



COMMAND CONTROL &



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Electronic Navigation Takes Another Giant Step Forward



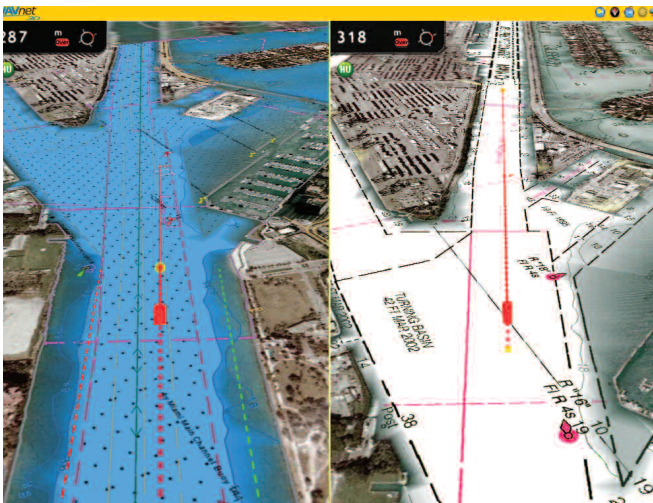
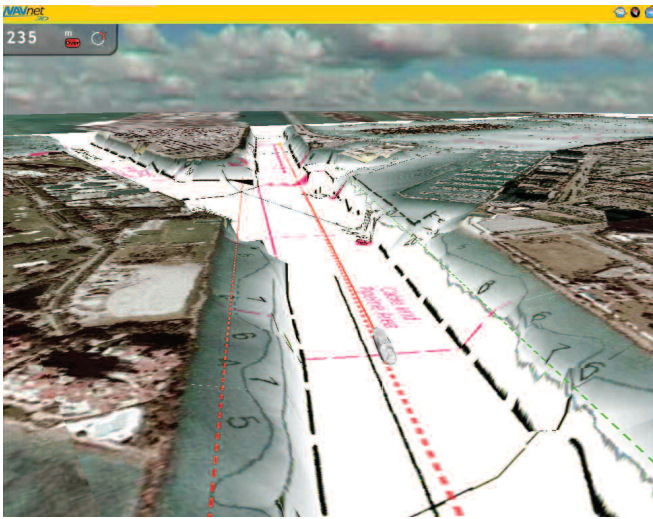
Story By JOHN WOOLDRIDGE

The past 14 months have seen a whirlwind of change in electronic marine navigation. Next-generation multifunction displays (MFDs) have come to market with increased processing power and networking ability, larger and easier-to-read displays, and new user interfaces that add increased convenience and safety to our passage planning and making. As single display or multiple display installations, most of them move us more positively in the direction of the “Glass Bridge,” with control units mounted remotely, increased interconnectivity, and fewer individual components mounted on the console. Here’s a look at the biggest news in electronic marine navigation to hit the waves over the last 12 to 14 months.

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In October, Furuno introduced its most innovative integrated marine electronics system ever, NavNet 3D, a completely redesigned, component-based navigation suite. The brains of this building-block system are based in 8.4-inch (\$3,195) or 12.1-inch (\$4,495) MFD units, or in a Black Box MFD (\$9,995), tucked away in a remote location and designed to drive one of four select displays. To expand system capabilities, you can also add a variety of optional Furuno components to round out your package, including the Ultra High Definition (UHD) digital radar sensor, the Furuno Digital Filter (FDF) fishfinder, a Sirius Marine Weather receiver, a GPS/WAAS receiver, an autopilot, an AIS receiver, digital instruments, and Internet protocol (IP) cameras.

Virtually everything about this new nav system is noteworthy. When you’re ready to navigate, you can choose from preloaded official NOAA charts—raster, vector, and bathymetric—for the entire U.S. coastline, including Alaska and Hawaii. And the system can display any of these chart formats in 2D or 3D anytime, on the fly, with no redraw time. Flawless chart loading and scaling make this system very unique. When you see it in operation, you’ll walk away convinced, like I was,



Images courtesy of Furuno

Top: With Furuno's PhotoFusion, detailed satellite images depicting land masses and shallow water appear on a NOAA raster chart, clearly showing charted depths, warning notes, and more. Above: A simple menu selection allows you to move between preloaded vector (left) and raster (right) charts.

that NavNet 3D is a game changer, a giant leap forward in electronic navigation.

NavNet 3D incorporates a powerful graphic engine and a new technology, powered by a next-generation software package from MaxSea, that Furuno calls TimeZero. This technology allows seamless chart redraw with absolutely no waiting time. The selected chart can be zoomed continuously in and out to whatever chart scale is desired, something like gaining or losing altitude in a private aircraft, but without the hesitation found in conventional chart planners as you pass from one chart scale to the next. Panning side-to-side and scrolling forward or backward around the chart in real time is equally flawless, allowing you the freedom to explore the waters ahead on your charts. A short button push

instantly returns you to your own vessel's position, while a long push on the same button toggles between a traditional 2D view and a bird-like 3D view.

PhotoFusion is the name Furuno gives to another NavNet 3D technology that allows high-resolution satellite photography to be fused with the raster or vector charts you've chosen. Dry land and shoal areas are displayed with satellite photos on the chart, so you can see where the shore ends and corresponding soundings begin. As the depth increases, the satellite photography becomes more transparent, indicating where the deeper water begins. The satellite photography for coastal areas of the United States is free. Simply download your navigation area of interest onto an SD card from the NavNet website (navnet.com), and upload it to your system.

When you're ready to expand your system, Furuno offers UHD radar sensors (\$2,600 to \$6,500) that feature noise-free target presentations with automatic, real-time digital controls. NavNet 3D's new dual progressive scan transmits two separate echo signals that act autonomously when the screen is split with two radar displays, allowing you to adjust each individual presentation for range, gain, sea, and rain clutter controls. Each screen is also equipped with an automatic radar plotting aid (ARPA) that is capable of tracking up to 30 targets simultaneously.

The Furuno Digital Filter, operating in conjunction with the DFF1 network sounder (\$660), adds a powerful, dual-frequency digital fishfinder to the NavNet 3D system. The filter suppresses surface clutter caused by propeller action, adding exceptional shallow-water capabilities, and also optimizes gain to obtain highly defined images of fish and structure on the bottom.

The screen can be split and customized to show the information that interests you most often, including views from your engine room and from stern-facing and underwater cameras using multiple video inputs or distributed over an Ethernet network with up to four IP cameras. Cycle through multiple video inputs in a single window while viewing digital instruments monitoring engine performance, wind data, or other sensor data. Drop a real-time Sirius satellite weather overlay over the chart for up-to-date local and regional weather conditions. Add a PG500R WAAS GPS antenna (\$350) for high-accuracy fixes and an FA30 Automatic Identification System (AIS) two-channel receiver to help keep track of large vessels when running in limited visibility. The options for customization seem almost limitless with NavNet 3D.

For more information, contact Furuno (360.834.9300; navnet.com; furuno.com).