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|  | **VOS Report for 2017** | **Country =** | **SPAIN** |
|  |
|  | **a.** | **Programme description:** |
| **Category** | **No. of ships at** **31 Dec 2017** | **Recruitments in 2017** | **De-recruitments****In 2017** | **Comments** |
| *Selected* |  |  |  |  |
| *Selected AWS* | 1 |  |  |  |
| *VOSClim* |  |  |  |  |
| *VOSClim AWS* |  |  |  |  |
| *Supplementary* |  |  |  |  |
| *Supplementary AWS* |  |  |  |  |
| *Auxiliary* |  |  |  |  |
| *Auxiliary AWS* |  |  |  |  |
| *Other* | 6 |  |  | These ships do not transmit data through the GTS. |
| **National VOS Total** | 7 |   |  |  |
|  |  |  |  |  |  |
|  | **National VOS Target** |  |  |  |  |  |
|  | **National VOSClim Target**  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  | **b.** | **Data management:** |
|  | *Total number of ship observations (BBXX) distributed on the GTS in 2017* | Selected AWS: Esperanza del Mar: 7983Others: No dataRV R Margalef and RV A Alvarino send the data to the IEO Data Center once a day (data are collected on boards the ships each 1 minute). These data are available for OPERATIONAL purposes by FTP RV Sarmiento de Gamboa, RV Garcia del Cid, BIO Hesperides send to the CSIC Data Center. RV SOCIB sends the data to the SOCIB Data Center. |
|  | *Dates when VOS data submitted to the GCCs in 2017* |  |

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|  | c. | **Shipboard Automatic Weather System** |
| **Type** | **No. of ships at 31 Dec 2017** | **Manual Input****Yes / No** | **Method of Comms** | **Year1 Plans** |
| Vaisala MAWS 410 | 1Esperanza del Mar | No | Inmarsat-C e-mail |  |
| Automatic meteorological Station  | **2**R/V Ramón Margalef R/V Angeles Alvariño |  | Daily transmission to IEO Data Center. Data available for OPERATIONAL purposes via FTP (info: cedo@ieo.es) |  |
| Automatic meteorological Station | **2**R/V Sarmiento de GamboaR/V García del Cid |  | Data sent to the CSIC Data Center in real time every 10 seconds. |  |
| Automatic meteorological Station |  **1**R/V Hespérides |  | Data sent to the CSIC Data Center in real time every 1 minute |  |
| Automatic meteorological Station | **1** **R/V SOCIB** |  | Data sent to the SOCIB Data Center Center in real time every 1 minute (in mobile phone communication area) |  |
|  |  |  |
|  | **d.** | **Electronic logbooks: (TurboWin, SEAS, OBSJMA)** |
| **Software & version** | **No. of ships at**  **31 Dec 2017** | Implementation plans |
| Vaisala 1103 | 1 | Since December 7th 2016 the SHIP messages are transmitted to the GTS in BUFR code using the following headers:ISSA01 LEMM (SHIPs 00, 06, 12 and 18UTC)ISSA22 LEMM (SHIPs 03, 09, 15 and 21UTC)ISSA21LEMM (hourly SHIPs) |

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| **e.** | **Standard Meteorological Equipment: (Types and Settings)** |
| **Equipment Type / Element** | **Manual Instrumentation** | **AWS Instrumentation** |
| BarometerYES |  | Vaisala PTB220 (Esperanza del Mar) |
| *Default national setting* | *Station Level or Mean Sea Level* | *16.2m* |
| BarometerYES |  | AANDERAA Scanning Unit 3010 Station (*R/V Hespérides)* |
|  | Geonica Meteodata Station (*R/V Sarmiento de Gamboa*) |
|  | Campbell CR1000 Automatic Weather Station (*R/V* *García del Cid)* |
|  | AANDERAA Automatic weather Station AWS 2700 *(R/V R. Margalef)* |
|  | AANDERAA Automatic weather Station AWS 2700 *(R/V A. Alvariño)* |
|  | GEONICA METEODATA 2000 Young, model 61302V (R/V SOCIB) |
| *Default national setting* | *Station Level or Mean Sea Level* | *Station Level or Mean Sea Level* |
| ThermometersYES |  | Vaisala HMP155 (Esperanza del Mar) |
|  | AANDERAA Automatic weather Station AWS 2700 *(R/V R. Margalef)* |
|  | AANDERAA Automatic weather Station AWS 2700 *(R/V A. Alvariño)* |
|  | AANDERAA Scanning Unit 3010 Station (*R/V Hespérides)* |
|  | Geonica Meteodata Station (*R/V Sarmiento de Gamboa*) |
|  | Campbell CR1000 Automatic Weather Station (*R/V García del Cid)* |
|  | Geonica Meteodata 2000 GEONICA 5031 Air Temperature and Relative Humidity Sensor (*R/VSOCIB)* |
| Sea Surface TemperatureYES |  | Yes / Hull contact Vaisala HMP45D (Esperanza del Mar) |
|  | AANDERAA Automatic weather Station AWS 2700 *(R/V R. Margalef)* |
|  | AANDERAA Automatic weather Station AWS 2700 *(R/V A. Alvariño)* |
|  | AANDERAA Scanning Unit 3010 Station (R/V Hespérides) |
|  | Geonica Meteodata Station (R/V Sarmiento de Gamboa) |
|  | Campbell CR1000 Automatic Weather Station (R/V García del Cid) |
|  | SeaBird SBE21 Termosalinograph / SBE38 Remote temperature |
| Wind SpeedYES |  | Vaisala WMT700 (Esperanza del Mar) |
|  | AANDERAA Automatic weather Station AWS 2700 *(R/V R. Margalef)* |
|  | AANDERAA Automatic weather Station AWS 2700 *(R/V A. Alvariño)* |
|  | AANDERAA Scanning Unit 3010 Station *(R/V Hespérides)* |
|  | Geonica Meteodata Station (*R/V Sarmiento de Gamboa*) |
|  | Campbell CR1000 Automatic Weather Station (*R/V García del Cid)* |
|  | Geonica Meteodata 2000Young, model 05106 Wind Monitor-MA (*R/VSOCIB)* |
| Wind DirectionYES |  | Vaisala WMT700 (Esperanza del Mar) |
|  | AANDERAA Automatic weather Station AWS 2700 *(R/V R. Margalef)* |
|  | AANDERAA Automatic weather Station AWS 2700 *(R/V A. Alvariño)* |
|  | AANDERAA Scanning Unit 3010 Station *(R/V Hespérides)* |
|  | Geonica Meteodata Station (*R/V Sarmiento de Gamboa*) |
|  | Campbell CR1000 Automatic Weather Station (*R/V García del Cid)* |
|  | Geonica Meteodata 2000 Young, model 05106 Wind Monitor-MA (*R/VSOCIB)* |
| HumidityYES |  | Vaisala HMP155 (Esperanza del Mar) |
|  | AANDERAA Automatic weather Station AWS 2700 *(R/V R. Margalef)* |
|  | AANDERAA Automatic weather Station AWS 2700 *(R/V A. Alvariño)* |
|  | AANDERAA Scanning Unit 3010 Station *(R/V Hespérides)* |
|  | Geonica Meteodata Station (*R/V Sarmiento de Gamboa*) |
|  | Campbell CR1000 Automatic Weather Station (*R/V García del Cid)* |
|  | Geonica Meteodata 2000 (*R/VSOCIB)*GEONICA 5031 Air Temperature and Relative Humidity Sensor |
| Solar radiationYES |  | AANDERAA Scanning Unit 3010 Station (*R/V Hespérides)* |
|  | AANDERAA *Automatic weather Station AWS 2700*  (Ramón Margalef) |
|  | AANDERAA *Automatic weather Station AWS 2700*  (Angeles Alvariño) |
|  | Geonica Meteodata Station (*R/V Sarmiento de Gamboa*) |
|  | Campbell CR1000 Automatic Weather Station (*R/V García del Cid)* |

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| **f.**  | **PMO ship visit activities: (if a visit is for dual purposes, include all purposes)** |
| **Activity** | **Manual Ship**  | **AWS****Ship** | **Comment** |
| Routine VOS inspections |  |  |  |
| VOS recruitment visits |  |  |  |
| VOS de-recruitment visits |  |  |  |
| VOS courtesy or foreign visits |  |  |  |
| *Total visits to VOS* |  |  |
| Routine ASAP inspections |  |  |  |
| ASAP recruitment visits |  |  |  |
| ASAP de-recruitment visits |  |  |  |
| ASAP courtesy visits |  |  |  |
| *Total visits to ASAP* |  |  |  |
| Routine SOOP visits |  |  |  |
| SOOP recruitment visits |  |  |  |
| SOOP de-recruitment visits |  |  |  |
| SOOP courtesy visits |  |  |  |
| *Total visits to SOOP* |  |  |  |
| Visits in support of DBCP (drifting buoys) |  |  |  |
| Visits in support of Argo (profiling floats) |  |  |  |
| *Total visits to other programs* |  |  |  |
| **Total visits by national PMOs** |  | *Sum of all ship visits (VOS + ASAP + SOOP) + visits to other program (DBCP + Argo)* |
| **Total number of PMOs(FTE\*)** |  |  |
| (\*FTE-Full Time Employee) |  |  |  |

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| **g.** | **Major challenges and difficulties:** |
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|  |  |
| **h.** | **Research / development / testing:** |
|  |
|  |  |
| **i.** | **Other comments** |
|  |