

Stable and futureproof wireless networks: VBH and Extricom provide a life source for superyachts



Van Berge Henegouwen (VBH) installs state-of-the art Entertainment, IT, Security, Communication and Control Systems onboard megayachts. Since the IT-network is often the backbone for the other systems, VBH is continuously looking for solutions that are future-proof, stable and can deal with yacht-specific challenges. Extricom and VBH have partnered on an 81 meter superyacht to deliver a Wireless Local Area Network (WLAN) that fulfills all the requirements of the yacht's build team.

Changing media consumption onboard megayachts: increase in content and WiFi device usage

Luxury megayachts are often used by superyacht Owners to explore the world and escape the stresses of the outside world. But for those who want to stay connected, anywhere in the world, the on-board WiFi system is of paramount importance. As is the case for being ashore, superyacht Owners, guests and crew expect to have access to their content anywhere, any time and on any device. Wherever their content is stored, they expect to have secure access to their email, business applications and downloaded audio and video files.

Alongside the increase in (web) content related services such as Twitter, Skype and YouTube, the use of fixed and personal IP-devices onboard megayachts has grown. Owners, guests and crew expect that their own end-user equipment be easily absorbed by the wireless LAN network.

WiFi as the yacht's life source

The WiFi not only serves as a content distribution network for the people onboard but also serves as an essential operational technology for the yacht itself. Many onboard applications and devices run on the WiFi network. VOIP telephones, CCTV cameras, the ship's offices' video conferencing system and wireless panels to control the Entertainment system, room temperature, lighting and blinds are just a few examples of technologies that a WLAN can enable in a yacht environment.

The specific challenges for WiFi onboard megayachts

A megayacht in itself poses some challenges to provide Owners, guests and crew with a high bandwidth WiFi network. These challenges are related to:

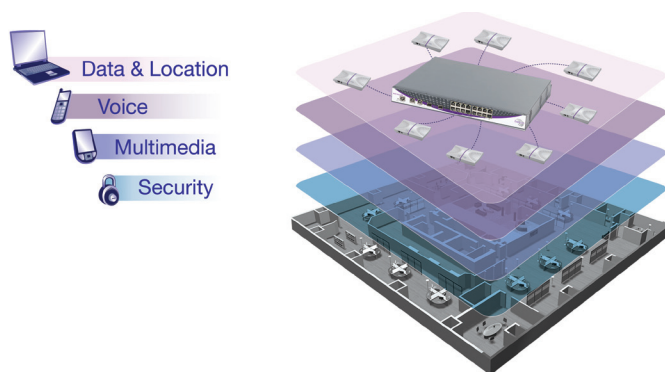
- The construction of a yacht. In many cases a yacht has to be designed according to superyacht regulations from classification bodies. These regulations require area partitions by concrete walls which in many cases must be waterproof and fire-resistant. This calls for a highly flexible system since this yacht layout makes wireless signal propagation highly problematic.
- Request for up and downscaling. Charter guests or family visits are common in the yachting business and the WiFi network should be flexible enough to deal with this.
- Maintainability. On megayachts there is usually one engineer responsible for the complete onboard electrical system, including the wireless LAN system. This person is not likely to be a wireless network expert but should be able to manage and maintain this network easily.
- Data security. Of paramount importance, all data must be retained in a safe and secure environment at all times on all networks, with the WLAN embedding the most stringent security protocols available without sacrificing mobility or performance.
- Different user profiles use the Wireless LAN network. To facilitate different user profiles and adhere to necessary individual security protocols, the separation of wireless networks within the system is required.
- Predictability and high reliability performance. In this environment, the wireless LAN must simply deliver guaranteed, robust and reliable service all the time, every time.

Specific requests of the yachts build team

- The WLAN needed to provide network access with guaranteed data rates anywhere onboard the yacht, from the main areas to the crew cabins, technical areas, tender bay and outside decks. Therefore, the WLAN needed to be flexible enough to adapt to the physical constraints imposed by the yacht's layout and build material.
- The onboard WLAN needed to support up to 12 Guests and 22 Crew users at peak time, without capacity issues or performance slow-downs.
- Different user profiles (Owner, guest, staff, crew) and different types of devices (IP phone, laptop, A/V controller) need different VLANs.
- The WLAN had to be essentially low-to-no maintenance and simple enough to be administered by the onboard staff, with remote help and management from Van Berge Henegouwen's IT department.

Why Extricom

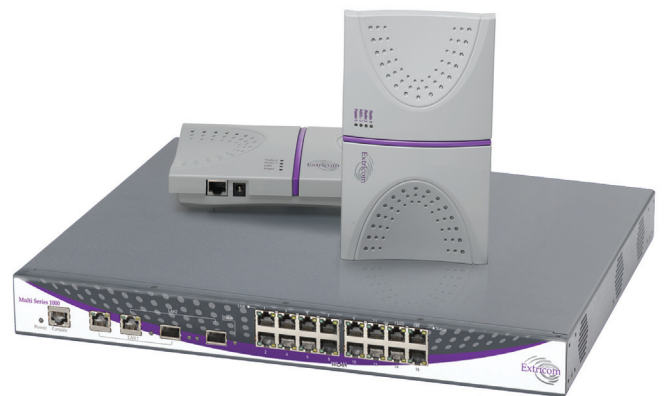
As the AV-IT system integrator of this project, Van Berge Henegouwen had to deal with the specific client requests and was attracted by Extricom's Channel Blanket™ technology, in which multi-radio APs, all transmitting on the same channels, form blankets of aggregated WiFi coverage. This enabled VBH to create multiple, simultaneous and overlapping wireless networks from one set of APs. The wireless operation of the APs is



fully controlled by a central intelligence located in the Extricom WLAN switch.

This means that the client devices associate with the switch rather than an individual AP and the switch decides which APs are best positioned to serve the client at any given moment. The solution consists of:

- 802.11n for high throughput. This way, any 802.11 compatible device or application, including complex video or RFID solutions, can be supported.
- Channel Blanket (1x blanket for VoIP 802.11a, 1x blanket for Data 802.11n)
- 1x 32 port Cascaded Switch
- 1x 16 port Exsw-1600



In the design phase of the system, VBH and Extricom worked together to choose the exact locations of the access points, in order to ensure coverage throughout the entire yacht. Hereafter VBH installed the APs and configured the VLANs on the different blankets. During the commissioning of the system VBH and Extricom performed a site survey to test the consistency of the wireless network coverage and throughput throughout the yacht.

The total process resulted in a stable, simply accessible and low maintenance system where Owner, guests and crew have their own VLAN and can have easy access to the WiFi with their brought along devices. This makes onboard life even more comfortable, which is in line with VBH's mission: enriching the yacht experience!