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|  | **SOOP Report for 2016** | | | | | **USA** | | |
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|  | **a.** | **Programme description:** | | | | | | | |
| **Line** | | **Agency** | | **Sampling programme and mode (if applicable)** | | | **No. of ships** | |
| AX01 | | AOML1 / IRD2 | | High Density (HD) | | | 1 | |
| AX02 | | AOML / IRD | | HD | | | 1 | |
|  | AX07 | | AOML | | HD | | | 3 | |
|  | AX08 | | AOML | | HD | | | 1 | |
|  | AX10 | | AOML | | HD | | | 2 | |
|  | AX18 | | AOML | | HD | | | 3 | |
|  | AX22 | | SIO3 | | HD | | | 1 | |
| AX25 | | UCT4 / AOML | | HD | | | 1 | |
| AX32 | | WHOI5 / NMFS6./ URI7 / AOML | | HD | | | 1 | |
|  | AX90 | | URI / SBU8 / AOML | | HD | | | 1 | |
|  | AX97 | | AOML / FURG9 | | HD | | | 4 | |
|  | IX01 | | BOM10 / AOML | | Frequently Repeated (FR) | | | 1 | |
|  | IX21 | | SIO | | HD | | | 3 | |
|  | IX28 | | CSIRO11 / SIO / AOML | | HD | | | 1 | |
|  | MX04 | | ENEA12 / AOML | | HD | | | 1 | |
|  | PX05 | | SIO | | HD | | | 1 | |
|  | PX06 | | SIO | | HD | | | 2 | |
|  | PX09 | | SIO | | HD | | | 2 | |
|  | PX30 | | SIO / CSIRO | | HD | | | 2 | |
|  | PX34 | | SIO / CSIRO | | HD | | | 3 | |
|  | PX37 | | SIO | | HD | | | 2 | |
|  | PX39 | | SIO | | HD | | | 2 | |
|  | PX40 | | SIO | | HD | | | 1 | |
|  | | | | | | | | |
|  | **b.** | **Data management** | | | | | | | |
|  | **Agency** | | | **No. of JJVV/BUFR messages on the GTS in 2016** | | | **Location of delayed-mode data** | | |
|  | NOAA / AOML and Partners | | | 6699 | | | NCEI / AOML / SIO / CSIRO | | |
|  | SIO / AOML | | | 5276 | | | NCEI / AOML / SIO / CSIRO | | |

**Agency:**

1. AOML: Atlantic Oceanographic and Meteorological Laboratory – AOML

2. IRD: Institute of Research for Development, France

3. SIO: Scripps Institution of Oceanography

4. UCT: University of Cape Town, South Africa

5. WHOI: Woods Hole Oceanographic Institution

6. NMFS: National Marine Fisheries Service – NOAA

7. URI: University of Rhode Island

8. SBU: Stony Brook University

9. FURG: Federal University of Rio Grande, Brazil

10. BOM: Bureau of Meteorology, Australia

11. CSIRO: Commonwealth Scientific and Industrial Research Organisation, Australia

12. ENEA: National Agency for new Technologies, Energy and Sustainable Economic Development, Italy

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|  | **c.** | **Major challenges and difficulties:** | |
|  | * Level funding for ocean-spanning routes, and high scientific value in sustained boundary current observations, lead to challenges in adapting the design of existing networks to meet the new constraints and requirements. * Limited budget available to contribute with probes and equipment to international and US collaborators. * Difficulty to find and recruit ships along AX10 (Newark to Puerto Rico) and AX07 (Gibraltar to Miami) due to changes in shipping industry. | | |
|  | | |
|  | **d.** | **Research / development / testing:** | |
| * All SEAS XBT data continue being transmitted from SOOP ships to NOAA in full resolution profiles and all data are placed into the GTS by NOAA. * AOML/SOOP continues to develop and upgrade AMVERSEAS for the recording of XBT and thermosalinograph (TSG) observations. * AOML implemented a new Iridium-based transmission system which reduces transmission cost by 95%. All data transmissions from AOML and SIO started to be transitioned to this new system in 2015. * XBT data transmissions to the GTS using BUFR format continue to be performed regularly, along with ASCII BATHY bulletins. * SOOP continues to support the deployment of other observational platforms such as TSG, drifters and Argo floats. * AOML/SOOP continues to work in other XBT related projects including experiments for the study of the XBT fall rate equation issue. * AOML/SOOP worked in collaboration with international partners in the maintenance of XBT high density transects in the Atlantic Ocean (AX01, AX02, AX25, and AX97), in the Mediterranean Sea (MX04),and in the Indian Ocean (IX01, and IX28). * SIO worked in collaboration with international and interagency partners in the maintenance of the XBT high density transects in Pacific Ocean (PX30 and PX34), the Southern Ocean (IX28; AX22), the Indian Ocean (IX21). | | |
|  | | |
|  | **e.** | **Other comments:** | |
| * NOAA / AOML continues to participate in collaborative programs with other institutions involved with XBT deployments. In particular, during 2016 AOML continued its collaboration in support of AX97 (Brazil), IX01, IX28 (BOM/Australia), and AX01, AX02 (IRD/France). * SIO continue to participate in collaborative programs with other institutions involved with XBT deployments. In particular, during 2016 SIO continued its collaboration in support of PX30, PX34, IX21, IX28 (CSIRO, Australia). * Real time transmission and quality control procedures for the TSG data continue in operation. The TSG data set, including quality control flags, is being distributed through NOAA/NCEI and GOSUD. | | |