

## TT-IBPD Report (Luca Centurioni and Rick Lumpkin)

- 1) Full report to DBCP submitted in summer
- 2) AOML stats are the starting point of GDP QC procedures, followed-up by other tools such as real-time statistics and performance evaluations of suspect/re-designed units
- 3) Inter-sessional period spent on identifying the most prominent failure modes of the drifters
  - Focus on the assembly and fitting of battery packs into drifters;
  - Focus also onto power consumption of electronic's and sensor's suite
  - A number of engineering investigations were performed including assessing damage occurring after rough shipping and handling, recovery of grounded units, mooring of drifter's buoys off the Scripps Pier and running complete systems on the bench (benchmarks), extensive testing and tuning of GPS management and PMT A3 management.
- 4) It was determined to focus on battery pack integrity over drogue retention (higher priority)
- 5) Recommendation 1): given that a 56Ah pack has enough power to meet the drifter's lifetime requirement (over 450 days) industry should make optimal choices of individual batteries and implement proper assembly solutions of the packs so that they can resist drop impact from 30 ft (10 m) and impact/vibration in rough seas/storms; Doubling battery pack, unless required by higher sensor's consumption is not best practice.

- 6) Recommendation 2): careful evaluation of the power requirements of the electronics and sensor's suite is also critical; lower sampling frequency of sensors as applicable (e.g. strain gauge)
- 7) Modifications of drifters to Iridium/GPS and upgrades to barometers should be discussed and approved with the owner of the drifters.
- 8) Manufacturers should be consulted by the TT members but should not be part of the task team (conflict of interest)
- 9) Luca Centurioni and Rick Lumpkin are proposed to continue co-chairing the effort for the next inter-sessional period;
- 10) Outlook for the next inter-sessional period will be on drogue retention.