

*Minutes of*

21<sup>st</sup> Meeting  
of the  
BALTEX Science Steering Group

*held at*

***Kuressaare Kultuurivara***  
**Kuressaare, Saaremaa, Estonia**

**3 June 2007**

*Edited by*  
***Marcus Reckermann***

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**Participants of the 21<sup>th</sup> BALTEX Science Steering Group Meeting**, from left to right: Marcus Reckermann, Irina Danilovich, Ryhor Chekan, Jörgen Nilsson, Jüri Elken, Ole Bøssing Christensen, Timo Vihma, Hans-Jörg Isemer, Benjamin Smith, Sirje Keevalik, Franz Berger, Joakim Langner, Phil Graham, Sven-Erik Gryning, Dan Rosbjerg, Daniel Michaelson, Andreas Lehmann, Bernd Schneider, Daniela Jacob, Valery Vuglinsky, Anders Omstedt, Jarmo Koistinen, Hans von Storch. Photo: Edith Kallaste

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### Summary of Decisions

**DECISION 1:** The revised Terms of Reference for the BALTEX Working Group on Data Management (BWGD) and the new BALTEX Data Management strategy, as proposed by the BWGD, was approved by the BSSG.

**DECISION 2:** The BALTEX SSG approved Michael Lautenschlager, Head of the World Data Centre for Climate and the Model and Data Group at the Max-Planck-Institute for Meteorology, Hamburg, Germany, as new BSSG member.

**DECISION 3:** A new Working Group on the Utility of Regional Climate Models (BWG-RCM) was approved by the BSSG and Markus Meier, head of the Oceanography Group at the Research Division of SMHI was appointed chair of BWG-RCM.

### Summary of Action Items

**Action Item 1 to the Secretariat** to announce and promote the availability of the BALTEX project list (PhD and other projects) on the BALTEX web site, and to motivate the BALTEX scientific community to amend this list with further projects.

**Action Item 2 to the BSSG Chairmen** to contact the Editors of “Boreal Environment Research” and ask conditions for the publication of a Special Issue on the 5<sup>th</sup> Study Conference on BALTEX. – **Action Item settled.**

**Action Item 3 to Andreas Lehmann and Daniela Jacob** to revise the Terms of Reference for the new BALTEX Working Group on BALTIC GRID.

**Action Item 4 to Hans von Storch** to invite a representative of HELCOM to join the new BALTEX Working Group on BACC II (BWG-BACC-II). – **Action Item settled.**

**Action Item 5 to Markus Meier**, appointed chairman of the new BWG-RCM, to revise and finalise the Terms of Reference of the new Working Group, to initiate the working process including a first meeting in the second half of 2007, and to give a first report at the next BSSG meeting in Norrköping in January 2008.

**Action Item 6 to the BSSG chair and vice-chairs and the Secretariat** to initiate the review process for the present BALTEX science and implementation document in 2007; **and to all BSSG members:** to prepare for a conclusive discussion of the above documents at the forthcoming BSSG meeting in January 2008.

**Action Item 7 to Joakim Langner and Phil Graham as the local organizers together with the BSSG vice-chairs and the Secretariat** to prepare for the forthcoming BSSG meeting (#22) at the SMHI in Norrköping in January 2008.

## **Introduction**

The 21<sup>st</sup> meeting of the BALTEX Science Steering Group (BSSG) was held on 3 June 2007 in conjunction with the 5<sup>th</sup> Study Conference on BALTEX in Kuressaare on the island of Saaremaa, Estonia. The meeting was arranged as an interim half day meeting.

## **Item 1: Opening and welcome by the chairman**

Joakim Langner, the chairman of the BALTEX Science Steering Group, welcomed the meeting participants. 17 BSSG members were present at this meeting, the Steering Group was almost complete (Appendix 1). The Chairman welcomed in particular the new BSSG members Bernd Schneider, Benjamin Smith, Jüri Elken and Phil Graham.

## **Item 2: Changes of the agenda and approval**

The agenda was unanimously approved (Appendix 2), but a different sequence of items was fixed because some BSSG members could only join after the first half of the meeting; so items which were relevant for these individuals were shifted to the 2<sup>nd</sup> half of the meeting.

## **Item 3: Action items of BSSG #20 summarized**

Joakim Langner and Hans-Jörg Isemer shortly reviewed the list of Action Items from the previous BSSG meeting. Most action items (in particular those concerning Data Management and the preparation of the 5<sup>th</sup> Study Conference on BALTEX) could be considered settled; see Item 5 (conference briefing) and Item 7d (Data Management).

Action Item #6 of the previous meeting was taken up and it was demonstrated by Marcus Reckermann that a list of BALTEX projects is presented on the BALTEX web site, divided into finished projects of BALTEX Phase I, and ongoing projects of BALTEX Phase II. This list shows six currently ongoing projects (including BACC) and five PhD projects contributing to BALTEX Phase II. The list is preliminary and will be constantly updated.

The BALTEX Secretariat had sent an e-Mail motivating BSSG members to identify and label relevant ongoing projects as “BALTEX Projects”. The current list on the BALTEX web site ([www.baltex-research.eu/projects](http://www.baltex-research.eu/projects)) is based on the responses to this call. Still, it was considered to be of further importance to invite the larger BALTEX community to put more relevant projects on the list, emphasizing the benefits for the projects being accepted as BALTEX Projects. These benefits are stated on the BALTEX web site. Still, a motivation letter to all BALTEX Scientists concerning projects was encouraged and the BALTEX Secretariat was asked to formulate and mail such a letter.

***Action Item 1 to the Secretariat*** to announce and promote the availability of the BALTEX project list (PhD and other projects) on the BALTEX web site, and to motivate the BALTEX scientific community to amend this list with further projects.

**Item 4: Approval of the previous BALTEX SSG meeting minutes**

The minutes of the 20<sup>th</sup> BSSG meeting were unanimously approved.

**Item 5: Briefing on the 5<sup>th</sup> Study Conference on BALTEX**

Hans-Jörg Isemer, Sirje Keevallik and Jüri Elken gave a short overview over some statistics and noteworthy issues around the conference prior to its start. 145 registered participants from 16 countries are expected to attend and 122 papers with 263 authors will be presented. The proportion of papers dealing with BALTEX Phase II topics was 73%; this proportion had been 30% at the 4<sup>th</sup> Study Conference on Bornholm in 2004, demonstrating the increased acceptance of BALTEX Phase II topics within the BALTEX community. Jüri and Sirje will be available for press contacts during the conference. A special issue of “Boreal Environment Research” (BER) is envisaged to publish selected papers presented at the conference. In this respect, details will have to be negotiated with the editors of BER.

***Action Item 2 to the BSSG Chairmen*** to contact the Editors of “Boreal Environment Research” and negotiate details for the publication of a Special Issue on the 5<sup>th</sup> Study Conference on BALTEX.

**Action Item settled:** The Editorial Board of BER has meanwhile agreed to publish a dedicated issue for papers presented at the 5<sup>th</sup> BALTEX Study Conference. Authors are requested to submit their manuscripts to the BALTEX Secretariat before 15 September 2007. The Secretariat will check some basic requirements and provide all BALTEX manuscripts in one package to BER. All manuscripts will have to be subject to the standard review process of BER. The number of papers will be limited. For details and the call for papers, see the BALTEX web site ([www.baltex-research.eu](http://www.baltex-research.eu)).

The opening ceremony on Monday morning, to be inaugurated by Jüri Elken on behalf of the national organizers, has prominent speakers: Andres Tarand, Estonian member of the European Parliament; Jaanus Tamviki from the Estonian Ministry of the Environment; Urve Tiidus, the Mayor of Kuressaare; Piret Hedin, International Coordinator of the SIDA Baltic Sea Unit, and Joakim Langner, Chairman of the BALTEX Science Steering Group.

The conference was jointly organized by BALTEX with the following partner organisations: HELCOM, LOICZ, ASTRA, ENSEMBLES and EUR-OCEANS. Each of these organisations had presentations during the first day of the conference. A special acknowledgment was given to the sponsors of the conference: the Estonian Maritime Academy, the Marine Systems Institute at Tallinn University of Technology, the Estonian Meteorological and Hydrological Institute, the Swedish International Development Cooperation Agency (SIDA), and the GKSS Research Centre Geesthacht, Germany. Hans-Jörg’s presentation is given in Appendix 3.

**Item 6: Summary of the BALTEX Interims BSSG Meeting on BONUS, Copenhagen, 15 May 2007**

Joakim Langner shortly summarised the meeting, which was held to collect ideas and form groups for preparing BALTEX proposals for BONUS. Three project ideas had emerged during the meeting, which will be elaborated and prepared as joint proposals for the 1<sup>st</sup> BONUS call, which is expected for September 2007. Jüri Elken, who is member of the

BONUS Network Steering Committee, updated the BSSG with the information that guidelines for proposals will be available on the BONUS web site ([www.bonusportal.org](http://www.bonusportal.org)) at the end of August 2007; the call is expected to be published on 3 September, and it is presently planned as 1-step application procedure, using an electronic submission system. For further details, please refer to the meeting minutes which are attached in Appendix 4.

### **Item 7: Status Reports of BALTEX Working Groups**

#### **a. BALTEX Working Group on GRID**

Andreas Lehmann presented the Terms of Reference (ToR) for the new Working Group (WG) on BALTIC GRID, which is the merger of the previously suggested WGs on BALTIC GRID and on Water and Energy Budgets, as approved at the 20<sup>th</sup> BSSG Meeting in St. Petersburg. The Terms of Reference (see Appendix 5) were discussed, and the BSSG suggested that some research objectives and related time scales need more detail and specification. BSSG encouraged the co-chairs of the Working Group to go ahead implementing actions of the Working Group, and requested a final revision of the Working Group's ToRs along the lines discussed for the next BSSG meeting.

*Action Item 3 to Andreas Lehmann and Daniela Jacob* to revise the Terms of Reference for the new BALTEX Working Group on BALTIC GRID.

#### **b. BALTEX Working Group on BACC**

Hans von Storch shortly reported on the status of the preparation for the upcoming BACC book (BALTEX Assessment of Climate Change for the Baltic Sea basin) as being on schedule. The technical editing and preparation of the print-ready manuscript is now being performed by the BALTEX Secretariat with the overall aim to have the book published before the end of 2007.

Hans further reported that the BACC approach proved to be exemplary for similar projects in other areas. A similar assessment is being suggested for the area of the city of Hamburg (Northern Germany) and the entire North Sea and its catchment. BACC has also raised interest at the steering level of the LOICZ ("Land Ocean Interaction in the Coastal Zone") program, where the BACC approach could be applied to coastal regions in other parts of the World. Thus, the BACC project represents a good showcase for BALTEX, demonstrating how existing knowledge can be exploited and assessed efficiently.

Hans continued to point out that new evidence on past and future climate change, including impact on the latter on ecosystems, is emerging rapidly. He strongly suggested to critically assess new evidence in the above fields in five years time as a follow-up of the present BACC book. The rationale behind the new WG on BACC II is the analysis and assessment of new research results (compared to what is now being published) and the organisation and preparation of a new assessment report in about five years time (by 2012). There are certain milestones along this time line, which involve a thorough analysis of the current report, summer schools and workshops.

The draft Terms of Reference for the new BALTEX Working Group on BACC II are given in Appendix 6. An involvement of HELCOM from the start of BACC II was considered desirable.

**Action Item 4 to Hans von Storch** to invite a representative of HELCOM to join the new BALTEX Working Group on BACC II (BWG-BACC-II).

**Action Item settled:** Juha-Markku Leppänen, professional secretary at the HELCOM Secretariat agreed to be a member of the BWG-BACC II.

**c. BALTEX Working Group on Radar**

Jarmo Koistinen and Daniel Michelson gave a short overview over recent activities and achievements of the WG on Radar. Good advances have been made in the good quality radar coverage of Lithuania, Latvia, Russia and Belarus. New high quality radars have been implemented and old ones replaced. The NordRad network is operational, and all data since October 1999 are available on the BRCD web site ([www.smhi.se/brdc/](http://www.smhi.se/brdc/)). There are still data missing from Germany, but this gap is expected to be filled in the nearest future.

**d. BALTEX Working Group on Data Management**

Jörgen Nilsson outlined the strategy for BALTEX Phase II Data Management. The major step forward will be the integration of the one-stop-shop data management system UNIDART and its opening by DWD to BALTEX scientific users. This and other data management topics are dealt with at the Data Management Seminar scheduled for Wednesday evening (6 June 2007) during the 5<sup>th</sup> Study Conference on BALTEX (agenda available in Meeting Minutes of the BWGD meeting on 24 April 2007 in Hamburg, see Appendix 7). He also confirmed that a 300 year data set of the Millenium Run will be available.

Jörgen shortly reported on the BWGD meeting held 24 April 2007 in Hamburg (Minutes in Appendix 7). Main issues of this meeting were the slight revision of the Terms of References for the BWGD, the preparation of the Data Management Seminar to be held at the BALTEX conference on 6 June 2007, and the presentation of the UNIDART/WebWerdis and CERA data management systems for BALTEX. Furthermore, the gradual implementation of a new BALTEX Data Management system was discussed and approved, which involves the free availability of Data Management web links relevant for BALTEX research on the BALTEX web site, and the later implementation of UNIDART/WebWerdis and CERA as primary and user-friendly data portals for BALTEX researchers. Furthermore, all available BALTEX Phase I data should be placed into the WDCC (World Data Centre for Climate) meta-database.

**DECISION 1:** The revised Terms of Reference for the BALTEX Working Group on Data Management (BWGD) and the new BALTEX Data Management strategy, as proposed by the BWGD, were approved by the BSSG.

Jörgen proposed Michael Lautenschlager, Head of the Models and Data Group at the Max-Planck Institute for Meteorology in Hamburg, and Head of the World Data Centre for Climate (WDCC) as new BSSG member. He would considerably

strengthen the Data Management issues of BALTEX, both scientifically and technically.

**DECISION 2:** The BALTEX SSG approved Michael Lautenschlager, Head of the Model and Data Group at the Max-Planck Institute for Meteorology, Hamburg, Germany, and the World Data Centre for Climate, as new BSSG member.

### **Item 8: Proposal of a new BALTEX Working Group on the Utility of Regional Climate Models (BWG-RCM)**

Based on discussions at the BALTEX Workshop on “Added Values of regional Climate Model, and Detection and Attribution Studies in the Baltic Sea Basin”, held on 25 and 26 May at Göteborg University, a new Working Group on the “Utility of Regional Climate Models” was proposed by Anders Omstedt and Hans von Storch. Rationale of such a Working Group is the exploration of added values of RCMs for certain aspects of regional climate research, e.g. for detection and attribution studies. It was argued that the added value of these models are not well acknowledged by the international modelling community, and that the best regional modellers work in the Baltic Sea basin. A main deliverable of the WG is a review paper on the state of the art of RCMs and their added values. The draft Terms of Reference for this new WG can be found in Appendix 8.

Markus Meier of the SMHI was suggested as chair of the BWG-RCM.

**DECISION 3:** A new Working Group on the Utility of Regional Climate Models (BWG-RCM) was approved by the BSSG and Markus Meier, head of the Oceanography Group at the Research Division of SMHI was appointed chair of BWG-RCM.

**Action Item 5 to Markus Meier,** appointed chairman of the new BWG-RCM, to revise and finalise the Terms of Reference of the new Working Group, to initiate the working process including a first meeting in the second half of 2007, and to give a first report at the next BSSG meeting in Norrköping in January 2008.

### **Item 9: The future of BALTEX**

Joakim Langner opened a short discussion on the future of BALTEX. He recalled that both the science and implementation documents for BALTEX Phase II are in place now since 2004 and 2006, respectively. Since then, several distinguished scientists with particular expertise in areas which are new in Phase II compared to Phase I have become new BSSG members and have started to energetically contribute to and shape the program. The Chairman suggested undertaking a critical review of the present versions of the above plans against what has been achieved until present and also against new plans and ideas discussed recently with the overall aim to have reviewed and possibly revised implementation documents in place in 2008. Such a revision should also allude to the latest version of the GEWEX and CEOP roadmaps and implementation plan, respectively, in order to harmonize the time schedules of BALTEX and GEWEX/CEOP to the extent possible. The following discussion was lively and a number of areas were briefly discussed where BALTEX would need to document improved and more detailed planning. Those areas included e.g. research on the impact of and consideration of land use and vegetation in Regional Climate Models, a stronger contribution to Earth system

modelling and modelling of the carbon cycle in both the marine and terrestrial ecosystems of the Baltic Sea Basin.

The BSSG concluded to initiate a detailed discussion prior to the next BSSG meeting to be held in January 2008 in Norrköping. The chair and vice-chairs together with the Secretariat will initiate a related process later in 2007 and all BSSG members are asked to actively contribute to this review process with the overall aim to have sufficient material at hand to undertake a detailed and conclusive discussion on possible revisions of the actual BALTEX implementation documents at the forthcoming BSSG meeting.

***Action Item 6 to all BSSG chair and vice-chair and the Secretariat:*** to initiate the review process for the present BALTEX science and implementation document in 2007; ***and to all BSSG members:*** to prepare for a conclusive discussion of the above documents at the forthcoming BSSG meeting in January 2008.

#### **Date and Place of the next BSSG meeting**

The next full two day BSSG meeting will take place at the Swedish Meteorological and Hydrological Institute (SMHI) in Norrköping, Sweden, on 23-25 January 2008. The BSSG Chair Joakim Langner together with Phil Graham will act as the local organiser.

***Action Item 7 to Joakim Langner and Phil Graham as the local organizers together with the BSSG vice-chairs and the Secretariat*** to prepare for the forthcoming BSSG meeting (#22) at the SMHI in Norrköping in January 2008.

#### **Any other business**

None.

**Acronyms and Abbreviations**

ABL	Atmospheric Boundary Layer
ASTRA	Developing Policies & Adaptation Strategies to Climate Change in the Baltic Sea Region
AWI	Alfred-Wegener-Institute for Marine and Polar Research
BACC	BALTEX Assessment of Climate Change for the Baltic Sea basin
BALTEX	The Baltic Sea Experiment
BALTIC GRID	A network to share expertise and data in BALTEX
BALTIMOS	Development and validation of a coupled model system in the Baltic Region
BONUS	BONUS Network for the Baltic Sea Science - Network of Funding Agencies
BRIDGE	The Main BALTEX Phase I Experiment
BSIOM	Baltic Sea Ice Ocean Model
BSSG	BALTEX Science Steering Group
BWG	BALTEX Working Group
BWGD	BALTEX Working Group on Data Management
CEOP	Coordinated Energy and Water Cycle Observation Project
CERA	Climate and Environmental Retrieval and Archive (Database at WDCC)
COSMOS	Community Earth System Models
DETECTIVE	Detection of climate change and climate variability in the Baltic Sea region)
DWD	German Weather Service
ECMWF	European Centre for Medium-Range Weather Forecasts
ECOMET	Economic Interest Grouping of the National Meteorological Services of the European Economic Area
ENSEMBLES	Ensemble prediction systems for climate change (an FP6 project)
ERANET	European Research Area Network
ERA-40	ECMWF 40 Year re-analysis project
ESM	Earth System Modeling
EU	European Union
EUROCEANS	European Network of Excellence for Ocean Ecosystems Analysis (an FP6 project)
FP7	7 <sup>th</sup> Framework Programme of the EU
GCM	Global Climate Model
GEWEX	Global Energy and Water Cycle Experiment
GKSS	GKSS Research Centre in Geesthacht, Germany
HELCOM	Baltic Marine Environment Protection Commission
KNMI	Royal Netherlands Meteorological Institute
LOI	Letter of Interest
LOICZ	Land-Ocean Interactions in the Coastal Zone
MPI	Max-Planck-Institute
PRUDENCE	Prediction of regional scenarios and uncertainties for defining european climate change risks and effects
RCAO	Rosby Centre Regional Atmosphere-Ocean Model
RCM	Regional Climate Model
RCO	Rosby Centre Regional Ocean model
SIDA	Swedish International Development Cooperation Agency
SMHI	Swedish Meteorological and Hydrological Institute
SP	Sub project
SSG	Science Steering Group
UNIDART	Uniform Data Request Interface (web portal project for data access)
VAT	Value Added Tax
WDCC	World Data Centre for Climate
WG	Working Group
WMO	World Meteorological Organisation

21<sup>st</sup> BALTEX SSG Meeting Minutes  
Appendix 1

**Appendix 1: Participants of the 21<sup>th</sup> BSSG meeting**

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Appendix 1

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**Appendix 2: Agenda of the 21<sup>th</sup> BSSG Meeting****BALTEX SSG Interims Meeting (No 21)**

Kuressaare, Saaremaa, Estonia

Sunday, 3 June 2007, 15:00 to 19:00

Location: Kultuurivara, Tallinna Str 6, Kuressaare  
(Conference venue !)**AGENDA (as of 23 May 2007)**

This BALTEX Science Steering Group (BSSG) meeting is a short interims meeting to address important issues which need consideration at this point of time between two major BSSG meetings. An overall maximum duration of 4 hours is expected to be sufficient in order to address the agenda's topics in due time.

**15:00 Start of the BSSG meeting****1. Opening and welcome** (J. Langner)

**1.1 Short introduction of new BSSG members** (J.Langner with B.Schneider, B.Smith, J.Elken and P.Graham)

**1.2 Approval of previous SSG meeting minutes** (All)

**1.3 Changes to this meeting's agenda** (All)

**2. Briefing on BALTEX Conference**, some statistics and noteworthy issues relevant for BSSG members prior to the start of the conference (S.Keevallik, J.Elken, H.-J.Isemer)

**3. Briefing on the BALTEX planning meeting for BONUS** held 15 May 2007 in Copenhagen (J.Langner)

- Discussion and decisions, if appropriate

*ACTION prior to BSSG meeting: J.Langner and Secretariat to prepare and distribute relevant handouts to BSSG members*

**4. BALTEX Working Group Radar**

Summary report on past and future activities (J. Koistinen), including a brief overview on the status of the BALTEX Radar Data Centre (D. Michelson or J. Koistinen)

*ACTION prior to BSSG meeting: J. Koistinen and D. Michelson together with the Secretariat to prepare and distribute relevant handouts to BSSG members*

**5. BALTEX Working Group on Baltic GRID** (A. Lehmann and D. Jacob)

- final draft terms of reference, members, plans etc to be presented

- final decision by BSSG to be taken

*ACTION prior to BSSG meeting: A.Lehmann, D.Jacob and Secretariat to prepare and distribute relevant handouts to BSSG members*

**6. Briefing on the BALTEX workshop „Added value of regional climate models"** held 24/25 May 2007 at Göteborg University (H.v.Storch)

- Discussions and decisions, if appropriate

**7. BALTEX Working Group on BACC** (BALTEX Assessment of Climate Change for the Baltic Sea Basin) (H.v.Storch)

- final draft terms of reference, members, plans etc to be presented, including a brief summary on the status of BACC

- decision by BSSG to be taken

*ACTION prior to BSSG meeting: H.v.Storch and Secretariat to prepare and distribute relevant handouts to BSSG members*

**17:00 Break**

**17:30**

**8. BALTEX Working Group Data Management** (J. Nilsson)

Report of a Working Group meeting held April 2007, adjustment to terms and membership

- decision on future data management system to be taken by BSSG

*ACTION prior to BSSG meeting: J. Nilsson and Secretariat to prepare and distribute relevant handouts to BSSG members*

**9. Views and suggestions of new BSSG members** (B. Schneider, B. Smith, P. Graham, J. Elken)

This topic shall give room for new BSSG members to voice basic views and suggestions on how the BALTEX Phase II science and implementation documents may be adjusted and specified. At least a short initial discussion is expected to be conducted and future actions be decided by the BSSG.

This topic shall particularly cover the following two issues:

**9.1 BALTEX Phase II Objective 4: Gradual extension to air and water quality studies**

- Initiate discussion on concrete action, projects etc, possibly precision of the actual implementation plan

**9.2 Follow-up of major BALTEX Phase II milestones**, as given in the implementation plan

There are 2 pending milestones (see pages 57 and 58 of the implementation plan, milestones 11 and 12), both related to flood forecasting activities. The BSSG may discuss and decide to suggest conducting a workshop covering aspects of milestones 11 and 12 still in 2007. This is generally expected to be a prominent task for hydrologists in the BSSG.

**10. Funding for BALTEX at the International Level**

**10.1 List of FP7 proposals** submitted to the Environment FP7 call on 2 May 2007, which are either expressively or indirectly contributing to BALTEX

*ACTION prior to BSSG meeting: Secretariat and all SSG members to establish such a list as a handout for BSSG members*

**10.2 Summer School for BALTEX** (A. Omstedt)

**11. Next BALTEX SSG meeting, Topic for Science Workshop**

**12. Any other business**

**19:00 Closing of the BSSG meeting**

**Appendix 3: Presentation on the 5<sup>th</sup> Study Conference by H.-J. Isemer**

WELCOME

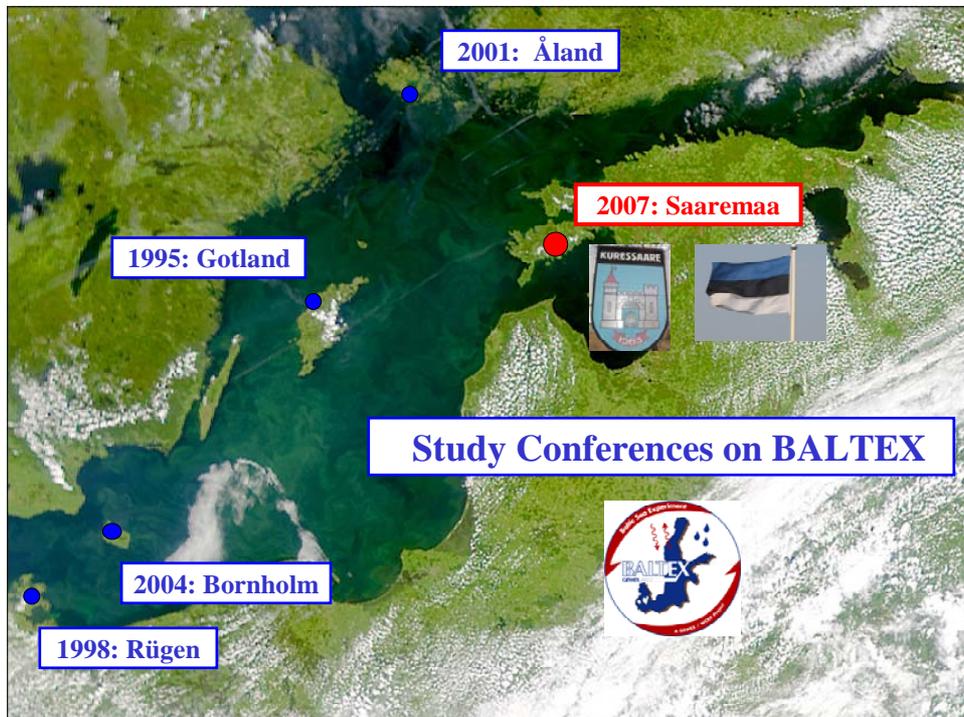


to the

**Fifth Study Conference on BALTEX**

4 - 8 June 2007

Kuressaare, Saaremaa, Estonia





**Fifth Study Conference on BALTEX**

Kuressaare, Saaremaa, Estonia, 4 - 8 June 2007

**Some Statistics**

Registered Participants:	145	(from 16 countries)
Papers:	122	(65 oral, 57 posters)
Authors:	263	(from 19 countries)
Multi-Institution Papers:	49	(40%)
Multi-National Papers:	25	(21%)

**BALTEX Phase II Papers : 99 (73%)**



**BALTEX Phase II - Implementation**

**Fifth Study Conference on BALTEX**

Kuressaare, Saaremaa, Estonia, 4 - 8 June 2007

**Some Statistics (2)**

**Sessions (= BALTEX science objectives) and Number of Papers**

1: Improving knowledge on Water and Energy Cycles	33 papers	← <b>Phase I</b>
2: Climate change, variability and impact	44 papers	<b>27 %</b>
3: Coastal Zone and Water Management	19 papers	← <b>Phase II</b>
4: Linking BALTEX Science to air quality, water quality and impacts on ecosystems	26 papers	<b>73 %</b>



### Fifth Study Conference on BALTEX

Kuressaare, Saaremaa, Estonia, 4 - 8 June 2007

#### Partners of the Conference

##### HELCOM

Baltic Marine Environment Protection Commission



##### LOICZ

Land-Ocean Interactions in the Coastal Zone



##### ASTRA

Developing Policies and Adaptation Strategies to  
Climate Change in the Baltic Sea Region



##### ENSEMBLES

Ensemble-based Predictions of Climate Changes and their Impact



##### EUR-OCEANS

European Network of Excellence for Ocean Ecosystem Analysis



### Fifth Study Conference on BALTEX

Kuressaare, Saaremaa, Estonia, 4 - 8 June 2007

#### Sponsors of the Conference include:

- Estonian Maritime Academy
- Marine Systems Institute, Tallinn University of Technology
- Estonian Meteorological and Hydrological Institute
- Swedish International Development Cooperation Agency SIDA
- GKSS-Forschungszentrum Geesthacht GmbH, Germany

#### Their support of the Conference is gratefully acknowledged !



**Appendix 4: Minutes of the Interims BALTEX BSSG Meeting on BONUS, Copenhagen, 15 May 2007**

**Minutes of the Interims BALTEX Science Steering Group Meeting on BONUS**

Copenhagen, Scandic Hotel Sydhavnen, 15 May 2007

**1. Introduction and Rationale**

The announcement of a first BONUS call, to be published in fall 2007, has called for action regarding possible ideas for proposals from the BALTEX community. The idea of this meeting is to initiate one or more "BONUS task groups", i.e. small groups of scientists from the BSSG (but not restricted to), who together with partners from the BONUS countries would elaborate project proposals.

Therefore, this intermediate BSSG meeting was appointed on short notice, with only one agenda item: The discussion of the first BONUS call and the possible installation of task groups and the initiation of proposals. The one-day meeting took place at the conference facilities of the Hotel Scandic Sydhavnen in the vicinity of Copenhagen Airport on Tuesday 15 May 2007.

**2. Update on BONUS** by Jüri Elken

After a short welcome by Joakim Langner (Chair of the BALTEX Science Steering Group), Jüri Elken, member of the Network Steering Committee of BONUS, gave an overview over the latest developments regarding BONUS. Key information from his presentation are reproduced in Annex III.

**Summary of draft deadlines and basic figures regarding the expected first call of BONUS**

1. The BONUS programme is oriented to ecosystem approach to management
2. Launch of 1<sup>st</sup> call shall be this autumn, open at least 12 weeks
3. A total amount of 27 mill € is divided into 18 mill € (national funds) + 9 mill € (EU FP7 ERA-Net Plus funds); these figures are however considered optimistic
4. For the 1<sup>st</sup> call, an ERANET+ scheme will be applied for a 3 yr funding period; for later calls, the Article 169 scheme shall be implemented
5. The first call in fall 2007 will be open for Themes 1 - 7. Theme 8 (Strengthening Collaboration and Use of Common Resources) will be left out in the first call
6. Priorities will be for proposals from Themes 2 - 6 which have linkages to Themes 1 (Linking Science and Policy) and 7 (Integrating Ecosystem and Society), as well as interdisciplinary applications among Themes 2 - 6
7. There must be a minimum of 2 partners from the contributing partner countries.
8. Proposals will be evaluated and ranked according to their scientific quality; only very good proposals to receive EU money, others will have to rely on national money
9. Eligible costs are equipment (if properly justified) and salaries (for PIs not permanently employed), also ship costs (if properly justified) and VAT (depending on the national regulations)
10. 2-step evaluation process probable: The 1<sup>st</sup> step should be an extended "Letter of Intent" which would be the basis for a recommendation for a 2<sup>nd</sup> round of proposals; decisions would be taken after evaluation of both steps (this model is still under discussion, 1<sup>st</sup> step having the major importance<sup>1</sup>)
11. Project size limit approximately 1-2 mill €, more if many partners are involved<sup>2</sup>
12. Funding will be managed and organized by the national funding organisations, according to national rules.

BONUS partner countries are: Denmark, Germany, Poland, Lithuania, Latvia, Estonia, Russia, Finland, Sweden.

BONUS Themes related to the 1<sup>st</sup> call:

Theme 1: Linking Science and Policy

Theme 2: Understanding Climate Change and Geophysical Forcing

Theme 3: Combating Eutrophication

---

<sup>1</sup> Recently BONUS NSC adopted the 1-step application procedure

<sup>2</sup> This is just a rough estimate, there might be some more detailed indications in the forthcoming guidelines

Theme 4: Achieving Sustainable Fisheries  
 Theme 5: Protecting Biodiversity  
 Theme 6: Preventing Pollution  
 Theme 7: Integrating Ecosystem and Society

The BONUS-169 Baltic Sea Science Plan and Implementation Strategy is available online at <http://www.bonusportal.org/uploads/nomqee3iknpi3.pdf>

### **3. Analysis of links between the BONUS and BALTEX Science Plans** by Timo Vihma

Many overlaps exist in the research aims of BONUS and BALTEX. Strong correlations are in BONUS Theme 1 and BALTEX Objective 5; BONUS Theme 2 and BALTEX Objectives 1 and 2; BONUS Theme 3 and BALTEX Objective 4; BONUS Theme 6 and BALTEX Objective 4. Topics in which BALTEX has a particular strong standing are regional climate scenarios and impact studies and the geophysical forcings; thus BONUS Theme 2 would be a natural aim; however, many linkages across the Themes and Objectives are possible; this is an explicit funding condition by BONUS. The detailed analysis is given in Timo's presentation in Annex IV. Meeting participants expressed their appreciation to Timo Vihma for this analysis, which was considered key for further discussion on potential proposals for BONUS under the BALTEX umbrella.

### **4. Review of existing initiatives with focus on BONUS**

Various BSSG members including Bernd Schneider, Joakim Langner, Ole Bøssing Christensen, Jan Piechura gave a short overview over existing initiatives in their own institutes/countries, some of which seem to cover aspects in support of the BALTEX programme.

### **5. Identification of proposal initiatives based on the BALTEX and BONUS Science Plans and group discussions**

The lively discussion led to some general consensus, as follows:

1. It was considered necessary that BALTEX contributes actively to proposing projects as a response to the future BONUS call. Funding through BONUS was considered an essential element for the future development of the BALTEX programme. The comprehensive interdisciplinary network established in BALTEX offers a perfect base for forming competitive consortia.

2. Given both the overall financial frame of the future BONUS call and the above analysis individual project proposals would be expected to have an overall budget of 1 to 1,5 million Euro on average. A strategy for BALTEX would therefore be that several proposals (rather than one major comprehensive proposal) of the above size be established and submitted to BONUS indicating their contribution to individual BALTEX objectives and, whenever possible and useful, indicating linkages between each other, however, always pointing out the independency of the individual proposals. The BALTEX SSG would offer to be a platform to coordinate between individual proposals and provide support whenever useful for and wished by the individual consortia.

3. Considering aspects such as the above analysis given by Timo Vihma, the available BALTEX data bases, current BALTEX initiatives such as Baltic Grid, three principal research fields for potential project ideas evolved and were discussed in separate group discussions (participants given in parenthesis, respectively):

- a. **Physical Fluxes and Transports** (Lehmann, Vihma, Rosbjerg, Elken, Piechura, Nilsson)  
 These are the basis for biogeochemical and matter (e.g. nutrient, carbon, pollutant) fluxes and transports and still not yet well understood and quantified. BALTEX Phase II objective no 1 (better understanding of energy and water cycles would be addressed by this proposal. Coordination of a respective funding proposal would be through Andreas Lehmann. For more details, see Annex VI.
- b. **Variability of geophysical and nutrient forcing of the Baltic sea during 1800-2100** (Langner, Nilsson, Bøssing Christensen, Isemer)  
 The principle idea is to establish a 300 year data base (1800 – 2100) for the Baltic Sea Basin to be used for addressing scientific questions related to climate variability and change and ecosystem-based management. A key source would be the so called millennium run produced in

the frame of the COSMOS project (<http://cosmos.enes.org>). The coupled model system RCO – possibly applied in a data assimilation mode - will be used for downscaling information to the required regional and time scales. The scientific challenge – and therefore novel contribution to BALTEX – shall be the inclusion of phosphorus, nitrogen and carbon cycle related quantities. The use of products evolving from other major European projects such as ENSEMBLES was also considered, and emphasis should be on adding new elements (such as P, N and C relevant parameters) to existing products rather than re-doing and thus duplicating existing efforts. For more details, see Annex VII.

c. **The Baltic Sea Carbon Cycle** (Schneider, Omstedt, Smith, Sørensen, Reckermann)

This has strong links to Objective 4 of the “BALTEX Phase II Science Framework and Implementation Strategy”. The main scientific questions behind this are

- the validation of current biogeochemical models with CO<sub>2</sub> system/carbon cycle; this is currently not sufficiently done in most models
- the question of how a rising CO<sub>2</sub> level in the atmosphere will affect the CO<sub>2</sub> system of the Baltic Sea and how a potential acidification of surface and deep waters might affect the ecosystems of the Baltic Sea
- acidification as an additional variable to hydrological models, understanding vertical mixing by alkalinity

One goal could be to complement current biogeochemical models with the CO<sub>2</sub> system, and to make projections on the state of ecosystem in the future. The terrestrial carbon cycle, for which good prognostic models already exist, will be incorporated. There are links to both other research fields mentioned above (Physical fluxes and transports, climate scenarios). Coordination of a respective funding proposal would be through Bernd Schneider.

An existing 2 pages project summary form was adjusted to BONUS requirements and distributed for project-internal preparations and discussion (Annex V).

## 6. Action Items

**Action Item 1:** All meeting participants to review these minutes and send suggestions for corrections, additions and changes to the BALTEX Secretariat before Tuesday 29 May ([baltex@gkss.de](mailto:baltex@gkss.de)). The revised minutes shall be distributed to all BSSG members prior to the forthcoming BSSG meeting on Saaremaa on 3 June 2007.

**Action Item 2:** At least points 1 to 3 of the 2 page Project Proposal Summary form should be filled in for each project idea and be presented at the BSSG meeting on 3 June 2007.

**Annex I** to Minutes of the Interims BALTEX Science Steering Group Meeting on BONUS**Participant List**

Ole Bøssing Christensen  
Danish Meteorological Institute, Copenhagen, Denmark

Jüri Elken  
Tallinn University of Technology, Marine Systems Institute, Tallinn, Estonia

Hans-Jörg Isemer  
International BALTEX Secretariat at GKSS Research Centre Geesthacht, Germany

Joakim Langner  
Swedish Meteorological and Hydrological Institute, Norköpping, Sweden

Andreas Lehmann  
Leibniz Institute for Marine Sciences, Kiel, Germany

Jörgen Nilsson  
Swedish Meteorological and Hydrological Institute, Norköpping, Sweden

Anders Omstedt  
Göteborg University, Earth Sciences Centre – Oceanography, Göteborg, Sweden

Jan Piechura  
Polish Academy of Sciences, Institute of Oceanology, Sopot, Poland

Marcus Reckermann  
International BALTEX Secretariat at GKSS Research Centre Geesthacht, Germany

Dan Rosbjerg  
Technical University of Denmark, Institute of Environment & Resources, Kongens Lyngby, Denmark

Bernd Schneider  
Baltic Sea Institute Warnemünde, Germany

Benjamin Smith  
Lund University, Geography and Ecosystems Analysis, Lund, Sweden

Lise Lotte Sørensen  
Technical University of Denmark, Risø National Laboratory, Roskilde, Denmark

Timo Vihma  
Finnish Meteorological Institute, Helsinki, Finland

**Annex II** to Minutes of the Interims BALTEX Science Steering Group Meeting on BONUS

**Draft Agenda for the Interims BSSG Meeting on BONUS**

Copenhagen, Scandic Hotel Sydhavnen, 15 May 2007

**9:00 Welcome**

*Joakim Langner, BSSG Chairman*

9:10 Update on BONUS (including a short overview of the BONUS science plan and available information on guidelines for proposals)

*Jüri Elken, member of Network Steering Committee of BONUS*

**10:00 Coffee break**

10:30 Recap of the BALTEX Science and Implementation Plan and links to BONUS

*Anders Omstedt / Timo Vihma*

11:00 Review of existing initiatives that we know of and their respective focus

*All*

**12:00 Lunch Break**

13:00 Identification of one or more proposal initiatives based on the BONUS and BALTEX Science Plans

*All*

**15:00 Coffee break**

15:30 Group discussions aimed at producing draft proposals including goals, deliverables, lead partners and participants, etc.

*All*

**17:00 End of meeting**

**Annex III** to Minutes of the Interims BALTEX Science Steering Group Meeting on BONUS

**BONUS+ Call**

Key Slides from the presentation by Jüri Elken

## Discussion of two-step application

**The first step evaluation should be scientific evaluation:**

- a. In order to be able to make a scientific evaluation, the requirements for the letter of intent (LOI) have to be reformulated (-> a project proposal).
- b. The project proposals will go through the scientific evaluation. The panellists could give recommendations to the proposers to improve the proposal, if necessary. On the second round, the panellists could check the application in a written procedure, if needed, i.e. a second panel would not be needed.

**The proposals on the second round include the administrative matters as well.**

## Discussion of eligibility of costs

*Salaries*

- Principal scientist who does not have a permanent position -> Salary is eligible (for permanent not)

*Equipment*

- Needs a definition
- Must be exclusively used for the project (if for longer time, e.g. a percentage could be used)

*Ship costs*

- Included ship time, fuel and port costs.

*VAT*

- Conditional because countries have their own VAT rules

## **Evaluation of the scientific quality**

### **Scientific excellence - Quality of the project (Threshold 3/5)**

- Sound concept, and quality of objectives
- Progress beyond the state-of-the-art
- Quality and effectiveness of the scientific methodology and associated work plan
- Innovation and new approaches
- Interdisciplinarity

### **Quality and efficiency of the implementation and the management (Threshold 3/5)**

- Appropriateness of the management structure and procedures
- Quality and relevant experience of the individual participants
- Quality of the consortium as a whole (including complementarity, balance, research environments)
- Appropriate allocation and justification of the resources to be committed (budget, staff, equipment)

### **Potential impact (Threshold 3/5)**

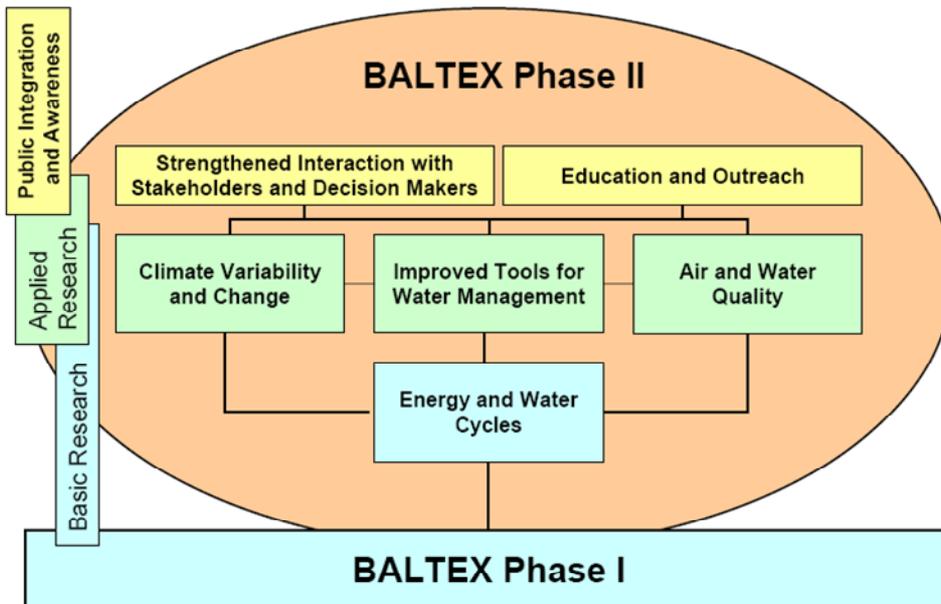
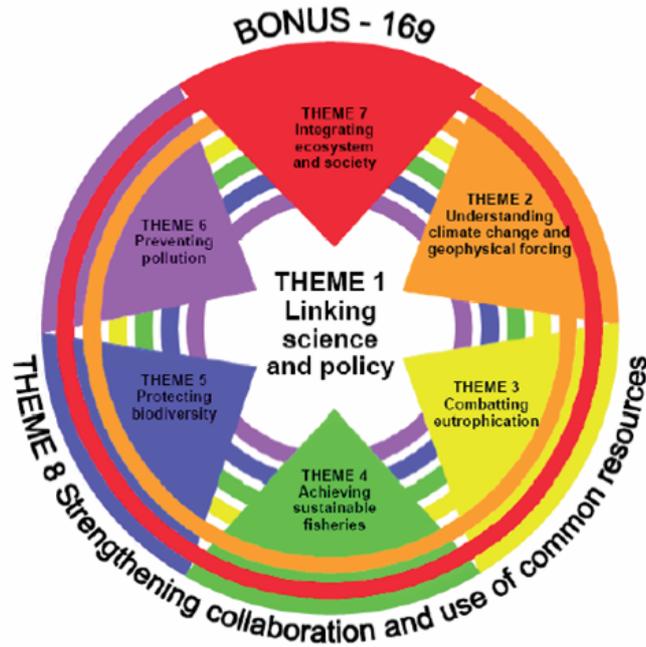
- Relevance of the proposal in relation to the Themes of the call and BONUS-169 Science Plan
- Relevance for the management for Baltic Sea
- Contribution, at the European and/or international level, to the expected impacts listed in the FP7 work programme under Cooperation/ERANET Plus Actions
- Appropriateness of measures for the dissemination and/or exploitation of project
- Researcher training
- Transnational cooperation within and international cooperation beyond the project

**To guarantee the relevance of the projects in terms of the overall aim of the research programme, the projects passing the thresholds of 3/5 from the scientific evaluation will undergo a relevance evaluation**

**Annex IV** to Minutes of the Interims BALTEX Science Steering Group Meeting on BONUS

**The BONUS and BALTEX Science Plans**

Analysis by Timo Vihma



## **BONUS**

### **1. Linking Science and Policy**

- a) **Development and application of the ecosystem approach to management for the Baltic Sea**
- b) **Environmental outlooks, scenarios and models for investigating future developments and implications of policy actions**
- c) **Making a difference through dialogue, consultation, and information exchange and dissemination**

## **BALTEX Second Phase**

### **5. Strengthened Interaction with Stakeholders and Decision Makers**

- **BALTEX – HELCOM co-operation in climate change assessments: continuation?**
  - **BALTEX produces tailored model results and wants scenarios of anthropogenic factors**
  - **adaptation of security infrastructure in changing climate**
  - **sea level variability and coastal zone management**
  - **eutrophication of the Baltic Sea**
- (floods, hydropower, groundwater)

## **BONUS**

### **2. Understanding climate change and geophysical forcing**

- a) **Analyses of historical and current climate change and direct human encroachment**
- b) **Processes relevant for the geophysical forcing of the environment**
- c) **Innovative observation strategies and operational forecasting and modelling systems**
- d) **Scenarios, predictions, risk assessments and response strategies: environmental, ecosystem and human consequences**

## **BALTEX Second Phase**

### **1. Energy and water cycles**

- Better and more comprehensive obs. from the Baltic Sea basin
- Development of a complete regional climate model system
- Closing of energy and water budgets
- Evaluation of regional models and data sets for their use in climate impact analyses and environmental issues

### **2. Climate variability and change**

- Reconstruction of the climate history in the past 200 years
- Detection and attribution of climate change
- Scenarios based on evolving global and regional forcing and response

**BONUS****3. Combatting eutrophication**

- a) Inputs and origins, distributions, flux and mass balances of nutrients
- b) Effects and consequences of eutrophication in the ecosystem
- c) Scientific strategies for improving surveillance, assessment and management

**BALTEX Second Phase****4. Gradual extension to air and water quality studies**

- Studies on waterborne and airborne sources of nutrients, including new measurement techniques and high-resolution modelling of turbulence in coastal regions
- Inclusion of nutrients in coupled models
- Links between eutrophication problem and climate issues (CO<sub>2</sub> uptake)

**5. Strengthened Interaction with Stakeholders and Decision Makers**

- eutrophication of the Baltic Sea: co-operation with environmental protection agencies and HELCOM

**BONUS****4. Achieving sustainable fisheries**

- a) Developing the scientific basis for implementing the ecosystem approach to fisheries management
- b) Assessment and mitigation of the ecosystem impacts of aquaculture
- c) Improving food safety and risk assessments, and developing dependable information systems for producers, retailers and consumers of seafood products

**BALTEX Second Phase**

- 2. Climate variability and change**
- 4. Air and water quality**
- 5. Strengthened Interaction with Stakeholders and Decision Makers**

Fisheries not explicitly mentioned

**What to do?**

Climate-change scenarios → changes in fish populations

**BONUS**

**5. Protecting biodiversity**

- a) Understanding indigenous biodiversity and assessing status and trends including change and loss
- b) Conservation of habitats and their associated species and communities
- c) Combatting alien organisms

**BALTEX Second Phase**

- 2. Climate variability and change
- 4. Air and water quality
- 5. Strengthened Interaction with Stakeholders and Decision Makers

Biodiversity not explicitly mentioned

**What to do?**

Effects of climate change on biodiversity

**BONUS**

**6. Preventing pollution**

- a) Inputs, distributions, flux and mass balances of pollutants
- b) Detecting and predicting effects of pollutants on populations, communities and ecosystem
- c) Scientific strategies for improving surveillance, assessment and management

**BALTEX Second Phase**

**4. Air and water quality**

- Studies on waterborne and airborne sources of pollutants, including new measurement techniques and high-resolution modelling of turbulence in coastal regions

- Inclusion of pollutants in coupled models

**5. Strengthened Interaction with Stakeholders and Decision Makers**

**BONUS****7. Integrating ecosystem and society**

- a) Explaining the spatial and temporal variations in human's uses of Baltic Sea ecosystem resources
- b) Integrated modelling for forecasting the trajectory of the Baltic Sea ecosystem under various scenarios for management policies, environmental variability, and human actions
- c) Estimating society's values for conserving, protecting and restoring Baltic Sea ecosystem resources
- d) Developing the scientific basis for improving governance of the Baltic Sea ecosystem
- e) Acquire, assemble, and archive time series data on various issues related to ecosystem and society

**BALTEX Second Phase****2. Climate variability and change**

Climate change scenarios → input to bioeconomic models

**4. Air and water quality****5. Strengthened Interaction with Stakeholders and Decision Makers****6. Education and outreach**

**Annex V** to Minutes of the Interims BALTEX Science Steering Group Meeting on BONUS

**Template for the Collaborative Project Proposal Summary**

**BONUS Programme**

The 2 pages BONUS project proposal summary

**1. Title of proposal (and acronym)**

Short concise and clear. This should explain the project without reference to any other text. Normally determined at the end of writing this summary.

**2. BONUS themes addressed**

Which of the 7 BONUS themes are addressed?

**3. Objectives of proposal**

5-10 lines describing the project. Should be a short expansion of the title. Relate the objectives to the BONUS themes you claim to address. Also, identify in particular BONUS key research issues within BONUS themes and main BONUS cross-thematic areas of cooperation.

**4. Deliverables**

What exactly will be produced e.g. report, working model, service etc. Use bullet points.

**5. Background and state-of-the-art**

Why are you doing this project? Why now? 5-10 lines. Educate the reader.

**6. Potential impact**

Describe the potential impact of the project. Elaborate in particular on the required BONUS “ecosystem approach to management of the Baltic Sea”. 5 – 10 lines, or bullet points.

**7. Phases of the work**

Break the work into 4-5 phases or work packages including a brief description of each phase (may be bullet points). Divide into main activities such as R&D, demonstration, dissemination, training, management, as required. Indicate major milestones.

**8. Organisations involved and their roles**

<b>Organisation</b>	<b>Contact person</b>	<b>Country</b>	<b>Role</b>

**9. Expected costs and duration**

Use estimates in terms of kEuros only.

**Annex VI** to Minutes of the Interims BALTEX Science Steering Group Meeting on BONUS

### **Collaborative Project Proposal Summary**

#### **BONUS Programme**

The 2 pages BONUS project proposal summary

Participants (so far) : Jüri Elken, Andreas Lehmann, Jörgen Nilsson, Jan Piechura, Dan Rosbjerg, Timo Vihma

#### **1. Title of proposal (and acronym)**

Coastal and Offshore Exchange Processes - COFFEX

#### **2. BONUS themes addressed**

- Theme 1: Linking Science and Policy
- Theme 2: Understanding climate change and geophysical forcing
- Theme 3: Combatting eutrophication
- Theme 6: Preventing pollution

#### **3. Objectives of proposal**

COFFEX aims at a comprehensive investigation of coastal and offshore exchange processes in the Baltic Sea taking advantage of advanced numerical modelling, observational techniques including satellite data and data management. The project includes the determination of transports and fluxes from the coastal area (river mouth) to the open Baltic Sea and vice versa, naturally including atmospheric processes as the main driver of coastal exchange. The proposal is directly related to Theme 2 to improve the understanding of the variability of the geophysical forcing of biological and biogeochemical characteristics of the sea and coast (key research issues 1-3). It is related to Theme 1 (key research issue 1 and 2), Theme 3 (key research issue 1) and Theme 6 (key research issue 1) by delivering the basic understanding of physical forcing, including circulation and mixing in the Baltic Sea, which controls the distribution of nutrients and pollutants in the Baltic Sea.

**Annex VII** to Minutes of the Interims BALTEX Science Steering Group Meeting on BONUS

## **Collaborative Project Proposal Summary**

### **BONUS Programme**

The 2 pages BONUS project proposal summary

Participants (so far): Joakim Langner, Jörgen Nilsson, Ole Bøssing Christensen, Hans-Jörg Isemer

#### **1. Title of proposal (and acronym)**

BIOGEOVAR - Variability of geophysical and nutrient forcing of the Baltic sea during 1800-2100

#### **2. BONUS themes addressed**

- Theme 1: Linking Science and Policy
- Theme 2: Understanding climate change and geophysical forcing
- Theme 3: Combatting eutrophication
- Theme 7: Integrating ecosystem and society

#### **3. Objectives of proposal**

BIOGEOVAR aims at delivering quality controlled data sets of geophysical and nutrient drivers of the Baltic Sea ecosystem and demonstrate their applicability for use in assessment of ecosystem response to variability and change in physical and nutrient forcing. The datasets will together span the entire time period 1800-2100 and will be based on:

global scale reconstructions of past climate and scenarios (1800-2100). Sources could be results from the EU projects ENSEMBLES and/or GLIMPSE and simulations done within the consortium, like the MPI Millenium simulation  
global reanalysis of the past 50 years like the ECMWF ERA-40

Main aims of the project are:

- downscaling of the global climate data for past, present and future using regional climate models in high resolution (10km) over an area including the Baltic Basin with the focus on key variables like precipitation and near-surface winds and temperature
- demonstration of coupled atmosphere-ocean reanalysis for a selected time period
- integration of the mass transport and chemistry of nutrients like organic nitrogen and phosphorus into these models with the aim of providing forcing data for ecosystem models.

The proposal is directly related to Theme 2 to improve the understanding of the variability of the geophysical forcing, including the effects of climate change, (key research issues 1 and 4). It is related to Theme 1 on scenarios (key research issue 2), Theme 3 on origins, distributions, and mass balances of nutrients (key research issue 1) and Theme 7 (key research issues 2 and 5) by acquiring, assembling and archiving spatially resolved time series data of key physical and nutrient driver data.

**Appendix 5: Terms of Reference for the BALTEX Working Group on BALTIC-GRID**

BALTEX Working Group on Baltic Grid (BWG-BGRID)

Terms of Reference

**1. Background and Objective**

One of the major objectives of BALTEX Phase I was the development of coupled atmosphere-land-ocean-models for the Baltic Sea basin. This aim has been achieved and at least two coupled systems have been developed, the Regional Coupled Atmosphere-Ocean Model (RCAO) at the Rossby Center in Sweden and the BALTEX integrate model system BALTIMOS at the Max-Planck-Institute for Meteorology in Germany. For BALTEX Phase II these models will be further developed and applied for BALTEX research, and will produce an enormous amount of data. These data are of very high scientific potential, and the analysis, validation and improvement of the models need international collaborations of different scientists, not only modellers. These models can be seen as nuclei for the development of Earth System Models (ESM) of the Baltic region. Regional Earth system modelling belongs to the group of Grand Challenge problems with long model runs on supercomputer and high data storage requirements. Regional Earth system modelling of the BALTEX region requires an infrastructure for which BALTEX with its international cooperation and contacts has created an ideal basis. The BALTEX region constitutes an ideal test bed not only for model development, validation, and developments in satellite techniques but also for grid technologies - ``The BALTIC GRID``. In the near future, scientific experiments (models and observations) will become more detailed and complex via improved modelling tools and new observational techniques such as new satellite sensors. This will cause a tremendous increase in information and data. The emphasis for BALTIC GRID until 2012 will be directed to the extension and intensification of the BALTEX Communication Network to share expertise and databases rather than distributed computing.

**2. BALTIC GRID Pilot Study**

As a first step to BALTIC GRID a Working Group on BALTIC GRID has been established to coordinate activities and promote a BALTIC GRID Pilot Study. The intention of the pilot study is to intensively utilize the BALTEX Community Network to initiate the formation of international research groups to start important research within BALTEX Phase II. Furthermore, the research groups will be ideally suited as core groups to initiate funded projects which will be of interest for the EU or other funding agencies.

The target period for the pilot study is 1900 to 2100, including the time periods under investigation within GEWEX for which the working group will contribute to GEWEX, and with special focus on the embedded extended BRIDGE period 1999 to 2006. The extended BRIDGE-Period includes recent extreme inflows to the Baltic Sea as well as extreme hot summers and flooding. Thus, this period is extraordinarily suited to study variability and trends as well as extreme events in the Baltic catchment. A synthesis of BALTEX BRIDGE is up to now missing. With modelled data and corresponding observations including satellite data, a synthesis would be possible including a detailed quantification of the energy and water cycles of the Baltic catchment. The BALTIC GRID Pilot Study should last about 2 years. Participating research groups should take advantage of existing observations and satellite data in conjunction with model simulations of the target period. Thus data needs will be: model data from process models and coupled atmosphere-land-ocean models, and observations

consisting of basic measurements of atmosphere, land and ocean, flux-measurements and satellite data. The general objectives with focus on the target period are:

- determining variability and trends in energy and water budgets of the Baltic Sea catchment
- quantification of fluxes between atmosphere-land, atmosphere-ocean including sea ice
- analyse and compare observations, re-analysis products, results from regional coupled climate models with respect to climate variability and trends
- quantification of uncertainties
- study of extreme events

The following projects/case studies have been identified as a framework of potential sub-projects (SPs) within the BAL TIC GRID Pilot Study:

### **SP BRIDGE Synthesis (Quantification of the Energy and Water cycle including P-E)**

This subproject focuses on the quantification of the energy and water cycle of the Baltic Sea catchment with the intention to determine as accurate as possible river runoff, P-E, in and outflow through the Danish Straits, im- and export of heat and water vapour to the BALTEX area. For the target period, the mean conditions and their variability should be determined also as reference for further studies. Thus, projects should be grouped around the following items:

- Inventory of observations and satellite data.
- Budgets and uncertainties
- Climate variability

### **SP Coastal Regions**

The atmospheric boundary layer (ABL) over the Baltic Sea is typically not entirely in balance with the local sea surface, but a more or less coastal influence is felt. This influence might reach as far as 100 km off the coast, thus, major parts of the ABL over the Baltic Sea are under coastal influence. Furthermore, coastal waters are the important transition between the coast and the deep basins of the Baltic Sea, and there is still less knowledge whether fluxes of heat and material (salt, nutrients and toxic substances) are directed off the coastal area to the open sea or vice versa? Projects should be grouped around the following items:

- Atmospheric boundary layer, atmosphere-ocean and atmosphere-sea ice-ocean fluxes including carbon and nitrogen
- Coastal mesoscale features
- Coastal seas and transports including up- and downwelling
- Sea ice dynamics and ice thickness distribution

### **SP Wind, Water Vapour and Cloud Properties**

This subproject aims at the comparison of the representation of wind, water vapour and clouds in coupled atmosphere-land-ocean models with corresponding measurements by mainly using satellite data. Wind, water vapour and clouds strongly affect the air-sea and air-sea ice fluxes. Thus this SP is strongly related to SP Coastal Regions.

- Wind over water
- Detailed analysis of clouds and water vapour

**SP Großwetterlagen and Extreme Events (forcing and response)**

Large scale and mesoscale weather patterns should be investigated in relation to extreme events. As the target period includes extremes such as hot summers, flooding and major inflows, typical weather patterns (classification) might be identified responsible for extreme situations.

- Classification, probability and extreme events
- Convective Großwetterlagen and precipitation

**3. BALTIC GRID Management**

The main task of the Working Group on BALTIC GRID will be the initiation and conduction of the pilot study. Members will be the leading scientists of the different subprojects plus one representative of the BALTEX Secretariat. The terms of reference are as follows:

- conduction of the BALTIC GRID Pilot study
- improvement of the understanding of processes and feedbacks on different space and time scales of climate variability of the Baltic catchment
- setting up international collaborations
- initiating and conducting (interdisciplinary) research within BALTEX Phase II
- initiating resources sharing (expertise, observations including satellite and model data)
- promote scientific core groups to initiate workshops and projects which will be of interest for the EU or national funding agencies
- maintain links to GEWEX and GHP

**4. Time Schedule**

- 1st working group meeting at the BSSC in Rostock, March 2007
- June 2007 BALTIMOS and BSIOM (1999-2006) model data accessible for BGRID working group
- 2nd working group meeting at BALTEX Study Conference in Kuressaare, Saaremaa, Estonia
- ....

**5. Membership (preliminary list)**

Alfred Dubicki (IMWM, Poland)

Juri Elken (TU, Estonia)

Frauke Feser (GKSS, Germany)

Phil Graham (Rossby Centre, Sweden)

Sirje Keevallik (EMA, Estonia)

Daniela Jacob (MPI for Meteorology, Germany, Chair)

Andreas Lehmann (IFM-GEOMAR, Germany, Chair)

Philip Lorenz (MPI for Meteorology, Germany)

Markus Meier (SMHI, Sweden)

Kai Myrberg (FIMR, Finland)

Anders Omstedt (GU, Sweden)

Bernd Schneider (IOW, Germany)

Timo Vihma (FMI, Finland)

## **ANNEX**

In the following, there is a collection of applications which have been received so far:

### **Name: DETECTIVE - Detection of climate change and climate variability in the Baltic Sea Region**

#### **Idea/Motivation**

Knowledge of the natural variability of the Baltic Sea climate is of utmost importance for the studies on human influence including climate change. How to discriminate between natural variations and changes and the anthropogenic impact is still an unsolved problem, due to the shortness of available instrumental records, the apparent amount of variability in the system and, possibly, the still emerging signal of anthropogenic climate change for the region (alt. on the relevant scale).

The objectives of DETECTIVE are to better assess long-term climate variability in the Baltic Sea region and to understand and quantify the different climatic states of the Baltic Sea. The main study period will be 1958-2004, for which coherent large-scale reanalyses are now available. As for many variables observations for such a long period are either missing or too inhomogeneous, regional coupled atmosphere-land-sea-ice-ocean models with relatively high horizontal resolution will be used to assess climate change and climate variability in all sub-systems. The regional models will be driven with the ERA40 reanalysis data and thus run in the so-called hindcast (alt. perfect boundary condition mode). The coupled approach enables an energetically consistent analysis of all sub-systems. The dynamical downscaling approach offers the opportunity to assess climate variability on relatively small spatial scales, as well as to attempt to fill in gaps in the observational data in geographic, temporal and process spaces in an internally consistent and coherent manner.

DETECTIVE is meant as a first step to detect induced regional climate change. Longer transient regional climate change simulations should follow later to explore the nature of the expected changes. This will, in turn, both provide guidance in further detection and attribution efforts, as well as provide new possibilities for impact research and stakeholder interaction.

#### **Project proposal outline**

- Establish up-to-date versions of coupled models for the Baltic domain.
- Downscaling of the period 1958-2004 with regional coupled atmosphere-land-ice-ocean models with lateral boundary data from ERA40.
- Evaluation of model results using observations, including from the
- BALTEX/BRIDGE study period 1999-2004.
- Calculation of trends in the regional sub-systems.
- Test the significance of any found trends by comparison with simulated climate variability.

#### **Data needs/methods**

- ERA40 reanalysis data for the regional models for initial and boundary conditions.
- Additional initial and boundary condition data for 1958-2004.
- Modelled data for the period 1958-2004.
- Evaluation data for the period 1958-2004.

#### **Time plan/Milestones**

- To be explored. (Possible start: mid-2006, suggested duration: 1-2 years.)

**Participants**

At SMHI: Ralf Döscher, Markus Meier, Phil Graham and Markku Rummukainen.

At ??: ...

At ??: ...

At ??: ...

**SP: Coastal regions**

**Name of the project:** Two-way coupling between an open sea model and coastal area models

**Scientific objectives and aims:** There is a great interest in the coupling between an open sea model with models describing the coastal area. This issue will hence be discussed in an NMR Workshop taking place in Gothenburg in May 2006. So far most coastal models receive their boundary conditions from the open sea model without transferring any information back to it.

The aim of the proposed project is to investigate how a two-way coupling between already existing models could be carried out and to analyse the coastal influence on the open sea. It is suggested to use the RCO model for the target period 1999 to 2005 and to implement a two-way coupling to the Coastal Zone Model used at SMHI. The proposed test area would be outside Östergötland on the east coast of Sweden where the Coastal Zone Model have been used for several years. To start with only the physics of the system would be considered, but the long-term objective would be to also incorporate the biochemical part of the Coastal Zone Model and to use a similar module for the RCO model.

The same type of investigation could also be carried out for other coastal areas of the Baltic Sea using various kinds of coastal models. For the open sea the RCO model could be used as the common model for all the studies.

**Data needs:** For the first phase physical data for initialisation, forcing and validation are needed. For the second phase nutrient and some ecological data are also required.

Responsible scientist and partners: Kari Eilola, SMHI. Possible partners are institutes taking part in the NMR projects Bansai and E-maps. Other institutes working with coastal models would also be potential partners.

**Time plan:** The work could be initiated during 2007 but the main part of the study would probably take place during 2008 assuming that the question of funding is solved.

May 2006

Karin Borenäs, SMHI

karin.borenas@smhi.se

## **Application of participation in BALTIC GRID project-Pilot Study**

### **Subproject:**

Grosswetterlagen and Extreme Events (Forcing and Response).

### **IMWM Wroclaw Branch project proposal:**

Extreme hydro-climatic events in the mountain area of Central Europe.

### **Scientific objectives and aims:**

1. Criteria to determinate the extreme hydro-climatic events in the mountain area.
2. Monitoring of extreme summer and winter precipitation from the period 1999-2005.
3. Monitoring of extreme high temperature (summer 2003 year).
4. Monitoring of extreme long periods without precipitation (drought 2003 year).
5. Impact assessment of the atmosphere circulation on hydro-climatic extremes in the mountain area.

### **Data needs:**

- daily values of: maximum temperature, precipitation and depth of snow cover from the Polish and Czech standard stations (Sudety and Karpaty Mountains).
- catalogues (classification) of atmosphere circulation patterns (Grosswetterlage) from the period 2001-2005.

### **Responsible scientist and partners:**

**Scientist:** Assistant prof. dr Alfred Dubicki (alfred.dubicki@imgw.pl) Institute of Meteorology and Water Management, Wroclaw Branch (IMWM, Wroclaw), Parkowa str., 30, 51-616 Wroclaw, Poland

**Partners:** dr Bronislaw Glowicki (IMWM, Wroclaw), dr eng. Mariusz Adynkiewicz Piragas (IMWM, Wroclaw), dr Grzegorz Urban (IMWM, Wroclaw)

### **Time plan:** 24 months period (2006-2008), therein:

1. Inventory of meteorological data from years: 1999-2005.
2. Casual-consecutive characteristics of extreme summer precipitation.
3. Casual-consecutive characteristics of extreme winter precipitation.
4. Casual-consecutive characteristics of extremes high temperature (hot periods) and long periods without the precipitation.

**BALTIC-GRID Proposal SP: Grosswetterlagen and Extreme Events (Forcing and Response).****IMWM Wroclaw Branch project proposal:**

Extreme hydro-climatic events in the mountain area of Central Europe.

**Scientific objectives and aims:**

Criteria to determinate the extreme hydro-climatic events in the mountain area.

Monitoring of extreme summer and winter precipitation from the period 1999-2005.

Monitoring of extreme high temperature (summer 2003 year).

Monitoring of extreme long periods without precipitation (drought 2003 year).

Impact assessment of the atmosphere circulation on hydro-climatic extremes in the mountain area.

**Data needs:**

a) daily values of: maximum temperature, precipitation and depth of snow cover from the Polish and Czech standard stations (Sudety and Karpaty Mountains).

b) catalogues (classification) of atmosphere circulation patterns (Grosswetterlage) from the period 2001-2005.

**Responsible scientist and partners:**

**Scientist:** Assistant prof. dr Alfred Dubicki (alfred.dubicki@imgw.pl) Institute of Meteorology and Water Management, Wroclaw Branch (IMWM, Wroclaw), Parkowa str., 30, 51-616 Wroclaw, Poland

**Partners:** dr Bronislaw Glowicki (IMWM, Wroclaw), dr eng. Mariusz Adynkiewicz Piragas (IMWM, Wroclaw), dr Grzegorz Urban (IMWM, Wroclaw)

**Time plan:** 24 months period (2006-2008), therein:

1. Inventory of meteorological data from years: 1999-2005.
2. Casual-consecutive characteristics of extreme summer precipitation.
3. Casual-consecutive characteristics of extreme winter precipitation.
4. Casual-consecutive characteristics of extremes high temperature (hot periods) and long periods without the precipitation.

## **Appendix 6: DRAFT Terms of Reference for the BALTEX Working Group on BACC II**

### **Working Group on BALTEX Assessment of Climate Change (BACC II)**

#### **DRAFT Terms of References**

##### **1. Introduction**

The purpose of the first BACC assessment was to provide the scientific community with an assessment of ongoing climate variations in the Baltic Basin. An important element was the comparison with the historical past. Also changes in relevant environmental systems, due to climate variations, were assessed – such as hydrological, ocean and ecosystem changes. The work has generated a large activity around the Baltic Sea with 80 authors writing the assessment and with a close cooperation with HELCOM. The BACC book will be published by Springer in 2007.

The BACC work has been an important step towards an increased understanding of the role of climate change for the Baltic Basin including land and water ecosystems. BALTEX may play an important role in this work in the future and we therefore suggest that a Working Group within BALTEX should be formed.

##### **2. Terms of references**

The work on BALTEX Assessment of Climate Change (BACC) should continue and be organised through a working group aiming for a new assessment within 5 years. The work should be lead by a BACC science steering group with the following terms of references:

- Report on what we have learned from BACC and how the book was received by different communities. Time: Dead line: Autumn 2008
- To increase our multi-disciplinary understanding by initiate a summer school on main drivers (climate, eutrophication, fishing, shipping, land use change, economic growth etc) and response characteristics in the Baltic Basin. Dead line: Summer 2009
- Organize a workshop for starting up the new assessment and for identifying new lead authors. Dead line: 2009/2010
- Organize the BACC II assessment aiming for a new book to be published 2012.

The “old” BACC Scientific Steering Group is terminated with the publication of the BACC book.

##### **3. Membership of Working Group**

###### **BACC II Science Steering Committee**

Hans von Storch (Chair)  
Hans-Jörg Isemer (Secr.)  
Sirje Keevalik  
Anders Omstedt  
Timo Vihma  
Possibly a representative of HELCOM

**Appendix 7: Minutes of the BWGD-Meeting in Hamburg, 24 April 2007**

BALTEX Working Group on Data Management (BWGD)

**Minutes**

of the Meeting held on 24 April 2007  
at the Max-Planck-Institute for Meteorology  
Models and Data  
Beim Schlump 58  
20144 Hamburg



From left to right: Valery Vuglinsky, Marcus Reckermann, Michael Lautenschlager, Reinhard Budrich, Andreas Lehmann, Jörgen Nilsson

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Item 1. Data Management section on new BALTEX web site

Item 2. Terms of Reference of the BWGD discussed

Item 3. Data Management Systems for BALTEX

Item 4. The Open BALTEX Data Management Seminar in Estonia

Item 5. New datasets and possible Project ideas for BONUS/FP7

Other Items

Summary of Action Items

Annex 1: Draft meeting Agenda

Annex 2: Participant List

Annex 3: Revised Terms of Reference for the BWGD

Annex 4: Requirements for Data Providers – Web-Werdis/UNIDART at DWD and  
Integration of external Data into the WDC Climate

### ***Introduction***

The meeting of the BALTEX Working Group on Data Management (BWGD) was hosted by Michael Lautenschlager, Head of the Group “Models and Data” at the Max-Planck-Institute for Meteorology in Hamburg, Germany. Main rationales for the meeting were the preparation of the Open Data Management Seminar scheduled for the 5<sup>th</sup> Study Conference on BALTEX in Estonia and the related BSSG meeting, a collection of ideas and activities for BONUS or FP7 funding possibilities, and the preparation of proposed decisions to be taken by the BSSG at the next steering group meeting.

### ***Item 1. Data Management section on new BALTEX web site***

Marcus Reckermann presented the new BALTEX web site, with a section dedicated to BALTEX Data Management issues. This section is accessible directly at [www.baltex-research.eu/data](http://www.baltex-research.eu/data). These pages are supposed to act as information platform for any data related activities of BALTEX. A special page is also dedicated to the BWGD.

**Action Item 1:** All BWGD members to view critically the section on Data Management and the BWGD on the BALTEX web site at [www.baltex-research.eu/data](http://www.baltex-research.eu/data) and propose changes or amendments to M. Reckermann of the BALTEX Secretariat, by 15 May 2007.

### ***Item 2. Terms of Reference of the BWGD discussed***

The Terms of Reference for the BWGD were discussed and approved by the present members of the BWGD with minor changes (see Annex 2).

A more concrete list of data requirements will be developed in connection with project proposals (**Action Item 2**).

A BALTEX Data Management Plan is to be prepared under the leadership of Jörgen Nilsson before the next full BSSG meeting in January 2008 in Norrköping, Sweden (**Action Item 3**).

A list of data requirements will be developed in connection with project proposals.

### ***Item 3. Data Management Systems for BALTEX***

Michael Lautenschlager and Jörgen Nilsson presented two data management systems which could be used for BALTEX data, and which are complementary rather than competitive.

As a first step, a collection of accessible data bases with data relevant to BALTEX is to be published on the BALTEX Data web site. For this purpose, all BWGD members are asked to send relevant links to M. Reckermann who will then put them on online after consultation with the respective data base responsible persons.

**Action Item 4:** to collect and send URLs of data collections accessible for BALTEX research to M. Reckermann of the BALTEX Secretariat, by 15 May 2007.

The **UNIDART** system by the DWD is a one-stop-shop system of currently only meteorological data, which most of the European Hydrometeorological Services have already or are planning to adopt: Germany, Norway, Finland, Korea, the WMO. Sweden and other countries in the Baltic Sea basin are expected to join. This system is currently only accommodating meteorological data; other data types can be introduced by data providers.

The proposal of a “one-stop-shop” for data through BALTEX homepage was discussed. Behind a portal presently there could be two systems, UNIDART/WebWerdis and CERA which are to be seen as complementary.

The UNIDART system will basically contain observed climatological time series. These time series will be updated periodically by the national Met Services. The CERA system will mainly contain data sets from experiments, both measured and simulated though models in defined products.

#### ***Item 4. The Open BALTEX Data Management Seminar in Estonia***

On Wednesday 6 June, at 18:15, an open Data Management Seminar will be given in connection with the 5<sup>th</sup> Study Conference on BALTEX in Estonia. This seminar shall be open to any interested conference participant. The purpose is to explain access to BALTEX data as well as to other related data bases. The agenda for the seminar is given here:

- a. Welcome  
Jörgen Nilsson, BALTEX SSG
- b. The BALTEX Data Management Web Site  
Marcus Reckermann, BALTEX Secretariat
- c. A presentation of the UNIDART system  
Jürgen Seib, DWD
- d. Data access through the World Data Centre for Climate  
Michael Lautenschlager, WDCC
- e. Access to CEOP Data  
Michael Lautenschlager, WDCC; Franz Berger, BALTEX SSG
- f. The Climate Explorer  
Sjoukje Philip, KNMI

#### ***Item 5. New datasets and possible Project ideas for BONUS/FP7***

The creation of a 300 yr data set as BALTEX re-analysis and projections according to BALTEX Science Plan (1800-2100).

This could be a basis for a BONUS/FP7 proposal; this will be further elaborated and presented by Jörgen Nilsson at the BSSG-BONUS meeting in Copenhagen 15 May.

Further FP7 possibilities concerning the funding of data management activities are to be investigated (**Action Item 5**).

***Other Items***

1. Decide to accept the revised terms of reference for the BDMG.
2. to propose Michael Lautenschlager as a new member of the BWGD members and BALTEX Science Steering Group.
3. to accept the steps taken towards a one-stop-shop for data
  - a. the updated homepage
  - b. the registration of BALTEX as a user in UNIDART
  - c. the creation of meta databases for BALTEX data (met, hyd, oc)
  - d. to use the complementary UNIDART and CERA data systems

**Summary of Action Items:**

1. **BWGD members** to view critically the section on Data Management and the BWGD on the BALTEX web site at [www.baltex-research.eu/data](http://www.baltex-research.eu/data) and propose changes or amendments to M. Reckermann of the BALTEX Secretariat, by 15 May 2007.
2. **BWGD members** to prepare a tentative list of data requirements for BALTEX Phase II research, based on the BALTEX Phase II Science Framework and Implementation Strategy; before 3 June (BSSG meeting in Kuressaare, Estonia).
3. **Jörgen Nilsson** together with selected BWGD members to prepare a BALTEX Data Management Plan, in accordance with the Terms of Reference of the BWGD, before January 2008 (BSSG meeting in Norrköping, Sweden)
4. **BWGD members** to collect and send URLs of Data collections accessible for BALTEX research to M. Reckermann of the BALTEX Secretariat, by 15 May 2007
5. **Marcus Reckermann** and **Hans-Jörg Isemer** to find out about FP7 funding possibilities for Data Management System development, before 3 June 2007 (BSSG meeting in Kuressaare, Estonia).

**Annex 1** to Minutes of the BWGD-Meeting in Hamburg, 24 April 2007

**Draft meeting Agenda**

Proposed agenda for the BDMG 07-04-24, Hamburg

1. Preparation for the BSSG meeting in Estonia in June
  - a. Examine ToR to see what can be expected from us.
  - b. UNIDART-proposal
  - c. DKRZ-proposal
  - d. Other
  
2. Planning for the open seminar in Estonia.
  - a. Title “How to find data” (?)
  - b. Baltex data available today (MHO + RS)
  - c. Data from other sources (WIS, SIMDAT, IODE...)
  - d. Other
  
3. Planning for activities in BDMG
  - a. New datasets (COSMOS millennium run)
  - b. Downscaling the global set for BALTEX area (300 years)
  - c. Higher resolution for 1980-
  - d. Showcase EUROGrid.
  - e. Other
  
4. Planning for activities in BONUS and Fp7
  - a. Baltex meeting in Copenhagen May 15
  - b. Discussion with HELCOM
  - c. Discussion with BONUS
  - d. Other

**Annex 2** to Minutes of the BWGD-Meeting in Hamburg, 24 April 2007

**Participant List**

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**Annex 3** to Minutes of the BWGD-Meeting in Hamburg, 24 April 2007

**Revised Terms of Reference for the BWGD**

Revised Terms of Reference of the BALTEX Working Group on Data Management (BWGD), as of 24 April 2007, approved by the present BWGD members

The BALTEX Working Group on Data Management (BWGD) was established by the BALTEX Science Steering Group (BSSG)

- to serve as the principal advisory group in all matters pertaining to BALTEX data management activities and issues and the coordination and exchange of BALTEX data among data providers, data centres and data users;
- to establish and periodically review both the terms of reference and the membership of the BWGD, to be finally approved by the BSSG;
- to revise and propose updates of the BALTEX data policy including data exchange restrictions and access procedures, to be finally approved by the BSSG. Such propositions should be in compliance with regulations of major international relevant organisations such as WMO<sup>3</sup>, ECOMET<sup>4</sup>, and the EU directives;
- to undertake appropriate action for the implementation and continuous monitoring of the BALTEX data policy;
- to establish and maintain BALTEX data requirements for BALTEX research;
- to facilitate the access to data for BALTEX researchers by
  - getting the BALTEX data policy known and accepted by data owners,
  - and establishing and maintaining an inventory of available and new data archives and data sources.
- to develop and draft a BALTEX Data Management Plan to be finally approved by the BSSG;
- to initiate the establishment of and continuously review a BALTEX data management WWW website, preferably linked to the BALTEX “homepage” on WWW. This website is expected to inform on relevant data management issues for BALTEX data providers, BALTEX Data Centres and archives, as well as BALTEX data users.

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<sup>3</sup> WMO = World Meteorological Organization

<sup>4</sup> ECOMET = The Economic Interest Grouping of the National Meteorological Services of the European Economic Area

**Annex 4** to Minutes of the BWGD-Meeting in Hamburg, 24 April 2007

**Requirements for Data Providers – Web-Werdis/UNIDART at DWD and Integration of external Data into the WDC Climate**

## **Requirements for Data Providers**

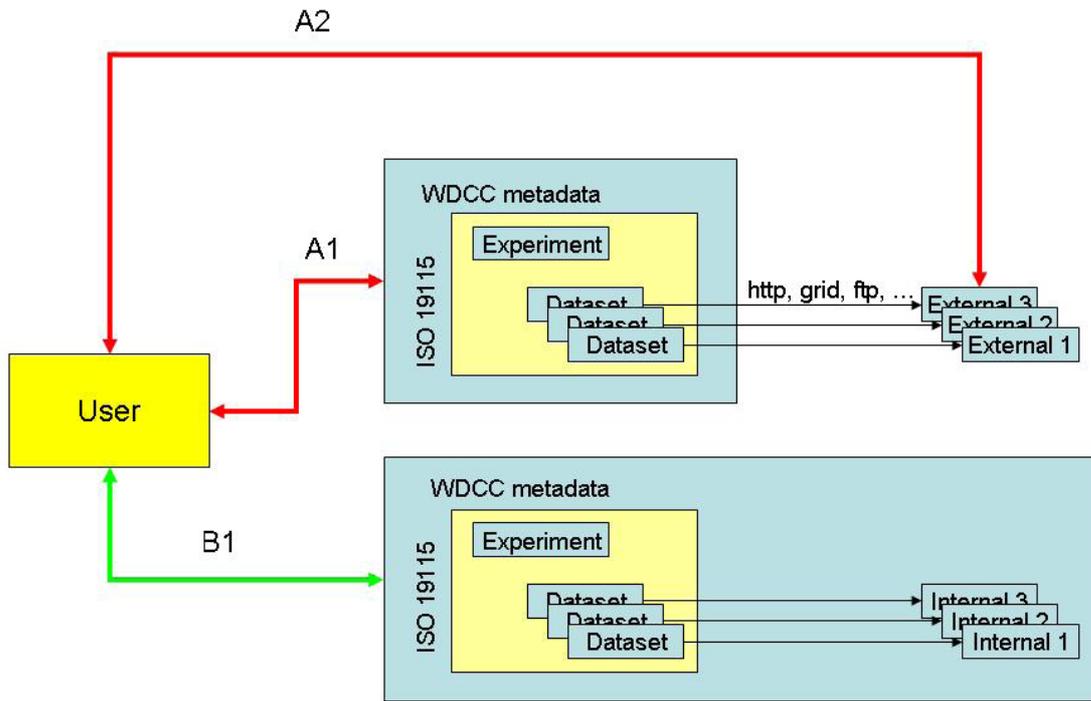
(Notes from UNIDART WS, Langen Februar 2007 / Michael Lautenschlager (WDCC + M&D/MPI-M))

### ***To participate in Web-Werdis / UNIDART at DWD***

1. System is operational for climatic station data
2. Data provided for download are expected in a relational database management system like MySQL or ORACLE
3. JDBC is used for database interfacing
4. Communication through a firewall is performed via a standard HTTP port, e.g. 80 or 8080
5. A standard web container like Tomcat or ORACLE Application Server is expected for the deployment of the UNIDART software
6. Two configuration files are needed in order to adapt UNIDART-SW to the local data provider environment (configuration is described in the installation instructions)
7. A data product in the sense of UNIDART is a finite but not fixed data set, e.g. the daily mean air temperature time series of German stations
8. Metadata which describes the data products is defined according to the ISO 19115 standard. The descriptions are implemented as XML files using the ISO 19139 schemas (JOAI harvesting of metadata XML files is planned for the near future)
9. The domain of a data product is a set of value tuples. This domain must be defined as a SQL select statement. The SQL statement is stored the data product definition table.
10. The data provider is still responsible for data quality

### ***To integrate the external data in the WDC Climate***

1. A data storage structure which reflects the data access constraints of the envisaged applications has to be implemented. These data entities correspond with UNIDART data products.
  2. The defined data storage structure has to be described in the catalogue of the CERA data model. CERA support a hierarchy up to three levels.
  3. Metadata are expected in ISO 19115 XML files according to corresponding CERA templates.
  4. Data access at the lowest hierarchy level is organised by specifying the data access method if possible otherwise a high level link (URL) is provided together with a description how to access the data entities.
  5. Data are searchable and accessible in the web-based graphical user interface. Project data like BALTEX data can be separated in the WDCC GUI by pre-selection. An API based on JDBC is provided alternatively.
  6. Data access constraints can be implemented according the WDCC user management.
  7. The data provider is still responsible for data quality
- Basic WDCC architecture for internal data access (B1) and external data access (A1 + A2):



**Appendix 8: Draft Terms of Reference for the proposed new BALTEX Working Group on Utility of Regional Climate Models (BWG-RCM)**

BALTEX Working Group on the Utility of Regional Climate Models

DRAFT Terms of Reference

**1. Background and Objective**

During the BALTEX workshop on “added values of regional climate models and detection and attribution studies in the Baltic Basin” held 24/25 May 2007 at Göteborg University (organized by Anders Omstedt and Hans von Storch) the utility of Regional Climate Models (RCMs) was discussed. It was concluded that RCMs could be used for

- dynamical downscaling of Global Climate Models (GCMs)
- regional reanalyses utilizing data assimilation schemes
- sampling network design
- supply hypotheses, among others guiding detection and attribution studies
- test dynamical hypotheses

The main question was how to infer the added value by studying these topics with RCMs instead of using a global model framework or statistical analysis of observational evidence derived from a network. The suggested working group will continue the discussions started during the workshop to foster international collaboration among the Baltic Sea countries on these topics and to generate new, common projects related to BALTEX.

**2. Description of tasks**

The proposed working group will be active during a three-year period (2007-2010) conducting working group meetings, organizing workshops open for all interested scientist on the topic, and setting up international collaborations and projects financed by the EU, BONUS or national funding agencies. An example of such a project proposed earlier within BALTEX is DETECTIVE (Detection of climate change and climate variability in the Baltic Sea Region) addressing the question how to discriminate between natural variations and anthropogenically induced climate change. Various scientific questions related to the tasks of the proposed working group may be addressed using results of a RCM forced with lateral boundary either from the ERA40 reanalysis or from transient global simulations. The working group will prepare a brief report summarizing the results of the discussions and of hopefully performed, common projects until the next BALTEX conference in 2010.

**3. Time Schedule**

- Start 1 September 2007
- 1<sup>st</sup> working group meeting in autumn 2007
- Workshop on the utility of RCMs during the BALTEX SSG meeting in Norrköping, spring 2008
- ...
- Final working group meeting at the next BALTEX conference in 2010

**4. Membership (preliminary list of suggested members)**

Lars Barring (SMHI and Lund University, Sweden)

Ole Bøssing-Christensen (DMI, Denmark)

Philip Lorenz (MPI, Germany)

Markus Meier (SMHI and Stockholm University, Sweden, Chair)

Jouni Räisänen (Helsinki University, Finland)

Eduardo Zorita (GKSS, Germany)

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- No. 1:** Minutes of First Meeting of the BALTEX Science Steering Group held at GKSS Research Centre in Geesthacht, Germany, 16-17 May, 1994. August 1994.
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- No. 3:** First Study Conference on BALTEX, Visby, Sweden, August 28 – September 1, 1995. Conference Proceedings. Editor: A. Omstedt, SMHI Norrköping, Sweden, 190 pages. August 1995.
- No. 4:** Minutes of Second Meeting of the BALTEX Science Steering Group held at Finnish Institute of Marine Research in Helsinki, Finland, 25-27 January, 1995. October 1995.
- No. 5:** Minutes of Third Meeting of the BALTEX Science Steering Group held at Strand Hotel in Visby, Sweden, September 2, 1995. March 1996.
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- No. 7:** Minutes of Fourth Meeting of the BALTEX Science Steering Group held at Institute of Oceanology PAS in Sopot, Poland, 3-5 June, 1996. February 1997.
- No. 8:** *Hydrological, Oceanic and Atmospheric Experience from BALTEX*. Extended Abstracts of the XXII EGS Assembly, Vienna, Austria, 21-25 April, 1997. Editors: M. Alestalo and H.-J. Isemer, 172 pages. August 1997.
- No. 9:** The Main BALTEX Experiment 1999-2001 – *BRIDGE*. Strategic Plan, 78 pages. October 1997.
- No. 10:** Minutes of Fifth Meeting of the BALTEX Science Steering Group held at Latvian Hydro-meteorological Agency in Riga, Latvia, 14-16 April, 1997. January 1998.
- No. 11:** Second Study Conference on BALTEX, Juliusruh, Island of Rügen, Germany, 25-29 May 1998. Conference Proceedings. Editors: E. Raschke and H.-J. Isemer, 251 pages. May 1998.
- No. 12:** Minutes of 7<sup>th</sup> Meeting of the BALTEX Science Steering Group held at Hotel Aquamaris in Juliusruh, Island of Rügen, Germany, 26 May 1998. November 1998.
- No. 13:** Minutes of 6<sup>th</sup> Meeting of the BALTEX Science Steering Group held at Danish Meteorological Institute in Copenhagen, Denmark, 2-4 March 1998. January 1999.

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- No. 14:** BALTEX – BASIS Data Report 1998. Editor: Jouko Launiainen, 96 pages. March 1999.
- No. 15:** Minutes of 8<sup>th</sup> Meeting of the Science Steering Group held at Stockholm University in Stockholm, Sweden, 8-10 December 1998. May 1999
- No. 16:** Minutes of 9<sup>th</sup> Meeting of the BALTEX Science Steering Group held at Finnish Meteorological Institute in Helsinki, Finland, 19-20 May 1999. July 1999.
- No. 17:** Parameterization of surface fluxes, atmospheric planetary boundary layer and ocean mixed layer turbulence for BRIDGE – What can we learn from field experiments? Editor: Nils Gustafsson. April 2000.
- No. 18:** Minutes of 10<sup>th</sup> Meeting of the BALTEX Science Steering Group held in Warsaw, Poland, 7-9 February 2000. April 2000.
- No. 19:** BALTEX-BASIS: Final Report, Editors: Jouko Launiainen and Timo Vihma. May 2001.
- No. 20:** Third Study Conference on BALTEX, Mariehamn, Island of Åland, Finland, 2-6 July 2001, Conference Proceedings. Editor: Jens Meywerk, 264 pages. July 2001.
- No. 21:** Minutes of 11<sup>th</sup> Meeting of the BALTEX Science Steering Group held at Max-Planck-Institute for Meteorology in Hamburg, Germany, 13-14 November 2000. July 2001.
- No. 22:** Minutes of 12<sup>th</sup> Meeting of the BALTEX Science Steering Group held at Royal Netherlands Meteorological Institute (KNMI), De Bilt, The Netherlands, 12-14 November 2001. April 2002.
- No. 23:** Minutes of 13<sup>th</sup> Meeting of the BALTEX Science Steering Group held at Estonian Business School (EBS), Centre for Baltic Studies, Tallinn, Estonia, 17-19 June 2002. September 2002.
- No. 24:** The eight BALTIMOS Field Experiments 1998-2001. Field Reports and Examples of Measurements. Editors: Burghard Brümmer, Gerd Müller, David Schröder, Amélie Kirchgäßner, Jouko Launiainen, Timo Vihma. 138 pages. April 2003,.
- No. 25:** Minutes of 14<sup>th</sup> Meeting of the BALTEX Science Steering Group held at Lund University, Department of Physical Geography and Ecosystems Analysis, Lund, Sweden, 18 - 20 November 2002. May 2003.
- No. 26:** CLIWA-NET: BALTEX BRIDGE Cloud Liquid Water Network. Final Report. Editors: Susanne Crewell, Clemens Simmer, Arnout Feijt, Erik van Meijgaard, 53 pages. July 2003.

- No. 27:** Minutes of 15<sup>th</sup> Meeting of the BALTEX Science Steering Group held at Risø National Laboratory, Wind Energy Department, Roskilde, Denmark, 8 - 10 September 2003. January 2004.
- No. 28:** Science Plan for BALTEX Phase II 2003 – 2012. February 2004, 43 pages.
- No. 29:** Fourth Study Conference on BALTEX, Gudhjem, Bornholm, Denmark, 24 - 28 May 2004, Conference Proceedings. Editor: Hans-Jörg Isemer, 189 pages. May 2004.
- No. 30:** Minutes of 16<sup>th</sup> Meeting of the BALTEX Science Steering Group held at Gudhjem Bibliotek, Gudhjem, Bornholm, Denmark, 23 May 2004. October 2004.
- No. 31:** BALTEX Phase I 1993-2002 – State of the Art Report. Editors: Daniela Jacob and Anders Omstedt, 181 pages, October 2005.
- No. 32:** Minutes of 17<sup>th</sup> Meeting of the BALTEX Science Steering Group held at Poznan, Poland, 24 – 26 November 2004. November 2005.
- No. 33:** Minutes of 18<sup>th</sup> Meeting of the BALTEX Science Steering Group held at Meteorological Observatory Lindenberg – Richard Aßmann Observatory, Germany, 18 – 20 October 2005. February 2006.
- No. 34:** BALTEX Phase II 2003 – 2012 Science Framework and Implementation Strategy, 95 pages. April 2006.
- No. 35:** BALTEX Assessment of Climate Change for the Baltic Sea Basin. Summary. Editors: The BACC lead author group, 26 pages. June 2006.
- No. 36:** Minutes of 19<sup>th</sup> Meeting of the BALTEX Science Steering Group held at Ågrenska Villan of Göteborg University Sweden, 23 – 24 May 2006. October 2006.
- No. 37:** Minutes of 20<sup>th</sup> Meeting of the BALTEX Science Steering Group held at St. Petersburg, Russia, 6 – 7 December 2006. March 2007.
- No. 38:** Fifth Study Conference on BALTEX, Kuressaare, Saaremaa, Estonia, 4 - 8 June 2007. Conference Proceedings. Editor: Hans-Jörg Isemer, 209 pages. May 2007.
- No. 39:** Minutes of 21<sup>th</sup> Meeting of the BALTEX Science Steering Group held at Kuressaare, Saaremaa, Estonia, 3 June 2007. September 2007.

Copies are available upon request from the International BALTEX Secretariat.