

## 2021 Report of the Technical Committee on Data Exchange

The meeting of the Technical Committee on Data Exchange (hereafter TCODE) was held virtually via Zoom, from 17:00 to 20:00 (PDT) on September 28, 2021. All member countries were represented (*TCODE Endnote 1*). Some agenda items were carried out over email (*TCODE Endnote 2*).



Meeting participants at PICES-2021.

### AGENDA ITEMS 1 & 2

#### Welcome and Introductions

TCODE Chair, Jeanette Gann welcomed members and other participants to the meeting, and introductions were made by each member and guest. The agenda was reviewed by members via email and adopted by all. Peter Chandler agreed to be the rapporteur for the meeting.

## **TCODE – 2021**

### AGENDA ITEM 3

#### **Election of Vice-Chair**

An election was conducted by Sanae Chiba. There was unanimous agreement for Fangfang Wan, from the National Marine Data and Information Service of China to be the next Vice-Chair. Wan Fangfang agreed and is now serving as Vice-Chair of TCODE.

### AGENDA ITEM 4

#### **Update on TCODE discussions at ISB-2021**

Chair Jeanette Gann provided insight into the discussion at the Science Board, focus being on the UN decade of Ocean Science, in addition to the in-person meeting in Busan, Korea, for PICES-2022.

### AGENDA ITEM 5

#### **TCODE recommendations for POMA 2020**

The Chair updated TCODE on results of their consensus to support the nomination of the ecoFOCI Monitoring Program.

### AGENDA ITEM 6

#### **Status of AP-NPCOOS**

Dr. Naoki Yoshie, Co-Chair of AP-NPCOOS, provided a review of this Advisory Panel and the agenda for its upcoming meeting October 5.

### AGENDA ITEM 7

#### **Update on IOC/IODE**

Dr. Yutaka Michida, *ex-officio* member representing IODE, (which celebrated its 50th anniversary in 2021), provided an update on the contribution to the UN Decade of the Ocean, the IOS Ocean Data and Information system (ODIS), and suggested PICES consider participation in the International Ocean Data Conference 2022 on “The Data We Need for the Ocean We Want” that will be held as a hybrid event in 2022 in Sopot, Poland, and online.

### AGENDA ITEM 8

#### **Status of NPESR3**

Peter Chandler, Co-Chair of WG 35 (WG-NPESR3), confirmed that the NPER3 Synthesis Report was complete and published, but that the editorial process for the regional reports was still underway. It was proposed that a final WG 35 report, and proposal for an NPESR4 Study Group would be ready for Science Board at ISB-2022.

### AGENDA ITEM 9

#### **Session Proposal for PICES 2022**

Di Wan (with Drs. Igor Shevchenko and Hernan Garcia) presented a proposal for a PICES-2022 topic session titled “*Realizing scalable artificial intelligence in marine science*” (TCODE Endnote 3). There was unanimous approval to proceed with this and consider proposing a PICES study group.

## AGENDA ITEMS 10 &amp; 11

**UN Decade of Ocean Science**

Jeanette Gann presented a proposal for a workshop to determine the role TCODE could play in helping facilitate open data sharing between multiple countries, and the means to facilitate collaboration with other agencies. There was a request for TCODE members to be convenors of the workshop, and plans for a sub-group (including Jill Prewitt, Hernan Garcia, Brett Johnson, Wan Fangfang, and Shelee Hamilton) to meet with Jeanette Gann.

## AGENDA ITEM 12 &amp; 13

**TCODE catalog service workshop proposal**

Dr. Shevchenko presented an historical review of the PICES Metadata Federation and the TCODE catalog service, and a demonstration of how to navigate the website. Most of the service for these is being provided by Igor and colleagues at the Pacific branch of VNIRO (TINRO). There was a discussion around a workshop proposal for expanding PICES use of the catalogue and awareness of its features but a conclusive plan to advance this was not established.

## AGENDA ITEM 14

**Closing**

Mrs. Gann closed the meeting at 20:00 h.

***TCODE Endnote 1*****TCODE participation list**Members

Jeanette Gann (USA, Chair)  
 Peter Chandler (Canada, Vice-Chair)  
 Shelee Hamilton (Canada)  
 Brett Johnson (Canada)  
 Di Wan (Canada)  
 Manchun Chen (China)  
 Fangfang Wan (China)  
 Daisuke Ambe (Japan)  
 Daiki Ito (Japan)  
 Toru Suzuki (Japan)  
 HuiTae Joo (Korea)  
 Sung-Dae Kim (Korea)  
 Yutaka Michida (*ex-officio*, represents IODE)  
 Igor I. Shevchenko (Russia)  
 Hernan Garcia (USA)

Members unable to attend

Canada: Meghan Paulson  
 China: Jinkun Yang  
 Japan: Daisuke Ambe  
 Korea: Jung No Kwon  
 Russia: Georgiy S. Moiseenko

Observers

Joon-Soo Lee (former TCODE Chair, Korea)  
 Jill Prewitt (AOOS, USA)  
 Naoki Yoshie (AP-NPCOOS Co-Chair, Japan)

PICES

Sanae Chiba (Deputy Executive Secretary)

**TCODE Endnote 2**

**TCODE meeting agenda**

*17:00-20:00 (Pacific Daylight Time), Tuesday, September 28, 2021*

1. Welcome and introduction of members (All)
2. Adoption of agenda and appointment of rapporteur (All)
3. Election of Vice-Chair (Chiba + All)
4. Update on TCODE discussions at ISB-2021 (Gann)
5. Update on TCODE recommendations for POMA 2021 (Gann)
6. Status of AP-NPCOOS (Yoshie, Co-Chair of AP-NPCOOS)
7. Update on relations with IOC/IODE (Michida, *ex-officio* member)
8. Status of WG-NPESR3 (Chandler)
9. Session proposal for PICES-2022 (Wan, Shevchenko, Garcia)
10. TCODE UN Decade workshop proposal and Ocean Sciences Meeting 2022 (Gann/Garcia)
11. Discussion - TCODE UN Decade workshop proposal (All)
12. TCODE Metadata Catalog workshop proposal/ adding metadata to catalog for all PICES publications/ reports. (Shevchenko)
13. Discussion - TCODE Metadata catalog workshop proposal (All)
14. Summary of meeting, and closing

*Agenda items carried out via Email:*

1. Review of PICES data inventory (All)
2. Update, review, and comments for TCODE Workplan 2021/2022 (All)
3. Update on status of FUTURE (Qiao, liaison for FUTURE SSC)
4. Finalize proposal for 2022 workshops (by October 7 deadline)
5. Proposal for science topic session PICES-2022 (by October 7 deadline)
6. Discuss submission of abstract on TCODE workshop to International Ocean Data Conference 2022 - The Data We Need for the Ocean We Want - *added to workplan, tentative on Workshop acceptance by Science Board.*

**TCODE Endnote 3**

**Proposal for at Topic Session on  
“Realizing scalable artificial intelligence in marine science”  
At PICES-2022**

Duration: 1 day

Convenors: Di Wan (Canada), Igor Shevchenko (Russia), Hernan Eduardo Garcia (USA)

Exploratory projects in applications of artificial intelligence (AI) to marine science issues have been advancing rapidly in recent years, and these projects so far have been limited in scope and not been made scalable. This session brings together the scientists, developers, and leaders who are interested in advancing scalable AI applications. We will discuss the knowledge gaps, priorities, infrastructure requirements, feasibilities in realizing scalable AI in marine science. More importantly, we will welcome innovative, future oriented and actionable solutions. We invite a wide range of submissions, including but not limited to real-time and delayed-mode QC and anomaly detection using AI and data infrastructure that allows scalable operations. Other information: This session is a contribution to 2 of the PICES Strategic goals • Goal 4: Advance methods and tools. Machine learning and AI are new tools with enormous potential that should be explored in the PICES context. • Goal 6: Engage with early career scientists to sustain a vibrant and cutting edge PICES scientific community. Big data and AI represent the cutting edge of the process to convert data into information in the modern world, therefore encouraging the development and application of these new tools is one way to attract early career scientists to PICES.