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## General instructions

### Process information

Ship time on the global, oceanic and regional German research vessels is allocated in a joint procedure agreed between the institutions operating the vessels and the funding providers. The Review Panel German Research Vessels (GPF) appointed by the BMBF and DFG votes on the basis of external reviews of the inclusion of cruise proposals in the cruise planning process. The respective competent institutions operating the vessels are responsible for the preparation of cruise plans. You can contact the vessel coordinators directly for advice on logistical matters related to the preparation of your cruise proposal:

- FS HEINCKE and FS POLARSTERN:  
Dr. Rainer Knust, Alfred Wegener Institute, Logistics and Research Platform Department,  
[rainer.knust@awi.de](mailto:rainer.knust@awi.de), Tel. +49 471 4831 1709
- FS ALKOR:  
Dr. Klas Lackschewitz, GEOMAR, Research Vessel Centre, [klackschewitz@geomar.de](mailto:klackschewitz@geomar.de), Tel. +49 431 600 2132
- FS ELISABETH MANN BORGESE:  
Johann Ruickoldt, Institute for Baltic Sea Research, Warnemünde, Research Vessel  
Department, [johann.ruickoldt@io-warnemuende.de](mailto:johann.ruickoldt@io-warnemuende.de), Tel. +49 381 5197 170
- FS MARIA S. MERIAN, FS METEOR and FS SONNE:  
Prof. Dr. Christian Betzler, University of Hamburg, German Research Vessels Coordination  
Center, [leitstelle.ldf@uni-hamburg.de](mailto:leitstelle.ldf@uni-hamburg.de), Tel. +49 40 42838 3640

The responsible BMBF project management offers advice on the online submission system for cruise proposals:

- Dr. Doreen Rößler, Project Management Jülich, MGS 1,  
[d.roessler@fz-juelich.de](mailto:d.roessler@fz-juelich.de), Tel. +49 381 20356 296

Please contact the GPF office in Bonn for all other technical and formal matters related to the review process:

- Udo Frinke, Tel. +49 228 885 2742  
Dr. Claudia Müller, Tel. +49 228 30818 17  
Dr. Kristian Remes, Tel. +49 228 885 2012  
[gpf@dfg.de](mailto:gpf@dfg.de)

## Formal requirements

Researchers employed at research institutions in Germany who receive their basic funding from public funds and have completed their academic training with a doctorate or equivalent academic achievements, are entitled to submit cruise proposals. Cruise proposals for secondary uses of FS POLARSTERN can also be submitted by researchers from foreign research institutions. Researchers not entitled to submit (e.g. retirees, international users of other vessels) can be co-authors of a cruise proposal, provided that a person entitled to submit assumes responsibility for conducting the cruise and is the contact person for the GPF office.

Cruise proposals for the main and secondary use of German research vessels can be submitted twice a year by the **respective deadlines of 28 February and 31 August** via the submission system of the German Research Vessels Portal (<https://www.portal-forschungsschiffe.de/submission>). An exception is made for cruise proposals for the primary use of FS POLARSTERN, which may only be accepted every 3 to 4 years subject to prior notice.

Secondary uses of already planned cruises are possible for FS METEOR, MARIA S. MERIAN, SONNE and POLARSTERN. The respective chief scientist must be informed of the planned secondary use in advance. Secondary uses are generally open to groups of up to three persons (up to 10 persons for POLARSTERN).

When preparing cruise proposals for the primary use of a vessel, please bear in mind the different lead times between the submission of the cruise proposal and the cruise being carried out. As a general rule, these amount to three to four years for FS POLARSTERN, two years for FS MARIA S. MERIAN, FS METEOR and FS SONNE, and one year for other vessels. A lead time of roughly one year should be considered for secondary uses.

With respect to time management, please note that diplomatic proposals for research permits in Exclusive Economic Zones (EEZs) of other states must generally be submitted eight months prior to the start of the cruise. Work in difficult areas (for example where there is piracy and the risk of war) must be refrained from. The German Research Vessels Coordination Center provides information on this.

Cruise proposals for cruises conducted as part of **long-term monitoring programs** on medium-sized research vessels can be proposed for up to five consecutive years. These cruise proposals are subject to the normal scientific review process (see section on "Review process", p. 6).

Cruise proposals for **cruises conducted as part of a collaborative scientific project reviewed by other bodies** must be reported to the GPF office in advance (generally at the time of submitting the funding proposal for the collaborative project). This particularly includes cruises in coordinated programmes of the DFG, BMBF collaborative projects, POF programmes of the HGF and EU collaborative projects. Should advance notice not be given, external reviews will be requested in line with the normal scientific review process (p. 6) in any event.

Cruise proposals for **regular cruises conducted as part of university student training** on medium-sized research vessels can be proposed for several consecutive years (usually the accreditation time of the course). An extract from the university's course catalogue as well as a list of the participant numbers from previous years must be enclosed in the proposal.

Please use the template available on the portal when preparing your cruise proposal. The format requirements (DIN A4, Arial 11 pt., 1.0 line spacing, standard margins, page numbering, section headings, declarations) may not be modified. It is not necessary to complete sections of no relevance to your project (for example for cruise proposals for training cruises). **Only cruise proposals written in English** will be accepted. Please formulate your cruise proposal using concise and self-explanatory language. The cruise proposal should be no longer than a maximum of 20 pages (excluding appendices). Please remember to include the signatures of all authors at the end of the document. With regards to a revision of a previously rejected cruise proposal, the edited text passages must be highlighted in colour.

The signed cruise proposal must be submitted as a PDF file. Please ensure that the cruise proposal document along with its appendices is uploaded to the submission system as **one** single PDF document. Only cruise proposals that are submitted in the submission system are accepted for processing. Users can determine this when they receive a confirmation email. Drafts and incomplete cruise proposals will not be considered.

Some key information from the cruise proposal must be submitted in an input mask on the submission system in the German Research Vessels Portal. Please ensure that the information in the proposal and the portal is identical.

The rules of good scientific practice must be observed when formulating the cruise proposal ([http://www.dfg.de/en/research\\_funding/principles\\_dfg\\_funding/good\\_scientific\\_practice/index.html](http://www.dfg.de/en/research_funding/principles_dfg_funding/good_scientific_practice/index.html)).

## Review process

As a general rule, two written reviews are sought from experts from a closely connected specialism (peer review) for your cruise proposal. When selecting reviewers, the GPF office ensures that there is no conflict of interest, in addition to examining the specialist expertise. The requirements placed on reviewers and the review criteria are listed in the Guidelines for Reviewing Cruise Proposals, which can be downloaded from the German Research Vessels Portal (<https://www.portal-forschungsschiffe.de/en/cruise-proposals/evaluation>).

The cruise proposal and the solicited reviews create a foundation for consultation on the Review Panel German Research Vessels (GPF). The GPF examines and assesses the reviews and the arguments put forward in them. Following this consultation, the GPF formulates a recommendation for which it is independently responsible. In order to reach an appropriate decision in the competition between cruise proposals, the GPF has a large margin of discretion and can deviate from the recommendations put forward in the reviews.

External reviews are not solicited in the following cases:

- Cruises that are conducted in line with research policy considerations or financially supported by governmental departments other than the BMBF;
- Cruises reported in advance in the context of collaborative scientific projects;

- Cruises conducted primarily for the purposes of student training;
- Cruises conducted for testing and developing seagoing major scientific instrumentation.

These cruise proposals are assessed exclusively by the GPF with particular regard to the appropriateness of the proposed working days at sea. However, the same requirements apply to the quality of the cruise proposal as for other cruises so that the GPF can vote for a rejection should there be any deficiencies in this regard.

Further information on the review process can be found on the German Research Vessels Portal (<https://www.portal-forschungsschiffe.de/en/cruise-proposals/evaluation>).

### **Data protection**

The data required for processing your cruise proposal will be stored and processed electronically by the Project Management Jülich and the GPF office. When you register in the submission system, you will be asked to provide various personal data. Your cruise proposal cannot be processed without the requested data. The data are stored in our systems and only used to render the service requested by you. This also includes forwarding your data to external reviewers and the Review Panel German Research Vessels (GPF). The data may also be transmitted to a third country in this context. By submitting the cruise proposal, you consent to the storage and further processing of your data.

You have the right to revoke this consent with future effect at any time. The lawfulness of the processing of your data carried out before the time of revocation shall remain unaffected by the revocation.

## Template instructions

### 1 General information

#### 1.1 Title

Please choose an appropriate and concise title for the cruise that makes reference to the work area.

#### 1.2 Acronym

Please choose a brief acronym (maximum 20 characters) derived from the title to identify your cruise proposal. An acronym should be chosen for cruises in EEZs of other states that would not lead to negative feedback from the approval authorities in necessary diplomatic applications.

#### 1.3 Ship

Please name the preferred research vessel for this cruise or several vessels as an alternative. Please also specify whether this is a cruise proposal for primary use or secondary use.

#### 1.4 Applicant(s)

To begin with, please state the person who is responsible for conducting the cruise with respect to the GPF and the contact person of the GPF office. The following information is requested from all authors of the cruise proposal:

- First name, last name, academic title
- Employment status (if on fixed-term contracts, please indicate duration of contract and, where applicable, funding provider)
- Date of birth, nationality
- Work address and full name of the institution
- Telephone number and email address

State the designated chief scientist and, where applicable, a deputy by indicating this role in brackets after the respective name.

#### 1.5 Working area

Please state the location of the working area, indicating the states from which research permits need to be obtained on the basis of planned work in the respective Exclusive Economic Zones (EEZs). In working areas with notoriously difficult approval procedures, please briefly outline whether alternative working areas are worth considering and whether you have special cooperation agreements with researchers in the respective state.

Please also state the geographic position of the first and last station as well as the preferred port of departure and destination port.

#### 1.6 Discipline and subject area

In this section, please state the research areas e.g. physical oceanography, marine geology, geophysics, biogeochemistry, marine biology) and the specific scientific work directions (e.g. seismology, marine microbiology) to which the cruise proposal is primarily assigned.

#### 1.7 Cruise dates and heavy equipment

Please state the preferred year and season, and provide reasons for restrictions to limited periods. Please also indicate the number of necessary working and in-transit days within the working area (excluding transits from the port of departure and/or to the destination port). Lastly, list the major instrumentation required for the cruise.



1.8 *German summary*

Generally understandable summary of the scientific background and the planned work in German, no more than 2,000 characters.

1.9 *English summary*

Generally understandable summary of the scientific background and the planned work in English, no more than 2,000 characters.

**2 State of the art and preliminary work**

2.1 *State of the art and preliminary work*

Please explain briefly and precisely the current state of the art, providing details on the most important relevant publications, in its direct relationship to the cruise proposal. This description should make clear in which context you categorise your own research and to which issues you wish to make a unique, innovative and ongoing contribution. This description must be understandable without references to additional literature. The quotations must be marked using the format "(author(s) [where applicable, et al.], year)".

2.2 *Integration in national and international programmes*

Please indicate which ongoing national and international projects and programmes the cruise will contribute to and how. The reference to the scientific objectives and working hypotheses indicated in Section 3.1 should be clear. Please briefly outline your existing or planned cooperation with other researchers not involved in the cruise proposal. Working groups from institutions of the Helmholtz Association are asked to explain the reference of the project to the ongoing or upcoming funding period within the framework of the programme-oriented funding (POF) of their institution.

2.3 *Relevance for BMBF funding goals (RV SONNE only)*

For cruise proposals for FS SONNE, please explain the reference of the project to the funding policy goals of the BMBF.

**3 Objectives and work program**

If you are requesting funds for an initial evaluation of the collected data and samples for the purposes of preparing a subsequent, independent proposal for third-party funding for scientific evaluation for cruises with FS MARIA S. MERIAN or METEOR (see Section 5), the planned initial evaluation must be explained in this section under Objectives (3.1) and Work program (3.2). Explanations regarding the objectives and work program for the cruise and the evaluation phase (post cruise) must be provided for FS SONNE.

3.1 *Objectives*

Please provide a concise description of your cruise proposal's research program and scientific objectives. Formulate measurable working hypotheses or questions to be answered. Please indicate if you anticipate results of the cruise that may be relevant to fields other than science (such as science policy, technology, the economy or society), in addition to expanding scientific knowledge.

3.2 *Work program*

A detailed description of the work program on board must be provided in this section. The quality of the work program is of crucial importance to the evaluation of the cruise proposal.

The work program must conclusively justify why the individual days-at-sea of the vessel and the major instrumentation are required. The subsequent evaluation phase must be outlined so that it is clear how the scientific objectives will be achieved. For cruises with FS SONNE, the evaluation phase must be explained in concrete terms. A work schedule must be provided for scientific employees requested in the cruise proposal, outlining the exact task areas of the employees during the cruise and post cruise phases.

### 3.2.1 *Working area, stations, and profiles*

Please provide a list with the approximate geographic coordinates and water depths of your planned cruise route as well as the number and location of the stations and/or profiles. If the stations can only be determined during the cruise, please specify the coordinates of the perimeters of the working area. You may make reference to high-resolution maps in the appendix (see Section 10).

For cruises with FS SONNE, a chronological overview of the journey and evaluation in the form of a Gantt chart must also be enclosed. The maximum duration of the project encompasses three months before the cruise, the cruise itself and 24 months of evaluation (post cruise), rounded to whole months respectively.

### 3.2.2 *Deployment of equipment*

Please provide reasons for the use of all equipment as well as its technical requirements on the vessel. Specify whether only certain ships are suitable for use. In this section, both on-board equipment, such as echo sounding systems, CTD rosette, nets, winches (**please specify weight, required cable type and length, and water depths**), laboratory containers, isotope containers, as well as external equipment, such as ROV, AUV, MeBo, core frames, seismology, OBS, OBH, moorings, landers, fishing gear and helicopters, must be considered. Please demonstrate that the external equipment is available for use in the project. If moorings are to be deployed, briefly outline how and when the retrieval of the equipment is planned.

### 3.2.3 *Special requirements*

In this section, please set out particular requirements for the cruise, such as the undertaking of ice stations, visits of research stations and coordination with other vessels.

### 3.2.4 *Work days at sea*

In the form of a table, please outline what work is to be carried out in the proposed time period. In addition to an overall estimate of the usage time of equipment and the transit between stations, the chronological sequence of the cruise and the duration of the equipment use at the respective stations should be outlined.

### 3.2.5 *Arrival and departure*

Please estimate the respective transit duration from the preferred port of departure to the working area and from the working area to the preferred destination port.

### 3.2.6 *Measures to conduct responsible marine research*

Please explain what measures you will take with regard to the Declaration of Responsible Marine Research (Appendix 1), the Code of Conduct for Responsible Marine Research in the Deep Seas and High Seas of the OSPAR Maritime Area (Appendix 2), and the Mitigation measures for the operation of seismic and hydroacoustic sources with pulsed sound emissions (Appendix 3).

As far as work with biological material from the EEZs of foreign CBD signatories is concerned, please observe the provisions of the Nagoya Protocol (<https://www.cbd.int/abs/about/>).

Information on CBD is also available in guidelines 1.021 of the DFG ([http://www.dfg.de/formulare/1\\_021e/1\\_021e.pdf](http://www.dfg.de/formulare/1_021e/1_021e.pdf)).

#### 4 **Bibliography**

List the publications cited in Sections 2 and 3 here. Please highlight publications by the authors of the cruise proposal in bold. The full list of authors, the full title, the year of publication, the journal, the volume and the page numbers must be specified for each publication (if applicable, also the DOI).

#### 5 **Funds requested (RVs MARIA S. MERIAN, METEOR, and SONNE only)**

Funding for the purposes of carrying out a cruise can only be requested for the research vessels MARIA S. MERIAN and METEOR (DFG financing) as well as SONNE (BMBF financing). Funding for cruises with MARIA S. MERIAN and METEOR is provided through the German Research Vessels Coordination Center after approval of the GPF. Following the approval of the GPF, a proposal for funding for cruises with SONNE must be submitted on the request of the responsible project management of the BMBF.

Should the cruise be carried out within the framework of a coordinated project (coordinated programmes of the DFG, BMBF collaborative projects, EU projects, POF programmes of the HGF), all costs, including the shipping and transport costs, must be applied for within the coordinated project.

Each funding item requested in the following should be based on the objectives and work program of the cruise proposal and must be justified so that it can be reviewed by external reviewers and the GPF.

The separate justification of personnel and consumables funding for an initial evaluation of samples and data from cruises with FS MARIA S. MERIAN or FS METEOR (no more than one page), can be submitted as an appendix to the cruise proposal. Initial evaluations of samples and data from cruises with FS MARIA S. MERIAN and FS METEOR should be set out so that they include the necessary preliminary work for submitting an independent third-party funding application for further evaluation once the cruise has been completed.

Cruise proposals for FS SONNE can include funds for conducting the cruise and funds for a full evaluation of the data and samples collected. These must be explained in detail in the appendix.

##### 5.1 *Funding for staff*

The number of positions, the wage group and, if applicable, the number of hours per month must be specified for all requested funding for staff.

##### 5.1.1 *Student assistants*

Depending on the scientific requirement, funding for student assistants to carry out preparation and follow-up work for the cruises as well as for work on board can also be requested in this section.

##### 5.1.2 *Technical personnel*

In duly substantiated exceptional cases, funds can be requested for technical service personnel for preparing and conducting a cruise.

The following applies in particular for cruises with **FS SONNE**: Technicians who carry out laboratory work are generally remunerated in line with wage group E9. Any additional costs must be covered by the core funding of the PI's institution. Technicians employed during the cruise and financed by BMBF funds can be paid in full during this period, i.e. overtime is remunerated in line with the rates specified by the wage agreement. Overtime for technicians who are not funded by the BMBF is not remunerated.

#### 5.1.3 *Scientific personnel*

Funding for scientific personnel can only be requested within the framework of wage agreement provisions.

Funding for scientific personnel can only be requested for an initial evaluation of samples and data for cruises on **FS MARIA S. MERIAN** and **METEOR**. Only users from universities and institutions of the Leibniz Association are entitled to submit proposals. Postdoctoral positions can be requested for up to 18 months. Doctoral positions cannot be applied for. With regard to the amount of the requested funds, the current [guidelines 60.12 of the DFG](#) must be applied. In cases of partial financing, information on complementary financing and personal details are required (including a curriculum vitae in the appendix to the cruise proposal).

Staff positions for 24 months plus the cruise time of the vessel, however no more than a maximum of 26 months, can be requested for cruises on **FS SONNE**. Both postdoctoral and doctoral positions may be applied for.

#### 5.1.4 *Other personnel*

In justified cases, additional staff required for carrying out the cruise can be applied for. For example, this includes ship's complement in addition to the existing crew or observers in relation to the protection of marine mammals. Reasons for the requirement and evidence of the qualifications required for the work for the purposes of fulfilling the position must be provided. A calculation of additional funding for observers must be provided.

### 5.2 *Travel and transport costs*

The following information can be adapted in an updated financing plan once cruise planning has been completed.

#### 5.2.1 *Travel expenses (to and from the ports)*

Travel expenses incurred in connection with embarkation and disembarkation can be requested here. Costs can only be borne for researchers and, where applicable, student assistants who are employed at a German academic institution. Please refer to the applicable German Travel Expenses Act or German Foreign Travel Expenses Ordinance for the maximum amount of daily rates that can be applied for. Please enclose a preliminary quotation for flight and hotel costs.

Travel expenses for scientific and diplomatic observers from states where work is to be carried out in their respective EEZ as part of the cruise can also be covered upon prior arrangement with the German Research Vessels Coordination Center.

Costs for medical precautions (e.g. vaccinations) which are financed with project funds (maximum of €75 per person) can only be borne for student assistants on cruises with **FS SONNE**.

#### 5.2.2 *Transport costs*

Container transport:

Please enclose a quotation for the transport of all necessary containers.

Air freight:

Please justify costs for air freight to and from the vessel and enclose a quotation.

Cooled and refrigerated transport, special transport:

Please justify costs for cooled and refrigerated transport to and from the vessel and enclose a quotation. Please note that significant costs may arise depending on the port and type of material to be dispatched. Please obtain information on requirements for the shipment of biological materials.

Land transport:

In this section you can request funding for the road and rail transport of expedition materials within Germany as well as to and from the vessel. Transport within the port area is not taken into account.

5.2.3 *Conference travel (RV SONNE only)*

Grants for travel to congresses and participating in a status conference can be requested per sub-project for FS SONNE. This includes funding for a conference abroad of up to €2,500, a conference in Germany of up to €1,500 and travel to a status conference of up to €255 per sub-project. Only defined grants will be approved. Active participation and precise details of the conferences to be attended are expected along with a description of the direct benefits to the project. In the case of group projects, grants for work meetings (workshops) of the group project can also be requested where applicable.

Users of other vessels must finance participation in the status conference from their own funds or externally funded projects.

5.3 *Consumables, light equipment, external contracting*

5.3.1 *Consumables*

In exceptional cases, consumables directly related to the research work on board can be requested in this section. Consumables for an initial evaluation (FS MARIA S. MERIAN, FS METEOR) or full evaluation (FS SONNE) can also be requested.

A detailed list of the materials that are likely to be needed and the funding earmarked for them (including an indication of quantity) is requested for FS SONNE. The basis for calculation must be explained.

5.3.2 *Light equipment (up to € 410)*

In exceptional cases, small items of equipment directly related to the research work on board can be requested in this section. Quotations do not need to be submitted for this. However, these are requested by the responsible project manager in the course of the subsequent project proposal for cruises with FS SONNE.

5.3.3 *External contracting (RV SONNE only)*

In general, funding for the outsourcing of work to third parties can be requested for the evaluation of cruises with FS SONNE in particular, however, this may only account for a fraction of the total funding amount in terms of content and volume.

5.4 *Scientific instrumentation*

5.4.1 *Deployment costs for heavy equipment*

Major instrumentation costs can be requested in the cruise proposal only if these are not already financed by internal or third-party funding. Please justify the need for use and the

funding requirement, and enclose a calculation basis for the total costs of the major instrumentation to be used. Please note the fixed-rate charges for use at <https://www.portal-forschungsschiffe.de/en/equipment>. Working groups from HGF and MPG institutions as well as from federal authorities may not request funding for own major instrumentation of their institutions. This also applies in case of joint projects with university partners, even if the equipment is primarily used by the university group.

These rules also apply for working groups from WGL institutions in the case of cruises with FS SONNE.

#### 5.4.2 *Costs for rented equipment*

Please justify the need for use of loan equipment and break down the costs involved for maintenance, wear and insurance. Enclose corresponding proof of the lender.

#### 5.4.3 *Acquisition of new equipment*

In certain exceptional cases, additional equipment essential to the success of the cruise can be requested. Please demonstrate that this equipment cannot be loaned and outline a plan for further support following completion of the cruise.

## 6 **Cruise participants**

Please specify the total number of berth required by your working group. If already known, please specify the name, role on board, institution and status group (researcher, technician, student assistant, observer) of the cruise participant. Highlight the chief scientist and the deputy chief scientist. For large vessels, primary users must allow any secondary users to participate in the cruise. As a general rule, 3 berths should be reserved on MARIA S. MERIAN, METEOR and SONNE and up to 10 berths on POLARSTERN for secondary users. Deviations from this specification are only permitted in duly substantiated cases.

## 7 **Data and sample handling**

Data and samples acquired during the cruises with German research vessels must be preserved on a long-term basis and made accessible to the scientific community for use in an appropriate period. In this section, an appropriate data plan (data responsibility, data use, archiving and release) must be explained. The quality of this plan is considered in the evaluation of the cruise proposal. In particular, the following should be outlined:

- The data and samples to be acquired,
- the data volume to be expected,
- the data/sample center where storage and archiving will take place,
- when the data and samples will be transferred for safeguarding purposes, and
- when they will be released for use by the scientific community.

Appropriate safeguarding of data and samples is ensured by their transfer to an established data/sample center or a data/sample bank that can guarantee long-term data storage. Release for use by other users can be delayed in order to protect publication rights. The data and samples can be provided in a protected state so that only their existence is publicly displayed for the moratorium period.

## 8 Declarations

The following must be declared:

"The signatories are required to carry out the planned research activities in accordance with the declarations on responsible marine research (Appendices 1 to 3 of the Cruise Proposal Preparation Instructions)."

Please enclose another declaration if you have submitted a proposal for funding for the submitted cruise proposal to a third party or intend to do so.

## 9 Signature(s)

The cruise proposal must be signed by all users specified in Section 1.4. Scanned signatures in the PDF document are sufficient.

## 10 List of Enclosures

Please list the appendices enclosed in the cruise proposal. The appendices must include the academic CV of the users specified in Section 1.4 (no more than two pages per person, in English). This must include a directory of the 10 most important publications, a list of the cruises conducted over the last 5 years and a complete rundown of experience as a chief scientist.

Other potential appendices are statements regarding the preliminary review for resubmissions, undertakings of cooperation, the high-resolution maps specified in Section 3.2.1, explanations regarding the budget for initial and complete evaluations, as well as any quotations. Other appendices will not be accepted.

*Utilisation plan (for FS SONNE only)*

When applying for funding for conducting and evaluating cruises with **FS SONNE**, a utilisation plan must also be enclosed in the cruise proposal as an appendix. This must address the three following points:

- Economic prospects

*(economic potential for implementation and transfer, benefits for Germany)*

Please outline the prospects for success in the short, medium and long term should there be successful results (time horizon), with particular regard to potential markets (products/systems) and other uses. For example, the following aspects are to be considered:

- Interlinking of research and production strategies
- Benefits for different user groups – industries in Germany (for example, a list)
- Economic potential for implementation and transfer

Where feasible, information regarding the economic potential for implementation and transfer (e.g. description of the market potential) must be provided. This also includes the assessment of whether there is a clear advantage of the solution compared to competing solutions until the time of the expected market launch in functional and/or economic terms.

- Economic and/or technical prospects for success

*(How can results be used in other ways?)*

Irrespective of the economic prospects for success, the scientific and/or technical prospects for success should be presented (with time horizon). This also includes how the planned results can be used in other ways, for example for public functions, databases, network units, transfer units. Any collaborations with other institutions, companies, networks and research bodies must also be incorporated here.

- Capacity for scientific and economic cooperation

*(Who will take over the next phase and/or the next innovative steps?)*

In this section, it must be demonstrated who will take over the next phase and/or the next innovative steps in successfully implementing the project results and how this is to be approached. Possible outcomes of the

- Basic research: Collaborations between research and business;
- Applied research: Indexing of cross-sectoral use, e.g. different product developments;
- Development: Transfer to the market.



## Appendix 1

### Declaration of Responsible Research

#### *Preliminary Notes*

As marine researchers we value and respect the uniqueness and complexity of the marine environment. We are thus especially interested in conserving this habitat, which is precious in terms of ecology, science, culture and economy. Because of their special knowledge and use of specialized equipment (such as research vessels and manned or unmanned submersible vehicles), scientists are the only group that can monitor and evaluate this unique marine environment. Compared to natural occurrences (such as volcanic/tectonic events, landslides, climate variability, etc.) or interference caused by other human activities (e.g., mining, fishing, shipping industry), the impact of scientific work on the research areas is generally considered to be minor. Nevertheless, the risk exists that certain research activities may have unintended negative effects on individual areas or creatures.

A basic understanding of the extremely complex marine system is the best prerequisite for protecting the oceans and for their ecologically sustainable use. This knowledge, however, is only obtainable by scientific marine research. Marine research should thus be an integrated part and a basic requisite of resource management and conservation of the natural biodiversity of the oceans. Research projects must endeavor to find an approach as non-polluting and ecologically compatible as possible. The following principles should be observed for research proposals and expeditions:

#### *Principles for Responsible Marine Research*

As members of the international marine research community and in the spirit of responsible research, we call on all scientists to respect the following principles when investigating the oceans, and urge them:

- 1) to avoid research activities that may affect regional populations or a large proportion of individual marine organisms.
- 2) to avoid research activities that provoke change or damage to the marine ecosystem (in terms of physical, chemical, biological or geological harm).
- 3) to take precautions to protect natural resources (especially protected species or habitats) from disturbance or damage – or to only impact to the minimum extent possible when carrying out research activities in ecologically sensitive areas (e.g., for the North Atlantic and Baltic Sea, the habitats of the OSPAR and HELCOM “List of threatened and/or declining species or habitats” – for other regions there are similar regulations). This applies to all national/international marine sanctuaries.
- 4) to avoid sampling not essential to the research project.
- 5) to employ the most appropriate and environmentally friendly methods for investigations – as far as these are possible, in a reasonable manner.
- 6) to ensure that the transfer of biota between different marine regions is avoided, as this may permanently change the habitat or the composition of communities.

- 7) to avoid activities that influence other scientific experiments and surveys. This requires that scientists make themselves familiar with present and planned research projects in the pertinent area. At the same time, your own research projects or plans should be communicated to the international research community via free accessible databases.
- 8) to ensure that samples are used as extensively as possible among the scientific communities. Samples that can be archived should be stored for future use by members of the scientific community.
- 9) to promote the international use of data, samples and results via appropriate databases, in order to avoid needless sampling and pollution/stress, and to promote a global understanding of the marine habitat.

German marine research supports appropriate research projects with the aims of acquisition, research, evaluation, and possible ecological improvement of the effects of research activities to the marine environment.

The DFG Senate's Commission for Earth System Research and the German Marine Research Consortium (KDM) unequivocally support all of the statements of the declaration for responsible marine research – also with respect to the responsibility towards future generations. They call upon all scientists to comply with the above-mentioned principles when planning and conducting research projects. The consideration/application of these principles is mandatory for the approval of research proposals.

## Appendix 2

### OSPAR Code of Conduct for Responsible Marine Research in the Deep Seas and High Seas of the OSPAR Maritime Area

(OSPAR Agreement 2008-1)

#### BACKGROUND

1. This code of conduct is based on the InterRidge Statement of Commitment to Responsible Research Practices at Deep-Sea Hydrothermal Vents, and an unofficial translation of the German Senatskommission für Ozeanographie / German Marine Consortium KDM, Commitment to Responsible Marine Research. It has been developed within the work program of the OSDPAR Biodiversity Committee by an intersessional correspondence group on marine protected areas working in consultation with a number of deep sea scientists and experts. It is currently being circulated to European scientific bodies for further comment.
2. The OSPAR Maritime Area includes large areas of deep and high sea.[1] These are recognized as containing ecosystems that may have a lower resilience than shallower near-shore areas, including several species and habitats that can be vulnerable to human disturbances.
3. The OSPAR Commission has adopted, and keeps under review, an Initial OSPAR List of Threatened and/or Declining Species and Habitats (OSPAR agreement 2004/6) to guide the setting priorities for its further work on the conservation and protection of marine biodiversity. The species and habitats on this list, especially those occurring in high / deep sea areas, are vulnerable to different actual or potential human activities, including marine scientific research.
4. OSPAR acknowledges the provisions and entitlements of United Nations Convention on the Law of the Sea (UNCLOS) and highlights that the General Principles for the Conduct of Marine Scientific Research set out therein require, inter alia, that marine scientific research shall be conducted in compliance with all relevant regulations adopted in conformity with UNCLOS including those for the protection and preservation of the marine environment.
5. OSPAR recognizes that marine research scientists appreciate the uniqueness and complexity of the marine environment, and are therefore particularly interested in preserving this scientifically, aesthetically, ecologically, and potentially economically valuable environment. Because of the specialized nature of the equipment required to work in the deep-sea, such as manned and unmanned research submersibles, scientists are the primary group of people who have had the opportunity to visit and value these extraordinary habitats. OSPAR also recognizes that scientists have already worked to develop codes of conduct for some deep-sea features, such as hydrothermal vents and cold water corals, and this OSPAR code of conduct has been written to fit harmoniously with those. (Specific provisions concerning the conduct of scientific research in certain deep / high seas habitats will be attached as annexes to this statement as they are developed.)
6. The potential impact of many scientific activities on the marine environment is low in comparison to the potential for disturbance by natural processes (e.g. volcanic/tectonic events, slumps, climate variation, etc.) or other human activities (e.g. mining, fisheries, and shipping). Indeed

many areas, especially seamounts and cold coral reefs, have been widely impacted by human activities, like fisheries, long before being scientifically studied. Nonetheless, there remains the possibility that some scientific activities could have unwanted negative side-effects on particular regions or animals if research activities are not carefully planned and executed. In addition, because only a limited number of sites are currently known and scientists from a wide variety of disciplines frequently work at these single locations, there is the potential for conflicting effects among studies, and multiple impacts, particularly at sites where scientific activity is intense.

7. OSPAR recognizes that protection and sustainable use of the oceans is best served by a fundamental understanding of its complex marine ecosystems, and that can only be achieved through marine research. OSPAR further recognizes that the role of scientists is also of primary importance concerning the implementation of the OSPAR network of Marine Protected Areas, and this should be preceded with the best available science.
8. Thus, marine research is a prerequisite and an integral component of an ecosystem based management of marine resources and the effective conservation of biodiversity of the deep and high seas. Most forms of observation and investigation of natural systems involve some disturbance of the systems being studied. In the interest of environmental stewardship, it must be the goal of research scientists to minimize disturbances as much as possible, while still gathering the information necessary both to understand the systems and to form a basis for sustainable use strategies. Therefore, marine scientists should always evaluate their research plans from a conservative standpoint, and choose the most environmentally friendly research approach.
9. When awarding research grants or research cruise time, the research plans should be assessed against conformity with the following principles.

#### *CONDUCT OF RESPONSIBLE MARINE SCIENCE*

10. OSPAR requests all scientists working in the deep seas and high seas of the OSPAR maritime area to adhere to the following principles when conducting their work:
  - a. **Species:** avoid, in the course of scientific research, activities which could lead to long-lasting changes in regional populations or substantially reduce the number of individuals present.
  - b. **Habitats:** avoid, in the course of scientific research, activities which could lead to substantial physical, chemical, biological or geological changes or damage to marine habitats.
  - c. **Threatened and/or declining features:** When working in areas of particular ecological vulnerability, including, inter alia, the features listed in the OSPAR “List of Threatened and/or declining Species and Habitats” utmost care should be taken not to disturb or damage the features as far as possible.
  - d. **Management areas / marine protected areas:** When working in areas of particular ecological importance and/or sensitivity, including, inter alia, OSPAR marine protected areas, care has to be taken not to disturb or damage the protected features, and that activities are in compliance with regulations for the area. Further, scientists are requested to respect the importance of management areas like marine protected areas and are asked to assist in their implementation through the use of the best scientific knowledge.

- e. **Notification and research planning:** Avoid activities which could disturb the experiments and observations of other scientists.  
  
This requires that scientists:
    - a) make themselves familiar with the status of current and planned research in an area; and
    - b) that they ensure that their own research activities and plans are known to the rest of the international research community via appropriate public domain data bases and web sites.
  - f. **Methods:** Use the most environmentally-friendly and appropriate study methods which are reasonably available.
  - g. **Transport of biota:** Ensure that transport of biota between different marine regions, which could lead to changes in the environment or the composition of marine communities, does not occur.
  - h. **Collections:** Avoid collections that are not essential to the conduct of the scientific research, and reduce the number of samples to the necessary minimum.
  - i. **Collaboration and cooperation:** Ensure the fullest possible use of all biological, chemical and geological samples through collaborations and cooperation within the global community of scientists. Samples which can be archived should be placed in accessible repositories for future use.
  - j. **Data-sharing:** Practice international sharing of data, samples and results in order to minimize the amount of unnecessary sampling and to further a global understanding of the marine environment.
11. OSPAR supports the individual points of this commitment unreservedly and requests all scientists to adhere to them when planning and carrying out their research.
12. Their application should be a prerequisite for the granting of research funds and ship time.

## Appendix 3

### Mitigation measures for the operation of seismic and hydroacoustic sources with pulsed sound emissions

#### *Abbreviations and terms used*

BP:	Bubble Pulser
TPV:	Total Primary Volume, the sum of all primary volumes of air guns or GI guns whose signals overlap during signal generation such that they amplify one another.
in <sup>3</sup> :	Cubic inch(es). 1 in <sup>3</sup> corresponds to a volume of 0.0164 litres; 150 in <sup>3</sup> is approximately 2.5 litres.
IR:	Infrared
MB:	Multibeam (echosounder)
MMO:	Marine Mammal Observer. Person trained in the observation of marine mammals.
MM:	Marine Mammal
PAM:	Passive Acoustic Monitoring
PV:	Primary Volume; the main chamber volume of an air gun or the generator volume of a GI gun
SBP:	Sub-Bottom Profiler (e.g. parametric SBP such as Parasound, Innomar SES-2000, Chirp or 3.5 kHz systems)
SS:	Sidescan Sonar
Soft start:	The emitted seismic energy is increased from minimum to maximum over a period of 20 minutes. The minimum energy is emitted when the smallest chamber volume of a source is triggered with the lowest pressure at which the source will still function.

Adequate visibility: The visibility range is at least twice the applicable mitigation radius.

#### **Applicability**

The rules described here apply solely to profile-type surveys of the sea floor.

#### **General rules**

- The proposed cruise period should be chosen such that a higher occurrence of marine mammals in the area under investigation is not likely. Breeding and nursery areas of marine

mammals must be avoided during periods when marine mammals are present. In exceptional cases, planned measurements require special justification.

- The emitted seismic and hydroacoustic energy should be limited to the level strictly necessary for scientific purposes. Scientific justification for the use of the proposed seismic and hydroacoustic energy should be submitted; this forms part of the review process.
- Seismic measurements must begin with a soft start.
- During a change of profile, only a single seismic source (a 'mitigation pulser') should be triggered approximately every 60 seconds, assuming that no research-relevant data is being collected during the profile change.
- Observation of MMs should be carried out by a suitable number of MMOs from a suitable position with a view of at least 90 degrees from dead ahead to abeam of the sources (e.g. the bridge).
- All observations and measures should be logged in the cruise report.
- The use of explosives is not permitted.

#### **Mitigation measures for the operation of weak seismic and/or hydroacoustic sources (BP, boomer, sparker, MB, SS, SBP, air guns with TPV $\leq 150$ in<sup>3</sup> (2.5 litres))**

*Start of measurements:* Before a source is first triggered, in daylight and adequate visibility, operators should scan the area around the vessel up to a distance of 500 m (mitigation radius) for MMs from a suitable position for a period of 60 minutes. Measurements may only commence if no MMs are observed within the mitigation radius.

In darkness, measurements may only commence if the working area is outside known breeding and nursery areas of MMs. If MMs were sighted during daylight hours on the previous day, in darkness the non-presence of MMs in the mitigation radius must be operationally demonstrated using suitable technical aids. If no such technical aids are available, measurements must commence in daylight.

*Interruptions:* If unscheduled interruptions of less than 5 minutes occur, measurements may continue immediately and without further checks. In the case of interruptions lasting 5-10 minutes, measurements may continue if no MMs have been observed within the mitigation radius. Otherwise, operators must wait until MMs have left this zone before measurements may recommence with a soft start. In the case of interruptions of more than 10 minutes, measurements must begin with a soft start assuming that no MMs have been observed within the mitigation radius. If a seismic source with minimal energy emission (a so-called mitigation pulser) is triggered continuously, measurements are regarded as non-interrupted.

#### **Mitigation measures for the operation of seismic sources with TPV $> 150$ in<sup>3</sup> (2.5 litres)**

*Start of measurements:* Before a source is first triggered, in daylight and adequate visibility, operators should visually scan the area around the seismic source with a mitigation radius of 750 m for MMs for a period of 60 minutes. Measurements may only commence if no MMs are observed within the mitigation radius.

In darkness or inadequate visibility, measurements may only commence if the working area is outside known breeding and nursery areas of MMs and the use of suitable technical aids (e.g. IR or PAM) has

given no indication of the presence of MMs in the mitigation radius within the last 60 minutes. If no such technical aids are available, measurements must commence in daylight.

As measurements progress, the mitigation radius is continuously monitored either visually or with the aid of PAM or IR. If MMs are observed in the mitigation radius, measurements must be paused until the MMs have left the mitigation radius. Measurements must then be continued with a soft start.

*Interruptions:* In the case of interruptions lasting less than 10 minutes, measurements may continue if no MMs have been observed within the mitigation radius. Otherwise, operators must wait until MMs have left this zone before measurements may recommence with a soft start. In the case of interruptions of more than 10 minutes, measurements must begin with a soft start assuming that no MMs have been observed within the mitigation radius. In darkness, measurements may only recommence if the working area is outside known breeding and nursery areas of MMs and the use of suitable technical aids (e.g. IR or PAM) has given no indication of the presence of MMs in the mitigation radius. If a seismic source with minimal energy emission (a so-called mitigation pulser) is triggered continuously, measurements are regarded as non-interrupted.