Couch sailing

TV coverage of elite sailing has always lacked the adrenaline rush of being aboard a yacht sailing fast in strong wind. Until the advent of augmented reality, that is.

Now, a seamless mash-up of computer graphics and live video feeds is making sailboat racing a thrilling spectator sport. It shows you the real boats and crews, as well as their tracks through the water, course boundaries, wind direction, speed, and other things that significantly affect the outcome of the race. At a glance, you can tell which boat is ahead and by how much, how its main competitors are doing, and whether they are trying different routes and tactics.

The use of augmented reality for elite sailing started with the 2013 America's Cup, in San Francisco. The man behind it is world-renowned navigator Stan Honey. Along with colleague Ken Milnes, he developed an augmented reality solution for the America's Cup Event Authority that allows fans to monitor the events live on TV and mobile devices. You can see the world's top sailors making high-speed maneuvers in powerful vessels with sail-wings 12 stories high.

"The magic really happens when we combine position information from sensors aboard the boats with the video and camera position data from helicopters following the action," explains Honey.

Honey and Milnes are experts in applying augmented reality to broadcast sports, such as their yellow first-down line in televised American football, the tracking system used in NASCAR and other motor races, and the ESPN K Zone system used to track and show a baseball's path.

Their America's Cup system, called AC Liveline, tracks vessels to within two centimeters, 10 times a second, superimposing graphics on the live race footage shot from HDTV cameras mounted on each boat , as well as the race helicopter. This involves integrating ship sensors and telemetry systems, and custom writing software. The America's Cup race management team will also use the system's two-centimeter accuracy to enable umpires to make more accurate decisions.

AC Liveline utilizes Expedition software, widely recognized as the best tactical sailing and navigational software for high-performance offshore racing sailboats,

C-MAP 4D CHARTS:

http://e1.no/54d

RACE AUGMENTED REALITY VIDEO:

http://e1.no/5rAR

THE AMERICA'S CUP

The America's Cup tradition started in 1851, when a boat named America won a race around the Isle of Wight in England. The winning team named its trophy the America's Cup and donated it to the New York Yacht Club. The race has occurred every four to five years since, with a few longer and shorter intervals, and it is always between the current holder of the cup—the "defender"—and a single challenger. Since 1983, that challenger has been determined before each match in the Louis Vuitton Cup race series, in which national teams compete for the right to challenge.

In the in 2017 contest, Team Australia's AC45 catamaran, skippered by Olympic Gold Medallist and ISAF Rolex Sailor of the Year Mathew Belcher, will compete against the defender, Oracle Team USA.

which in turn uses Jeppesen's C-MAP MAX and 4D electronic charts. Expedition's owner/developer Nick White, himself a Volvo Ocean Race navigator and Whitbread winner, says the C-MAP charts are important for displaying course weather and currents and setting the course marks – and are also used for fleet monitoring.

Honey explains how the America's Cup operations centre and committee boat used Expedition and C-MAP charts as a critical background to set and view mark and boundary locations, check currents and wind, and to monitor race boat location and predict their finish ETA. C-MAP charts also provided reference positions for calibrating the augmented reality solution.

The 35th America's Cup in 2017 will be exciting, says Honey. The Hamilton Island Yacht Club has long since announced its Australian Challenge to the defending Oracle Team USA of Golden Gate Yacht Club, San Francisco. But beyond confirming that the race will be an augmented reality experience again, Honey refuses to predict the outcome.

STAN HONEY

Stan Honey is director of technology at the America's Cup Event Authority. A two-time Emmy Winner for Technical Innovations in Sports TV Broadcast, Honey co-founded Etak Inc., the company that pioneered vehicle navigation systems and is now part of TomTom. He holds eight patents in navigation technology and 21 in tracking and television special effects. Honey is also a top-ranked professional sailor, having navigated ABN AMRO to victory in the 2005-2006 Volvo Ocean Race and Groupama 3 in setting the Jules Verne record for the fastest circumnavigation of the world under sail in 2010.