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australian coastal ocean

HR: 1800h

AN: OS25A-04

TI: [The Australian Coastal Ocean Radar Network: Data Archiving Protocols](#)

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AB: The Australian Federal Government has established an Integrated Marine Observing System consisting of research infrastructure at key locations around the country which will produce quality assured data into a central database. One of the elements of IMOS is the Australian Coastal Ocean Radar Network (ACORN). ACORN will have a combination of phased array and direction-finding systems to cater for the different needs of the marine research community. The data will be routed through a central laboratory for quality assurance and metadata labelling. System diagnostic data will also be sent to the central laboratory and all monitoring and maintenance will originate there. The maintenance model is a combination of caretaker casual staff at each site, with full technical competence at the central laboratory. Deployment of the radars will be in support of regional nodes where there is a range of identified questions concerned with boundary currents and associated eddies and their interactions with shelf water and topography. The first installation for the Australian Coastal Ocean Radar Network is in the southern section of the Great Barrier Reef (GBR) on the north-east coast. The GBR radar is a phased-array WERA system operating at 8.348 MHz and a 33 KHz bandwidth. It transmits 28 W of power in a CW chirp on a broad-beam antenna and receives on 12 short whip antennas at half-wavelength spacing along the bank at the back of the beach in a sweeping arc of a circle with a large radius of curvature. This configuration produces surface current measurements on a 4.5 km grid scale over ranges of up to 150 km. The two radar stations operate alternately for 5 minutes, giving a map of surface currents every 10 minutes. The data volume is 115 MByte/day for the near real-time data and 1.5 GByte/day for the raw time series for each of the two radar stations. One of the requirements of the project is to establish appropriate archiving procedures. We anticipate that the most popular data format will be the hourly maps of surface currents which can be used for operational, planning and educational purposes. The most popular research data will most likely be the digital vector components of surface currents every 10 minutes or 1 hour. The present plan is to archive the most detailed form of each data set i.e. the shortest time step and the highest spatial resolution available rawest form of data. The archive will have software tools to deliver specific files for output to users at their request. For example if a user selects an hourly surface current map for a specific time and area then the software toolbox should go to the 10-minute archive and construct the averaged map.

DE: 4262 Ocean observing systems
SC: Ocean Sciences [OS]
MN: 2008 Western Pacific Geophysics Meeting

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