

Subsea DigiGRID™ Connect/Control

A qualified generic control, safety and Digital Twin System(s)

1. Connect/Control

Subsea DigiGRID™ is a qualified generic control, safety, and Digital Twin system(s) intended for and used to control any part in a subsea process setup. The main intention for a subsea DigiGRID implementation is to extend the interfaces for a regular topside Safety and Automation Setup (SAS) and Digital twin system(s) to the seabed. A good example for such an application is a subsea factory setup, including, pumps, water treatment systems, separators, and electrical power distribution.

Different requirements exist regarding types of (electrical and functional) interfaces for subsea connected equipment than for topside automation equipment. The interfaces for subsea connected equipment and requirements for operating temperature range and mechanical shock and vibration makes it not feasible to put regular topside interface units/boxes on the seabed. This is the reason for making and qualifying specialized components and interface cards for subsea usage. Subsea DigiGRID™ design philosophy is to build subsea systems consisting of small and flexible iRIO (Intelligent Remote IO) units with standard interfaces both towards subsea connected equipment and existing topside installed equipment.

Several types of iSubsea DigiGRID™ usage. Available interface cards cover the use of different types of serial ports, RS-485 and CAN buses, and discrete analogue and digital input and outputs.

Subsea DigiGRID™ is a subsea control system based on open industrial communication standards that allows co-existence of Subsea Control Modules (SCM) and instrumentation from different vendors and of different generations of technologies.

Biggest benefit of Subsea DigiGRID™ is the capability to act as an Integrated Solution in already existing topside installation.

Subsea DigiGRID™ may act as traditional I/O units providing inputs and outputs to SAS system and Digital twins located topside, and/or act as a stand alone control system on the seabed.

Subsea DigiGRID™ expands existing topside automation and Digital Twin interfaces to the seabed, eliminating data translation or protocol conversion.

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Siemens Energy, Inc.
Transformation of Industry
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Orlando, FL 32826
USA

For more information, please visit our website:
siemens-energy.com/subsea

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