

# ***WEATHER EXTRACTOR COMPUTER***

## ***'THROUGH-THE-SENSOR' WEATHER RADAR PROCESSING***



### **System Features**

- Standard meteorological radar products
  - Reflectivity, Velocity, Spectrum Width
  - Wind Profiles (vertical and 2-D field)
  - Echo Tops
  - Hydrological products
  - Storm tracking
- Data quality control
  - Clutter / point target editing
  - Velocity / range unfolding
- Commercial processing hardware running Windows or Linux operating systems
- Web-server Display and Data Distribution
- SIPRNET approved

Military operations are greatly impacted by current and future weather conditions. However, many naval vessels at-sea and military detachments deployed around the globe often lack organic weather radar information. Satellite sensors and receivers can provide near real-time weather information, but this information is often not continuously available. Many battle-field and ship-based radars, however, can provide meaningful weather information, but typically disregard this information. Using 'Through-the-sensor' processing, tactical radars can effectively provide weather radar data as a secondary output from their normal operation.

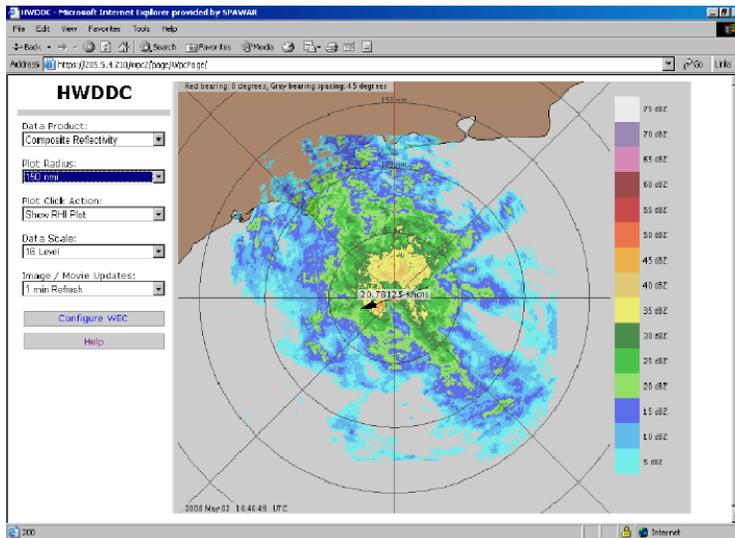
BCI Sensors has developed a real-time adjunct weather processor that converts tactical radar returns into meaningful weather radar information. The passive interface from the radar to the Weather Extractor Computer (WEC) means there is no impact on the tactical operation of the radar.

## PRODUCT LINE INFORMATION: **WEATHER EXTRACTOR COMPUTER**

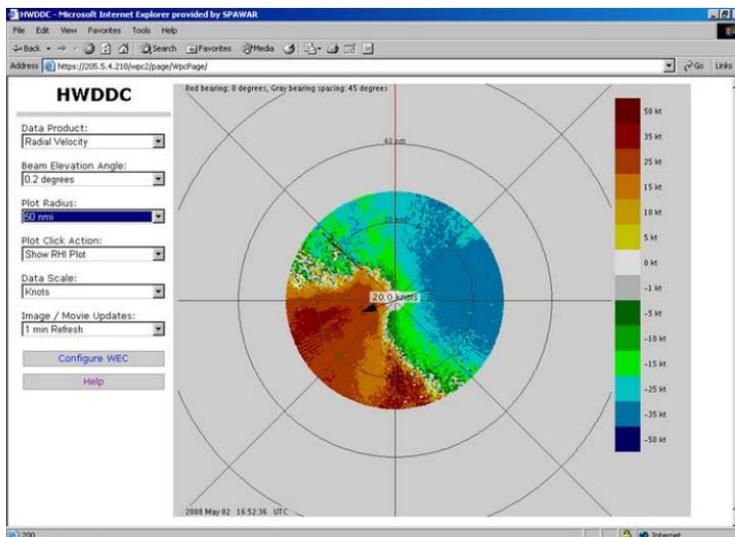
The WEC is based on commercial, off-the-shelf PC server technology and adheres to the US Navy's Open Architecture guidelines. Weather information updates are provided at intervals up to once per minute. Weather products are available from the WEC via standard Ethernet connection to an external network (such as SIPRNET) or via closed-circuit video (such as 23-TV).

The WEC provides standard spectral moment estimates such as reflectivity (dBZ), mean Doppler velocity, and spectrum width (depending on radar operations), and post-processed products such as composite reflectivity, de-aliased velocity, wind profiles and others. The modular nature of the WEC's software allows the system to be applied to a variety of tactical radar systems with limited development per application.

WEC systems are used in the Navy's UMR-1 meteorological processing system, also known as the Hazardous Weather Detection and Display Capability (HWDDC), which is installed on CVN and L-class ships equipped with the SPS-48E radar. BCI Sensors has also developed WEC systems for the Air Force's TPS-75 radar. The Tactical Environmental Processor, a weather processor system being developed by BCI Sensor for the SPY-1 radar, also utilizes the WEC modular processing software architecture.



Radar reflectivity (above) and radial velocity (below) from an AN/SPS-48E radar processed by the BCI Weather Extractor Computer and displayed using BCI's web-based viewer for the Navy's Hazardous Weather Detection and Display Capability.



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### About BCI Sensors:

BCI Sensors develops radar system components and communications systems solutions for Government and commercial clients. BCI Sensors is a division of Basic Commerce and Industries, Inc., headquartered in Moorestown, NJ.

[www.bcisensors.com](http://www.bcisensors.com)