

**NOOS annual report**  
**London - 2017**  
**Member report – Met Office**

Nov 2017

<b>Country</b>	UK
<b>Institution</b>	UK Met Office
<b>Observations Status and new initiatives</b>	<p><i>In situ Observations</i></p> <ul style="list-style-type: none"> <li>• MAWS (<i>Marine Automated Weather Stations</i>) – 7 offshore including 2 in Biscay and 2 in English Channel (E1 &amp; L4). 5 Light Vessels on-shelf in English Channel. Spectral wave data now available from 6 buoys.</li> <li>• Data from North-Sea rigs and platforms received and transmitted on GTS. Met-ocean including waves and some SST. Of the order 110 presently operating.</li> <li>• Deployment of drifters (through E-SURFMAR) in the North Atlantic. Number of drifters ~60 in N Atlantic and Med, a number of which enter the NOOS region.</li> <li>• Voluntary Observing Fleet (VOF) of around 240 ships. Around 20% of UK Voluntary Observing Ships (VOS) observations are from the North Atlantic. 60 vessels with Automatic Weather Stations (AWS), the majority of ship-of which are in the NOOS region</li> </ul> <p><i>Remote sensing observations</i></p> <ul style="list-style-type: none"> <li>• The OSTIA system produces analyses of foundation SST and sea ice based on a 3DVar, two length-scale analysis scheme on a 1/20° global grid.</li> <li>• A diurnal analysis of SST skin temperature based on OSTIA is produced daily</li> <li>• Met Office Space Programme have delegates on appropriate EUMETSAT, ESA and UK Space Agency meetings</li> <li>• Radsat, Autosat and Eumetcast systems receive data from a large array of remote sensing instruments on the many satellites. Satellites we receive and use observations from include Jason-2, Jason-3, Sentinel-3, and the MetOp series for low-earth orbiting systems. We also receive data from geostationary satellites including Meteosat-9, Meteosat-8, Meteosat-7, GOES and MTSAT-1R.</li> </ul> <p><i>New Initiatives:</i></p> <ul style="list-style-type: none"> <li>• Working in partnership with NERC's Sea Mammal Research Unit and BODC, the Met Office has been trialling the addition of Argos communications to standard seal tags. Since July 2017, we have been receiving temperature profiles in near-real time from 20 seals foraging off the north and west of the UK. These observations are available in TESAC format to all NMSs via the GTS, and are being assimilated into operational systems.</li> </ul>
<b>Modelling Status and new initiatives</b>	<p><i>Operational:</i></p> <ul style="list-style-type: none"> <li>• The NWS analysis and forecast system has been delivering to CMEMS</li> <li>• baroclinic model (NEMO FOAM AMM7) nested into a regional open ocean model (FOAM NATL12) and CMEMS Baltic model, 6 day forecasts, 1 x daily, nested to ERSEM ecosystem model and including NEMOVAR SST, SLA and profile data assimilation. Real-time ingestion of E-Hype data has been removed due to high biases in southern-north sea.</li> <li>• NEMO FOAM ORCA025 global model with altimetry, SST, T&amp;S profile assimilation</li> <li>• Global coupled ocean-atmosphere forecasts using 1/4° NEMO</li> <li>• barotropic model (POLCOMS on C-grid) using 3 nest (a 12km shelf model (CS3X), a 1.2km Bristol Channel model and a 1.2km South Coast model). 4 x daily, 6 day forecasts. Model surge is combined with tides predicted at tide gauge sites.</li> <li>• WWW-III surface waves Global SMC grid (3-6-12-25 km) twice daily (hourly outputs) 5 day forecast) plus 4 x day update runs to get best possible forecast winds.</li> <li>• WWW-III surface waves UK waters wave model at 4 km, 4 x daily (hourly outputs) two day forecast plus 4 x day update runs.</li> </ul> <p><i>Under development:</i></p> <ul style="list-style-type: none"> <li>• A 1.5 km version of the AMM will become operational in 2018</li> <li>• Global coupled ocean, atmosphere models using 1/4° ocean and 10 km atmosphere pallend for operations in 2019</li> <li>• Global 1/12° resolution forced and coupled systems planned for 2020</li> <li>• A 1.5 km ocean-wave-atm model for use in a coupled research system in the NOOS</li> </ul>

	<p>region</p> <ul style="list-style-type: none"> <li>• A NEMO based surge model at 7 km to replace 12 km CS3X (winter 17/18 trial, winter 18/19 operational), to be followed by 1.5 km shortly afterwards</li> <li>• Wave model on SMC grid (3-1.5 km NWS)</li> </ul>
<b>Dissemination Status and new initiatives</b>	<p><i>Status:</i></p> <ul style="list-style-type: none"> <li>• FOAM AMM7 (including a daily forecasting wave model equivalent), GLO coupled and OSTIA data available from CMEMS (<a href="http://marine.copernicus.eu/">http://marine.copernicus.eu/</a>).</li> <li>• Other model data are available from <a href="mailto:enquiries@metoffice.gov.uk">enquiries@metoffice.gov.uk</a></li> <li>• MAWS data available and viewable from (<a href="http://research.metoffice.gov.uk/research/ocean/goos/maws_pic.html">http://research.metoffice.gov.uk/research/ocean/goos/maws_pic.html</a> )</li> </ul> <p><i>Additionally:</i></p> <ul style="list-style-type: none"> <li>• Marine physical data <ul style="list-style-type: none"> <li>• measured water levels and wave data on ftp server (<i>for NOOS members</i>)</li> <li>• computed water levels and wave data on ftp server(<i>for NOOS members</i>)</li> <li>• computed transports in North Sea and North Sea/Baltic transition area on ftp server (<i>for NOOS members</i>)</li> </ul> </li> <li>• NOOS homepage <ul style="list-style-type: none"> <li>• Computed transport forecasts for the North Sea on NOOS-homepage</li> <li>• Computed forecasts of currents in the North Sea on NOOS-homepage</li> </ul> </li> <li>• Environment Agency flow and height data.</li> </ul>
<b>Relevant national projects</b>	<p>Public Weather Service (PWS) Defence Oceanography Programme (DOP)</p>
<b>Relevant International projects</b>	<p>Copernicus Marine Environment Monitoring Service EuroARGO: European contribution to a global ocean observatory IOC – IODE (Committee on International Oceanographic Data Exchange) Geo-Seas: EU-FP7 project: Pan-European infrastructure for management of marine and ocean geological and geophysical data JCOMM-OPS: provides coordination at the international level for oceanographic and marine observations from drifting buoys, moored buoys in the high seas, ships of opportunity, voluntary observing ships and sub-surface profiling floats. ETOFS: Expert Team on Operational Ocean Forecast Systems GODAE-OceanView Coastal and Shelf Seas Task Team: Coordinates internationally work on global model inputs to coastal modelling Ceaseless: developing coastal services, including wave data assimilation</p>
<b>Additional information</b>	