

## MARTOB-SEAM Joint Conference Outcome

BALLAST WATER MANAGEMENT		
Results	Recommendations	Further Research
<p>1- Introduction of reliable testing protocols for systems at lab-scale and full-scale, (with exception of viability issue.)</p> <p>2- Development and introduction of MARTOB soup,</p> <p>3- Demonstration (pilot scale) of effective techniques for treatment of BW,</p> <p>4- Development of open model (dynamic) tool for assessment of cost-effectiveness of BW Treatment systems,</p> <p>5- Software tool for environmental risk-assessment of pollutants,</p>	<p>1- Enforcement practice</p> <p>2- Integrated environmental approach,</p> <p>3- Environmental performance assessment,</p> <p>4- Environmental, management/organisation onboard,</p> <p>5- Training/Qualifications required onboard,</p> <p>6- General environmental education,</p> <p>7- Naval operations and their exemptions in BW Convention.</p>	<p>1- Biological risk assessment model</p> <p>2- Development of international risk areas (publicly available)</p> <p>3- Method development for assessing viability of planktons,</p> <p>4- Development of Black-Box concept,</p> <p>5- Monitoring and verification of Ballast Water treatment systems (type approval),</p> <p>6- Investigation into cost of retrofitting and new building of BW treatment systems</p> <p>7- Sampling, testing and analysis of BW onboard (rapid, accurate and defendable results)</p>

<p>6- There are economically feasible solutions for BW treatment,  7- Development of evaluation framework for BW treatment systems,  8- Ranking of mitigation measures.</p>		<p>8- Use of IT systems for enforcement of BW regulations.</p>
<p><b>AIR EMISSIONS</b></p>		
<p><b>Results</b></p>	<p><b>Recommendations</b></p>	<p><b>Further Research</b></p>
<p>1- Development of open model (dynamic) tool for assessment of cost-effectiveness of AE treatment systems,  2- Software tool for environmental risk-assessment of pollutants,  3- Ranking of mitigation measures.</p>	<p>1- Enforcement Practice,  2- Global framework,  3- Economic assessment of approved technologies,  4- Development of environmental acceptability criteria,  5- General environmental education,  6- Integration of Emission issues with CAFE.</p>	<p>1- Geographical discrimination  2- Effect of sulphur on marine ecosystems (brackish and sea water)  3- Development of particulate scrubbing and other abatement technologies,  4- External cost evaluations (similar techniques used for land transport)  5- CO2 Indexing for ships,  6- Atmospheric effect of ship emissions.</p>

## Anti-Fouling

<b>Results</b>	<b>Recommendations</b>	<b>Further Research</b>
1- Software tool for environmental risk-assessment of pollutants, 2- Ranking of mitigation measures.		1- Biological risk assessment model.