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|  | **VOS Report for 2017** | **Country =** | **Hong Kong, China** |
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|  | **a.** | **Programme description:** |
| **Category** | **No. of ships at** **31 Dec 2017** | **Recruitments in 2017** | **De-recruitments****In 2017** | **Comments** |
| *Selected* | 44 | 2 | 0 | 2 of the selected ships were installed with shipborne automatic weather system. |
| *Selected AWS* |  |  |  |  |
| *VOSClim* | 24 | 3 |  | 3 ships were upgraded from Selected to VOSClim class. |
| *VOSClim AWS* |  |  |  |  |
| *Supplementary* | 1 |  |  |  |
| *Supplementary AWS* |  |  |  |  |
| *Auxiliary* |  |  |  |  |
| *Auxiliary AWS* |  |  |  |  |
| *Other* |  |  |  |  |
| **National VOS Total** | 69 |   |  |  |
|  |  |  |  |  |  |
|  | **National VOS Target** | 78 by 2019 |  |  |  |  |
|  | **National VOSClim Target**  | 27 by 2019 |  |  |  |  |
|  |  |  |  |  |  |  |
|  | **b.** | **Data management:** |
|  | *Total number of ship observations (BBXX) distributed on the GTS in 2017* | 13731 real-time manual observations from Hong Kong VOS ships; 16760 real-time automatic observations from shipborne automatic weather systems installed on board Hong Kong VOS ships. |
|  | *Dates when VOS data submitted to the GCCs in 2017* | 23 Feb 2017, 1 Jun 2017, 7 Aug 2017, 27 Dec 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** |
| AMOS | 1 | No | Iridium (SBD) | Explore the installation of more shipborne automatic weather systems on Selected VOS ships. |
| SVP Driftting buoy (MetOcean) | 1 | No | Iridium (SBD) |  |
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|  | **d.** | **Electronic logbooks: (TurboWin, SEAS, OBSJMA)** |
| **Software & version** | **No. of ships at**  **31 Dec 2017** | Implementation plans |
| TurboWin 5.0 | 48 |  |
| TurboWin 4.5 | 15 | Will gradually be replaced by Version 5.0 or above |
| TurboWin plus 2.5.7 | 1 |  |
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| **e.** | **Standard Meteorological Equipment: (Types and Settings)** |
| **Equipment Type / Element** | **Manual Instrumentation** | **AWS Instrumentation** |
| Barometer | Precision aneroid | AMOS |
| Ship’s aneroid | SVP Drifting buoy (MetOcean) |
| *Default national setting* | Station Level for ships with TurboWin/Mean Sea Level for ships without TurboWin | *Mean Sea Level* |
| Barograph | Small scale |  |
| Digital Barograph ( Mintaka Duo) |  |
| *Default national setting* | Station Level for ships with TurboWin/Mean Sea Level for ships without TurboWin |  |
| Thermometers | Liquid-in-glass | AMOS |
|  | Resistance |  |
| Sea Surface Temperature | Condenser intake |  |
|  | Hull contact sensor |  |
| Wind Speed | Propeller vane |  |
| Cup anemometer and wind vane |  |
| Ultrasonic wind sensor |  |
| Wind Direction | Propeller vane |  |
| Cup anemometer and wind vane |  |
| Ultrasonic wind sensor |  |

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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 | 20 | 0 |  |
| VOS recruitment visits | 2 |  |  |
| VOS de-recruitment visits |  |  |  |
| VOS courtesy or foreign visits |  |  |  |
| *Total visits to VOS* | 22 |  |
| 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) | 2 |  | Arranged Hong Kong VOS for deployment of a drifter buoy in the South China Sea region. |
| Visits in support of Argo (profiling floats) |  |  |  |
| *Total visits to other programs* | 2 |  |  |
| **Total visits by national PMOs** | 24 | *Sum of all ship visits (VOS + ASAP + SOOP) + visits to other program (DBCP + Argo)* |
| **Total number of PMOs(FTE\*)** | 1 |  |
| (\*FTE-Full Time Employee) |  |  |  |

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| **g.** | **Major challenges and difficulties:** |
| The service routes of ships change from year to year, making some Hong Kong VOS ships not able to return to home port for many years for inspection by PMO. Regular changing of crew members every half to one year is another issue that results in variation of both quantity and quality of weather observations due possibly to improper handover of the weather observation duty. Some ship captains show a lack of motivation to participate by reporting weather observations, even detailed procedures have been briefed by PMO for several times during ship visits. There is only one PMO in Hong Kong. VOS ships berthing at port outside office hours and last-minute changes of berthing time generate difficulties for PMO ship visits. Automatic transmission of weather observations via TurboWin or TurboWin+ is not feasible for some ships which have restricted or limited internet access on board. All shipborne AWSs available on the market require connection to external power source, which is not a readily-available option for many ships. Design of self-powered AWSs utilizing renewable energy for operation on board the VOS ships is most desirable.  |
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| **h.** | **Research / development / testing:** |
| During the past year, 7 more aneroid barographs of ships in the Hong Kong VOS fleet were replaced by digital barographs for better quality of pressure observations. The Hong Kong Observatory (HKO) plans to replace all aneroid barographs with digital barographs on board the Hong Kong VOS ships in phases. A webpage has been developed to display weather photos taken at seas by the crews of the Hong Kong VOS ships for educational purpose and outreach. More than 400 photos were received and 200 of them were selected to display on the HKO website which will be launched shortly. Another photo and video collection campaign was conducted between Dec 2017 and Feb 2018 to collect photos from land, sea and air, with enormous support received from shipping companies under the Hong Kong VOS. The winning contributions will be displayed in a public exhibition at the Hong Kong International airport later in 2018.HKO plans to deploy five drifting buoys under the DBCP barometer upgrade program in the South China Sea and western North Pacific in 2018 with the assistance of the Hong Kong VOS fleet.HKO will continue to present awards to ships of the Hong Kong VOS fleet which have reported a certain number of weather observations in a year to encourage the ships to take more weather observations. HKO will continue to assist in upgrading existing VOS ships to meet the VOSClim standards. |
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| **i.** | **Other comments** |
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