

90 km range in high-speed radio link at sea

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The **BOREAL** ISR drone, equipped with the **SIMPULSE SL200** radio communication system, carried out a long-distance mission of more than 50 nautical miles (90 km) located off the French Atlantic Ocean coast. This project, as part of the **RF100** program, started a few months ago with the goal to validate long-range video transmissions.

Radio data transmissions in the maritime environment are usually affected by reflections on the surface of the water and by meteorological disturbances specific to the marine environment: the wave propagation conditions are considered as atypical compared to those in the terrestrial environment. These conditions cause weakening or even interruption of the radio signal.

Therefore, long-distance flights over the seas require a very good knowledge of these phenomena and the solutions to be implemented. This is why the experienced **BOREAL** and **SIMPULSE** teams worked together to demonstrate the feasibility and validate long-distance radio ranges in these difficult environments.

Thus, the **BOREAL** ISR drone, particularly suitable for long-distance missions, was operated with the **SIMPULSE** compact SDR radio technology on board which adapts its data rate to the propagation conditions, used in the **SL200** on-board modem and the ground tracking antenna **GRS-T200**.

An exhaustive data set was collected during this campaign on the transmissions propagation in the maritime environment. This collection enabled a detailed analysis of the atypical reflections phenomena and radio waves propagation for modeling them and optimize solutions to prevent them.

"Our drone has all the features to perform in the maritime environment. We are pleased to collaborate with **SIMPULSE** on this project that results a perfect knowledge of waves propagation phenomena in such complex environment" notes **Michel Gavart, CTO of BOREAL SAS**.

Few months ago, the **RF100** program overcame a first step in validating long-range radio transmissions in the terrestrial environment. The **BOREAL** UAV had successfully transmitted video data at maximum rate during a flight where the drone system (embedded with **SIMPULSE** technology) and the ground station were separated by 110 km.

"Our long partnership with **BOREAL** is essential to test and improve our products in difficult conditions, and we are happy to participate in the success of the **BOREAL** ISR drone" underlines **Emmanuel Hamman, President of SIMPULSE**.

From now on, very large-scale missions involving a high-speed radio link can be carried out, such as the surveillance of linear infrastructures, borders, and communication routes, industrial and/or sensitive sites, or the supervision of large maritime and fishing areas.

About BOREAL SAS

BOREAL is the designer and manufacturer of the BOREAL drone system: fixed-wing drone with large payload capacity and long endurance. Involved in the field of maritime surveillance, scientific experimentation and earth observation, the company is one of the references in the civilian drones area in France. Its modularity, its size, its autonomy of 8 hours and its long-range make it an ideal drone for demanding reconnaissance, surveillance or data collection missions.

www.boreal-uas.com

About SIMPULSE

SIMPULSE designs and markets proprietary SDR (Software-Defined Radio) transmission solutions for professional communication systems. SIMPULSE radio links are used in secure applications operating in difficult conditions, urban or over very long distances, requiring robustness, compactness and low power consumption. The SL200 modem, SIMPULSE's flagship product, is now deployed in a large number of video and data transmission applications in challenging environments.

www.simpulse-sdr.com

