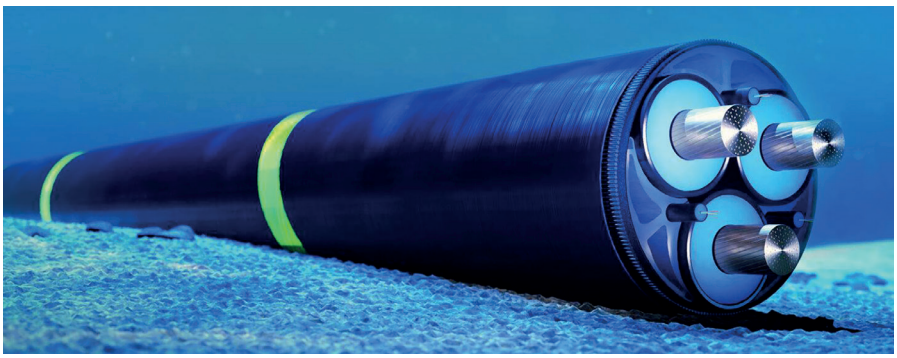
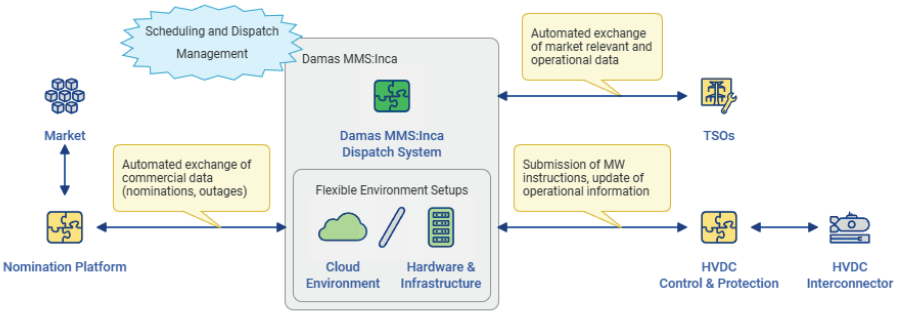
Damas MMS:INCA

A robust energy solution with a comprehensive toolset for monitoring, management, automation, and integration of HVDC interconnector scheduling and dispatch processes

The Damas MMS:Inca solution supports the processes of business-critical real-time control of the HVDC interconnector. The essential purpose of the Inca is to transform the nominated business flows into physical electricity flows in a secure and most economical way. The availability and operational reliability of Inca are ensured in the 24/7/365 mode. Inca combines both the software and hardware elements, and thus, further expands Unicorn's portfolio of highly specialized HVDC specific solutions.





Damas MMS:Inca Solution Big Picture

Solution Introduction

The HVDC (High-Voltage Direct Current) technology and its practical application in the current transmission system topologies continue to gain importance. The specifics of HVDC interconnections include the practical need for an independent flow control process. This process functionally stands between the allocation / nomination platforms, and the control & protection systems bound with the HVDC interconnector hardware.

Damas MMS:Inca represents a unified set of specialized modules and components built with a fundamental focus on HVDC interconnection management.

The key features of Inca are as follows:

- Intelligent transformation of commercial nominations into operational instructions (Power Orders), respecting the technical constraints and security requirements as well as requirements of the interconnected TSOs.
- Automation of critical scenarios, such as management of unplanned outages, the Return-to-service, etc.
- Automation of communication with the subjects (Operators, TSOs) involved in the flow agreement process.
- Advanced notification and monitoring features for the system operators decrease the operational risks.

The key functionality of Inca solution is to transform the received commercial values into the operational instructions used directly to adjust the target flow on the HVDC link. This is done by a transparent computation of the interconnector flow under the surveillance of HVDC Operators.

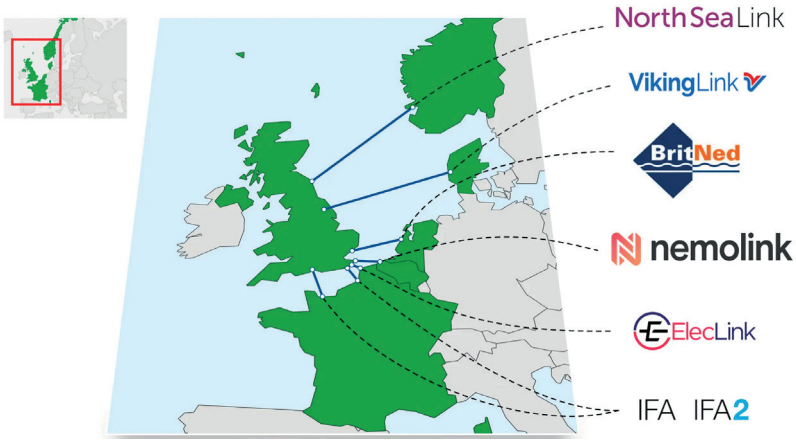
Solution Benefits

The main benefits and advantages of Damas MMS:Inca are outlined as follows:

- Automated scheduling process and dispatch
- Increase of operational security and reliability
- Effective and efficient real-time control and monitoring of the HVDC interconnector
- Advanced reporting and monitoring tools
- Automatic communication with the TSOs and authorities
- 24/7/365 support and availability
- Data and access security
- Flexibility and extensibility

About Damas MMS

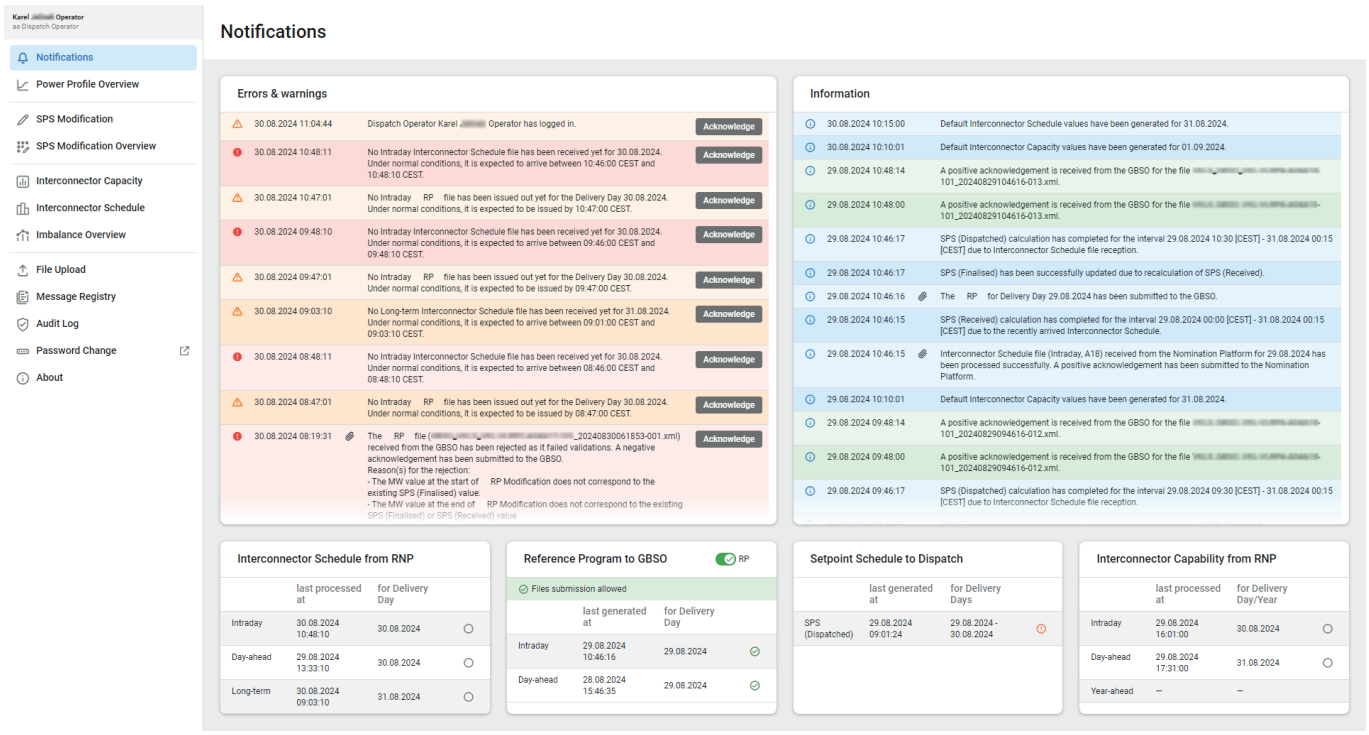
Damas Market Management Systems (MMS) family responds to the dynamics of the energy domain, offering a comprehensive set of components and agile tools for efficient and speedy development and cost reduction. The TimeSeries Engine enables time series data management, while built-in Process Management supports automation. Our FlexiGUI simplifies the UI design, enhancing user-friendliness and intuitiveness. Additionally, the platform supports configurable business rules, a digital workspace, enterprise integration through the Enelane data-exchange orchestration component, data access and publication via REST APIs, and data analytics using Microsoft Power BI. Damas MMS platform is based on modern IT approaches, such as cloud computing, DevOps practices, microservice architecture, and containerization - thus, leveraging the platform to become more responsive to changing business needs. Damas MMS:Inca benefits from being part of the Damas MMS family, relying on a range of mutually compatible visual and functional components. Our solutions combine well-established market management and interconnector dispatch products, built with a high focus on security aspects. They are composed of pre-existing business and technical components used across Unicorn – a foundation for all our recent solutions and products, leveraging many years of successful track record in business-critical operations.



HVDC Interconnectors Powered by Damas MMS:Inca Solution

Technology

The robust and flexible architecture of Damas MMS:Inca is based on the Unicorn **Universe Digital Twin Construction Kit** and the **Mobile-first IoT-ready AI-boosted Cloud Architecture** that allows to build systems and apps that work on all types of devices, from mobile phones to smart TVs. With a modern technological stack and set of ready components, it increases the flexibility of teams, accelerates the training, decreases risks and time-to-market, and delivering a major competitive advantage.



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