

Standards Week Reflections

A Look Ahead with Mark Oslund

During NMEA Standards Week in Durham, NH, technical leaders and developers came together to refine protocols, test devices, and shape the future of marine electronics. In the update below, **Mark Oslund, NMEA's Director of Standards**, shares highlights from the event—covering OneNet interoperability, security advancements, and how collaboration is driving the next wave of innovation across the marine industry.



OneNet and the Future of Interoperability

NMEA 2000 plenary week in Durham, New Hampshire, allowed us to explore all aspects of the standards we use for common communications within our industry.

Our plenary consisted of both standards work and lab collaboration to ensure that the first beta test of operational OneNet devices met the NMEA certification process.

Working groups had multiple opportunities to present new applications and messaging options encapsulated in the OneNet protocol. The more collaboration occurred, the more productive and innovative the results—leading to exciting new ideas for our standards.

The initial goal to create OneNet as an extension to NMEA 2000 and 0183 presents an ideal model for achieving interoperability across multiple manufacturers. OneNet levels the playing field—enabling both large and small companies to innovate freely.

As we continue our development mission in 2025, innovative implementations will emerge in 2026 and 2027. OneNet is now proving itself ready for mass market consideration. The merging of all three NMEA protocols around a shared messaging focus will drive the connected boat concept forward. Leadership is especially focused on expanding the spec to include measured security and legacy data tunnels to extend the life of installed equipment.

NMEA's NOAA-sponsored sessions increased participation around communications for ropeless gear systems in the fishing sector. These efforts support real-world ocean governance through technology. Our WAVS initiative also saw progress, particularly in secure ship-to-shore communications. The team is drafting server-to-client interoperability specs to allow manufacturers to present subsystem info using JSON and HTML—empowering rapid, user-driven configurability.

Our committee also moved forward with parallel drafting of new specs and software development for OneNet device security solutions. The plenary helped solidify a working draft to address security requirements, and we're now preparing updates to the NMEA certification tool.

A long-term working group is forming to standardize display and configuration options within OneNet, giving end users consistent control across multi-display platforms.

We also demonstrated the first wireless OneNet devices using ESP32 platforms, opening the door for lightweight, purpose-built IoT devices on boats.

Finally, in response to manufacturer interest, Ethernet engineers from IOL and Charles Wu of Amphenol presented the latest in two-wire Ethernet tech. Capable of 25Gb speeds over 1,000m, this could play a future role in sensor networks for OneNet Layer 1.

Personally, I believe OneNet is more than capable of addressing modern concerns around Ethernet on vessels. It offers our industry new tools and opportunities to deliver meaningful information directly to the ship operator.

OneNet is our yellow brick road to ship-wide integration.

— Mark Oslund

Director of Standards, NMEA



Pictured: Ryan Martin – Honda / Grant Suzuki – Yamaha / Tim Banaszak – Southeast Navigators / Bob Marcinkowski – Airmar / Dave Morschhauser – Mystic Valley / Brian Gnad – Navico Group / Rick Siebenaler – Maritime Cybersecurity Institute / Alex Polmans – Maretron / Roshan V. – Masters in Cybersecurity, Cyber Boat / student participant / Aeolionics / Jeremy Boynes – Aeolionics / Jeremy Daily – Colorado State Univ. / Tom DeBoerio – Dometic / Lee Luft – USCG