建構臺灣海象及氣象災防環境服務系統(3/4)

Construction of Taiwan Marine and Meteorology Disaster Prevention Information Service System (3/4)

主管單位：交通部

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摘要

中央氣象局「建構臺灣海象及氣象災防環境服務系統」計畫為四年期計畫，執行期間為民國 106 至 109 年，上承現代化海象暨氣象觀測，下接多元化氣象服務管道。計畫整合各種海洋、大氣與陸地觀測數據資料、預報及災防資訊，研發海象暨氣象相關應用技術與災防預警產品，以擴大海象暨氣象資訊之使用社群，強化海象暨氣象災防產品之服務與加值應用。計畫內容主要包含五大項目，(一) 建置近岸區域海象預報整合子系統、 (二) 建置西北太平洋海象資料庫與臺灣海象災防服務平臺、(三) 開發新式衛星與雷達衍生產品、(四) 發展未來 3 小時災害性天氣之鄉鎮尺度定量降雨預報技術、(五) 強化衛星產品展示平臺功能。

本年度(108 年)為第 3 年工作，計畫期間完成(一)發展與建置 3 維波潮偶合暴潮模式，引進颱風系集路徑暴潮預報技術，增加海象預報系統功能。(二)擴充西北太平洋海象資料庫，新增 16 項國際海域地理資訊圖資，促進海象資料在產、學、研應用，「臺灣海象災防環境資訊平臺」提供航行海象 SAFE SEE、海嘯監測分析、海岸長浪海溫、海難漂流預報與海洋熱含量變異等災防資訊服務，提升各機關海域災害防救效率。(三)完成衛星綠色植被指數、對流深度、熱帶氣旋強度輔助分析與預警性雷達監測等 4 項遙測應用產品，減少防災、緊急救援前置作業時間、新增高雄林園防災降雨雷達資料導入。(四)改進雷達定量降雨估計方法，並完成午後雷陣雨與綜合天氣型態之 0-1 小時對流啟始可能性預報產品顯示，並強化即時預報產品顯示網頁。(五)完成對外服務衛星產品整合平臺與相關設備擴充，增進遙測資料之應用效能與服務。

本計畫強化預報能量與引進資料處理技術及開發災防加值應用產品，提供更為即時的災害預警資訊，增加了政府防災單位與大眾應用的效能，增進民生之福祉。

關鍵詞：氣象資料災防應用、暴潮預報、海象資料、西北太平洋、氣象衛星資料、對流降雨

Abstract

"Construction of Taiwan Marine and Meteorology Disaster Prevention Information Service System" is a four-year project since 2017, which aims for a modern marine and meteorology monitoring and diversified information service. In this project, we integrate various observation data from marine, atmosphere, and land, and assorted forecast and disaster preventing information in order to strengthen Central Weather Bureau (CWB) products, services and value-added applications.

The project is consisted of 5 main tasks. (1) is to construct a better inshore marine meteorology integrated forecasting technique, (2) is to build up a Northwest Pacific marine database and a marine disaster preventing system of Taiwan, (3) is to develop new Satellite and radar products, (4) is to deliver 3-hour Quantitative Precipitation Forecast product, and (5) is to strengthen CWB's platform for Satellite products.

In 2019, we made several achievements, such as (1) build up a 3 dimensional wave, tide and storm surge coupled model, developing technology of ensemble forecasting of typhoon paths, and providing more marine forecasting products, (2) 16 type of geospatial information for northwest pacific marine database, and some application products about SAFE SEE platform, tsunami warning, swell and sea temperature on costal zone, drifter forecasting, and ocean heat content variances, etc. (3) Four remote sensing application products about Normalized Difference Vegetation Index and convective cloud thickness, Detective the strength of tropical storm ,warning radar products etc. (4) Improve radar precipitation quantitative forecast technique, and 1 hour convective initiation technique on mixed type weather regime, and (5) the satellite products integration service platform for public and data storage system.

In order to strengthen the forecasting capabilities and providing a real-time early warning service on an extreme weather event, we integrated the various type of data and introduced advanced data processing technologies. Anticipatedly, we can improve the efficiency of government disaster preventing and the application value for the social public, and ultimately, increase the welfare and happiness of people.

Keywords：Meteorological Data Approach for Disaster Management, Surge Forecast, Marine Meteorological Data, Northwest Pacific, Meteorological Satellite Data, Convective Rainfall.