



## **Coastal Radar “WERA” provides valuable and reliable data in case of strong storm events**

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The HF-Coastal Radar “WERA” is a shore based remote sensing system to monitor ocean surface currents, waves and wind direction. This very reliable long range and high resolution monitoring system based on short radio wave radar technology. Due to the outstanding temporal resolution WERA can provide very valuable information for a national disaster warning system. Examples from various storm events show that this instrument can provide valuable information to improve the prediction of storm events near the coast.

In case of accidents near the coast the real-time ocean surface current data can help Search and Rescue (SAR) operators. Presently, SAR tools are based on hydro-dynamical and atmospheric models to provide hindcast and forecast situations. Even if these oceanic numerical models are efficient to produce instantaneous maps of currents, the accuracy of derived Lagrangian trajectories is not sufficient for search and rescue purposes. Results of the SAR-DRIFT project show the significant improvement of the drift simulation, when using real-time current data provided by radar systems instead of using results from numerical models. This improved quality of the drift prediction can be very useful for Search and Rescue applications. To test this technique for SAR applications, surface drifters were launched and tracked. The drift prediction for this simulated “man-over-board” situation were carried out by means of a 2D tidal model typically used for the SAR operations and by a drift prediction based on the ocean currents measured by the WERA systems. The results clearly show that the drift prediction driven with the measured current data can keep close to the real drift trajectory much longer than the model driven prediction. In addition, this drift prediction can be used for the forecast of drifting oil spill or containers in case of an accident to make the management of the pollution more effective.

At the French coast near Brest a pair of WERA ocean radar stations are operational since 2006. The range of these systems is about 120 km with a spatial resolution of 1.5 km and a temporal resolution of 3 measurements per hour. These two shore based stations cover an ocean area of about 10,000 km<sup>2</sup>. Even under extreme harsh environmental conditions these systems provide reliable data, as demonstrated by a data series acquired during the passage of the storm Xynthia in February 2010.