Minutes of the Twentieth Annual Meeting of the International Arctic Buoy Programme [IABP] Hosted by Norwegian Meteorological Institute (NMI) Oslo, Norway, 6 – 7 June 2010

1. Meeting Opens

The twentieth annual meeting of the Participants of the IABP opened at 9:00 on 6 June 2010, at the Norwegian Meteorological Institute (NMI) in Oslo, Norway. Tim Goos (TG), the Chairman of the IABP Executive Committee, called the meeting to order and thanked NMI for kindly hosting the meeting.

Knut Bjorheim (KB) and Steinar Eastwood (SE) welcomed the participants to NMI.

KB spoke to having auto stations and no volunteer observing ships. He noted that Norway produces marine forecasts for the Barents Sea but without the benefit of data. Data could be available from the Russians if Norway provided the communications. SE spoke to using IABP buoy data to validate ice drift and SST products. Meeting attendees were referred to the Ocean and Sea Ice Satellite Application Facility (OSI SAF) web site http://osisaf.met.no. This web site provides information and products from the high latitude part of the EUMETSAT OSI SAF (http://www.osi-saf.org/).

There were 19 Attendees, representing 14 of the 31 Participants. The list of Attendees is shown in Attachment 1, and the list of Participants is shown in Attachment 2.

2. Agenda Approval [TG]

TG noted that the half-day Technical session was dropped from Agenda this year given surrounding science conferences. Participants were invited to expand their Status Reports to present research and technical developments.

The draft was reviewed, amended and approved (Attachment 3).

3. Review Minutes & Action Items from Nineteenth Meeting [Ignatius Rigor (IR)]

3.1. Finalize minutes of the meeting and post on the IABP web pages.

3.2. Collect pictures and other material for IABP web page

Participants are encouraged to send photos and material to Ignatius Rigor and/or Edward Hudson.

3.3. Follow up with Igor Polyakov (IP) regarding deployment of buoys in the Russian EEZ. Although they may not have a permit to deploy buoys in the EEZ during this cruise, they may be allowed to given the operational use of this data. More details are provided in the discussion in section 8 (of the Minutes of IABP-18). [Sync with text from these minutes.]
also discussed this with John Calder (JC), a USIABP program manager from NOAA, who suggested talking to Renee Tatusko (NOAA), who has worked out a memorandum of agreement (MOA) with AARI to maintain land stations in the Eurasian Arctic (e.g. Tiksi). These discussions led back to working with Sergey Priamikov (SP), who says this is possible, but funding would be necessary to get the permits.

DISCUSSION

TG also noted that Canada is working on an MOA with Russia. TG will provide some text

3.4. Ask Vladimir about getting a more prominent endorsement for the IABP from the WCRP/WMO similar to General Letter of Recommendation that the IPAB and is endorsed by the Scientific Committee on Antarctic Research. The IABP should solicit similar letters from Government and International agencies.

This still needs to be pursued.

3.5. Assimilate DAMOCLES buoy observations into IABP databases.

Ongoing. Jean Claude Gascard (JCG) noted that the data was still under “embargo” for the scientists of DAMOCLES, and the data will be released to the community in 2011.

3.6. Maintaining the buoy array in the Eurasian Sector of the Arctic Ocean.

Ongoing.

3.7. Bruce Bradshaw (BB), and IR will coordinate the IABP web pages with the development of the DVD using material provided by the Participants.

Ongoing. DVD will not be developed. Rather focus will be on material for the web page.

3.8. Contact Sun Bo (SB) regarding buoy deployments from the Xuelong

Ongoing. IR contacted SB, who is willing to collaborate and deploy buoys from the Xuelong. Last year, we declined to use this asset since DAMOCLES was planning to deploy a number of buoys from this ship. However, the data from these buoys was not made available to the GTS. SB has purchased some IMB buoys. Their next cruise into the Arctic will be in 2010 and this will be another logistics asset from which we may be able to deploy additional buoys.

4. Status Reports from each Participant [TG]

4.1. Canatec Associates International Ltd. - Svetlana Machurina (SM)

This report is given in Attachment 4.
EH reported for the Met. Service of Canada, and the Canadian Ice Service with information provided by Luc Desjardins and Gaëtan Langlois. This report is given in Attachment 5.

4.4. Integrated Science Data Management – Bruce Bradshaw (BB)

4.5. International Arctic Research Center – Jenny Hutchings (JH)

This report is given in Attachment 6.


4.7. National Ice Center – Michael Vancas (MV)

4.8. Norwegian Meteorological Institute – KB and SE

4.9. Purdue University – Paul Shepson (PS) and Jan Botteheim

Introduced the Ocean Atmosphere Sea Ice Snowpack (OASIS) program, and the development of the O-Buoy. This report is given as attachment 7.

4.10. Université Pierre et Marie Curie (UPMC) – JCG

4.11. University of Alberta – Christian Haas (CH)

4.12. Polar Science Center and Other Participants – IR

4.12.1. Chinese Arctic and Antarctic Administration & Ocean University of China – Jinping Zhao (JZ)

Deployed two ice buoys this spring on north of Canadian shelf. Both of them are simple with only GPS and two temperature sensors. They are still working after one month.

4.12.2. LBI Inc. – provided by Peter Legnos

This report is given in Attachment 8.

4.12.3. Norwegian Polar Institute – provided by Sebastian Gerland

We have now the buoys, which we ordered last year, one ICEB CAN and two SVP.

At the moment I consider also one of our cruises to be in August 2010 north of Svalbard (with Lance) to deploy one of the SVPs. We will have helicopter and hopefully we could deploy the buoy far enough in the ice so we would get some reasonable duration of data afterwards. The ICEB CAN buoy and the other SVP buoy could be deployed at one of the eastern positions (not used last for the SVP) of the NABOS transect.
We have also plans for buoy deployments in spring 2011, one or two IMBs (which we bought in the framework of a project funded by the research council of Norway) along with 1 or 2 radiation buoys (setup with three spectral radiometers for surface albedo and ice transmission measurements). For those, at the moment it is considered to be deployed with (landing) airplane support in the central Arctic Basin, but this is not discussed or decided in much detail yet. I hope to discuss this further at the IGS, CliC and IPY meetings in Tromsø and Oslo in the coming weeks.

4.12.4. World Climate Research Programme (WCRP) – provided by Vladimir Ryabinin

This report is given in Attachment 9.

5. Coordinator's Report [Ignatius Rigor (IR)]

IR reported on: 1.) the status of our membership and letters of intent, 2.) the status of the buoy array, 3.) deployment plans and opportunities including IPY, and 4.) the progress of data management and publications related to the IABP.

The Coordinator's report is given in Attachment 10.

6. New Business [TG]
   6.1. Update on WCRP/SCAR IPAB [Christian Haas]

7. New Directions – Part I [TG]
   7.1. We need every year to find opportunities to keep spatial balance in our array. This is a continuing challenge.
   7.2. We need to continue to deploy more buoys in the marginal and ice free zones. SVP's with barometers and perhaps sonic anemometers. Buosy that can survive the freeze-thaw cycle. Developments that have been taken are good and need continued investment.
   7.3. We need to continue to engage and be present to future operational agencies. They will be spending more in the future.
   7.4. We need to continue to encourage participation from nations with Arctic interests including but not limited to Russia.

Discussion
• EH noted that we also need to link the IABP more with oceanographic buoy programs
• And we need to be alert to what else is out there that we can display.

8. Election of Officers [TG]

The Coordinator, IR, invited all Participants to nominate individuals to the executive in an email in May 2010. IR also initiated contact with existing members of the executive to learn if they were willing and able to continue on the executive. IR reported that TG
nominated Christine Best as Chair. PCC seconded this nomination and this was passed unanimously.

Chair: Christine Best
Vice-Chair: Christian Haas
Member: Pablo Clemente-Colón
Member: Takashi Kikuchi
Member: Jean-Claude Gascard

9. Report from Data Buoy Co-operation Panel (DBCP) [by IR]

Hester Viola (HV) provided the report presented by IR on the activities of the DBCP since the IABP-20 meeting and the status of global buoy programmes was presented. Details regarding current DBCP activities can be found at http://www.jcommops.org/.

This report is given in Attachment 11.

10. New Business [Christine Best (CB)]
   - Report on WMO Executive Council Panel on Observations, Research and Services (EC-PORS) [TG]
   - DBCP Meetings [IR]
     - DBCP-26 Meeting in Scotland, 27 – 30 September 2010
   - Location of 21st IABP meeting [CB]

11. Summary of Participant Contributions [IR]

Contributions further the objectives of the IABP and are defined in the Operating Principles of the IABP, section 6.5.

The Participant contributions table is given in Attachment 13.

12. Review and Approval of the IABP Operating Principles [CB]

The Operating Principles (Attachment 14) were reviewed and approved.

13. Review of Meeting, Recommendations, and Action Items

Given time constraints, the meeting was called to a close, and remaining business would be discussed after the meeting and at the next annual meeting.

14. Draft and Approve Meeting Minutes
Attachment 1
List of Attendees

Yann Bernard
Collecte Localisation Satellites
8-10 rue Hermès
Parc Technologique du Canal
31520 Ramonville-Saint-Agne
France
Phone: +33 (0)5 6139 30 99
Fax: +33 (0)5 6139 47 97
Email: ybernard@cls.fr

Christine Best
Environment Canada
Meteorological Service of Canada
Twin Atria
Building, Room 200
Edmonton, Alberta T6B 2X3
Canada
Phone: +1 780-951-8847
Fax: +1 780-951-8634
Email Christine.Best@ec.gc.ca

Knut Bjorheim
Norwegian Meteorological Institute
Postboks 320-Blindern
N-0313 Oslo, Norway
Phone: +47 22 96 30 00
Fax: +47 22 96 30 50
Email: knut.bjorheim@met.no

Jan W. Bottenheim
Science and Technology Branch
Environment Canada
4905 Dufferin Street
Toronto, Ontario, M3H 5T4
Canada
Phone: +1 (416) 739 4838
Fax: +1 (416) 739 4281
Email: Jan.Bottenheim@ec.gc.ca

Bruce Bradshaw
Marine Environmental Data Service
Fisheries and Oceans Canada
12W082-200 Kent St.
Ottawa, Ontario, K1A 0E6
Canada
Email: Bruce.Bradshaw@DFO-MPO.GC.CA

Steinar Eastwood
Norwegian Meteorological Institute
P.O.BOX 43, Blindern
N-0313 Oslo, Norway
Phone: (+47) 22963354
Fax: (+47) 22963050
Email: s.eastwood@met.no

Jean-Claude Gascard
Université Pierre et Marie Curie (UPMC)
4, place Jussieu - 75252 Paris - France
Phone: +33 144 27 70 70
Email: gascard@lodyc.jussieu.fr

Pablo Clemente-Colón
National/Naval Ice Center
NOAA Satellite Operations Facility (NSOF)
4251 Suitland Road
Washington, D.C. 20395, USA
Phone: +1 (301) 394-3100 x3105
Fax: +1 (301) 394-3200
Email: Pablo.Clemente-Colon@noaa.gov

Tim Goos
(Formerly of Meteorological Service Canada)
Email: tim.goos@gmail.com

Christian Haas
Department of Earth & Atmospheric Sciences
1-26 Earth Sciences Building
(Office Tory 2-105C)
University of Alberta
Edmonton, Alberta, T6G 2E3
Canada
Phone: +1 (780) 492-8171
Fax: +1 (780) 492-2030
Email: Christian.Haas@ualberta.ca
Edward Hudson
Prairie and Arctic Storm Prediction Centre
Meteorological Service of Canada
Twin Atria Bldg. 2nd Floor
4999 98 Avenue
Edmonton, Alberta T6B 2X3, Canada
Phone: +1 780 951 8878
Fax: +1 780 951 8602
Email: Edward.Hudson@ec.gc.ca

Jenny Hutchings
International Arctic Research Center
University of Alaska
PO Box 757320
Fairbanks, Alaska 99775-7320, USA
Phone: +1 907 474 7569
Fax: +1 907 474 2643
Email: jenny@iarc.uaf.edu

Takashi Kikuchi
Japan Agency for Marine-Earth Science and Technology
2-15, Natsushima
Yokosuka 237-0061
Japan
Phone: +81 468 67 9686
Fax: +81 468 67 9455
Email: takashik@jamstec.go.jp

Svetlana Machurina
Canatec Associates International Ltd.
No. 122, 3553 - 31st Street N.W.
Calgary, Alberta, Canada T2L 2K7
Phone: (+1) 403-228-0962
Fax: (+1) 403-282-1238
Cell: (+1) 403-542-7759
Email: Svetlana_Machurina@canatec.ca

Stoyka Netcheva
Atmospheric Science and Technology Directorate
Science and Technology Branch
Environment Canada
4905 Dufferin Str
Toronto, ON, M3H 5T4,
Canada

David Peddie
Christian Michelsen Research Institute
Fantoftvøn 38
P.O. Box 6031 Postterminalen
N-5892, Bergen, Norway
Phone: +47 55 57 42 43
Fax: +47 55 57 40 41
Email: davidp@cmr.no

Ignatius Rigor
Polar Science Center
Applied Physics Laboratory
University of Washington
1013 NE 40th Street
Seattle, WA 98105-6698, USA
Phone: +1 206 685 2751
Fax: +1 206 616-3142
Email: ignatius@apl.washington.edu

Paul B. Shepson
Departments of Chemistry/Earth and Atmospheric Sciences
Purdue University
1393 Brown Building
West Lafayette, IN 47907-1393
USA
Phone: +1 765/494-7441
Fax: +1 765/496-2874
Email: pshepson@purdue.edu

Michael Vancas
National/Naval Ice Center
NOAA Satellite Operations Facility (NSOF)
4251 Suitland Road
Washington, D.C. 20395
USA
Phone: +1-301-394-3100
Fax: +1-301-394-3200
Email: michael.vancas@noaa.gov
<table>
<thead>
<tr>
<th>Participant</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfred Wegener Institut für Polar und Meeresforschung</td>
<td>Ursula Schauer</td>
</tr>
<tr>
<td>Postfach 12 01 61</td>
<td>Tel: +49-471-4831-1817</td>
</tr>
<tr>
<td>D-28359 Bremerhaven</td>
<td>Fax: +49-471-4831-1797</td>
</tr>
<tr>
<td>Germany</td>
<td>Email: <a href="mailto:ursula.schauer@awi.de">ursula.schauer@awi.de</a></td>
</tr>
<tr>
<td>Arctic and Antarctic Research Institute of Roshydromet</td>
<td>Igor Ashik</td>
</tr>
<tr>
<td>38, Bering Street</td>
<td>Tel: +7 812 352-1922</td>
</tr>
<tr>
<td>199397 St. Petersburg</td>
<td>Fax: +7 812 352 2688</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>Email: <a href="mailto:ashik@aari.nw.ru">ashik@aari.nw.ru</a></td>
</tr>
<tr>
<td>Chinese Arctic and Antarctic Administration</td>
<td>Zhanhai Zhang</td>
</tr>
<tr>
<td></td>
<td>Tel: +86 10 68047754, 68053486</td>
</tr>
<tr>
<td></td>
<td>Fax: +86 10 68012776</td>
</tr>
<tr>
<td>Christian Michelsen Research Institute</td>
<td>David Peddie</td>
</tr>
<tr>
<td>Fantoftvåg 38</td>
<td>Tel: +47 55 57 42 43</td>
</tr>
<tr>
<td>P.O. Box 6031 Postterminalen</td>
<td>Fax: +47 55 57 40 41</td>
</tr>
<tr>
<td>N-5892, Bergen</td>
<td>Email: <a href="mailto:davidp@cmr.no">davidp@cmr.no</a></td>
</tr>
<tr>
<td>Norway</td>
<td></td>
</tr>
<tr>
<td>Collecte Localisation Satellites (CLS)</td>
<td>Christian Ortega</td>
</tr>
<tr>
<td>8 – 10 rue Hermès,</td>
<td>Tel: +33 5 61 39 47 20</td>
</tr>
<tr>
<td>Parc Technologique du Canal,</td>
<td>Fax: +33 5 61 75 10 14</td>
</tr>
<tr>
<td>31520 Ramonville, France</td>
<td>Email: <a href="mailto:christian.ortega@cls.fr">christian.ortega@cls.fr</a></td>
</tr>
<tr>
<td>CLS America</td>
<td>Bill Woodward</td>
</tr>
<tr>
<td>1801 McCormick Drive, Suite 10</td>
<td>Tel: +1 301 925 4411</td>
</tr>
<tr>
<td>Landover, MD 20785</td>
<td>Fax: +1 301 925 8995</td>
</tr>
<tr>
<td>USA</td>
<td>Email: <a href="mailto:woodward@clsamerica.com">woodward@clsamerica.com</a></td>
</tr>
<tr>
<td>Cold Regions Research and Engineering Laboratory</td>
<td>Jackie Richter-Menge</td>
</tr>
<tr>
<td>72 Lyme Road</td>
<td>Tel: +1 603 646 4266</td>
</tr>
<tr>
<td>Hanover, NH 03755-1290</td>
<td>Fax: +1 603 646 4644</td>
</tr>
<tr>
<td></td>
<td>Email: <a href="mailto:Jacqueline.A.Richter-Menge@erdc.usace.army.mil">Jacqueline.A.Richter-Menge@erdc.usace.army.mil</a></td>
</tr>
<tr>
<td>Georgia Tech</td>
<td></td>
</tr>
<tr>
<td>Dqing Liu</td>
<td></td>
</tr>
</tbody>
</table>
|   | Integrated Science Data Management  
W082, 12th Floor  
200 Kent Street  
Ottawa, Ontario K1A OE6  
Canada | Bruce Bradshaw  
Tel: 1-613-998-2886  
Fax: 1-613-993-4658  
Email: BradshawB@DFO-MPO.GC.CA |
|---|---|
| 11 | International Arctic Research Center  
Frontier Research System for Global Change  
University of Alaska Fairbanks | John Walsh & Jenny Hutchings  
Phone: 907 474 2677  
Email: jwalsh@iarc.uaf.edu  
Email: jenny@iarc.uaf.edu |
| 12 | Japan Agency for Marine-Earth Science and Technology Center  
Ocean Research Department  
2-14, Natsushima  
Yokosuka 237, Japan | Takashi Kikuchi  
Tel: +81 468 67 9486  
Fax: +81 468 67 9455  
Email: takashik@jamstec.go.jp |
| 13 | Department of Atmospheric and Oceanic Sciences  
McGill University  
805 Sherbrooke Street West  
Montreal QC  
Canada H3A 2K6 | Bruno Tremblay  
Tel: 514 398-4369  
Fax: 514 398-6115  
Email: bruno.tremblay@mcgill.ca |
Universite Pierre et Marie Curie - Tour 45-55, Etage 4, Case 100  
4 Place Jussieu, 75252 Paris cedex 05. France. | Frederic Vivier  
Tel:+33(0)144277077  
Fax:+33(0)144273805  
Email: fvi@locean-ipsl.upmc.fr |
| 15 | LBI Corp  
973 North Road  
Groton, CT, 06340  
USA | Peter Legnos  
Tel: +1 (860) 446 - 8058 x204  
Fax: +1 (860) 446 - 8132  
Email: plegnos@lbicorp.com |
| 16 | METOCEAN Data Systems Ltd.  
21 Thornhill Drive  
Dartmouth, Nova Scotia  
CANADA B3B 1R9 | Emily Daniel  
Tel: +1-902-468-2505, ext.247  
Cell: +1-902-449-0706  
Fax: +1-902-468-4442 |
| 17 | Meteorological Service of Canada  
   Twin Atria Bldg. 2nd Floor  
   4999 98 Avenue  
   Edmonton, Alberta T6B 2X3  
   Canada | Ed Hudson  
Tel: 1 780 951 8629  
Fax: 1 780 951 8762  
Email: Edward.Hudson@ec.gc.ca |
| 18 | Nansen Environmental and Remote Sensing Center  
   Thormøhlensgate 47  
   5006 Bergen  
   Norway  
Nansen International Environmental and Remote Sensing Center  
7, 14th Line, office 49  
Vasilievsky Island  
099034 St. Petersburg  
Russia | Ola M. Johannessen & Stein Sandven  
Phone: +47 55 20 58 00  
Fax: +47 55 20 58 01  
Email: ola.johannessen@nersc.no  
Email: stein.sandven@nersc.no  
Leonid Bobylev  
Tel: +7 812 324 5103  
Fax: +7 812 324 5102  
Email: adm@niersc.spb.ru  
Email: leonid.bobylev@niersc.spb.ru |
| 19 | National/ Naval Ice Center  
   NOAA SOF  
   4231 Suitland Road  
   Washington, DC 20395  
   USA | Pablo Clemente-Colón  
Tel: +1 301 394-3105  
Fax: +1 301 394-3200  
Email: Pablo.Clemente-Colon@natice.noaa.gov |
| 20 | Naval Oceanographic Office  
   Code N323  
   Air Operations Branch  
   1002 Balch Boulevard  
   Stennis Space Center, MS 39522-5001  
   USA | James A. Duke  
Tel: +1 228 688-5725  
Fax: +1 228 688-5514  
Email: james.a.duke@navy.mil  
Email: james.duke@navy.smil.mil |
| 21 | Norwegian Polar Institute  
   The Polar Environmental Centre  
   NO-9296 Tromsø  
   Norway | Sebastian Gerland  
Phone: +47 77750 554  
Fax: +47 77750 501  
E-Mail: s.gerland@npolar.no |
| 22 | Norwegian Meteorological Institute  
   Postboks 320-Blindern  
   N-0313 Oslo  
   Norway | Steinar Eastwood  
Tel: +47 22 96 3354  
Fax: +47 22 96 30 50  
Email: s.eastwood@met.no |
| 23 | Pacific Marine Environmental Laboratory  
   Bldg. 3  
   Bin C15700 CB 357940  
   7600 Sand Point Way NE  
   Seattle, WA 98115-0070  
   USA | James Overland  
Tel: +1 206 526 6824  
Fax: +1 206 526 6485  
Email: overland@pmel.noaa.gov |
| 24 | Polar Science Center  
   Applied Physics Laboratory | Ignatius Rigor  
Tel: +1 206 685 2571 |
<table>
<thead>
<tr>
<th>No.</th>
<th>Institution Name</th>
<th>Address</th>
<th>Contact Person</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Polar Research Institute of China</td>
<td>451 Jinqiao Road, Pudong, 200136, Shanghai, China</td>
<td>Sun Bo</td>
<td><a href="mailto:sunbo@pric.gov.cn">sunbo@pric.gov.cn</a></td>
</tr>
<tr>
<td>26</td>
<td>Scottish Association for Marine Science</td>
<td>Dunstaffnage Marine Laboratory, Dunbeg, Oban PA37 1QA, Scotland</td>
<td>David Meldrum</td>
<td><a href="mailto:dtm@sams.ac.uk">dtm@sams.ac.uk</a></td>
</tr>
<tr>
<td>27</td>
<td>Department of Earth &amp; Atmospheric Sciences</td>
<td>1-26 Earth Sciences Building (Office Tory 2-105C), University of Alberta, Edmonton, Alberta, Canada T6G 2E3</td>
<td>Christian Haas</td>
<td><a href="mailto:Christian.Haas@ualberta.ca">Christian.Haas@ualberta.ca</a></td>
</tr>
<tr>
<td>28</td>
<td>Université Pierre et Marie Curie (UPMC)</td>
<td>4, place Jussieu - 75252 Paris - France</td>
<td>Jean-Claude Gascard</td>
<td><a href="mailto:gascard@lodyc.jussieu.fr">gascard@lodyc.jussieu.fr</a></td>
</tr>
<tr>
<td>29</td>
<td>Woods Hole Oceanographic Institute</td>
<td>Woods Hole, MA 02543-1541, USA</td>
<td>Richard Krishfield</td>
<td><a href="mailto:rkrishfield@whoi.edu">rkrishfield@whoi.edu</a></td>
</tr>
<tr>
<td>30</td>
<td>European Meteorological Network (EUMETNET/E-SURFMAR)</td>
<td>Centre de Meteorologie Marine 13, rue du Chatellier - BP 90411 29604 BREST CEDEX, FRANCE</td>
<td>Pierre Blouch &amp; Jean Rolland</td>
<td><a href="mailto:pierre.blouch@meteo.fr">pierre.blouch@meteo.fr</a>, <a href="mailto:jean.rolland@meteo.fr">jean.rolland@meteo.fr</a></td>
</tr>
<tr>
<td>31</td>
<td>JPS for WCRP</td>
<td>7bis, Avenue de la Paix, CP2300, Geneva 2, CH-1211, Switzerland</td>
<td>Vladimir Ryabinin</td>
<td><a href="mailto:VRyabinin@wmo.int">VRyabinin@wmo.int</a></td>
</tr>
</tbody>
</table>
Attachment 3 - Agenda
Twentieth Annual Meeting of the International Arctic Buoy Programme [IABP]
Hosted by Norwegian Meteorological Institute (NMI)
Oslo, Norway, 6 – 7 June 2010

Sunday, 6 June 2010
0900-1200 Business Meeting
1. Meeting Opens – [Tim Goos]
   • Welcome [Knut Bjorheim or Steinar Eastwood]
   • Meeting Information [Steinar Eastwood]
   • Call to order [Tim Goos]
2. Agenda Approval [Tim Goos]
3. Review Minutes & Action Items from Nineteenth Meeting [Ignatius Rigor]
4. Status Reports from each Participant [Tim Goos]
5. Coordinator's Report [Ignatius Rigor]
   • Status Report on Membership and Letters of Intent
   • Status of Buoy Network and Deployment Plans

1300–1700 Business Meeting [Continued]
6. New Business [Tim Goos]
   • Update on WCRP/SCAR IPAB [Christian Haas]
7. New Directions – Part I [Tim Goos]
8. Election of Officers [Tim Goos]

Group Dinner – No host

Monday, 7 June 2010
0900–1200 Business Meeting [Continued]
9. Report from Data Buoy Co-operation Panel (DBCP) [Hester Viola]
10. New Business [Chair]
    • Report on WMO Executive Council Panel on Observations, Research and Services
       (EC-PORS): [Tim Goos]
    • DBCP Meetings [Ignatius Rigor]
      o Report on DBCP-25 Meeting in Paris, 28 September – 1 October 2009
      o DBCP-26 Meeting in Scotland, 27 – 30 September 2010
    • Location of 21st IABP meeting [Chair]
11. Summary of Participant Contributions [Ignatius Rigor]
12. Review and Approval of the IABP Operating Principles [Chair]

1300–1700 Business Meeting [Continued]
13. New Directions – Part II [Chair]
14. Review of Meeting, Recommendations, and Action Items [Chair]
15. Draft and Approve Meeting Minutes [Chair]

Notes:
• Half-day Technical session dropped from Agenda given surrounding science conferences. Participants may expand their Status Reports to present research and
Canatec Ice Drift Data Sets

Canatec is selling data sets of ice drift originating in the Beaufort Sea, to support offshore petroleum activities. Four Canatec designed beacons have been deployed in the Beaufort lease areas. Their sampling rate of 2 hours and resolution of 2.5 m allow much better calculations of impact loading and ice management strategies than has been possible to date. The data set begins 18 March 2010 and will continue up to 12 months. The beacons have been placed on large, thick floes, one of which is multiyear. They will transmit if floating and have limited capability to continue working in refreeze. This extended life will generate data critical for understanding movement of oil from possible spills and blowouts. Beacon deployment locations are shown as white dots on the floes.

Tracking Displays

Data can be accessed by the customer as they are produced, on the Canatec website (www.canatec.ca) by clicking on the button labeled “Tracking Beacon Map”. Access is password protected. The 4 beacons are transmitting as indicated north of the Mackenzie Delta. Tracking displays can be manipulated on the web to examine each beacon drift in detail, up to the 2.5m maximum resolution. The display will give the location at each time.
northernmost beacon only) and the number of satellites viewed by the GPS in making a position fix (which relates to accuracy if they fall below 4). The following table shows a sample data set for 1 beacon.

<table>
<thead>
<tr>
<th>Time (UTC)</th>
<th>Date</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Pressure</th>
<th>Temperature</th>
<th>Satellites</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:20:06</td>
<td>21/03/10</td>
<td>71.939615</td>
<td>-137.292332</td>
<td>1036.1</td>
<td>-27.8</td>
<td>9</td>
</tr>
<tr>
<td>14:21:26</td>
<td>21/03/10</td>
<td>71.934802</td>
<td>-137.303992</td>
<td>1035.6</td>
<td>-27.3</td>
<td>8</td>
</tr>
<tr>
<td>16:20:26</td>
<td>21/03/10</td>
<td>71.929455</td>
<td>-137.315233</td>
<td>1035.6</td>
<td>-26.9</td>
<td>10</td>
</tr>
<tr>
<td>18:21:06</td>
<td>21/03/10</td>
<td>71.921907</td>
<td>-137.327685</td>
<td>1035.3</td>
<td>-25.4</td>
<td>11</td>
</tr>
</tbody>
</table>

**Price**
The data set price is 2,200 $US per beacon per month and includes all available parameters. Customers can purchase data streams from any or all of the beacons, for a minimum of 1 monthly period, on a monthly basis. If data stop, Canatec will consider putting out replacement beacons. If this is not possible, billing will be prorated. Payments are tri-monthly or monthly, whichever is the shorter period of the contract. To choose a beacon track and time, you can request temporary access to the tracking part of the website.

**Restrictions**
The data set may be used by any individual working within the same corporate building. Individuals working in other buildings must purchase the data set separately. The raw data set may not be resold, nor utilized by any other party except as part of a specific subcontract for analysis.

**Additional Services and Customization**
If desired, Canatec can provide expert analysis of drift data and relate them to specific issues of importance to customers. Data sets in other areas of interest and seasons can be generated upon request. Beacons can also be customized to vary sampling rates, house additional sensors and sink if required by environmental permitting after the ice floe disintegrates.

**How to Purchase**
Contact Svetlana Machurina at Canatec, svetlana_machurina@canatec.ca, +1 403 228 0962. Upon receipt of a purchase order number, a permanent username and password will be emailed to the customer to download the purchased data sets for the duration of the contract.
A. MSC Experiment Code 627 - Status 25 May 2010 - The 25 May 2010 monthly IABP buoy map shows 6 MSC Experiment Code 627 buoys active in the Arctic Basin and 1 grounded on the North Alaska Coast.

B. Deployments July 2009 to June 2010 - 5 buoys had the Meteorological Service of Canada (MSC), Environment Canada, “touch”:
1. White Trident August 2009 – Two of the ICEX-AIR buoys deployed during the August 2009 US Naval Meteorology and Oceanography Command White Trident exercise were funded by MSC.
   Status 25 May 2010 – One ceased reporting shortly after deployment and the other in the period late April into May.
2. Twin Otter landing on ice March 2009 – 2 SVP’s and a MetOcean Ice Beacon were provided by the US for deployment. However, the annual Meteorological Service of Canada deployment flights conducted out of Eureka using a Twin Otter landing on ice was a no go. In its place:
   o SVP Argos Id 89945 deployed 27 April courtesy Mike Dempsey, Institute of Ocean Sciences, in conjunction with Eddie Carmack’s Oceanography of the High Canadian Arctic in Winter project
   o MetOcean Ice Beacon Argos Id 66270 deployed early May courtesy Switchyard project
   o SVP Argos Id 89946 deployed early May courtesy Christian Haas on fast off Alert

C. IABP Awareness and Business Activities – The IABP Chairman’s – Coordinators Report for the October 2009 DBCP meeting in Paris was submitted in “doc” format. A Power Point edition was also prepared. The Power Point was presented at the DBCP
D. **O-Buoy for measurement of atmospheric components** – See report by Jan Bottenheim et al.

E. **Observations to GTS** - Environment Canada has sorted out a mechanism to allow buoys using Iridium telemetry - EC or 3rd party - to be routed to GTS as FM 18 buoy code messages. Status May 2010:
   - EC has a data sharing agreement with Scotia Weather and Jou Beh in place.
   - An advantage of the Jou Beh/Scotia Weather system is that the 3rd agreement is with them, and they have a one-pager that ensures any buoy operators agree to GTS distribution and transfer IP rights to EC to use the data for archive, science etc.
   - CMC is accepting data in standard format and routing to GTS from 5 drifting buoys owned/operated by research projects, private sector and other countries (Japan, New Zealand, US)
   - EC is using this as a test case for other 3rd party data ingest under the Network of Networks approach. E.g. Polar Arctic Weather Stations (PAWS)
   - While it was great to get the data in from the University of Alberta, there was no formal agreement in place which is problematic to EC. For example, it is harder to manage the metadata reporting to DBCP.

Edmonton HRPT Local Users Terminal (LUT) - Only 1 buoy is presently being posted to the GTS from the Edmonton LUT, IMB Argos 7440 WMO 48621

New- Data from Resolute HRPT being sent to CLS for processing - Since the fall of 2009, data from the Resolute HRPT system is being sent to Service Argos for processing. This became feasible when a high speed data link from the Resolute facility to the south came on stream. Data from the Edmonton HRPT continues to flow to Service Argos.

F. **Meteorological Service of Canada action plan**

Maintain focus on buoys for operational meteorological purposes: buoys that give surface air pressure and surface air temperature

- Participate in the annual White Trident Exercise by funding ICEX AIR buoys - 2 possibly 3 or 4 for 2011
- Look for deployment opportunities other than the annual EC late March or early April Twin Otter landing-on-ice deployment out of Eureka.
- Continue working with IABP Coordinator to prepare IABP Chairman / Coordinators report and PowerPoint for annual DBCP meeting
- Add buoys that float and can survive the freeze/thaw cycle to the EC mix going on ice the Arctic Basin including SVP buoys with sonic anemometers

G. **Weather Support for operations and science across the Arctic Basin**

EC hosts an ftp site which provides satellite imagery and forecast visualizations which cover much of the Arctic Basin. **Direct access**

ftp://cisclient.cisclient@cisclient.cis.ec.gc.ca/IPY-API/ArWx
If that doesn't work: ftp://cisclient.cis.ec.gc.ca/IPY-API/ArWx  user: cisclient
password: cisclient

For 2010, a high speed data link south from the Resolute HRPT allowed EC to make higher resolution satellite imagery and additional satellite imagery mappings available on the ftp site and to the forecasters serving the Canadian Arctic. The ftp site continues to host visualizations of, for example, winds, blizzard conditions and stratus/fog. Wave visualizations are being added for summer and fall marine season.

A. **MSC Experiment Code 633, Canadian Ice Service, Status May 2010**
5 CALIB’s are presently active. 2 provide barometer data. 3 of the 5 CALIB’s were deployed earlier this year.

B. **Plans**
- No additional deployments planned for 2010.
- Focus to remain on position buoys deployed on ice shelf fragments, ice islands, and other thick ice within and off the Canadian Archipelago.
- One additional CALIB (position only) will be provided to GCFR – the Transport Canada airplane which will monitor Arctic Pollution this summer. No scheduled deployment is planned but opportunistic deployment will be available should a special situation arise.

C. **Extra**
- In order to offer better support, a new person is being trained on the CIS beacon program and its regular activities; please add Gaetan.Langlois@ec.gc.ca on your mailing list.
Attachment 6
International Arctic Research Center

Deployments
- NPEO: 20km scale deformation array (Spring)
- SIZONET: 2 Seasonal IMBs (Spring)  http://ak.aoos.org/SIZONet/
- Wales Deployments: Array (Spring)
- NABOS: 7 buoys planned for Siberian Seas (Cancelled)
- APLIS11 Camp. (Cancelled)

Future Plans
- GPSification of IABP
- Building pan-Arctic sea ice deformation products, with quality control and error characterisation.
- Future IBO deployments: What spatial scale must be resolved to show relationship between sea ice deformation and surface fluxes?

Ice Plan
- Please provide logistics information to  http://iceplan.org

Community Ship Reporting of Ice Obs
- Pilot project summer/autumn 2010
- Basic variables (concentration, melt pond fraction, type, thickness)
- Web dissemination hosted by the SEARCH Sea Ice Outlook.
- China, Japan, Canada, US, Norway, Germany, UK
- If you are going to sea contact jenny@iarc.uaf.edu to get involved.

Overview of this weekends CLIC sea ice WG meeting
- Logistics coordination, access (Law of the Sea) + intense burst every 10 years. Start planning NOW
- Need to bring Russia into the group
- Provide recommendations for sat + model cal/val, and observation protocols.
- ASPECT type ship obs coordination
- Provide documents to facilitate consistent observations
Attachment 7

**O-buoy deployments by Environment Canada in spring 2010**

Jan W. Bottenheim, Stoyka Netcheva

Environment Canada

The O-Buoy is a potentially transformative system for acquisition of long-term, ocean-based data sets that are needed to quantify seasonal and inter-annual variability in the atmosphere above a fast-changing Arctic sea ice cover. Existing data on atmospheric ozone (O₃), bromine monoxide (BrO), and carbon dioxide (CO₂) over Arctic sea ice are very limited in number and the length of measuring period because of the logistical challenges for long-term data acquisition in the Arctic. Recent developments in analytical equipment, power management and instrumentation control allowed us to overcome those challenges. The O-Buoy is powered by a hybrid energy source build of Li and rechargeable batteries and solar panels that could sustain system operation for periods of up to at least two years (environmental conditions permitting). Meteorological parameters, the system position and its drift parameters, as well as a daily webcam image are also included into daily records that are transmitted by Iridium satellite. The new type of buoy is designed to survive harsh conditions during transport and melting of the Arctic Ocean sea ice and operates with no direct human interaction transmitting collected data via Iridium satellite communication on predefined daily schedule. It is a collaborative project involving several Canadian and US research groups.

The data obtained with this advanced instrumentation are expected to provide new insights into seasonal and inter-annual variability in the Arctic marine atmosphere and transform the knowledge and understanding of air-ice-ocean interactions. They will significantly increase the knowledge and understanding of the Arctic atmosphere and its connections to the global atmospheric system, and aid in modeling Arctic and global atmospheric chemistry and climate change.

The first O-Buoy was successfully tested in spring 2009 near Barrow, Alaska. It was subsequently deployed from the CCGS Louis St Laurent on an ice floe in the Beaufort Sea in early October 2009. Two upgraded O-Buoys were acquired by Environment Canada. One of these was deployed from Churchill, Manitoba on February 20 2010 in the Hudson Bay and collected data until March 27, 2010. The second Canadian unit was deployed on the ice South of Borden Island (78.183N/112.06W) in collaboration with UNCLOS for the duration of their spring mission between April 3 and April 27 2010. Data collected are archived in the Arctic observing Network (AON) CADIS system, the International Arctic Buoy Program (IABP) archive, as well as reported to the WMO in Geneva.

The coming season will see a second US owned O-buoy deployed in September 2010 in collaboration with WHOI. Since both Canadian O-buoys could be recovered, we are in the lucky position to undertake a second deployment. Once again we plan to deploy one Canadian O-buoy on the ice of the Hudson Bay out of Churchill, while the opportunities for deployment of the second one on the Arctic Ocean are currently explored.

The innovative O-Buoy data sets are intended to contribute to the understanding of Arctic environmental system change. All AON data are community data that are made freely and openly available for the use by the broader scientific community. Future plans encompass an Arctic wide network of O-buoys, in conjunction with the IABP.

Literature:
T. N. Knepp, J. Bottenheim, M. Carlsen, D. Carlson, D. Donohoue, G. Friederich, P. A. Matrai, S.
Air-droppable eXpendable Ice Buoy (AXIB)

The two AXIBs deployed in the Arctic in August of 2008 are still operating, having successfully transmitted temperature and barometric pressure data continuously over two winter seasons. Battery voltages still look good and we anticipate continued operation of these buoys.

Two AXIBs were developed in 2009 for Dr. Mike Steele of the Polar Science Center, University of Washington for his UpTempoO Project. The objective of this project was to measure the thermal effect of the circulation of the upper layers of water in the Arctic Ocean. These buoys were developed with our partner at that time—Clearwater Instruments—and had a 100-meter thermistor chain for measuring seawater temperature at depth. The thermistor employed a single conductor with a multiplexed signal for each of the thermistor elements, and a ground using a seawater path to the buoy. One buoy was deployed in Summer 2009 and the thermistor failed to operate successfully, probably due to the non-conductive freshwater layer at the buoy.

We are currently developing 4 new AXIBs for air and water launch this summer. Dr. Pablo Clemente-Colon of the National Ice Center and Dr. Ignatius Rigor of the Polar Science Center at U. Washington sponsor this project. We are teaming with MetOcean Data Systems Ltd. to develop a new version of the instrumentation package.

LBI is also currently engaged in developing several autonomous surface and subsurface craft of the Office of Naval Research.
The AXIB is a versatile and robust platform for collecting meteorological data in the marginal “freeze-thaw” ice zone.

The buoy has a two-meter sensor mast for barometric and temperature measurement, and an ice/seawater thermistor.

It is hydrostatically stable when floating in water.

AXIB can sustain multiple thaw-freeze-thaw cycles due to its unique hull shape.

The AXIB can be air-deployed on ice or in water.
Attachment 9

WORLD CLIMATE RESEARCH PROGRAMME (WCRP): UPDATE FOR IABP

Twentieth Annual Meeting of the IABP
Norwegian Meteorological Institute, Oslo, Norway, 6 – 7 June 2010

(Submitted by Joint Planning Staff for WCRP)

WCRP

The new WCRP Implementation Plan 2010-2015 and the recent Accomplishments Report are available online from the WCRP website, section Strategy (http://wcrp.wmo.int). Until 2015, WCRP will work on implementation of the Coordinated Observation and Prediction of the Earth System (COPES) (http://wcrp.wmo.int/pdf/WCRP_strategImple_LowRes.pdf), which aims to facilitate analysis and prediction of Earth system variability and change for use in an increasing range of practical applications of direct relevance, benefit and value to society. The two major original WCRP objectives - to determine the extent to which climate can be predicted and to determine the extent of human influence on climate – remain, but WCRP focuses more and more on developing the science that supports climate and climate change decision making, adaptation, mitigation. There is a clear demand and hence emphasis on the development of science enabling climate services for the community. Further evolution of WCRP and its future structure will be dependent on these priorities.

Major recent meetings that served as milestones in determining the future path of WCRP were
- the World Climate Conference -3 (WCC-3, Geneva, 31.08-04.09.2009), which agreed to establish a Global Framework for Climate Services (GFCS), and
- the OceanObs’09 (Venice, 21-25.09.2009), which urged for sustainable development of the “ocean physical” observations and progress in biogeochemical and ecosystem observations.

To enable climate predictions and corresponding services, there is an urgent need to address two extremely tough challenges for climate science: strengthen capabilities for climate predictions from seasonal to decadal time scales and develop the basis for meaningful regional climate predictions. To address these challenges, WCRP has launched two recent activities, a decadal variability, predictability and prediction initiative and the Coordinated Regional Downscaling Experiment (CORDEX). Seasonal predictions are addressed through the Climate-system Historical Forecast Project (CHFP) - a multi-model and multi-institutional experimental framework for sub-seasonal up to decadal prediction of the complete physical climate system. The Phase 5 of the WCRP Coupled Model Intercomparison Experiment (CMIP5) includes experimental predictions on decadal scale and centennial time scale (up to the year 2100 with some runs up to the year 2300). Other priority WCRP activities are associated with the topics of sea-level variability and change, research on monsoons, climate extremes (especially droughts), atmospheric chemistry and climate (AC&C), and legacy of the International Polar Year 2007-2008 (IPY). A continuous focus of WCRP is on the anthropogenic climate change (ACC), its causes and predictions.

CliC

The Sixth Session of the CliC Scientific Steering Group (SSG-VI) was held at the Centro de Estudios Científicos (CECS) in Valdivia, Chile, from 4 through 9 February 2010. The SSG-VI objectives were to review the progress of CliC initiatives and themes, realign CliC activities towards tangible contributions to the WCRP objectives outlined in the WCRP 2010-2015 Implementation Plan, and to identify people and determine collaborations required to achieve the CliC/WCRP objectives. The meeting discussed project’s future activities and its intermediate- and long-term objectives.

The SSG-VI agreed to four major long-term objectives seen as key milestones in studying the predictability of the climate and cryosphere system and in understanding the human effects on climate. They are:
- Enabling prediction of the Arctic climate system;
CliC will work with partners within and outside WCRP, including IABP, towards achieving these objectives. To reach these long-term objectives, a range of contributing shorter-term activities were reviewed and endorsed. These include the five integrating and cross-cutting initiatives that CliC SSG-V formulated in Geneva in December 2008, as follows:

- Cryospheric input to the Arctic and Southern Ocean freshwater budgets
- The role of carbon and permafrost in the climate system
- Hemispheric differences in sea-ice extent and seasonal predictability
- Regional climate modelling and improved parameterisation of cryospheric processes
- Ice sheet dynamics and the role of the major ice sheets in sea-level rise

In addition, six new initiatives were formulated and endorsed:

- Review of passive microwave sea-ice concentration and extent products
- Extension of permafrost studies into continental shelf areas
- Improvement of sea-ice parameterization for climate models of the Arctic- and Southern Oceans
- Support for the Arctic System Reanalysis
- Focus on the explanation of causes and prediction of the Arctic sea-ice loss involving a CMIP5 diagnostic subproject, including the ARctic Climate HIndcasting, Modelling and PrEDiction ExperimentS (ARCHIMEDES)
- Continuing the Southern Ocean Observing System development and reinvigoration of the Southern Ocean Physical Oceanography and Cryosphere Linkages (SOPHOCLES) initiative

**WCRP polar initiatives with a focus on the Arctic or both Polar Regions**

*Polar climate predictability:* WCRP is organizing a workshop (Bergen, Norway, 25-29 October 2010, by invitation) to exchange information, interact, brainstorm and try to distill ideas on what may be predictable in the Polar Regions and mid-latitudes due to teleconnections with other regions and interactions between various components of the Earth system. The workshop will review the state of knowledge about feedbacks / teleconnections / processes / interactions / modes of variability in the climate / earth systems and asynchronous relations between various components of these systems that have a polar manifestation and are essential for secular, decadal and seasonal scale climate prediction.

*Polar observations:* CliC will continue to support the development of cryospheric and polar observations, mostly through the activities of the team of people that prepared the IGOS Theme on Cryosphere.

*IABP:* WCRP welcomes extended collaboration and coordination between IABP and WCRP/SCAR IPAB.

*Arctic Climate Prediction:* “Enabling prediction of the Arctic climate system”, a long-term goal of CliC, was endorsed by the 31st Session of WCRP Joint Scientific Committee (Antalya, 15-19 February 2010) and a WCRP initiative. Consultations with several programs and partners are underway on a way forward.

*International Polar Decade:* this is a proposal by several participants in the IPY. WCRP is supportive of it and wishes to use the opportunity to start and continue long-term activities aimed at the improved monitoring and prediction of polar climate.

**WMO Executive Council Expert Team on Polar Observations, Research and Services (PORS)**

At its first session in Ottawa, Canada, on 13-15 October 2009, PORS reviewed various programs and projects active in the Polar Regions including IABP and IPAB. It is recommended that PORS, as the main WMO vehicle for coordination of polar activities, is continuously kept informed of the developments with IABP, its status and needs.

**WCRP and IABP**

WCRP considers IABP a very successful and important program and remains a loyal supporter of and participant in IABP. WCRP cordially invites IABP participants to submit an abstract and participate in the WCRP Open Science Conference (OSC) to be held in Denver, Colorado, USA, on 24-28 October 2011. The
this document. The OSC website is at http://www.wcrp-climate.org/conference2011/index.html. The OSC venue offers good possibility to organize associated side meetings.
Coordinator’s Report

The Coordinator reported on: 1.) the status of the buoy array, 2.) deployment plans and opportunities, and 3.) the progress of data management and publications related to the IABP. The full report may be viewed at http://iabp.apl.washington.edu/IABP-20/…

Status of the Buoy Array

- 89 buoys were reporting as of our last meeting in June 29 (Fig. 1)
- 43 buoys have been deployed since.
- 89 buoys are currently reporting (Fig. 2)

Data and Publications

- Research data analyzed through 2009 and posted on web pages.
- Major redesign of IABP Web pages has been accomplished.
- 600+ papers have used IABP data (Citations through 2009).

Highlights

- AXIB, ICEXAIR, and SVP-15BG have been certified for air drop.
- We plan to deploy 70+ more buoys during the summer of 2010. See http://iabp.apl.washington.edu/overview_deploymentplans.html for more details.
- Big Issue: How do we maintain the buoy array in the Eurasian Arctic?
Figure 2: Buoy Positions on 4 June 2010. Note clusters of buoys in the Beaufort and near the North Pole. Also note the gap in observations in the Eurasian Arctic.
Figure 3: Remaining Buoy Deployment Plans for 2010. The Participants and Collaborators of the IABP plan to deploy at least 70+ more buoys this summer.
Area of Interest: Central Arctic Ocean and its marginal seas, excepting Exclusive Economic Zones, where agreements of the Coastal States have not been obtained.

Variables measured: Basic variables: atmospheric pressure, air temperature. Other variables: atmospheric pressure tendency, wind speed and direction, snow, and sea-ice properties, as well as subsurface oceanographic characteristics.

Targeted horizontal resolution: 250 x 250 km
Chairperson: Tim Goos, Meteorological Services Canada
Coordinator: Ignatius Rigor, University of Washington, USA
Web site: http://iabp.apl.washington.edu/
Meetings: Annual meetings in spring/early summer of the Northern Hemisphere.

Status (Sept. 2008) The daily buoy status report for 26 August 2008 shows 89 buoys on the basin: This is similar to last year at this time there are more buoys on less ice than in previous years. The number of buoys is higher in 2007 and 2008 than in 2006 and years previous as result of and / or in support of International Polar Year activity. There continues to be several ice thickness and oceanographic buoys in the array. The Number of buoys on the Eurasian side of the pole on ice and / or in water remains low.

IABP was formally established on 18 September 1991 and officially became an action group of the Panel at the seventh session of the DBCP (Toulouse, October 1991).

The Programme is targeting a horizontal resolution of 250*250 km. Recommended measured data include SLP, AT, ice motion, snow depth, ice thickness, ice temp, ocean temperatures and salinity.

Today, the IABP is composed of 28 different research and operational institutions from 8 different countries (Canada, China, France, Germany, Japan, Norway, UK, USA), and 2 international organizations (the World Climate Research Programme, and the European Meteorological Network).