

REPORT OF TECHNICAL COMMITTEE ON DATA EXCHANGE

(Draft - Nov 29, 2006)

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The meeting of the Technical Committee on Data Exchange was held from 16:00-19:30 hours on October 18, 2006. The Chairman, Dr. Igor Shevchenko, called the meeting to order and welcomed the participants. The meeting was attended by 7 TCODE members and 5 observers representing PICES member countries and international organizations (*TCODE Endnote 1*). Robin Brown served as rapporteur.

The Committee reviewed the provisional agenda and 3 items were added to New Business (*TCODE Endnote 2*).

Review progress on items in the 2005/2006 Workplan (TCODE Agenda Item 3)

- Arrange joint MONITOR/TCODE Workshop at PICES XV on dense/real time data systems

Presentations covered a wide range of topics. Summaries of posters and e-posters were presented as a part of the workshop. After the presentations, there was a lively discussion of future directions. The summary of the workshop will be mailed to all members and will be available on the PICES website.

- Update NPEM and TCODE Inventory

The North Pacific ecosystem metadatabase now contains all records from the TCODE metadata inventory, but there are questions about who is responsible for updating of metadatabase. Current methods such as doing internal QC checking and regular mailout notifications are routine. It seems

that only federated searching could be considered as the real solution.

- Establish dialogue with ICES working groups involved into Data Management issues

Igor Shevchenko contacted Michele Fichaut and Helge Sagen, co-chairs of the ICES Working Group on Marine Data Management

(<http://www.ices.dk/iceswork/wgdetail.asp?wg=WGMDM>). Georgiy Moissenko as a member of WGMDM participated at the meeting in Copenhagen, 8-10 May 2006, and made a presentation on PICES TCODE activities. Some interest was expressed in making contacts and coordinating activities with TCODE. Co-chairs of WGMDM were invited to participate at the PICES XV Annual Meeting in Yokohama. However, ICES WGMDM will be disbanded by the end of 2006 and new Working Group on Data and Information Management will be established. The WGDIM will provide ICES with advice on all aspects of data management including technical, data policy, data strategy and user-oriented guidance. The WGDIM will meet for the first time in Copenhagen, 12-14 June 2007. Helge Sagen along with two former co-chairs of the ICES Study Group on Management of Integrated Data

(<http://www.ices.dk/iceswork/wgdetail.asp?wg=SGMID>) Chris Zimmermann and Peter Wiebe will serve as co-chairs of WGDIM.

At the 2006 ICES ASC in Maastricht Netherlands, Bernard Megrey participated in session M - "Environmental and fisheries data management, access, and integration"

([http://www.ices.dk/iceswork/asc/2006/The meSessionReports/Theme%20Session%20M%20report.pdf](http://www.ices.dk/iceswork/asc/2006/The%20meSessionReports/Theme%20Session%20M%20report.pdf)).

Here he discussed with convenors Christopher Zimmermann (Germany), Helge Sagen (Norway), and Peter H. Wiebe (USA) possible cooperative and joint sponsorship of future meetings of mutual topics of interest by the newly formed ICES WGDIM and PICES TCODE.

One goal of the WGDIM is to sponsor a data theme session every 2nd year to keep track of new developments in this quickly changing field. TCODE should consider co-sponsoring sessions with this new group to strengthen ties between ICES and PICES data management planning. In particular, there was some discussion about asking the ICES WGDIM, after it is formally constituted, to co-sponsor a theme session at Victoria.

Georgy Moiseenko and Bernard Megrey will report through the Chairman on changes in committees and future opportunities for collaboration.

- Prepare and post a report on PICES Federated Searching program: Phase I

The objectives of the PICES Metadata Federation project were to create standardized metadata descriptions of national, institutional and agency databases and to serve those descriptions in a

- World-Wide Web-based, one-stop environment with search and delivery capability. Using partial support from PICES, KODC and NPEM personnel developed the application over a year, with major progress coming from joint meetings held in Seattle during August 2005 and Busan in October 2005. KODC had translated some metadata records to English and became a registered node of the NSDI Clearinghouse (<http://registry.fgdc.gov/serverstatus/>) and scroll down to PICES. In PICES Press: Volume 14 Number 1, a paper by *S. Allen Macklin, Bernard A. Megrey, Kyu-Kui Jung and Hae-Seok Kang* on Korea and U.S. federate marine metadata collections was published. Recently, Hae-Seok Kang has brought servers on line and now more than 700 Korean records are available. The

PICES Federated Searching program was continued in 2006 with Phase II

A work plan similar to that developed for NPEM-KODC federation was used. Phase II included two successful planning meetings that discussed required technical details and technical hurdles and the means to address and solve problems associated with federating with MIRC. Bernard A. Megrey, S. Allen Macklin, and Kimberly Bahl had prepared draft **REPORT ON FEDERATION OF PICES MEMBER COUNTRIES' METADATA**. The report provides technical guidance for anyone wishing to become a partner. TCODE Members will review the draft. Chairman will send around an email reminder.

Bernard Megrey described a new change in international metadata standards from FGDC to ISO 19115 and its biological extensions; plans for adoption within the US. They will lead to modifications in PICES Metadata Clearinghouse interface standards and will require changes for existing and future Clearinghouse servers.

Future participation of PICES member countries not already federated (i.e. Canada and China) into a PICES Metadata Federation, may be available through NSDI-CAP funding possibilities. And TCODE will pursue these.

With the move of the US metadata clearinghouse interface from proprietary to open source software, the potential exists for PICES to adopt the open source standard, federate their metadata internally and sever their relationship with the USA Clearinghouse nodes. Related costs, consequences, benefits and recommendations were briefly discussed.

TCODE asked Allen Macklin to consider opportunities for establishing Asian-side "mirror" clearinghouse servers with FGDC/NSDI Secretariat.

Since the beginning of the PICES Metadata Federation Project, the total budget for Phases I and II has been USD\$36,000 consisting of US Funding external to NPEM and PICES - USD\$16,000, PICES - USD\$8,000, NPEM - USD\$ 6,000, and KODC - USD\$ 6,000).

TCODE requests for Phase III funding (\$4K) to bring China or Canada into the Federation (pending successful funding application elsewhere) (*TCODE Endnote 3*).

Annual reports (TCODE Agenda Item 4)

TCODE members presented national annual reports. These reports include lists of key institutes and agencies, key persons/contacts, links to data and metadata sets, ocean observing systems, data and metadata formats and standards, information technologies for collecting, measuring and enumerating marine organisms, marine data management programs that underpin marine science programs, data policies; software applicable in marine ecosystems studies and modeling, publications on marine DM issues, education materials, etc. All reports are posted at <http://tcode.tinro.ru/pices15.html>.

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

Norio Baba (Japan) described ongoing data management programs of NOWPAP (Northwest Pacific Action Plan) and potential areas of collaboration with PICES. Regional Activity Centers of NOWPAP deal in particular with harmful algal blooms. Norio Baba expressed interest in the Metadata Federated Searching Project and mentioned funding opportunities for capacity building to generate metadata records.

Discussion of the FUTURE (PICES Future Integrative Scientific Program) (TCODE Agenda Item 6)

The Committee reviewed the program description. There was much discussion about “prediction” and the difficulty implied. Noted that TCODE can assist in some of the underpinnings (or infrastructure) of such a program (e.g., federated metadata searching capability). Metadata inventories also contribute to outreach. TCODE could continue to showcase new approaches to data integration, visualization and management. There was a feeling that the targeted “clients” of the program (governments, policy and resource managers) might not be all receptive. TCODE was designed to support the science program of the organization. However, at the moment, it is somewhat difficult to understand exactly what the requirements might be.

Topic session proposals for PICES XVI (TCODE Agenda Item 7)

TCODE proposed a scientific/e-poster session for PICES XVI on ‘Data Management, Data Analysis and Data Delivery Systems to Support Detection and Prediction of North Pacific Ecosystem Change and Its Impacts’ (see *TCODE Endnote 4*).

PICES XVII theme (TCODE Agenda Item 8)

TCODE supported the proposal for the PICES XVII theme. Some concern was expressed that the wording seems narrow and could be improved by replacing “environments” with “ecosystems”.

Chairmanship of (TCODE Agenda Item 10)

The Committee unanimously requested Dr. Shevchenko to stay on for one more year. Dr. Megrey will serve as vice-chairman.

Summary of items with financial implications (TCODE Agenda Item 11)

TCODE requests support for the following activities:

- Travel support for an invited speaker to attend the scientific session at PICES XVI;
- \$4K for supporting Phase III of the TCODE Metadata Federation (pending successful funding applications) (see *TCODE Endnote 4*).

New business (items added at the meeting) (TCODE Agenda Item 12)

TCODE asked Robin Brown to be an advisor to the Secretariat review of publishing and archiving activities (request from F&A). TCODE strongly supported Tokio Wada's proposal for a Monitoring Award. It was recommended that a new series of Technical Reports in electronic format only be established. TCODE recommended that the PICES Technical Report on Federated Metadata Searching be published in this series. To reduce publishing costs, PICES should adopt a practice common to other scientific meetings (e.g., International Council for the Exploration of the Sea and American Fisheries Society). That is to print only the meeting schedules and prepare the book of Abstracts in CD-ROM format only. The CD's would be distributed to all meeting participants. It would be very convenient to include key URLs for every paper in Abstract books (CD's).

Discussion and adoption of the TCODE Workplan for 2006/2007 (TCODE Agenda Item 13)

Based on the discussion of all agenda items, the Committee adopted the following workplan:

1. Continue to support HAB-S work with HAE-DAT database and required metadata
 - Responsibility - Robin Brown
2. Continue Federated Metadata searching project
 - Complete Phase II report and promote use of metadata
 - Carry out Phase III including capacity building
 - Investigate utility of Asian-side metadata server
 - Responsibility - Allen Macklin, Bernard Megrey, Igor Shevchenko, Norio Baba
3. Organize the Scientific Session/E-poster session at PICES XVI
 - Responsibility - Allen Macklin, Kyu-Kui Jung
4. Develop collaboration with ICES Working Group on Data and Information Management
 - Responsibility - Georgy Moiseenko, Bernard Megrey, Igor Shevchenko
5. Provide advice on information archival/e-publishing to Secretariat
 - Responsibility - Robin Brown
6. Coordinate activities with MONITOR Technical Committee
 - Responsibility - Tom Royer

TCODE Endnote 1

Participation List

Members in attendance:

Canada
Robin Brown

China
Ruguang Yin

Japan
Tomowo Watanabe, FRA

Korea
Kyu Kui Jung

Russia
Georgiy Moiseenko
Igor Shevchenko

U.S.A.
Bernard Megrey

Observers:

Canada
John Holmes, DFO

Japan
Norio Baba, NOWPAP Regional
Coordinating Unit (RCU)

Toru Suzuki, MIRC (CC-S liaison)

Korea
Joon-Yong Yang, NFRDI

U.S.A.
Allen Macklin, PMEL

**TCODE Meeting Agenda
Wed. Oct. 18, 2006 16:00-19:30**

Chairman: Igor Shevchenko (Russia)

1. Welcome and introduction of members
2. Adoption of agenda (3 agenda items under "New business" were added)
3. Review progress on items in the 2005/2006 Workplan
 - a. Continue to support HAB-S work with HAEDAT database and required metadata
 - b. Arrange joint MONITOR/TCODE Workshop at PICES XVI on dense/real time data systems
 - c. Update NPEM and TCODE Inventory
 - d. Establish dialogue with ICES working groups involved into Data Management issues
 - e. Prepare and post report on PICES Federated Searching program: Phase I
 - f. Continue with PICES Federated Searching program: Phase II
 - g. Update TCODE Action Plan
 - h. Coordinate activities with Monitor Technical Committee
4. Annual reports
5. Updates on data management activities in PICES member countries and international organizations
6. Discussion of the FUTURE (PICES Future Integrative Scientific Program)
7. Topic session proposals for PICES XVI
8. PICES XVII theme
9. Relations with other international programs/organizations
10. Chairmanship of TCODE
11. Summary of items with financial implications:
 - a. Proposed inter-sessional meetings for 2006 and beyond
 - b. Proposed publications for 2006 and beyond
 - c. Travel support requests
 - d. Other items
12. New business (items added at the meeting)
 - a. Secretariat request for advice on publishing and archiving
 - b. Monitoring Award
 - c. Abstract Books Format
13. Discussion and adoption of the TCODE Workplan for 2006/07

TCODE Endnote 3

**PICES TCODE Data-Sharing Project to Federate Metadata on North Pacific Ecosystems:
Phase III**

S. Allen Macklin (NOAA PMEL, USA)

Bernard A. Megrey (NOAA AFSC, USA)

Significant progress has been made over the past two years 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 2005 work plan. In Phase I of this project, the first two PICES nodes (PICES-NPEM, PICES North Pacific Ecosystem Metadatabase and PICES-KODC) were registered with the National Spatial Data Infrastructure clearinghouse. Since then a second KODC node and one Russian node have been brought 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/>.

Last year we were successful locating a source of funding through the National Spatial Data Infrastructure Cooperative Agreements Program (NSDI-CAP) for Phase II of the project wherein we brought a Japanese node online on October 19, 2006. Over the past year, Phase II of this project included two successful planning meetings that discussed required technical details and technical hurdles and the means to address and solve problems associated with federating with MIRC. Success with these projects mean efforts with the remaining two PICES countries (Canada and China) will easily scale up with a nominal investment of time and planning.

The new 2007 NSDI CAP announcement will appear in early November and we plan to prepare at least one proposal to complete the PICES Metadata Federation.

TCODE proposes, as phase III, to federate with Canada and/or China and asks PICES to continue to support this project at the same level as last year, conditional on three essential elements: confirmation by Canada or China that they are willing to federate, that there will be suitable programs in the upcoming announcement by the NSDI CAP program against which we can propose for further financial assistance, and that TCODE can prepare a successful proposal to the NSDI CAP program. Since NSDI CAP funds cannot be programmed to foreign countries, PICES support will enable travel for training of non-US PICES personnel to attend planning meetings to discuss technical issues related to metadata standards and communication protocols required by the clearinghouse.

Total cost: \$US 4,000

TCODE Endnote 4

Data Management, Data Analysis and Data Delivery Systems to Support Detection and Prediction of North Pacific Ecosystem Change and Its Impacts

Co-Convenors: S. Allen Macklin (U.S.A.) and Kyu Kui Jung (Korea)

Profound changes have occurred in the North Pacific climate system, in the composition, abundance and distribution of its living marine resources, and in the human societies that depend on the North Pacific Ocean and its resources. New and novel techniques are needed to handle the ever-increasing volume of scientific data and to analyze its meaning with respect to climate variability, anthropogenic effects and the combined impacts that these changes have already had, and can be expected to have, on North Pacific ecosystems. This session will address methods such as high-volume data management, regime shift detection and prediction, modern fisheries acoustics, cabled observatories, and ocean observing systems. Presentations describing links with climate and ecosystem change in the Arctic and relating to the International Polar Year Projects are also welcome. Oral presentations and electronic posters are encouraged.