

# USS MIDWAY MUSEUM

Ruckus Wi-Fi Proves as Tough as Legendary Naval Battle Carrier



## CASE STUDY



### OVERVIEW

The USS Midway Museum is the most visited historic naval ship in the world, attracting over one million visitors a year. Visitor interaction and engagement is a top priority for the museum. Unfortunately, the existing Wi-Fi was unable to deal with the RF signal interference of the armored carrier. The IT team decided to rip out the network and replace it with Ruckus. Now the museum has reliable, high-speed Wi-Fi coverage above and below decks to support a great guest experience.

### CHALLENGES

- Visitors had to be standing right next to an AP in order to connect to the old Wi-Fi
- Parts of the ships couldn't be served at all by the legacy Wi-Fi
- IT was frustrated by the inability to take advantage of emerging technologies to add to the guest experience

### SOLUTION

- Indoor H500, R500 and R600 APs
- Outdoor Ruckus T300 and T301 APs
- Redundant ZoneDirector controllers

### BENEFITS

- 3X increase in Wi-Fi signal strength and coverage, 4X improvement in performance over the old Wi-Fi
- The museum provides reliable Wi-Fi coverage for exhibits, displays and events above and below decks
- The Ruckus infrastructure provides the foundation for future projects at the museum

## RUCKUS UPGRADES LEGENDARY SHIP/ MUSEUM AND DELIVERS A MODERN WARFIGHTING CAPABLE WIRELESS SOLUTION

Commissioned in 1945, the US Government's USS Midway is truly in a class of its own. This legendary aircraft carrier was the first battle carrier ever built. For a decade, she held the distinction of the largest naval vessel in the world (in fact, she was one of the largest human-made moving objects ever made).

The Midway has an armored flight deck—the equivalent of four acres reinforced with three and a half inches of steel armor—for the launch and recovery of aircraft. In her years of service, she supported troops in both combat and rescue missions, from Southeast Asia to the sub-Arctic. The Midway became the longest-serving aircraft carrier in the 20th century.

After 47 years, the carrier was decommissioned in San Diego, California. But she was about to serve her country in another way. In 2004, the USS Midway reopened as a museum docked in San Diego Bay. In fact, the Midway is the most visited historic naval ship museum in the world. And about 30 percent of visitors are from other countries.

An armored warship is a mighty protector. Unfortunately, it's also a powerful enemy of radio frequency signals trying to penetrate steel and cover an armored flight deck as large as three football fields.

When it opened, the USS Midway Museum was equipped with Cisco Wi-Fi. The Wi-Fi network is essential for visitors using their mobile devices while touring the ship. After all, it takes quite a bit to navigate a ship of this size with so many exhibits and activities.

Unfortunately, the Wi-Fi coverage was spotty or non-existent. "Because this is effectively a massive floating metal box constructed of the most RF-unfriendly materials you can imagine, we found it extremely challenging to deploy a reliable and ubiquitous Wi-Fi infrastructure," says Joe Gursky, IT Director for the museum. "Getting Wi-Fi signals where we wanted was a huge challenge. Signals would suddenly drop off, performance was erratic throughout the ship, and we couldn't even get Wi-Fi in some areas of the museum. It was a complete mess."

Unless visitors were right next to an AP it was almost impossible to maintain a consistent connection as signals interfered with each other and bounced all over the metal floors and ceilings and walls.

Was it even possible to find a commercial-grade Wi-Fi for a naval warship-turned-museum?

Gursky and his team turned to Equinox Telecom, a leading global supplier of advanced networking systems and services. After evaluating top Wi-Fi



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### JOE GURSKY

IT Director, USS Midway Museum

vendors, they chose Ruckus based on performance, coverage and flexible deployment options.

“Once we installed Ruckus, the challenges disappeared,” says Gursky. “Ruckus was the only system we found that was really designed with RF in mind to deliver the highest possible strength and coverage within the most difficult environments. Our use of the technology has completely validated this. We are now able to deliver fast, reliable Wi-Fi services where we haven’t had them before.”

The Ruckus environment has resulted in a 3x increase in Wi-Fi signal strength and 4x increase in performance.

### RUCKUS WI-FI DELIVERS PERFORMANCE WORTHY OF LEGENDARY NAVAL SHIP

With more than 200 exhibits, displays, classrooms and retail operations across nearly 10 acres, both above and below decks, the Midway has the most complete cross-section of carrier aviation in the world.

Below decks, visitors can tour the floating hospital, the crew’s sleep quarters, chapel, war room and other areas. They can even descend below the waterline into the engine room itself.

Throughout the corridors, the museum installed Ruckus H500 wall-mounted APs with built-in four-port switches. The H500s not only provide greater reliability and faster Wi-Fi speeds, they enable coverage in areas of the ship where it wasn’t available using the legacy Wi-Fi equipment.

Ruckus R500 and R600 802.11ac APs are used to support the museum’s popular flight simulation application. The flight simulation allows guests to experience what it’s like to land aircraft on the battleship through a virtualized environment.

“Our primary goal is always to improve the guest experience here,” said Gursky. “When we first installed Ruckus, we were frankly astounded at the signal propagation and the ability to keep and hold strong signals for a such a large number of concurrent clients. Ruckus APs are doing things that we never thought possible.”

On the hangar and flight decks, there are more than 30 restored aircraft and helicopters. Here, the museum installed Ruckus T300 and T301 802.11ac outdoor APs to provide high-speed Wi-Fi service. The outdoor APs provide sectorized antenna systems to extend and strengthen signals across the outdoor flight and hangar deck exhibits. The Wi-Fi even covers the adjacent parking lots.

The USS Midway Museum has many plans to continue to fulfill its mission to “serve, inspire and educate future generations and entertain museum guests.”

Gursky is confident that the Ruckus infrastructure will enable the museum to easily layer new services over the network. “Ruckus opened the door for us to begin leveraging the Wi-Fi network as an electronic utility upon which we could build. Moving forward with emerging technologies, such as BLE beacons, we believe Ruckus is better positioned to help us deliver a better guest experience and closer visitor interactions on the USS Midway Museum,” says Gursky.

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