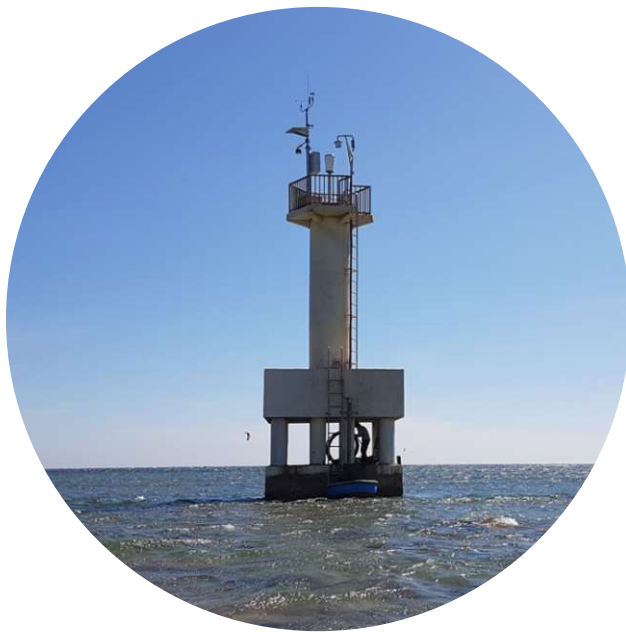# Flood Forecasting and Warning System in the South-Central provinces of Vietnam

Floods in Vietnam represent a **constant threat** that occur throughout the year in different areas of the Country, affect the safety and well-being of the population and cause enormous economic loss, which in turn hamper the social development.

Minimizing flooding damages is among the main target of all Vietnamese institutions concerned, especially the Ministry of Natural Resources and Environment (MONRE). Vietnam Hydro-Meteorological Administration (VNMHA) has the responsibility to upgrade the **specialized telecommunication system** with **advanced technologies to ensure the timely and accurate data collection and dissemination** of all forecasting information for flood and typhoon preparedness and prevention in Vietnam.

Summary

Location: South-Central provinces of Vietnam

Work completion: 2020

Focus: Risk due to extreme flood events

Challenges:
- Constant threat and damages by floods in Vietnam
- Improve the flood forecasting and warning system
- Upgrade the specialized telecommunication system

CAE solutions:
- 114 automatic stations
- 6 control centers
- Mhaster datalogger & wide range of sensors: PG10, THS, LPR,...
- CAE's Software: Datalife, Mapsme,...
- Training activities and high value-added services

CAE

innovation for a safer world.

FEATURES

The present project is the successor to, and promote the achievements of, the previous project **"Improving the Flood Forecasting and Warning System in Vietnam - Phase I"**, **implemented by CAE** in 2009 in the Middle Central Region.

The second phase will be deployed in the main river basins located five provinces of Binh Dinh, Phu Yen, Khanh Hoa, Ninh Thuan and Binh Thuan.

The aim of the project is to **accomplish and modernize the Flood Forecasting and Warning System of Vietnam**, under the leadership of MONRE, as an essential part of the Master Plan on the Strategy of Natural Disaster Preparedness and Prevention in Vietnam.

In order to achieve the objective of quality and robustness, which has always been the outstanding feature of CAE's **monitoring systems**, the **detailed site design**, the supply and installation of **reliable and precise equipment** are strictly required, together with **highly reliable and flexible dedicated software** and all the necessary elements to provide the client with a system that is capable of:

- Improvement of surface water and precipitation monitoring system;
- Improvement of data collection and processing system;
- Improvement of data communication system;
- Improvement of weather forecast and early warning systems;
- Improvement of preparedness of local staff.

COMPOSITION

The system will be composed of:

- **114 automatic monitoring stations:**
  n. **13 Meteorological Stations** for measuring the wind direction, wind speed, temperature, humidity, air pressure, rainfall and rain intensity;

  n. **17 Hydrological Stations** for measuring the water level, rainfall and rain intensity;

  n. **83 Rainfall Stations** for measuring the rainfall and rain intensity;

  n. **1 Marine Meteorological Station** wind direction, wind speed, temperature, humidity, air pressure, water level, wave parameters, water temperature, salinity, rain fall and rain intensity;

- **6 control centres:**
  n. 1 National centre;
  n. 1 Regional centre;
  n. 4 Provincial centres;

Considering the complexity of this project, in addition to the supply and installation of a comprehensive technological system in the territory, the contract includes also the **training activities and the supply of high value-added services.**