Maritime Rapid Environmental Assessment / Blue Planet'2007:
Acoustic Oceanographic Buoy Data

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Abstract Among the existing panoply of instrumentation for Rapid Environmental Assessment (REA), underwater unmanned vehicles, satellite remote sensing and oceanographic drifters attract particular attention. In the last years, there has been a growing interest in coupling purely oceanographic surveys and acoustic measurements, in order to provide a final environmental image that is not only oceanographically consistent but also acoustically coherent for the area and period of interest. Thus, the usage of remote acoustic equipment is becoming an integrand part of the REA equipment list. One of the major characteristics of REA equipment is its unique capability for remote, often unsupervised, operation and compactness. The Acoustic Oceanographic Buoy Joint Research Project (AOB-JRP) was launched in 2004 with the objective of develop and test at sea a dedicated sensing device for acoustic REA (AREA). The MREA/BP'07 sea trial was designed to assess the joint capabilities of both oceanographic remote sensing and acoustic means to attain a recognizable picture of the environment in a particular location at a given time, able to provide suitable short term sonar predictions. A series of environmental measurements, ocean circulation modelling and acoustic probing were performed in order to both obtain a suitable data base for validation purposes and simultaneously provide an operationally realistic sampling strategy. Environmental measurements included extensive CTD and MVP casts over the BP03 and adjacent areas and from NRV Leonardo during acoustic transmissions, bottom grab samples in the shallower area (below 50 m depth), Uniboom and X-Star profiling along the whole BP03 area, multibeam surveys along the main propagation paths (both with HmSr Snellius and the Remus vehicles), thermistor strings at points A, B and incorporated in the AOB drifting arrays and finally a Waverider buoy in the middle of the BP03 area. Acoustic measurements took place from the HmSr Snellius RHIB or Sloop using a set of sparse arrays and/or from the free drifting AOB's, receiving pre-coded sequences transmitted from NRV Leonardo sound source or using occasional sources of opportunity. This report describes in detail the AOB data set and a

few associated environmental measurements available at the time of publication. Other data sets will be described in companion reports or posted in the NURC Geos website by the responsible institutions.

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