Case Study: Shipboard Scientific Weather Radar

Requirement: A shipboard Doppler weather radar system to support collection scientific data for oceanographic and atmospheric research.

Solution: A modified version of the model HDD250 Doppler radar.

The Ron Brown is a research ship operated by US National Oceanographic and Atmospheric Administration (NOAA). Its mission is to collect data for oceanographic and atmospheric research.

The HDD250 radar with a Sigmet signal processor and Sigmet's IRIS software, provides a full range of reflectivity, velocity and spectrum width products, including volume scan products.

The antenna controller includes an inertial motion reference unit. The result is an antenna that is stabilized to within ±0.1° pointing accuracy in spite of the ship's pitch and roll motion. Velocity products and animation loops are corrected for the ship's speed and direction. Thus, the full range of weather radar capability is available in any sea conditions while the ship is stopped or in motion.

This installation provides a full set of Doppler weather radar data products, including volume scan products, whose quality and accuracy is comparable to shore-based systems.

The HDD250's antenna is in the large radome on top of the tower above the ship's bridge.

NOAA Research Ship Ron Brown