

CODAR Patent Pending “Coastal HF Radar System for Tsunami Warning”

In April 2016 CODAR Ocean Sensors, Ltd. submitted Application No. 15/140,325 with the U.S. Patent & Trademark Office and also filed officially for patents in Germany, China, Japan, and U.K.

CODAR’s invention describes the series of steps unique to HF radars that are needed to maximize the robustness and utility of candidate warning messages sent to tsunami warning centers. The first steps in this are filtering, to remove false alarms based on correlation with other information. The second involve QA (quality assurance), namely attaching a flag to potential detections with a confidence level.



This invention describes how the q-factor spikes -- denoting a possible approaching tsunami -- are related to other information that may be used to filter and QA them to reduce false alarms. For example, applications are available online that give the location of any subsea earthquake worldwide; from this, a time window will be set up at the site, within which a tsunami would be expected. Correlations with detection spikes from adjacent coastal sites (e.g., within 50 km) will be used as a filter and QA flag. Finally, real-time correlation with background currents (e.g., from storms) and external noise/interference will guide credibility determination for a potential alert spike candidate. This is a dynamic process, with alert credibility changing as background seen by the radar varies with time.