



## **Marine Disaster Prevention Information Service Platform**

Yang-Ming Fan, En-Chi Wu, and Chia Chuen Kao

Coastal Ocean Monitoring Center, National Cheng Kung University, Tainan City, Taiwan (R.O.C.)

Taiwan is located in the Northwest Pacific of the subtropical region where easily attacked by typhoons and strong northeast monsoon. Terrible marine environment such as extreme wave, swell, storm surge, and wave runup and overtopping can easily cause ship crashes into reef, collision or even capsizes, and may cause people fall into the sea or oil spills. This also threatens the lives and property of coastal residents. Therefore, accurate marine meteorology information is an indispensable element of reducing the occurrence of unexpected disasters and reducing the risks to life and property.

The object of this 4-year project (2017-2020) which was commissioned and supported by Central Weather Bureau is to develop the Taiwan Marine Disaster Prevention Information Service Platform. The development strategy is to integrate real time marine observing and forecasting, data management and information services using state-of-the-art technologies and capabilities. That is to combine the applied technologies for marine meteorology disaster prevention on the basis of science and technology and a huge and correct of Northwest Pacific marine meteorology database, and then present marine disaster products base on GIS interface so that users can easily operate and get information. The applied technologies including typhoon extreme wave early warning, flooding warning from tsunami and storm surge, ship sailing safety, spilled oil tracking, trapped by high tide, and search and rescue objects missing at sea. In addition to the daily operational observing and forecast data of Central Weather Bureau, the public marine meteorology monitoring and forecast information will also be imported into the database.

The sub-platforms of oil spill tracking, typhoon extreme wave early information, ship sailing safety information, and tsunami real time analysis information system have been developed, and confirm the rationality of these products after the verification of past marine disaster events. Further, due to this platform is mainly to serve the government disaster prevention agencies, the developed technologies will continue to improve according to the feedback from the government disaster prevention agencies, such as operational multi model oil spill system, backtracking of oil spills, and evaluation of ensemble forecast uncertainty. Through the integration and provision of real-time marine weather monitoring and early warning information services, the government will increase the ability of implement early warning and prevention for various catastrophic marine disaster events, effectively reduce the losses caused by various disasters.