

**GEOTRACES INTERNATIONAL SSC MEETING  
VIRTUAL MEETING  
15-17 SEPTEMBER 2020**

**List of attendees**

SSC Members:

Andy Bowie (co-chair)  
Karen Casciotti (co-chair)  
Eric Achterberg  
Adrian Burd  
Zanna Chase  
Jay Cullen  
Susanne Fietz  
Vineet Goswami  
Marina Kravchishina  
Rob Middag  
Hajime Obata  
Abby Ren  
Yeala Shaked  
Kazuyo Tachikawa  
Rodrigo Torres  
Antonio Tovar Sanchez  
Tina van de Flierdt  
Liping Zhou

Other participants:

Phoebe Lam (Past SSC co-chair)  
Reiner Schlitzer (Past SSC co-chair)  
Bob Anderson (Past SSC co-chair)  
Bill Landing (Data Management Committee co-chair)  
Alessandro Tagliabue (Data Management Committee co-chair)  
Maite Maldonado (Data Management Committee member)  
Sunil Kumar Singh (Data Management Committee member)  
Walter Geibert (Standards and Intercalibration Committee co-chair)  
Maeve Lohan (Standards and Intercalibration Committee co-chair)  
Catherine Jeandel (IPO science director)  
Elena Masferrer (IPO executive officer)  
Mohamed Adjou (GEOTRACES data manager)  
Patricia Miloslavich (SCOR Executive Director)

TUESDAY 15 SEPTEMBER 2020

## **Introduction**

Andy Bowie and Karen Casciotti welcomed the Scientific Steering Committee (SSC) members. New members are: Rodrigo Torres (Chile), Vineet Goswami (India) and Karen Casciotti (USA, as SSC co-chair).

## **SCOR review of the GEOTRACES Programme**

Andy Bowie introduced the mid-life review of GEOTRACES conducted by SCOR at the request of ICSU. He reminded that during last SSC meeting the SSC already reviewed and discussed the recommendations of the SCOR Panel Review. Andy, Phoebe and Karen with the help of Elena have now prepared a response that has been circulated through the SSC.

Andy proposed to go through the recommendations sequentially.

*Recommendation 1) While bottom-up studies are clearly important, GEOTRACES should consider developing some needed process studies to address specific scientific questions that are derived from their synthesis activities.*

Bob Anderson: He pointed that it is worth noting that from the first stages of planning GEOTRACES adopted the philosophy that a global survey (sections) would identify the most appropriate targets for process studies. That is, it is logical to complete the survey first to facilitate prioritization of process studies.

*Recommendation 2: GEOTRACES should continue to encourage the development of BioGEOTRACES as a separate new project.*

Catherine Jeandel: She informed that a BioGEOSCAPES meeting is planned to be held on December 6-8, 2020 in Toulouse.

Alessandro Tagliabue: He noted that it would be good to clarify the differences between BioGEOTRACES and BioGEOSCAPES and also the links between these initiatives and GEOTRACES. For instance, BioGeoSCAPES leaders are making use of the GEOTRACES planning expertise.

Alessandro also informed that he has been successful in raising money from the Royal Society for a BioGeoSCAPES workshop entitled “Marine Microbes in a Changing Climate”. This workshop would probably be held in 2022.

*Recommendation 3: The GEOTRACES SSC should consider the importance of having an open science conference before the end of the project, and also consider whether it should be a stand-alone conference or one associated with some other international meeting, recognizing that open science conferences have significant implications for funding and staff time allocations.*

Bob: He noted that synthesis workshops have been very successful in stimulating innovative and novel ideas. They have not only resulted in a few synthesis papers but have also inspired new fields for future research.

Rob Middag: He pointed out that an open science conference may attract a narrower audience than a targeted special session in international conferences. Also international conferences allow a better use of the limited resources.

Patricia Miloslavich: She noted that organising sessions on important international conferences allows reaching more easily early career scientists and scientists from developing countries as this audience may not attend to a project specific conference.

Andy: He noted that that organising a session in an international conference also helps to optimising travel funds.

Maeve Lohan: She suggested collecting all the information about all GEOTRACES special issues and sessions and adds them in this document. Elena mentioned that the original report sent to the Review Panel including these information.

*Recommendation 4: GEOTRACES should focus some efforts on identifying what kind of processes studies (which places, which elements) should be examined in the future to look for impacts of global change.*

Walter Geibert: He mentioned one of the action items from 2019 SSC meeting was already to explore having a smaller workshop on sensitivity on of TEI distribution to environmental change an international conference, so GEOTRACES is already taken care of it. It is just necessary to decide when. He proposed re-discussing about it when he will present the proposal for this workshop. He added that he believes that sections completed offer an opportunity to monitor global change. GEOTRACES sections can be considered as a baseline and repeat section is implicitly looking at change.

Zanna Chase: She noted that the question of global change was also addressed in a paper in the *Elements* issue lead by Gideon Henderson and suggested to add this into the response.

Jay Cullen: He noted that historically there have been strong connections between GEOTRACES and time series programmes (e.g. CLIVAR), so in general, the GEOTRACES community has strong links with locations and infrastructures that allows to explore impacts of global change.

*Recommendation 5: GEOTRACES should add information to its Website about sample archiving, if any, what samples are available, how they have been preserved, whether they are available for outside groups, etc.*

Phoebe: She summarised the discussion held last year at the SSC meeting, saying that it was centered on whether GEOTRACES wants to formalize sample archiving or not. The general consensus was that it would be really difficult, as it would require a lot of work and resources

to organise this (making sample accessible requires substantial part of time of the people doing the samples and there are not enough resources - time and money – to be devoted to it). She added that last year the SSC took the initiative to provide a list of cruises that have collected sediments and the person to contact to ask for spare samples. The reason for doing this was that this information was not available on the GDAC inventory available on-line.

Rob: He pointed that stored samples should in theory be collected in all GEOTRACES cruises.

Mohamed: He said that in order to put the information on the GDAC web site he would like to know how to organise it.

Tina: She said that in the case of samples for intercalibration those needing them can contact the S&I coordinator using the list available on the GEOTRACES web site (<https://www.geotraces.org/elemental-coordinators/>). For this, she suggested adding a sentence saying “if you're interested in samples, please contact the person for the element” to give people an entry point to get the samples.

**Action:** Elena to work with Mohamed in including the information on the sediment samples available on the GEOTRACES web sites. Also add on the GEOTRACES web site a sentence like “if you're interested in samples, you can also contact the scientist responsible for the element” with a link to the elemental coordinators lists.

Bob: He explained that at Lamont they do archive samples but with the current budget restrictions he would not have resources to pay for someone to prepare and send samples if requested.

Jay Cullen: He noted that each station location is more or less equivalent to a sediment core and that these locations are present in the data product. Investigators can request a subsample from a station from the linked PI already which is somewhat analogous to IODP.

*Recommendation 6: GEOTRACES should make clearer on its data portal when there are missing data, what are the causes of the missing data.*

Patricia: She suggested that GEOTRACES should expand the explanation on the reasons why it is not possible to identify the causes behind missing data.

*Recommendation 7: GEOTRACES should develop a process for removing cruises from its cruise database (and completed cruise maps) within some period of time after the cruise has occurred if metadata and data have not been received, to avoid reaching the end of the program and not having all planned sections completed.*

Alessandro: He reminded that in past SSC meetings it was agreed that at the end of the programme GEOTRACES will have to review all the section cruises and see which one's have covered all the parameters.

Phoebe: She advised focusing the discussion on how to follow up with PIs who did not send data.

Mohamed: He explained that GDAC does chase data when this data is not received. They are updating the inventory when they have an answer. Sometimes there is no reply or reason. He added that the strategy is to give priority to chase key TEI data. Mohamed requested help from national representatives to chase data.

Phoebe: She suggested that SSC members could use the on-line GDAC inventory to see which colleagues have data pending. To see which data is expected by GDAC, SSC members should click on "view the data set inventory for all cruises" (<https://www.bodc.ac.uk/geotraces/data/inventories/all/>), then they can see the status ("received" vs "dataset overdue") of individual datasets (parameters) along with the relevant PI. It is also possible to view this level of detail by clicking on individual cruises.

Alessandro: He noted that there is an action item from DMC meeting for DMC co-chairs to make an inventory of data missing in IDP in order to help GDAC in chasing data. When this is done they plan to solicit help from SSC members. So he suggested for DMC co-chairs input before national representatives start chasing data from colleagues.

*Recommendation 8: The GEOTRACES Data Management Committee should begin discussions with the British Oceanographic Data Centre about the permanence of the GEOTRACES data archive.*

Patricia: She noted through the site that it maybe good to clarify if the BODC service as a repository includes and "active platform (people can look for their data) or just a repository that is archived and people will have to request the data in order to obtain it.

Mohamed: He repeated the information provided as an answer to an action item from 2019 SSC meeting: data archiving is the function of the data centers, there is a guarantee that the data will be kept as long as BODC exists. Also, the landing page of GDAC web site will be guaranteed after the end of the programme and kept as long as BODC exists.

*Recommendation 9: The GEOTRACES SSC should consider whether to re-open the survey to collect additional input from a broader cross-section of the community to help its planning for the future. Special attention might be given to providing surveys in national languages to countries with low response rates. Questions could be added to collect more information about some of the issues raised in the open-ended survey question.*

There was a general consensus that there is no need to open the survey again.

*Recommendation 10: The GEOTRACES SSC should continue to support such activities as the recent GEOTRACES-PAGES Workshop in order that the full value of the GEOTRACES program to paleoceanographic reconstruction is realized.*

Tina van de Flierdt: She suggested using the GEOTRACES science highlights and the publication database to add references on paleoceanographic references in the text. She also

proposed to highlight Zanna Chase's paper in the Elements issue (DOI: <http://dx.doi.org/10.2138/gselements.14.6.397>) or one Tina led for the Royal Society workshop (<https://royalsocietypublishing.org/doi/10.1098/rsta.2015.0293>).

Jay: He provided two references: Farmer et al. (DOI: <https://www.essoar.org/doi/10.1002/essoar.10504265.1>) and Horner et al. (DOI: <https://www.essoar.org/doi/10.1002/essoar.10504252.1>).

*Recommendation 11: GEOTRACES should pay attention to the acquisition and preservation of international intercalibration standards for the remainder of the project.*

Patricia: She suggested depositing the intercalibration standards and papers in the Ocean Best Practice repository.

Elena: She noted that the GEOTRACES cookbook as well as intercalibration special issue are already deposited in this repository.

**Action:** SSC co-chairs to update the GEOTRACES response to the GEOTRACES Panel Review document and with the help of Elena submit the document to SCOR.

### **S&I Report** – Maeve Lohan and Walter Geibert

Walter reported about the S&I activities in the past year. There has not been in person meetings since June 2019 but several virtual meetings are planned. Walter congratulated Elena and François André for their work on the DOoR portal.

He reviewed the statistics of reports submitted: 194 datasets were obtained prior to first deadline (May 2020). To date there are 2,230 datasets registered in DOoR.

**Action:** SSC members to stimulate dataset submission in their respective countries to facilitate the processing.

Walter explained that the S&I have so far focused on the Arctic datasets and that they noted that some groups of parameters are clearly more abundant than other.

He noted that so far the S&I have not received any complaints from submitters, just submissions!

One issue is that some researchers have submitted blank reports. Those people should submit the S&I report as soon as possible.

Walter explained that the S&I have 21 meetings scheduled up to 17 December. They would be meeting every Tuesday and Thursday for 1,5 hour on the time slot which is best for all the time zones.

They had a first meeting on 10<sup>th</sup> September and they already approved 4 datasets. They also approved remaining data from data which has not been submitted through the DOoR.

Maeve also reported that the S&I has solicited that the DOoR allows S&I to ungroup parameters so that if there is a minor issue with one element/parameter the S&I can approve the other parameters included in a grouped report.

Maeve asked SSC members to help in asking colleagues to respond as soon as possible to the S&I requests to allow for them to focus on one parameter type for meeting.

Maeve then provided an update on consensus materials. She informed that GSP and GSC have now assigned values for Cd, Cu, Fe, Ni, Mn, Pb, Zn and are available on the GEOTRACES web site. But there are limited data on Al and Co so SSC members should help in encouraging scientist to submit these data.

**Action:** SSC members to encourage colleagues to submit Al and Co data so that the consensus values could be established.

She explained that there is limited stocks left of GSP and GSC materials (55 x GSP, 340 x GSC) so priority is given to people running GEOTRACES section data.

She finalised by reporting about the impact of COVID-19. The main impact was the cancellation of the annual meeting. However, if possible they would like to have an in-person meeting next year.

Finally, S&I need discussion about reconsidering the timeline when the rest of the data would be submitted to see how the intended meetings fit into the overall timeline for IDP. It might be necessary to do a prioritization like it was done in the IDP2017 (e.g. prioritising parameter and cruise types).

#### Questions:

Mohamed: He asked Maeve how best deal with data approved for the S&I that have not been submitted by the PI through DOoR. Mohamed has already registered these data in DOoR but he is unsure about how to proceed with S&I approval.

Maeve: She suggested Mohamed to send a blank report to the S&I so that the S&I can tick the boxes and approve the report in DOoR.

Walter: He agreed on this procedure. This would also allow for the automatic approval notifications e-mails to be sent by DOoR.

**Decision/Action:** Mohamed to submit a blank S&I report through DOoR for those datasets which were received before the DOoR was ready and for S&I reviewers to tick the boxes in the DOoR review page and give the final approval through DOoR.

Jay: He asked whether it would be good for the S&I membership to be increased so that the S&I have more help.

Maeve: She answered that the S&I have already expanded the committee. S&I believe that at the moment they have the adequate number. Karen and Tina agree. With a large number of members it would be more difficult to take decisions.

Adrian: He wanted to know whether S&I have an idea of datasets that may not be processed. Maeve answered that DMC co-chairs plan to go through the different cruises completed and try to make an inventory of potential data that could be submitted for the IDP2021.

Maeve: She strongly advocated for SSC members to register their data they plan to submit on DDoR even if the S&I report is not ready as this will facilitate to have an idea on the datasets to come.

**Action:** SSC members to register data that they want to submit to the IDP2021 through DDoR already (do not wait to have the S&I report) as soon as possible and also ask colleagues to do the same.

**Action:** SSC members to respond to S&I committee as soon as possible to speed up the process, the faster they receive the answer the faster the processing will be done and encourage colleagues to do the same.

Catherine: She asked for updated information on the new standards from Atlantic? Eric responded that it would take a couple of months to be able to create the new standards since they have been delayed due to COVID-19 pandemic.

Catherine: She also asked whether Eric was planning to send samples for people sending REE? Eric responded that this was not planned. Catherine mentioned that it would be good to get consensus values so she proposed to pull for labs interested in this intercalibration.

**Action:** Catherine to poll for labs that could be interested for REE samples for intercalibration and send the list to Eric so that he can organise the sending of the samples.

## **Ocean Implementation Plans** – Karen Casciotti and Andy Bowie

### **Request for endorsement of US GP17 cruises** – Phoebe Lam

Phoebe reported that this section is going to be completed as two cruises GP17-ANT and GP17-OCE. For the GP17-OCE the principal investigators are B. Twining, J. Fitzsimmons and G. Cutter. Requested cruise dates are 29 November to 20 January 2022 (53 days).

Phoebe reviewed the criteria for endorsement as section cruises. All the criteria are met.

For the GP17-ANT, the PIs are P. Sedwick, P. Lam, R. Sherrell and B. Anderson. This cruise was originally planned for 25 January to 18 March 2022 but it will be delayed at least for one year. There are limitations in the conducting cable so they may not be able to reach the bottom (limited to 3000m). But they are still pushing to resolve this and hoping that they will solve this.

Phoebe reviewed the criteria for endorsement as section cruises. All the criteria are met (except for the limitation in the conducting cable that not allows sampling full depth).

She then reviewed the GP17 funding status. In February 2020, all management proposals were submitted. In May 2020 an online cruise workshop was organised and in June 2020 both management proposals were recommended for funding. PI submitted proposals to participate



in GP17-OCE and GP17-ANT in August 2020. They are expecting that in February 2021, more PI to submit proposals, especially for GP17-ANT.

#### Questions:

Alessandro: He suggested splitting this section into two sections. Phoebe mentioned that at the time of submission they tried very hard to justify as one single section as they thought that otherwise the second portion of the section would not be funded.

Alessandro: He asked whether there was way that the SSC can help in getting the cable. Phoebe answered that a note of concern from GEOTRACES would be appreciated.

**Action:** SSC co-chairs to provide a note of concern to support PI from GP17-ANT cruise to get the adequate cable.

Tina: She proposed for Phoebe to coordinate for the sediments with the US-UK THOR project (Julia Wellner, University of Houston).

**Action:** Phoebe to try to coordinate for GP17 sediments with Julia Wellner from University of Houston.

**Decision:** SSC approved GP17-ANT and GP17-OCE to be endorsed as GP17 section cruises.

#### **Summary of the current status of completed and planned cruises – Karen Casciotti**

Karen presented a review of cruises completed since last SSC meeting and cruises planned by basin.

##### *Process studies:*

4 process studies have been completed (China, Brazil, USA and France). Australia, the Netherlands and Canada have process studies planned for 2021 (some of them are cruises that have been postponed due to the COVID-19 pandemic).

Rob: He said that there is another potential Dutch process study to be done in 2023.

##### *Indian Ocean:*

India completed the western extension of GI06 section in January-February 2020. The German cruise along GI07 has been cancelled. It may take 3-4 year to be rescheduled again.

Vineet Goswami: He noted that there would be another Indian cruise to be done in 2021 but this cruise will not follow GI08 section.

**Action:** Vineet to submit a proposal for endorsement as GEOTRACES cruise for forthcoming Indian cruise to be held in 2021.

##### *Pacific Ocean:*

GP22: This Japanese cruise has been postponed. The new date is 2022.

GP11 and GP21: There is discussion at the moment about re-scheduling these German cruises.

*Southern Ocean:*

GS02: The French SWINGS cruise is planned to be held from January to March 2021.

GS03: So far no plans for the future.

GS05: Australia is planning to complete this cruise. It will be scheduled at the end of this year to be done in 2023.

*Atlantic Ocean:*

GA11: UK has interest in GA11. The UK GEOTRACES community would try to work on writing a proposal for this cruise to be completed in the future.

GA05: There are conversations in US to cover the GA05 cruise.

*Arctic Ocean:*

Germany got a cruise funded for a repeated Arctic Section (PIs Walter Geibert and Eric Achterberg). The cruise should be done in 2022 or 2023. Walter has not decided the GEOTRACES status of this cruise.

*Other cruises:*

Australia plans to submit SOLACE cruise (Dec 2021- January 2022) as a process study.

UK is hoping to complete NARC process study in July. As soon as it is scheduled they will submit the process study request.

Canada has a funded research cruise to be done in August-Sept 2021. It might be submitted as process study.

Taiwan-Guam-Palau transect is currently being planned in 2021 as the first scientific cruise of the New ORI. It is likely to become a repeated transect in coming years that could support the GEOTRACES mission

WEDNESDAY 16 SEPTEMBER 2020

## **Data Management**

### **Report on virtual DMC meetings – Alessandro Tagliabue and Bill Landing**

Alessandro reviewed the DMC membership. This committee benefits from other members like past co-chairs, co-chairs of the S&I and the IPO that assist the meeting as observers.

He explained that DMC normally meets during the two day before the SSC meeting. Due to the COVID-19 pandemic this in person meeting has not been possible so it has been replaced for 3 two-hour virtual meetings (2<sup>nd</sup>, 13<sup>th</sup> July and 11<sup>th</sup> September).

He reviewed the key topics discussed during the meetings including: (1) assessing the impact of COVID-19 on DMC activities (GDAC, DOoR, S&I); (2) recognising the huge amount of work from the S&I. DMC and all SSC members should be helping the S&I as much as possible; (3) the role of sensor dataset and their integration in DOoR; (4) Integration of BioGEOTRACES parameters in IDP; (5) the need for extra funding to the DOoR Team at SEDOO (10,000 euros for 2020); (6) Rotations, it might be necessary to add another DMC member. DMC will discuss about it at next DMC virtual meeting planned for November 2020.

### **Discussion:**

There were several positive comments about how the DOoR facilitates the IDP work and in support of providing additional funding to DOoR developers.

There was also a discussion about adding a new DMC member, whether it would be possible to do so after the SSC meeting. Patricia noticed that there is budget to cover another member so from the budget perspective they can add a new member. There was a general consensus that DMC can add a new member if needed. It would require the SSC approval but this could be done by e-mail.

There was also a discussion on whether there was a need to delay the IDP release. The conclusion was that so far it doesn't look necessary to report the launch of it. But if arises arguments during the meeting then it would be considered.

### **Report on GDAC activities – Mohamed Adjou**

Mohamed explained that in his presentation he would report about (1) updates on GDAC web site; (2) present the IDP downloads; (3) the linking with IPO and other centres; and (4) he will convey important messages for national representatives.

Mohamed is updating the GDAC web site (cruise programme and cruise maps pages) as soon as new information is available. There are a few maps updates following the 2019 SSC meeting to be done, but since this is not a priority, Mohamed is doing this progressively. Mohamed invited SSC members to send an email to GDAC if there is a need to update anything on the GDAC web site.

**Action:** SSC members to send Mohamed an e-mail if there is any update needed on the GDAC web site.

Regarding the IDP downloads, there have been over 3,700 IDP downloads from 48 nations (up to 15 September).

Mohamed liaised with the IPO to update cruise information and coordinated also for the DOoR needs and required information. He is in close liaison with other national data centres: BCO-DMO (US), JDOC (Japan), NIOZ (Dutch), XMU (China) and LEFE CYBER (France).

He showed the DOoR GDAC Interface. The tool allows tracking and checking and inventory of expected data submission. Mohamed participated at the 2019 Summer School teaching about marine meta-data management.

He finalised the presentation with several messages to SSC members:

1. It is really important that GDAC gets the hydrographical data for section cruises and process studies, these needs to be sent by the chief-scientists. Data must be submitted to GDAC without submitting an S&I report except for nutrients (i.e. require an S&I report).
2. GDAC expects to receive all discrete sample data in DOoR generated template.
3. Encourage National PIs who registered their data to submit them to national data centres or to GDAC (we received 843 among 2296 registered datasets)
4. Encourage national PIs to consider to send as much metadata and information as possible in their submissions. And, please, to reply to GDAC as soon as possible when GDAC requests data and complementary information.

**Action:** SSC members to: (1) contact national chief scientists to ensure that they have submitted the hydrographical data. Data must be submitted to GDAC without submitting an S&I report except for nutrients (i.e. require an S&I report); (2) encourage colleagues who had registered data to send it as soon as possible to the appropriate data centre; (3) encourage national PIs to send as much as metadata and information as possible in their submissions; (4) respond to GDAC e-mails as soon as possible and encourage colleagues to do so too.

#### Discussion:

Bill: He explained that CTD-mounted sensor data does not need S&I approval, but those data do need to be registered using the DOoR. And the CTD sensor data must be submitted to a national data centre or directly to GDAC.

Maeve: She added that the S&I template in DOoR will make it clear that sensor data does not need for this form to be filled in and submitted through DOoR.

Tina: She asked whether Mohamed could extract a list for each national representative with data that have been submitted to help tracking which hydrographical data is missing so that they can help in chasing it. Mohamed said that this could be a good method, if DMC agrees.

Zanna: She suggested that Mohamed could also cc the national representatives when chasing the data. Mohamed said that most of e-mails were sent in July but that he could start doing this from now on.

**Decision/Action:** Mohamed to cc DMC co-chairs and national representatives when chasing data.

Phoebe: She wanted to know how updated the GDAC web page inventory is in regards with the data received in DOoR, this could help for the national representatives to check whether the data is being submitted and monitor whether is submitted after contacting them. Mohamed confirmed that it is automatically updated as soon as data is received.

Alessandro: He explained that the DMC is going to do an inventory of missing data and once done that this could be used to work with national representatives in chasing the data. So suggested for Mohamed to wait until this inventory is completed before sending any list of missing data to national representatives.

### **Report on DOoR developments – Elena Masferrer**

Elena presented the progress done with the DOoR portal. The first version of the DOoR Portal was released on December 2020. Following the release of the DOoR, a virtual followed by a 2-day in-person meetings were held in Toulouse in order to discuss how the DOoR can facilitate the IDP building. As a result of this meeting a version 2 of the Portal was developed and released on June 2020. Two IT developers are working in the DOoR development: François André is the main IT developer. He counts with the help of Arnaud Mière (GDAC interface and maintenance).

She reported that a new interface has been added into DOoR. It consists on an Interface for the Parameter Definition Committee (PDC) to update and/or create new parameters in DOoR. This interface has mainly been designed by François André and counted with inputs from Mohamed Adjou and Bill Landing. With this new interface, the DOoR counts with 5 interfaces (the public interface for scientist to use to register datasets; the S&I interface, the GDAC interface, the PDC interface and one administration interface for Elena and IT developers to monitor and execute actions).

She explained that the current work of the developers consist on improving the S&I Interface as requested by the S&I Committee and making the last changes to the Parameter Interface. Once this is finalised, the integration of IDP2017 data in DOoR will follow. Finally, a new interface will be developed so that the DOoR could update IDP web reference system automatically with the information provided by scientists in DOoR.

Elena thanked the work done by François André and Arnaud Mière and all the contributors. SSC co-chairs thanked Elena for her work too.

## **Linking BioGEOTRACES data with IDP – Reiner Schlitzer**

Reiner presented a map showing the potential BioGEOTRACES data to be included in IDP. These are thousands of data. He explained that there are two steps to include BioGEOTRACES data in IDP:

- Include additional columns to contain text and accession numbers that will link a interested used to the samples.
- But also, to include bioGEOTRACES webpages active link to TEI data for the particular sample.

There is one complication that BioGEOTRACES samples are taken from normal rosette casts, so no direct trace metal measurements exist for these samples. The approach proposed is obtaining trace metal values by linear interpolation (that is, using ODVinterpolated derived variables often, nearby UCCTD samples exists, and interpolation errors seem acceptable e.g 93m for example metagenome sample 100m).

He stressed that the fair use agreement would be sent along with the IDP data through the BioGEOTRACES links.

### Discussion:

Alessandro: He requested for Reiner to precise at which depth the measures have been done.

**Action:** Reiner to include the depth the BioGEOTRACES sample data were measured so that user can have it.

Zanna: She asked Reiner whether he would leave the full profile so that user can assess the interpolation done. Reiner replied that these aspects were not decided yet. Maite and Paul Berube would meet in the future to decide this.

Maite: She reported that Paul is already talking to the NCBI team about adding the extra attribute in their web site to link the GEOTRACES data for each sample. So they should start doing tests soon.

Catherine: She asked whether it would be best to call this BioGeoSCAPES rather than BioGEOTRACES data.

Alessandro: He explained that BioGEOTRACES is the appropriate name as BioGEOTRACES refers to the linking with biological datasets within the GEOTRACES programme. BioGeoSCAPES refers to the nascent new effort whose scope and science questions remain to be clearly defined (this process is underway).

SSC co-chairs thanked Maite and Reiner to make this linking possible.

## **GEOTRACES Intermediate Data Product**

### **Discuss the release of IDP2021 – Alessandro Tagliabue and Bill Landing**

Alessandro showed the timeline approved during the Hobart 2019 SSC meeting. The deadline for final submission is 15<sup>th</sup> December. In 15<sup>th</sup> May the DOoR would be frozen and in July

2021 the IDP2021 will be released. He said that the DMC is still working with keeping this set of deadlines. To ensure this, DMC would be asking continued support from SSC national representatives in order to ensure timely data and S&I report submission from national colleagues.

Alessandro thanked those SSC members who staffed the SCOR Booth at Ocean Sciences Meeting 2020 as well as thanked SCOR for inviting GEOTRACES at the Booth. This initiative helped in the informing and facilitating submissions from the GEOTRACES community.

Alessandro stressed that any action that national representatives could do to help in making other colleagues to submit the data would be greatly appreciated.

Maeve: She asked how the DOoR frozen would be done.

Elena: She suggested that the DOoR to remain open, but that the S&I Committee should not review any data submitted after the deadline (there is a column in DOoR showing the report submission date, so S&I can order datasets received by date). Other SSC members agreed. Alessandro suggested revising this at next DMC meeting.

He then showed a list of decisions and plans for SSC approval.

**Decision/Action:** The following decisions and actions were approved by the SSC for the DMC to take care:

- Rollover IDP2017 data: DMC co-chairs to communicate with PIs and community to remind them of the shift to “fair use” agreement.
  - o Fair use to be provided with all IDP2021 downloads and as a pop-up for ODV online
  - o SSC national representatives to assist in reinforcing positive message
- DMC co-chairs to communicate and reaffirm previous decisions on IDP deadlines and processing priorities agreed at past SSC meetings:
  - o The deadlines require registration of data in DOoR and submission of a complete dataset and S&I report (blank forms are not sufficient)
  - o Priority list of GDAC and S&I: Sections > Process Studies > Compliant Data
  - o May need to be revisited – key parameters
- DMC to undertake a review of data registrations, submissions and S&I status across all cruises:
  - o Facilitated by DOoR
  - o Focus on key parameters and presence/absence of hydrography, nutrients and oxygen data
  - o This inventory will be shared with SSC national representatives so that they can help in chasing missing data
- DMC co-chairs to amplify requests for sensor/hydrography data from GDAC
- DMC co-chairs to submit a Townhall session at Goldschmidt 2021 in Lyon.
- Another virtual meeting will be held in November 2020 to monitor progress and assess data inventory.
- DMC co-chairs to prepare a guide to ‘making the most’ of the IDP2021.

Adrian: He noted that receiving an e-mail from national representatives might be more influential for some PIs rather than an unknown user.

Looking forward, after the data submission deadline, DMC are planning to hold an in person meeting in early 2021 to plan the IDP2021 release more in detail.

He mentioned that a brochure about the IDP2017 highlights might still be an idea for it to be done. This was an action item from 2019 DMC meeting.

DMC would also discuss more in detail about a mechanism to maximise the ability for PIs to check their own data prior to release.

Other ideas are to improve findability of the IDP2021 and cross linkages with other datasets. The Fair Use agreement would really facilitate this. Also, the DMC and SSC should be thinking on more on-line activity (e.g. webinars that can be recorded and made available in the future).

**Action:** Elena to add in the agenda for forthcoming DMC meetings to dedicate some time to discuss about the preparation of the IDP2017 highlights package and developing more on-line activities for IDP2021 release.

Walter: He mentioned that the summer school could also produce webinars. Actually, he is thinking on engaging professional webinars to do this work. He will report about it later on the agenda.

Maeve: She said it would be good to remind the GEOTRACES community about the deadlines and what each deadline means (sending a completed report to the S&I and the data to the appropriate data centre). Alessandro answered that DMC co-chairs plan to communicate with the GEOTRACES community to clarify the deadlines and what they mean (e.g. blank report submission does not count). This is already included in the list of action items approved previously.

### **IDP Integration – Reiner Schlitzer**

Reiner explained that he is willing to avoid potential errors in data in IDP2021. For this, the GDAC has already implemented a routine of range/unit checks, but in addition, Reiner wants to add additional checks. One way to do so is for PI to check the data before being integrated in DOoR.

His plan is: two weeks before the release Reiner would like to create automatic plots for each dataset and send these graphics to the PI by e-mail or other so that the PI can check them. PI would be asked to respond only if there is a problem. The deadline may be minimum 8 or 14 days before the release. Further details need to be discussed. This would be possible thanks to DOoR. He then showed an example for the GEOVIDE cruise about the Pb\_D\_CONC\_BOTTLE.

Reiner pointed in response to Karen that he would only generate these graphics for S&I approved datasets and with the permission given.



Tina: She said that people would love to have this option but she finds that people should be given more time to make the checking. Reiner answered that the timeline would depend on how and when data is received from GDAC.

Mohamed: He agreed that this is an excellent way to check the data. But he also thinks that two weeks is short, as GDAC would need more time to make the corrections. So he would like for Reiner to start doing the plots as soon as possible.

**Action:** Elena to put on the agenda for the DMC meeting to discuss on the best timeline for data checks.

Reiner explained about the IDP2021 team at AWI. These are two persons; Reiner is doing the processing, software development and working on the ODV-online browser interface. Sebastian Mieruch-Schnüller is working on the webODV data extractor, webserver design, setup and administration. He is funded by EU grants and AWI. However, he said that at the moment a contribution coming from GEOTRACES would be welcomed.

### **GEOTRACES Special Sessions and Town Halls** – Karen Casciotti and Andrew Bowie

Karen asked SSC members to report on known GEOTRACES special sessions and town halls planned.

For Goldschmidt 2021, Alessandro and Bill already reported that they plan to submit a Town Hall session for the IDP2021 release.

Bob: He advised for this session to be done during lunchtime as this facilitates the participation of more people.

Yeala Shaked: She mentioned that Adi Torsftein plans to propose a particle flux session at Goldschmidt.

Phoebe: She asked whether any of the SSC members participated in the virtual Goldschmidt meeting in Hawaii as she wanted to know in the case the Goldschmidt 2021 goes virtual, whether is worth organising a session or not.

Tina: She attended the virtual Goldschmidt meeting and she said that the meeting worked very well specially for early career researchers. So she really thinks it is worth organising it.

No other sessions are planned to present or use IDP2017 data in forthcoming international conferences.

Bill: He suggested that SSC members could consider whether they have students doing videos or webinars who could help in communicating about the IDP.

THURSDAY 17 SEPTEMBER 2020

### GEOTRACES Events and Synthesis Initiatives

#### **Update on GEOTRACES Summer School in Bremerhaven for 2021 – Walter Geibert**

Walter reported about the plans for a Summer School in Bremerhaven. It will be organised with the help of Claudia Handfland. Dates are fixed to 28 June to 2 July 2021. They plan to host 50 participants and 12 lecturers.

In addition of the lectures, they plan training in shipboard sampling (*RV Heincke* already approved) and sample processing (acidification, preconcentration and ion chromatography), as well as some key analytical technics. They would like to have some webODV training and specific workshops, if possible.

Walter has started to set up a science committee and organisation committee (with Claudia Hanfland from POLMAR graduate school and Maria-Elena Vorrath, she was an early postdoc).

They have applied for EGU support (they may get 5k€).

They potentially want to made videos recorded by professional staff but cost is not clear (18.000 euros). He is exploring this at the moment.

They are planning for a in person summer school but they want to be prepared in case this could not be done in-person due to the COVID-19 pandemic. If so, they are considering preparing video recording and video-transmission or a series of live webinars.

He presented the budget. He presented two scenarios: one with participants charged with a fee and another one without charging a fee (travel cost at the expense of the participant). Depending on the scenario they would need to receive about 18k euros from SCOR (if no fees are charged) or 1,2k euros (if students are charged with fees). The budget already includes funds (in euros) from AWI 12k, EGU 6k, Freundeskreis Bremerhaven 8.4k. For a total budget of 44.4k euros.

Elena: She mentioned that in addition to the GEOTRACES SCOR funds, it is also possible to apply for additional funding from the SCOR travel grant for developing countries. Patricia confirmed this.

**Action:** Elena to help Walter in submitting a proposal for the SCOR Travel grants for developing countries.

Antonio: He said that Spanish Summer School received funding from several Spanish institutions that offered to contribute funds when they realised of the international impact of the summer school.

Alessandro: He suggested the funds to create webinars and on-line materials could be seen as something contributing more widely than the summer school as these materials can be recycled and more widely used.

## **Synthesis Workshop on Sensitivity of TEI distributions to environmental change – Walter Geibert**

Walter explained that he got a large *Polarstern* cruise granted for summer 2022, so if a workshop is to be hosted by him, then it should be held later on the year or in 2023. He presented two scenarios:

Scenario 1: Having a small preparation workshop in 2022 and full-sized workshop in 2023 (in Germany or elsewhere)

Scenario 2: Having the full workshop late in 2022 or mid-2023

Walter has already contacted HWK Delmenhorst and they are interested in hosting it. They provide rooms and food but also they offer support on the organisation of the workshop (e.g. taking care of bookings and reservation of transport). They have flexibility on the dates at the moment.

Walter could organise it, but it is also happy for another SSC member to volunteer in organising it (e.g. organise it at the Royal Society for example).

Discussion: *When do we want to have it and in which form do we want to have it?*

Andy: He asked whether Walter could provide more details on what a small preparation workshop would be. Walter explained that this could be a workshop of about 10-15 members, like a scientific and organization committee to meet and plan in more detail the topics and the organisation of the full-sized workshop.

Alessandro: He mentioned that there is no overlap with the Royal Society workshop he is planning to organise as the one he proposes is really focused on microbes and their response to environmental change. He proposed that it would be good to define more the scope of the synthesis workshop to see if it would be possible to do it with another institution.

He added that he believes it would be good to have only one full-size meeting rather than the two meetings scenario. He also mentioned that it would be interesting to join another community as it was done in the past with OCB and PAGES.

Walter: He agreed on the suggestion of trying to join another community. Regarding the topic, he mentioned that he would like to focus more in future scenarios, not excluding paleo, but really more focused on what it is expected to be met into the future.

Rob: He mentioned that regarding the timing it would be good to organise it when people are less busy (there is a need to take into account the US section cruise and the teaching periods). Regarding the topic, he suggested seeking support from the UN decade of the Ocean Science for Sustainable Development that should start next year as linking with them could provide nice publicity.

Bob: He wanted to know which the reasons of the limit of 50 participants were as he reminded that the internal cycling workshop had about 100 participants and the Royal Society workshop had close to 200 participants. He suggested that the larger the number of participants the workshop could have the better. Walter replied that there is a hard limitation for the main workshop (about 60 or 65 persons). It might be possible to have other rooms for

specific activities. But that if GEOTRACES wants to have about 100 participants then it would have to be organised in another venue.

Adrian: He suggested that IMBER might be a good project to link with for this workshop, but if so, then it would increase the size of the workshop.

**Decision:** SSC agreed to organise a single full-size synthesis workshop on sensitivity of TEI distribution to environmental change for 2023.

**Action:** Walter to inquire with HWK Delmenhorst about the possible dates and number of participants for the synthesis workshop on sensitivity of TEI distributions to environmental change and report back to the SSC.

### **Funding for IPO, GDAC, SSC, and other meetings**

Patricia reported on the GEOTRACES budget. Total income in 2020 is 656,563 USD and the income for 2021 is 430,951 USD. In 2020 GEOTRACES spent 225,612 USD. Estimated remaining budget for 2021 after all the expected costs would be of 93k USD left over.

SCOR plans to submit a renewal proposal to NSF for all SCOR projects in early 2021. This is necessary because the current grant will run out of salary money (e.g. GDAC) by the end of the grant on 31 August 2021. After the grant renewal is approved, they will extend the current grant by one year. In the renewal proposal they will ask for reduced funds for travel support in year 1 because of remaining funds for travel in the current grant.

Discussion:

Phoebe: She asked clarification about the restrictions on the budget, that is, whether the only restriction is that it is not possible to move funding from travel into salary. Patricia confirmed this and added that it could be possible for example, to use the 15,000 USD currently assigned for the summer school to the video recording. It is up to the SSC to decide on what the budget is spent. However, if additional funding is provided from the SCOR travel grant for developing countries, the funding must be destined to travel for developing countries only. Phoebe mentioned that what it might be necessary to add additional funding to cover the video on the top of the existing funding already budgeted for the meeting in the current budget.

Alessandro: He asked clarification on whether there is a limit in extending the current grants and what would happen if the money would not be used. Patricia answered that in fact SCOR is advancing the money and sending it to the different components of the programme (e.g. GDAC, IPO) and paying the meeting expenses. Later they send the invoices to NSF in order to get reimbursed. NSF would not provide funds to SCOR if invoices are not available, that is, if money is not expended.

Alessandro: He supported for GEOTRACES to allocate additional funding to the video recording. Also he asked adding additional funding for the IDP release (e.g. Town Hall organisation, etc.) Maeve agreed.

Bob: He mentioned that with the current COVID-19 pandemic situation it has become almost automatic for the NSF to give a second no cost extension of grants, they have experienced this recently with the US GEOTRACES NSF grant.

Patricia: She asked whether Bob had experience in transferring money from travel into salaries. Bob said that he did not have previous experience on this. He pointed that travel is without overhead while salaries do have overhead so this is something that needs to be clarified with NSF.

**Action:** Walter to inquiry about the cost of the video and report back to the Patricia and the Executive Committee.

Reiner: He asked whether it would be possible for GEOTRACES to contribute funding to help covering the cost of eGEOTRACES graphics development. Requested cost is 16,6k USD.

There was strong support from SSC members to dedicate GEOTRACES funding to help covering AWI's costs in preparing the IDP graphics. There was a long discussion on which could be the most appropriate mechanism to transfer these funds to AWI.

**Decision:** SSC approved to add in the budget 15k USD for the IDP2021 release, 16,6k USD to cover AWI's costs to prepare the eGEOTRACES graphics for IDP201 data. Note: Following further discussions by e-mail, it was also approved to increase S&I funding for meetings to 20k UDS.

**Action:** Patricia to modify the budget to add 15k USD for the IDP2021 release, to add 16,6k USD to cover AWI's costs to prepare the eGEOTRACES graphics for IDP201 data and to increase S&I funding for meetings to 20k UDS.

### **IPO Report** – Elena Masferrer

Elena reported about the IPO activities. She first quickly reviewed the IPO tasks. Then she reported about the IPO's staffing. The IPO recruited Katherine Brownlie as IPO project officer (part-time). She started on the position on March 2nd but had to resign on June 30th since she has been repatriated to Australia after being more than 3 months sick of COVID-19. She was only able to work for GEOTRACES for 5 days. The task for an assistant is still identified but due to the COVID-19 pandemic situation, Catherine and Elena proposed to wait to see the COVID-19 pandemic evolution before hiring another person.

Elena then presented the new products developed in the past year including the coordination of the DOoR portal (release of version 1 and 2, new interfaces, etc.), the completion of a major web site overhaul and eNewsletter redesign. GEOTRACES recruited 6 new national representatives in the past year. Elena introduced new training materials available on the GEOTRACES web site and encouraged SSC members to provide materials to the IPO if available. She ended by presenting some statistics about the IPO's work.

## Discussion:

There was a discussion on whether the IPO should recruit an assistant immediately rather than waiting a few months and whether part of the IPO work could be subcontracted. Most SSC members supported and understood the need for a more long-term support for the IPO.

### **SSC, DMC and S& Rotations** – Karen Casciotti and Andy Bowie

Karen reported that SSC members whose first 3-year term is ending are: Susanne Fietz, Abby Ren and Kazuyo Tachikawa. All of them have already agreed to serve for a second 3-year term if SCOR approves this.

On the other hand there are three members that will arrive at the end of their second year term at the end of the year. There is a need to find a replacement for them. These members are: Liping Zhou, Hajime Obata and Andy Bowie.

#### *Replacement for Liping Zhou as SSC regular member*

Liping Zhou introduced potential Chinese candidates: Dr. Dailin Shi (Xiamen University) and Dr. Zhimian Cao (Xiamen University).

There was also a discussion about a potential addition of a Chinese member in the DMC. Liping had a potential candidate who could join the DMC. Alessandro pointed that this addition could happen after the release of the IDP2021.

SSC members voted and Daili Shi was elected with 94% of votes.

#### *Replacement for Hajime Obata as SSC regular member*

Hajime Obata introduced three candidates from Japan: Dr. Keiji Horikawa (Associate Professor, Toyama University), Dr. Kazuhiro Norisuye (Associate Professor, Niigata University) and Dr. Yoshiko Kondo (Associate Professor, Nagasaki University).

SSC members voted and Yoshiko Kondo was elected with 73% of the votes.

#### *Replacement for Andy Bowie as co-chair*

Andy Bowie term will end in December 2020, so there is a need to replace him. In order to ensure continuity in the programme in 2021 when the IDP will be released and to allow proper handover to Karen and the new co-chair to be smoother, it is proposed to give an ex-officio member status to Andy for one year. There are two candidatures for replacing Andy Bowie: Alessandro Tagliabue and Maeve Lohan.

The SSC voted and the two candidates got the same score 50% each. So it was decided for the SSC members to vote again and this time Maeve Lohan obtained 63% of the votes.

**Decision/Action:** SSC agreed for co-chairs to invite Maeve Lohan as new SSC co-chair and Daili Shi and Yoshiko Kondo as new regular SSC members.

**Decision:** SSC agreed to ask SCOR to give an ex-officio role to Andy Bowie so that he can remain at the SSC for one more year.

**Action:** Elena to prepare the GEOTRACES SSC nomination package to be submitted to SCOR.

Venue for next SSC meeting – Andrew Bowie and Karen Casciotti

Phoebe: She explained that when organising the 2020 SSC meeting which was cancelled due to the COVID-19 pandemic, she realised about some challenges that would need to be overcome if a meeting is to be hosted in Santa Cruz. She is still willing to do so, but she suggested that if another country wanted to take the lead she would be prefer it.

Tina: She mentioned that on her opinion Santa Cruz should be the default option. But if this is no longer possible, then she is willing to host it in London (UK). An advantage of organising it in UK it is that it would reduce the carbon footprint of the meeting.

Andy reviewed the other possible venues for the future. This includes India and the Netherlands. In the future California could be a venue again.

Note: After the meeting, Rob confirmed by e-mail that NIOZ is willing to host the meeting in Texel and could provide venue and coffee free of charge but it might be difficult to make a financial contribution at the moment. The Dutch Royal Society could in principle make a contribution (no guarantees the proposal is funded) but then the meeting would have to be in Amsterdam but then the higher costs of hotels, etc. would exceed the contribution so actually there would be a net loss. Regarding the year he said it was irrelevant; it could be in the next 2-3 years.

**Decision:** SSC members approved for 2021 SSC meeting to be held in London, UK, organised by Tina van de Flierdt, if COVID-19 pandemic allows for in-person meetings. India and Netherlands are potential hosts for next SSC meeting.

Meeting adjourn at 15h34 (GMT).

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*Zoom links to the recorded sessions:*

*Sept 15:* [https://stanford.zoom.us/rec/share/fVM4cWLVckAW47r\\_mbwCAfwG\\_zcMF6-j1pSU4SwoqZVcd310QCP3fwmPHAWASOcS.dA0lMGZFwqR3\\_Ey\\_](https://stanford.zoom.us/rec/share/fVM4cWLVckAW47r_mbwCAfwG_zcMF6-j1pSU4SwoqZVcd310QCP3fwmPHAWASOcS.dA0lMGZFwqR3_Ey_)

*Sept 16:* [https://stanford.zoom.us/rec/share/W7HUFzP-INbb6yKZeQ8u3FZYrfTE\\_jdiGi76sRV4sXH4Dcb65r6RhHFTwRF9EV6C.bwDxpAbsckM--cII](https://stanford.zoom.us/rec/share/W7HUFzP-INbb6yKZeQ8u3FZYrfTE_jdiGi76sRV4sXH4Dcb65r6RhHFTwRF9EV6C.bwDxpAbsckM--cII)

*Sept 17:* [https://stanford.zoom.us/rec/share/DPHsJe\\_eyB5wok-jRIGAHUVY72MjsSHv7sTAffibGlnBlxDAMEKtQNfThI-5Ly37.dWiyPkQChRwo87FX](https://stanford.zoom.us/rec/share/DPHsJe_eyB5wok-jRIGAHUVY72MjsSHv7sTAffibGlnBlxDAMEKtQNfThI-5Ly37.dWiyPkQChRwo87FX)