

**Chikyu IODP Board #5 meeting**  
**15–16 March 2017**  
**Takigawa Memorial Hall**  
**Kobe University**

Final minutes

**Day-1**

**Wednesday, 15 March 2017**

Agenda Items

**1. Welcome Remarks**

(Shin'ichi Kuramoto)

(09:00 h.)

Shin'ichi Kuramoto (CDEX) welcomed the CIB members, liaisons, and observers, appreciating, first of all, Chair Yoshiyuki Tatsumi, for providing a nice venue for the fifth CIB meeting, and for the nice weather. He welcomed new CIB members Hiroshi Kitazato, Keir Becker, and Benoit Ildefonse. In addition, Kuramoto briefly mentioned the main task of the CIB—to discuss *Chikyu* future operations in specific and report to the president of JAMSTEC, and discussed the schedule of this two-day meeting. Kuramoto ended his opening remarks thanking the attendees.

**2. Introduction and Logistics**

(Shigemi Matsuda)

(09:02 h.)

The Chair moved on to Agenda Item #2, Introduction and Logistics. Shigemi Matsuda briefly explained the meeting location and emergency escape route to the participants, and provided a small tip in case of Earthquake (follow the green sign).

Participants self-introduction started at 09:05 h.

**3. Approval of Agenda**

(Chair - Tatsumi)

(09:09 h.)

The Chair shared the present agenda with the group, including a new discussion item for the CIB, the *Chikyu* performance review. The agenda was approved with no major changes. The Chair asked if there were any conflict of interests (COIs)

related to this agenda, and Andrew Heap identified himself as potentially conflicted over the next day's Lord Howe Rise (Proposal 871) discussion. The Chair said Andrew Heap may need to recuse himself. Jim Mori also identified himself as conflicted, as he is a proponent for JTRACK (Proposal 835). Chair Tatsumi said he is potentially conflicted over IBM (Proposal 698). Further potential COIs included: Yoshi Kawamura and Yasu Yamada for LHR (Proposal 871), and Gaku Kimura for NanTroSEIZE (Proposal 603).

**CIB\_Consensus\_0317-01: Approve agenda.**  
The CIB approved the #5 meeting agenda as is.

**4. Approval of Last Meeting Minutes** (Chair - Tatsumi)  
(09:14 h.)

The Chair asked if there were any comments or questions about the last meeting's minutes. There were none.

**CIB\_Consensus\_0317-02: Approve minutes.**  
The CIB approved the last meeting's minutes without modification.

**5. CIB Decisions since Last Meeting** (Chair - Tatsumi)  
(09:16 h.)

Chair Tatsumi asked Nobu Eguchi to cover CIB activities since the last meeting in Kobe. Eguchi described the video conference between CDEX and CIB members deciding the next IODP operation to endorse for the 2017 window. The 16 Feb 2017 discussion focused on two possible projects, the 603D NanTroSEIZE shallow riserless LTBMS, and the 835 JTRACK project. Considering the budget and time available for IODP operations, the consensus was that the NanTroSEIZE LTBMS proposal should be endorsed. Holly Givens asked if the meeting format was conducive to a good discussion, which Benoit Ildefonse responded was adequate, but could be improved; "still, it was much better than using email".

**6. CIB Action Item Status** (Chair - Tatsumi)  
(09:25 h.)

Chair Tatsumi moved on to discuss the CIB action items. Eguchi showed the list, two action items, CIB comments on ADP proposal implementation guidelines (CIB action item 0316-01), and to inform SEP regarding alternate sites for Proposal 865; Nankai Trough T-Limits (CIB action item 0316-02) were already finished. CDEX will also report on fund-raising efforts (CIB action item 0316-03), to be

discussed by Kuramoto. Kuramoto began by describing CDEX's efforts to land commercial drilling contracts and cut costs for repair and maintenance of *Chikyu*. An important national gas hydrates effort will hire *Chikyu* for work, so this will help. Kuramoto will share details later during this meeting.

Eguchi noted that there are two action items (CIB action item 0316-04 and -05) related to riser projects remaining and to be discussed under Agenda Item 13 at this CIB meeting. Mori asked if he should speak, but it was decided to wait until tomorrow.

## **7. Other FB, IODP Forum, and Agency Activities**

### **a. IODP Forum**

(James Austin)

(09:29 h.)

Austin began by introducing the purpose of the forum, and discussed the meaning of the term, "forum", which is a big open space for discussion and collaboration. Austin said that this is what the IODP Forum is; there have been three meetings so far, to discuss IODP as a program, and it seems to be working; from science, education and outreach, to future planning. Austin stressed the need to be responsive to the community of proposal writers, otherwise, we will not be successful. Austin said posting on websites doesn't mean we are responding to the community, and a look around this room shows everyone that we are not making a good enough effort reaching out to young scientists. Austin said if IODP doesn't reach out in an effective way to young generation scientists, IODP will not teach them what we are doing, they will not write proposals, and IODP will be finished. Austin stated that the forum looks at the platform providers and examines the science they are supporting; we are lucky that the new science plan, written by about 600 scientists several years ago is a great one, and is still very much valid.

The Forum worked on making a good appearance at the International Geological Congress in South Africa, Austin said that Becker, Gilbert Camoin, Yoshi Tatsumi, and himself worked on developing multiple IODP sessions (and a joint IODP-ICDP booth) for that meeting. Austin said the geoscience meeting in South Africa was used as a venue to find new members – no African nation has ever been an IODP member – and were able to get a tour of the new DeBeers marine research vessel. The hope was to connect to, and open communication with, the South African and Namibian scientific community. Austin mentioned that he's in touch with Anglo-African; their only profitable unit is in diamonds, and they are not in a

position to be intermediates between IODP and either Namibia or South Africa. Austin predicts, however, that as JR nears the Atlantic, interest will increase. He mentioned that DeBeers could potentially be an industry partner, looking at the 3D structure of diamond deposits, and JR could be involved.

Austin mentioned the need for inter-PMO communication, and that Carl Brenner, of USSSP, headed a PMO meeting after the last IODP Forum meeting in Brazil. This was very successful, and may become a regular event. Austin stressed that outreach and education are important, but separate, activities, and each PMO and operator have their own way of approaching these – cooperation in this is essential.

Austin discussed the SEPs' approach to the Forum in 2015, regarding the state of seismic data being submitted to IODP. There has always been an issue with the quality and costs of seismic data, and the Forum told the SEP that they would examine the issue in Brazil; a follow-up meeting in November submitted a white paper to NSF. A new group, the Marine Seismic Research Oversight Committee, has been formed with international experts to discuss better funding, efficient scheduling, proposals, and collaboration.

Austin briefly introduced each community and their current state of activity (Brazil, China, Japan, India). Brazil is a new member, financially supporting the current JRSO-IODP phase with 3M USD/year for three years. China is excited about becoming a new IODP platform provider, and has been talking about building a new drilling vessel. Austin shared that there would be an associated PMO meeting at the next forum meeting, 11–13 September 2017, in Shanghai. He would like people from the CIB to attend. India has invited the Forum to meet in Goa in September 2018.

Jamie Allan asked about the details under discussion for the workshop and forum to be hosted in Japan in 2019. Austin replied that since he will not be forum chair at the time he does not have any updates. Hiroshi Kitazato suggested that a Vancouver, Canada meeting would be a good opportunity to communicate with young scientists. Austin asked that the dates be shared with him, and also mentioned the “Denver II” meeting which will focus on younger scientists and also be held at the end of September.

The Chair called a coffee break at 09:51 hrs, and the meeting reconvened at

10:10 hrs.

b. JR Facility board

(Jamie Allan)

(10:12 h.)

Jamie Allan presented the JRFB update on behalf of Anthony Koppers, who was absent. After Allan introduced the new JR schedule for FY17–19, he mentioned that JR was now ensured to operate on a 10-month schedule, even if the budget gets cut a bit, because there were several CPPs, JR costs were less than planned, and they received a little more funding from the US Congress than what was in the present budget. Allan mentioned that JR was required to undergo certified dock work in FY18. He also said that there is an interesting opportunity to provide JR with some work outside of IODP during the transit between the South Pacific and Chile. Allan said that the new science program of the JR is a success, since the ship was not only used on a regional basis much more, instead of sailing to port calls all over the place, but also doing thematic areas with coherent approaches to problems and more facts than we had in the past.

Allan said the JRFB has tried to set the ship's track several years in advance to promote coherent writing proposals. Allen said that one of the things that they found was that development of proposals in the South Atlantic seems to be taking more time than they initially outlined. This, Allen explained, was why they had modified the ship track a bit, rather than to shrink from the Southern Ocean to South Atlantic. Allan mentioned that proposals for the South Atlantic and port calls were likely to happen in a few years although there would be lots of things to be done.

Next, Allan talked about the last SEP in terms of JR proposals. There are no proposals forwarded to JRFB from the January 2017 SEP meeting: several proposals are in the holding bin, three have been sent to external review, and only three were deactivated. There are three fast-tracked proposals, and five proposals potentially ready by May 2017, which is important for scheduling.

Allan stated that non-disclosure agreements (NDA) for some kinds of site survey data are a challenge, and he complimented the Science Support Office for their excellent work. He said that data need to be available during the cruise for safety issues, and legal discussions had been made that would meet with lawyer and company requirements to create a statement covering their use. He told the group to be aware that there were a lot of difficulties in overwriter policies without having

all sources in one office. Allan said that the JRFB was focusing on the ship track for the next few years of FY 22–23, and said it's all working well.

Austin supported this by saying that it was important to motivate proponents to submit proposals not just internally, because it takes 2–3 years to get a proposal in the system. He also said that Koppers would prepare an article in *Eos* shortly for scientists outside the IODP community.

Allan ended with JRFB updates. New members are: Sean Gullick (Univ. of Texas), new SEP co-chairs for site characterization, Wolfgang Bach (Germany) and Liping Zhou (China), new JRFB science members, Beth Christensen (U.S.) and Dick Arculus (ANZIC), new curatorial advisory board (CAB) member, and Mike Lovell (ECORD) as a new chair of CAB. He also noted that 897-APL Southern Ocean Cretaceous Anoxia was added to Expedition 369. The next EPSP meeting would be held 2–3 May 2017 to deal with proposal 877-CPP2's (Flemings) site review. He mentioned that the 877-CPP2 safety review was not yet finished.

Austin mentioned that one of the main reasons JR would go through the Panama Canal into the Gulf of Mexico was DOE's (US Department of Energy) funds for 877-CPP2 (Flemings). He said it's a large amount of money (20 M USD) and tagged for FY19 in Gulf of Mexico.

The Chair asked if there were any comments, but no questions arose.

*c. ECORD FB* (Gilbert Camoin)

*d. ECORD* (Gilbert Camoin)

Gilbert Camoin merged the 2 agenda items into one presentation. He introduced some of the new names in ECORD: Mike Webb as the new chair of ECORD Council, Magnus Friberg as vice chair. There are also 3 new members in ECORD Facility Board: Gretchen Frueh-Green, Gabriele Uenzelmann-Neben, and Ellen Thomas.

ECORD now has 15 member countries, with 3 dropping out: Poland, Israel, and Belgium. These nations had no real drive to build a community and national effort to be an ECORD member. Turkey is interested, but ECORD has suggested that they first build a national consortium and then join. In talks last week, Turkey said

they are well on the way. Belgium is also working to do this, and hopes to return to ECORD. Camoin was happy that Spain has returned to ECORD. However, ECORD still has some concerns with the Canadian IODP organization, which next week plans to discuss funding with their national government. All of these committed to 2018. Next 2019-2023 is the focus. Camoin said that they are organizing a review of ECORD activities in preparation for renewal.

Camoin spoke about past and future MSP plans. The ECORD external review panel will be reporting to EMA and ECORD funding agencies for renewal. Mandated to review ECORD within IODP and the impact of science results, and effectiveness. The MARUM meeting will have 2 closed sessions. IODP science talks will highlight ECORD science within IODP.

Camoin said this review will continue until late June. Next year, work on MoU and funding agency agreements will begin, with a target for signing the MoUs, including with the US, in 2019.

Camoin showed the MSP expedition schedule to 2020. The next 3 are Corinth (Exp. 381), and ESO is now working to announce the expedition dates in 2018; the Arctic (Exp. 377), and ESO is working with Russia for in-kind contributions including an icebreaker; and Antarctic (Exp. 373) in 2020. Past expeditions included Atlantis Massif (Exp. 357, very positive external reviews), and Chicxulub (Exp. 364) to be reviewed in Lisbon, prior to the SEP meeting on 20 June 2017. Ben van der Pluijm mentioned how tremendously successful the Chicxulub outreach program was, and this should be included in the review.

ECORD still has 4 slots for low cost (x3) and medium cost (x1) expeditions for the next few years. Camoin said they plan to tackle many science themes, not just climate change, and they are planning to do this with a diversity of drilling systems.

van der Pluijm commented that he'd like to see fewer climate-related MSP expeditions; Allen reminded everyone that the MoU specifies that the MSP focus on shallow water, implying climate work. Austin said that the Corinth and Chicxulub were NOT climate expeditions. Givens wanted to confirm that IODP would be included in this call for new MSP expeditions, which Camoin did.

Camoin listed proposals now at the ECORD FB, including New England Shelf,

Hawaiian Drowned Reefs, and Sabine Bank Sea Level; there are not many MSP proposals at SEP. There are 3 that have been inactive for quite some time, and they need to be addressed at the next meeting. Do the proponents want to keep these in the system? Camoin said this is still not too bad, considering the number of slots ECORD needs filled. ECORD FB needs a diversity of proposals and the pressure to move.

Camoin discussed the Magellan Plus Workshop series, with one call yearly, for all IODP platforms and ICDP (ADP) welcome. There have been 14 workshops since 2014, with 15K Euro support per workshop. Some travel funds are also provided for EU scientists. Camoin discussed the upcoming workshop.

Camoin then gave an update on sea drills. A combined community ECORD infrastructure exists to support drilling, with 25 institutes and 16 countries working on this. Distributed European Drilling Infrastructure (DEDI) will help support multiple organizations to supply the best equipment and techniques to achieve their science goals.

Camoin spoke on ECORD educational activities. ECORD works to maintain and add to yearly activities. Some of the key focus points are early career scientists training, and scholarships and grants. This money can be used on all current and legacy IODP samples and data. ECORD supports educators on the JR and now the MSP. ECORD has now started its' own school of rock series; these efforts trained 150 students and early career students in 2016. Camoin also talked about some of the 39 Distinguished Lecturer Program talks given during 2016. ECORD also launched a new website last September, so Camoin encouraged everyone to take a look and give feedback. ECORD will have a booth at this year's EGU as usual. As part of this, ECORD is working with IODP on the 25 April IODP Town Hall, and with ICDP on the 27 April ICDP town hall. Camoin talked about the joint IODP-ICDP session, which is also being planned. Around 50% of the participants will be young, early career scientists.

Upcoming outreach plans include the 13-18 August Goldschmidt 2017 in Paris and a Scientific Drilling booth at the 2017 AGU in New Orleans. ECORD is working to prepare for the 2019 AGU 100 yr anniversary.

Austin talked about how the AGU program committee for the Fall meeting came to the IODP Forum for session support, since they realized how many of the



transcendent science themes the AGU promotes are deeply embedded in scientific ocean drilling. This is a good motion that should be followed through. Austin finished by remarking that the goal is to deliver taped union sessions highlighting these connections, and that these will eventually reach out into fundraising, outreach, etc.; even more important in the current challenging political climate. This effort will be gradually implemented as AGU prepares for the 2019 centennial. Becker asked why these are ranked the way they are? Austin responded that no “ranking” is implied here – these are just the way the program brought these themes.

Camoin ended with a review of the next upcoming meetings: in 2017, the ECORD council meeting in UK and in 2018, the ECORD FB in 6-7 March, in Italy.

ECORD’s 2016 annual report is due out soon.

(10:26 h.)

e. MEXT

(Eisho Sato)

(11:09 h.)

Eisho Sato briefly introduced the MEXT CIB report, including the planned MEXT personnel change (New director of Ocean and Earth Division, Takahiro Hayashi), renewal of JAMSTEC’s 5-year plan, the MEXT JAMSTEC budget allocation plan, activities and structure/sub-divisions of MEXT, and plans for the next G7 meeting in Torino, Italy. Sato introduced the current JAMSTEC 5-year plan (reviewed in 2018 and ended at the end March, 2019) followed. Sato said that the JAMSTEC budget had been steadily decreasing, but the JFY17 budget would be larger than JFY16. Even so, decreasing budget trends would continue.

van der Pluijm asked if the new 5-year plan would be different from the current plan, and to what extent, since the current one already had a lot to cover. Sato said either Kuramoto or Wataru Azuma would be better to answer this. Azuma said what is important is data sharing. Kuramoto added that discussion about the new plan had just started, and he hoped that there would be no drastic changes from the current one. The Chair commented that the CIB members would like to hear more strategic plans of supporting IODP and we should probably discuss them later. Heap asked if the new minister and government might have some influence to affect changes. Sato did not think there would be much influence.

Azuma added that the Japanese Government's innovation projects and industry issues might be an important strategy to effect change.

f. NSF

(Jamie Allan)

(11:27 h.)

Allan reported that the NSF perspective for JR has never been better, not only financially, but in how the ship is being run, how proposals are being evaluated, how the facility is being jointly managed by the community, the operators and funding agencies are all working together, and that many here have been a big part of this. These changes really prove that they are acting as a group.

Allan began talking about the budget, and said there's now a transition year since Donald Trump became president, and NSF is waiting to see what will happen, as no budget has yet been released. Allan reminded the group that the US budget is decided by Congress, and not by the president. He again mentioned that JR is now in a positive financial situation. The budget for JRSO is nearly 62.7M USD a year for 10.5 months operation over five expeditions in FY17. He explained that they are expecting 14.8M USD in base contributions from their partners, and additional contribution 12M USD was from CPP. Allen said that the facility and science are well balanced. He mentioned that the NSF goal was for 10 months/year through FY19, and one way they can achieve this is by spending less of their budget than expected in 2016, so this means a larger budget for FY17.

Benoit Ildefonse asked how JR managed to spend less, and asked if this was mostly because of drops in fuel costs. Allan answered "no"; fuel costs for the JR are only part of the story, with 35 tons/day to drive the ship, 20–25 tons/day onsite and 10 ton/day to tie up. So, fuel efficiency is met by not burning fuel for transit, but by focusing it on doing science regionally.

Allan said that during ODP JR used to operate for 12 months a year, and there were a few downsides to this: lab upgrades and improvements and maintenance were put off. Allen reminded everyone that the JR is an NSF facility and can be used for non-IODP projects as well, especially during IODP-off periods of time. With the retirement by the US Navy of the *Knorr*, the US lost its' long-core facility. As announced in the NSF Dear Colleague Letter (DCL) on 24 August 2016, JR would be available to perform this piston coring in 2019 during the transit between the western Pacific, southwest Pacific, and Chile. Allen said the 100-m limit was set following advice from the general counsel's office at NSF. They would like to avoid environmental impact statements for drilling, by instead following the

environmental procedures associated with the long-core facility, which significantly reduces the regulatory overhead. This coring capability would be scheduled after the facility board set the new schedule. Allan said the extra cost to use the ship would be 25 K USD/day, and funding would come from the facility section at NSF and from the geology and geophysics program. Allen also said that science staffing would be handled just as for other research cruises, and would be funded depending on the science project.

Allan explained the designated sequence of events for the JR NSF non-IODP coring program with a timeline slide. Azuma asked how many days are available for this non-IODP project. Allan answered that there would be 18 additional days during the transit in this case, for which the ship would otherwise be tied up and waiting at port.

Allan spoke about expedition data, which was discussed at the last IODP Forum. He said expedition data are very important for the FBs to consider, and is traditionally described as “data acquired during actual expeditions”, but extra data after the cruise would sometimes achieve expedition goals more effectively. Allen listed examples: whole-core XRF scanning for splicing, whole-core CT-scanning (for example Chicxulub), and isotopes. He said what was unaddressed is who pays for it. He introduced the JRFB approval to purchase an XRF scanner and now two scanners were available for JR expeditions at TAMU.

Allan discussed the next phase of IODP from 2019–2023. He said NSF goals remain at 10 months a year for JR operations. He said the original subcontract TAMU signed for IODP is until 2023, but NSF decided to make a cooperate agreement with TAMU and JRSO to have a new 5-year contract through 2024 instead of the typical 4-year contract. He mentioned next that partner contributions would increase to 1/3 of JR operation expenses, which used to be 50% in the beginning of ODP. Allan also said NSF decided to increase CPP costs to 8M USD after the survey.

Allan next said that NSF instructed the JRSO to increase U.S. science party members from 8 to 10 on JR expeditions in response to the “Sea Change” report recommendations. He mentioned that those staffed under the onboard outreach program were considered members of expedition science party with publishing responsibilities. He explained that all onboard outreach program participants and co-chiefs will be included in berth counts, post 2019.

Allan showed the timeline for the next three years and said that a facility review was ongoing. The U.S. Community Workshop would evaluate the effectiveness of JR as a facility toward achieving the Science Plan Challenges. He said FY18 would be the year to focus on preparing partner memoranda and National Science Board (NSB) action items for the smooth shift into the next phase of IODP (2019–2023).

van der Pluijm commented that the US regional planning is a budget-driven scenario, and emphasized that we should follow thematic driven planning, not just regions. Allan replied that NSF would consider both budgetary and science issues. Allen said it's important to look at things from a facility viewpoint, in terms of efficiency and costs, but thematic science targets need to be followed. van der Pluijm agreed.

Allan reported on how the first JR facility review was made. A 5-year cooperative agreement for JR operation required annual and mid-award (3<sup>rd</sup>-year) reviews. Allan also said that while reviews are confidential and cannot be posted, the NSF response is public. The NSF panel met at JRSO from 24–26 February 2016 for the FY15 review after receiving the report from FY15 co-chief review, which was held just two days before that. Allan said the first facility review was stunning and positive, and NSF accepted all panel recommendations, asking the JRSO chair to implement or consider them. Allan said the second JR facility review had just been produced on 1–3 March in College Station. Allan emphasized that not just U.S. members were invited to join the meeting as a panel, one important example was a Canadian member, who is an astronomer with experience working with large international observatories. The report that they received was powerful and it would be good enough to get U.S. community approval.

Lastly, Allan mentioned that IODP proposals at NSF have done very well, so funding wouldn't (shouldn't) be changed. Allan also pointed out the DCL published on 9 August 2016 regarding seismic capabilities. Allan confirmed that NSF is committed to providing future seismic capability to the U.S. community, and currently NSF is trying to evaluate several responses to this DCL.

Azuma asked who accepts these reviews. Allan answered that would go to him because it was his panel.

Given commented that the revision of berth allocations might be good for other facility boards to discuss and maybe adopt if it simplifies things from a programmatic point of view. Allan mentioned that the “Sea Change” Report was a guide as to how these should be done/sorted out. He additionally mentioned that the recommendations were not going to be negotiated, because the memorandum wouldn’t be approved above the division of sciences. Ildefonse commented that some small countries might react negatively to these changes. Allan said there had been problems regarding education/outreach people aboard JR, and what their exact role aboard ship was. Allan felt there should be a programmatic workshop clearly explaining what the expedition goals were. However, some education/outreach staff released inaccurate reports, showing that they had not worked closely with the co-chiefs, and this causes friction. On the other hand, Allan mentioned both the South China Sea and Chicxulub expeditions went very well. Allen stressed that this is not a new program, and that they worked well when they were properly mentored and involved; therefore, mentoring these people was very important. Allan also mentioned that some of these people had not been willing to collaborate. Brad Clements commented that a clear education plan might help guide and improve cooperation with the expedition and co-chiefs, and that this might be extended to IODP, program-wide. Camoin commented that this would have implications in staffing, since on MSPs there’ve been problems with outreach plans as well. Clements commented that sooner is better to address such a workshop.

The Chair concluded the discussion and confirmed there were no more questions or comments, and moved on.

g. ANZIC

(Andrew Heap)

(12:04 h.)

Andrew Heap gave the ANZIC update. The lead agency is the Australian National University, and the partnership is made up of Australia and New Zealand. Heap said that since 2008 51 Australians and 11 New Zealanders have sailed on IODP expeditions. Heap mentioned that ANZIC is very happy with IODP membership. The current funding levels are good, but Heap hopes to see these raised by the Australian government. This takes money out of the Australian Research Council budget, but other methods are looking good. Heap said that there are movements to examine using the IODP model to fund all Australian research funding.

Heap mentioned how more ANZIC proposals have been coming through the

system. However, one worry is the costs of collecting site survey data; it's very expensive, and they've been working to resolve this.

Heap shared some details on the regional IODP proposals. One item he mentioned was an APL for Cretaceous climate, which has been resurrected. This will be added to Exp. 369 in 2017. ANZIC is very happy with this.

Heap shared some details on the IODP 2017-2020 drilling plans around Australia and New Zealand.

Heap then discussed the *Chikyu* Lord Howe Rise project; the Australian government contribution will be immense, and details are now being worked out. More details will be shared tomorrow. One site survey has been completed, with another planned for later this year. Funding negotiations with the national government are now underway with Geoscience Australia.

Given asked what legacy funding was, and Heap responded that this is for looking at legacy data & samples. van der Pluijm suggested that ANZIC needs to tell their funding agencies to provide more support to IODP, since ANZIC is getting so much out of the program.

Allen mentioned that the NSF director is headed to Australia soon, to brief GA on how to approach this, as well as looking at port call plans, etc. NSF feels that the program is getting a lot back from ANZIC.

Austin noted that the ANZIC community "punches above their weight" regarding the number of excellent proposal submissions, etc.

Heap acknowledged this, saying that they are busy supporting the development of new proposals and strengthening new ones. Heap invited participation in the Australasian IODP Regional Planning Workshop on 13-16 June WS at Sydney University, Australia. Heap ended by confirming that ANZIC has great support for IODP and sees much value in the program. ANZIC provides post cruise and legacy funding for scientists, and ANZIC always needs new proposals.

h. PMO

J-DESC

(Hiroshi Nishi)

(12:19 h.)

Hiroshi Nishi presented J-DESCs' activities. He first listed seven international meetings (e.g., SEP, EPSP, CIB, ECORDFB, and JRFB), and the numbers for each (seven for SEP, one for EPSP, three for CIB, none for JRFB, and one for ECORD), in which Japanese members participated. Nishi mentioned that 29 Japanese scientists in total, and three to four in average, contributed onboard each IODP expedition. Nishi also added that while many applications were accepted, not so many were selected to board. Next, Nishi introduced the successful Expedition 370 (T-Limit of the Deep Biosphere off Muroto) thanks to the hard work of its' three co-chiefs, Heuer, Inagaki, and Morono. Nishi talked about J-DESC IODP cruise support, mentioning two sampling parties (Exp. 359 and Exp. 361), three 2<sup>nd</sup> post-cruise meetings (Exp. 350, Exp. 351, and Exp. 352), pre-cruise training (Exp. 362, Exp. 363, Exp. 364, Exp. 367, and Exp. 368), nine young scientists supported by JAMSTEC for post-cruise activity, and three IODP feasibility support activities (proposal support).

Nishi talked about last years' symposiums/workshops (three in English, two in Japanese, and one in both languages). He mentioned that the JpGU (Japan Geoscience Union) 2017 would be held on 21–25 May 2017. Nishi said that the J-DESC core school was very important, and a good opportunity to train young scientists, with five core schools held last year. Nishi then talked about J-DESC outreach activity, mentioning two special onboard-*Chikyu* tours held at Ishinomaki port in Miyagi and Kochi port in Kochi. Nishi also talked about the International short course held last year. Nishi showed several pictures from the the core school. Nishi mentioned a speech given at the Short Course on Core & Logging Data Interpretation Exercises at the Taiwan-Japan Deep Drilling Science Symposium on 1–4 February 2016 in Taiwan. Nishi spoke about the international *Chikyu* Onboard School, funded by JAMSTEC and J-DESC, and held onboard *Chikyu* from 3–6 July 2016. Six different countries were represented by 13 students, but there were actually 35 applications for this event. Nishi said J-DESC supported 10 participants for the *Chikyu* ship-tour in Yokohama, and 15 participants for the one in Miyagi. Nishi mentioned exhibitions in which J-DESC participated, JpGU (22–26 May 2016), Goldschmidt (26 June–1 July 2016), and the Geological Society of Japan (10–12 September 2016). Nishi introduced two Japanese publications: *J-DESC news*, and *Newton*, which featured Kuramoto (of CDEX) in an article explaining *Chikyu* operations and science services for the community. Nishi introduced the J-DESC website and its Facebook page.

Nishi announced two important things in closing: one is the JpGU IODP session, which will be held on 22 May 2017 with speakers; Kiyoshi Suyehiro, James Austin, Keir Becker, and Masafumi Murayama. Nishi encouraged the group to participate in this session which is very important for the future of IODP. Nishi then spoke about the ICDP Oman Drilling Project. The target of this project is drilling and coring the crust-mantle boundary to investigate the nature of the Moho transition zone. This project is being conducted in two different phases through 2016–2018. Phase I (2016–2017) has completed drilling at sites (GT2, GT1, GT2, and BT1), and full core characterization and description will be conducted on *Chikyu* in Summer 2017. There are three more target sites (MD1, MD, and BA1) during Phase II (2017–2018), and laboratory work will be conducted on *Chikyu*. This is the first time ICDP-IODP jointly cooperates on off-site core examination and curation. The proposed core flow for the work onboard *Chikyu* has been tentatively proposed and the team is waiting for the cores to be shipped.

The Chair closed the morning session, and broke for lunch at 12:30 hrs.

## **8. JR Advisory Panels Report / Proposal Overview**

a. Science Support Office

(Holly Given)

(13:29 h.)

Holly Given gave a brief update on the Science Support Office (SSO). For the new CIB members, Given explained that SSO has a 5-year cooperate agreement with NSF, and staffs this office with eight people, only three of whom are full-time equivalent workers. A marine seismic imaging specialist was newly hired because of a SEP requirement. Given mentioned the SSOs' main tasks: task one is JRFB, SEP, and EPSP support, and liaison with the ECORD FB and CIB. The second task is to oversee the proposal review process; the whole process from calling for proposals, submission software, getting them to SEP and maintaining a proposal archive. Given said SSO also maintains the [iodp.org](http://iodp.org) website, and asked the group to provide feedback on the website. Given mentioned that SSO is the guardian of IODP policy and documents, and also maintains and hosts the site-survey database, inherited from IODP-MI and which has been completely rewritten.

Given explained the history of proposal submissions: there were 82 new proposals, 48% de-activated, 36% still under active review, and 16% forwarded to FBs (half of those (6) scheduled/drilled) since the new IODP started on 1 October 2013. Given mentioned it would take 3.5 or 4 years to have a proposal get through all these processes in the new program.



Given next mentioned proposal outcomes from the last two SEP meetings; five sent to FB (incl. 835 JTRACK and 871 LHR for CIB), another five sent to external review (four for JR, one for *Chikyu*), one in the holding bin, seven full proposals have been invited, including 898 Fore Arc M2M proposal (Michibayashi) with *Chikyu*, and 10 proposals are de-activated but with no *Chikyu*-related ones included.

Given showed a page from the iodp.org website and explained how *Chikyu* proposals “in the system” can be sorted by platform, and also show the stage of each proposal in the process. Given showed that active proposals are also accessible at iodp.org. Right now, 87 proposals are active, and the distribution among science themes has not changed by much. Given also showed the lead proponents, by member affiliation, among other members, and then showed participation in the pool.

Given showed the latest call for proposals published in *Eos* as of 3 April 2017, and asked the group if there was any necessary amendment about the wording regarding *Chikyu* operations. van der Pluijm didn't like it, saying “it sounded as if *Chikyu* was almost dead”. van der Pluijm also commented that the current wording might mislead proponents to think that riser proposals were no longer being solicited, and that *Chikyu* should be “alive” for the community. van der Pluijm suggested that the CIB statement about riser drilling should be strongly mentioned no matter how it is funded or not. The Chair said that would be a key long-term view discussion later on Day 2. Mori agreed and supported van der Pluijm's comments. Given asked for more comments about improving the wording and Ildefonse commented that it should reflect the consensus from last year. Ildefonse said the time limit is missing in the statement, to which Eguchi said that this was for the *Chikyu* mid-term, until 2019.

(Details in the agenda book.)

b. Science Evaluation Panel

(Holly Given)

(13:43 h.)

Given presented the SEP's outcomes on behalf of Ken Miller and Sean Gulick, Co-chairs of SEP. Given briefly reviewed the status of two proposals that were sent to CIB with “Excellent” evaluations at the SEP meetings in June 2016 and

January 2017: 835-Full2 (JTRACK) and 871-CPP2 (Lord Howe Rise Ribbon). Given also showed a list of other proposals currently at the CIB.

(Details in the agenda book.)

There were no comments or questions.

## **9. *Chikyu* Operation/status update**

### a. Overall *Chikyu* Operation

(Shin'ichi Kuramoto)

(13:57 h.)

Shin'ichi Kuramoto presented the *Chikyu* schedule since 2005; *Chikyu* IODP operations started in 2007, two years after delivery. In JFY16 saw two expeditions, Exps. 365 and 370. In Exp. 365, an older, previously installed observatory was replaced with an advanced Long-Term Borehole Measurement System (LTBMS). This has already been connected to the Dense Oceanfloor Network system for Earthquakes and Tsunamis (DONET) and is producing real-time monitoring data. One significant event was monitoring a M6 plate boundary earthquake just beneath the observatory on April 2016; a full report is soon-to-be published. Followed by a maintenance period and open ship tours, IODP expedition Exp. 370 (T-Limit) was launched. For the coming JFY17, new commercial work for a Japanese company will begin on 1 April, focusing on methane-hydrates. During the following maintenance period (mid-July to mid-September), the IODP Oman drilling project cores will be loaded aboard *Chikyu* for core description. Kuramoto said there will be an open ship in Hachinohe in September, then back to Shimizu for maintenance and open ship. In October, IODP Exp. 380 will start. Kuramoto discussed the plan to invite early-career scientists onboard for a workshop during IODP Exp. 380. In January 2018, some Japanese commercial work is being negotiated (not contracted yet). Expeditions have been well received by TAT and garnered good media coverage. Kuramoto said that CDEX/JAMSTEC was looking to maximize funds from MEXT, combined with commercial work and cost-cutting efforts. Kuramoto said this meant some maintenance might be postponed until the next 5-year term. Kuramoto emphasized that JAMSTEC/CDEX would always welcome CPPs and new *Chikyu* memberships.

Camoin asked if Exp. 380 would be a regular expedition. Eguchi answered yes, that with about 10–12 people planned for the science party, there would be still available berths for the workshop participants. Eguchi continued to briefly explain

that young scientists would be welcome; they would sail the whole expedition and be able to use previously collected cores and LWD data to conduct original research and write papers. Ildefonse wanted confirmation that the workshop would be a training-oriented or research-oriented and related to this expedition. Eguchi confirmed that both were meant, and added that this was Kimura's idea—revisit the previously taken cores (data) since we have not used them all (item #13, details available in Toczko's talk).

Takehiko Yano took over to give a financial update. Yano commented that the JFY15 Indian commercial operation was thought to have lost money, but actually ended up making a good profit. Yano said this enabled CDEX to create a *Chikyu* independent account, which wouldn't be used by JAMSTEC for other purposes. In addition, Yano explained things needed to improve the current financial situation: e.g., making strong efforts to sell the *Chikyu* NanTroSEIZE project to the government, but so far has no response.

van der Pluijm asked what *Chikyu* maintained with all these large "maintenance" windows, which must cause a lot of lost costs. Eguchi answered that *Chikyu* was standing-by during those terms and always needed to be well prepared.

Yano continued to explain the overall budget situation of JAMSTEC, not specifically CDEX. Yano said that an average cut of three percent occurred every year as Sato (MEXT) mentioned. Yano explained that 30% of the budget was officially allocated for *Chikyu* operations, ca. 80–90M USD; however, reality was different and in fact only about 58M USD was actually allocated to CDEX. Yano showed the *Chikyu* funding structure (*Chikyu* Account) to explain several sources of funds: Government funds, *Chikyu* membership fees, Commercial operations, CPP, and Donations. Control of the basic cost is the key to manage *Chikyu* budgets, and all savings from cost cutting would be forwarded to the Deep Riser drilling.

van der Pluijm wanted to confirm that when the new program starts in 2019, there would basically be no money for drilling for the first two to three years. Yano said this was right, but added that a CPP is expected. Clements wanted to make sure that *Chikyu* expected to begin the Lord Howe Rise (LHR) project in 2020. Eguchi said that the LHR topic would be discussed in detail later. Allan commented that deferred maintenance would be good for the short-term, but has the potential to create issues in the long-term. Yano agreed. Allan asked if he was correct in

thinking that deferred maintenance would not risk impacting the operation. Kuramoto replied that *Chikyu* still needed to be inspected, even with deferred maintenance. van der Pluijm commented that last year's maintenance seemed relatively intense. Kuramoto commented that many requirements needed to be satisfied after the Macondo disaster in 2010. van der Pluijm said that to keep up with industry levels, it sounded like this was costing more. Eguchi said this really meant basic cost cutting. Clements asked if the *Chikyu* account diagram was vertically scaled, and Eguchi answered that this had no relative scale at all, it is just an illustration. The Chair commented that *Chikyu* might produce some money, and CIB would discuss this later. Austin commented that there would be one riserless option, JTRACK in 2018 or more riser with NanTroSEIZE. van der Pluijm agreed to discuss this later.

b. NanTroSEIZE, IODP Exp. 365, PCT report

IODP Exp. 365

(Sean Toczko)

(14:38 h.)

Sean Toczko presented the *Chikyu* operations updates for Exp. 365 and Exp. 370. Toczko introduced the Expedition 365 science party, including the videographers from Science Media, the site and objectives, operations, schedule (next milestones), and evaluation results. Toczko explained the GeniusPlug (microbio) and the LTBMS, are two different kinds of observatories. Toczko mentioned that Mie-ken Nanto Oki quake (M6) occurred on 1 April when GeniusPlug was retrieved. Toczko said a shore-based sampling party was held quay-side at the Port of Shimizu 25 July– 5 August 2016. The 1<sup>st</sup> post cruise meeting was on 5 December 2016, with the *Proceedings* due to be published in Spring 2017. Toczko also said the C0002 LTBMS paper will be published soon. The science party was happy about GeniusPlug recovery, LTBMS deployment, coring, laboratory support (MWJ), and flexibility (CDEX, MQJ, MWJ). Toczko also noted some comments: the curator was great, but Internet access, core laboratory layout, and the microbiology laboratory missing some standards were noted as unsatisfactory.

Austin said he liked the LTBMS video, showing Laura Wallace explaining a complicated tool very well, and said that CDEX released a great example of video, which can be used for outreach. Toczko agreed and commented that Science Media was very professional and did a great job. Allan also commented that the Exp. 365 YouTube videos were great and well evaluated in NSF as it raised the awareness of the IODP program. Eguchi suggested showing the video in the coffee break. Toczko mentioned that CDEX was trying to provide the videos to

high school teachers as PR and hoped that it works.

The Chair suggested moving on to the PCT meeting report, and the NanTroSEIZE PCT meeting updates followed.

PCT report

(Sean Toczko)

(14:53 h.)

Toczko reported on the meeting held at the last AGU and discussed the details of Exp. 380, Exp. 365, and the C0002 deep riser extension. He added that another PCT meeting would be held in May (just before JpGU) to further discuss these items. The Chair suggested sending a CIB liaison to the PCT for the next meeting, and asked Becker to do so since he will attend JpGU. Becker accepted.

The Chair confirmed the CIB members' agreement on this suggestion.

<p><b>CIB Consensus 0317-03:</b> CIB selected Keir Becker to participate in the May 2017 NanTroSEIZE PCT meeting as a CIB liaison</p>
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No questions or comments arose.

The Chair confirmed that the next Agenda item was Exp. 370.

c. IODP Exp. 370

(Sean Toczko)

(14:56 h.)

Toczko continued to introduce the expedition's objectives, sites, operations, its major issues, operational achievements, scientific achievements, and evaluation results.

Clements asked about the VIV ropes around the drill pipe. Toczko replied that they were attached to it to break up water flow around the pipe. Austin said that it was like a fairing. Toczko continued describing the drilling sequence and operational achievements of Exp. 370. Toczko mentioned that the observatory thermometer string was cut and lost. Toczko said shipboard and shore-based co-chiefs worked well together during Exp. 370, and the science party was mostly happy with conditions, except for the Internet.

At the end of presentation, Austin commented that it reminded him of Fumio Inagaki saying a punch line that there is no limit of life, while the notion here was

“T-Limit” implying that you know something you do not know. Austin continued, saying that the results were really exciting and big, much like Chicxulub. Toczko agreed that this was something NASA should be interested in. Becker added that the results showed temperatures a little higher than previously found, but that there has to be a T-Limit somewhere.

Austin emphasized that the result of this experiment was surprising. Ildefonse asked if that current research was a high profile for publications. Toczko replied that he was not sure, so Ildefonse rephrased his question because he was asking about when it would be published in Science or Nature. Toczko agreed it would be significant when it was published.

The Chair said the CIB would be very keen to hear about the results.

The Chair called a coffee break at 15:00 hrs.

## **10. TAT Report**

(Keir Becker)

(15:28 h.)

Becker gave a brief report on the TAT. Becker presented the TATs’ purpose and membership. Becker mentioned that TAT was really impressed with CDEX operations and developments. Becker talked about some of these technical developments, starting with the Okinawa project. Becker said that the SIP wellhead designs for HOT programs are really amazing and well-engineered. Becker said that speaking as a developer of the original CORKS, these are really impressive.

Becker showed a long and detailed list of Lord Howe Rise TAT recommendations, summarized in his presentation (see Agenda Book). Becker said an effort should be made to convince industry to help invest in LHR.

Becker ended with a long and detailed description of the drill well on paper (DWOP) activity recommended by TAT to CDEX in preparation for the deep C0002 riser well. These points are all summarized in Beckers’ presentation (see Agenda Book).

Ildefonse asked about the details of DWOP, which Becker said means getting the team into a room to simulate drilling the well. Given asked if this was like a

tabletop exercise. Becker agreed, saying this is standard in industry. Nishii appreciated this, and encouraged more efforts like these. Becker pointed out that the TAT is like the forum, with everyone in the room being an active participant.

## **11. Chikyu Outreach Activities**

(Nobuhisa Eguchi)

(15:53 h.)

Nobu Eguchi summarized CDEX education and outreach activities. These included open ship events at Ishinomaki port (August 2016), which had been seriously damaged by the Tohoku earthquake, Kochi's new port (November 2016), lectures/seminars for (junior) high school students, joint IODP/ICDP booth with USSSP and ECORD at AGU for the first time, YouTube videos created for Exp. 365 with more than 10,000 viewers, one YouTube video created for Exp. 370, filming by NHK crew, onboard school with 15 attendees from different countries (July 2016 and February 2017), and other media efforts and publications. Eguchi ended his presentation with the comment that outreach activity were okay more or less inside Japan, but emphasized that the necessity of reaching out internationally. Eguchi also added that education should also be more seriously considered domestically. Eguchi said that CDEX needs some website renewal, and also needs a revamp for smart phone users and better social media use. Eguchi mentioned the planned workshop onboard during Exp. 380, and said Toczko would share more details on Day 2.

Given said that there used to be a videographer team working at Scripps, but stopped since they were too expensive. Videos made on JR were getting better and better edited. That made Given wonder if videos could be a very effective outreach tool; CDEX agreed. Ildefonse also commented that professional videographers are needed to make good and effective videos. Given said some JR science parties had made good videos. Ildefonse disagreed, saying there's a lot of garbage out there. Eguchi agreed with Ildefonse and said that while Science Media was not cheap, they did really a professional job. In addition, CDEX got all the footage, incl. final products, which contractually could be used as desired by JAMSTEC. Camoin commented that this was a discussion held at the last meeting where there was talk about hiring a team. Camoin said that it helps when you have some "sexy" expeditions like Chicxulub, and you can try to sign up TV companies. Eguchi replied that with commercial contracts, copyright is always an issue to worry about.

Austin commented that this goes beyond label sharing. Some of these are designed for advertising outlets to make money. Austin wanted to know when we will start to make this a focus, now or later? Austin said the borehole instrument video was incredibly interesting to the community, and this should be especially so in a country where earthquake prediction has been a mainstream discussion, the public is interested in it for a very good reason. Here in Japan, there should be partnerships involved to make dollars. Austin asked why CDEX wasn't more interested in this – to which Eguchi responded they are. However, all video groups to date have been Japanese organizations, and focused exclusively on the local market. Given asked who knew about these observatories? Austin answered that he knew but he didn't hear anything otherwise about it.

Given asked if the borehole instruments were connected to DONET and did the science community know this? Toczko replied that some borehole data are available from a website run by Demian Saffer (Penn State Univ.); the link is in the Scientific Prospectus and *Proceedings*. This website shares pressure data from Site C0002 data. Toczko also said the DONET website also provides borehole observatory data; raw data are available. Given said discussions on getting subseafloor real time data have been going in for the past ten years, and now we seem to have achieved this. Given understood that part of the problem lies with website design and layout. Toczko agreed and added that Saffer's group webpage is quite nice with search capabilities, but the problem is that there is not enough infrastructure support to manage all the data coming out. Toczko said it would take money to hire a professional to design such a website. Given commented it would be exciting if we could get access to the real-time data, but people can't find through the CDEX website.

Eguchi added that use of the Science Media was the first time to use foreign company. Eguchi understood that these videos were targeted at people outside of Japan while *Chikyu* TV, created by Japanese companies, had limited appeal, and only really within Japan. Ildefonse said he feels CDEX needs to better manage languages, Japanese and English when advertising *Chikyu*, providing the example of the *Chikyu* twitter account: the last six tweets were all in Japanese. Given mentioned that it is not in the SSO mandate to support IODP outreach on the webpage. Ildefonse added there wasn't as much news about T-Limit as Chicxulub, and that we didn't know about the limits to life on this planet, and there were a great number of interesting stories that needed to get out.



The Chair closed the discussion and asked for the KCC report.

## 12. KCC Report

(Tsuyoshi Ishikawa)

Note: Presentation order was changed from the original 14 on Day 2 to 12 on Day 1.

(16:26 h.)

Tsuyoshi Ishikawa presented KCC tasks (core storage management, sample requests evaluation, sampling plans for *Chikyu* IODP expeditions, organizing sampling parties, sample data management, and education & outreach). The curation of core materials in KCC includes legacy core from DSDP/ODP, and from non-IODP expeditions as well. Based on the geographical model, KCC is in charge of cores taken from the western Pacific and Indian Ocean, with just over 121 km of cores stored in KCC as of February 2017. He said core material was divided into three types: 1.5 m long core sections, 10 cm long microbiological whole round (WR) samples for deep biosphere study, which are saved at -80°C, and cuttings samples from *Chikyu* riser drilling operations, which are saved at +4°C at ~80% humidity. KCC follows the IODP sample data & obligation policy implementation plan.

Ishikawa mentioned they received many more sample requests than the previous year especially because of Exp. 370. Ishikawa said the number of shipped samples in 2016 was the most in KCC history, related to the Exp. 353 sampling party at KCC. There were about 75 IODP-related visitors to KCC.

Ishikawa showed some photos of the Exp. 370 onshore party; the cores taken onboard *Chikyu* were delivered by helicopter and shipped to KCC immediately so that onshore science party could begin detailed observation. Ishikawa also introduced the KCC symposium held on 15 October, which featured Fumio Inagaki in an internet broadcast from *Chikyu*. There were 1,055 viewers, including young students, and there was very good interaction with the audience.

Ishikawa said that KCC has cores from JR (Exp. 356, 359, 362, and 362T) and *Chikyu* (Exp. 365 and 370) in 2016, and they expect to receive cores from JR (Exp. 361, 356, 366, 363, 367, 368, and 371) during this year (2017).

Ishikawa introduced a new database for IODP core samples, and said it was much easier to find core samples than before, since now image data comparison is available.

Ishikawa said they regularly hold education and training for Japanese IODP expedition participants and also support the J-DESC yearly core school. For young Asian scientists, another science program was created, and four participants came from Myanmar. Ishikawa also said that some logging equipment, such as XCT scanner, have been opened to the IODP community outside Japan.

Regarding further actions, Ishikawa said that KCC had some budget problems for curatorial activities, so KCC needs to streamline or simplify activities, transfer some legacy cores from the old to the new reefer, promote the utilization of DeepBIOS cores with the science community, and discuss how to deal with the Nagoya Protocol.

Ishikawa gave a quick brief of the Nagoya Protocol, and then talked about how to implement access and benefit-sharing (ABS) measures for future IODP expeditions on *Chikyu*. Ishikawa talked about two documents being prepared; one is the Prior Informed Consent (PIC). This is not required when providing Japanese genetic resources outside Japan, but CDEX/JAMSTEC will seek PICs from other countries when required. The other is the Material Transfer Agreement (MTA), which CDEX first implemented for Exp. 370, and was also used for KCC sample requests. Lastly, Ishikawa explained KCC preparations for the coming year.

Given asked if outsiders can use the analytical facility. Lallan Gupta explained that after receiving requests through SDR, as this is a national facility, using it is free of charge; however, schedule of use and period needed have to be negotiated. Ildefonse asked if this facility is free when used for activities outside IODP. Gupta answered these are free as well.

The Chair confirmed there were no comments and closed the meeting for Day 1.

### **18:30- Reception**

### 13. *Chikyu* Proposals (update and discussion)

(Chair - Tatsumi)

Note: The order was changed from the original 12 on Day 1 to 13 on Day 2.

a. *Potential Chikyu Proposals at CIB and SEP*

b. *Recommendation for Future Chikyu IODP Window*

(08:53 h.)

The Chair began with the section of potential *Chikyu* proposals. There are many proposals listed and the chair asked Eguchi to explain them to the members.

Eguchi began explaining the list of *Chikyu* proposals currently at CIB and SEP. There are 10 *Chikyu* proposals at CIB: two CRISP (537-CDP7 and 537-Full4), three NanTroSEIZE (603-CDP3, 603C-Full, and 603D-Full2), one IBM (698-Full3), two Hikurangi (781-MDP and 781B-Full), one Japan Trench Tsunamigenesis (835-Full), and one Lord Howe Rise Continental Ribbon (871-CPP2/Add). Eguchi said JR would conduct the first Hikurangi project in May 2018. Eguchi explained that CDEX has established project coordination teams (PCTs) for CRISP, NanTroSEIZE, and IBM. Eguchi would share more details when they discuss the LHR later during the meeting.

Eguchi introduced the other *Chikyu* proposals at SEP as follows: KAP (707-CDP3) which is a combination *Chikyu* and JR proposal (only the umbrella proposal stays at SEP), the Indian Ridge Moho (800 MDP), which was partially completed by JR two years ago, but still remains at SEP, the umbrella proposals of MoHole to the Mantle (805-MDP) stays at SEP, DREAM riser operation (857-MDP2) was deactivated two years ago at SEP, two Bend-Fault proposals (876-Pre and 886-Pre), which will be explained a little bit more later, and the Fore Arc Mohole-to-Mantle (898-Pre) which is at SEP. These are all the proposals on the table for CIB from SEP.

The Chair asked the members to consider which project should be recommended for the IODP window over the next four years. First, the Chair mentioned that CIB would like to recommend Exp. 380 for the 2017 IODP window as was discussed during the previous video meeting. The Chair asked for confirmation that the CIB members have consensus on this. The Chair then asked Toczko to give a brief presentation on Exp. 380.

#### **CIB\_Consensus\_0317-04: IODP Exp. 380.**

The CIB endorsed IODP Proposal 603D, NanTroSEIZE shallow riserless LTBMS, for *Chikyu* IODP Exp. 380 that will be scheduled in October - December 2017.

Toczko described the concept of Exp. 380. Toczko said that *Chikyu* IODP Exp. 380, proposal 603D, NanTroSEIZE shallow riserless LTBMS, scheduled from 23 October to 5 December 2017. Toczko said the call for application had already been sent to PMOs on 24 February 2017. Toczko explained that the main purpose of this expedition is to deploy an LTBMS at the accretionary toe, originally with Site C0007 as the primary site and Site C0006 as the secondary site. Toczko showed 314 LWD/Logging unit data depicting sandy formation, correlated with core sampling results from C0006 from Exp. 316. Toczko showed the planned drilling sequence for Site C0006.

Eguchi asked Toczko to explain the TAT discussion/suggestions and explain why screened casing would not be used. Toczko said that the target area was completely fractured and it just needed to be isolated from the seafloor, but there was a formation “sweet spot” for the sensors to aim for. Toczko discussed the results from the December PCT meeting where the consensus was that logging would be nice, but is not actually required. Eguchi asked Becker to confirm that there are no major differences found from the previous data as Toczko said that sweet spot was about 100 m. Becker agreed with the target zone, and again talked about the TAT recommendation to include LWD, if possible. Becker (and the TAT) agreed with the PCT’s decision, however.

Toczko talked about DONET and its’ relation to Sites C0006 and C0007. The DONET cabled network has a cable and “Node C” close to the drilling site. Because of the close proximity of the cables to the proposed sites, CDEX was currently negotiating with DONET to drill at Site C0006, considering the worst case would be that one of the secondary cables could get severed; a seafloor survey would help pinpoint the cable locations. These considerations made Site C0006 superior to Site C0007, especially that no LWD data were collected at the latter site. Additionally, Site C0007 was far too close to the cables, in any case.

Toczko discussed the plans for the concurrent workshop, details and outline (workshop and fieldwork at sea). Toczko basically said that the workshop was a weeklong activity, with the benefit of having the “fieldwork” in the *Chikyu* labs for three weeks, examining and sampling Site C0006 & C0007 cores, and C0006 LWD data. Toczko said that this program is aimed at early-career and young scientists. Toczko mentioned that important factors to consider are the JAMSTEC/CDEX HSE regulations for helicopter transfer to/from *Chikyu*. This requires helicopter underwater escape training (HUET) certification for 2 to fewer

flights per year, and this means OPITO certification. Some of the PMOs, Toczko said, are supportive of this, and negotiations are underway to determine the level of support available.

Becker liked the idea of the workshop, but asked who would be in charge. Toczko answered that Kimura would be onboard as leader. The Co-chiefs, Harold Tobin and Masataka Kinoshita could assist, and Eiichiro Araki would be on board as well. van der Pluijm also liked this idea, and wondered if it would be practical to target post-doc or junior faculty, because they probably would have the scheduling freedom, and van der Pluijm also felt it was important to engage students aggressively by giving them a chance and to get them involved in the system for the future.

Camoin thought he would approve this proposal and asked how many slots were available and how would participants be selected. Eguchi answered there was room for 10–12 in addition to the Exp. 380 scientists. Camoin asked again about how selection would be handled. Eguchi answered that they might ask applicants to submit research plans based on what kind of materials and data available onboard, and the NanTroSEIZE PCT could review them for selection.

Ildefonse said he was not sure if he would agree or not, because he thought it would be probably fair enough to have NanTroSEIZE post-cruise activity. However, it might be difficult to get such an opportunity and participants would help with evolving science.

Jin-Oh Park asked about the recruiting target for this challenging activity, and who would help narrow it down? Toczko answered that CDEX were working with the NanTroSEIZE PCT, and CDEX was still refining whom to invite. Given said that there is a restriction on senior graduate students in the academic year for some places. Given also asked what the goal of the workshop was; focused on training or publications. Toczko answered that publications are the chief goal. Given also asked if applicants should already have been involved in related research. Toczko said this was not necessary: Eguchi also said that this is really a challenge and even they (CDEX) were wondering who would apply. Given said that this was a way to do more marketing. Ildefonse suggested that while some students might be working on this course, the rest of them might be going to work on the core few years later inspired by this adventure at sea, of which he suspected there might be

a few. Camoin additionally suggested that we should announce this and have it done very quickly.

Gaku Kimura briefed the CIB with more details of this project. The expedition itself would only comprise 40 days of mainly engineering operations. The real/actual engineering operation results would be the observatory sharing data through DONET, and the current status of DONET includes borehole observatories at C0010 and C0002. Kimura said the new observatory would be a great advance, and data would be accessible to the public. Kimura mentioned the huge amount of data produced so far, and spoke about the impressive paper published about the fault zone. Kimura mentioned that there have been few papers describing the geology and geophysics for these sites even though basic descriptions were completed. After the Tohoku earthquake, concerns about large tsunami in Nankai were revived, so all the integrated data produced from this proposed workshop would be helpful. Kimura was confident that getting many young scientists to look at borehole observatory data, combined with logging data and core samples would help produce exciting new science, so this program is very exciting. Kimura said that basic discussion on the programs' structure is already finished and data integration is what he expects students, young career scientists, and specialty staff to be working on together for 40 days. Kimura admitted that there are still some difficult issues, such as logistics, choosing applicants, and balancing applicants and disciplines. However, Kimura emphasized this would be a new kind of collaboration and activity, and expected that during the next PCT meeting in May, the program will be fully refined.

The Chair said probably all CIB members understand the importance of this workshop. Kuramoto said that they needed to consult with the PCT about this workshop to discuss using DONET data in real-time, experiencing work at sea aboard *Chikyu*, and better defining the program goals before the expedition. These are some of the things CDEX will be asking the PCT about.

The Chair asked the CIB members if they would like to encourage this challenging program. Ildefonse asked if the CIB should officially support the workshop proposal. The Chair said yes. Camoin asked about the timing for application. The Chair said timing was very tight. Eguchi said it would be announced in one week or two.

The Chair asked CIB members once again to confirm if CIB would like to encourage this workshop proposal.

All agreed.

**CIB\_Consensus\_0317-05: WS/Field work at Sea.**

CIB encourages the presented ambitious plan of workshop/field work at sea during Exp. 380; the call for application should not solicit only graduate students but should also be open to post-doc, young, and early career scientists.

The Chair then talked about some items for 2018. The last CIB consensus endorsed riser operations at Hole C0002F in 2018. Chair Tatsumi reminded everyone that the day before, CDEX showed its' efforts in getting funds to implement this project. Funds were still not fully sufficient but funding was being sought, so the Chair asked the members to discuss if the 2018 IODP window should be opened for the C0002F riser hole project.

Mori asked if there were any other options than the riser operation. The Chair answered that there were three other riser proposals and one non-riser proposal. Mori asked if there was space for JTRACK to come up or not. van der Pluijm suggested focusing on riser options first, and then if they didn't work, go to the JTRACK discussion. Ildefonse asked if there was enough time to do C0002F, are the resources available, would this complete the NanTroSEIZE project, or would there be another step to go? Mori said that we should be clear on the target, and said NanTroSEIZE needs to deepen the hole by at least 1,000 m. Becker said that TAT members saw the reprocessed 3D data, which seemed to show the new targets. Eguchi said a presentation on this subject was ready. The Chair asked Kimura, who Eguchi identified as one of the PCT chief project scientists, to give his presentation.

Kimura began his Site C0002 overview. Kimura said *Chikyu* had 10 years drilling NanTroSEIZE, a project of high social relevance, which became extremely more so after the Tohoku Earthquake. Kimura said from the beginning, an early warning system was wanted. Kimura acknowledged that the budgetary realities are quite difficult, which help make this project seem to be a never-ending one. Kimura's suggestion is that one possible solution is to complete Hole C0002F to as deep as possible, with complete logging, coring, and install an LTBMS. Kimura said we

could declare victory after this operation, and we could preserve the plate boundary target for a possible future Japanese CPP, which would allow requesting more funds from the Japanese government. Kimura showed the original targets, then the reprocessed 3D seismic data, comparing the 2016 vs. 2006 processing. Kimura described the reprocessed 3D seismic data as being much clearer, with a greatly improved 3D profile. Even so, Kimura said we are still a few kilometers away from the primary target, and this being too expensive to accomplish, so the target was modified to target the high velocity zone (more than 5 km/s) within the hanging wall. Kimura said we could learn the current status of this hanging wall portion, measure *in-situ* stress, pore pressure, and material process here, if we could reach this target and get samples. Kimura ended by mentioning that this was the strategy to support NanTroSEIZE as the next riser drilling target.

Allan asked about the error bar on the velocity model. J. Park answered that was a new velocity model, and that the first impression is that this was more accurate. Camoin asked, as a non-specialist, what the target was here, 1,000 m or 500 m, and what was needed to reach the significant velocity changes. Kimura answered that maybe it would be important to get the high velocity portion, which probably is storing strain. Camoin then asked if we need 1,000 m to reach it. Austin said we should make sure that we have the science goals that you need to answer the questions, and use that as your value to “declare victory”. Austin said that it’s clear we need to drill deep enough to get it.

The Chair asked Kimura if drilling would stop once reaching the orange high velocity area, to which Kimura said yes. The Chair asked Kimura again if he would like to continue this project beyond this expedition since the final goal is the plate boundary. Kimura said theoretically “yes” because he understood it’s difficult to continue operations in a much narrower hole. Kimura said it would be great if we could at least reach the target in the hanging wall, which would lead us to propose a new project to do new science in a new hole. Ildefonse commented that part of his question was answered here, and in the time you think you have, can we do this. Ildefonse said his understanding was to go as deep as possible, since there was no clear “boundary” or target between 3–4 km or 5 km., so he asked how much drilling could be done in the time allotted. Eguchi answered that CDEX had started scoping this deep hole, and in the time allowed in this window, he said we could reach 4200 mbsf, more or less. Ildefonse said this had been scoped, and you had a plan to reach, on here, from the sea level, it’s just over six kilometers.



van der Pluijm said he knew structural geology, and didn't think this was the way to end the project with no real geology to find. van der Pluijm said that you wouldn't learn more in the 1000 m that you didn't already know; he commented "it's pity that we're saying, we got really close, but we didn't reach it", and that was a downer. As devil's advocate, van der Pluijm questioned this being the best use of our time and money, and suggested that we should decide very carefully.

Becker said that a counter point was that the ultimate goal was to place the instrument to the hanging wall and footwall, however, this would be very difficult to do both in one hole here. He commented that you could get the hanging wall first, come back and get the footwall later maybe with the CPP or something like that.

van der Pluijm disagreed by saying his point that we couldn't declare victory if we don't get to where we wanted to go. Ildefonse asked if it really makes sense to go one more kilometer and install the LTBMS. Mori said that key would be getting to where there is not a lot of structural "mess". Mori also said one really important thing would be going to another 1000 m deeper; it would be good enough to measure strain, with a good observatory, and that would be a huge difference by getting data twice as close to the target. Austin commented that these are the arguments you need; getting closer for strain measurement was an advance argument, and quantifiable and objective goals needed to be spelled out.

Ildefonse said that if equipment needs to be installed, how much/long is needed to do this. Toczko asked if this just covers installation. Ildefonse rephrased to ask how long it would take for a minimum riser operation. Eguchi answered that this would make things easier, but scientists want core, if we start to run out of time, we could sacrifice coring for an extended TD. Ildefonse asked about the case just to install the LTBMS at the current depth. Sawada said this would take three to four weeks. Eguchi added that riser pipe & BOP connection would take two weeks (after confirming with N. Kyo), and therefore it would take 2.5 months in total. Ildefonse commented that not going 1 km deeper might be a better case to use available time and money resources. Austin said that a case needs to be built for coming back, so you need to be in the best possible place to do so. Austin suggested going for the hanging wall target, then come back with a CPP in a clean new hole. Austin said that Mori 's argument regarding strain measurement was a great one, but he also said that this argument was not about time and money, it's about science.

Kimura said the primary goal here is science, but to reach the plate boundary would take three times the budget on hand. Kimura agreed that even getting simple pressure measurements had been converted to strain and showed very good data by Achim Kopf and his group. Kimura said this showed a good path towards getting important data even from a shallower target, and would allow reopening the argument to go deeper. Kimura said that now we knew the temperature there was quite high, around 120°C. Kimura said only pressure measurements were possible with this shallow configuration, and it's quite important to know what is going on in the fault zone. Kimura again mentioned that we could invite more money in the future to re-open the hole to reach to the final target.

van der Pluijm asked if we do this, we would be locking *Chikyu* in for the next 5-years, and wondered it was positive or negative for proponents. van der Pluijm said he was not for or against this, rather he agreed we should go deeper. However, van der Pluijm also believed that the new phase should also be something new. Mori said if we decided not to do it, this would be on the table regardless, and also said that not doing it now would not solve the issue as you mentioned. Ildefonse said if he were a proponent, he would want to return to the system. van der Pluijm said we were like Moho people now, but we should remember that we do have alternatives, so this discussion was a big step.

The Chair asked CIB members if they agreed about this project. Austin asked if the money was available. Eguchi answered that the money on hand (31M USD) would need to be spent by the end of 5-year term, 31 March 2019, as Yano presented on Day 1. He added that CDEX needs to gather more money from other operations including commercial options and other opportunities.

The Chair asked the group if we could endorse the C0002 riser project for the 2018 IODP window, then JAMSTEC should prepare the money for it. Camoin asked if the pink scheduled option was already decided. Eguchi explained that they still had not included those other options, so there should be more opportunities. Ildefonse asked to confirm if the plan was minimum or maximum. Eguchi said it was maximum for the long term and some more opportunities.

van der Pluijm asked if the CIB should be looking at other options, since there's no consensus yet. van der Pluijm then asked if we should discuss these options,

commenting that he would be disappointed in ending NanTroSEIZE here, like this. Ildefonse asked if this was the only riser operation proposal. The Chair said we have a non-riser candidate to consider as well. He explained that in the last meeting, we decided that the next riser would be NanTroSEIZE, so he suggested getting into this after discussing riserless options.

Eguchi talked about available non-riser proposals, saying JTRACK: 835-Full is the only thing in the hopper. van der Pluijm asked for a summary. Mori briefly explained that there were good results from JFAST drilling the fault, but this was just one site, and more coverage, or transects, is needed. The project wants to confirm frictional properties and compare them to places where there was no large slip. Clements asked the length of the drill string. Eguchi answered that for JFAST it was around 7,900 m.

Austin commented that SEP likes this and wondered what will put *Chikyu* in a good place for the new program? Austin asked which is better science; Nankai or JTRACK? Austin asked CDEX if they could do JTRACK in the allotted time. The Chair asked Kuramoto to comment. Kuramoto said the operation would be possible, but even though the last great Nankai Trough earthquakes happened nearly 80 years ago, the Tohoku earthquake had a huge impact on science and the public. Kuramoto said that's why public focus is back on the Nankai region. CDEX would prefer riser drilling than riserless. Ildefonse commented that this tells him that the Nankai riser drilling would be better for renewal, since that was what *Chikyu* was designed to do.

The Chair asked if there were any other comments.

Becker commented that this was related to non-riser drilling, and he reminded everyone that a shorter version of the T-Limit project was endorsed last year. Becker said he hadn't seen anything about other site of this proposal yet. Eguchi did not have a lot to add, but said T-Limit proposal had two sites: 11-74 was done, but the 11-73 portion remained. Becker said so this option is in never-never land. Kuramoto explained that we needed to confirm the bottom-hole temperature, as well as the life limit confirmation first before continuing. The Chair asked if the group were ready to form consensus about C0002 riser drilling in 2018.

Mori said that we should go for the riser option, which was what *Chikyu* was designed for; therefore Mori supported the choice to go for riser drilling. Austin said

*Chikyu* was also sold to get into deeper water than JR could do; but you don't want to get into a corner. Austin said that JTRACK was a unique option for *Chikyu* to have on the table, and it is also great science.

The Chair asked Ildefonse to prepare the consensus statement by this afternoon. Camoin said the case for science needs to be clearly stated. Becker reminded everyone that Mori stated that the extension would get us much better strain in the hanging wall. Austin said measuring strain, drilling deeper, and installing the LTBMS.

**CIB\_Consensus\_0317\_06: Deepening C0002 Riser Hole.**

The CIB endorsed IODP Proposal 603, NanTroSEIZE Deep riser drilling at Site C0002 for *Chikyu* IODP operations to be scheduled in the Nov. 2018 - Mar. 2019 time window. C0002 operations include logging the deep accretionary prism, sampling the hanging wall, and installing a borehole observatory to measure strain and stress near the plate boundary and observe fluid properties of the Nankai plate boundary. The CIB recognized that deepening the current borehole C0002 to about 1000 m below its current depth will significantly improve the observations in the hanging-wall of the plate boundary. The observatory will be installed in a higher velocity unit as indicated by recent re-processing of 3D seismic data, and a monitoring location closer to the plate boundary fault will enable more sensitive measurements.

The Chair called for a coffee break at 10:15 hrs.

c. Lord Howe Rise CPP Project (Sean Toczko)  
(10:45 h.)

The Chair asked Toczko present the Lord Howe Rise CPP.

Toczko briefly reviewed the Lord Howe Rise deep drilling project, drilling through Cretaceous formations to basement in a continental ribbon, the Lord Howe Rise. Toczko showed the three IODP themes (Earth, Oceans/Climate, and Life) related to the project. Toczko talked about how recent surveys have revised primary site choices due to deep drill-site target prioritization. Toczko said that JAMSTEC and the Australian Government (Geoscience Australia) are working on pre-drilling site surveys; one was completed in May 2016, and another is scheduled for this November and December. Toczko said this project will be a collaborative effort funded by the Australian government and JAMSTEC.

Nishi asked if the Cretaceous sequence includes the K-T boundary or not. Heap replied that the main goal here is reconstructing the ribbon's history.

The Chair asked if there were any questions and confirmed no, and thanked Toczko for his presentation.

(10:53 h.)

The Chair asked Eguchi to tell the history of this proposal. Eguchi provided background information of the LHR proposal and workshop process. The original proposal was submitted in October 2014 and was constantly updated since this was a riser proposal. CIB endorsed the workshop in 2015. Based on the workshop discussion, the proponents submitted a full proposal. SEP reviewed it in 2016, and requested revisions. As Toczko mentioned earlier, the first site survey was conducted, and this data was included in the revised proposals. SEP reviewed it and happily sent it to CIB rated “Excellent”.

The Chair asked Heap to excuse himself, and the group began discussion on whether this should be designated as a *Chikyu* project. Becker wanted to confirm what this meant, “designating as a *Chikyu* project”. Eguchi said this was a slightly different category in CIB: riser proposals (CRISP, IBM, and NanTroSEIZE) are designated as “*Chikyu* projects” at CIB, and then a PCT is formed. Hikurangi is at CIB but no PCT has been formed. Eguchi said the CIB needs to decide if a PCT should be created for the Lord Howe Rise project. Becker wanted to confirm that the CIB had not yet created any PCT for CRISP or IBM? Eguchi said there were, but it’s a different discussion point.

Allan asked how much time is needed to set up a PCT? Eguchi answered as soon as possible. Becker asked if CIB should discuss creating a CPP *Chikyu* project. Eguchi answered that unlike *JR*, a *Chikyu* CPP basically covers operation costs, but not basic costs as shown in Agenda Item #9 (Yano’s presentation). Ildefonse wanted to confirm that we would be allocating resources to start scoping, and Eguchi agreed. The Chair asked if the CIB members were happy with designating the Lord Howe Rise as a *Chikyu* project. Becker agreed, saying this would help raise CPP funding. van der Pluijm said that what complicates things here is designating a new riser drilling project after we said we would not be doing so. Camoin said yes, but there was an exception for CPPs. Austin asked if the CIB would choose the PCT members. The Chair said that this would be the next step.

**CIB\_Consensus\_0317\_07: LHR Project.**

The CIB designates IODP Proposal 871-CPP “Lord Howe Rise Continental Ribbon” as a “Chikyu Project”.

Eguchi briefly explained the working structure between the Australian Government (Geoscience Australia: GA) and JAMSTEC regarding LHR before going on to discuss PCT members. There are five agreements (Four completed, and one pending). CDEX will contribute a team and GA will do the same; Eguchi said the science members should be decided jointly, with CIB support. Eguchi said the first meeting was held last month; it would be held every two months, with weekly telecons. As Toczko mentioned, the first site survey (JAMSTEC conducted) was completed, and GA would conduct a geotech survey in November–December 2017.

Eguchi continued presenting the GA/JAMSTEC consensus items. Eguchi said that normally, the PCT does not have a budget management function, but this PCT will, as per GA insistence; the PCT itself should include four scientists, four CDEX representatives and two GA management personnel. Eguchi said that the Lord Howe Rise PCT SOW (scope of work) was not circulated within the CIB yet, but would be next week, and Eguchi showed slides for general terms of reference (each PCT has a SOW; available as downloadable pdfs) and also presented GA's suggested member candidates. Eguchi added CDEX proposed alternates for the Japanese members. Given and Ildefonse asked why CDEX was supporting candidates different from GA's suggestion. Eguchi explained that these members were all JAMSTEC personnel, and CDEX would prefer people from outside of JAMSTEC; therefore, ended up with flipping Marco Coolen and Fumio Inagaki, and added Junichiro Kuroda. Given pointed out that this eliminated the sole Australian female scientist. Becker asked what GA thought about this. Eguchi said that he had already talked about this with Heap and that would be a discussion for CIB. Eguchi also said that lead proponent Ron Hackney knew that the CIB had a final call on membership. Becker mentioned TAT's recommendation—highlighting the value of a stratigraphic model. Eguchi replied that those people might cover that part, and would bring this up at the next meeting with GA in April.

The Chair asked the group if there were any further comments before agreement could be made. Eguchi reminded the group that the list of PCT member candidates (CDEX's suggestion) had been discussed with Heap. The Chair asked if Eguchi expected that GA would accept the CIBs' suggestions. Eguchi replied that should be fine with them, and he would speak to them about it tomorrow morning. The Chair checked if GA would be happy if the CIB agreed on membership. Eguchi replied if they did not agree, he would bring that back to the

CIB. The Chair asked the group if there were any comments, and Ildefonse commented that it might be better to replace the Japanese JAMSTEC scientist (microbiologist) with a non-JAMSTEC scientist. Eguchi said that finding someone to replace Inagaki would be difficult.

van der Pluijm asked if the CIB couldn't wait until tomorrow for GA's feedback and then make a consensus statement? Ildefonse wondered if it was important to clarify the backup people. Eguchi answered yes, because CDEX needs the CIB to designate them as alternates. Ildefonse pointed out the gender balance would be important as Given mentioned earlier, and suggested switching the climate people (Junichiro Kuroda and Jessica Whiteside) so the female scientist would be the primary. Eguchi agreed, saying that there was no confirmation from Kuroda yet, and he may still decline. Austin suggested letting the two parties sort this out; make an agreement on creating the PCT first, and then let the CIB sort this out after the agreement is settled. Ildefonse said what about first forwarding the CIB the approved membership and if that came back to us, the CIB would approve with no videoconference needed. The Chair told the group that they could communicate the details later by email. Eguchi said that the CIB could just establish the PCT, saying: "Create the PCT".

**CIB\_Consensus\_0317\_08: LHR Project Coordination Team.**

The CIB creates a Project Coordination Team (PCT) for the LHR project.

Membership will be;

Science Representatives (*italics* are alternate member):

Lead Proponent: Ron Hackney (GA),

Earth theme: Yasu Yamada (JAMSTEC) & *Sanny Saito (JAMSTEC)*,

Oceans/Climate theme: Kliti Grice (Curtin Univ., Perth) & *Junichiro Kuroda (Univ. Tokyo)*,

Life theme: Marco Coolen (Curtin Univ., Perth) & *Fumio Inagaki (JAMSTEC)*

Additional GA representatives:

Andrew Heap

Jessica Gurney

CDEX representatives:

Kan Aoike

Nobu Eguchi

Tomo Saruhashi

Take Yano

The Chair said we would move to the next item at 11:23 hr.

d. Bend Fault Serpentinization WS report

(Nobuhisa Eguchi)

(11:25 h.)

Eguchi discussed this workshop, approved by the last CIB, and conducted on 19–21 June 2016 in London. Eguchi said the currently relevant proposals are 876-Pre Bend-Fault Serpentinization, and 886-Pre NW Pacific Bend-Fault Hydrology, and both were still at SEP. Eguchi commented that these were in the agenda book, and added that 876 is ultra-deep drilling. Ildefonse commented that this was before you told us no more non-CPP riser drilling. Eguchi said that this workshop was disappointed by the CIB message that, except for CPPs, that no more riser operations were being sought. Ildefonse added that the workshop participants tried to figure out how to get the maximum science here with riserless drilling.

The Chair decided to adjourn to a small meeting of the CIB members for about 30 minutes in the next room.

The main gist of this breakout was to nail down the CIBs decision regarding the current riser proposals: CRISP, IBM, and Hikurangi. Furthermore, what would the official CIB stance be on requesting new riser proposals? Ildefonse wondered why, if this was not a confidential meeting, were we meeting in a separate room? Eguchi replied that this was just to streamline discussion, and all items discussed would be brought to the entire meeting's attention.

The Chair suggested that not only CPPs, but all kinds of riser proposals be accepted. Becker agreed that this was needed, but Camoin wanted to confirm that this would help renewal. The discussion moved on to the messaging, and how this should be crafted for an *Eos* advertisement, that would create hope and not confusion. Eguchi and the Chair suggested that messages be sent to the proponents of the current riser proposals for addendums and updates be forwarded to SEP. van der Pluijm wanted to ensure that all proposals get treated on an equal basis, and suggested that the Hikurangi proponents might think that they are next in line.

All agreed that Lord Howe Rise be scheduled, but as van der Pluijm suggested, they do not get a sliding window to fit into the drilling schedule whenever they want. The Chair confirmed that the 2020 IODP riser window be reserved for the Lord Howe Rise CPP.



(11:30–12:00 h.)

#### **14. Long Term Strategy for Future *Chikyu* Implementation**

(All)

Note: The order was changed from the original 13 to 14 on Day 2.

(12:02 h.)

The meeting resumed after the short breakout session. Becker said that the CIB knows that the Chair (Tatsumi) is an IBM proponent, but decided he was not in COI. The Chair reminded everyone that for riser proposals there are a few things to consider. Mori noted that the CIB was supposed to science rank these, but since they've already been ranked, maybe this was not a great idea. Mori also said if these get sent back for rescheduling and re-ranking, the CIB would have to explain why, and this would not be very constructive.

The Chair asked if the science needed to be updated, if the proposals' needs updating. The Chair suggested asking proponents to send addendums to SEP by 1 Oct 2018 and see if the CIB can discuss these after the SEP review. Given said that the CIB's message to SEP is important, since otherwise, SEP may try to start from zero again. The Chair wanted to clarify that the CIB would be asking for science updates from drilling results; however, what about for riser proposals? Both Given and Ildefonse agreed that clear direction to SEP should be given, especially how the outcomes from JR riserless drilling affects the riser proposals. Allen suggested some direct communication with the SEP chairs Gulick and Miller, to see the best way to approach this. Allen warned about getting too deep into details; for example, for CRISP, the whole strategy may change. Allen suggested that the SEP might pleasantly surprise the CIB.

Ildefonse said the CIB needs to let proponents know that there are new things that require riser proposal revision. Given mentioned that since the SEP membership has changed, sending these back for revision could have different results. Becker added that the CIB needs to identify items for the next 5-year term. Austin agreed saying they need clear "instructions".

Michiko Yamamoto asked if the CIB wants a Proponent Response Letter (PRL), if there isn't any new site info. Eguchi said if updates are needed, and a PRL is better, let's do that. Given agreed, saying, that this is the new system. Ildefonse said even so, some of these proposals may need revision. Becker wanted to clarify who the updates should be submitted to? The CIB? Given suggested the

CIB ask SEP to comment on the updates. Austin pointed out that in the case of Hikurangi, there are two Hikurangi expeditions with four co-chiefs, showing that more information is needed from just one expedition alone. Becker suggested that maybe this should be submitted to the CIB.

van der Pluijm said that there should be new pre-proposals, and there should be a distinction between these. Allen suggested keeping the JRFB and the SEP chairs included and not the whole membership; this may be a way of minimizing potential problems. The Chair decided to ask proponents to update science, and submit addendum to the CIB. The Chair wondered if the SEP chair would be able to assist the CIB. The deadline should be based on the SEP schedule, 1 Oct 2018.

Given wondered what would happen if the situation were overly complicated? van der Pluijm said the CIB should handle it. A brief discussion on formatting was held, with the result that the CIB would rely on SEP to create a format – if needed.

Clement was curious as to what CIB would do with this information, and the Chair replied that this would guide planning for the next 5-year session. Becker suggested writing a general consensus and then finish the details later. van der Pluijm again said we should encourage new riser pre-proposals, which the Chair agreed with. There was some concern that there may be confusion between pre-proposals and SEP-approved proposals, but Given said this should be clearly understood. van der Pluijm and Ildefonse wanted to make clear that CIB is setting a path to riser work beyond NanTroSEIZE.

**CIB\_Consensus\_0317\_09: Proposal update.**

The CIB will ask proponents of three riser proposals (CRISP (537), IBM (698), and Hikurangi (781)) to submit updates to the CIB by 1 October 2018 based on new results and drilling operations for further assessment of those proposals at the CIB. The CIB will contact the JRFB chair and the SEP co-chairs for potential involvement in this process.

**CIB\_Consensus\_0317\_10: Call for new riser pre-proposals.**

The CIB recommends a change in the next IODP call for proposals. Currently, only CPP's are being considered as new riser proposals. To encourage exciting new riser projects for current and future IODP consideration, pre-proposals for new projects will be solicited. At its 2018 meeting, the CIB will resume its evaluation of any riser pre-proposals forwarded to it by the SEP.

The Chair called a break for lunch at 13:00 hrs.

LUNCH

(13:29)

The Chair began the afternoon session with the LHR CPP scheduling. The Chair mentioned that CIB had designated this as a *Chikyu* project and that this could be a candidate for the IODP window near the end of 2020. The Chair recognized that tentatively fixing the schedule was essential to get GA funding. The Chair said this had been discussed in the side meeting, and recognized that this LHR CPP should be the candidate in the 2020 window if the funding was soon available. The Chair asked for comments.

van der Pluijm said that we should go on record as identifying this for the IODP window in 2020, but the CIB should not automatically approve other times or scheduling.

The Chair asked for any other comments. There were no comments, so Heap was called back to the meeting room.

**CIB\_Consensus\_0317\_11: Scheduling Lord Howe Rise Project.**

The CIB applauds the efforts of the proponents of IODP Proposal 871-CPP Lord Howe Rise to obtain CPP funding for the project. The CIB recommends this riser operation be scheduled during the available time window in 2020, on condition that funding is available. This window will not be automatically extended without CIB discussion. The LHR PCT will work to ensure that the 2020 IODP window is met.

**15. Safety Review Committee Update**

(Shigemi Naganawa)

(13:32)

Shigemi Naganawa presented the 2016 drill pipe drop incident. Naganawa told the group that after the fourth CIB meeting, two *Chikyu* safety review committee and three drilling sub-committee meetings were held. Following CIB recommendation, Naganawa said that they discussed a detailed technical investigation, analyses, and simulation to specify the causes.

Naganawa explained both #12 and #13 tests and said that although the incident occurred during #13 test, the cause was actually estimated to have occurred during test #12. Naganawa also explained the technical causes, which CDEX analyzed; there were three technical causes. One was a fracture propagation process from surface observation. After some tests, they found that total number of repeated stress was estimated as  $3 \times 10^4$  from numerical simulations which matched well with the results of material testing and crack propagation analysis.

The second was the torque record, showing that micro cracks were believed to occur during high pipe rotation. The third is heat effect, where CDEX observed changes in composition and the strength of pipe material from the heat effect in the surface layer of the pipe section in contact with the insert bowl.

In addition to these technical causes, Naganawa also pointed out two root management causes. One was the evaluation test plan and procedures. Naganawa said that CDEX should have carried out the test much more carefully with enhanced safety measures and greater crew accident prevention awareness. Second, was requiring safety evaluations of the equipment technical test. Naganawa said CDEX should have included risk communication among the participants onboard, including the crew, and should have reminded them of the importance of precaution.

Naganawa summarized the committee's recommendations:

- More direct communication with crew so that they can be reminded to follow the general safety rules.
- Improve safety evaluation workflow to evaluate engineering development tests and training cruises in the same manner as scientific drilling.
- Share knowledge and findings with the public and related industry communities.
- Share the operating plan and risk assessment with all personnel on *Chikyu* in order to have successful operation

Naganawa showed a revised *Chikyu* safety evaluation workflow, where the *Chikyu* safety review committee can review not only the scientific drilling cruises but also technical tests conducted on *Chikyu*. Naganawa said that this new process would enhance both internal and external safety evaluation processes in CDEX.

The Chair asked the group for questions, and there were none.

## **16. *Chikyu*/IODP Performance Review**

(All)

(13:45 h.)

The Chair began by tasking CIB members to summarize today and yesterday's reviews, since CDEX was very interested in feedback from an external committee.

The Chair opened the discussion with the review topic "Operation". The Chair asked Becker for comments. Becker said that the TAT had very positive reviews

on operations and engineering development. The Chair asked if we could circulate this draft by the end of the month. Kuramoto answered yes, saying CDEX needed to report the CIB and TAT comments to an internal JAMSTEC committee. Mori said that CDEX was well prepared for discussions, logistics, future planning, etc. The Chair confirmed that there were no further comments on this first topic.

The Chair moved to the second topic “fund raising and savings”. The Chair recalled that CDEX presented their best efforts to increase their budget, appealing to “social relevance” and “disaster mitigation” as key words to push the Japanese government. The Chair asked if there were any additional comments. Austin said that TAT mentioned the possibility of raising money from engineering developments, such as patents and commercial returns, which should be included here. The Chair said that to get more funding, CDEX/JAMSTEC needs proposal pressure and interest from the younger generation. van der Pluijm said the phrase should be “societal” not “social relevance”; additionally, “mitigation” was not an appropriate key word, because it “refers to post-disaster”, and we should be minimizing the effects. Given pointed out that “mitigation” was OK, because it works to help reduce the negative effects. Becker suggested that adding “deep biosphere” seems to be helpful. Ildefonse said that we should include fundamental research. The Chair said that we definitely need a catchy key word, to raise awareness and interest in our mission. Ildefonse said that we should add “deep biosphere”.

The Chair moved on to the third topic “education and outreach”. The Chair said that one of the key issues here is how to nurture younger generations of scientists. Camoin wanted to decouple education and outreach since they are different things. The Chair agreed and asked the members about the effectiveness of CDEX’s education and outreach efforts. Kitazato said we should be contributing to open science, sharing data with other communities; for example, oceanographic data collected by *Chikyu* during expeditions should be made available. Ildefonse reminded everyone that IODP was doing exactly this, sharing data openly, to all. Kuramoto said JAMSTEC was looking for external suggestions to be forwarded to the JAMSTEC President, and upwards to the MEXT Minister. Ildefonse asked Kuramoto if we should highlight good things or point out improvements. Eguchi answered both, and said that they would like to get comments of good things, bad things, or any other things. van der Pluijm said that one strength is international collaboration, it’s one of the biggest successes of IODP. Ildefonse said that perhaps better advertising of the data and sample availability would help, but

added that in France, there are people asking “why pay for IODP when the data and samples are available for free?” Ildefonse added that an active community is needed to maximize the use of these resources. The Chair said more collaboration with IODP members needs to be considered. Becker wondered that with IODPs’ current decentralization, what could be done? Camoin suggested more involvement and sharing of what each group is doing, share experience, and maybe the IODP forum is such a place.

Austin said that communication in the forum was only a beginning; the educational world makes formal assessments of their activities, and statistics are extremely important here. How many people visited the website, how many people read the statement, how many workshops, visitors, papers, etc, and they tabulate the results. Austin reminded the group that the education community hire professionals to make formal assessments of these impacts, since without a formal assessment, nobody would believe what you report. Austin wasn’t aware that CDEX required this; while discussion with a professional group might help, this would cost money. Austin said NSF budgets money for these assessments; perhaps CDEX should do the same. Austin said we need to track publications and outcomes. Austin said this is a “numbers game” and we have to keep that in mind, as the same lessons can be applied to educational efforts and outreach. Camoin repeated that this was why education and outreach need to be decoupled. Allen said he may ask Austin to add an agenda item regarding the roles of education officers aboard JR, and Austin said the Forum is the best place to start.

The Chair moved on to the next topic: “Long range plans”. The Chair reminded everyone that the mornings’ discussion covered future riser & riserless projects. Keeping in mind that riser drilling is a major and key task of *Chikyu*, the Chair said we also need to recommend riserless operations. The Chair asked CDEX to show their long-range plans. Austin wanted to know what “long range” meant: 2018 or the 2019-2023 phase. Kuramoto said this was for 2019–2023. Ildefonse was puzzled, since the message from last year was all negative, with budgets constantly falling, but somehow this year everything’s positive. Ildefonse wondered if the problem here is that there is no real “vision” but everything is based on “budget”.

Austin said that CDEX had riser and riserless proposals with good science, which had gone through SEP. The science is there, and there have been many positive results; Camoin mentioned the two successful riserless expeditions in 2016.

Austin said the main task is CDEX finding the money. Becker made the point that the scientific impact of these efforts is not getting out there, at least he hasn't seen it, and this need to be a priority. The Chair said we need to encourage CDEX.

The Chair then moved on to the importance of nurturing early career scientists. The Chair mentioned that this is the force behind the efforts to establish the workshop on *Chikyu* during Expedition 380, the core schools, and the international efforts made by CDEX. Given said that she always checked the science members of each expedition, and was encouraged by seeing a lot of young career scientists in the T-Limit expedition. Given was also impressed by nationalities, age, gender balance, and so on. Austin said that he thought IODP-wide action was been taken to address this. Camoin asked CDEX if there was a deficit of early-career scientists from Japan. Kuramoto said this was very true. The Chair said we would prepare a draft and circulate it among the CIB members, and forward it to CDEX by the end of the month.

**CIB\_Consensus\_0317-12: Chikyu/IODP Operation.**

Based on Chikyu operation/Status Update (Agenda item 9) and TAT Report (Agenda item 10), the CIB commends the great operational successes of the Chikyu in riserless mode during IODP Expeditions 365 and 370. The CIB also applauds the CDEX engineering and operational developments, especially development of "high current drill pipe support system" for safe and efficient onboard work. The CIB recognized that CDEX was well prepared for each IODP expedition and the CIB encourages CDEX to maintain the same level of effort for future expedition planning.

**CIB\_Consensus\_0317-13: Fund Raising/Saving.**

The CIB commends the success of Chikyu IODP operations not only for basic science but also for disaster mitigation. To conduct further high-impact IODP expeditions, the CIB endorses CDEX for continued effort towards fund raising as well as cost savings for Chikyu IODP operations. The CIB recommends CDEX to consider those newly developed engineering equipment as a venue for raising funds from industries. Although the CIB is pleased with cost savings in creating a more flexible operation budget, the CIB expressed some concerns whether too much cost savings in the current five-year phase might negatively affect Chikyu maintenance and therefore readiness and preparedness of Chikyu beyond JFY2018.

**CIB\_Consensus\_0317-14: Education & Outreach.**

The CIB praises CDEX's education and outreach efforts, including several expedition video products for international audiences as well as the inaugural international Chikyu onboard school. The CIB recommends that CDEX decouples education and outreach activities, and endorses CDEX to consider future education opportunities for young and early career scientists.

**CIB\_Consensus\_0317-15: Long Range Plan.**

The CIB was pleased to schedule one riserless expedition (Exp. 380), one riser expedition (Exp. 358), and one potential riser CPP expedition at this meeting. The CIB understands that the final scheduling of IODP expeditions ultimately depends on JAMSTEC budgets; however, the CIB strongly encourages CDEX to ensure Chikyu continues to operate for excellent science.

**17. Next CIB meeting**

**Note:** The order was changed from the original 18 to 17 on Day 2.

(14:20 h.)

The Chair moved on to selecting the dates for the next CIB meeting. Eguchi felt that the ECORD FB and CIB meetings should be separated by at least one month, therefore proposed 19–20 March or 22–23 March 2018 for the next CIB meeting. However, Eguchi asked the CIB members to comments on this first. van der Pluijm said that 19–20 March was better and all agreed on this.

The Chair announced the next meeting would be held on 19–20 March 2018.

**CIB\_Consensus\_0317\_16: Next meeting.**

The CIB decided the next meeting will be held on 19 – 20 March 2018 in Kobe, Japan.

**18. Other Business**

**Note:** The order was changed from the original 19 to 18 on Day 2.

(14:25 h.)

The Chair asked if there was any other business. Becker asked to confirm that the term of the Chair was about to end – if so, this would be a bad time to rotate the chair. Becker suggested that the Chair stay for another term. Austin agreed, saying that leadership continuity was a good idea. Eguchi said that since the Chair's term was two years, once accepted, this would mean two more years. van der Pluijm wanted to think positively and suggested we request the renewal. The Chair said if the group desired, he would accept and do his best. Ildefonse asked if we could have a meeting on *Chikyu*. Eguchi answered maybe, but there would be no drinking.

**CIB\_Consensus\_0317\_17: Extension of Chair term.**

The CIB recommends a 2-year term extension of the current CIB chairperson be granted.

The Chair called for a short 30-minute coffee break at 14:30 hrs.



## 19. Review of Consensus Statements and Action Items

Note: The order was changed from the original 17 to 19 on Day 2.

(15:07 h.)

The Chair started the final item, review of consensus statements and action items. Eguchi then reviewed the draft items one by one.

The Chair checked for final comments, and there being none, thanked all the attendees and closed the meeting at 16:00 h.

Meeting adjourned

**CIB\_Consensus\_0317-18:** Proposal 898-Pre workshop proposal.  
The CIB learned that the IODP Proposal 898-Pre “Fore Arc Mohole-to-Mantle” proponent team is planning to hold a workshop in October 2018. The CIB reviewed 898-Pre, and decided to invite a “Full-proposal development workshop” proposal with a submission deadline of 16 February 2018.

**Background:** The CIB has a process to invite a “Full proposal development workshop” proposal for pre proposals that have been evaluated as “Develop Full Proposal” at SEP. IODP Proposal 898-Pre “Fore Arc Mohole-to-Mantle” was forwarded to CIB as a potential *Chikyu* proposal at the March 2017 meeting; however, there was no discussion regarding this at the meeting. CDEX had learned that the proponent team of this proposal was planning to hold a workshop in October 2018. CDEX asked the CIB members to discuss, by email (29 December 2017), whether to invite a workshop proposal or not, after consultation with the CIB chair. This was done because waiting until the March 2018 CIB meeting to discuss this would be too late for the workshop preparation. All the CIB members were in favor of inviting a workshop proposal and were in consensus (18 January 2018).

This consensus was recorded in CIB #5 meeting minutes.