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# Session 4 Notes

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Session IV Notes

These notes are intended as a supplement to the Session IV presentation. The following discussion points were captured by workshop rapporteurs:

- A Data Management System (DMS) should exist to support the command and control of numerous stations. Modules would include a data acquisition system, a relational data base, and an information dissemination system.

- A viable Data Management Systems would work for many stations and multiple types of sensors, run on traditional Windows-based systems, support different communication systems, facilitate efficient data collection and processing, and provide web-based viewing.

- A DMS that allows the user to format concise messages saves money and promotes the use of essential information for smart phones.

- Being able to include bathymetry and possibly imagery-based products that show features such as wavelengths, surf zone width, and waterlines in a database supports data fusion.

- It would be important to overlay certain types of information such as wind velocity, circulation, and significant wave heights over depth.

- The online demonstration of information from SmartBay in Placentia Bay and the use of Automatic Identification System (AIS) was considered a very valuable tool to avoid collisions and most importantly to get weather and sea state information to the pilot house.

- Getting custom data transmitted from buoys should support harbor pilots who have to pin their pilot boat alongside a particular vessel, climb a ladder in order to board the vessel, and then navigate safely into the harbor. This application was mentioned as a benefit from strategically sited buoys for both SmartBay in Newfoundland, Canada and NOAA's Chesapeake Bay Interpretive Buoy System.

- Long-term inventories of measured wave data are available online from NDBC, Coastal Data Information Program, the Canada Department of Fisheries and Oceans, and from various private installations.

- In offshore waters around the world, long-term buoy wave measurement networks are still relatively few and far between. Networks with directional measurements (directional information is essential for coastal prediction) are even scarcer. Some participants indicated that the larger deep-sea buoys are being considered for removal from the inventory due to high operating costs and low budgets.

- The most highly developed wave buoy network seems to be the NOAA-NDBC buoy networks in the US, which includes links to archived information from other country's "Ocean Data Acquisition System buoys."

- Operators are using a number of database repositories for real-time and archived wave data. They include resources such as:
  - Coastal Data Information Program (CDIP) Recent Observed. Available online. URL: http://cdip.ucsd.edu/?&nav=recent&sub=observed
  - CDIP Historic Data. Available online. URL: http://cdip.ucsd.edu/?&nav=historic&sub=data
  - Canada Dept Fisheries and Oceans, Integrated Science Data Management, Available online. URL: http://www.meds-sdmm.dfo-mpo.gc.ca/isdm-gdsi/index-eng.html
  - Various private installations (e.g., Oil and Gas, Ports, etc that are not included in public databases).

- The buoy data are used primarily for (a) forecasting and optimal ship tracking, (b) validating satellite altimeter and wave model wave heights and (c) validating wave model wave periods and directions. A retired Army Corps of Engineer participant highlighted the importance of both buoy and model data to plan for coastal erosion and disaster relief.

- There is a need for simultaneous directional wave measurements in deep and shallow water, especially to assess the impacts from severe weather such as Hurricane SANDY.

These rapporteur notes do not necessarily reflect the view of all participants and speakers during this discussion session.