

# Real-time Measurements of the Wave

Real-time measurements of the wave field near a moving vessel or offshore platform with the use of cameras synchronized with IMU+GPS



*Please note, header image is purely illustrative. Source: pxhere.com/en/photo/392846, CC0*

## IP Status

Patented

## Seeking

Licensing, Development partner

# Background

The patent refers to a method and an apparatus for the spatial measurement of the surface of the sea, from mobile platforms. Compared to existing devices, this proposed system takes advantage of innovative aspects that allow it to overcome the current operational limitations. The synchronization of cameras and IMU+GPS instrument allows the reconstruction of the wave spectrum with high precision.

## Tech Overview

Real-time measurements of the wave field near a moving vessel or offshore platform is essential to improve the safety of navigation and of on-board operations. The system described herein proposes the use of cameras synchronized with an IMU+GPS device. The processing and control unit, intersecting the images of the cameras, is able to represent, over time, the 3-D wave surface of a limited area (in the order of 100×100 squared meters) near the hull. This system allows for a correction of six degrees of freedom on the measurements, favoring high precision and accuracy of the representation. The measurements can be collected in any wave condition and is performed remotely. This the instrumentation is less subject to wear and tear since it is not in direct contact with seawater ( **Figure 1** ).

## Benefits

- Accurate measurements even in the presence of wind and currents
- Remote sensing no erosion caused by contact with sea water
- Improved safety in navigation and normal on-board operations

## Applications

- Meteorological equipment
- Oceanographic equipment
- Commercial navigation
- Scientific research and study of wave mechanics

## Opportunity

Open to collaborative projects to further develop the technology and/or licensing.

# Patents

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## Appendix 1

Figure 1

