Introduction to BOOS activities

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BOOS Steering Group
BOOS objectives

• To develop, co-ordinate and harmonize operational oceanographic observation, information, forecasting systems and services for the Baltic Sea through effective cooperation:
  – To facilitate BOOS partner cooperation on OO through joint activities and projects
  – To improve the service quality both in basin and local scales
  – Foster cooperation in regional, European and global levels: BOOS-EuroGOOS, BOOS-CMEMS, BOOS-BSHC, BOOS-HELCOM, BOOS-EMODnet etc
BOOS 2017/18 activity review

• BOOS Communication
• BOOS external cooperation
• BOOS Website WG
• BOOS Modelling activities
  – Modelling in BAL MFC2: HBM-NEMO-ERGOM-WAM-SCOBI
  – Forecasting challenge identification
  – Multi-lateral cooperation
• BOOS Observation activities
  – In-situ TAC in CMEMS
  – ftp data exchange WG
  – NRT ship data delivery TT
  – Observing system assessment and integration
  – Multi-lateral cooperation
• BOOS Product and service activities
  – Multi-model ensemble TT
  – CMEMS OSR2017
BOOS Communication

• Business as usual
  – BOOS Workshop on Coastal Operational Oceanography and Annual Meeting (13 partners attended, apology from 7, no response from 3)
  – Bridging BOOS with EuroGOOS, EMODnet, HELCOM etc
  – Broadcast funding opportunities
  – Quarterly STG Skype meetings

• Annual report resumed

• Resume contacts with BOOS members
  – In 2017 BOOS AM, there are 23 members, 7 of them are “silent”, many due to funding, personnel or organizational change or political reasons
  – To re-establish contacts with: EPA, IOUG, LEGMA, IOW, RSHU, KU
  – Members still silent: NWAHEM, SPb-SOI
BOOS external cooperation

- **BOOS-EuroGOOS**: involved in SAWG, DataMEO WG, coastal WG (new), Glider TT (new), Ferrybox TT, Tidal gauge TT, EuroArgo TT etc.

- **BOOS-CMEMS**: BALMFC (website, modelling, MME, cal/val etc.), INSTAC (QC), OCTAC, SSTTAC

- **BOOS-EMODnet**: EMODnet projects

- **BOOS-MedGOOS**: CLAIM project

- **BOOS-GOOS-EOOS**: contribution to EOOS Forum, OBS19
• Update of BOOS website:
  – New products: accumulated inflow index
  – New data: water level from IMWG
  – Updated products: eg MME
• Extension of BOOS web: BALMFC cal/val webpage (in discussion)
• Potential improvements (eg Observation page, in discussion)
BOOS Modelling activities

- **NEMO cooperation**
  - SMHI, BSH, DMI, FMI, MSI, (IOPAN)
- **ERGOM cooperation**
  - BSH, IOW, DCE, MSI
- **HBM cooperation**
  - BSH, DMI, MSI, FMI, UL
- **WAM cooperation**
  - FMI, BSH, DMI, MSI
- **PDAF cooperation**
  - DMI, BSH, SMHI, FMI, AWI, (HZG)
- **Cal/Val cooperation**
  - BSH, MSI, SMHI, DMI, FMI
- **MME cooperation**
  - BSH, FMI, DMI, SMHI, MSI, FCOO, IOPAN
National modelling activities

- **Ice modelling**
  - SMHI, FMI, BSH, DMI, FMI, MSI, IOPAN, IMWG, FCOO, HZG

- **Ecological modelling**
  - SMHI, IOPAN

- **Ocean modelling**
  - IMGW (mike3), FCOO (GETM), HZG (NEMO, GETM, SCHSIM), IOW

- **Wave modelling**
  - IOPAN, IMGW (shallow water), FCOO (WW3), IOUG, MIG

- **Oil spill modelling**
  - BSH, DMI, SMHI, FMI, FCOO
BMP: challenges and opportunities

• Modelling needs and challenges at national level
• How can community basin-scale models help in coping with national modelling challenges?
• How can MME be used for improving operational forecast?
• Standardized cal/val approach (CMEMS cal/val metrix)
• Bathymetry and coastline optimization (to ensure use of best and most updated data)
• Towards coastal data assimilation (PDAF)
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<thead>
<tr>
<th>Project</th>
<th>Description</th>
<th>Partners</th>
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<tr>
<td>Tasseff (DK) – M+O</td>
<td>Resuspension in Limfjørð caused by fishing</td>
<td>DCE, DMI</td>
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<td>FindFISH (PL)</td>
<td>Knowledge transfer</td>
<td>IOPAN, MIG</td>
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<td>SatBałyk (PL) – O+M</td>
<td>Satellite Environment Control of Baltic Sea</td>
<td>IOPAN, MIG, IOUG</td>
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<td>Fimari (FI) – I</td>
<td>Combine all major components of the Finnish marine research community</td>
<td>SYKE, FMI</td>
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<td>Exosystem (FI) – M</td>
<td>Development of Archipelago Sea nutrient load model assembly</td>
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<td>BuleAdapt (FI) – S</td>
<td>Enhancing Adaptive Capacity for Sustainable Blue Growth</td>
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<td>MeRamo (DE) – M+S</td>
<td>Support MSFD from an assimilative Physical-biogeochemical model system</td>
<td>BSH, IOW, HZG</td>
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<td>SmartSea (RE) – S</td>
<td>Gulf of Bothnia as resource for sustainable growth</td>
<td>FMI, SYKE, SMHI</td>
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<td>Famos (RE) – O</td>
<td>Finalising Surveys for the Baltic Motorways of the Sea</td>
<td>BSH, SMA</td>
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<td>Baltic LINes(RE) – I+S</td>
<td>Coherent Linear Infrastructures in Baltic Maritime Spatial Plans</td>
<td>BSH, SYKE</td>
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<td>Daimon (RE) – S</td>
<td>Decision Aid for Marine Munitions</td>
<td>SBSH, YKE, IOPAN, MIG</td>
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<td>Balmfc (EU) – M</td>
<td>Provide Baltic Sea Copernicus marine service</td>
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<td>Instac (EU) – O</td>
<td>CMEMS In-situ Thematic Assembly Centre</td>
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<td>SicTac – O</td>
<td>CMEMS Sea Ice TAC</td>
<td>FMI, DMI</td>
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<td>EfficienSea2 – M</td>
<td>e-navigation for Baltic and Arctic</td>
<td>DMI, SMA</td>
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<td>Bscp (EU) – O</td>
<td>Data adequacy assessment in 11 challenge areas</td>
<td>DMI, FMI, MSI, SMA, SMHI</td>
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<td>Claim (EU) – M+O</td>
<td>Monitoring, modelling and cleaning plastic litters</td>
<td>DMI, MSI</td>
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<td>Emodnet Chemistry (EU) – O</td>
<td>Collect and disseminate chemistry data</td>
<td>SMHI, LHEI, TUT, FMI, SYKE</td>
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<td>Emodnet data ingestion (EU) – O</td>
<td>Marine Data ingestion</td>
<td>FMI, AU, MSI, SMHI</td>
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<td>Seadatacloud (EU) – O</td>
<td>Advance the SeaDataNet Services and adopt cloud and HPC technology</td>
<td>BSH, SMHI, FMI, MSI, IOUP, SYKE</td>
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<td>Jerico Next (EU) – O</td>
<td>Joint European Research Infrastructure Network for Coastal Observatory</td>
<td>SYKE, FMI, SMHI</td>
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<td>Wave2Nemo (EU) – M</td>
<td>Coupled ocean-wave model development in forecast environment</td>
<td>HZG, MSI</td>
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# National Observation Activities

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BOOS Observation activities

• Upgrade and extend BOOS ftp network: IMGW WL data added

• NRT ship data delivery TT (Johanna’s talk):
  – NRT ship data delivery workshop
  – IOPAN ship data NRT delivery

• Observing system assessment and integration
  – She J. 2018, Assessment of Baltic Sea observations EuroGOOS conf. paper
  – She J. and J. Murawski: GEO Blue Planet special issue, submitted
  – BSCP Data adequacy report 2: fit-for-purpose assessment
  – Contribution to CMEMS in-situ assessment
  – Contribution to OceanObs19
Integration in BOOS: breaking institutional and community barriers in ocean observing (OceanOBS19)
BOOS Product and service activities

• Multi-model ensemble (Thorger’s talk)
  – Monthly validation
  – NRT MME
  – Towards a distributed operational MME

• CMEMS OSR2017 (Jun’s talk)
  – Ocean monitoring indexes (OMI)
  – Baltic Inflow
  – Baltic Eutrophication
  – Extremes in sea level, SST and waves
  – ”Silent” storm event in western Baltic Sea
News from partners
IOUG owns and operates a new research vessel – catamaran ‘OCEANOGRAF’

MAIN SCIENTIFIC EQUIPMENT:

• Wire trawl sonar Simrad FS70 with real-time catch monitoring system PI50/60
• Gillnets operating equipment
• Current meter ADCP, Teledyne, RD Instruments Workhouse Mariner
• Radiance and Irradiance Sensors RAMSES by TriOS for analysing light above and below water surface
• MINI_ROV GUARDIAN 2.1 remotely operated underwater vehicle (ROV) with umbilical cable, SUBSEA TECH
• Towed scan sonar Multi-Purpose Survey System 4200,
• Vaisala Maritime Observation System MAWS410
• MiniCTD Probe, Valeport
Open access research infrastructure of the Marine Valley of Marine Research Institute of Klaipeda University
IOPAN: EuroArgo, Argo Poland
Argo float 39021101 trajectory and S,T,O₂ profiles
http://www.ifremer.fr/argoMonitoring/float/3902101
IOPAN: Surface buoy deployment
Deployment of the SatBaltyk bio-optical buoy

The buoy operate in summer time