

Subsea operations are rapidly evolving toward electrified, autonomous, low-carbon systems, but progress is still constrained by limited power availability.

ENGINEERED SOLUTIONS



Website
verlume.world

Commercial use only



STANDBY - ID: 3B-19 - LOAD: 41%
WARNING - TEMP: 64°C
PROCESSING - ID: 2A-89 - LATENCY: 14ms



Contact
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SYSTEM INTEGRATION

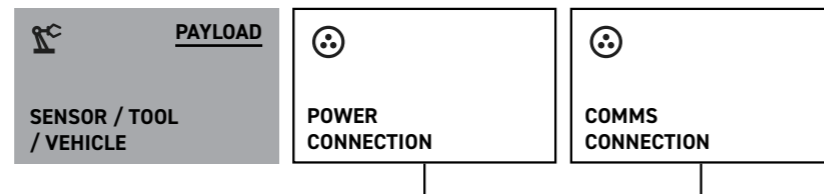
01 ENGINEERING SUBSEA ENERGY & CONTROL SYSTEM RESILIENCE

Subsea operations are entering a period of rapid change. The push toward electrification, autonomy, and lower-carbon offshore activity is reshaping how systems are designed and deployed. From resident vehicles to inspection tooling and long-duration monitoring, there is a clear shift away from traditional, vessel-dependent operations toward more flexible, continuously deployed subsea assets. However, one constraint continues to limit what is possible: power.



02 REDEFINING SUBSEA POWER AND AUTONOMY

Verlume delivers advanced subsea energy storage and power management solutions for the next generation of sensors, tooling, vehicles and autonomous systems. Working closely with OEMs, we design and integrate high-performance battery systems that enhance capability, enable operational flexibility and facilitate low-carbon maritime operations.

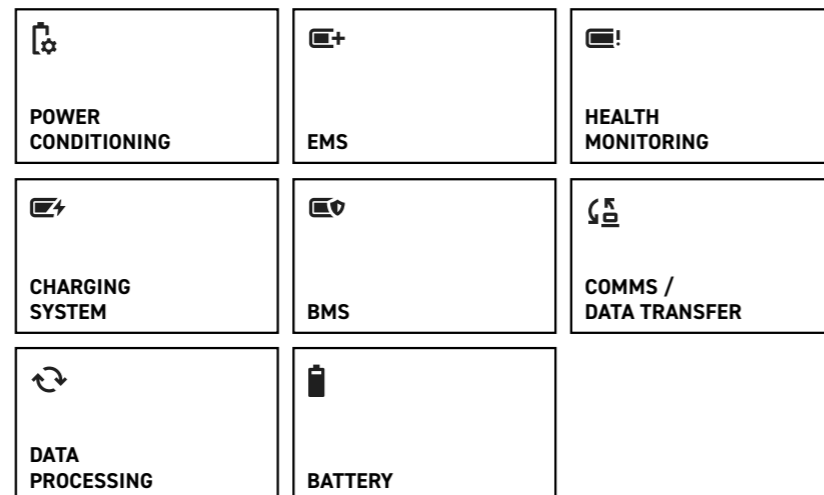


03 PROVIDING RESILIENCE THROUGH STUDIES

Designing the correct energy system is a balance of utilizing each component within the system appropriately, with efficient interfaces to maximize the energy available to the end payload.

With detailed experience in component selection and energy balance analysis, Verlume is best positioned to help you develop the optimum solution.

BATTERY SYSTEM



04 ENERGY STORAGE SYSTEMS

We tailor each solution to your system requirements, designing energy capacity around duty cycle, mission duration and charging strategy to ensure optimal performance. Our modular, scalable architectures allow systems to adapt across multiple platforms and evolve over time, to meet varying operational demands.

05 POWER MANAGEMENT & CONTROL

Integrated energy management and battery management systems (EMS and BMS) delivering intelligent control, alongside power conversion, distribution, monitoring and advanced system diagnostics.

06 PACKAGING

Full mechanical, electrical and controls integration across subsea platforms, including ROVs, resident vehicles, subsea tooling and intervention systems, as well as inspection and long-duration monitoring platforms.

07 CHARGING & INTERFACE SOLUTIONS

Flexible charging interfaces including wet-mate, dry-mate and pin-less solutions, fully integrated with subsea docking and charging systems to enable reliable, repeatable operations.

08 DESIGNED FOR SUBSEA REALITY

Systems are engineered specifically for harsh offshore environments:

- Pressure-tolerant and 1-ATM maritized architectures
- ROV-installable, retrievable and operable designs
- Fully autonomous operation with built-in asset protection and diagnostics

09 SAFETY, REGULATORY & COMPLIANCE

We have a breadth of knowledge applying the correct standards appropriately to battery systems based on their use case and function.

- UN3480/UN3481: Battery Dangerous Goods Classification
- UN38.3 : Battery Transport Safety
- IEC 62619 & IEC 62620: Battery Safety & Performance for Industrial Applications
- API 17F: Subsea Production and Processing Control Systems

10 USE CASES

- Resident subsea vehicles & docking systems
- Electric work-class ROV tooling
- Electric intervention systems
- Inspection, repair & maintenance control systems
- Subsea sensors & monitoring networks
- Uninterrupted Power Supplies

11 REMOVING POWER AS A CONSTRAINT

Verlume brings proven subsea battery technology heritage alongside full system integration capability, delivering complete power solutions rather than standalone components.

Our independent, application-driven approach ensures each system is engineered around real operational requirements, with a clear focus on reliability, safety and long-term deployment. By enabling autonomy and reducing vessel intervention, we support a new generation of subsea operations.

The result is enhanced product performance through fully integrated subsea power, greater autonomy and extended mission capability, simplified integration and faster time to market, and more differentiated, electrification-ready products with improved lifecycle reliability.