshore energy targets and the importance of HVDC system interoperability.

Martin Koning, also from Elia Group, highlighted InterOPERA's role in paving the way for future HVDC systems. He then gave updates on Belgium's planned energy island in the North Sea, Princess Elisabeth.

Mark van Stiphout, Deputy Head of Unit - Research, Innovation, Digitalisation, Competitiveness at DG Energy, highlighted InterOPERA's role in deploying offshore wind energy and in creating a strong, meshed offshore grid capable of bringing the energy to shore.

During the two-day meeting InterOPERA experts also shared updates on project activities and looked at different issues related to project implementation in dedicated workshops.

WindEurope, who is leading InterOPERA's communication work, presented the project video.

Watch the video here!

InterOPERA joins BRIDGE

InterOPERA is now a member of the Horizon BRIDGE initiative, a network of 160 projects in the energy sector working towards an energy resilient and net-zero Europe.

BRIDGE is a European Commission initiative providing a platform and resources to support projects in the energy sector. InterOPERA's accession to BRIDGE comes after its attendance at the BRIDGE General Assembly 2023 in March. This event was a chance to introduce the project to BRIDGE members. Posters of new projects were presented allowing participants to get to know them and to speak directly with project representatives.

UPDATES FROM WORK PACKAGES

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

Working Group 1 experts are preparing simulations to demonstrate the functioning of interoperable HVDC systems and for this, they will use two real-time simulators: RTDS and HyperSim.

RTDS is one of world's leading real time power system simulators. It runs electromagnetic transient-type simulations in real time, validating the performance of power system devices and de-risking project execution. InterOPERA partner TU Delft just received the RTDS equipment needed to run the simulations.

HyperSim is state-of-art, extensively field-tested software for power electronics and power systems that will help engineers to model HVDC networks with high efficiency signal processing, and thus perform more realistic tests.

Real-time software simulation offers the advantage of physical devices, such as power system protection and control devices being connected to the simulated system in a closed loop. As a result, InterOPERA partners will be able to study detailed interactions between the network and protection, control, and power devices during system transients (changes in the system that move it from steady-state operation).

The HVDC equipment vendors in the project are developing these control and protection systems based on the requirements agreed by the consortium.

RTE and TU Delft have also developed a guide for a dynamic link library (DLL) and other digital toolboxes to use in either of the two simulators.

Partners have continued to lay out the steps and processes for the interaction studies that will be carried out in Work Package 1. They will define what studies will be done, which parameters to run, the number of iterations, etc. The labs will then get going with the simulations.

Work Package 2 "Requirements and assessment of interoperability for multi-vendor multi-terminal HVDC systems"

Work Package 2 ensures that HVDC components from different suppliers can work together – making them interoperable and modular by design.

One of the objectives is to try to simplify HVDC grids, making them as easy as AC grids are today. Work Package 2 aims to develop the requirements for the future HVDC grid where each subsystem is provided by different vendors.

During these opening months for the project, Work Package 2 experts are developing an initial framework for DC grid functional requirements. This framework is based on the split of the HVDC grid into relevant subsystems such as DC switching stations, gate units, HVDC converter stations and energy dissipation devices.

For each subsystem they are assigning key functionalities and at the same time they are developing technology neutral functional requirements. By following this *"technology-agnostic"* approach InterOPERA ensures that there will be no biases in favour of different technology solutions by vendors who are not among the project partners.

In addition, Work Package 2 will include the topic of DC grid protection in this framework, which is an important element for the expandability of HVDC systems.

Work Package 3 "Multi-vendor multi-terminal demonstrator project"

Work Package 3 experts are preparing a preliminary report on the "Demonstrator project definition and system design studies" that will lead to alignment and consensus on the topology and grid configuration of the demonstration project.

To define the demonstrator, they will use a short-list of Multi-Terminal (MT)-HVDC use-cases reflecting the most relevant needs and characteristics from the upcoming commercial MT-HVDC projects which are expected to be commissioned in the early to mid-2030s.

In early autumn, Work Package 3 will publish the updated version of the report focusing on preliminary system design studies.

Work Package 3 experts are launching a new task on the pre-design of HVDC grid sub-systems with the aim of aligning stakeholders and ensuring that all essential sub-systems and specifications required for the InterOPERA demonstrator are designed and developed in a timely manner.

Work Package 4 "Cooperation framework and governance"

Work Package 4 is finalising work on the **Preliminary Multi-Vendor Cooperation Framework**. This internal framework will help partners handle complex multi-stakeholder engagement across the project lifespan, and it covers the sharing of data and models that are important for project activities, intellectual property rights, competition etc.

T&D Europe and Ørsted have led the work with the support of HVDC equipment vendors. They presented the key findings to all partners at the General Assembly in Brussels.

As the work on the first framework is almost complete, Work Package 4 kicked-off work on the second, **Generalised Multi-Vendor Cooperation Framework** that will define the roles, duties, and responsibilities.

This framework will be universally applicable to future multi-vendor HVDC projects. It will also enable future expandability and dynamic system studies at early planning stages and detailed control and protection development.

Statnett is leading the work in collaboration with Ørsted and the University of Groningen, and the first draft will be ready by the end of the year.

GET IN TOUCH

Do you want to learn more about InterOPERA or have questions on our work?
Get in touch at info@interopera.eu

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