



PRODUCT SERIES BRIEF

WIRELESS NETWORKED COMMUNICATIONS (WNC)

Powered by UnetStack, the
Software-Defined Network Stack
for Underwater Applications.

The WNC series of products provide best-in-class performance with up to 15 kbps and more than 4 km of communication range (horizontal) in littoral waters for the M25M series, and up to 30 kbps and over 1 km of communication range for the S60H series. Both are optimized for throughput, communication range, and reliability with features like spatial diversity combining, adaptive link tuning, and robust forward error correction codes.

WNC SERIES GENERATION4



SPEED



RANGE



RELIABILITY

The software-defined architecture integral to the UnetStack-powered WNC wireless communication devices from Subnero unlocks new high performance connectivity, unmatched flexibility and diverse new applications.

EDITIONS

The WNC product series offers various editions that are tailored to specific industries, including defense, marine and subsea, as well as scientific research.

PLATINUM EDITION

Delivering performance under the toughest environmental conditions.

SILVER EDITION

Easily customized and reliable communication node for commercial deployments.

RESEARCH EDITION

Bridge the gap between developing using a simulator & commercial deployment.

Software-Defined Open Architecture Modem (SDOAM)

- ▶ Ease of integration with unified interfaces
- ▶ APIs in Java, Groovy, Julia, Python, C, JavaScript
- ▶ OS/hardware platform independence
- ▶ Support for external sensors (e.g. GPS, AHRS)
- ▶ Optional coprocessor for user applications
- ▶ ML/AI ready for edge computing applications
- ▶ Single WNC device to fill the role of multiple acoustic devices
- ▶ Interoperability with other acoustic systems by emulating them (E.g. transponders, pingers)
- ▶ Coexistence with other acoustic systems (e.g. USBL, transponder)
- ▶ Regular software updates

Advanced networking & localization capabilities

- ▶ Operate multiple communication nodes simultaneously
- ▶ Support for multi-hop links
- ▶ Support for routing protocols
- ▶ Support for mesh networks
- ▶ Cellular-like networks for broader coverage
- ▶ Ability to control devices remotely

FLEXIBLE CONFIGURATIONS

The WNC product series is available in four general configurations: standalone (SC), embedded/OEM (OC), multi-channel, and deck to address different deployment scenarios and performance requirements. These configurations are designed for seabed-mounted deployments (SC with pressure hull), integration to marine robotics such as AUV/ROV (OC), and buoy or boat-mounted scenarios (multi-channel or deck).



Optional accessories and upgrades

Subnero WNC products support a rich ecosystem of optional accessories and upgrades making it one of the most versatile acoustic devices in the market today.

- ▶ GPS, Compass (AHRS)
- ▶ Storage options: 256 GB, 1 TB
- ▶ Coprocessor
- ▶ Various underwater cables
- ▶ Depth rating - 300 m, 2000 m, 4000 m, 6000m

Advanced Features across the board

- ▶ Communication Profiles for various environments
- ▶ Link Tuner
- ▶ Smart Scheduler
- ▶ Regular software upgrades
- ▶ Support for different types of links



UnetStack

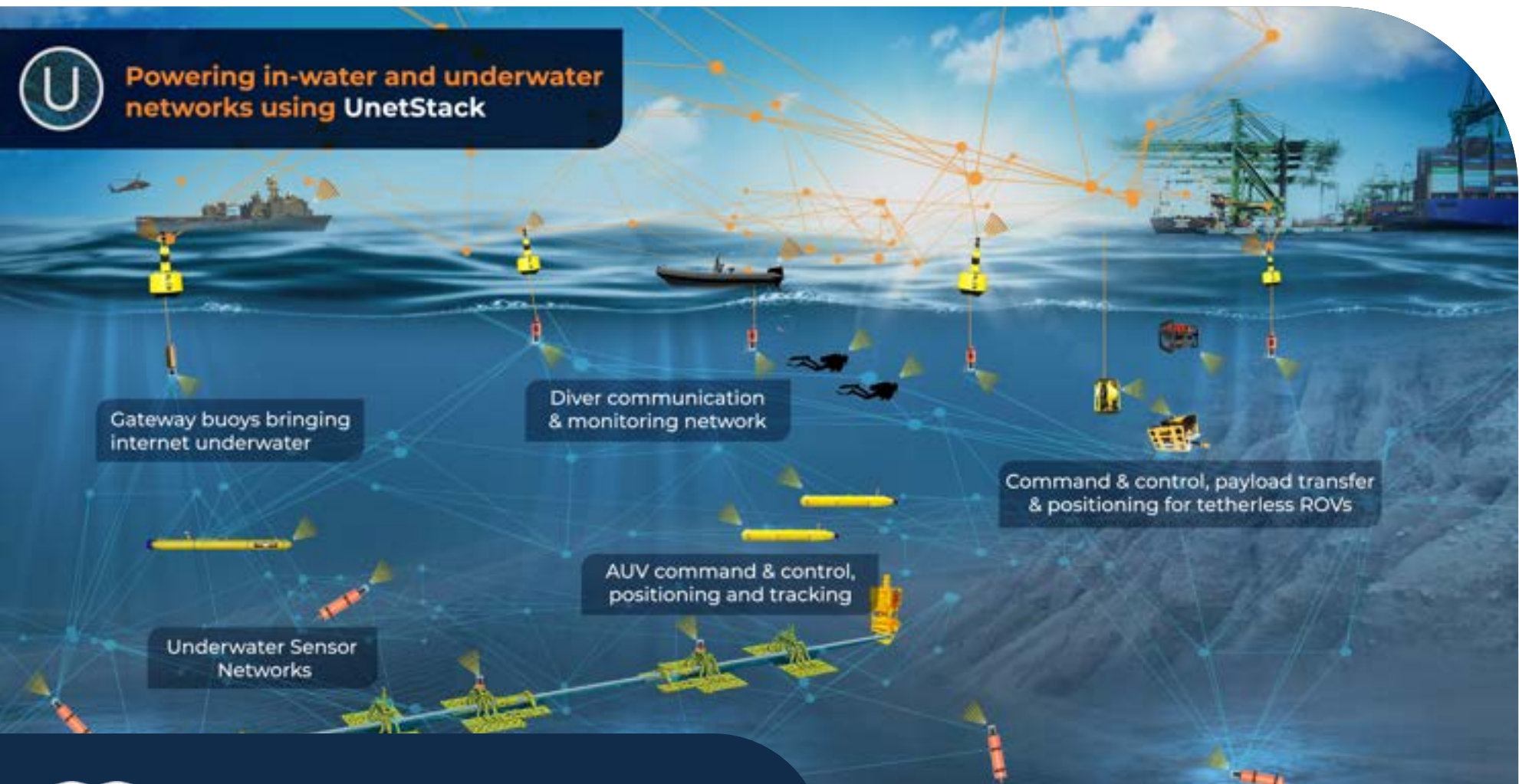
Designed with flexibility and ease of use in mind, UnetStack allows you to easily develop and configure underwater communication networks, automate and optimize network management, develop, simulate, and test new network protocols, and implement software-defined signaling at the physical layer. The community edition is downloadable free of charge for educational and research purposes.



PRODUCT APPLICATIONS



Powering in-water and underwater networks using UnetStack



Gateway buoys bringing internet underwater

Diver communication & monitoring network

Command & control, payload transfer & positioning for tetherless ROVs

AUV command & control, positioning and tracking

Underwater Sensor Networks



UNDERWATER SENSORS

Subnero Wireless Integrated Suite (SWIS), ADCPs Edition provides a seamless end-to-end solution for the wireless transfer of data from Acoustic Doppler Current Profilers (ADCPs) to avoid uncertainties during long-term deployments. The intuitive web-based user interface and Content-Aware Processing (CAP) engine let the user effectively manage multiple deployments to drive down the overall costs. [Refer to our application-specific brochure for more details.](#)



MARINE ROBOTICS

Ripple is a software package that provides a single software interface to all communication devices, both above and underwater on your underwater vehicle, be it wireless or wired. It provides features such as simultaneous data transfer, payload and link prioritization. Ripple provides API support to specify "capabilities" such as priority or compression at a packet level.



UNDERWATER WIRELESS NETWORKS

Combine UnetStack with Subnero's wireless networked communication (WNC) portfolio, and you have a truly scalable, dynamically configurable, and extendable underwater communication and positioning network termed Subnero Underwater Network (SUN) that provides seamless wireless connectivity underwater for a variety of applications.



DIVERS

Designed with military and commercial applications in mind, Subnero's diver communication network is easy and quick to deploy. It fits diving equipment without inconvenience to the divers and most importantly it is reliable. Its ease of use makes it also suitable for search & rescue dive teams and technical divers.

Subnero WNC series of products support various applications in defense, research, marine & subsea sectors. They are MIL standards certified, features arbitrary waveform transmission & reception, offer customizable network stack layers, wide sensor support, deep sleep mode, and cost-effective legacy system replacement.



DEFENSE



SCIENTIFIC RESEARCH



COMMERCIAL



Get in touch now