

# Luna Rossa Prada Pirelli Team

## Unfailing Wi-Fi connects America's Cup Italian team on land, sea and air



From design through racing, winning also depends on championship Wi-Fi performance

The 36th America's Cup presented by PRADA will literally elevate performance levels for this grueling and exhilarating sport. The revolutionary AC75 sailing yachts incorporate hydrofoils mounted under the hull. As the massive 75-foot boats gain speed, they rise out of the water. Under testing conditions, these "flying yachts" are capable of speeds close to 50 knots. This is an unprecedented engineering feat for boats of this size.

As the Challenger of Record, Italy's Luna Rossa Prada Pirelli team is the one that proposed the daunting hydrofoil design. "The America's Cup is won through mastery of sport and technology," says Max Sirena, skipper and team director of the Luna Rossa Prada Pirelli team. "And our team has the finest talent and technology available."

Operations Manager Gilberto Nobili chose the CommScope RUCKUS® team to design and implement the AC75 Luna Rossa Wi-Fi



network. "In the last three editions of the America's Cup, I used RUCKUS products," says Nobili. "I've tried different vendors, but the quality of the RUCKUS technology for our application, which is very particular and difficult for Wi-Fi, has always proved to be the top solution."

If there's a championship challenge for Wi-Fi performance, it may well be the America's Cup. Like the sailors and the boats, the Wi-Fi network has to operate at peak performance at all times. For Wi-Fi this includes signal strength, bandwidth, coverage, low latency, throughput, security, ease of management, versatility and device support.

Wi-Fi signals can be attenuated by dozens of hostile factors in the America's Cup from winds and weather to obstructive steel in the hangar and carbon in the boats. RUCKUS APs incorporate proprietary adaptive antenna technology that automatically steers signals around obstacles and over the best performing paths. "Communications disruption is unacceptable no matter what the conditions. RUCKUS performs flawlessly on-premises when we have the boat in the hangar and in the water while sailing," say Nobili.



## The Wi-Fi network is continuously collecting and distributing vital data for instantaneous action

Compared to the last America's Cup, the AC75 Luna Rossa is a bigger boat with a smaller crew—and it will sail three times faster. It took two and a half years for the flying yacht to become a reality. During the design stage, RUCKUS Wi-Fi connected the design and shore teams to sailors on a test boat. On shore, designers ran simulations based on the massive amount of data collected by the computers on the boat. The sailors tested changes and provided feedback to the designers. This loop was performed daily.

“During this phase, there was a continuous flow of information over the RUCKUS Wi-Fi network that kept us all connected,” says Nobili. “The Wi-Fi connectivity that supports this constant communications was absolutely essential to optimizing the AC75 Luna Rossa’s performance.”

During the training phase, a RUCKUS AP provided connectivity on the racing boat. Another RUCKUS AP provided point-to-point telemetry between the racing boat and the support motorboat. This required continuous wireless connectivity between two boats sailing up to two miles apart, reaching speeds up to 50 knots, and performing split-second maneuvers in rough waters and gusting winds.

During the actual races, any outbound communications from the racing boat are prohibited. All traffic on board must be broadcast, which Nobili says is intensely demanding for a wireless network. The AC75 Luna Rossa has an unmanaged version of the same RUCKUS AP used during training. The unmanaged AP connects the server, on-board instrumentation, hundreds of sensors, and as many as 35 mobile and wearable devices. The Wi-Fi provides up to five extremely low-latency broadcasting channels.

When the racing boat is docked, the onboard AP automatically connects to a RUCKUS AP on the dock. Using mesh technology, the land-based AP backhauls gigabytes of data collected on the boat and transmits it to the shore team.

## Moving to New Zealand is smooth sailing with RUCKUS Cloud

Traditionally, the America's Cup is held in the waters of the defending champion, which meant the Italian team had to move its boats and base of operations to Auckland, New Zealand. Transferring the boats required the largest transport aircraft in the world. Transporting the RUCKUS network was a great deal simpler.

At its headquarters in Sardinia, the team uses on-premises controllers to manage all the RUCKUS APs. “We recommended that they switch to the RUCKUS Cloud in Auckland,” says Massimo Mazzeo, vice president, RUCKUS Global Systems Engineering. “Switching to cloud management enabled the entire operations to be back online in New Zealand in a matter of hours.”

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**Max Sirena**  
Skipper and Team director  
Luna Rossa Prada Pirelli Team

Other Wi-Fi vendors force customers to purchase different APs for cloud management. RUCKUS APs work with on-premises or cloud-based controllers.

"In Auckland, we have the same APs that we're used to, so the change was completely transparent to us," says Nobili. "With RUCKUS Cloud, we can focus on the race and leave the network management to the cloud. We also have the flexibility to expand or move operations anywhere in the world with the same ease."

## RUCKUS Cloudpath® securely onboards staff and guests

Security is tight at the America's Cup. Espionage is a real concern for all of the teams. The RUCKUS technology also had to ensure rigorous end-to-end network security, but without administrative or operational complexity. "Our technology is known as much for its simplicity as its performance," says Mazzeo. "The RUCKUS Cloudpath Enrollment System streamlines the entire process associated with onboarding staff and guests. It's highly automated, which eliminates unnecessary overhead for the Luna Rossa Prada Pirelli IT team."

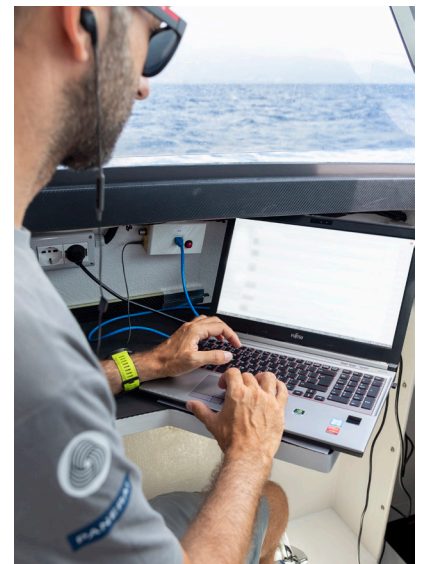
Cloudpath issues a digital certificate to each staff member; once authorized, users don't have to re-enter their credentials. Cloudpath also associates every device with a user, so there's no chance of rogue devices getting on the network. If there's any problem with a user on the network, it takes less than a minute to revoke that person's credentials without affecting anyone else.

There's a self-service login portal for guests, making it both welcoming and secure for guests and their devices to be hosted in the hospitality suite.

"CommScope's RUCKUS engineering team has been an invaluable partner to us in the design, implementation and operation of our Wi-Fi network," says Nobili. "Starting from excellent off-the-shelf products, RUCKUS has provided outstanding support tailoring their products to our specific requirements. And those requirements changed right up until the AC75 Luna Rossa was launched in Auckland. Their engineering knowledge and swift response to every request is fundamental to what we've achieved. They are as passionate as we are about being part of a winning team."

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**Gilberto Nobili**  
Operations Manager, Luna  
Rossa Prada Pirelli Team



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