



Non-Stop Around The World – The Ultimate Performance Test

CUSTOMER: The Orange II, a 120-ft maxi-catamaran on its non-stop around-the-globe world record attempt

CHALLENGE: Deliver a failsafe communications platform with global coverage at sea.

SOLUTION: The Nera Fleet maritime satellite communications terminals, renowned for durability and exceptional performance even under the roughest conditions

BENEFIT: Top quality communications enabling the transfer of voice, data and images throughout the voyage



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CAPTAIN BRUNO PEYRON, ORANGE II

Sailing non-stop around the globe in pursuit of a world record is a tough challenge. It is a task for only the most competent, knowledgeable and experienced of professional sailors.

For such a venture to succeed, everything onboard must work perfectly and continually. The communications system, being the critical link to the rest of the world in any emergency, has to be completely trustworthy, whatever the weather conditions.

Before setting out to sea to break the around-the-world record, the **Orange II maxi-catamaran** was equipped with the most professional, high-performance and reliable communications equipment. **The Nera Fleet maritime terminals** demonstrated beyond any doubt that they were up for the challenge.

True Professionals

The Orange II maxi-catamaran couldn't be in more professional hands. The vessel's captain, Bruno Peyron, was already a celebrity in the sailing world and a national hero in his native France. He was the first person to sail around the world in 80 days, the only skipper to win the Jules Verne trophy twice, record holder for the longest distance crossed with a maxi-catamaran and founder of the sailing contest The Race. Skipping the Orange II, Bruno smashed the 24-hour sailing record in the summer of 2004.

Preparation, Preparation

The Orange II had already made two attempts to beat the world record in 2004, both times having to return without completing the course. The lessons were hard but the message clear: A record attempt is all about preparation, in every meaning of the word. During the autumn of 2004, the Orange II underwent a massive refit, resulting in a catamaran 1.5 tons lighter, stronger and more efficient. Thousands of technical improvements were carried out, including overhauling both main engines and fitting new rudders.

Mission-Critical Information

The ability to communicate and contact onshore support is essential for any vessel out at sea. This is particularly true on a non-stop voyage without any external technical support. At sea, communications guarantee safety.

Safety onboard the Orange II depends entirely upon communication systems delivering up-to-date weather reports. Knowing the weather ahead is essential to navigate around storms and bad weather.

Nera was a natural choice as communications partner for the Orange II team. "The ability to communicate throughout the entire tour played a vital role in the success of the venture," says Captain Bruno Peyron. "The Nera satellite communications equipment has served as a truly professional crew member."

For years, Nera has kitted out the majority of the sailing yachts participating in the Volvo Ocean Race and the Whitbread Round the World Race – an excellent test of its equipment's durability under extreme conditions. Understanding the intense pressures experienced during an around-the-globe race, Nera has been able to tailor solutions for extremely demanding customers.

A Communications Flagship

From early 2004, Nera engineers worked with the Orange II technical team to install the communications terminals required to receive and send voice, video and data.

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To transmit live pictures during the record event, the Orange II relied upon twin Nera F77 terminals, one on the back of each hull, to ensure a continual free line of sight to the satellite. Each terminal allowed data, fax and telephone to be transmitted from



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For the Orange II, top quality, reliable communications is also crucial for another reason: media coverage. In a sport fuelled by sponsorships, media coverage is essential in order to deliver value for money for sponsors and interest groups. On a non-stop voyage, a stable communications service is an absolute necessity to feed the media and fans with constant updates and create headlines for journalists. Consequently, the Orange II was equipped with the best available communications technology before it set sail.

any location on the planet. For the first time onboard a vessel, the terminals were linked to deliver double the speed, reducing the transfer time for live and still pictures.

The Nera terminals were connected to the onboard IT network, which consisted of four computers and six video cameras. Two of these cameras were used for video conferencing interviews from a compact video studio fitted in the vessel's portside hull. Video footage could be edited onboard, and transmitted along with audio feeds from any point around the world, to a video production unit back on shore. This production unit distributed the pictures to media outlets around the world.

The Nera F77 terminals even allowed the Orange II crew to enjoy their own onboard Internet café. From the computer installed in the front of the portside hull, e-mails, pictures and data files were shared with friends and family back home.

The Orange II was also fitted with two Inmarsat C terminals. One of these provided safety functions and the other was used for tracking, allowing the race headquarters to know the exact position of the maxi-catamaran at any point in time.

A Nera F33 terminal dedicated to voice communications was also installed. The terminal's two handsets – one placed in each hull – allowed 'internal calls' between the starboard and portside hulls.

A Test Of Professionalism And Endurance

The Jules Verne trophy course covers more than 27,000 nautical miles. To break the previous world record, held by American sailor Steve Fossett, the Orange II crew had to make it around the globe non-stop in less than 58.5 days. It was a true test of professionalism and endurance.

The clock started ticking on 24 January 2005, when the Orange II crossed an imaginary line near the island of Ouessant outside of Brest in France. Having left the base camp, the Orange II was entirely in the hands of the weather gods.

During seven weeks at sea, across three great oceans and around the three most famous capes, the progress of the Orange II was followed enthusiastically by every major French newspaper and TV station, the global sailing press and sailing enthusiasts around the world. Nobody was going to miss the Orange II make it into the history books.

The Nera Fleet Meeting The Challenge

Prior to departure, every function of the communications equipment was thoroughly tested. Yet, on a voyage like this, only time would tell if everything functioned properly. And it did – to perfection.



A fully-owned subsidiary of Nera, Nera SatCom is the chief supplier of products and solutions for the Inmarsat satellite system and a leading manufacturer of equipment based on the DVB-RCS broadband via satellite standard.

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The Nera F77 terminals were used for approximately 5 hours per day. The navigator onboard used the satellite communications service to monitor daily weather information. The crew carried out live video conferences with the media, transmitting via both terminals to achieve a high-speed connection. They also transmitted live to the media centre in Paris and via the Internet. For the first time ever, the Orange II could perform interviews with very high definition pictures live from the middle of the ocean. The most extraordinary feat was the live interviews from the catamaran to Orange mobile phones around the globe – a world first!

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Throughout the voyage, the Nera F33 was also used extensively for making calls to the onshore support team and for real-time telephone interviews. In total, the terminal was in use for around half of the 50 days at sea.

Breaking The World Record!

At 3 am in the morning of 16 March 2005, Captain Peyron and his 13 colleagues set the new record for sailing non-stop around the globe. The Orange II had covered 27,047 nautical miles in just 50 days, 16 hours and 20 minutes, achieving an average speed of 22 knots and beating the previous record by more than a week.

There can be no better way to demonstrate the superior reliability and robustness of Nera products. Subjected to severe weather conditions and huge temperature variations at sea, and the high-speed demands of competition sailing, the Nera satellite communications terminals consistently delivered high-performance communications. The Nera equipment mastered the task it was assigned onboard the Orange II, and proved its worth as an integral part of a world-record-breaking team.

