European Consortium for Ocean Research Drilling (ECORD)

MEMORANDUM OF UNDERSTANDING
of
European and Other Funding Organisations
on
Membership and Operation of ECORD
in the
International Ocean Discovery Program (IODP)

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Introduction

Section 1: Background and General Principles

Scientific drill ships allow scientists to access some of Earth's most challenging environments, collecting data and samples of sediment, rock, fluids and living organisms from below the seafloor. Drilling expeditions and experiments during the past international ocean drilling programmes (the Deep-Sea Drilling Program - DSDP from 1968 to 1983, the Ocean Drilling Program - IODP from 1983 to 2003 and the Integrated Ocean Drilling Program (IODP) from 2003 to 2013 have transformed the understanding of our planet by addressing some of the most fundamental questions about Earth's dynamic history, processes and structure, and by opening up new lines of inquiry. Drilling scientists and engineers have developed tools and methodologies that are now used across the terrestrial and marine geosciences, and in the private sector. Equally important, scientific ocean drilling has fostered enduring international collaborations, trained new generations of multidisciplinary students and scientists, and engaged the public worldwide in scientific discovery.

Between 2010 and 2012, the 25 international IODP partners, the IODP platform operators and the scientific leadership of the Science Advisory Structure collaborated to consider the IODP experience and design a management structure and business model for future operations that retains the multi-platform capabilities and the transformative science goals outlined in a new Science Plan "*Illuminating Earth's Past, Present, and Future: The International Ocean Discovery Program Science Plan for 2013-2023*".

With multiple platforms, proven drilling, sampling and long-term observational techniques, as well as the diverse range of science that can be addressed by studying Earth beneath the sea, the International Ocean Discovery Program was built on the legacy of previous ocean drilling programmes. It addresses global challenges facing current and future generations with new research approaches, expanded scientific communities and continued development of its unique collaborative model.
IODP goals, organisation and principles of scientific investigation are detailed in Annex 1.

Section 2: ECORD as part of IODP

ECORD was created in 2003 by 12 countries to join IODP through the co-ordination of the European contribution to this programme in which it has played a major role. ECORD has initiated the MSP concept (detailed in Section A6) at the start of IODP. The scientific and operational accomplishments of ECORD in IODP have been prolific and of high quality, and have been recognised by its partners as a crucial contribution to the largest marine geosciences programme in the world.

The new IODP framework has a simplified funding model providing more independence and more funding flexibility to the Platform Providers. It therefore provided an excellent opportunity to raise ECORD profile and visibility in the European and Canadian science landscape. ECORD architecture has been therefore reshaped in 2012 to face the new challenges offered by IODP.

A Memorandum of Understanding (hereinafter referred as "initial ECORD MoU") was established with its funding organisations to defines how ECORD will function and how ECORD will play a major role in the construction and operation of IODP during the 2013-2023 period through its partnership with Japan, the USA and their associate members.

As anticipated in the initial ECORD MoU, a 5-year review of the effectiveness of ECORD membership was implemented in 2017. Following this external review, the ECORD Members decided to review the initial ECORD MoU to update some aspects of ECORD structure and functioning based on the relevant recommendations and the practices during the IODP first phase (2013-2018).

This ECORD MoU (hereinafter referred as "MoU") is therefore established to define the organisation and the operation of ECORD and its contribution to IODP during the 2019-2023 period (hereinafter referred as "IODP second phase").

The ECORD operation is described through the sections below detailing:

- **Section A: ECORD Principles**
- **Section B: ECORD Council**
- **Section C: ECORD Managing Agency (EMA)**
- **Section D: ECORD Science Support and Advisory Committee (ESSAC)**
- **Section E: ECORD Science Operator (ESO)**
- **Section F: ECORD Facility Board (EFB)**
- **Section G: ECORD Vision Task Force (EVTF)**
- **Section H: ECORD Outreach Task Force (EOTF)**
- **Section I : MagellanPlus Workshop Series Programme**

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SECTION A : ECORD Principles

Section A1: Introduction

ECORD aims to maximise the scientific excellence of IODP and to ensure the high impact of science and engineering innovations, collaboration and technology transfer. ECORD will ensure that within IODP high priority is given to the ECORD members relevant scientific strategies with socio-economic impacts.

This section details the ECORD Principles in IODP, including ECORD membership, responsibilities and rights of ECORD members and ECORD entities in charge of management, science, operation, education and outreach activities.

Section A2: ECORD Membership

o The organisations signing this MoU are members of ECORD (cf Current ECORD members listed in Annex 2).

o Other organisations from European or non-European countries may be invited to join ECORD upon request addressed to the Director of the EMA and the Chair of the ECORD Council and approval of the ECORD Council in consultation with the Director of the EMA. Once approved, ECORD membership will become effective upon signature of the membership form (see model in Annex 3) between the organisation mandated to represent the EMA as defined in Section C. To be an ECORD member and have voting rights on the ECORD Council, a member must contribute according to its scientific interests and funding commitments with a defined annual minimum membership fee (usually of U S$ 30,000) that has been agreed with the EMA and approved by the ECORD Council in accordance with the provisions set up in Section B4 . This contribution has to be a cash contribution and/or an In-Kind Contribution (IKC).

o ECORD members may increase their cash contribution on a project basis and/or provide an IKC to implement an MSP expedition.

o The ECORD Council, in consultation with the ECORD Science Operator (ESO), shall decide on the suitability of the IKC offer and the level of financial contribution represented by the offer

- Additional funding will be sought from the European Commission through applications to the European Infrastructure and research funding programmes, as well as programmes from other funding organisations as detailed in Section A5.

Section A3 : Duration, Termination and Amendments

- This MoU is effective for the IODP second phase (from 1 January 2019 to 31 December 2023) and shall replace the initial ECORD MoU from is entry into force (date of the signature by all ECORD members as listed in Annexe 2, hereinafter referred to as "the Parties");
- At the end of this period, the ECORD Council may decide to conduct a review to decide on the continuation of this MoU and its terms;
- This MoU will be terminated automatically in case of termination of IODP;
- Obligations arising from this ECORD MoU may be terminated by any of the ECORD members giving written notice to be sent to the Director of EMA and the Chair of the ECORD Council at least one year in advance.
- Amendments to the ECORD MoU or any of its Annexes may be proposed to the ECORD Council by any ECORD member by giving the ECORD Council Chair written notice, and providing a copy to the Director of the EMA. The proposed amendment needs to be seconded by another ECORD member (from a different country). The EMA will inform all ECORD members of any amendment so notified at least three months before it is discussed in an ECORD Council meeting.
- Any amendment must be approved by the ECORD Council according to the provisions set out in Section B4.
- Any amendment shall be subject to a written addendum signed by all the ECORD members.

Section A4: Responsibilities and Rights

- ECORD members shall have the responsibility to actively participate in all IODP activities;
- ECORD members and the scientific community that they represent shall have the right to:
  - actively participate in all aspects of IODP as they become IODP member as defined in the MoUs with the NSF and the JAMSTEC as described in Annex 1 ;
  - apply to represent ECORD on all planning and advisory panels;
  - have access to data, samples, scientific and technical results following expedition moratorium principles;
  - submit proposals to the advisory structure for drilling or engineering developments in support of IODP science;
  - access the ECORD educational activities regardless of their financial contribution;
- Participation of ECORD scientists in IODP expeditions shall be calculated in direct proportion to the financial contributions of ECORD members. ESSAC, in consultation with EMA, shall annually review the distribution and make recommendations in view of the above target ratio and of specific drilling interests. Any extra contribution (in cash or in-kind) from an ECORD member to a MSP expedition shall provide additional rights to the relevant ECORD member. The ECORD Council will define the additional rights, in consultation with ESO.

o Participation of ECORD scientists on IODP panels is calculated in direct proportion to the financial contributions (cash and in-kind) of ECORD members. ECORD membership will follow the IODP panel rules as defined by the *JOIDES Resolution* Facility Board (JRFB).

o Benefits shall be allocated to give the best return for ECORD, as a whole, as such individual member benefits may not be directly proportional to contributions for an individual year. Increased participation on an expedition may be acceptable if this is balanced by reduced participation in other expeditions.

Section A5: ECORD budget

o The ECORD budget, as approved by the ECORD Council, shall be allocated as a priority for funding the operation, the activities of three ECORD entities - EMA, ESSAC and ESO (including the BCR and the EPC) and the MG+, before making contributions to IODP partners as agreed by the ECORD Council;

o As specified in Section C1, EMA will manage all ECORD money flows (revenue and expenditure), including annual financial contributions from ECORD members (hereinafter referred to as "annual financial contributions"), funding of ECORD entities and the distribution of ECORD funds to IODP partners;

o As the organisation mandated to represent the EMA (see Section C), the CNRS shall pool and manage ECORD money flows as described above;

o For all ECORD money flows, fiscal years will be aligned on calendar years;

o Additional funding sources such as IKC, project-based cash contributions, industrial partnership, and European Commission Research Infrastructure resources, shall be considered in the ECORD overall programme finance plan;

o The annual financial contributions shall be paid in one instalment and by bank transfer, upon receipt of a call for funds sent by the CNRS and paid on the following bank account between January 1st and June 30th of the current year :
Account holder : Agence comptable du CNRS - Délégation Paris Michel Ange
Bank domiciliation : BNP paribas
Account n° : 00018503386
Swift-Code : 30004
Rib Key : 50
IBAN : FR76 3000 4 0 02 7 4 00 0185 0 338 650

o Should the IODP be terminated before December 31st of the running year, the ECORD members shall be reimbursed on the basis of one-twelfth of their respective contribution for each month of curtailment, after due commitments made by ECORD have been settled.

o Should the ECORD member withdraw from ECORD as provided in Section A3, and therefore IODP, no refund of contributions will be made.

Section A6: Mission-Specific Platform (MSP) Expeditions

o ECORD is responsible for funding and implementing MSP expeditions for IODP as an independent Platform Provider.

o MSPs might include specifically outfitted polar vessels, jack-up rigs, geotechnical vessels, seafloor drilling systems, long-piston coring, anchored barges and others, as determined by scientific priorities and operational efficiency.

o ECORD shall endeavour to ensure that an appropriate budget will be committed to Mission-Specific Platform for the period 2019-2023 (calendar years). In addition to its own funding, ECORD shall encourage and help the proponents to seek additional funding sources on a project basis, with the aim to offer more opportunities.

o Possible additional funding may come, *inter alia*, from the European Commission, specific funding at the national level, partnership with industry, and/or any other funding source. Potential partnership with industry shall be evaluated and enforced through an *ad-hoc* committee whose membership shall be defined among the former members of the ECORD Industry Liaison Panel (E-ILP) and other experts as appropriate. These additional fundings shall be approved by the ECORD Council;

o ECORD shall encourage IKCs for MSP expeditions that can be proposed by IODP member and non-member countries. IKCs might include: drilling platforms, support vessels, essential scientific service that ESO would normally pay for, hazard site survey (if required), onshore facility near the drill site (if required), ice management, remote logistics and assistance.

o Offers of IKCs shall be evaluated by ESO on a case-by case basis. Propositions and options of IKCs and their proposed cash-value based on actual costs shall be presented to the EFB for discussion and then to the ECORD Council for final approval.

o IKCs shall be rewarded by extra Science Party positions on other MSP expeditions, or any other IODP expedition if appropriate. For ECORD members, IKCs extra Science Party positions may be used to solve and/or mitigate unbalanced situations in the quota system.

Section A7: ECORD Entities

During the second IODP phase, the ECORD structure shall include a Managing Agency an Implementing Organisation (ESO), three committees (ECORD Council, ESSAC and EFB), two task forces (ECORD Vision Task Force – EVTF and ECORD Outreach Task Force – EOTF) and a specific workshop programme (MagellanPlus Workshop Series Programme – MG+).

These entities are detailed below.

o **ECORD Council** (*see Section B*) shall be the ECORD decision-making body for ECORD by deciding on the ECORD budget and its allocation providing oversight for all ECORD activities and co-ordinating a common ECORD approach to IODP policy.

o **EMA** (*see Section C*) shall be the ECORD management body. As such, it shall be in charge of the management of the ECORD budget and the contracts with ECORD partners as provided in Section C (included but not limited to MoUs with IODP partners e.g NSF and JAMSTEC), the representation of ECORD scientific strategy, position in all IODP entities and provide the link between these entities and the ECORD members.

- **ESSAC** (*see Section D*) shall be the ECORD Science Committee and be responsible for the science planning and co-ordination. ESSAC will aim at maximising the scientific and technological contribution of ECORD to IODP, as well as promoting appropriate representation of the ECORD scientific community in the IODP SAS. The ESSAC Office will be contracted by the host organisation of EMA.

- **ESO** (*see Section E*) shall be the MSP Implementing Organisation (IO) for ECORD on behalf of IODP. ESO shall be in charge of contracting MSPs and related scientific support, and operate in the best interest of IODP and all its member organisations, without preference. ESO shall also include facilities such as core curation, data management and outreach tasks.

- **EFB** (*see Section F*) shall be the key planning forum for MSP expeditions by providing operational and management oversight of those expeditions.

Task forces shall be used to implement focused tasks or activities and/or to provide concrete advice on policy, so that the relevant ECORD committees can proceed with implementation.

The ECORD Task Forces shall include representatives from various ECORD entities and guests who may contribute to their activities. Two ECORD Task Forces have been defined at the start of IODP; additional task forces may be appointed on an *ad-hoc* basis when necessary.

- **EVTF** (*see Section G)* shall be the ECORD strategic entity in charge of developing a long-term scientific and funding strategy and monitoring the ECORD progress toward the completion of the IODP Science Plan.

- **EOTF** (*see Section H*) shall co-ordinate ECORD communication tasks, such as outreach/public information and educational activities related to IODP in ECORD countries.

- **MG+** (*see Section I*) shall be designed to support ECORD scientists in developing new and innovative science proposals to meet the IODP Science Plan challenges. This programme will be co-funded by ECORD and the International Continental Scientific Drilling Program (ICDP).

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Section B: ECORD Council

Section B1: Mandate

The ECORD Council will oversee and approve a shared approach to IODP policy.

The main tasks of the ECORD Council will be to:

- Implement ECORD as an integrated part of IODP;
- Structure ECORD by (re)defining the mandate and responsabilities of its entities;
- Allocate the ECORD budget to the ECORD partner;
- Approve the admission of new ECORD members;
- Approve the amount of the annual financial contributions as provided in Section B4;
- Approve the nominations of ECORD members serving on IODP panels of the Science Advisory Structure (SAS);
- Approve the nominations of the Chair of ESSAC (*see Section D*) and of the Chair and the members of the EFB (*see Section F*);
- Select EMA and ESO;
- Take measures to secure sufficient funding for ECORD entities;
- Decide on the MSP scheduling and the corresponding budgets proposed by the EFB;
- Assure effective planning, management and operation of ECORD;
- Decide to conduct independent reviews of ECORD activities and management.

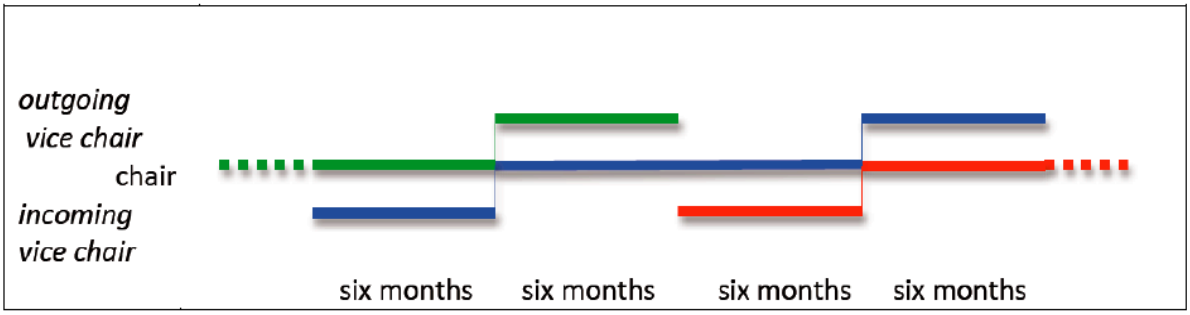
Section B2: Composition

o Section B2.1: ECORD member representatives

Each ECORD member shall have one representative and, when appropriate, an alternate representative at the ECORD Council.
The alternate representative has the right to attend meetings of the ECORD Council but shall get a voting right only in the absence of the representative.

o Section B2.2: Chair and Vice-Chair

The Chair will be appointed among the representatives of ECORD members at the ECORD Council for a period of one year. After the end of his/her term, the Chair shall become the outgoing Vice-Chair for six months. An incoming Vice-Chair shall be then appointed to become the Chair after six months. At any time, there will be a Chair and one Vice-Chair - as shown on the figure below.



The ECORD Council chairmanship will be based on a fixed rotation scheme (*see table below*) among the three major ECORD funders (DFG, CNRS and the UKRI) and the other ECORD members (referred to as 'Other ECORD member' in the table below). This rotation scheme has been applied during the period 2013-2018 and shall be continued accordingly.

Years	*Chair*	*Outgoing vice-Chair*	*Incoming vice-Chair*
Year 1 (1st half)	CNRS	DFG	
Year 1 (2nd half)	CNRS		'Other ECORD member'
Year 2 (1st half)	' Other ECORD member'	CNRS	
Year 2 (2nd half)	' Other ECORD member'		UKRI
Year 3 (1st half)	UKRI	' Other ECORD member '	
Year 3 (2nd half)	UKRI		DFG
Year 4 (1st half)	DFG	UKRI	
Year 4 (2nd half)	DFG		CNRS
Year 5 (1st half)	CNRS	DFG	
Year 5 (2nd half)	CNRS		' Other ECORD member'

The Chair will be responsible for conveying the ECORD position at the meetings of the IODP Forum along with the Director of the EMA.

- **Section B2.3: Standing Invitees**

The meetings of the ECORD Council shall include the Director of the EMA, the Chair and the Science Manager of the ESO, the ESSAC Chair and the Chair of the EFB as standing invitees. They are invited in an *ex-officio* capacity and have no voting rights.

- **Section B2.4: Observers**

Observers at the meetings of the ECORD Council may include:

- Members of the ECORD Task Forces;
- Representatives from IODP entities (IODP funding agencies, IODP Forum, IODP Facility Boards, IODP implementing organisations, Science Evaluation Panel, Science Support Office).
- Representatives of organisations expressing an interest to join ECORD;
- Representatives of European funding or research organisations;
- Representatives from non-European countries, which are members of IODP;
- Representatives from science programmes collaborating with ECORD or expressing an interest to collaborate with ECORD;
- Observers who may contribute to the planning and implementation of ECORD and IODP.

- **Section B2.5: ECORD Council Core Group**

The ECORD Council Core Group is composed of the Chair, the Vice-Chair of the ECORD Council and three additional ECORD Council representatives appointed by the ECORD Council. The three major ECORD funders will belong automatically to the ECORD Core Group; the representatives of other members will be designated by the ECORD Council. The members of the ECORD Council Core Group will be part of the ECORD facility Board and the ECORD Vision Task Force.

Section B3: Meetings

- **Section B3.1: Frequency and format**

The ECORD Council will normally meet twice a year, with a fall meeting organised in conjunction with ESSAC. Additional meetings may be held when necessary on the initiative either of the Chair of the ECORD Council and the Director of the EMA or of two members of the ECORD Council and the Director of the EMA.

The meetings of the ECORD Council shall be organised by the Director of EMA, assisted by the other EMA staff members (see section C). EMA shall prepare and send the relevant meeting documents.

The meetings of the ECORD Council include sessions that are open to all meeting attendees (ECORD Council representatives, Standing Invitees, Observers and Guests). Closed sessions

whose attendance shall be restricted to ECORD members and standing invitees as identified in Section B2.3) may be organised at the discretion of the Chair of the ECORD Council and the Director of the EMA or at least two members of the ECORD Council.

Section B4: Decisions

- Each ECORD Member shall have one vote on the ECORD Council.

- The decisions of the ECORD Council shall be taken according to the rules listed below:
  - The ECORD Council shall usually reach decision by general consent, *i.e.* when a motion is not likely to be opposed; reasonable effort will be made to attain a general consent.
  - At least a simple majority of the ECORD Members representatives shall be present in order to deliberate.If a motion fails to be approved by general consent, the ECORD Council Chair can decide either to defer further action, or to ask for a standard vote. In the case of a standard vote, a motion shall be accepted if approved by 75 % of the votes cast at the meeting.
  - If a motion fails to be approved by a standard vote, the ECORD Council Chair can decide either to defer further action, or to ask for a weighted voting procedure by ballot. The number of votes per ECORD Member shall be weighted by the annual financial contribution and/or in-kind contribution of his/her country in the year that the vote takes place.
  - By exception, standard vote and weighted voting procedure described above do not apply to the decisions concerning the amount of the annual financial contributions, which shall be approved by general consent.
  - Quorum requirements for weighted voting shall include *(a)* that representatives of all ECORD major contributors must participate in the voting, *(b)* that three-quarters of the votes of ECORD members representatives shall be present .
  - Voting shall be normally done by ‘show of hands’.

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Section C: ECORD Managing Agency (EMA)

Section C1: Roles and Responsabilities

- The EMA shall manage the participation of ECORD members in IODP, represent the link between ECORD members and the other IODP members, provide the central services for funds, and oversee the other ECORD entities.
- EMA shall ensure that the public and private liabilities associated with the ECORD contribution to IODP are all understood and that all ECORD entities have the appropriate liability insurances in place.
- EMA shall follow and implement the guidance from the ECORD council;
- EMA shall prepare, negociate, sign and manage the contracts with the ECORD partners, and funded from the ECORD budget as agreed by the ECORD Council;
- EMA, shall pool and manage the ECORD funds as agreed by the ECORD Council, including make the payment of the financial contributions related to the ECORD participation in IODP and the operation of ECORD entities as provided is Section A5;
- EMA shall provide the ECORD Council with an ECORD Programme Plan for approval and a budget for each upcoming fiscal year, including the financial support of EMA, ESO, ESSAC, the BCR and the MagellanPlus Workshop Series Programme. Other ancillary items such additional cash and in-kind contributions, and the support from European central funds (*e.g.* European Commission contracts) will also be included in the annual ECORD Programme Plan;
- EMA shall provide funding to the ECORD entities and programmes funded by ECORD as agreed by the ECORD Council ;
- In co-ordination with ESO, EMA will implement a funding model in which proponents of expeditions will be encouraged to seek co-funding from other sources, including industry and other funding bodies, such as the European Commission as agreed by the ECORD Council;
- EMA shall report regularly to the ECORD Council on its actions and other issues as required;

- EMA shall oversee activities of other ECORD entities and report regularly to the ECORD Council;
- EMA shall organise the meetings of the ECORD Council, the EFB, the ECORD EVTF and the EOTF;
- In co-ordination with ESO and in collaboration with other research entities, EMA shall support a pro-active role for technology development for seafloor drills, innovative coring, logging, and sub-seabed technology;
- EMA shall give support to the ECORD Outreach Task Force (EOTF), specifically through the management of the ECORD website, the edition of ECORD publications (ECORD Newsletter, ECORD Headline, ECORD Annual Report, leaflets) and the organisation of outreach events to inform the public and the scientific community of the progress in IODP;
- In co-ordination with ESSAC, EMA shall be responsible for maintaining the ECORD archives;
- EMA shall seek to extend the ECORD to non ECORD member organisations.

Section C2: Management

- EMA shall be managed by the CNRS, .
- As responsible of the EMA management, the CNRS shall manage the ECORD funds in compliance with the French public accounting rules.
- The CNRS shall assist the EMA staff regarding contractual and budgetary issues with the appropriate personnel as provided respectively in Section C 3.
- EMA shall be legally represented by the CNRS within the framework of ECORD contracts mentioned in Section C1.

Section C.3 Staff

- The EMA staff is composed of a Director, assisted by an Assistant Director, an Outreach Officer and an administrator. The staffing of EMA may change and/or evolve with time. Any change must be approved by the ECORD Council and budgeted accordingly.
- The Director of the EMA shall represent ECORD strategy, scientific position and vision in all relevant entities, international meetings, events in connection with ECORD activities, and shall report regularly to the ECORD Council on his/her actions and other issues as required.
- The Director of EMA shall be the official contact point for ECORD in all relationships with the IODP Forum, the Science Support Office (SSO), the panels of the Science Advisory Structure (SAS) and the IODP partners (the US National Science Foundation – NSF and its associate members, the Japanese Ministry of Education, Culture, Sports, Science and Technology – MEXT and the Japanese Agency for Marine-Earth Science and Technology – JAMSTEC).

- Following the guidance from the ECORD Council, the Director of EMA, with the assistance of the relevant directions and services of the CNRS, shall prepare and negotiate the contracts with the ECORD partners.

- The Director is assisted by an Assistant Director in charge of the ECORD budget and the ECORD meeting planning and reports, an Outreach Officer in charge of the outreach activities (website, conferences, ECORD publications etc.) and an administrator in charge of the EMA budget and administration.

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Section D: ECORD Science Support and Advisory Committee (ESSAC)

Section D1: Mandate

ESSAC shall be responsible for the scientific planning and coordination of ECORD contribution to and participation in IODP. The main purpose of ESSAC will be to maximize ECORD scientific and technological contribution to IODP.

The Office shall rotate, on a two-year basis, with the Chair of ESSAC. The budget shall be sufficient to provide salary for a Science Coordinator with a scientific background, the full cost of maintaining the ESSAC Office and resources to compensate the Chair.

The main tasks of ESSAC shall be to:

- Advise ECORD funding organisations and ECORD Council members on IODP issues;
- Coordinate expedition applications, nominate shipboard participants and review quotas of shipboard scientists between participating countries;
- Report to the ECORD Council;
- Liaise with EMA and the ECORD Science Operator (ESO);
- Interact with the appropriate IODP advisory panels, the Science Evaluation Panel (SEP) and the Environmental Protection and Safety Panel (EPSP);
- Coordinate ECORD Training, Education and Outreach Programmes, through the evaluation of applications and the funding of ECORD Grants, ECORD Schools and Courses, ECORD Scholarships, Teachers/Educators at Sea and the Distinguished Lecturer Programme;
- Evaluate applications and nominate scientists to participate to the Science Board of the EFB, the JRFB and the CIB);
- Nominate representatives (delegates and alternates) on IODP advisory panels;
- Respond to the ECORD Council requests for evaluation of its activities and initiation of evaluations of the ECORD scientific input to IODP;
- Assist and advise EMA on extending the scientific community of the consortium to non-member organisations;

- Initiate and monitor workshops on specific scientific themes and syntheses of European IODP programs;
- Assist and advise EMA on the formulation of proposals for funding European related infrastructure;
- Provide stimulation and guidance for the writing of drilling proposals in accordance with the IODP Science Plan and encourage IODP-related activities among participating countries;
- Encourage (a) innovative science and technology development, and (b) the formulation of long-term integrated IODP studies;

In cooperation with the EOTF, assist and advise EMA and ESO on ECORD public outreach

Staffing of the IODP expeditions

The IODP-assigned quota of expedition participants granted to ECORD shall reflect the financial contributions of each member and specific interests of each participating country. ESSAC, in consultation with EMA, shall annually review the distribution effective as of 1 October and make recommendations in view of the target ratio and specific drilling interests.

Staffing of the IODP panels

The delegates and alternate delegates on IODP Science Advisory Panels and the EFB shall be designated by ESSAC after an open call and recommendations from national offices, and shall be approved by the ECORD Council and the *JRFB* Board. IODP panel membership shall reflect the financial contribution of each participating country/organisations over a rolling three-year period. In the normal case, all ECORD representatives on the IODP advisory panels shall serve for a three-year period and may not be re-appointed for a second consecutive term.

Section D2: Composition

- **Section D2.1: Delegates**

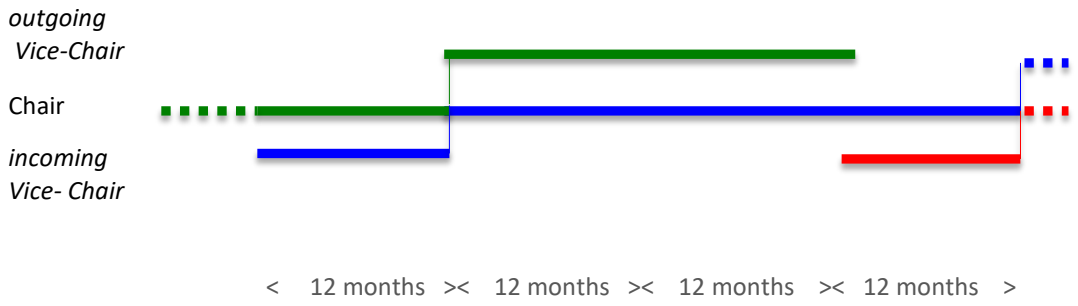
  - ESSAC is composed of a national delegate and an alternate delegate from each ECORD member to be appointed by the respective ECORD member. Terms of office of committee members will be reviewed every three years. A three-year rotation is recommended where possible. Terms of office of Committee Members should preferably not exceed six years. No more than one-third of the membership should be replaced in a given year. Terms of office will normally begin in January. If the delegate and his/her alternate cannot attend an ESSAC meeting, the relevant committee shall be informed and, if possible, a substitute nominated;
  - To actively participate in the evaluation process of applications and selection of candidates for IODP expeditions, ECORD Scholarships, ECORD Grants, Distinguished Lecture Programme – DLP and members of IODP and ECORD advisory panels;
  - To ensure that the minutes of ESSAC meetings are distributed to the national alternates and national ECORD representatives;
  - To attend ECORD workshops and to report to ESSAC when requested;
  - To provide information to interested parties within the national scientific communities of each ECORD member country and to advise on national regulations and policies.

- **Section D2.2: Chair and Vice-Chair**

A Chair and Vice-Chair shall be appointed by the ECORD Council following an open call for applications, the review of applications and final nominations by ESSAC. This open call for the ESSAC Chair position is to be published 6 months in advance of the incoming vice-Chair starting in post (i.e. Jun. – Jul. Year 0).

The nominated ESSAC Chair shall start with an initial 12-month period as incoming vice-Chair (1st Jan. - 31st Dec. Year 1), followed by his/her 24-month appointment as chair (1st Jan. Year 2 - 31st Dec. Year 3), and shall end his/her term as outgoing vice-Chair for 12-months (1st Jan. Year 4 - 31st Dec. Year 4).

The Chair shall not serve two consecutive terms, and consecutive terms in the same host country should be avoided.



The ESSAC Chair shall represent and support ESSAC in all ECORD and IODP activities.

The ESSAC Chair shall select a Science Coordinator following an open call for applications.

The main tasks of the ESSAC Chair and his/her Science Coordinator shall be the following :

- Manage the ESSAC Office;
- Oversee and manage ESSAC scientific activities, including scientific planning, evaluation and staffing of IODP expeditions, and evaluation and nominations of ECORD panel members;
- Oversee and coordinate educational activities and participation in defining strategies for ECORD science, funding and technology;
- Communicate with and advise IODP program managing and support offices regarding nomination and staffing of expeditions and coordination of education and outreach activities;
- Oversee quotas and maintain country balance for IODP expeditions and panel members and participants of education and outreach activities;
- Liaise with the ECORD Council, EMA and ESO;
- Report to the ECORD Council;
- Organise and chair the ESSAC meetings;

- Attend meetings of the ECORD Council and the EFB and provide advice on ECORD science priorities and long-term scientific planning in accordance with the IODP Science Plan;
- Chair the EVTF and assist in ECORD scientific strategy;
- Represent ESSAC at other IODP meetings, such as the *JOIDES Resolution* Facility Board (JRFB) and IODP Forum meetings, or arrange for an appropriate alternate;
- Inform the ESSAC delegates of ECORD and IODP activities and decisions;
- Provide contributions to ECORD Newsletters and ECORD Annual Reports;
- Ensure that an IODP-ECORD/ICDP session is organised at the EGU General Assembly meetings.

Section D3: Meetings

ESSAC shall meet twice a year, or at the request of one-fourth of the members, the ECORD Council, or the ESSAC Chair. Fall meetings shall usually be joint meetings with the ECORD Council and spring meetings shall be dedicated to planning and discussion of ESSAC activities.

Alternate delegates can attend the ESSAC meetings, as non-voting members when in addition to delegates.

Additional non-voting representation may be invited on an *ad hoc* basis.

Liaisons from EMA and ESO are invited to attend the ESSAC meetings.

ESSAC can implement working groups and define their terms of reference.

Section D4: Decisions

- A simple majority of the members present shall be required before decisions can be taken. There shall not be any power of attorney for absent members.
- Each delegate present has one vote and the Chair has a casting vote.
- Where possible ESSAC shall proceed by consensus. If this is impossible, there shall be a majority vote. If no decision is reached, the issue shall be passed to the ECORD Council.

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Section E: ECORD Science Operator (ESO)

Section E1: Description and Organisation

- The **BGS** shall be responsible for the overall ESO management under a contract with the EMA as designated by ECORD Council. BGS shall carry out best practice in project management, including budgetary control and financial probity. The BGS will design, build, manage the offshore operations, and will offer coring expertise and operational oversight. Additionally, the BGS shall provide procurement services, coordinate permitting and scoping efforts, manage the science party and science outputs, and manage MSP expedition outreach activities. The BGS shall provide the following management staff: the ESO Science Manager as the main contact with both EMA and the ECORD Council, and the ESO Chair, who is also the Science Director for BGS Marine Geoscience. The ESO Chair shall be responsible to the BGS Executive Director, and ultimately to the Chief Executive of the UKRI. The BGS shall sub-contract EPC, MARUM and other organisations on behalf of ESO as required by the program of work required to deliver MSP expeditions and as mentioned in Section E2.1 to Section E.2.3. ESO shall work closely with science parties and contractors to seek optimal performance, utilising new and innovative techniques and operational procedures where applicable. BGS shall manage the budget allocated by the ECORD Council to the ESO and subsequently disburse these as appropriate both within ESO and to contractors, sub-contractors in accordance with the decisions of the ECORD Council and the approved public financial management practice.

A facility to transfer monies in multiple currencies (GBP, EUR and USD) should be provided by the EMA, to minimise exchange rate losses. The exact amounts in each currency will be decided on a case-by-case basis depending on the currencies of the ECORD member contributions and the ESO expenditure in a specific year.

- The **EPC** shall be managed by the Borehole Research at the University of Leicester, UK. In addition to the University of Leicester, the EPC shall include the University of Montpellier (*Laboratoire de Géophysique et Hydrodynamique en Forage*, CNRS). EPC will provide high-level scientific and technical support and be responsible for the acquisition and interpretation of downhole logging data, core physical properties, data calibration and quality control, and will manage sub-contracts and permitting associated with those activities.

- The **MARUM**, University of Bremen, shall be responsible for the continuous curation, databasing, and archiving of collected cores and samples. MARUM will provide offshore and onshore laboratory facilities and staff support for core sampling, data management, and the acquisition of IODP standard measurements. In addition, MARUM will contribute to expedition outreach efforts. Additionally, MARUM will organise and host the Onshore Science Party (OSP) and coordinate OSP media events.

Section E2: Mandate

- **Section E2.1: Mission-Specific Platform Expeditions**
  - ESO shall undertake activities as required to successfully implement all aspects of MSP operations for IODP in accordance with agreed procedures. ESO will liaise with EMA should the formulation of any new procedures be required. MSP implementation activities shall include: operational and scientific planning; engineering development; platform and equipment procurement; contracting; essential training of personnel; safety surveys; data management; curation; shore-based sampling parties; publications; outreach; and other related pre-, syn- and post-expedition activities.
  - ESO shall undertake the staffing of MSP scientific parties in consultation with the IODP Program Member Offices (PMO).
  - ESO shall, where required and appropriate, align its procedures with those of IODP, notably in data management, standard measurements, and publications.
  - ESO shall, in common with other IODP platform providers, observe best practice in health, safety and environmental issues.
  - ESO shall observe and adhere to appropriate international standards, regulations and obligations.
- **Section E2.2: Logging and Petrophysics**
  - ESO shall provide appropriate staff and facilities to enable and integrate all aspects of the acquisition, management and distribution of core physical properties measurements and *in situ* downhole measurements during ship- and shore-based IODP MSP operations.
  - ESO shall be responsible for maintaining and developing petrophysical shore-based support facilities and training as required by the scientific community and in line with IODP principles.
  - ESO shall sub-contract logging services as required.
- **Section E2.3: Curation, Scientific Expertise and Facilities, and Data Management**
  - ESO shall provide curatorial services and appropriately staffed ship- and shore-based laboratory facilities as required by each MSP expedition.
  - ESO shall manage a core repository for geographically selected IODP cores and provide appropriate facilities in line with IODP principles.
  - ESO shall also contribute to data management services using the PANGAEA® - Data Publisher for Earth & Environmental Science.
  - ESO shall sub-contract other scientific services as required.

- **Section E2.4: Interactions with other ECORD entities**
  - Communication between ESO and EMA shall be frequent. ESO shall formally report to EMA on a quarterly basis and on request, as needed. As shall be defined in the contract between EMA and ESO, EMA, on behalf of the ECORD Council, is the only body authorised to direct ESO.
  - ESO shall submit an annual work plan to EMA, including an estimated budget, to be approved by the ECORD Council. This work plan will be prepared in consultation with the EFB, EMA and other relevant IODP bodies. Once agreed, the annual work plan is the definitive statement of work and can only be changed through a formally agreed written contract amendment.
  - ESO shall report to the ECORD Council and will communicate on a regular basis with EMA.
  - ESO shall report to the EFB on at least an annual basis and more frequently if requested.
  - ESO shall participate in the activities of EVTF and of the EOTF.
  - ESO shall observer at all ESSAC meetings, and will advise ESSAC on ESO actions and plans.
  - ESO shall provide guidance to all prospective IODP drilling proponents who require MSPs to carry out their proposals.
- **Section E2.5: Interactions with IODP entities**
  - ESO shall implement MSP operations as prioritised by the EFB and carry out all logistics as required by the IODP ECORD Member Memorandum and in line with IODP principles.
  - ESO shall communicate regularly with other IODP operators: *JOIDES Resolution* Science Operator (JRSO, USA) and the Center for Deep Earth Exploration (CDEX, Japan).
  - ESO shall act as an observer on relevant IODP panels and committees, including Science Evaluation Panel (SEP), Environmental Protection and Safety Panel (EPSP) and Facility Boards. ESO will report to these panels and committees as requested.
  - On a project-specific basis, ESO shall coordinate expert groups to support and advise any technological developments required for a particular MSP project.
- **Section E2.6: Communication**
  - ESO shall communicate regularly and as required with the IODP scientific community, including through ESSAC and ECORD Council sponsored events.
  - ESO shall co-operate fully with ECORD, ESSAC, EMA and other IODP entities to support the outreach and education programmes.
- **Section E2.7: Annual Workplan**

ESO shall provide facilities and staff to ensure the maintenance of capability in science operations for ECORD on a year-by-year basis, irrespective of whether an IODP MSP expedition is scheduled in that year. This capability will include:

- Consultation with the IODP panels and committees and ESSAC;

- Co-operation with other platform providers;
- Preparation of annual plans for ECORD;
- Communication with EMA and demonstrating accountability to ECORD Council;
- Provision of advice to current and potential proponent groups.
- Scoping of potential future expeditions.
- Planning of scheduled expeditions.
- Managing and monitoring post-expedition activities.

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Section F: ECORD Facility Board (EFB)

Section F1: Mandate

- The EFB is the key- planning forum for the Mission-Specific Platform (MSP) expeditions, including their scheduling, their operational and management oversight, and their long-term planning.
- The main tasks of the EFB shall be to:
  - Develop MSP operational plans for approval by the ECORD Council according to Section B4 to implement high-priority science proposals forwarded to the EFB by the Science Evaluation Panel (SEP) and to secure sufficient funding for the MSP expeditions;
  - Oversee the operational plans which will include the following elements associated with the MSP expeditions: operational schedule, data management, publications, core curation, and engineering and scientific technical development;
  - Review all aspects (science, operations, funding, outreach) related to the MSP expeditions in a year after their implementation;
  - Advise on long-term planning of MSP expeditions;
  - Issue guidelines and best practices documents related to the implementation of MSP expeditions;
- The EFB shall liaise with all major entities of IODP including the IODP Forum, the SEP, funding agencies and Platform Providers, and the IODP Program Member Offices (PMO).

Section F2: Composition

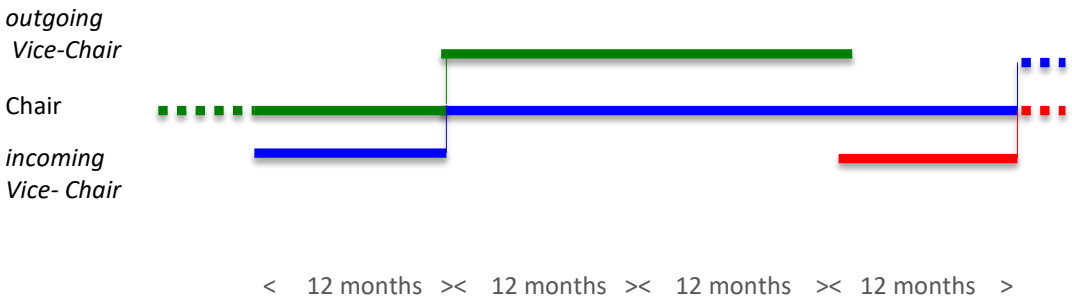
The EFB is composed of a Science Board, ECORD representatives and representatives from the US National Science Foundation (NSF) and the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT).

- **Section F2.1: Science Board**

  - The Science Board of the EFB is composed of six leading scientists from any country funding IODP, namely three members from ECORD members (including the EFB Chair), one US member, one non-US member from the *JOIDES Resolution* consortium and one Japanese member.
  - The Science Board members shall be nominated by the ECORD Science Support and Advisory Committee (ESSAC) following an open call for applications; their nominations will be agreed by the Chair of the EFB before being submitted to the ECORD Council for approval.
  - The Science Board members shall be selected to serve on the EFB on 3-year staggered rotations.

- **Section F2.2: Chair**

  - The Chair of the EFB shall be an ECORD scientist belonging to the EFB Science Board and selected for his/her scientific and managerial leadership.
  - The Chair shall be appointed for three years. The Chair shall be nominated by the EFB members and his/her nomination approved by the ECORD Council. After the end of his/her term, the Chair will become the outgoing Vice-Chair for two years. After this period, an incoming Vice-Chair will be then appointed to become the Chair after twelve months. At any time, there will be a Chair and one Vice-Chair - as shown on the figure below.



  - The Chair should attend meetings of the ECORD Council, the ECORD Vision Task EVTF, the SEP, the other IODP Facility Boards (JRFB and CIB), the IODP Forum, as well as selected international scientific conferences.
  - Financial and logistical support to the Chair of the EFB will be provided by his/her IODP National Office or national funding agency.

- **Section F2.3: Other members of the EFB**

  - ECORD representatives: five members of the ECORD Council Core Group (*see Section B*), the Director of the EMA, the Chair and the Science Manager of the ECORD Science Operator (ESO) and the Chair of ESSAC.
  - IODP Partners: a representative both from NSF and from MEXT will be members of the EFB, as defined in the ECORD-NSF and ECORD-JAMSTEC MoUs.

Section F3: Meetings

- The EFB shall convene once annually to execute its mandate regarding MSP scheduling. In addition to the EFB members defined above, representatives from ESO and representatives from IODP funding agencies shall be invited to the EFB annual meeting as appropriate. Liaisons and observers from all major IODP entities may attend the EFB annual meeting, including the Chair of the IODP Forum or his/her nominated representative, the Chair of the SEP or his/her nominated representative, the Chair of the Science Support Office (SSO) and representatives from the PMOs. Guests who may contribute to the EFB activities shall be invited as appropriate.

- The operational review meetings of the MSP expeditions shall be held as appropriate, generally a year after their implementation. The Operational Review Committee shall typically include three members of the EFB Science Board and two external reviewers who will be nominated by the EFB. The operational review meetings shall be also attended by the expedition Co-chief Scientists, representatives from ESO, including its Chair and its Science Manager, the Director of EMA and the Chair of ESSAC.

- The meetings of the EFB shall be organised by EMA.

- All potential conflicts of interest will be declared at the start of every meeting, or at an otherwise appropriate time during the meeting. Members of the EFB or other meeting attendees determined as having a conflict of interest regarding an MSP-related proposal should not be present when the relevant proposal is evaluated, considered for ranking, ranked, considered for scheduling, or scheduled.

Section F4: Decisions

- The EFB shall usually reach decision by general consent, *i.e.* when a motion is not likely to be opposed. Reasonable effort shall be made to attain a general consent. If a motion fails to be approved by general consent, the Chair of the EFB can decide either to defer further action, or to ask for a standard vote involving only the Science Board members. A motion shall be accepted if approved by the majority of the simple majority votes cast at the meeting. Voting shall be normally done by ‘show of hands’.

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Section G: ECORD Vision Task Force (EVTF)

Section G1: Mandate

o The EVTF is the ECORD strategic entity, in charge of identifying long-term scientific, technological challenges and funding opportunities. The EVTF will report appropriate actions to the ECORD Council for approval.

o The main tasks of the ECORD Vision Task Force shall be the following:

- Identify new scientific challenges;
- Advise the EFB, the ESO and the ESSAC on ECORD long-term planning and scientific and operational strategy, including science, technology and partnership;
- Identify co-funding opportunities (industry, EC, national funding agencies, etc.) and assist the ECORD Managing Agency (EMA) in taking the appropriate actions;
- Oversee the relationships with ECORD partners;
- Plan the relationships with industry and other science programmes and organisations;
- Identify potential new members for the consortium and assist EMA in taking the appropriate actions.

Section G2: Composition

The EVTF is composed of the ECORD Council Core Group (*see Section* B2.4), the Director and the Assistant Director of EMA, the Chair of ESSAC, the Chair and the Science Manager of ESO and the Chair of the EFB.

Section G3: Meetings

o The EVTF shall normally meet twice a year, immediately prior to the annual meeting of the EFB and the ECORD Council-ESSAC joint meeting. Additional meetings may be held as appropriate.

o The meetings of the EVTF shall be prepared and organised by EMA who shall prepare the relevant meeting documents.

- The Chair of ESSAC shall chair the meetings of the EVTF and report to the ECORD Council.

Section G4: Decisions

- The EVTF shall usually reach decision by general consent, i.e. when a motion is not likely to be opposed. Reasonable effort shall be made to attain a general consent. If a motion fails to be approved by general consent, the Chair of the EVTF can decide either to defer further action, or to ask for a standard vote involving only the Science Board members. A motion shall be accepted if approved by the majority of the simple majority votes cast at the meeting. Voting shall be normally done by 'show of hands'.

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Section H: ECORD Outreach Task Force

Section H1: Mandate

- The ECORD Outreach Task Force (EOTF) coordinates ECORD communication tasks such as outreach/public information related to IODP in ECORD countries.
- The main tasks of the EOTF shall be the following :
- Inform the general public (e.g. in relation with museums, aquariums, documentary production, popular science journals), the scientific community, teachers and educators, the medias and stakeholders in ECORD countries about the IODP scientific results and technological advances;
- Develop appropriate resources to reach the various targeted audiences;
- Promote ECORD and IODP activities via the World Wide Web (ECORD website, social media, information database, videos and documentaries), in publications and reports, at exhibition booths, meetings and public events, during Mission-Specific Platform (MSP) expedition (publications and press releases);
- Assist the ECORD Science Support and Advisory Committee (ESSAC) in ECORD educational activities, e.g. the Distinguished Lecturer Programme, ECORD Summer Schools and Scholarships and outreach and/or education officers participating in IODP expeditions;
- Assist the ECORD Managing Agency (EMA) to prepare information to be conveyed to stakeholders and decision makers;
- Assist the ECORD Science Operator (ESO) in outreach and educational activities related to MSP expeditions as described in the expedition communication plans;
- Assist ECORD members to organise outreach and public events promoting IODP;
- Assist teachers from ECORD countries to develop IODP educational resources to be used in classrooms and IODP/ECORD-related activities (e.g. ECORD School of Rock);
- Collaborate with other science programme and organisations, to better promote IODP to other science communities (ICDP, IAS, EGU, etc.).

Section H2: Composition

The membership of the EOTF shall be composed of the Outreach Officer and the Assistant Director of EMA, the Outreach Manager and Press Relations Officer of ESO and the Science Coordinator of ESSAC. The Director of EMA and the Chair of ESSAC will be observers and attend the EOTF meetings as appropriate.

Section H3: Meetings

- The EOTF shall normally meet twice a year; additional meetings may be held as appropriate. The meetings of the EOTF will be organised by EMA.
- The EMA Outreach Officer shall chair the EOTF meetings.

European Consortium for Ocean Research Drilling (ECORD)

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Section I: MagellanPlus Workshop Series Programme

Section I1: Mandate

- The MagellanPlus (MG+) Workshop Series Programme is designed to support scientists from ECORD and ICDP members in developing new and innovative scientific drilling proposals that meet the IODP and/or ICDP Science Plan challenges, by co-funding workshop proposals and travel grants. The MG+ Workshop Series Programme is coordinated by a Science Steering Committee (SSC).
- The main tasks of the MG+ SSC shall be the following:
  - Develop specific workshop calls in line with the IODP/ICDP programme goals;
  - Design the proposal review process;
  - Review workshop proposals and travel grants;
  - Provide workshop guidelines and convener's obligations;
  - Give feedback on the content of individual workshop programs and the list of registered participants;
  - Evaluate the granted workshops and final reports;
  - Report on the use of the funds to the ECORD Council and ICDP annually.
- ECORD and ICDP shall provide annual budget guidance to MG+.
- The ECORD Managing Agency (EMA) shall manage the financial reimbursement of MG+ workshops and travel grants.
- Decisions within the SSC shall be made either by consensus or voting, as decided on a case-by case basis. Votes shall be decided by a majority of all members present and eligible to vote. A quorum shall consist of at least two-thirds of the voting members.

Section I2: Composition

The MG+ SSC shall be composed of a maximum of 10 members, including one Chair, up to seven ESSAC delegates and up to two ICDP delegates. An alternate can be designated to

replace a delegate who cannot attend a meeting. The SSC Chair and Vice-Chair shall be elected by the ECORD Science Support and Advisory Committee (ESSAC) and approved by ICDP and the ECORD Council. The SSC chair shall be liaison to the ESSAC, with the vice-chair as alternate.

Section I3: Meetings

The SSC shall meet annually within one month after the January 15th deadline of the call for proposals. The SSC Chair will present the use of the funds during the 2nd ECORD Council meeting each year.

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Section J: Signatures

The Parties have requested that the MoU be duly signed by the undersigned authorised representatives in separate signature pages the day and year first above written.

European Consortium for Ocean Research Drilling (ECORD)

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FOR AND ON BEHALF OF THE ÖAW :

Date: 22. OKT. 2019

Name: Prof. Dr. Anton ZEILINGER

Position: President of ÖAW

Signature:

Doz. Dr. Michael ALRAM

Vice-President of ÖAW

FOR AND ON BEHALF OF THE CCOD:

Date: September 15, 2019

Name: John W. Jamieson

Position: Chair, Canadian Consortium for Ocean Drilling

Signature : 

FOR AND ON BEHALF OF THE DAFSHE :

Date: 2/7 2019

Name: Stine Jørgensen

Position : Deputy Director General

Signature : 

FOR AND ON BEHALF OF THE ACADEMY OF FINLAND :

Date: JULY 17, 2019

Name: REKO LEINO

Position : CHAIR OF THE RESEARCH COUNCIL FOR NATURAL SCIENCES AND ENGINEERING

Signature : 

FOR AND ON BEHALF OF THE CNRS :

Date: 0 2 SEP. 2019

Name: Mr Antoine PETIT

Position : Chairman – Chief executive officer

Signature :

European Consortium for Ocean Research Drilling (ECORD)

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FOR AND ON BEHALF OF THE DEUTSCHE FORSCHUNGSGEMEINSCHAFT E.V. (DFG):

Date: 22.03.2023

Name: Dr. Heide AHRENS

Position: Secretary General

Heide Ahrens

Signature:

Date: 22.03.2023

Name: Prof. Dr. Katja BECKER

Position: President

Signature :

FOR AND ON BEHALF OF THE GSI :

Date: 24th September 2019

Name: Koenraad Verbruggen

Position : Director, Geological Survey of Ireland.

Signature : 

FOR AND ON BEHALF OF THE CNR :

Date: 26/02/2019

Name: PROF. MASSIMO INGUSCIO

Position : PRESIDENT

Signature :

FOR AND ON BEHALF OF NWO (Dutch Research Council):

Date: 23 July 2019

Name: Dr. G. (Arian) Steenbruggen

Position : Director Domain Science NWO

Signature :

FOR AND ON BEHALF OF THE FORSKNINGSRADET- RESEARCH COUNCIL OF NORWAY:

Date: 02.07.2019

Name: Anders Hanneborg

Position: Executive Director

Signature: 

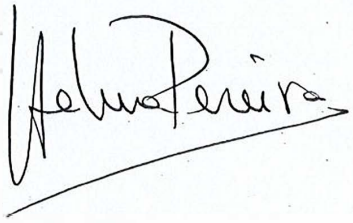
FOR AND ON BEHALF OF THE FCT:

Date: 1/10/2019

Name: FUNDAÇÃO PARA A CIÊNCIA EA TECNOLOGIA

Position : PRESIDENT OF THE BOARD OF DIRECTORS

Signature :



FOR AND ON BEHALF OF THE SWEDISH Research Council (VR):

Date: 23/09/19

Name: Ann Fust

Position : Deputy Director General

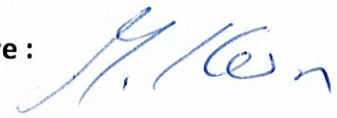
Signature : 

FOR AND ON BEHALF OF THE FNS :

Date: 02.09.2019

Name: Dr. Martina Kern

Position : Scientific Officer, Division II – Mathematics, Natural and Engineering Sciences

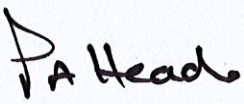
Signature : 

FOR AND ON BEHALF OF THE UKRI :

Date: 21st August 2019

Name: Dr Phil Heads

Position : Interim NERC Director of Strategic Partnerships

Signature : 

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Annex 1: IODP

Section 1: Description of IODP

IODP is a multinational program of scientific research in the oceans which uses drilling, logging and sub-seafloor monitoring to undertake research on earth system processes ranging from changes in the earth's climate to the rifting and drifting of continents.

The IODP Science Plan is designed to guide multidisciplinary, international collaboration in scientific ocean drilling during the second phase of IODP. IODP expeditions are developed from hypothesis-driven science proposals aligned with the programme's 2013-2023 Science Plan and are carried out in accordance with the programme's Principles of Scientific Investigation. This Science Plan highlights four main themes, each encompassing a short list of high-priority scientific challenges. These themes incorporate shared interests with another major international scientific drilling programme (*e.g.* the International Continental Scientific Drilling Program – ICDP) and some marine-based national and international research programmes (*e.g.* ocean-observing initiatives, Past Global Changes, InterRidge, InterMARGINS).

- **Climate and Ocean Change: Reading the Past and Informing the Future***,* targets the most pressing questions about the climate, ocean and ice-sheet response to on-going increase in greenhouse gases. Only scientific drilling can recover samples and data having sufficient distribution and resolution to understand the causes and impacts of global climate change in Earth's past.

- **Biosphere Frontiers: Deep Processes and Their Impact on Earth's Surface Environment** includes exploration of deep life within the sub-seafloor, facilitated by rapid developments in microbiology and related technologies. Scientific drilling will also investigate ecosystem response to environmental forcing and the impacts of climate and ocean events on individual and whole ecosystems, including hominid evolution.

- **Earth Connections: Deep Processes and Their Impact on Earth's Surface Environment** concentrates on the links between surface, lithospheric and deep Earth processes. Drilling is an essential tool for unravelling and understanding the geologic, tectonic, geochemical, magmatic and hydrological processes responsible for development and evolution of these solid Earth systems.

- **Earth in Motion: Processes and Hazards on Human Time Scales** addresses dynamic processes that occur on human time scales, including those leading to and resulting from earthquakes, landslides, and tsunamis. Scientific ocean drilling, coupled with real-time observations from individual and linked networks of long-term, sub-seafloor observatories installed in boreholes address the frequency, magnitude, mechanisms and impacts of these events.

No single platform can meet the drilling requirements of the four science themes. To maximise drilling capability, IODP uses three primary platforms (Fig. 1), which are operated by three independent Platform Providers contributing to IODP by fulfilling objectives identified in the IODP Science Plan.

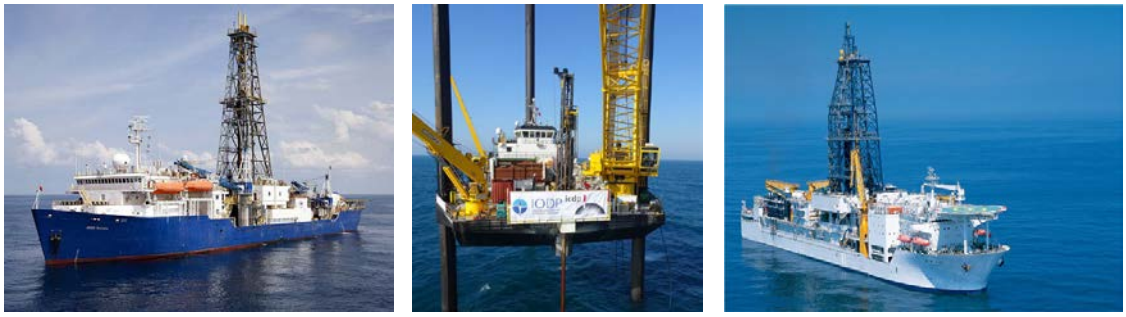

Fig. 1: The three IODP primary platforms. From left to right, the JOIDES Resolution (John Beck, IODP/TAMU), the Mission-Specific Platform L/B Myrtle used during the Chicxulub K-Pg Impact Crater Expedition (IODP 364) in 2016 (Dave Smith ©ECORD/IODP) and the Chikyu (©IODP/JAMSTEC).

- The National Science Foundation (NSF) operates the US-supplied multipurpose drillship *JOIDES Resolution* with enhanced capabilities since its refurbishment in 2008.

- The Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) and the Japanese Agency for Marine-Earth Science and Technology (JAMSTEC) operate the riser-drilling-capable *Chikyu* for ultra-deep drilling in the ocean crust, the underlying mantle, and subduction zone environments.

- ECORD operates Mission-Specific Platforms (MSP) as defined in section A7 of this MoU chartered on a specific project basis for drilling in technically challenging conditions, including high latitudes and shallow-water environments.

Together, these entities represent twenty-three nations whose scientists are selected to staff IODP research expeditions conducted throughout the world's oceans. Scientists' activities are managed by the IODP Program Member Offices.

During the first phase of IODP (2013-2018), ECORD partnership was based on two MoUs:

- a MoU signed with the NSF on 7 October 2013 for the period October 2013-September 2019 that includes access to the *JOIDES Resolution* for ECORD scientists and, in reciprocity, access to MSPs for scientists from the *JOIDES Resolution* Consortium (USA and Associate Members). This MoU is being renewed for the second phase of IODP;

- a MoU signed with JAMSTEC on 17 February 2014 for the whole duration of IODP (2013-2023) that includes access to the *Chikyu* for ECORD scientists and, in reciprocity, access to MSPs for Japanese scientists through a berth exchange mechanism between those two Platform Providers.

Long-term borehole observatories provide data through which generations of researchers can build on the legacy of scientific ocean drilling, collecting new samples and deploying new instruments as technology and ideas change.

The architecture of IODP maintains an overarching international umbrella and an international scientific evaluation system, but allocates more independence to the Platform Providers *(see Fig. 2)*.

Section 2: Principles of Scientific Investigation

1. IODP is an international research collaboration that addresses important questions in Earth, Ocean, Environmental and Life sciences based on drill cores, borehole imaging, observatory data, and related geophysical imaging obtained from beneath the ocean floor using specialized ocean-going drilling and research platforms.

2. IODP collaboration is further elaborated in Memoranda of Understanding (MoUs) that establish partnerships between platform providers and nations that help to fund the research platforms.

3. IODP investigations are based on research proposals that address objectives described in the program's guiding document, the IODP Science Plan Illuminating Earth's Past, Present, and Future, or other outstanding new research ideas.

4. IODP proposals are reviewed by the *JOIDES Resolution* Facility's advisory panels composed of international representatives. The panels provide independent advice to IODP platform operators on science quality, feasibility, safety, and environmental issues. IODP proposals for scientific ocean drilling, including workshop proposals, are evaluated in a fair and unbiased manner that avoids conflicts of interests. The *JOIDES Resolution* Facility's advisory panels serve all IODP drilling and research platforms.

5. Decisions on the scheduling of expeditions are made by Facility Boards that provide operational and management oversight of the IODP drilling platforms, JRFB, CIB and EFB). Each Facility Board is the policy-making body for the drilling and research platform it oversees while the platform is engaged in IODP expeditions. Facility Boards strive toward common IODP procedures and policies where practical and within the limits of resource availability.

6. The intellectual property of any scientific proposal submitted to the program belongs to proponents until a proposal is scheduled for drilling as part of an IODP expedition. At that time, the program acquires the right to publish the proposal and conduct the science. Every effort will be made by the program to recognize the intellectual efforts of the proponents.

7. IODP expeditions will be undertaken by international teams of scientists selected by the platform operator in accordance with MoUs between the participating nations that fund the research platforms. Staffing decisions will, as far as possible, take into account the intellectual contributions made by the original proponents and the goal of achieving diversity within the science party.

8. IODP expeditions are intended to have no significant environmental impact and are carried out in conformance with the highest accepted levels of environmental sensitivity as further explained in the IODP Environmental Principles.

9. IODP policies, procedures, recommendations, and minutes of meetings are openly available to the public within the limits of the program's confidentiality policies for proposals, samples, and data.

10. IODP will provide open access to all expedition samples and data once the members of the expedition science party have had a reasonable opportunity to complete their initial studies within an established moratorium period (typically one year).

11. After the expiration of the data moratorium, the program will publish a detailed account of all findings, core and borehole details, data acquired during the expedition, and make all samples and cores (working halves) available to any scientist with a sound scientific proposal and proven facilities to conduct the proposed science in accordance with the IODP Sample, Data, and Obligations Policy.

Section 3: IODP organization and Operation

o The **IODP Forum** is the custodian of the IODP Science Plan 2013-2023 and a venue for exchanging ideas and views on the scientific progress of the programme, and also provides advice to IODP Facility Boards on Platform Provider activity.

o Members include active community scientists and representatives from the funding agencies (to any platform), the Implementing Organizations (IOs) and the Program Member Offices (PMOs).

o The **Science Support Office (SSO)** for IODP is provided by Scripps Institution of Oceanography, University of California San Diego under Cooperate Agreement OCE-1327683 with the National Science Foundation (NSF). It is funded through contributions to the U.S. Facility Board to support *JOIDES Resolution* operations. The four major tasks of the SSO are: 1) to provide logistical support for the JRFB and the *JOIDES Resolution* Facility's advisory panels; 2) to oversee the proposal submission and review process; 3) to manage the Site Survey Data Bank; and 4) to provide a gateway website to IODP scientific planning.

o The **Science Advisory Structure (SAS)** includes the Science Evaluation Panel (SEP) and the Environmental Protection and Safety Panel (EPSP), which are staffed by the Program Member Offices using a quota system based both upon national/consortia contributions to the operations of the *JOIDES Resolution* and the overall programmatic contributions.

- The **SEP** is an advisory body of the JRFB composed of volunteer domain experts from IODP member countries and approved by the JRFB. SEP primarily reviews proposals to use the IODP drilling platforms (*JOIDES Resolution, Chikyu,* and MSP) but can advise on other scientific topics. The panel size is determined by scientific need and its composition is outlined in MoUs between contributing nations and the *JOIDES Resolution* Platform Provider. SEP follows the proposal review process described in the "*IODP Proposal Submission Guidelines*" and the "*IODP Proposal Confidentiality Policy*". The SEP forwards all approved proposals to the appropriate Facility Board(s) for future project consideration.

- The **EPSP** is an advisory body of the JRFB composed of volunteer domain experts from IODP member countries. The EPSP primarily carries out a site-by-site review of proposed or scheduled IODP expeditions from the point of view of safety and environmental protection. The panel composition is outlined in MoUs between contributing nations and the *JOIDES Resolution* Platform Provider.

The architecture of IODP is shown below *(Fig. 2).*

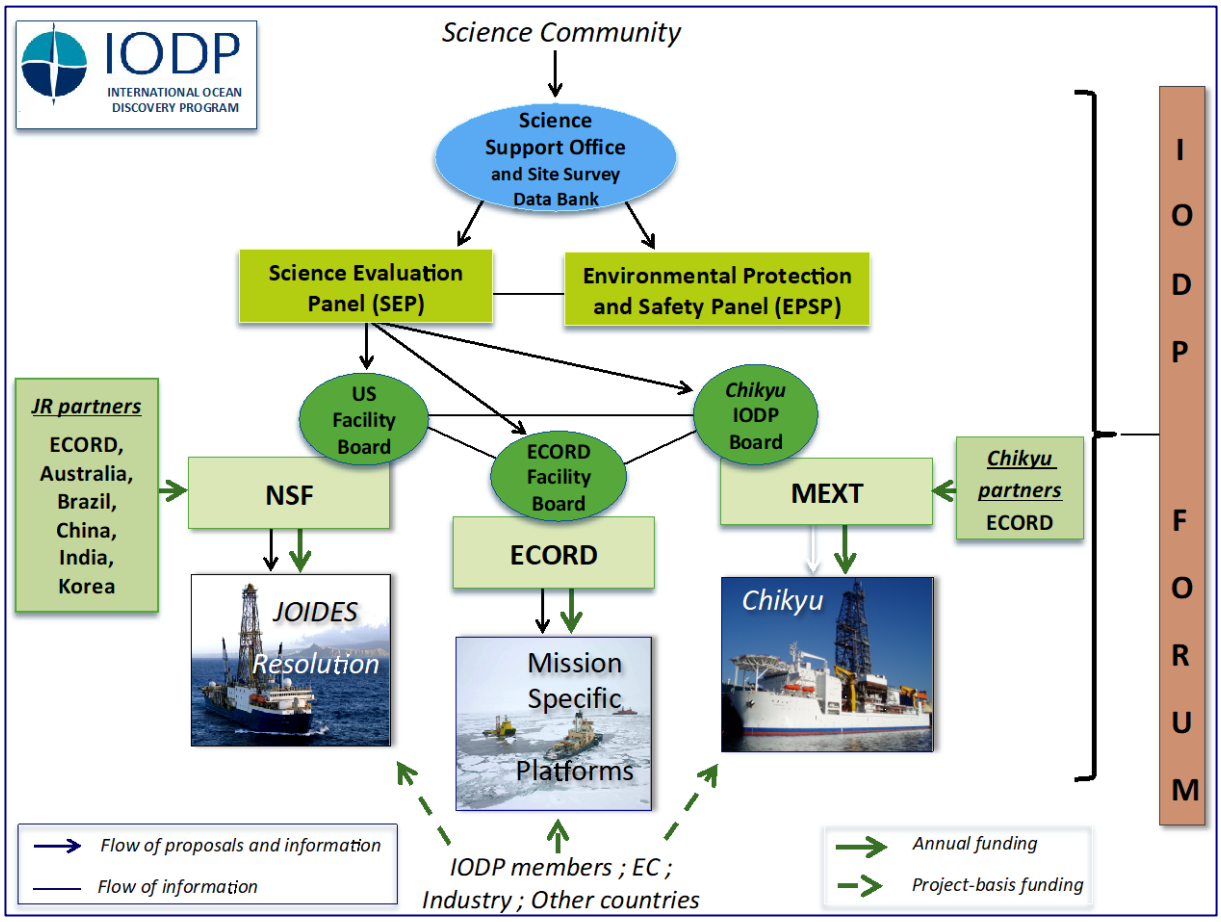

Fig. 2: Architecture of the International Ocean Discovery Program 2013-2023

European Consortium for Ocean Research Drilling (ECORD)

MEMORANDUM OF UNDERSTANDING
of
European and Other Funding Organisations
on
Membership and Operation of ECORD
in the
International Ocean Discovery Program (IODP)

Annex 2 – Current ECORD members and estimated financial contributions for the period 2019-2023

ECORD members (name and country of affiliation)	Estimated amount of the financial contribution per fiscal Year				
	FY 19 $M	FY20 $M	FY21 $M	FY22 $M	FY23 $M
ÖAW(Austria)	100,000	100,000	100,000	100,000	100,000
CCOD (Canada)	80,000	80,000	80,000	80,000	80,000
DAFSHE (Denmark) *	152,000	152,000	152,000	152,000	152,000
Academy of Finland (Finland)	80,000	80,000	80,000	80,000	80,000
CNRS (France) *	4,260,000	4,260,000	4,260,000	4,260,000	4,260,000
DFG (Germany)	5,600,000	5,600,000	5,600,000	5,600,000	5,600,000
GSI (Ireland) *	115,000	115,000	115,000	115,000	115,000
CNR (Italy)	500,000	500,000	500,000	500,000	500,000
NWO (Netherlands)	600,000	600,000	600,000	600,000	600,000
Forskningsradet- Research Council of Norway (Norway)	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000
FCT (Portugal)	90,000	90,000	90,000	90,000	90,000
MINECO (Spain) *	168,000	168,000	168,000	168,000	168,000
VR (Sweden)	528,000	528,000	528,000	528,000	528,000
FNS (Switzerland)	600,000	600,000	600,000	600,000	600,000
UKRI (United Kingdom) *	3,330,000	3,330,000	3,330,000	3,330,000	3,330,000
TOTAL	17,303,000	17,303,000	17,303,000	17,303,000	17,303,000

** Based on currency exchange June 14th, 2019 (Euro, British Pound, Danish Crown vs US dollar)*

MEMORANDUM OF UNDERSTANDING
of
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International Ocean Discovery Program (IODP)

Annex 3 –Membership Form

By signing this document, [name of the applicant to the statut of ECORD member] agrees to be an ordinary ECORD member with rights, privileges and financial commitments as defined in this MoU. All cooperative activities under this MoU, including exchange of technical information, equipment and data, shall be conducted in accordance with international law, as well as the international obligations, national laws and regulations of each party and within the limits of available funds.

The ECORD MoU shall have no effect as a political precedent.

The [name of the applicant to the statut of ECORD member] wishes to endorse cooperation in IODP, with commitment, in principal, as an ordinary ECORD member to support of the IODP science programme in the period 1 January 2019 to 31 December 2023.

The [name of the applicant to the status of ECORD member] shall have rights as defined in this ECORD MoU on a pro-rata and equitable basis.

The [name of the applicant to the status of ECORD member] signing this ECORD MoU wishes to support the participation of ECORD in IODP.

FOR AND ON BEHALF OF [name of the applicant to the status of ECORD member]

_____

_____	_____
Name (block capitals)	*Position*
_____	_____
Signature	*Date*

FOR AND ON BEHALF OF THE CNRS, on behalf of EMA

_____	_____
Name (block capitals)	*Position*
_____	_____
Signature	*Date*

MEMORANDUM OF UNDERSTANDING
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Annex 4 : List of Acronyms

BCR: Bremen Core Repository
BGS: British Geological Survey
CCOD : Canadian consortium for Ocean Driling
CNR: Consiglio Nazionale delle Ricerche - National Research Council
CNRS: Centre National de la Recherche Scientifique - National Center for Scientific Research,
DAFSHE : Danish Agency for Science and Higher Education
DFG: Deutsche Forschungsgemeinschaft - German Research Foundation
DLP: Distinguished Lecturer Programme
DSDP: Deep Sea Drilling Project
EGU: European Geosciences Union
EPC: European Petrophysics Consortium
EPSP: Environmental Protection and Safety Panel
ESF: European Science Foundation
FCT: Fundação para a Ciência e a Tecnologia - National Funding Agency for Science and Technology
FNS: Fonds National Suisse de la Recherche Scientifique - Swiss National Science Foundation
GSI : Geological Survey of Ireland
IAS: International Association of Sedimentologists
ICDP: International Continental Scientific Drilling Program
IO: Implementing Organization
IPR: Intellectual Property Rights
JAMSTEC: Japan Agency for Marine Earth Science and Technology
JOIDES: Joint Oceanographic Institutions for Deep Earth Sampling
JRFB: *JOIDES Resolution* Facility Board
JRSO: *JOIDES Resolution* Science Operator
L/B: Liftboat
MARUM: Zentrum für Marine Umweltwissenschaften - Center for Marine Environmental Sciences, University of Bremen
MEXT: Ministry of Education, Culture, Sports, Science & Technology, Japan
MG+: MagellanPlus Workshop Series Programme
MINECO: Ministerio de Economía, Industria y Competitividad - Spanish Ministry of Economy, Industry and Competitiveness
NSF: National Science Foundation

NWO: Nederlandse Organisatie voor Wetenschappelijk Onderzoek - Netherlands Organisation for Scientific Research
ODP: Ocean Drilling Program
ÖAW: Österreichische Akademie der Wissenschaften - Austrian Academy of Sciences
PMO: Program Member Office
TAMU: Texas A&M University
UKRI : United Kingdom Research and Innovation
VR: Vetenskapsrådet - Swedish Research Council