

REPORT OF TECHNICAL COMMITTEE ON DATA EXCHANGE

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The meeting of the Technical Committee on Data Exchange (TCODE) was held from 8:30-17:30 hours on October 7, 2005. The Chairman, Dr. Igor I. Shevchenko, called the meeting to order and welcomed the participants. The meeting was attended by 8 TCODE members and 3 observers representing all PICES member countries (*TCODE Endnote 1*). Mr. Robin Brown served as rapporteur. The Committee reviewed the provisional agenda, and it was adopted as presented (*TCODE Endnote 2*).

Review progress on items in the 2004/2005 Workplan (Agenda Item 3)

TCODE Topic Session on “Marine data management and delivery systems to support ecosystem monitoring”

This was the first scientific session organized by TCODE. Papers covered topics of real-time data delivery between ships-at-sea and land-based laboratories, marine data exchange protocol options and standards, merging and aggregating data sets and data streams from diverse sources, and metadata search and federated systems. Eleven oral papers and 5 posters were presented. The session was received very well by PICES scientists and attendance was high. The session clearly demonstrated that TCODE can contribute to the scientific part of the Annual Meetings. The summary of the workshop is included elsewhere in this Annual Report.

Pilot project to “Federate metadata on North Pacific ecosystems”

One paper presented by Dr. Bernard A. Megrey at the TCODE Topic Session (above) described progress on this project. He provided a short review and demonstration including a query to a clearinghouse at <http://clearinghouse3.fgdc.gov/>. He noted that for metadata publishing using this technology: (1) minimal hardware is required,

(2) open source (free) software is available and (3) the server is easily configured. All the work is in preparing the metadata records (including translation into English).

Using partial support from PICES, KODC (Korea Oceanographic Data Center) and NPEM (NOAA-PICES North Pacific Ecosystem Metadatabase) have exploited a communications technique that allows public internet search of their combined metadata collections in a single session. Major progress came from the first joint meeting held in August 2005, in Seattle. The second planning meeting will be held in Busan following the PICES Annual Meeting, to work out the details (mapping DIF which is used by Korea to the FGDC standard; translation of Korean metadata). Dr. Megrey will provide a report on “*Federate metadata on North Pacific ecosystems*” pilot project including a manual for those who are willing to federate (to be posted on the TCODE website at <http://tcode.tinro.ru>). Dr. Anthony Isenor will supply a link to a British parameter dictionary in order to try to standardize the vocabulary.

Personnel from the Japan Oceanographic Data Center, the Japan Marine Information Research Center and the Pacific Institute of Geography of the Far Eastern Branch of the Russian Academy of Sciences expressed strong interest in joining the federation process. To aid the ongoing effort, funding proposals were submitted to the Sasakawa Peace Foundation and to PICES (*TCODE Endnote 3*) for the continuation of the project. An article about the project was published in PICES Press (Vol. 14, No. 1).

TCODE Action Plan

The draft TCODE Action Plan was designed to reflect activities of the Committee for the next 5 years. Those activities are supposed to meet the goals and objectives of the PICES Strategic Plan and the PICES Strategy for Capacity Building.

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Update TCODE web pages

Dr. Shevchenko described the current content of <http://tcode.tinro.ru> and asked members and observers for their contributions.

Assistance with HAE-DAT database activities

The Committee reviewed the progress made with the development of the HAE-DAT (Harmful Algal Event Database) partnership. IOC and PICES agreed (a formal agreement was signed in June 2005) to establish a partnership in systematically compiling, storing and presenting on-line records on harmful algal events. Event records will be compiled and stored annually in the format specified in the HAE-DAT database. A similar agreement was signed between IOC and ICES. It was recommended that continued assistance with database activities be provided to the Section on *Ecology of harmful algal blooms in the North Pacific*.

Coordinating TCODE and MONITOR activities

Dr. Thomas C. Royer reported on the activities of the new MONITOR Technical Committee and its Action Plan.

OBIS and other related projects

In order to better understand the Ocean Biological Information Systems (OBIS) and other related projects, Dr. Shevchenko posted links to relevant internet resources at <http://tcode.tinro.ru>.

National annual reports (Agenda Item 4)

TCODE members from all member countries, Robin Brown (Canada), Ruguang Yin (China), Tomowo Watanabe (Japan), Kyu-Kui Jung (Korea), Georgiy Moiseenko (Russia) and Bernard Megrey (U.S.A.), presented national annual reports that were mostly in accordance with the recommended template. This template includes key institutes and agencies, key persons/contacts, data and metadata sets, ocean observing systems, data and metadata formats and standards, information technologies for

collecting, measuring and enumerating marine organisms, DM programs that underpin marine science programs, existing intra- and international data policies, software applicable in marine ecosystems studies and modeling, publications on marine DM issues, education materials, *etc.* All reports will be posted on the TCODE web page.

Updates on data management activities in PICES member countries and international organizations (Agenda Item 5)

Dr. Norio Baba (Japan) described ongoing data management programs of NOWPAP.

Dr. Shevchenko was invited to attend the 2nd International Workshop for GODAR-WESTPAC. He presented a report on PICES TCODE activities. At the workshop, representatives of WESTPAC member countries and several international organizations described various data management projects, such as IODE (International Oceanographic Data Information Exchange) activity, the GOSUD (Global Ocean Surface Underway Data) project, Australian Initiative for Oceanographic Data Management, SeaDataNet (Pan European Infrastructure for Ocean and Marine Data Management), and Japan Fisheries Oceanography Database, *etc.*

On behalf of PICES/TCODE, Dr. Shevchenko participated in the 3rd International Symposium on “GIS/Spatial Analyses in Fishery and Aquatic Sciences”. There were 86 participants from 21 countries and 5 international organizations. Three themes were chosen for this Symposium: (a) effective and affordable GIS for fishery and aquatic information especially for the people in the developing countries; (b) spatial fish stock assessment modeling; and (c) spatial fisheries resource management. Most papers described applications of GIS technology, statistical methods and mathematical modeling to processing and understanding marine and fisheries data. Dr. Shevchenko invited members of the Fishery-Aquatic GIS Research Group to participate in PICES/TCODE activities.

Discussion of TCODE activities in relation to the PICES Strategic Plan and development of TCODE Action Plan (Agenda Item 6)

The Committee reviewed and discussed the draft TCODE Action Plan. The results of this discussion will be used to update the Action Plan.

Future integrative scientific program(s) of PICES (Agenda Item 7)

Dr. Shevchenko reviewed the procedure and status of the implementation of future PICES integrative scientific program(s). The proposed themes will be posted on the PICES website, and the PICES community is encouraged to provide comments.

Planning for PICES XV (Agenda Item 8)

TCODE discussed and supported the proposal by MONITOR to convene a 1-day joint workshop on “*Data management, delivery and visualization of products from Ocean Observing Systems in major boundary currents*” (MONITOR Endnote 5). TCODE will nominate an additional convenor, if necessary.

PICES XVI theme (Agenda Item 9)

TCODE supported the Canadian proposal on the theme for PICES XVI: *The changing North Pacific: Previous patterns, future projections, and ecosystem impacts*.

Relations with other international programs and organizations (Agenda Item 10)

No proposals on updates for the PICES Standing List were made.

Election of TCODE Chairman and Vice-Chairman (Agenda Item 11)

This was the third year of Dr. Shevchenko’s chairmanship of TCODE. It was the intent of the Committee to elect a new Chairman. However, after serious discussion of the situation (including the issue of representation of different nations on Science Board),

Dr. Shevchenko was asked to continue for one more year, and he agreed to do so.

The Committee decided to have a Vice-Chairman position, and Dr. Bernard Megrey was nominated. He accepted the proposal in principle, but needs to consult with his head of laboratory. The Committee will proceed with this matter by correspondence.

Items with financial implications (Agenda Item 12)

TCODE requests support for :

- 1 invited speaker for the MONITOR/TCODE Workshop at PICES XV;
- a TCODE representative to attend a meeting of the ICES Working Group on *Marine Data Management*;
- Phase II of the PICES Federated Searching project (adding a node for JODC/MIRC) (TCODE Endnote 3).

TCODE Workplan for 2005/2006 (Agenda Item 14)

The Committee adopted the following workplan:

- Continue to support HAB-S work with HAE-DAT database and required metadata (Brown);
- Convene a 1-day joint MONITOR/TCODE Workshop at PICES XV on “*Data management, delivery and visualization of products from Ocean Observing Systems in major boundary currents*” (Royer);
- Update NPEM and TCODE inventory (all members);
- Initiate a dialogue with ICES Working Groups involved in data management issues (Shevchenko);
- Prepare and post a report on the PICES Federated Searching project: Phase I (Megrey);
- Carry out the PICES Federated Searching project: Phase II (if approved by Science Board) (Megrey);
- Update TCODE Action Plan (Brown and Shevchenko);
- Coordinate activities with MONITOR (Royer).

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TCODE Endnote 1

Participation list

Members

Robin Brown (Canada)
Kyu Kui Jung (Korea)
Bernard A. Megrey (U.S.A.)
Georgiy Moiseenko (Russia)
Thomas C. Royer (U.S.A.)
Igor I. Shevchenko (Russia, Chairman)
Tomowo Watanabe (Japan)
Ruguang Yin (China)

Observers

Norio Baba (Japan)
Anthony Isenor (Canada)
Dengwen Xia (China)

TCODE Endnote 2

TCODE meeting agenda

1. Welcome and introduction of members
2. Adoption of agenda
3. Review progress on items in the 2004/2005 Workplan
 - a. TCODE Topic Session on “*Marine data management and delivery systems to support ecosystem monitoring*”
 - b. Pilot project to “*Federate metadata on North Pacific ecosystems*”
 - c. TCODE Action Plan
 - d. Updating TCODE web pages
 - e. TCODE assistance with HAE-DAT database activities
 - f. Coordinating TCODE and MONITOR activities
 - g. OBIS and other related projects
4. National annual reports
5. Updates on data management activities in PICES member countries and international organizations
6. Discussion of the TCODE activities in relation to the PICES Strategic Plan and development of TCODE Action Plan
7. Future integrative scientific program(s) of PICES
8. Planning for PICES XV
9. PICES XVI theme
10. Relations with other international programs and organizations
11. Election of TCODE Chairman and Vice-Chairman
12. Items with financial implications
13. New business
14. TCODE Workplan for 2005/2006

TCODE Endnote 3

Data-sharing project “*Federate metadata on North Pacific ecosystems: Phase II*”

Significant progress has been made over the past year to connect PICES member nations’ metadatabase systems into one integrated resource. With this new scientific resource, a user of any one metadata inventory will have the ability to search for data catalogued by any and all other participating systems with a single search request. Using modern data management techniques to cross-search separate metadatabases provides the advantages of shared

metadata without compromising national ownership, data integrity, or security of national metadata products.

TCODE adopted a pilot KODC-NPEM federation as part of its 2004/2005 Workplan. The first PICES node (PICES-NPEM, PICES North Pacific Ecosystem Metadatabase) has been registered with the National Spatial Data Infrastructure clearinghouse, and a node for

KODC (PICES-KODC) will soon be on line. The status of the PICES nodes can be found at <http://registry.fgdc.gov/serverstatus/>, and the nodes can be searched by going to <http://clearinghouse3.fgdc.gov/>. Over the past year, two successful planning meetings took place that discussed required technical details and technical hurdles and the means to address and solve problems associated with federating with KODC. Success with this project means that efforts with other PICES countries will easily scale up with a nominal investment of time and planning.

We propose, as Phase II of the project, to federate with JODC and MIRC, and ask PICES to continue to support this project at the same

level as last year, conditional on confirmation by JODC and MIRC that they are willing to federate at this time.

Projected budget:

Total cost: US\$ 8,000

Two 2-day meetings; 2 people to travel to Japan or the United States at US\$ 2,000/person/trip. Meeting dates and locations will be determined at a later date.

Contribution from PICES: US\$ 4,000

Proponents of the proposal:

Toru Suzuki (JODC/MIRC, Japan)

S. Allen Macklin (NOAA/PMEL, U.S.A.)

Bernard A. Megrey (NOAA/AFSC, U.S.A.)

