Minutes of

20th Meeting of the BALTEX Science Steering Group

hosted by

State Hydrological Institute
St. Petersburg, Russia

6 – 8 December 2006

held at Hotel Morskaya, St. Petersburg, Russia

Edited by
Marcus Reckermann
and Hans-Jörg Isemer

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Participants at the 20th BALTEX Science Steering Group Meeting, from left to right:
Ryhor Chekan, Valery Vuglinsky, Hans von Storch, Joakim Langner, Anatoly Palishchuk, Anders Omstedt, Marcus Reckermann, Sirje Keevalik, Miina Krabbi, Franz Berger, Ole Bøssing Christensen, Dan Rosbjerg, Michael Lautenschlager, Ivo Saaremae, Andreas Lehmann, Hans-Jörg Isemer. Not on the photo: Marina Chestnova and Hans Dahlin.

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Summary of Decisions

DECISION 1: A workshop on Data Management will be conducted in conjunction with the 5th BALTEX Study Conference in Estonia, 4-8 June 2007.

DECISION 2: The BALTEX SSG unanimously approved the following new members of the BALTEX SSG, as of 7 December 2006:
- Bernd Schneider, Baltic Sea Research Institute Warnemünde, Germany
- Benjamin Smith, Lund University, Sweden
- Phil Graham, Swedish Meteorological and Hydrological Institute, Norköpping, Sweden
- Jüri Elken, Estonian Marine Institute, Tallinn, Estonia

DECISION 3: A report of national BALTEX activities should be presented annually at regular BSSG meetings by a national representative. This up to 4 page report should include activities as well as outcomes and results, divided into the BALTEX Phase II objectives, including a list of BALTEX publications.

DECISION 4: The BALTEX SSG approved Terms of Reference for BSSG chairs, vice-chairs and members with minor changes. They are available in Appendix 9.

DECISION 5: The BALTEX SSG approved general Terms of Reference for BALTEX working groups. They are available in Appendix 4. These general terms apply to all BALTEX Working Groups and must be supplemented with WG specific terms of reference (see Action Item 11).

DECISION 6: The two new BALTEX Working Groups on BALTIC GRID/Budgets and on BACC were approved.

DECISION 7: The next meeting of the BALTEX SSG will be a short interims meeting of half-day duration and is scheduled to take place in connection with the 5th Study Conference on BALTEX in Saaremaa, 4 - 8 June. An exact date and the venue will be communicated after the conference agenda has been finished.

DECISION 8: The next full BALTEX SSG meeting is scheduled to take place in Norköpping (Sweden) at the SMHI on 23 – 25 January 2008.

Summary of Action Items

Action Item 1 to Jörgen Nilsson and the BWGD *to prepare a decision concerning the adoption of the UNIDART system for BALTEX purposes; to be decided at the next BSSG meeting in Estonia, June 2007.*

Action Item 2 to Jörgen Nilsson, the Data Centre heads and the BWGD with the Secretariat *to establish a "web catalogue" with links to available databases which are relevant to BALTEX, to be published on the BALTEX web site; as soon as possible.*

Action Item 3 to All *to send all relevant links and information on available and relevant databases to the Secretariat; as soon as possible.*

Action Item 4 to BALTEX project leaders and All *to look over data needs for BALTEX Phase II projects and research, and to send a list to the Secretariat, as soon as possible.*

Action Item 5 to the Secretariat *to draft a letter to be sent to all BALTEX project responsible persons to let them define specific data needs for their project, as soon as possible.*

Action Item 6 to Chairs and Secretariat *to re-formulate a letter to all BALTEX scientists with a detailed definition of a "BALTEX Project", with the invitation to submit proposals for such projects. The list of benefits formulated at the BALTEX Chaimen Meeting in Geesthacht, 19 September 2006, should be part of this letter; as soon as possible.*

Action Item 7 to All *to identify and communicate BALTEX relevant Summer Schools, as soon as possible.*

Action Item 8 to Data Centre Managers *to produce BALTEX data set CDs/DVDs, as feasible; upon consultation with BWGD.*

Action Item 9 to Sirje Keevallik *to contact the editors of the Journal "Earth Sciences" of the Estonian Academy of Sciences for a cost estimate for the publication of proceedings of the 5th Study Conference on BALTEX containing 20-30 papers; based on this information, a decision will be taken by the Conference Steering Committee; as soon as possible.*

Action Item 10 to Secretariat *to activate the Conference Steering Committee of the 5th Study Conference on BALTEX; specific issues to be raised are the nomination of invited speakers, and the choice of the conference journal (see action Item 10).*

Action Item 11 to national representatives *to prepare a short overview over BALTEX or BALTEX related activities in the respective countries, to be presented annually at regular BALTEX SSG meetings (see Decision 3).*

Action Item 12 to Andreas Lehmann and Daniela Jacob *to prepare and send to BSSG members for discussion revised Terms of Reference for the merged Working Group on Budgets/BALTIC GRID; as soon as possible.*

Action Item 13 to Hans von Storch *to prepare and present ideas for the continuation of the WG on BACC/Detection and Attribution, after the delivery of the BACC book, including possible memberships – at next BSSG meeting.*

Action Item 14 to Marcus Reckermann *to continue to set up a draft web site for the public, and to make this available to BSSG members via a hidden link on the existing BALTEX web site for comments and suggestions; by end of February.*

Action Item 15 to All *to send to the Secretariat material, i.e. text, photos, graphics and animations which could be relevant for the public web site, as soon as possible, and to comment on the first full draft version of the web site as soon as it is available.*

Action Item 16 to Chairs *to prepare some thoughts on the future of BALTEX after 2012; by next BSSG meeting.*

Action Item 17 to Hans-Jörg Isemer *to present BALTEX at the 1st Mediterranean-HyMeX workshop 9-11 January 2007, and to discuss collaboration possibilities, also in the light of FP7.*

Action Item 18 to Chairs and the Secretariat *to distribute BALTEX relevant information on FP7 funding possibilities, as soon as possible*

Action Item 19 to All *to ponder and discuss at their home institutes possibilities for FP7 proposals based on the 1st FP7 call; as soon as possible*

Open or partially concluded action items from BALTEX SSG meeting #19

Action #10: Hans-Jörg Isemer to establish a draft list of BALTEX data sets and products to be offered as BALTEX data contributions to meet GEWEX Phase I objectives, secondly to receive approval of these data sets' authors and other relevant persons having relevant intellectual property rights, thirdly organise the proper inclusion of these BALTEX data sets and products at the GEWEX data management website, **preferably in 2005**.

Action #19: Daniela Jacob to review existing PhD schools and programmes (such as the International Max Planck Research School on Earth System Modelling) and possibilities to submit BALTEX-related PhD proposals to these programmes, and report accordingly to BSSG at its forthcoming meeting.

Action #20: Daniela Jacob to establish closer relations between BALTEX and the COSMOS (Community Earth System Models[1]) project and integrate BALTEX initiatives and projects into COSMOS, and/or vice versa, to the extent beneficial for both programmes, and report to BSSG at its forthcoming meeting for final approval.

[1] See http://cosmos.enes.org

Introduction

The 20th meeting of the BALTEX Science Steering Group (BSSG) was held together with the 2nd Meeting of the BALTEX Working Group on Data Management (BWGD). Both meetings were held at Hotel Morskaya in St. Petersburg, Russia, and were hosted by the Russian State Hydrological Institute .The BWGD meeting took place on Wednesday afternoon 6 December, while the BSSG meeting took place on Thursday 7 and Friday 8 December 2006. The BWGD meeting minutes are given in Appendix 3.

The first part of the BSSG meeting in the morning of 7 December was dedicated to three presentations illustrating some current aspects of Russian BALTEX related research. The presentations are available on the BALTEX web site (www.baltex-research.eu). The business part of the meeting took place in the afternoon of 7 and morning of 8 December. Various important topics were discussed, such as a potential re-structuring of the BALTEX steering bodies and the status of the BALTEX Phase II implementation. General terms of reference for chairman- and memberships of the BSSG as well as for Working Groups (WGs) were approved.

Items were treated in a different sequence than given in the agenda. Items are documented here in their chronological order, but item numbers as they appeared in the agenda are also indicated.

Item 1: Welcome by the host and the chairman

Valery Vuglinsky and Joakim Langner

Valery Vuglinsky, the host of the meeting, welcomed the participants in St. Petersburg.Valery invited all participants for a joint dinner at the Hotel restaurant on the evening of 7 December and wished the participants a pleasant stay in St. Petersburg.

Joakim Langner, the chairman of the BALTEX Science Steering Group, thanked Valery for the invitation to the beautiful and historic city of St. Petersburg.

Russian contributions to BALTEX

Three presentations were given by Russian scientists to demonstrate selected Russian contributions to BALTEX. The presentations are available on the BALTEX web site.

1. *Methodological approaches for assessment of hydroecologic state of urban water bodies (St.Petersburg lakes and rivers as a case study) (Valery Vuglinsky)*

   Valery Vuglinsky gave an overview over the project to inventorize and assess all water bodies in the St. Petersburg area. The main objectives are the inventory of water bodies in the city of St. Petersburg (rivers, canals, lakes, ponds, reservoirs); an assessment of the present ecological state of the water bodies; the development of scientifically validated recommendations on the rational use and improvement of urban water bodies; and the development of hydroecological monitoring systems in an urban environment. Subsequent outcomes of the project should be the development of rehabilitation measures for “hot spot” lakes, ponds and reservoirs, subsequent complex monitoring of the selected water bodies, and the preparation of the reference book “ Inland water bodies of St.Petersburg”.

2. *Some features of the bottom water spreading into the Baltic (V. Tsarev)*

   V. Tsarev presented a numerical model describing bottom water spreading into the Baltic Sea.

3. *Automated flood forecasting system for St.Petersburg (Konstantin A. Klevannyy)*

   Konstantin Klevannyy presented a system to forecast flooding events which could be dangerous to the St. Petersburg area. There had been catastropic floodings events of the city in the past, which called for a reliable forcasting system. The system relies on the HIRLAM model of the SMHI in Sweden for wind and pressure data, and on the BSHcmod sytem for flow data through the Danish straits to calculate water levels at St. Petersburg (BSM5, NWHMS). Forcasted and observed water leves have been in good agreement since the beginning of operation of the system (December 1999); 10 flooding events have occured since then. A challenge is the optimal forcast time period for the operation of the St. Petersburg flood barrier. A problem is the water level difference outside and within the barrier, due to Neva discharge and wind pressure at strong westerly winds. The improvement of the forecast accuracy is necessary.

Item 2: On the occasion of the 20th BSSG meeting: A short retrospect on the history of BSSG

Hans-Jörg Isemer took the participants on a short journey through 14 years of BALTEX history (see Appendix 4). He emphasized that while the 1st official BALTEX Steering Group meeting took place in May 1994 in Geesthacht, Germany, the preparatory phase of BALTEX dates back until at least 1992, when the establishment of BALTEX as a multi-national regional project within GEWEX was endorsed by P. Morel, director of the World Climate Research Programme at that time. First initiatives towards establishing a GEWEX project in Europe were forcefully promoted by E. Raschke already since 1990, at that time member of the GEWEX SSG, who later became vice-chair of the BALTEX SSG, together with L. Bengtsson as chair and Z. Kaczmarek as the 2nd vice-chair. The new SSG chair as of 2006, Joakim Langner, followed Hartmut Graßl (chair during 1999 to 2006) and Lennart Bengtsson (1994 to 1999). Ever since, the BALTEX SSG was an international body with representatives of all countries surrounding the Baltic Sea, thereby reflecting the successful international cooperation within BALTEX. All in all, 48 distinguished scientists and representatives of national services served as members of the SSG during its 12 years lifetime so far, and with the new objectives of BALTEX Phase II in mind, additional new members are expected to join in due time.

Item 3: Approval of the agenda

The agenda was unanimously approved, with one amendment: Hans-Jörg Isemer to present the recent HYMEX activity (under Item 13).

Item 4: Approval of the previous BALTEX SSG meeting minutes

The minutes of the 19th BSSG meeting were unanimously approved.

Item 5 (Agenda Item 9): BALTEX Data Mangement and the meeting of the BALTEX Working Group on Data Management (BWGD)

BSSG received a Memorandum of Undestanding (MoU) from the Workshop held the day before in St. Petersburg organized by the BALTEX Working Group on Data Management (BWGD). The meeting minutes including agenda, list of participants and the MoU are to be found in Appendix 3.

It is with satisfaction that BSSG noted the efforts made by BWGD and encouraged the group to continue to work in line with the approved MoU. Further, the BSSG tasked the BWGD to report back on their future work at the BSSG meeting in June in Estonia.

BSSG noted that all countries involved were not able to participate in the workshop. BSSG therefore tasked BWGD to communicate the result of the workshop with countries not present, to seek their approval to the MoU and to invite them to participate in the future work.

BSSG also noted with appreciation that the Workshop was sponsored by SIDA, the Swedish International Development Cooperation Agency, and asks BWGD to continue the cooperation with SIDA to find economic support to the arrangements in connection with the forthcoming BALTEX Study Conference in Estonia next summer.

The meeting of the BWGD was considered productive, both in terms of content and architecture. A main subject was the possible use of the UNIDART database system for BALTEX data. A system such as UNIDART would avoid establishing individual specific data bases, where data need to be physically collected, and is expected to either partially, or even fully, replace the existing BALTEX data centres. The new system shall link individual data providers, in particular in areas such as meteorology and hydrology. A further option would be links to existing specific BALTEX data centres, the present BALTEX Data Centre for Oceanography was mentioned as a potential candidate in this context. Although there was generally a positive attitude towards UNIDART, participants also noted that UNIDART may not be mature enough, also in the light that funding for the UNIDART project will end soon. Setting up a system such as UNIDART for BALTEX, including the subsequent permanent managing and updating, would require substantial financial resources, the potential sources of which need to be explored. Decisions are postponed until the next BSSG meeting to be held in Estonia in conjunction with the 5th Study Conference on BALTEX.

The past role of the present data centres was acknowledged. It was also noted that the number of data requests in recent times have gone down significantly; indicating that their present contents as well as their distribution practices may need revision. It was concluded that national Services such as SMHI shall be asked to discontinue the delivery of data to the BALTEX meteorological data centre in its present form until the revised data management system for BALTEX has been decided upon and implemented.

As BALTEX Phase I has now come to an end, it was suggested to produce CDs/DVDs with a comprehensive database of BALTEX I observational data and products, to be presented as one deliverable of BALTEX Phase I, in particular having in mind the role of BALTEX as a Continental-scale Experiment within GEWEX.

It was further proposed to collect meta data information on available data bases relevant to BALTEX – specifically on their availability and content. This information together with the links should be published on the BALTEX web site. Examples mentioned are the AMSR-E

ice cover database at the University of Bremen, MODIS and other available satellite data bases.

Action Item 1 to Jörgen Nilsson and the BWGD *to prepare a decision concerning the adoption of the UNIDART system for BALTEX purposes; to be approved at the next BSSG meeting in Estonia, June 2007.*

Action Item 2 to Jörgen Nilsson, the Data Centre heads and the BWGD with the Secretariat *to establish a "web catalogue" with links to available databases which are relevant to BALTEX, to be published on the BALTEX web site; as soon as possible.*

Action Item 3 to All *to send all relevant links and information on available and relevant databases to the Secretariat; as soon as possible.*

Action Item 4 to BALTEX project leaders and All *to look over data needs for BALTEX Phase II projects and research, and to send a list to the Secretariat, as soon as possible.*

Concerning Action Item 4 it was noted that in order to help define data needs and gaps, a close look at the proposed "BALTEX projects" will be needed.

Action Item 5 to the Secretariat *to draft a letter to be sent to all BALTEX project responsible persons to let them define specific data needs for their project, as soon as possible.*

DECISION 1: A workshop on Data Management will be conducted in conjunction with the 5th BALTEX Study Conference in Estonia, 4-8 June 2007.

Item 6 (Agenda Item 5): Review of previous BSSG meeting action items

Still open action items formulated at the BSSG #19 Meeting were discussed as follows:

BSSG #19 Action Item 10 (Stronger involvement of Baltic States in BALTEX)
Sirje Keevalik proposed Jüri Elken as new BSSG member. This was unanimously approved by the BSSG, see also Item 8 (Agenda Item 6). In the following, a discussion evolved on whether "BALTEX projects" could be a good vehicle to incorporate the scientific communities in the Baltic States, and, more generally, how a "BALTEX project" is defined, e.g. in terms of minimum number of participants or available budget. It was suggested to establish and publish a more precise definition. It was discussed whether PhD (and possibly also MSc) projects could qualify as BALTEX projects, and whether a "BALTEX project" necessarily needs to be international. It was generally agreed that a PhD thesis would principally qualify as a "BALTEX project" and that a purely national project, also and particularly a PhD thesis, are welcome as "BALTEX projects". Even more so, it was stated that PhD students as the future generation of researchers in the BALTEX area should be actively associated with BALTEX research topics and, whenever possible, be incorporated in the BALTEX network. The approval as "BALTEX projects" would be an excellent opportunity for selected PhD projects to be included in this network. BALTEX-related PhD projects could also act as spark for a self-organized network of PhD students in the BALTEX area, working on BALTEX subjects. This would also have direct relevance to the overarching Objective 5 of BALTEX Phase II (Education and Outreach).

It was thus concluded that the definition of a BALTEX project should not be too restrictive; scientific quality should be the primary criterion. In this respect, a clear formulation of incentives and benefits for projects to attain the BALTEX label will be very helpful in attracting interesting projects all around the BALTEX area. This formulation will be included in a revised communication to be sent to the BALTEX community and the relevant science community at large asking for project proposals.

Action Item 6 to Chairs and Secretariat *to re-formulate a letter to all BALTEX scientists with a more detailed definition of a "BALTEX Project", with the invitation to submit proposals for such projects. The list of benefits formulated at the BALTEX Chaimen Meeting in Geesthacht, 19 September 2006, should be part of this letter; as soon as possible.*

BSSG #19 Action Item 11 (Identification of BALTEX relevant summer schools)

Action Item 7 to All *to identify and communicate BALTEX relevant Summer Schools, as soon as possible.*

BSSG #19 Action Item 16 (List of data links on BALTEX web site)
Ongoing, this subject was addressed under Item 5 and Action Item 2 of these minutes.

BSSG #19 Action Item 18 (Identification of BALTEX relevant climate data sets)
Ongoing, this subject was addressed under Item 5 and Action Item 2 of these minutes.

BSSG #18 Action Item 10 (Identification of BALTEX data sets to meet GEWEX objectives)
The establishment of a BALTEX Phase I Data CD containing key observational data and products was suggested to be established, see also Item 5 of these minutes.

Action Item 8 to Data Centre Managers *to produce BALTEX data set CDs/DVDs, as feasible; upon consultation with BWGD.*

BSSG #18 Action Items 19, 20 (Collaboration with COSMOS and with PhD programmes of the International Max-Planck Research School for Earth System Modelling)
The possibility to emphasize the BALTEX region as regional target area within COSMOS, the Community Earth System Models Project, should be stressed. The mobility of PhD students working on Earth System Modelling subjects with a regional focus on the BALTEX area should be encouraged. They should have the opportunity to use the BALTEX coupled models and do their research on location with support from the model developers (i.e. at the Max-Planck Institute for Meteorology in Hamburg, Germany and at the Rossby Centre/SMHI in Norrköping, Sweden).

Item 7 (Agenda Item 10): Status of preparations of the 5th Study Conference on BALTEX

The preparation of the Conference is on schedule. The 2nd Announcement has been published on the BALTEX website and is widely being distributed, giving all details on registration and abstract submission procedures as well as the scientific focus.

Open issues are the selection of invited speakers and the choice of a journal for the Conference proceedings. A range of journals were mentioned such as "Tellus", "Boreal Environmental Research" and "Oceanologia". Following the tradition with earlier BALTEX

conferences, an Estonian journal may be preferably selected, because the host country of the conference had a major impact on the choice of journal. Sirje Keevallik was asked to approach the "Proceedings of Estonian Academy of Science", which, beginning in 2007, will include a section dedicated to and called "Earth Sciences".

Action Item 9 to Sirje Keevallik *to contact the editors of the Journal "Earth Sciences" of the Estonian Academy of Sciences for a cost estimate for the publication of proceedings of the 5th Study Conference on BALTEX containing 20-30 papers; based on this information, a decision will be taken by the Conference Steering Committee; as soon as possible.*

The Conference Committee will be asked to suggest scientists who can be invited as speakers. Names suggested by the BSSG are Jüri Elken of the Tallinn University of Technology, Estonia, Bernd Schneider of the Baltic Sea Research Institute in Warnemünde, Germany and Benjamin Smith of Lund University, Sweden. The latter two could represent Objective 4 (Air and Water Quality). Invited speakers should also be representatives of the 5 co-organizers HELCOM, LOICZ, ASTRA, ENSEMBLES and EUROCEANS. Other candidates could also be representatives of GEWEX/GHP or WCRP. It was also suggested to involve iLEAPS (the Integrated Land Ecosystem – Atmosphere Processes Study) of IGBP in the conference.

Action Item 10 to Secretariat *to activate the Conference Steering Committee of the 5th Study Conference on BALTEX; specific issues to be raised are the nomination of invited speakers, and the choice of the conference journal (see action Item 10).*

Other conferences:
BALTEX should be represented at the upcoming "Baltic Sea Science Congress" at Warnemünde, 19-23 March 2007. This could be done by one or more posters or by a presentation. The conference organizers should be contacted to check possibilities.

The establishment of a dedicated BALTEX session at the EGU General Assembly 2007 in Vienna, Austria, 15 – 20 April was considered as too tight. This is to be considered for the EGU General Assembly in 2008.

Item 8 (Agenda Item 6): BSSG members and terms

Joakim Langner informed the group that **Markku Rummukainen**, head of the Rossby Centre at SMHI resigned from his membership. The BSSG expressed its appreciation to Markku's year-long valuable contribution to the BALTEX steering process.

The contributions by the Rossby Centre were considered crucial for BALTEX, both in the past and in the future. Therefore, it was concluded that a new representative of the Rossby Centre should be invited to become a BSSG member as direct successor to Markku Rumukainen. **Phil Graham** was suggested by Joakim Langner because he had already been highly active in BALTEX for years, particularly in fields of hydrological and climate modelling including his recent contribution as lead chapter author within BACC (BALTEX Assessment of Climate Change for the Baltic Sea basin). This suggestion was welcomed by the BSSG, and Phil Graham was approved as new BSSG member.

The year-long SSG member **Ivan Skouratovich**, actually a founding member of the BSSG, resigned from his membership, as communicated by a representative of the national

Hydromet Service of Belarus, who was present at BSSG #20. Ivan's year-long membership and contribution to the SSG was appreciated.

Bernd Schneider and **Benjamin Smith** had been proposed new members prior to this meeting and both were unanimously approved new BSSG members and wholeheartedly welcomed although they were not able to attend this meeting.

Given his outstanding year-long contributions to marine research focused on the Baltic Sea, **Jüri Elken** of the Estonian Marine Institute, Tallinn, Estonia was suggested by Sirje Keevallik as an additional new member. His nomination and approval was also seen as a welcome involvement of and contribution to the science leadership by key scientists from the Baltic States to the BALTEX programme. Also this suggestion was welcomed, and Jüri Elken was approved as new member. Both Phil Graham and Jüri Elken had indicated their consent for their BSSG membership beforehand.

DECISION 2: The BALTEX SSG unanimously approved the following new members of the BALTEX SSG, as of 7 December 2006:
- Bernd Schneider, Baltic Sea Research Institute Warnemünde, Germany
- Benjamin Smith, Lund University, Sweden
- Phil Graham, Swedish Meteorological and Hydrological Institute, Norköpping, Sweden
- Jüri Elken, Estonian Marine Institute, Tallinn, Estonia

Item 9 (Agenda Item 7): Status of BALTEX Phase II implementation and national activities

Activities concerning BALTEX Phase II in the contributing BALTEX countries were presented to the BSSG by national representatives. The report delivered by the Finnish representatives was considered as an example for a standard format (see Appendix 5): A short, up to 4 page summary of national activities including results, divided into the BALTEX Phase II objectives. A reference list of BALTEX publications should also be added.

DECISION 3: A report of national BALTEX activities shall be presented at all future BSSG meetings by one national representative each for countries being represented in the BSSG following the format suggested by BSSG.

For **Finland**, the report was presented on behalf of Timo Vihma and Mikko Alestalo who were unable to attend the meeting. The report is available in Appendix 5.

For **Germany**, Andreas Lehmann presented German BALTEX activities in 2006 and planned activities in 2007. His presentation is available in Appendix 5.

For **Denmark**, Dan Rosbjerg and Ole Bøssing Christensen gave a short overview over BALTEX-related activities. This included PhD studies on climate change impacts on groundwater and the urban drainage system, as well as contributions to the PRUDENCE database including a DMI 12 km resolution run (prudence.dmi.dk), and to ENSEMBLES RT3 (ensemblesrt3.dmi.dk). Furthermore, the Danish project CONWOY (Consequences of weather and climate changes for marine and freshwater ecosystems) was finished recently; it included a DHI study on major Baltic inflows and other BALTEX-relevant research themes (conwoy.ku.dk).

For **Sweden**, Anders Omstedt reported on activities of Göteborg and Uppsala Universities in BALTEX Phase II Objective 1 (heat and water balance), objective 2 (BACC, long time modelling, historical documentation), and Objective 4 (Swedish-German collaboration in CO_2 research, collaboration with the EUR-OCEANS community). Joakim Langner referred to contributions of the SMHI and particularly the Rossby Centre to BACC and development and delivery of a range of climate indices to a Swedish government investigation. Also hydrological climate impact studies have been an important input to the investigation. Studies on climate impacts on water quality in streams and lakes have been initiated. A biogeochemical model for the Baltic (SCOBI) has been implemented in the 3D ocean model RCO for long integrations (decades) and changes in air quality and deposition over the BALTEX region due to climate has been performed.

Action Item 11 to national representatives *to prepare a short overview on BALTEX or BALTEX related activities in the respective countries, to be presented annually at regular BALTEX SSG meetings (see Decision 3).*

Item 10 (Agenda Item 6): The BALTEX Steering Structure

The documents prepared by Hans-Jörg Isemer concerning a revised steering structure (Appendix 6) and draft terms of reference for the steering bodies of BALTEX (Appendix 7) were discussed. Primary goal of a revised steering structure should be to activate members and to effectively motivate and facilitate the implementation of BALTEX Phase II objectives. This is difficult in a large group; so the implementation of sub-groups can possibly be a way to improve the situation.

The implementation of an additional committee within the BSSG ("Core Group") was discussed against alternatives like 1. a group of Working Group Chairs, 2. a group of BSSG members responsible for BALTEX Phase II objectives. The main argument against a new "group within the group" was that it would represent an additional administrative body and would thus not increase but decrease efficiency. On the other hand it was argued that decision making bodies must be small in order to work effectively.

No decision was taken at this point, but the idea to assign BSSG members (or other BALTEX scientists) to a specific BALTEX Phase II objective was discussed with sympathy. Due to their expertise, some BSSG members could be natural "mentors" for certain objectives; names mentioned were e.g. Dan Rosbjerg and Phil Graham for Objective 3, and Bernd Schneider, Benjamin Smith, Sven-Erik Gryning for Objective 4. There could be obvious candidates for Objectives 1 and 2 also. Their role would be similar to the PIs within the "Core Group" suggested by Hans-Jörg Isemer.

The suggested Draft Terms of Reference were accepted with minor changes, see Appendix 7.

DECISION 4: The BALTEX SSG approved Terms of Reference for BSSG chairs, vice-chairs and members with minor changes. They are available in Appendix 7.

Item 11 (Agenda Item 8): New BALTEX Working Groups – Definition and terms

New draft general terms of reference for Working Groups were presented. These terms apply to all WGs and need to be supplemented by WG-specific terms as appropriate. See Appendix 7 for the new general WG terms of references.

DECISION 5: The BALTEX SSG approved general Terms of Reference for BALTEX working groups (see Appendix 7). These general terms apply to all BALTEX Working Groups and must be supplemented with WG specific terms of reference (see Action Item 11).

The suggested Working Groups on BALTIC GRID, Water and Energy Budgets, and BACC were discussed:

1. BALTEX Working Group on BALTIC GRID
   Andreas Lehmann presented draft terms of reference for the WG on BALTIC GRID. Referring to an earlier suggestion, the reasoning for merging the WGs on BALTIC GRID and on Water and Energy Budgets was discussed. Arguments in favour of merging were that the scope of the WGs was too similar to justify two separate WGs. The two suggested chairs of the WGs, Andreas Lehmann and Daniela Jacob had no objections against this procedure. Still, it was argued that a more detailed description of the scope and deliverables of the new merged WG is necessary.

   The merging of the two WGs was tentatively approved with the condition that the WG chairs Andreas Lehmann and Daniela Jacob shall precisely define revised terms of reference as well as the purpose of and deliverables for the joint WG, along the lines discussed at this meeting.

Action Item 12 to Andreas Lehmann and Daniela Jacob *to prepare and send to BSSG members for discussion revised Terms of Reference for the merged Working Group on Budgets/BALTIC GRID; as soon as possible.*

2. BALTEX Working Group on BACC
   Hans von Storch presented the status of BACC (BALTEX Assessment of Climate Change for the Baltic Sea basin) and his concept for a related BALTEX WG (see Appendix 8). The BACC project with its planned end product of a book on "Assessment of Climate Change for the Baltic Sea Basin" is well on its way, and the chapters are now either in the process of revision after the reviewers' comments (Chapter 5), or already in the phase of language editing. The publication of the book is still anticipated prior to the 5th Study Conference on BALTEX on Saaremaa, Estonia, 4 – 8 June 2007. As the publication of this book is the sole objective and deliverable of the WG so far, a discussion emerged on the future scope after the publication of the book. On the one hand, a continuing assessment of new developments and findings in climate research in the Baltic Sea basin would be a natural reason for the continuation of the WG, on the other hand, the shift of scope towards research contributing to "detection and attribution" would be strongly desired. This could also help to stimulate research objectives for FP7 proposals concerning detection and attribution studies. Names for a membership in a possible new WG on detection and attribution were mentioned (Markku Rumukainen, Markus Meier). A discussion about the future scope of this WG should be taken up intensively at the next BSSG meeting in Saaremaa.

Action Item 13 to Hans von Storch *to prepare and present ideas for the continuation of the WG on BACC/Detection and Attribution, after the delivery of the BACC book, including possible memberships – at next BSSG meeting.*

DECISION 6: The two new BALTEX Working Groups on BALTIC GRID/Budgets and on BACC were principally approved with specific terms of references and membership to be finally approved by BSSG.

Item 12 (Agenda Item 13): BALTEX Public Web Site - Concept

Marcus Reckermann presented a very early draft version of a BALTEX web site for the general public (name subject to change). The web site would be installed parallel to the existing web site (for scientists); users would have the choice for either web site at an entry page. The public web site would contain basic background information on the geological, meteorological, physical and biogeochemical characteristics of the Baltic Sea basin and its water and energy cycle as well as on climate and biogeochemical models in general, including intelligible figures and animations. The second block would be dedicated to the comprehensive explanation of BALTEX research; descriptions and results of past projects and ongoing research in BALTEX Phase II.

The concept of the web site was generally approved. It was suggested to have external reviewers comment on text and figures; names mentioned were Hartmut Graßl, Joachim Dengg (IfM-GEOMAR) and Torsten Fischer (GKSS Research Centre). As soon as a first draft is available, the web site will be accessible online via a hidden link. A first version to be freely accessible is planned to go online before the 5th Study Conference on BALTEX on Saaremaa, 4 - 8 June 2007.

Action Item 14 to Marcus Reckermann *to continue to set up a draft web site for the public, and to make this available to BSSG members via a hidden link on the existing BALTEX web site for comments and suggestions; as soon as possible.*

Action Item 15 to All *to send to the secretariat material, i.e. text, photos, graphics and animations which could be relevant for the public web site, as soon as possible, and to comment on the first full draft version of the web site as soon as it is available.*

Item 13 (Agenda Item 12): Recent WCRP/GEWEX/GHP/CEOP developments

Both Joakim Langner and Hans-Jörg Isemer had attended the Pan-GEWEX meeting, held October 2006 in Frascati, Italy. Two topics presented and discussed at that meeting were summarised for the BSSG as follows.

World Climate Research Programme (WCRP)
WCRP is currently in a transition phase towards adjusting parts of its objectives and terms, as Dr Ann Henderson-Sellers, current director of WCRP reported at the Frascati meeting. WCRP's claim to be the "premier world-wide organisation established to improve the understanding of climate and its prediction" was highlighted and improvements in the fields of strategic implementation, stronger partnering and networking activities (*e.g.* with ESSP and IPCC) and, most important, a stronger, more visible and accountable connection to potential stakeholders are necessary for WCRP to stick to the above mentioned claim. WCRP's strategic plan for 2005 to 2015 "Coordinated Observation and Prediction of the Earth System (COPES)" will have to be implemented with a particular strong focus on improvements in terms of, generally speaking, resources, know-how and incentives to partners and stakeholders. GEWEX, as one core program of WCRP, needs to follow these general changes in WCRP, and the need to network with stakeholders and decision makers was highlighted. At

its 2006 meeting, the Joint Scientific Committee (JSC) initiated a review of GEWEX in light of the above mentioned changes. It was also noted that in particular the stakeholder issue will have implications and requirements for GEWEX regional projects such as BALTEX. The cooperation with HELCOM, initiated in the frame of the BACC (BALTEX Assessment of Climate Change in the Baltic Sea basin) had been presented at the Frascati meeting by Hans-Jörg Isemer in his overview on BALTEX presentation as an example for the involvement of stakeholders within the BALTEX programme.

CEOP / GHP merger plan
Hans-Jörg Isemer continued to report that a draft paper on a major re-organisation within GEWEX was presented and discussed at the Frascati meeting. It was proposed to dissolve the GEWEX Hydrometeorology Panel (GHP) and re-organise the GEWEX Continental-scale Experiments, such as BALTEX, under the umbrella of CEOP, the Coordinated Enhanced Observation Period. Together with other CSEs, BALTEX (through the BSSG chairs and Hans-Jörg Isemer) had raised concern on aspects of this planned GHP / CEOP merger and the proposed re-organisation of CSEs under the umbrella of CEOP because it seems to bear the danger of imposing drawbacks for CSEs, and also for CEOP. The BALTEX statement suggested keeping the CSEs as GEWEX CSEs directly under the GEWEX / WCRP umbrella and maintaining a panel such as GHP *within* GEWEX where CSEs may have a platform for sharing views, results and ideas. A re-organisation of other global projects and initiatives, presently organised under GHP, to other bodies such as GRP, was seen as an appropriate option (see Appendix 9 for the BALTEX statement).

Comprehensive discussions at the Frascati-meeting led to changes in the merger strategy, which, in short, now (status as of January 2007) foresees to develop CEOP into a *Coordinated Energy and Water Cycle Observation Project* with a dedicated panel for regional projects such as BALTEX. The future CEOP would take over much of the profile of the present GHP, however, avoiding duplication of management and science efforts. It was noted that the GEWEX SSG, at its forthcoming meeting at the end of January 2007 needs to approve the suggested organisational structure of GEWEX, GHP and CEOP.

BSSG appreciated the actions taken by the BALTEX SSG chairs and Hans-Jörg Isemer, and Hans-Jörg Isemer was given the mandate to continue following actions and acting on behalf of BALTEX at the GEWEX level, in close consultation with BSSG chairs.

Further, BSSG was informed by Hans-Jörg Isemer, that a French consortium is currently making plans for a "Hydrological Cycle in Mediterranean Experiment (HyMeX)", (see http://www.cnrm.meteo.fr/hymex/) with a first HyMeX workshop to be conducted 9 to 11 January 2007. The HyMeX organisers had invited Hans-Jörg Isemer to give a presentation on BALTEX experiences. The draft HyMeX objectives seem to largely overlap with those of both phases I and II of BALTEX, and possibilities for cooperation between BALTEX and a future international HyMeX project in view of both the GEWEX context and also funding issues at the European level were discussed. BSSG welcomed the offer of giving a BALTEX presentation at the HyMeX workshop and thanked Hans-Jörg Isemer for representing BALTEX at this occasion.

Action Item 16 to Chairs *to prepare some thoughts on the future of BALTEX after 2012; by next BSSG meeting.*

Action Item 17 to Hans-Jörg Isemer *to present BALTEX at the 1st Mediterranean-HyMeX workshop 9-11 January 2007, and to discuss collaboration possibilities, also in the light of FP7.*

Item 14 (Agenda Item 11): Funding options for BALTEX Phase II research

Hans-Jörg Isemer summarized recent developments related to the BONUS ERANET programme and funding options originating from the upcoming 7th Research Framework Programme of the EU.

Preliminary communications by members of the BONUS consortium seem to indicate that the further development of BONUS into a funding mechanism according to article 169 of the EU Treaty may be considerably delayed. This would imply that BONUS-169 is not in place for some time in FP7 and research proposals for funding related to BALTEX may have to be directed to FP7 instead. It was also noted that a "multi-national call" following the ERANET PLUS mechanism may be launched in 2007 with albeit a strongly reduced work programme compared to the BONUS science plan published in 2006. BSSG members agreed to keep track of the future development of BONUS and close contact with their national representatives in the BONUS consortium.

8 topics with possible relevance for BALTEX Phase II to be found in the present version of the draft work programme of the *Environment including Climate Change* thematic priority within the first Specific Programme *Cooperation* of EU's upcoming 7th Research Framework Programme (FP7) were presented to the BSSG. They were qualified as referring to different objectives of the BALTEX programme with however varying importance or relevance. It was also noted that, based on the experience in FP6, funding propopsals to FP7 will have to cover the whole or a major fraction of Europe (being "Pan-European") rather than being focussed on a region such as the Baltic Sea basin. The latter criterion may however need to be clarified for the different themes directly with the European Commission in case of a concrete proposal idea. The Chairman encouraged BSSG members - either personally or by triggering proposals within their institutions – to promote the submission of BALTEX-related proposals to FP7, or at least undertake actions to include research components meeting BALTEX Phase II objectives in FP7 proposals.

Action Item 18 to Chairs and the Secretariat *to distribute BALTEX relevant information on FP7 funding possibilities, as soon as possible*

Action Item 19 to All *to ponder and discuss at their home institutes possibilities for FP7 proposals based on the 1st FP7 call; as soon as possible*

Date and Place of the next BSSG meeting

DECISION 7: The next meeting of the BALTEX SSG will be a short interims meeting of half-day duration and is scheduled to take place in connection with the 5th Study Conference on BALTEX in Saaremaa, 4 - 8 June. An exact date and the venue will be communicated after the conference agenda has been finished.

DECISION 8: The next full BALTEX SSG meeting is scheduled to take place in Norköpping (Sweden) at the SMHI on 23 – 25 January 2008.

Any other business

None.

Acronyms and Abbreviations

ASTRA	Developing Policies & Adaptation Strategies to Climate Change in the Baltic Sea Region
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
BONUS	BONUS Network for the Baltic Sea Science - Network of Funding Agencies
BSHcmod	A 3D Ocean Model for the North and Baltic Seas
BSSG	BALTEX Science Steering Group
BWGD	BALTEX Working Group on Data Management
CEOP	Coordinated Enhanced Observing Period
CLIVAR	Climate Variability and Predictability
CONWOY	Consequences of weather and climate changes for marine and freshwater ecosystems
COPES	Climate Observation and Prediction of the Earth System
COSMOS	Community Earth System Models
CSE	Continental Scale Experiment
DMI	Danish Meteorological Institute
EGU	European Geoscience Union
ENSEMBLES	Ensemble prediction systems for climate change (an FP6 project)
ERANET	European Research Area Network
ESSP	Earth System Science Partnership
EU	European Union
EUROCEANS	European Network of Excellence for Ocean Ecosystems Analysis (an FP6 project)
FP7	7th Framework Programme of the EU
GEWEX	Global Energy and Water Cycle Experiment
GHP	GEWEX Hydrometeorology Panel
GKSS	GKSS Research Centre in Geesthacht, Germany
GOOS	Global Ocean Observing System
GRP	GEWEX Radiation Panel
HELCOM	Baltic Marine Environment Protection Commission
HIRLAM	High Resolution Limited Area Model
HyMeX	Hydrological Cycle in the Mediterranean Experiment
IfM-GEOMAR	Leibniz Institute for Marine Sciences in Kiel, Germany
IGBP	International Geosphere Biosphere Programme
IPCC	Intergovernmental Panel on Climate Change
JSC	Joint Science Committee (of the WCRP)
LOICZ	Land-Ocean Interactions in the Coastal Zone
LPB	La Plata Basin (a GEWEX CSE)
MODIS	Moderate Resolution Imaging Spectroradiometer (onboard Terra and Aqua satellites)
MoU	Memorandum of Understanding
NWHMS	North-West Administration on Hydrometeorology of Russia
PRUDENCE	Prediction of regional scenarios and uncertainties for defining european climate change risks and effects
RCO	Rossby Centre Regional Ocean model
SCOBI	Swedish Coastal and Ocean Biogeochemical model
SIDA	Swedish International Development Cooperation Agency
SIDA	Swedish International Development Cooperation Agency
SMHI	Swedish Meteorological and Hydrological Institute
SSG	Science Steering Group
UNIDART	Uniform Data Request Interface (web portal project for data access)
WCRP	World Climate Research Programme
WG	Working Group
WMO	World Meteorological Organisation
WOAP	WCRP Observation and Assimilation Panel

Appendix 1: BSSG Meeting Agenda

20th BALTEX SSG Meeting

Hosted by
State Hydrological Institute
St. Petersburg, Russia

6 - 8 December 2006

Venue:
Hotel Morskaya
Ploschad Morskoi Slavy 1
199106 St. Petersburg, Russia

PROVISIONAL AGENDA AND EXPLANATORY MEMORANDUM

(as of 28 November 2006)

The BSSG meeting will start with a workshop on BALTEX Data Management scheduled to take place on Wednesday afternoon, 6 December 2006. Expected participants are members of the BALTEX Science Steering Group, members of the BALTEX Working Group on Data Management, invited data managers and representatives of national Services. The business part of the BSSG meeting will begin in the morning of Thursday 7 December and is scheduled to be concluded early afternoon on Friday 8 December 2006. On Thursday morning presentations on research contributions to BALTEX in Russia will be given.

Day 1: Wednesday, 6 December 2006

13:00 **Workshop on Data Management**
Members of the BALTEX Working Group on Data Management
Chair: Jörgen Nilsson, SMHI
See separate agenda.

18:30 **Termination of Workshop, end of Day 1**

Day 2: Thursday, 7 December 2006

9:00 **Item 1:** Welcome by the host and the Chairman *(I. Shiklomanov, J. Langner)*

Russian contributions to BALTEX

Prof. V. Vuglinsky, Dr .T. Groskaya, Dr. N. Lemeshko, Dr. E. Rumyantseva, Prof. B. Skakalsky (State Hydrological Institute):
"Methodological approaches for the assessment the hydroecological state of water bodies (St.Petersburg rivers and lakes as a case study)"

Dr. V.Tsarev (Russian State Hydrometeorological University):
"Some features of the bottom water spreading into the Baltic"

Dr. K. Klevanny .(North-West Administration for Hydrometeorology and Environmental Monitoring)
"Development of automated flood warning system for St.Petersburg"

10:00 **Item 2:** On the occasion of the 20th meeting:
A short retrospect on BSSG history
Hans-Jörg Isemer

Item 3: Approval of the agenda

Item 4: Approval of the previous BALTEX SSG meeting minutes

Item 5: Review of previous BALTEX SSG meeting action items
Hans-Jörg Isemer and all

10:30 ***Break***

11:00 **Item 6: The BALTEX Science Steering Group: New members, future role, function, activities and membership**

The general role of the BALTEX SSG in view of the extended objectives of BALTEX Phase II will come up for discussion. This will include a discussion on the term of BSSG members, both in general and individually, and options for the implementation of a **BALTEX Core Group**, as suggested at an earlier BSSG meeting. A draft paper on the terms of both the BSSG and the suggested Core Group will be presented for discussion and approval.

Two suggestions for **new BSSG members** were communicated to BSSG members for approval. New candidate members will have the opportunity to present and discuss their views on future BALTEX developments.

13:00 ***Lunch***

14:00 **Item 7: Status of BALTEX Phase II implementation**
Ongoing activities in all BALTEX countries will be reviewed. Participants are expected to briefly review projects contributing to BALTEX. The aim is to begin establishing an inventory and assessment – against the planning as laid down in the BALTEX Phase II implementation document - of projects and actions, both within and outside BALTEX, which contribute to meeting BALTEX Phase II objectives. A continuous mechanism shall be initiated to regularly report on BALTEX Phase II developments at future meetings of BALTEX steering bodies and working groups. This will include the discussion of a list of projects and actions endorsed by BALTEX, which is to be established at the BALTEX web site.

16:00 ***Break***

16:30 **Item 8:** Candidate new BALTEX Working Groups: Definition, terms of reference and approval

BALTEX Working Group on BALTIC GRID
The present status of the BALTIC GRID initiative will be reviewed and the official implementation of a related BALTEX Working Group shall be discussed and concluded. The potential connection to the earlier proposed *BALTEX Working Group on Budgets* is expected to be discussed and conclusions be drawn.
Andreas Lehmann and all

BALTEX Working Group on BACC (BALTEX Assessment of Climate Change for the Baltic Sea basin)
The present status of BACC will be reviewed and the official implementation of a BALTEX working group related to BACC and climate change issues relevant for BALTEX shall be discussed and concluded.
Hans von Storch and all

18:00 **End of Day 2**

Day 3: Friday, 8 December 2006

9:00 **Item 9:** BALTEX Data Management
A summary report on the workshop conducted on 6 December will be given and shall in particular include a brief overview on the current status of the BALTEX data centres and future update plans.
Michael Lautenschlager and BALTEX Data Centre managers

Item 10: The 5th BALTEX Study Conference 2007 – Status of preparation
Hans-Jörg Isemer and Sirje Keevallik

Item 11: Funding options for BALTEX Phase II research: FP7 and latest developments concerning BONUS 169 and related funding programmes
Hans-Jörg Isemer and all

10:30 ***Break***

Item 12: Recent developments at the WCRP/GEWEX/GHP/CEOP levels and possible implications for BALTEX
Hans-Jörg Isemer

Item 13: BALTEX Web Site for the Public (Concept)
Marcus Reckermann

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

Any other business

14.00 **Closing of the BSSG meeting**

Appendix 2: Participants of the 20th BSSG meeting

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Guests:
Hans Dahlin
Marina Chestnova
Anatoly Palishchuk
Ryhor Chekan
Ivo Saaremae
Miina Krabbi
Michael Lautenschlager

Appendix 3: BWGD Meeting Minutes and Agenda

BALTEX Working Group on Data Management (BWGD)

St. Petersburg, Russia, 6 December 2006

Held in conjunction with the 20th BALTEX SSG Meeting

hosted by

State Hydrological Institute
St. Petersburg, Russia

Meeting venue: Hotel Morskaya, St. Petersburg, Russia

Participants at the BWGD Meeting, from left to right:
Marcus Reckermann, Valery Vuglinsky, Ryhor Chekan, Mikael Magnusson, Marina Chestnova, Anatoly Palishchuk, Michael Lautenschlager, Bärbel Müller-Karulis, Hans Dahlin, Andreas Lehmann, Jörgen Nilsson, Ole Bøssing Christensen, Franz Berger, Miina Krabbi, Philip Axe, Anders Omstedt, Marcus Flarup, Ivo Saaremae, Joakim Langner, Dan Rosbjerg, Hans-Jörg Isemer. Not on the Photo: Sirje Keevallik.

A. Minutes

1. **Jörgen Nilsson** welcomed the meeting participants and gave a short overview over the agenda. He thanked Valery Vuglinsky, the host of the meeting, for inviting the group to the historical site of St. Petersburg.

2. The host **Valery Vuglinsky** welcomed the meeting participants on behalf of the State Hydrological Institute at St. Petersburg.

3. Presentations were given by the various speakers. These presentations are available as pdf on the BALTEX web site (<Structure and Membership<Working Group on Data Management)

   Joakim Langner gave a short overview over the BALTEX programme and its prospects until 2012 (Phase II)

   Anders Omstedt stressed the achievements BALTEX made in terms of process understanding of the in- and outflows of the Baltic Sea including precipitation and evaporation. Enormous datasets have been established in the past 10 years which form a good base for regional climate studies; the establishment of coupled model systems has been a highlight of BALTEX Phase I. The coming 5-6 years will require an integrated exercise of the modelling, the measuring and the data communities

   Hans Dahlin presented the various data bases within Europe, related to EuroGOOS, the European section of the Global Ocean Observing System (GOOS). He stressed the importance of interoperability, i.e. the necessity of a global data format wherever possible, and the use of existing networks on a pragmatic basis – make it work, do not wait for the perfect system to evolve in the far future.

   Bärbel Müller-Karulis demonstrated an integrated assessment of ecosystem data from the Baltic Sea on the basis of Principle Component Analysis to make patterns of ecosystem change in the Baltic Sea visible.

   Marina Chestnova gave a presentation on Russian monitoring activities at the Kaliningrad coast and the Vistula and Curonian lagoons.

   Michael Lautenschlager gave an overview over the data bases of the World Data Climate Centre (Appendix 6). He also introduced the UNIDART Data base system of the German Meteorological Service DWD. It was discussed whether the UNIDART system could be applicable to BALTEX data; doubts were that it was not mature enough and that the funding of the programme will come to an end. However, it was suggested that a proposal for the implementation of UNIDART as a data management system could be submitted to BONUS if this funding scheme is to be realised with the appropriate funding foci.

   Jörgen Nilsson presented aspects of a legal framework of data management and a proposed Memorandum of Understanding for the Data Management workshop, to be discussed and approved by the participants.

4. The group was then divided into 2 groups to discuss content and architecture of a possible BALTEX data management system.

   Group A: Content

   The following main points were stated by the Content Group:

   - Free and easy accessibility of data
   - Inventory of existing data sets, quality and availability; avoidance of duplicate work

- Definition of the needs for a joint data base and joint data strategy
- Open discussion with HELCOM concerning a joint environmental and climate data base
- Create portal of existing data bases, publication on BALTEX web site
- Develop "Expert system" ("decision support system"); needs to be specified
- Promote data mining
- Analysis of existing data sets in relation to time frame 1800-2100, identify and fill gaps
- Involvement of PhD students, exchange across BALTEX countries

Group B: Architecture

The following main points were stated by the Content Group:

- Positive to UNIDART system but should not give up the data centre that is working today.
- Recognized that a UNIDART system needs a data centre for running the data model/sever
- There should be an end to the phase I as data delivery for instance by putting all data on a CD, there exists a CD with meteorological data up to 2001.
- Concentrating data handling to the existing available data. Final step →s give the info at BALTEX home page with links to data (existing already)
- Adding links to other data centre, for instance satellite and radar, find out how to get data from those other data bases
- A three step approach for data handling was proposed. Address the working group to act along this line, work to continue the process and try to define the steps for this work.
- Define what kind of data that is of interest. Information from the users is needed. Projects should deliver their data needs, as a base for the data management.
- Suggestion from the group is that the data group should work according to the MoU together with finding financing and report back to SSG

5. Summary and conclusions

The meeting decided to accept the MoU as an outcome of the meeting and send the MoU to BSSG.

Further, the meeting proposed a three step approach for the future work.

1. To describe the content of existing BALTEX Data Basis.
2. To get an overview of existing data with relevance to BALTEX Phase II
3. To organize a ONE-STOP-SHOP to facilitate the access to data for BALTEX research.

B. Meeting Agenda

BALTEX Working Group on Data Management

Meeting 6 December 2006

Venue:
Hotel Morskaya
Ploschad Morskoi Slavy 1
199106 St. Petersburg, Russia

AGENDA

13:00 **Opening**
Jörgen Nilsson
13:05 **Welcome to St. Petersburg**
Valery Vuglinsky

Session A

13:15 **Baltex Science, WCRP and BALTEX Phase II**
Joakim Langner
13:40 **Lessons learned and new needs**
Anders Omstedt

Session B

14:00 **Other view - EUROGooS**
Hans Dahlin
14:20 **Other view - Large Marine Ecosystems**
Bärbel Müller-Karulis
14:40 **Other view - Oceanographic models**
Vadim Sivkov
15:00 **Other view - World Data Climate Centre**
Michael Lautenschlager

Session C

15:20 **Technical possibilities - Uni-Dart**
Michael Lautenschlager

Session D

15:35 **Legal aspects**
Jörgen Nilsson
15:45 **MoU**
Jörgen Nilsson

16:00 ***Coffee Break***

Session E

16:15 **Group discussion - Architecture**
Andreas Lehmann
Group discussion - Content
Anders Omstedt

17:45 **Summary and future plans**
Jörgen Nilsson

18:30 **End of meeting**

C. Participant List

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D. Memorandum of Understanding

1. Legal aspects

Legal legislations, WMO
Resolution 40 of Congress 1995 and Resolution 25 of Congress 1999

Legal legislations, EU
• Environmental Data Directive
• Public Sector Information
• Inspire Directive (spatial data)

2. MoU for BALTEX data management workshop in St. Petersburg.

RECALLING 1.
The decision of WMO Congress on GEWEX as a vital part of WORLD CLIMATE RESEARCH PROGRAM.

RECALLING 2.
Baltex as one of the experiments in GEWEX and its importance for improvement of global climate models.

RECALLING 3.
The results of BALTEX phase I, the BACC project and the science plan and the implementation plan for BALTEX phase II

BEARING IN MIND.
The financial restrictions and other national constrains that must be solved in a constructive way in a drainage basin that consists of territory from14 countries.

RECOGNIZE 1.
The approved cooperation with HELCOM.

RECOGNIZE 2.
WMO data policy in resolution 40 and resolution 25.

RECOGNIZE 3.
The EU directives on Public Sector Information, Environmental Data and the expected content of INSPIRE.

RECOGNIZE 4.
The urgent need for data to research and to decision making.

NOTING 1.
The ongoing activities with BONUS 169 and the need for data in different research areas as well as the possibility to fund projects under Theme 8: Strengthening collaboration and common resources.

CONSIDERING 1
The technical possibilities in modern data architecture to create a ONE-STOP SHOP for data retrieval.

CONSIDERING 2
The possibilities for BALTEX Data Management to cooperate with other groups to reach the gool of creating a ONE-STOP SHOP.

CONSIDERING 3.
To find a way to create and maintain a basic level of data and datasets to meet the immediate needs of research.

DECIDES
To propose to BSSG to decide to explore the Data Management in two complementary lines.
To start the process towards a ONE-STOP SHOP.
To define the basic/minimum data need for BALTEX phase II

Appendix 4: Presentation by H.-J. Isemer

The 20th BALTEX SSG meeting

St. Petersburg, Russia, 7 – 8 December 2006

A „sentimental tour“

The 1st BALTEX SSG meeting

Geesthacht, Germany, 16 – 17 May 1994

H.-J. Isemer, IBS, *isemer@gkss.de*

How BALTEX started…..

1988: GEWEX founded

~1989: GCIP (GEWEX Continental-scale International Project)

1990: other CSEs suggested at GEWEX SSG level

E. Raschke: BALTEX, R. Stewart: MAGS

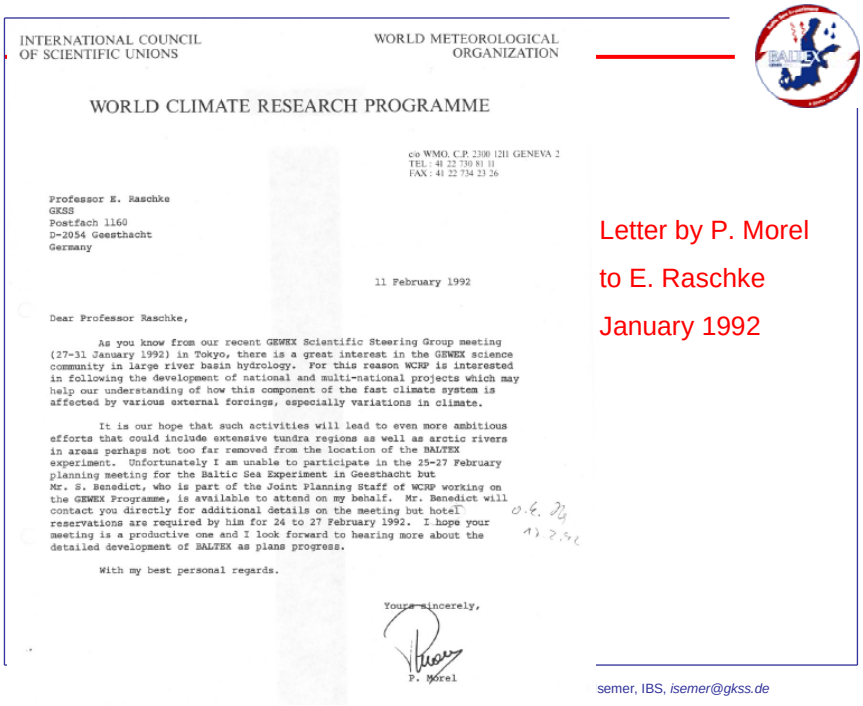
German BALTEX nucleus:

E. Raschke, E. Müller, W. Krauß, L. Bengtsson

1991: Discussions in almost all „BALTEX“ countries initiated

1992: GEWEX SSG and WCRP endorsed BALTEX

H.-J. Isemer, IBS, *isemer@gkss.de*



INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS

WORLD METEOROLOGICAL ORGANIZATION

WORLD CLIMATE RESEARCH PROGRAMME

c/o WMO. C.P. 2300 1211 GENEVA 2
TEL.: 41 22 730 81 11
FAX: 41 22 734 23 26

Professor E. Raschke
GKSS
Postfach 1160
D-2054 Geesthacht
Germany

11 February 1992

Dear Professor Raschke,

As you know from our recent GEWEX Scientific Steering Group meeting (27-31 January 1992) in Tokyo, there is a great interest in the GEWEX science community in large river basin hydrology. For this reason WCRP is interested in following the development of national and multi-national projects which may help our understanding of how this component of the fast climate system is affected by various external forcings, especially variations in climate.

It is our hope that such activities will lead to even more ambitious efforts that could include extensive tundra regions as well as arctic rivers in areas perhaps not too far removed from the location of the BALTEX experiment. Unfortunately I am unable to participate in the 25-27 February planning meeting for the Baltic Sea Experiment in Geesthacht but Mr. S. Benedict, who is part of the Joint Planning Staff of WCRP working on the GEWEX Programme, is available to attend on my behalf. Mr. Benedict will contact you directly for additional details on the meeting but hotel reservations are required by him for 24 to 27 February 1992. I hope your meeting is a productive one and I look forward to hearing more about the detailed development of BALTEX as plans progress.

With my best personal regards.

Yours sincerely,

P. Morel

Letter by P. Morel

to E. Raschke

January 1992

1st International BALTEX Workshop
Geesthacht, Germany, 25-27 February 1992

Participant List

Denmark: L. Laursen
Estonia: A. Aitsam
Finland: P. Alenius, C. Fortelius, E. Kuusisto
Germany: E. Augstein, U. Callies, L. Dümenil, M. Gast, L. Hasse, E. Heise, W. Krauß, U. Lass, L. Levkov, B. Machenhauer, W. Matthäus, H.-T. Mengelkamp, E. Müller, E. Raschke, B. Rockel, E. Ruprecht, D. Spänkuch, M. Sturm, J. Sündermann, D. Voppel
Poland: W. Buchholz, J. Cyberski, W. Krzyminski, R. Marks, T.Petelski, L. Radczuk, A. Staskiewicz
Russia: E. Fedorovich, S. Lappo, D. Mironov, I. Shiklomanov, V. Vuglinsky
Sweden: B.-O. Jansson, H. Sundqvist
WCRP: S. Benedict

The 20th BALTEX SSG meeting

2nd International BALTEX Planning Meting
Norrköping, Sweden, 26-30 October 1992

Participant List

Denmark: L. Laursen

Finland: P. Alenius, C. Fortelius

Germany: L. Bengtsson, W. Krauß, E. Müller, E. Raschke

Sweden: S. Bergström, B. Carlsson, H. Dahlin, B. Hakansson, A. Johansson, L. Meuller, H. Sundqvist

Draft Science Plan for BALTEX Phase I established

H.-J. Isemer, IBS, *isemer@gkss.de*

2nd International BALTEX planning meeting
Norrköping, Sweden, 26-30 October 1992

The 20th BALTEX SSG meeting

3rd International BALTEX Workshop
Geesthacht, Germany, 30 Nov – 2 Dec 1992

Participant List

Belarus: I. Skuratovich
Denmark: O. Brink-Kjaer
Estonia: A. Aitsam, P. Karing
Germany: L. Bengtsson, H. Graßl, W. Krauß, W. Matthäus, E. Raschke, B. Rockel, J. Sündermann, and others
Latvia: E. Zaharchenko
Lithuania: J. Dubra
Poland: A. Dubicki, W. Krzyminski, W. Majewski, Z. Wozniak
Sweden: S. Bergström
WCRP: S. Benedict

H.-J. Isemer, IBS, *isemer@gkss.de*

The 20th BALTEX SSG meeting

How BALTEX started…..

1992: 3 international meetings

Several national meetings e.g. Tallinn, Gdynia, Vilnius

1993: Several national meetings

4th (?) International Planning Meeting, Uppsala, Sweden, August 1993

BALTEX Science Plan finally established and endorsed for approval by the future BALTEX Science Steering Group

April 1994: International Secretariat established at GKSS

May 1994: 1st BALTEX SSG meeting at GKSS, Germany

H.-J. Isemer, IBS, *isemer@gkss.de*

The 20th BALTEX SSG meeting

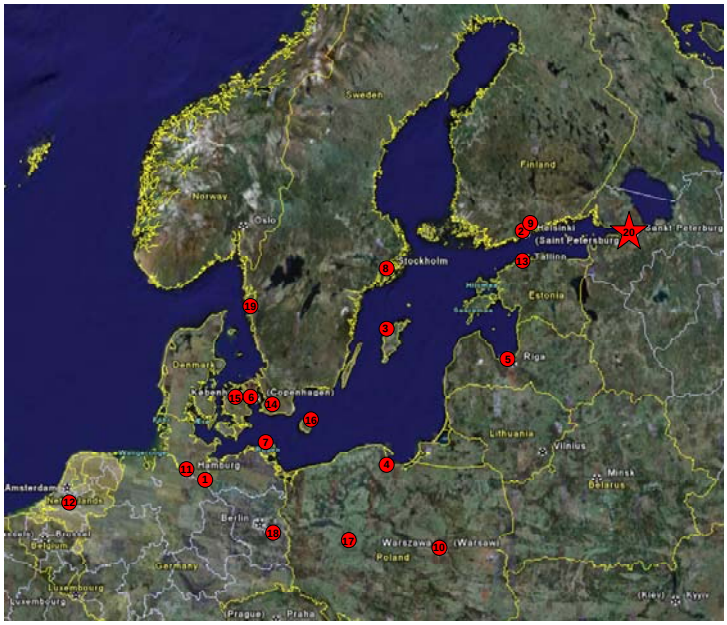
Founding members of the BSSG, May 1994

Lennart Bengtsson	Germany (chair)
Sten Bergström	Sweden
Jerzy Dera	Poland
Eero Holopainen	Finland
Zdzislaw Kaczmarek	Poland (vice-chair)
Peter Karing	Estonia
Petras Korkutis	Lithuania
Wolfgang Krauß	Germany
Leif Laursen	Denmark
Pentti Mälkki	Finland
Eberhard Müller	Germany
Ehrhard Raschke	Germany (vice chair)
Gert Schultz	Germany
Ivan M. Skouratovich	Belarus
Anders Stigebrandt	Sweden
Hilding Sundqvist	Sweden
Valery S. Vuglinsky	Russia
Evgeny Zaharchenko	Latvia
Hans-Jörg Isemer (ex-officio)	Germany

H.-J. Isemer, IBS, *isemer@gkss.de*

1st BALTEX SSG Meeting, 16-17 May 1994, Geesthacht, Germany

20 BSSG Meetings in 12 years



1	Geesthacht	Germany	May 1994
2	Helsinki	Finland	Jan 1995
3	Visby	Sweden	Sep 1995
4	Sopot	Poland	Jun 1996
5	Riga	Lativa	Apr 1997
6	Copenhagen	Denmark	Mar 1998
7	Rügen	Germany	May 1998
8	Stockholm	Sweden	Dec 1998
9	Helsinki	Finland	May 1999
10	Warsaw	Poland	Feb 2000
11	Hamburg	Germany	Nov 2000
12	De Bilt	The Neth.	Nov 2001
13	Tallinn	Estonia	Jun 2002
14	Lund	Sweden	Nov 2002
15	Roskilde	Denmark	Sep 2003
16	Bornholm	Denmark	May 2004
17	Poznan	Poland	Nov 2004
18	Lindenberg	Germany	Oct 2005
19	Göteborg	Sweden	May 2006
20	**St. Petersburg**	**Russia**	**Dec 2006**

4th BALTEX SSG Meeting, June 1996, Sopot, Poland

1999

New BSSG Chair

Hartmut Graßl

2001

New BSSG Co-chair

Anders Omstedt

12th BSSG meeting, De Bilt, The Netherlands, 12-14 November 2001

13th BSSG meeting, Tallinn, Estonia, 17-19 June 2002

16th BSSG meeting, Gudhjem, Bornholm, Denmark 23 May 2004

18th BSSG meeting, Lindenberg, Germany, 18-20 October 2005

18th BSSG meeting, Lindenberg, Germany, 18-20 October 2005

NEW BALTEX Leadership 2006

New BALTEX SSG Chair

Joakim Langner, SMHI, Sweden

New BALTEX SSG vice-chairs

Timo Vihma **Anders Omstedt**
FMI, Finland **Göteborg University, Sweden**
(as of May 2006)

19th BSSG meeting, Gothenburg, Sweden, 24 May 2006

Old and new BSSG chairs met in Göteborg, May 2006

Lennart Bengtsson 1994-2000

Hartmut Graßl 2000-2006

Joakim Langner 2006 -

BALTEX SSG 1994 - 2006

1994: 18 members from 10 nations

2006: 21 members from 10 nations

48 members in total in 12 years

7 chairs and co(vice) chairs

20 meetings

BUT

BALTEX is on the scene since more than 15 years already !

Appendix 5: National reports by Finland and Germany

A. Finland (Timo Vihma and Mikko Alestalo)

Report of the FMI activities in relation to the BALTEX Phase II Implementation (2006)
Timo Vihma and Mikko Alestalo
Finnish Meteorological Institute
28 November 2006

1. Better understanding of the energy and water cycles over the Baltic Sea basin

Research on precipitation has been made in FMI on the basis of radar data analyses (e.g. intensive small-scale precipitation events) and high-resolution numerical modelling (e.g. convective precipitation using non-hydrostatic models AROME and MM5).

The role of sea ice in the energy and water cycles over the Baltic Sea has been studied by new field experiments and modelling studies focusing on sub-surface melting, superimposed ice formation, and factors controlling the snow and ice albedo.

2. Analysis of climate variability and change since 1800, and provision of regional climate projections over the Baltic Sea basin for the 21st century

FMI, FIMR and SYKE have contributed to BACC, in particular to the chapter on detection of past and current climate change.

3. Provision of improved tools for water management, with an emphasis on more accurate forecasts of extreme events and long-term changes

Research on urban hydrology has been made in FMI and SYKE.

4. Gradual extension of BALTEX methodologies to air and water quality studies

There is a lot of research in air and water quality in Finland, but traditionally these groups have been outside of the BALTEX context. However, efforts have been made to integrate air and water quality research into BALTEX: the Conference on Baltic Sea and European Marine Strategy in Helsinki, 13-15 November, 2006, served these objectives. Also, a seminar on BALTEX Phase II implementation was organized in FMI and FIMR .

5. Strengthened interaction with decision makers, with emphasis on global change impact assessments

The Conference on Baltic Sea and European Marine Strategy in Helsinki, 13-15 November, 2006, was a major effort serving these objectives.

6. Education and outreach at the international level

A BALTEX related summer school on air-sea interaction was organized in Helsinki, 28 August - 1 September, 2006.

B. Germany (Andreas Lehmann)

BALTEX Phase II: **Activities in 2006**

IFM-GEOMAR

- finalizing Implementation Strategy (together with BALTEX Secr.)
- continuation of BSIOM model run for 2005 (BALTIC-Grid)
- upwelling in the Baltic Sea (FIMR, IFM-GEOMAR, 2 years, funded)
- hydrographic research survey R.V. Merian in March 2006
- surface fluxes of the Baltic Sea (master thesis/publication)
- role of brine release and sea ice drift on vertical mixing in the northern Baltic Sea (IFM-GEOMAR)
- water formation and TS-development (IFM-GEOMAR)
- sea ice development & intercomparison sea ice models (FIMR, IFM-GEOMAR, Baltic Grid)
- C3-Grid (BMBF funded, relevant for BALTIC GRID)
- Summer School on air-sea interaction (FIMR, FMI, Helsinki University)

Publications

- Science Framework and Implemetation Strategy
- Variability of sea surface heights in the Baltic Sea…, Novotny et al., Marine Geodesy, Vol. 29.
- A model measurement comparison of atmosph. forcing & surface fluxes (Rudolph & Lehman, Oceanologia 48
- Trends is sea surface temperatures , BALTEX Newsletter No. 9

BALTEX Phase II: **Planned activities in 2007**

IFM-GEOMAR

BSSC Rostock March 2007

- **Session on Upwelling and its impact on the ecosystem**
- **upwelling in the Baltic Sea (FIMR, IFM-GEOMAR, 2 years, funded)**
- **role of brine release and sea ice drift on vertical mixing and sea ice formation in the northern Baltic Sea (IFM-GEOMAR)**
- **water formation and TS-development (IFM-GEOMAR)**

Study Conference on BALTEX, June 2007

BALTIC GRID & BUDGETS (MPI –M)

- **re-arangement of terms of references and members of Working Group**
- **BALTIMOS runs 1999-2005**
- **continuation runs 1979-2006 BSIOM**
- **analysis of energy and water budget, > 10 runs MPI in house**
- **ENSEMBLES and PRUDENCE runs**
- **1st meeting at BSSC in Rostock, Germany**
- **2nd meeting at Kuressaare, Saaremaa, Estonia**

Appendix 6: Draft paper on a revised BALTEX steering structure

BALTEX Steering and Management Structure

Working paper on a revised structure
Hans-Jörg Isemer, 14 September 2006, revised 22 November 2006

This paper has been written upon request of BALTEX SSG chairs. It largely reflects my own personal opinion but has been used by the BALTEX SSG chairs as a discussion document for the BALTEX SSG meeting #20 in St. Petersburg.

This paper was not approved by the BSSG.

1. Current situation

At present, the steering of BALTEX is being performed by a Scientific Steering Group and dedicated working groups. Both are supported by an International Secretariat.

The Scientific Steering Group (SSG) had been established in 1994 at the beginning of BALTEX Phase I to represent
i) the major science disciplines involved in BALTEX Phase I (basically atmospheric physics and meteorology, hydrology and oceanography), and
ii) all national hydro-meteorological national services in countries of the BALTEX region. The latter were expected to represent the major stakeholders of BALTEX Phase I.

During the years, the SSG membership has changed in a somewhat ad-hoc manner, it has increased somewhat in size with the present number of members being 21, which seems quite large for a regional programme such as BALTEX (for comparison: the GEWEX SSG has 13 members). In total, since its foundation in 1994, the SSG had 45 members, which indicates quite some fluctuation, which may be viewed as a kind of "healthy" process.

My personal view is that it is fair to say that the activity intensity of individual SSG members is differing considerably. I also think that continuous pro-active action towards steering BALTEX, and a concurrent whole-heartedly identification with the programme, cannot be observed by all present SSG members. The present SSG membership still reflects the objectives of BALTEX Phase I, it appears obvious that particularly for the new objectives 3 and 4, as well as for the outreach aspects (objective 6), additional expertise needs to be added to the steering structure of BALTEX. A simple enlargement of the present SSG by further individuals is on the one hand desirable in the light of the enlarged objectives, but would bear the increased danger of making the steering process more ineffective.

At present, there are two approved working groups in BALTEX, Radar and Data Management. The first exists for years and has been a real success story. The latter is new, and needs to take up momentum. In the past, since the foundation of BALTEX, I recall at least four other working groups (Data Management I, Numerical modelling, Process studies, Energy and Water Cycles), which were dissolved after differing periods of existence.

2. A revised structure

A new element is the *BALTEX Core Group* (BCG). Existing elements such as the SSG and working groups will continue to exist, with a somewhat revised task and membership, if required.

2.1 The BALTEX SSG

It remains the highest supervising body in BALTEX. It meets once per year. Major tasks are to approve its own new members, members of the Core Group, and working groups. Major decisions

related to the entire programme need to be taken and approved by a qualified majority of the SSG. Decisions at the level of the BALTEX Phase II objectives are delegated to the Core Group level. The SSG shall continue to cover all science aspects and shall represent at least most important stakeholders. The SSG shall strengthen communication – in both ways - between BALTEX and research organisations, stakeholders and funding organisations at the national levels. Its term shall gradually be changed into a kind of advisory body, rather than a body making day-to-day decisions. A name change may be appropriate (e.g. BALTEX Oversight Committee, or so) but this is probably not an ad-hoc requirement.

2.2 The BALTEX Core Group (BCG)

The BCG is the real "centre of action" in BALTEX at the time scale of days to months, i.e. between the annual SSG meetings. It reviews project and working group actions at regular intervals. In urgent cases, it takes decisions and reports back to the SSG at the next regular SSG meeting for approval.

The BCG shall be a small group. It consists of the three BALTEX SSG chairs, one distinguished scientist representing one of the four science objectives of BALTEX Phase II each (named tentatively *Principle Investigator*, PI), and the BALTEX Secretariat head. The BCG is chaired by the SSG chair. The chair of a working group with considerable cross-cutting elements may be Core Group member as well; a current example is the present WG Data Management. A BSSG chair or vice-chair may act as a PI for one objective at the same time.

The Core Group meets more frequently than the SSG, at least twice per year, part of these meetings may be conference calls.

2.2.1 The Principle Investigators (PI)

One PI each for the four science objectives shall be member of the BCG:

BALTEX PI 1: Hydrometeorology (including oceanography)
BALTEX PI 2: Climate change and variability
BALTEX PI 3: Water Management
BALTEX PI 4: Environment (air and water quality)

A further option for the PIs is the creation of a *BALTEX Panel*. The latter will support the activities of the PI related to one BALTEX Phase II objective. It is the decision of the PI, whether he/she may wish to establish a *BALTEX Panel*.

2.3 BALTEX Working Groups

Working groups are established to cover either

i) a dedicated topic or element within one BALTEX Phase II objective, or
ii) a topic or element cross-cutting through several or all objectives.

The present WG Data Management is an example for type ii). The recently suggested WGs Energy and Water Budgets and BALTIC GRID are examples of the type i). Type i) working groups report primarily to the respective PI, and are supervised by the BCG. Type ii) Working Groups report to the BCG and are supervised by the latter.

Appendix 7: Terms of Reference for BSSG and Working Groups

Terms of Reference

A. BALTEX Science Steering Group (BSSG)
B. BALTEX Working Groups

A. BALTEX Science Steering Group (BSSG)

Tasks are to

- undertake the overall planning, monitoring and coordination of the BALTEX programme,
- regulary review and update the BALTEX science and implementation plans, and to assess BALTEX actions and achievements against the provisions of the science and implementation plans,
- suggest and approve members and chairs of BALTEX panels, including the BSSG, with qualified majority,
- initiate, superwise and review the work of the BALTEX working groups,
- review developments relevant for BALTEX at GEWEX and WCRP levels, suggest related actions for the BALTEX programme, and report, or organise the reporting, to the relevant panels at GEWEX and WCRP levels,
- interact with the various national and internatioal authorities important for BALTEX,
- establish and maintain links to other relevant projects and programmes and asure cooperation whenever possible and adequate,
- establish and maintain links to stakeholders, policy-makers and the public in order to i) create awareness of BALTEX, ii) make BALTEX results available for use, iii) exchange advise concerning BALTEX results, related requirements, and their application for the benefit of society,
- undertake suitable steps to both promote funding possibilties at national and international levels,
- actively initiate or support related funding proposals in support of BALTEX,
- initiate and prepare Study Conferences on BALTEX on a regular basis (every 3-4 years)
- initiate and prepare BALTEX symposia and workshops on BALTEX Phase II topics
- meet at least annually, with E-Mail communication between meetings.

Term

- For chairpersons: 3 years with the possibility of one prolongation to a second 3-year term
- For members: 3 years with the possibility of further 3-year terms

Election and approval

- New members need to be identified and suggested by at least one member,
- suggestion of candidate needs to be communicated to all members at least 4 weeks prior to election and approval by a qualified majority of the BSSG,
- approval by BSSG is normally done at a regular BSSG meeting, in important cases approval and election may be by E-mail between BSSG meetings,
- final official approval by the BSSG chair,
- chairs and vice-chairs election and re-election for a second 3-year term takes place at a regular BSSG meeting, with qualified majority,
- re-election of members for further 3-year terms takes place at a regular BSSG meeting, with qualified majority

Decisions

- Unanimously
- The “qualified majority” is 2/3 of the elective SSG members present at a meeting,

- A minimum of ½ of all SSG members must be present at a meeting in order to take decisions, this may include votes submitted prior to the meeting to the SSG chair

B. BALTEX Working Groups (BWGs)

Tasks are to

- represent the "working level" of BALTEX,
- conduct and actively promote a dedicated topic or element within one BALTEX Phase II objective (Type 1 BWG), or,
- conduct and actively promote a topic or element cross-cutting through several or all objectives (Type 2 BWG),
- organise to conduct or conduct relevant projects,
- report to the BSSG on a regular basis,
- meet regularly, at least once a year, with telephone conferences as required.

Term

- 2 years, or less, depending on the term of the working group, requires approval by the BSSG,
- possibility of pro-longations.

Election and approval

- New members need to be approved by a qualified majority of working group members

Decisions

- Unanimously

Deliverables

- Deliverables are to be defined in the specific Terms of References of the individual Working Groups. The deliverables are to be presented after the regular 2-year term, if not specified otherwise in the Working Group´s specific Terms of reference.

Appendix 8: Overview over BACC (Presentation by H. v. Storch)

BACC and future perspectives

Speaker:
Hans von Storch,
GKSS Research Centre, Germany

BALTEX SSG meeting, 7.12.2006, St. Petersburg

BACC: The **purpose**

of the BACC assessment is to provide the scientific community and the public with an assessment of ongoing and future climate change in the Baltic Sea region. This is done by reviewing published scientific knowledge about climate change in the Baltic Sea region.

An important element is the comparison with the historical past (until about 1800) to provide a framework for the severity and unusualness of the change.

Also changes in environmental systems, due to climate change, are assessed – such as hydrological regimes and ecosystems.

BACC report: Chapters

1. **Introduction and Policy Advise** (Hans von Storch, Anders Omstedt)
2. **Past and Current Climate Change, Detection and Attribution** (Raino Heino, Heikki Tuomenvirta)
3. **Projections of Future Climate Change** (L. Phil Graham)
4. **Climate-related Change in Terrestrial and Freshwater Ecosystems** (Ben Smith)
5. **Climate-related Change in Marine Ecosystems** (Joachim Dippner, Ilppo Vuorinen)
6. **Annexes (Hans-Jörg Isemer)**

Annexes

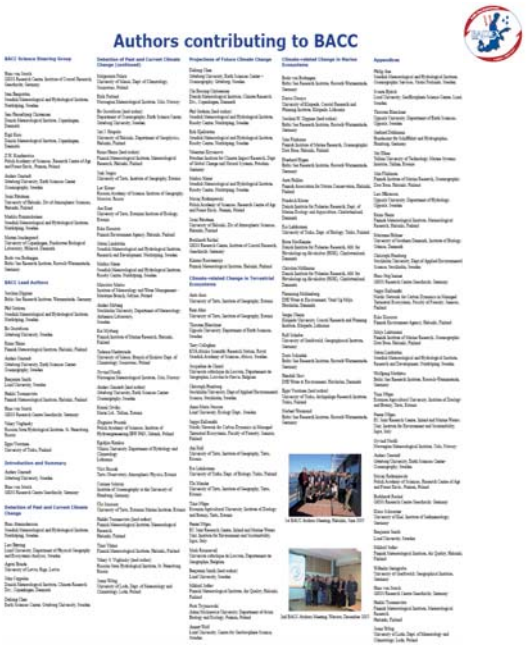
1. **Physical system description**
   i) Baltic Sea (Jüri Elken)
   ii) Atmosphere (Hans-Jörg Isemer)
   iii) Hydrology and land surfaces, inclusing rivers and lakes (Esko Kuusisto)
2. **Geology description** (Svante Björk)
3. **Ecosystem description**
   i) Marine ecosystem (Maijo Lehtiniemi)
   ii) Terrestrial ecosystem (Ben Smith)
4. **Observational data used**
   i) Atmosphere (Øyvind Nordli)
   ii) Ocean (Philip Axe)
   iii) Runoff (Göran Lindström)
   iv) Ecology (tbd)
5. **Data homogeneity issues** (Raino Heino)
6. **Climate models and scenarios** (Burkhardt Rockel)
7. **NAO and AO** (Joanna Wibig)
8. **Statistical background (trends, significance, oscillation, regime shift,..)** (Hans von Storch, Anders Omstedt)
9. **Glossary** (Maciej Radziejewski)
10. **Acronyms** (Anders Omstedt)

The BACC Project integrates available knowledge of historical, current and expected future climate change.

The unique feature of BACC is the combination of evidence on climate change and related impacts on marine, freshwater and terrestrial ecosystems in the Baltic Sea basin (catchment and water body).

It is the first systematic scientific effort for assessing climate change in the Baltic Sea region. More than 80 scientists from 12 countries have contributed on a voluntary basis.

The results have not been influenced by either political or special interests.



BACC results: In short …

- Presently a warming is going on in the Baltic Sea region.
- BACC considers it plausible that this warming is at least partly related to anthropogenic factors.
- So far, and in the next few decades, the signal is limited to temperature and directly related variables, such as ice conditions.
- Later, changes in the water cycle are expected to become obvious.
- This regional warming will have a variety of effects on terrestrial and marine ecosystems – some predictable such as the changes in the phenology others so far hardly predictable.

BACC status

1. Review of BACC report
2. Incorporation of BACC assessment in HELCOM analysis
3. Preparation of BACC report book

BACC report: Review status

- Review process not yet concluded.
- Chapter 3 (geophys. scenarios) and 4 (terr ecosystems) without major comments.
- Chapter 2 (recent on ongoing geophys changes) some comments (mainly concerning trends in the Baltic Sea water body)
- Chapter 5 (marine ecosystems) major comments – seemingly a "consensus on discensus" had not be achieved.
- Revison expected for end of December.
- Chapter 5 will go again to reviewers.

BACC: HELCOM analysis

- HELCOM has prepared an analysis of recent, ongoing and future climate change in the Baltic Sea region based upon the BACC review available in fall 2006.
- Problem: tight timeline at HELCOM vs. quality control at BACC.
- The contributions taken from Chapters 2-4 have been checked by BACC chapter authors; those taken from Chapter 5 (marine ecosystems) have been checked by BALTEX secretariat and reviewer of BACC chapter
- Final agreement between HELCOM and BACC in February 2007
- Submission to HELCOM board in March 2007 for official acceptance.

BACC book @ Springer

- ✓ An agreement has been made with Springer Verlag that the report will be printed in the 2nd quarter of 2007.
- ✓ Available for the BALTEX conference in June 2007.

BALTEX: BACC and beyond

Suggestion of a BACC working group dealing with the issue of BALTEX science objective 2 „climate and variability"

- based on the BACC approach of 5 chapters.
- organizing exchange of knowledge gains;
- defining protocols for parallel analysis;
- assessing state of knowledge;
- identifying gaps in knowledge;
- identifying potentials for extending the regional Earth system approach for the Baltic Sea catchment.

Members of BACC working group

In principle: BACC lead authors

- Synthesis: Hans von Storch and Anders Omstedt.
- Recent, ongoing and future change in geophysics (atmosphere, Baltic Sea; hydrology, cryosphere). NN and Phil Graham.
- Changes in terrestrial and marine ecosystems: NN and Ben Smith.
- Data: Ole Bøssing-Christensen.

No members who have shown to be chronically late, unresponsive or unreliable in providing the needed contribution.

Appendix 9: BALTEX statement on GHP/CEOP merger

Preliminary comment on: On the Transition of GHP to CEOP and Realignment of CEOP with GEWEX (John Roads, Sam Benedict, Toshio Koike, Rick Lawford, Soroosh Sorooshian)

by Joakim Langner (BALTEX SSG chair), Timo Vihma, Anders Omstedt (BALTEX SSG vice-chairs), Hans-Jörg Isemer (BALTEX Secretariat head)

We are commenting herewith in particular on the proposed organisation of CSEs within CEOP and the related name change into *CEOP CSEs*, as was proposed in the above draft white paper together with accompanying explanations given by John Roads.

1. CEOP is a data collection initiative and related science, which are targeted to a limited period of time of nowadays 3 years, in the future possibly up to six or seven years, with the ultimate goal to establish an integrated global observing system for the water cycle. CSEs such as BALTEX have developed major science programmes covering disciplines and time scales well beyond the objectives of CEOP, for example BALTEX Phase II addresses the time period from 1800 to 2100. Classifying and re-naming *GEWEX CSEs* to *CEOP CSEs*, as suggested, would be an inappropriate step in terms of science disciplines and time scales involved. It would not respect the spectrum of scientific work and history of CSEs, such as BALTEX, in an appropriate way.

2. CEOP is still in a rather early development stage (*e.g.* only part of the planned *in-situ*, model output and satellite data are readily available for scientific exploitation), while GEWEX is a mature core project of WCRP with more than 15 years of successful research being conducted. CSEs's objectives were largely defined following GEWEX targets and aims. We denote GEWEX as the mother program of BALTEX, and would like to continue to do so.

3. One of the two major science objectives of CEOP (related to monsoons) has no counterpart in the objectives of some CSEs (e.g. BALTEX), because of their geographical location.

4. The status of BALTEX as a GEWEX CSE, GEWEX being a well-known internationally accepted core program of WCRP, has been helpful for BALTEX and its reputation in many ways in the past, *e.g.* fund raising. CEOP does not have this reputation yet, and its name (Coordinated Enhanced Observation Period) does not indicate any science contents or objectives. The proposed re-organisation and re-naming is expected to constitute a drawback for CSEs such as BALTEX.

5. The proposed re-organisation also bears a danger for CEOP, because it will loose focus on its way towards establishing a global integrated observing system for the water cycle.

6. The proposed re-organisation including the shift of CSEs to CEOP are reported to be a response to criticism voiced at JSC level concerning doubling of efforts, working groups, management initiatives etc. However, adding a new management structure (CEOP) beneath the WCRP level across the core program level (GEWEX, WOAP, CLIVAR,..) is expected to increase management efforts rather than diminishing them.

6. Some CSEs, e.g. BALTEX, have recently defined extended objectives for their phase II. Others are young CSEs (e.g. LPB) with only recently defined objectives. In some cases, the new and extended objectives address also issues and objectives of other WCRP core projects,

such as CLIVAR. These CSEs rather tend to develop into pan-WCRP CSEs, contributing to more than one WCRP core project, with numerous disciplines and time scales involved, rather than contributing to an observing period (CEOP) of limited duration. With these developments in mind, *CEOP CSEs* do not seem to be the adequate organisational frame.

Preliminary conclusion: We regard CEOP as a very important and unique initiative towards establishing a global observing system for the water cycle. This goal has not fully been achieved at present and options for developing CEOP even into a near real-time system may require substantial efforts in the years to come. BALTEX will continue to support CEOP to the extent possible and appropriate, as it has done in the past. However, the proposed re-organisation of CSEs under the umbrella of CEOP seems not justified and may bear the danger of imposing drawbacks for CSEs, and also for CEOP. We suggest keeping the CSEs as GEWEX CSEs directly under the GEWEX / WCRP umbrella. We also suggest maintaining a panel such as GHP *within* GEWEX where CSEs may have a platform for sharing views, results and ideas. A re-organisation of other global projects and initiatives, presently organised under GHP, to other bodies such as GRP, may be appropriate.

Norrköping, Helsinki, Göteborg, Geesthacht, 3 October 2006

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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.

No. 2: Baltic Sea Experiment BALTEX – Initial Implementation Plan, 84 pages. March 1995.

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.

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No. 12: Minutes of 7th Meeting of the BALTEX Science Steering Group held at Hotel Aquamaris in Juliusruh, Island of Rügen, Germany, 26 May 1998. November 1998.

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No. 14: BALTEX – BASIS Data Report 1998. Editor: Jouko Launiainen, 96 pages. March 1999.

No. 15: Minutes of 8th Meeting of the Science Steering Group held at Stockholm University in Stockholm, Sweden, 8-10 December 1998. May 1999

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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.

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No. 23: Minutes of 13th 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.

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No. 25: Minutes of 14th 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 15th 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 16th 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 17th Meeting of the BALTEX Science Steering Group held at Poznan, Poland, 24 – 26 November 2004. November 2005.

No. 33: Minutes of 18th Meeting of the BALTEX Science Steering Group held at Meteorological Observatory Lindenberg – Richard Aßmann Observatory, Germany, 18 – 20 October 2005. February 2006.

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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 19th 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 20th Meeting of the BALTEX Science Steering Group held at St. Petersburg, Russia, 6 – 7 December 2006. March 2007.

Copies are available upon request from the International BALTEX Secretariat.