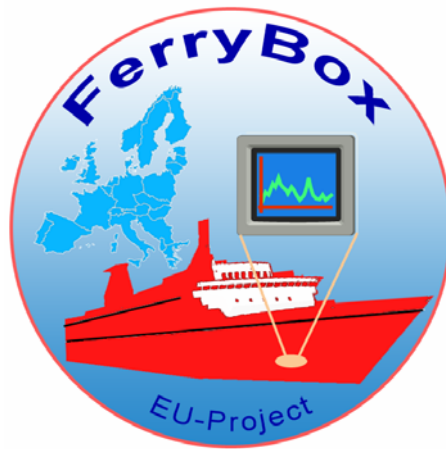


# FerryBox

## From On-line Oceanographic Observations to Environmental Information



## Final Report

### Executive Summary and Publications (Section 2)

Contract number : EVK2-2002-00144

Revision : 2.0

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## Document Reference Sheet

This document has been elaborated and issued by the European FerryBox Consortium.

P 1		<b>GKSS</b>	<b>GKSS Research Centre Institute for Coastal Research</b>	<b>Coordinator</b>
P 2		<b>NERC.NOC</b>	<b>NERC.NOC – National Oceanography Centre Southampton University and National Environment Res. Council</b> formerly NERC.SOC – Southampton Oceanography Centre	
P 3		<b>NIOZ</b>	<b>Royal Netherlands Institute of Sea Research</b>	
P 4		<b>FIMR</b>	<b>Finnish Institute of Marine Research</b>	
P 5		<b>HCMR</b> (formerly NCMR)	<b>Hellenic Centre for Marine Research</b> (formerly National Centre for Marine Research)	
P 6		<b>NERC.POL</b>	<b>Proudman Oceanographic Laboratory</b>	
P 7		<b>NIVA</b>	<b>Norwegian Institute for Water Research</b>	
P 8		<b>HYDROMOD</b>	<b>HYDROMOD Scientific Consulting</b>	
P 9		<b>CTG</b> (formerly CIL)	<b>Chelsea Technology Group</b> (formerly Chelsea Instruments Ltd.)	
P 10		<b>IEO</b>	<b>Spanish Institute of Oceanography</b>	
P 11		<b>EMI</b>	<b>Estonian Marine Institute</b> (in cooperation with the Estonian Maritime Academy)	

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## Section 2-A Executive Public Summary

Contract n°	EVK2-2001-00144	Reporting period	1.11.2004 – 31.10.2005
Title	FerryBox – from on-line oceanographic observations to environmental information		
<b>Objectives:</b> <p>The overall objective of FerryBox is to show that ship-borne instrumentation can cost effectively deliver information of immediate scientific value and help to solve environmental problems, that FerryBox systems provide a reliable system for efficient monitoring and management in European waters, that the data can be assimilated into prognostic numerical models to improve their accuracy and finally that such FerryBox systems offer potentials for a wider European contribution to GOOS, with incorporation of European sensor and information technology.</p> <p>During the last year of the FerryBox project, main emphasis was laid on the technical aspects of the respective FerryBox systems including efforts to establish and improve the calibration procedures. Moreover, the interpretation of the results based on the measurements and linking different observational techniques stood in the foreground.</p>			
<b>Scientific achievements:</b> <p>Using the results of the measurements, attempts were made to incorporate the data into models and testing their improvement after data-assimilation. Other models such as those calculating water transports, were used to compare data from single points (buoys) with the data from the ferry transect. Based on these model exercises direct comparisons between both types of observations became possible. Special emphasis was also put onto comparisons between FerryBox measurements and remote sensing observations from MERIS (on board the European satellite ENVISAT). Due to good weather conditions during 2005 several comparisons could be made between chlorophyll content in surface seawater and chlorophyll observed by satellite, which show the spatial extent of bloom phenomena, which otherwise can not be estimated from the ferry transects alone. The possibility to use FerryBox data as ground truth for satellite observations was taken into consideration by several partners and will deliver a large amount of information on the potential linkages between the two types of observational techniques.</p>			
<b>Socio-economic relevance and policy implications:</b> <p>During the last phase of the project the discussion on and the analysis of the costs-benefits of FerryBox systems started. This report contains costs elements (investments in systems, servicing, data retrieval, and reliability of systems) as well as benefits in terms of improved observations both temporal and spatial, for scientific and monitoring purposes. Also relations to international agreements (OSPAR, ICES) and EU Directives will be considered.</p>			



## Conclusions:

The final steps and conclusions of the project were discussed during a workshop in Helsinki in October 2005. This workshop organised by our local partner at the Finnish Institute for Marine Research has concluded that we have several outstanding results from our project regarding different aspects: We have reached the goals set for our scientific studies regarding eutrophication, sediment and water transport, on the usefulness of FerryBox data for model exercises and evaluations, including data assimilation procedures; we could demonstrate the ability to understand up-welling effects in the Finnish Gulf based on FerryBox data, we have derived several examples of a close integration of remote sensed data in the Baltic and Skagerrak, Bay of Biscay and the North Sea regarding the distribution of chlorophyll in surface layers as sampled by the FerryBox.

Usefulness of an ADCP on a Dutch ferry could be accomplished in terms of estimates of changing bottom topography and sediment transport through a tidal inlet.

Water transport calculations could be made for parts of the North Sea, where additionally comparisons were made between observations from a fixed buoy and our Ferry line transect several miles away.

Other activities were meant to improve the calibration procedures of the different sensors in the respective FerryBox systems. This chapter could not be entirely completed because it proved to be more complicate as previously thought.

## Keywords:

FerryBox systems, monitoring, remote sensing, numerical modelling, data assimilation, eutrophication, sediment transport



## Section 2-B Publications and Presentations

### B.1 Peer Reviewed Articles in Scientific Journals

- /PP-1/ Fleming V. and S. Kaitala (2005). Phytoplankton spring bloom intensity index for the Baltic Sea estimated for the years 1992 to 2003. *Hydrobiologia* 554, pp. 57-65.
- /PP-2/ Holley, S. and D.J. Hydes (2002). "Ferry-Boxes" and data stations for improved monitoring and resolution of eutrophication related processes: Application in Southampton Water UK a temperate latitude hypernutrified estuary. *Hydrobiologia* 475/476, pp. 99-110.
- /PP-3/ Hoteit, I., Korres, G. and G. Triantafyllou (2005). Comparison of Extended and Ensemble based Kalman filters with low and high resolution primitive equation ocean models. *Nonlinear Processes in Geophysics*, 12, pp. 755-765.
- /PP-4/ Jaanus, A., Hajdu, S., Andersson, A., Kaitala, S., Kaljurand, K., Ledaine, I., Lips, I. and I. Olenina (2004). Distribution patterns of the red tide dinoflagellate *Scrippsiella Hangoei* in the Baltic Sea. *Hydrobiologia*, 554, pp. 137-146.
- /PP-5/ Kanoshina, I., Lips, U. and J.-M. Leppänen (2003). The influence of weather conditions (temperature and wind) on cyanobacterial bloom development in the Gulf of Finland (Baltic Sea). *Harmful Algae*, Vol. 2: pp. 29-41.
- /PP-6/ Kelly-Gerrey, B.A., Hydes, D.J., Fernand, L.J., Jégou, A.M., Lazure, P., Puillat, I., and C Garcia-Soto (2006). Low salinity intrusions in the western English Channel and possible consequences for biological production. Submitted to *Continental Shelf Res.*, 51 pages.
- /PP-7/ Korres, G., Hoteit, I. and G. Triantafyllou (2005). Data assimilation into a Princeton Ocean Model of the Mediterranean Sea using advanced Kalman filters. *Journal of Marine Systems* (accepted).
- /PP-8/ Knight, P.J. and M.J. Howarth (2003). Towards a UK real-time coastal prediction system. *Marine Scientist*, 4, Q3, pp. 20-22.
- /PP-9/ Korres, G., Nittis, K., Triantafyllou, G. and I. Hoteit (2003). Towards a data assimilation scheme for the POSEIDON hydrodynamic model (submitted).
- /PP-10/ Petersen, W., Wehde, H., Krasemann, H., Colijn, F. and F. Schroeder (2005). FerryBox and MERIS – Assessment of Coastal and Shelf Sea Ecosystems by Combining In-situ and Remote Sensed Data. Submitted to *Estuarine Coastal and Shelf Science*.

## B.2 Dissertations

- /DI-1/ Boyd, J. (2003). The development and evaluation of new technologies for the study of eutrophication in coastal waters. [M.Phil. Thesis](#) at University of Southampton, 142 pages, Southampton (UK).
- /DI-2/ Eklof, L. (2003). Can recently developed autonomous observations such as satellite and *FerryBox* be useful tools within oceanography? [BSc Dissertation](#) at University of Southampton, 67 pages, Southampton (UK).
- /DI-3/ Lips, I. (2005). Abiotic factors controlling the cyanobacterial bloom occurrence in the Gulf of Finland. [PhD thesis](#) at Tartu University. Published in: *Biol. Universitatis Tartuensis*, 108, 47 pages, Tartu (Estonia).
- /DI-4/ Pihlajamäki, M. (2003). Seasonal cycles in the Baltic Sea based on data from the Finnish Institute of Marine Research *FerryBox* project 2000. [BSc dissertation](#) at University of Southampton, 104 pages, Southampton (UK).

## B.3 Research Reports

- /RsR-1/ Holley, S.E., Purdie, D.A, Hydes, D.J and M.C Hartman (2004). 5 years of plankton monitoring in Southampton Water and the Solent including *FerryBox*, Dock Monitor and discrete sample data. Southampton Oceanography Centre Research & Consultancy Report No. 82, 72 pages, Southampton (UK).
- /RsR-2/ Rantajärvi, E. (ed.) (2003). "Alg@line in 2003: 10 years of innovate plankton monitoring and research and operational information service in the Baltic Sea. Meri – Report Series of the Finnish Institute of Marine Research No. 48, 55 pages, Helsinki (Finland)
- /RsR-3/ Sørensen, K. (2005). *Ferrybox* data used in the REVAMP Atlas Chap 11. Comparison with in situ Chlorophyll-a samples. Part 3: Comparison from the Skagerrak area. In: Peters et.al. (eds.), (2005) "Atlas of Chlorophyll-a concentrations for the North Sea based on MERIS imagery of 2003. The EU-project REVAMP. Published at the Vrije Universiteit, Amsterdam (the Netherlands).
- /RsR-4/ Sørensen, K. et. al. (2005). Testing of new sensors for satellite validation using the *Ferrybox* concept in the EU project DISMAR (for details refer to the DISMAR reports and the DISMAR project website <http://www.nersc.no/Projects/dismar>)



## B.4 Published Conference Contributions and Non-refereed Scientific Articles

- /NrA-1/ Andreu-Burillo, I., Holt, J.T., Proctor, R. and I. James (2005). Assimilating thermal data into a high resolution coastal model using an Ensemble Kalman Filter. Proceedings of the 4<sup>th</sup> EuroGOOS Conference (in print), 6-9 June 2005, Brest (France).
- /NrA-2/ Colijn, F. and W. Petersen (2002). Collecting Oceanographic Data from Ferries. ICES Newsletters, 39, pp. 3-5.
- /NrA-3/ Colijn, F., Petersen, W., Petschatnikov, M. and F. Schroeder (2002). A New System for Automatic Measurements of Biological-Chemical Parameters from Ferry Boats. ICES Annual Science Conference 2002, 1-5 October 2002, Copenhagen (Denmark).
- /NrA-4/ Dunning, J. and S. Hand (2005). Design, Manufacture, Servicing and Usage of FerryBox Systems. In: Proceedings of the 4<sup>th</sup> EuroGOOS Conference (in print), 6-9 June 2005, Brest (France).
- /NrA-5/ Hartman, S.E., Hydes, D.J., Mills, D.K., Wanieck, J. and D.B. Sivyer (2003). FerryBox and data buoy measurements of plankton blooms. In: Dahlin, H., Flemming, N.C., Nittis, K. and S.E. Petersson (eds.): Building the European Capacity in Operational Oceanography, Proceedings of the 3<sup>rd</sup> EuroGOOS Conference, EuroGOOS Publication No. 19, Elsevier Oceanography Series 69, ISBN 0-444-51550-X, Elsevier, Amsterdam, pp. 568-573, 698 pages.
- /NrA-6/ Holley, S.E., Waniek J. and D.J. Hydes (2003). Ferrybox measurements of phytoplankton dynamics in a hypernutrified estuary (Southampton Water, UK). ICES Annual Science Conference 2003, 24-27 September 2003, Tallinn (Estonia), Paper no. CM 2003/L:02, 9 pages.
- /NrA-7/ Howarth, M.J., Proctor, R., Smithson, M.J., Player, R. and P.J. Knight (2005). The Liverpool Bay Coastal Observatory. In: Proceedings of the IEEE/OES/CMTC 8<sup>th</sup> Current Meter Technology Conference, 28-29 June 2005, Southampton (UK).
- /NrA-8/ Howarth, M.J., Proctor, R., Knight, P.J., Smithson, M.J. and D.K. Mills (2006). The POL Liverpool Bay Coastal Observatory. In: Proceedings of the World Maritime Technology Conference, 6-10 March 2006, London (UK).
- /NrA-9/ Hydes, D.J. (2002). Summary of the operations of the EU FP5 project "Ferry-Box". In: C.B. Miller (ed.), PICES Report No. 21, PICES-GLOBEC International Program on Climate Change and Carrying Capacity, Report of the PICES 2002 Volunteer Observing Ship Workshop, Appendix 4, 14 pages.
- /NrA-10/ Hydes, D.J., Hartman, S.E., Kelly-Gerreyn, B.A., Dodgson, J. Campbell, J.M., Crisp, N.A., Edwards, M., Dupee, B., Lavin, A.M. and C.M. Gonzalez-Pola (2003). Use of a FerryBox system to look at shelf sea and ocean margin process. In: Dahlin, H., Flemming, N.C., Nittis, K. and S.E. Petersson (eds.): Building the European Capacity in Operational Oceanography, Proceedings of the 3<sup>rd</sup> EuroGOOS Conference, EuroGOOS Publication No. 19, Elsevier Oceanography Series 69, ISBN 0-444-51550-X, Elsevier, Amsterdam, pp. 297-303, 698 pages.



- /NrA-11/ Hydes, D.J., Barger, C.P., Kelly-Gerrein, B.A., Wehde, H., Petersen, W., Kaitala, S., Fleming, V., Sørensen, K., Magnussen, J., Lips, I. and U. Lips (2005). A comparison of eutrophication processes and effects in different European marine areas based on the results of the EU FP-5 FerryBox Project. In: Proceedings of the 4<sup>th</sup> EuroGOOS Conference (in print), 6-9 June 2005, Brest (France).
- /NrA-12/ Kaitala, S. (2003). Development of the operational observation system of harmful algal blooms as a BOOS project. ICES Annual Science Conference 2003, 24-27 September 2003, Tallinn (Estonia).
- /NrA-13/ Jaanus, A., Kaitala, S., Kaljurand, K. and I. Lips (2005). Summer phytoplankton in the Gulf of Finland; seasonal patterns and recommendations for monitoring design. 5<sup>th</sup> Baltic Sea Science Congress, 20-24 June 2005, Sopot (Poland).
- /NrA-14/ Kaitala, S., Ylöstalo, P. and J. Seppälä (2004). Calibration of MODIS satellite images for chlorophyll-a estimates against automated fluorometer records with PLS analysis. BSRP SOOP Workshop, 14-15 October, 2004, Helsinki (Finland).
- /NrA-15/ Kaitala, S. (2005). Multispectral calibration of MODIS satellite images with chlorophyll-a records from a Ferrybox fluorometer. Workshop of Remote sensing and bio-optical modelling of the Baltic Sea, 19 May 2005, Gdansk (Poland).
- /NrA-16/ Kaitala, S., Seppälä, J., Ylöstalo, P., Raateoja, M. and P. Maunula (2005). Recent advances in Operational Phytoplankton Monitoring System Alg@line. In: Proceedings of 31<sup>st</sup> International Symposium on Remote Sensing of Environment: Global Monitoring for Sustainability and Security, 20-24 June 2005, St. Petersburg (Russia), 4 pages.
- /NrA-17/ Kaitala, S., Seppälä, J. and P. Ylöstalo (2005). Calibration of MODIS satellite images for chlorophyll-a mapping for the Baltic Sea. 2<sup>nd</sup> Workshop of Remote Sensing of the Coastal Zone, 9-11 June 2005, Porto (Portugal).
- /NrA-18/ Kaitala, S., Fleming, V., Hällfors, S. and P. Maunula (2005). Occurrence of cyanobacteria in relation to nutrients and temperature. The 9<sup>th</sup> Symposium on Aquatic Microbial Ecology, 21-26 August 2005, Helsinki (Finland).
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- /NrA-20/ Kelly-Gerreyn, B.A., Qurban, M.A., Hydes, D.J., Miller, P. and L. Fernand (2004). Coupled "FerryBox" Ship of Opportunity and satellite data observations of plankton succession across the European Shelf Sea and Atlantic Ocean. ICES Annual Science Conference 2004, 19-29 September 2004, Vigo (Spain), paper no. CM 2004/P:28, 21 pages, CD-ROM publication.
- /NrA-21/ Korres, G., Nittis, K., Hoheit, I. and G. Triantafyllou (2005). A data assimilation tool for the Aegean Sea hydrodynamic model. In: Proceedings of the 4<sup>th</sup> EuroGOOS Conference (in print), 6-9 June 2005, Brest (France).
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- /NrA-23/ London, L. and U. Lips (2003). Upwelling in the Gulf of Finland (an analysis of measurements along the Tallinn-Helsinki ferry line in 1997-2002). ICES Annual Science Conference 2003, 24-27 September 2003, Tallinn (Estonia).

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- /NrA-29/ Petersen, W., Wehde, H., Schroeder, F., Petschatnikov, M., Gehrung, M. and F. Colijn (2005). FerryBox – An Observation System for the Assessment of the Coastal and Shelf Sea Ecosystem. LOICZ II Inaugural Open Science Meeting, 27-29 June 2005, Egmond aan Zee (the Netherlands).
- /NrA-30/ Pfeiffer, K.D., Schroeder, F., Wehde, H., Petersen, W., Colijn, F. and the FerryBox-Team (2005). Automated Observing Systems on Ferry Boats: Overview and Cost-Benefits. In: Proceedings of PACON 2005 International Symposium (in print), PACON 2005 International Symposium, Changhua Technical University, 6-11 November 2005, Changhua (Taiwan).
- /NrA-31/ Proctor, R. and M.J. Howarth (2003). The POL Coastal Observatory. In: Dahlin, H., Flemming, N.C., Nittis, K. and S.E. Petersson (eds.): Building the European Capacity in Operational Oceanography, Proceedings of the 3<sup>rd</sup> EuroGOOS Conference, EuroGOOS Publication No. 19, Elsevier Oceanography Series 69. ISBN 0-444-51550-X, Elsevier, Amsterdam, pp. 548-553, 698 pages.
- /NrA-32/ Proctor, R., Howarth, M.J., Knight, P.J. and D.K. Mills (2004). The POL Coastal Observatory – Methodology and some first results. In: Spaulding, M.L. (ed.), Proceedings of the 8<sup>th</sup> International Conference on Estuarine and Coastal Modelling (ASCE) held in Monterey, California (USA), 3-5 November 2003, ASCE, 0-7844-0734-7, 2004, pp. 273-287, 1136 pages, Reston, Virginia (USA).
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- /NrA-37/ Rantajärvi, E., Ruokanen, L., Hällfors, S., Flinkman, J., Stipa, T., Suominen, T., Kaitala S. and P. Maunula (2003). Alg@line today. In Rantajärvi, E. (ed.), "Alg@line in 2003: 10 years of innovate plankton monitoring and research and operational information service in the Baltic Sea, pp. 9-16.
- /NrA-38/ Ridderinkhof, H. (2005). Long-term ferry observations in the Marsdiep tidal inlet. LOICZ Newsletter No. 36, pp. 2-4.
- /NrA-39/ Ruokanen, L., Kaitala, S., Fleming, V. and P. Maunula (2003). Alg@line – Joint operational unattended phytoplankton monitoring system in the Baltic Sea. In: Dahlin, H., Flemming, N.C., Nittis, K. and S.E. Petersson (eds.): Building the European Capacity in Operational Oceanography, Proceedings of the 3<sup>rd</sup> EuroGOOS Conference, EuroGOOS Publication 19, Elsevier Oceanography Series 69, ISBN 0-444-51550-X, Elsevier, Amsterdam, pp. 510-522, 698 pages.
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- /NrA-47/ Wehde, H., Petersen, W., Callies, U., Reinke, S., Schrum, C., Alekseeva, I., Lübben, A. and A. Plüß (2005). FerryBox observations in the Southern North Sea – Application of numerical models for improving the significance of FerryBox data for the Southern North Sea region. General Assembly 2005 of the European Geosciences Union (EGU), 24-29 April 2005, Vienna (Austria).
- /NrA-48/ Wehde, H., Schroeder, F., Colijn, F., Callies, U., Reinke, S., Petersen, W., Schrum, C., Plüß, A. and D.K. Mills (2005). FerryBox observations in the Southern North Sea- Application of numerical models for improving the significance of the FerryBox data. In: Proceedings of the 4<sup>th</sup> EuroGOOS Conference (in print), 6-9 June 2005, Brest (France).



## B.5 Near-Market Articles and Technical Publications

- /ArT-1/ CTG – Chelsea Technology Group (2003). UV Aqua<sup>Tracka</sup> In-situ PMG Flourimeter. [Product information and specification sheet](#), 2 pages, issue 403, West Molesey, Surrey (UK).
- /ArT-2/ CTG – Chelsea Technology Group (2003). UV Mini<sup>Tracka</sup> II Flow through Manifold. [Product information and specification sheet](#), 2 pages, issue 4/03, West Molesey, Surrey (UK).
- /ArT-3/ CTG – Chelsea Technology Group (2004). Instrument frame suitable for FerryBox systems. [Product information and specification sheet](#), 2 pages, issue 11/04, West Molesey, Surrey (UK).
- /ArT-4/ CTG – Chelsea Technology Group (2005). The AquaLine FerryBox System [Fact Sheet No. 12/1](#), issued November 2005, West Molesey, Surrey (UK).
- /ArT-5/ Dunning, J. (2005). FerryBox Open Conference. Joint feature issued by CTG and NERC-NOC, 2 pages, distributed through news services, February 2005, West Molesey, Surrey (UK).
- /ArT-6/ GKSS and -4h- Jena Engineering GmbH (2005). FerryBox Newsletter 1/2005., [Newsletter](#), 8 pages, issued August 2005, Geesthacht, Jena (Germany).
- /ArT-7/ Hydes, D.J., Campbell, J. M. and J. Dunning (2004). Systematic oceanographic data collected by FerryBox: Results from an integrated system linking ship and Internet. [Technical Article](#) in Sea Technology, February 2004 issue, pp. 10-14.
- /ArT-8/ Hydes, D.J. and J. Dunning (2005). FerryBox celebrates first year of data collection. [Technical Article](#) in Marine Scientist, No. 10, 1Q 2005, October 2005, pp. 32-34.
- /ArT-9/ Petersen, W., Schroeder, F. and C. Engelke (2006). FerryBox – A “Mature” System for Operational Monitoring – Automated Observations of Coastal Waters and Estuaries by Ships of Opportunity. Submitted to Sea Technology.
- /ArT-10/ Ridderinkhof, H. (2005). FerryBox Results. [Feature](#) in the magazine of the TESO ferry company (in Dutch).



## B.6 Presentations and Posters on Scientific Conferences, Workshops and Meetings

- /PR-1/ Allen, J.I., Holt, J.T., Holt, M.W. and R. Proctor (2003). Forecasting ecosystem status in shelf seas. [Poster](#) on the EGS/AGU Joint Conference, April 6-12, 2003, Nice (France).
- /PR-2/ Bargeron, C.P. and D.J. Hydes (2004). Watching the oceans breathe. [Poster](#) on the FerryBox Open Science Conference, 4-5 October 2004 Southampton Oceanography Centre.
- /PR-3/ Colijn, F., Petersen, W., Petschatnikov, M. and F. Schroeder (2002). Ships-of-opportunity: towards operational oceanography by using automatic measuring systems on board of ferries. [Presentation](#) given by W. Lenz on the meeting of the ICES/IOC Steering Group on GOOS, 21-23 April 2002, Halifax (Canada).
- /PR-4/ Colijn, F., Petersen, W., Hydes, D.J., Ridderinkhof, H., Kaitala, S., Nittis, K., Proctor, R., Howarth, M.J., Sørensen, K., Pfeiffer, K.D., Dunning, J., Lavin, A.M. and I. Kanoshina (2002). European FerryBox project: From online oceanographic measurements to environmental information. [Poster](#) on the 3<sup>rd</sup> EuroGOOS Conference, 3-4 December 2002, Athens (Greece).
- /PR-5/ Colijn, F., Schroeder, F. and W. Petersen (2003). A new system for automatic measurements of biological-chemical parameters from ferry boats. [Presentation](#) at the Ministry for Environment of Indonesia, March 2003, Jakarta, Java (Indonesia).
- /PR-6/ Colijn, F., Petersen W, Wehde H. and F, Schroeder (2004). FerryBox. [Presentation](#) on the Colloquium of GEOMAR Research Centre, 7 May 2004, Kiel (Germany).
- /PR-7/ Colijn, F., Petersen, W., Wehde, H. and F. Schroeder (2004). Monitoring of coastal waters by automatic equipment. [Presentation](#) at University of Bogor, Faculty of Marine Sciences, 3 June 2004, Bogor, Java (Indonesia).
- /PR-8/ Colijn, F., Petersen, W., Wehde H. and F. Schroeder (2004). Monitoring of coastal waters by automatic equipment. [Presentation](#) at the Institute for Technology Bandung at the workshop on real time coastal observing, 4 June 2004, Bandung, Java (Indonesia).
- /PR-9/ Colijn F. (2004). Introduction on the FerryBox project. [Presentation](#) on the FerryBox Open Science Conference, Southampton Oceanography Centre, 4-5 October 2004, Southampton (UK).
- /PR-10/ Colijn, F. (2005). Update on the FerryBox Project. ICES/IOC Steering Group on GOOS (SGGOOS) meeting, 10-11 June 2005, Brest (France).
- /PR-11/ Elliot, J. (2004). Quality control in the face of biofouling. [Presentation](#) on the FerryBox Open Science Conference, Southampton Oceanography Centre, 4-5 October 2004, Southampton (UK).
- /PR-12/ Doerffer, R., Schroeder, F. and W. Petersen Neue Verfahren zum Monitoring von Algenblüten, DWK Seminar, June 2005, Bremen (Germany)
- /PR-13/ Durand, D. (2004). Operational oceanography: the contribution from FerryBox observations. Presentation to representatives of the Rutgers University, Coastal Ocean Observation Lab., November 2004. Bergen (Norway).

- /PR-14/ Durand, D. (2005). Operational oceanography: the contribution from FerryBox observations. Lecture at University of Bergen, January 2005, Bergen (Norway).
- /PR-15/ Durand, D. (2005). Coastal monitoring in Norway. Presentation to a Polish Environmental agency panel. Feb. 2005, Gdansk (Poland).
- /PR-16/ Durand, D. (2005) Integrated monitoring for sustainable shellfish aquaculture under climate change conditions. Presentation to aquaculture industry panel, NIVA-Bergen 20-year jubilee, Bergen (Norway). In Norwegian.
- /PR-17/ Durand, D. (2005). Marine mapping and monitoring at NIVA. Presentation to the Maltese Ministry of Environment and diverse Maltese environmental agencies, June 2005. Valetta (Malta).
- /PR-18/ Durand, D. (2005). Integrated monitoring for sustainable mussel farming in Norway. Presentation at the AquaNor Exhibition, 9-12 August 2005, Trondheim (Norway).
- /PR-19/ Durand, D. (2005). High frequency coastal observations along the western coast of Norway. Presentation to Hordaland County, Norway, October 2005. Bergen (Norway). In Norwegian.
- /PR-20/ Durand, D. (2005). How Ferrybox observations can contribute to an improved monitoring and warning of HAB events. Presentation to the Norwegian Food Safety Authority, November 2005, Bergen (Norway).
- /PR-21/ Durand, D. (2006). Operational oceanography: the contribution from FerryBox observations. Lecture at University of Bergen, January 2006, Bergen (Norway).
- /PR-22/ Engelke, C.J., Janisch, S., Wiltshire, K.H., Schroeder, F., Petersen, W., Colijn, F. and K.J. Hesse (2005). A stationary FerryBox system for in situ high resolution measurements of physical, chemical and biological parameters at Heligoland, German Bight. [Poster](#) on the 4<sup>th</sup> EuroGOOS Conference, 6-9 June 2005, Brest (France).
- /PR-23/ FerryBox Team (2004). FerryBox – from online oceanographic observations to environmental information. [Poster](#) at the EUROCEAN Conference, 11-13 May 2004, Galway (Ireland).
- /PR-24/ Fleming V. and S. Kaitala (2004). Recent contributions of Alg@line to the FerryBox project. [Presentation](#) on the FerryBox Open Science Conference, Southampton Oceanography Centre, 4-5 October 2004, Southampton (UK).
- /PR-25/ Greenwod, N., Mills, D.K., Howarth, M.J., Proctor, J., Pearce, D.J., Sivyer, D.B., Cutchez, S.J. and O. Andres (2005). High frequency monitoring in Liverpool bay; variability of suspended matter, nutrients and phytoplankton. [Poster](#) on the 4<sup>th</sup> EuroGOOS Conference (in print), 6-9 June 2005, Brest (France).
- /PR-26/ Hartman, S.E., Hydes, D.J. and D.K. Mills (2002). *FerryBox* and data buoy measurements of coastal and estuarine plankton bloom. [Poster](#) on the 3<sup>rd</sup> EuroGOOS Conference, 3-6 December 2002, Athens (Greece).
- /PR-27/ Hartman, M., Hartman, S. and D.J. Hydes (2005). Improvements in continuous, systematic monitoring of phytoplankton growth using the FerryBox. [Poster](#) on the 4<sup>th</sup> EuroGOOS Conference (in print), 6-9 June 2005, Brest (France).



- /PR-28/ Holley, S.E, Waniek, J. and D.J. Hydes (2003). "FERRY-BOX" measurements for the improved monitoring and resolution of phytoplankton blooms. [Presentation](#) at UK Challenger Society, Progress in Chemical Oceanography Meeting, 17-18 July 2003, University of East Anglia Norwich (UK).
- /PR-29/ Holt, M.W. (2003). The potential for ecosystem forecasting. [Presentation](#) on the Seminar on Ecosystem Modelling, DEFRA, 13 March 2003, London (UK).
- /PR-30/ Holt, M.W. (2005). The observation component of the Northern west shelf operational oceanography system (NOOS). Presentation to the ECOOP steering group (including presentation of the Norwegian Ferrybox network), Copenhagen, (Denmark).
- /PR-31/ Howarth, M.J. (2003). The POL Coastal Observatory. [Presentation](#) at Liverpool Bay Coastal Group, 5 March 2003, Bidston (UK).
- /PR-32/ Howarth, M.J. and R. Proctor (2003). A pilot coastal observatory. [Presentation](#) on the joint EGS/AGU Joint, Conference, 6-12 April 2003, Nice (France).
- /PR-33/ Howarth, M.J., Knight, P.J. and R. Proctor (2003). The technology and IT of the POL Coastal Observatory. [Poster](#) on the NERC technology meeting, 15-16 June 2003, Cambridge (UK).
- /PR-34/ Howarth, M.J. (2003). The POL Coastal Observatory. [Presentation](#) on a meeting on future monitoring of Morecambe Bay, 19 August 2003, Kendal.(UK).
- /PR-35/ Howarth, M.J. (2003). The POL Coastal Observatory. [Presentation](#) on the Sefton Coast Research Workshop, 12 September 2003, Ormskirk (Denmark).
- /PR-36/ Howarth, M.J. (2004). Progress with Irish Sea FerryBox Birkenhead – Belfast route. [Presentation](#) on the FerryBox Open Science Conference, Southampton Oceanography Centre, 4-5 October 2004, Southampton (UK).
- /PR-37/ Howarth, M.J. (2004). Inclusion of a new ferry route for the Scottish west coast into the POL Coastal Observatory. [Discussion](#) on the SAMS Meeting, 4 November 2004, Oban (UK).
- /PR-38/ Howarth, M.J. and R. Proctor (2005). The POL Coastal Observatory. [Presentation](#) on the Cozone workshop, 11 February 2005, Liverpool (UK).
- /PR-39/ Howarth, M.J (2005). The POL Coastal Observatory. [Presentation](#) on the COBS Scientific Steering Committee meeting, 17 May 2005, Liverpool (UK).
- /PR-40/ Howarth, M.J. (2005). The POL Coastal Observatory. [Presentation](#) on the 2005 International Research Conference of The Ocean Society (TOS), 6-10 June 2005, Paris (France).
- /PR-41/ Howarth, M.J. (2005). The POL Coastal Observatory. [Presentation](#) on the Current Meter Technology Conference, 28-29 June 2005, Southampton (UK).
- /PR-42/ Hydes, D.J., Hartman, S.E., Kelly-Gerreyn, B.A., Dodgson, J., Campbell, J.M., Crisp, N.A., Edwards, M., Dupee, B., Lavin, A.M. and C. M. Gonzalez-Pola (2002). Use of a *FerryBox* system to look at shelf sea and ocean margin process. [Presentation](#) by D.J. Hydes on the 3<sup>rd</sup> EuroGOOS Conference, 3-6 December 2002, Athens (Greece).
- /PR-43/ Hydes, D.J. (2003). The role of ships of opportunity in the Oceans. [Presentation](#) on the IGBP-SCORE Oceans Meeting, January 2003, Paris (France).

- /PR-44/ Hydes, D.J., Hartman, S.E., Kelly-Gerreyn, B.A., Dodgson, J., Campbell, J.M., Crisp, N.A., Edwards, M., Dupee, B., Lavin, A.M., González-Pola, C.M. Schuster, U., Watson, A., Luger, H. and D.Wallace (2003). Use of a FerryBox system to look at shelf sea and ocean processes. [Presentation](#) by D.J. Hydes on the GKSS Seminar, 11 June 2003, Geesthacht (Germany).
- /PR-45/ Hydes, D.J. (2003). Use of the FerryBox concept for the study of processes of eutrophication. DEFRA Marine Environment Research Programme. [Presentation](#) within Review of Research on Nutrients and Eutrophication, 11 September 2003, London (UK).
- /PR-46/ Hydes, D.J. (2003). Removal of nitrates by natural means. [Presentation](#) on Irish Sea Forum Seminar 31 – Nitrates: Source to Sea, 7 October 2003, Warrington (UK).
- /PR-47/ Hydes, D.J. (2004). Development of a “FerryBox” system to look at shelf sea and ocean processes. [Presentation](#) on UK Marine Measurements Forum Meeting, 3 December 2003, Winchester (UK).
- /PR-48/ Hydes, D.J. (2004). Use of a FerryBox system to study shelf sea and ocean processes. [Presentation](#) on the Meeting of the ICES Working Group on Oceanic Hydrography, Southampton Oceanography Centre, 30 March 2004, Southampton (UK).
- /PR-49/ Hydes, D.J. (2004). Eutrophication – how data from FerryBox systems can be used to improve monitoring and understanding of an important environmental problem. [Presentation](#) on the FerryBox Open Science Conference, Southampton Oceanography Centre, 4-5 October 2004, Southampton (UK).
- /PR-50/ Hydes, D.J., Kelly-Gerreyn, B.A., Wehde H., Petersen, W., Kaitala, S., Fleming, V., Sørensen, K., Mangnussun, J., Lips, I. and U. Lips (2005). Quantification of eutrophication processes and effects in different European marine areas based on the results of the EU FP-5 FerryBox Project. [Presentation](#) on the ASLO 2005 Summer Meeting, Special Session on Global or Coastal Observations with Ships of Opportunity, 19-24 June 2005, Santiago de Compostela (Spain).
- /PR-51/ IEO (2004). Monitoring in the North/Northwestern of the Iberian Peninsula. Establishment of a Bay of Biscay-Iberian Task Team (BBI-GOOS). [Presentation](#) of the IEO contribution on the kick off meeting.
- /PR-52/ IEO (2004). Monitoring in the North/Northwestern of the Iberian Peninsula. [Presentation](#) of the IEO contribution on the kick off meeting of the Spanish Operational Oceanography System (ESEOO project): “A contribution to the development of Operational Oceanography in Spain”.
- /PR-53/ Jaanus, A., Hajdu, S., Hällfors, S., Lips, I. and K. Kaljurand (2003). Distribution patterns of the „red tide“ Dinoflagellate Scrippsiella Hangoei in the Baltic Sea. [Poster](#) on the Baltic Sea Science Conference, August 24-28, 2003, Helsinki (Finland).
- /PR-54/ Jaanus, A. (2004). Phytoplankton data quality in relation to sampling design. Examples from the Gulf of Finland, Baltic Sea. [Poster](#) on the FerryBox Open Science Conference Southampton Oceanography Centre, 4-5 October 2004, Southampton (UK).
- /PR-55/ Kaitala, S. (2003). Operational observation of harmful algal blooms (HABWARN) as a BOOS project. [Presentation](#) on the BOOS workshop on Marine Service, May 6-10, 2003, Riga (Latvia).

- /PR-56/ Kaitala, S., Rantajärvi, E. and V., Fleming (2003). Annual succession of chl-a in different areas of Baltic Sea according to Alg@line measurements. [Presentation and publishes abstract](#) on the 2<sup>nd</sup> International Workshop on Remote sensing and bio-optical modelling of the Baltic Sea, 28-29 August 2003, Helsinki (Finland).
- /PR-57/ Kaitala, S., Raateoja, M. Fleming, V. Maunula, P., Hällfors, S. and E. Rantajärvi (2004). 11 years of Alg@line and future perspectives. [Presentation](#) on the FerryBox Open Science Conference, 4-5 October 2004, Southampton Oceanography Centre, Southampton (UK).
- /PR-58/ Kaitala, S., Ylöstalo, P., Seppälä, J. and Mika Raateoja (2004). Bio-optical monitoring of cyanobacteria: future perspectives. [Presentation](#) on the FerryBox Open Science Conference, 4-5 October 2004, Southampton Oceanography Centre, Southampton (UK).
- /PR-59/ Kaitala, S., Laamanen, M. and S. Hällfors (2005). Cyanobacteria bloom index for the Baltic Sea. [Presentation](#) on the , 2005 Summer Meeting, Special Session on Global or Coastal Observations with Ships of Opportunity, 19-24 June 2005 Santiago de Compostela (Spain).
- /PR-60/ Kelly-Gerreyn, B.A., Qurban, M.A., Hydes, D.J., Miller, P. and L. Fernand. (2004). Coupled "Ferry-Box" Ship of Opportunity and satellite data observations of plankton succession across the European Shelf Sea and Atlantic Ocean. [Presentation and published abstract](#) on the ICES Annual Science Conference 2004, 19-29 September 2004, Vigo (Spain).
- /PR-61/ Kelly-Gerreyn, B.A. (2004). Understanding intense "gyrodinium" blooms in the English Channel based on FerryBox and satellite data. [Presentation](#) on the FerryBox Open Science Conference, Southampton Oceanography Centre, 4-5 October 2004, Southampton (UK).
- /PR-62/ Kelly-Gerreyn, B.A., Hydes, D.J., Fernand, L., Jegou, A.M., Lazure, P. and I. Pillat (2005). Linking French Atlantic rivers to low salinity intrusions in the western English Channel: highly resolved monitoring from the EU "FerryBox" project. [Poster](#) on the 4<sup>th</sup> EuroGOOS Conference, 6-9 June 2005, Brest (France).
- /PR-63/ Kelly-Gerreyn, B.A., Hydes, D.J., Fernand, L.J., Jégou, A.M., Lazure, P. and I. Puillat (2005). Interannual variations in surface water transport and biogeochemistry resolved in ship of opportunity studies in the English Channel and Bay of Biscay. [Presentation](#) on the ASLO 2005 Summer Meeting, Special Session on Global or Coastal Observations with Ships of Opportunity, 19-24 June 2005, Santiago de Compostela (Spain).
- /PR-64/ Kontoyiannis, H. (2004). Surface Temperature and Salinity Characteristics in the Aegean Sea. [Presentation](#) on the FerryBox Open Science Conference, Southampton Oceanography Centre, 4-5 October 2004, Southampton (UK).
- /PR-65/ Kontoyiannis, H. and H. Ballas (2005). The scales of the surface temperature and salinity fields in the southern Aegean Sea as derived from FerryBox space-series measurements. [Poster](#) on the 4<sup>th</sup> EuroGOOS Conference, 6-9 June 2005, Brest (France).
- /PR-66/ Kroeger, K. and W. Petersen (2005). Continuous direct nitrate determination in the North Sea in comparison to chemical methods. [Presentation](#) on the ASLO 2005 Summer Meeting, Special Session on Global or Coastal Observations with Ships of Opportunity, 19-24 June 2005, Santiago de Compostela (Spain).

- /PR-67/ Kröger, K., Petersen, W. and M. Gehrung (2005). In situ nitrate measurements with optical instruments. [Presentation](#) on the AquaLife Seminar, 20-22 September 2005, Kiel-Kronshagen (Germany).
- /PR-68/ Lavin, A.M. (2002). The European *FerryBox* project. [Presentation](#) at the ICES Ocean Hydrographic Working Group, 2002, Copenhagen (Denmark).
- /PR-69/ Lavín, A.M. et al. (2004). Observations and monitoring in the Iberian Atlantic waters. [Presentation](#) on the ICES/IOC Steering Group in GOOS.
- /PR-70/ Lavín, A.M., Hydes, D.J., González-Pola, C.M., Garcia-Soto, C., Kelly-Gerrey, B.A., Morán, X.A.G. and M. Qurban (2004). *FerryBox*: An operational Oceanography Project in the Bay of Biscay. *FerryBox*: From On-line Oceanographic Observations to Environmental Information. [Poster](#) (*winner of the Best Poster Award*) on the IXeme Colloque International d'Océanographie du Golfe de Gascogne, 10-12 June 2004, Pau (France).
- /PR-71/ Lips, I. (2003). Monitoring of cyanobacterial blooms: new techniques for real-time observations and scientific analysis on causal relationships. [Poster](#) on the Workshop on Real time coastal observing systems for ecosystems dynamics and harmful algal blooms (HABWATCH), 11-21 June 2003, Villefrance-sur-mer (France).
- /PR-72/ Lips, I. (2003). Cyanobacterial blooms in the Gulf of Finland (Baltic Sea) – can the measures be taken on land to prevent them? [Presentation](#) on the ICES Annual Science Conference 2003, 24-27 September 2003, Tallinn (Estonia).
- /PR-73/ Lips, I. (2004). “Variability of hydrophysical-biological parameters along the ferry-line Tallinn-Helsinki (Gulf of Finland), BalticSea.” [Presentation](#) on the *FerryBox* Open Science Conference, 4-5 October 2004, Southampton Oceanography Centre, Southampton (UK).
- /PR-74/ Lips, U., Lips, I., London, L. and T. Liblik (2005). Monitoring of upwelling events in the Gulf of Finland using SOOP measurements. [Poster](#) on the 4<sup>th</sup> EuroGOOS Conference, 6-9 June 2005, Brest (France).
- /PR-75/ Magnussen, J. (2004). Results from the *FerryBox* in the Skagerrak eutrophication related observations. [Presentation](#) on the *FerryBox* Open Science Conference, 4-5 October 2004, Southampton Oceanography Centre, Southampton (UK).
- /PR-76/ Merckelbach, L. (2004). Estimating suspended sediment concentration from ADCP acoustic backscatter in the Marsdiep tidal inlet. [Presentation](#) on the *FerryBox* Open Science Conference, 4-5 October 2004, Southampton Oceanography Centre (UK).
- /PR-77/ Mitchelson-Jacob, E.G., Doxaran, D., Binding, C.E. and D.G. Bowers (2005). Monitoring water quality from ferries in the Irish Sea. [Presentation](#) on the ASLO 2005 Summer Meeting, Special Session on Global or Coastal Observations with Ships of Opportunity, 19-24 June 2005, Santiago de Compostela (Spain).
- /PR-78/ Nöhren, I., Duwe, K.C. and D. Goldmann (2004). The German *FerryBox* model of the southern North Sea. [Poster](#) on the *FerryBox* Open Science Conference, 4-5 October 2004, Southampton Oceanography Centre, Southampton (UK).
- /PR-79/ Petersen, W. (2002). The German *FerryBox* System. [Presentation](#) at Southampton Oceanography Centre, 14 May 2002, Southampton (UK).



- /PR-80/ Petersen, W., Petschatnikov, M., Schroeder, F. and F. Colijn (2002). German Ferry-Box Cuxhaven (Hamburg) – Harwich. [Presentation](#) on the 13<sup>th</sup> Biennial International Symposium of the Hydrographic Society (Hydro 2002), 8-10 October 2002, Kiel (Germany).
- /PR-81/ Petersen, W., Colijn, F., Schroeder, F. and M. Petschatnikov (2002). German FerryBox Project. [Poster](#) at the European Commission, November 2002, Brussels (Belgium).
- /PR-82/ Petersen W. and F. Schroeder (2003). The European *FerryBox* project. [Presentation](#) on the 15<sup>th</sup> SeaNet Meeting, 20 May 2003, Brussels (Belgium).
- /PR-83/ Petersen, W. and M. Petschatnikov (2003). FerryBox: From On-Line Measurements to Environmental Information. [Presentation](#) on the 4<sup>th</sup> bbe Seminar/Workshop on toxicity assessment and chlorophyll/algae determination, 16-19 June 2003, Kiel-Kronshagen (Germany).
- /PR-84/ Petersen, W., Schroeder, F., Petschatnikov, M., Wehde, H. and F. Colijn (2004). FerryBox Systeme – Automatische Messsysteme auf Fährschiffen als Monitoring Instrument. [Presentation](#) on a Colloquium at BSH (Bundesamt für Seeschifffahrt und Hydrographie, the German Federal Maritime and Hydrographic Agency), February 2004, Hamburg (Germany).
- /PR-85/ Petersen, W., Schroeder, F. Petschatnikov, M., Wehde, H. and F. Colijn (2004). FerryBox Systeme – Automatische Messsysteme auf Fähr- und Forschungsschiffen als neues Monitoring Instrument. [Presentation](#) to the Meeting of the DFG Senatskommission für Ozeanographie der Deutschen Forschungsgemeinschaft (Senate Commission of the German Research Foundation) held at ZMAW, 30 March 2004, Hamburg (Germany).
- /PR-86/ Petersen, W. (2004). FerryBox From On-line Oceanographic Observations to Environmental Information, [Presentation](#) on the 16<sup>th</sup> SeaNet Meeting, 27 May 2004, Nantes (France).
- /PR-87/ Petersen, W. (2004). The activities of the FerryBox project. [Presentation](#) on the FerryBox Open Science Conference, 4-5 October 2004, Southampton Oceanography Centre, Southampton (UK).
- /PR-88/ Petersen, W., Bödewadt, J., Colijn, F., Petschatnikov, M., Schroeder F. and H. Wehde (2004). FerryBox in the North Sea. [Presentation](#) on the FerryBox Open Science Conference, 4-5 October 2004, Southampton Oceanography Centre, Southampton (UK).
- /PR-89/ Petersen, W. (2004). The activities of the FerryBox project. [Presentation](#) on the FerryBox Open Science Conference, 4-5 October 2004, Southampton Oceanography Centre, Southampton (UK).
- /PR-90/ Petersen, W. (2004). FerryBox Ein automatisches Messsystem zur Überwachung von Küstengewässern. [Presentation](#) at a Workshop of the German Research Foundation (DFG – Deutsche Forschungsgemeinschaft), 19 October 2004, Hamburg (Germany).
- /PR-91/ Petersen, W., Petchatnikov, M., Schroeder, F. and H. Wehde (2004). Application of a FerryBox: Automatic Measurements in the North Sea. [Presentation](#) at Oceans/Techno-Ocean 2004, 9-12 November 2004, Kobe (Japan).
- /PR-92/ Petersen, W. and F. Schroeder (2005). Status der FerryBox: Ein operationelles System? [Presentation](#) at the seminar of GKSS Research Centre, 22 April 2005, Geesthacht (Germany).



- /PR-93/ Petersen, W., Colijn, F., Hydes, D.J., Howarth, M.J., Kaitala, S., Kontoyiannis, H., Lavin, A.M., Lips, I., Proctor, R., Ridderinkhof, H. and K. Sørensen (2005). European FerryBox Project: From Online Oceanographic Measurements to Environmental Information. [Presentation](#) on the ASLO 2005 Summer Meeting, Special Session on Global or Coastal Observations with Ships of Opportunity, 19-24 June 2005, Santiago de Compostela (Spain).
- /PR-94/ Petersen, W. (2005). Application of FerryBox Data in the Southern North Sea – Combination with Numerical Models and Remote Sensing. [Presentation](#) on the AquaLife Seminar, 20-22 September 2005, Kiel-Kronshagen (Germany).
- /PR-95/ Petersen, W. (2005). Application of FerryBox data in the Southern North Sea – Combination with numerical models and remote sensing. [Presentation](#) on the MarTech Workshop, 10-12 October 2005, Bremerhaven (Germany).
- /PR-96/ Petersen, W. (2005). FerryBox. [Presentation](#) on a joint workshop of Alfred Wegner Institute for Polar and Marine Research and GKSS Research Centre, November 2005, Hamburg (Germany).
- /PR-97/ Petersen, W. (2005). Monitoring of coastal waters by FerryBoxes, [Talk](#) at GKSS, November 2005, Geesthacht (Germany).
- /PR-98/ Pfeiffer, K.D., Goldmann, D. and the FerryBox WP-3 Team (2004). Management of FerryBox Data – Common Data Quality and Unified FerryBox Data Sets [Poster](#) on the FerryBox Open Science Conference, 4-5 October 2004, Southampton Oceanography Centre, Southampton (UK).
- /PR-99/ Pfeiffer, K.D. and D. Goldmann (2004). Data Management in the European FerryBox project – Common Data Quality and Unified FerryBox Data Sets [Presentation](#) on the FerryBox Open Science Conference, 4-5 October 2004, Southampton Oceanography Centre, Southampton (UK).
- /PR-100/ Pfeiffer, K.D. (2005). Presentation of the European FerryBox Project. [Presentation](#) on occasion of the kick-off meeting of the InterReg IIIC InterMareC ASTIR sub-project at IFREMER, 29 October 2005, Brest (France).
- /PR-101/ Proctor, R. (2002). Ecosystem modelling in the Irish Sea. [Presentation](#) on a seminar of the University of Plymouth, 9 November 2002, Plymouth (UK).
- /PR-102/ Proctor, R. (2002). Operational Shelf Seas Oceanography. [Presentation](#) on the IACMST meeting on operational oceanography, Proudman Oceanographic Laboratory, 29 November 2002, Bidston (UK).
- /PR-103/ Proctor, R. and M.J. Howarth (2002). [Presentation](#) on the POL Coastal Observatory. 3<sup>rd</sup> EuroGOOS Conference, 3-6 December, 2002, Athens (Greece).
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