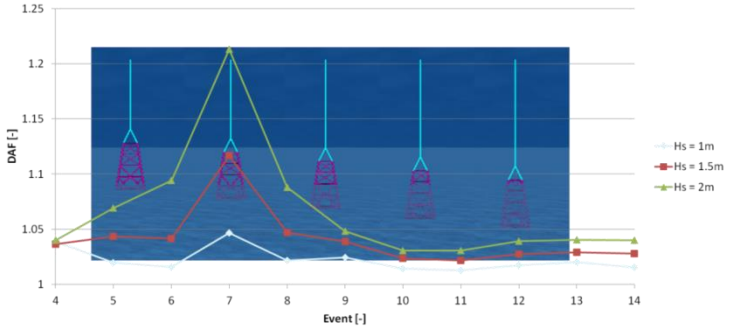
離岸風場作業安全評估技術開發計畫

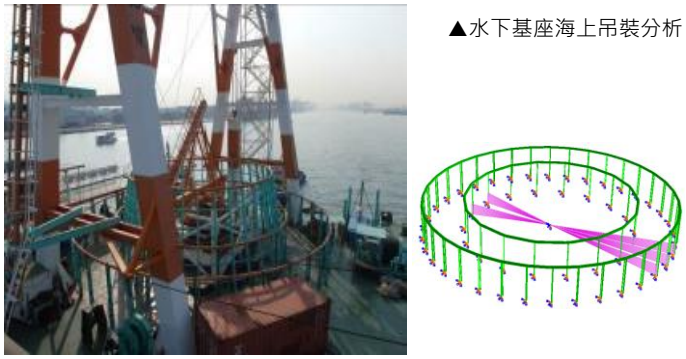
執行單位	船舶中心	計畫主持人	周顯光

- 建立離岸風場海事安裝所牽涉到之運輸、吊裝、安裝等作業之安全評估技術，以及海事工程即時施工管理系統開發，以強化施工安裝能量，協助國內產業切入離岸風場開發運維市場，增加相關產業之就業機會。

- 風力機葉片繫固系統(中華民國)
- 離岸風電工作船吊裝與運輸安全之評估方法(中華民國)
- 離岸風場開發系統(中華民國、中國大陸)
- 離岸風場開發系統的運作方法(中華民國、中國大陸)
- 離岸風場管理系統及其方法(中華民國)
- 離岸風場建設輔助系統(中華民國)



▲水下基座海上吊裝分析



▲運輸海纜過程之繫固分析▲

▲離岸風場施工管理平台
船舶動態定位系統

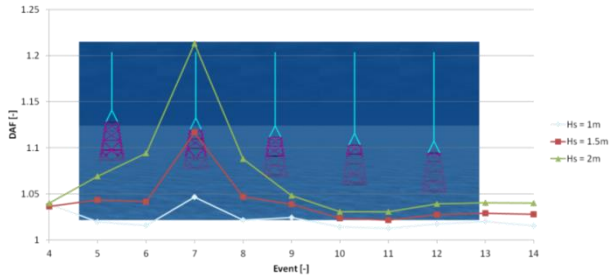
- 建立離岸風機海事工程運輸、吊裝與安裝作業之安全評估關鍵技術開發、波浪重現技術建立與環境資訊收集分析，以建立離岸風場海事施工在國際海事保證鑑定(Marine Warranty Survey-MWS)標準下之安全評估能力，協助國內海事工程廠商培養跨國作業能量，建立自主海事工程能力及掌握最大可能比例的風場建設本土化為目標。
- 開發離岸風場海事工程即時施工管理系統，藉由遠端即時監控管理系統，對施工環境條件、工作歷程、機具人員動態有進一步之掌握，以建構完整之施工資料，使施工管理能更上軌道、增進作業安全性。
- 本計畫建立海事保證鑑定海事工程安全評估能力，協助穩晉公司於示範風機安裝之佈纜作業中，事前進行裝載、運輸、海纜繫固與拖帶作業之計算評估，取得DNV GL佈纜作業MWS認證，為國內首次取得國際MWS認證案例，並順利完成安裝作業。

Development of Safety Evaluation Technology for the Offshore Wind Farm Construction

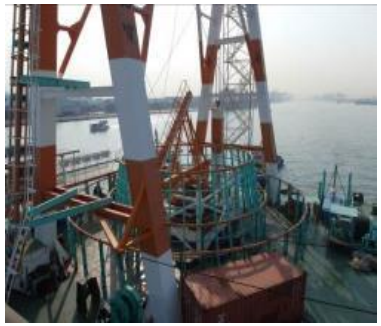
Execution Unit	Ship and Ocean Industries R&D Center
Project Director	Chou, Shean Kwang

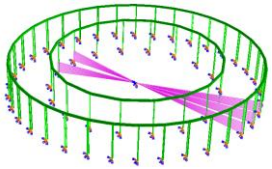
- This project develops the safety evaluation technology including transportation, marine lifting and installation during marine operation in offshore wind farm development. Besides, the real-time construction management platform is developed. By this, the overall capabilities of domestic industries can be upgraded, which will promote the competitiveness of Taiwan marine industries.

- Blade of Wind Turbines for Fastening System(R.O.C.)
- Method for evaluating offshore wind power workboat hanging and transport safety (R.O.C.)
- Offshore Construction Systems for Wind Farms(R.O.C., P.R.C.)
- Operating Methods of Offshore Construction Systems for Wind Farms(R.O.C., P.R.C.)
- Offshore wind farm management system and method thereof(R.O.C.)
- Offshore Construction Auxiliary System for Wind Farms(R.O.C.)



▲Marine lifting analysis of foundation





▲Seafastening analysis of cables during transportation

▲Real-time reporting for the location of working vessels

- This project develops the safety evaluation technology including transportation, marine lifting and installation during marine operation in offshore wind farm development. Combined with the simulated wave information based on the measured data, the capabilities for fulfilling the requirement for Marine Warranty Survey(MWS) are, which will promote the competitiveness of Taiwan marine industries
- The real-time marine construction management system is developed. By this, the site condition, construction process, vessels and crews activities can be integrated in this platform, which will improve the engineering management and construction safety.
- The technology developed in this project applied to the cable-laying works of demonstration offshore wind turbines. The domestic cable-laying contractor Woen Jinn received the MWS certificates from DNV GL for the demonstration wind turbine installation with the help from this project for the documentation of the loadouts, transportation and sea-fasteneing evaluation. This is the first case to receive the MWS certificates in Taiwan.