

Memorandum of Understanding (MoU)

Between

The European Polar Board (EPB), an independent European Organization of Directors and Managers of the major European National Polar Programmes, represented by Ms Maaïke Van Cauwenberghe, Chair of the EPB,

and

the European Space Agency, an intergovernmental organization created by the Convention opened for signature in Paris on 30 May 1975 (hereinafter referred to as "ESA") represented by Mr. Johann-Dietrich Wörner, its Director General,

hereinafter referred to as "the Signatories",

Recalling that the European Space Agency is an intergovernmental organization and Article 2 of the ESA Convention states its purpose to provide for and to promote, for exclusively peaceful purposes, cooperation among European States in space research and technology and their space applications, with a view to their being used for scientific purposes and for operational space application systems,

Recalling that the European Polar Board (EPB) is the central body to coordinate polar research and infrastructure effectively and foster multilateral collaboration in European polar research, having members from national polar operators and research institutes in 18 countries,

Recalling the provisions of the Antarctic Treaty signed at Washington on December 1, 1959, and in particular Article III of the said Treaty which reads as follows:

"1. In order to promote international co-operation in scientific investigation in Antarctica, as provided for in Article II of the present Treaty, the Contracting Parties agree that, to the greatest extent feasible and practicable:

- (a) information regarding plans for scientific programs in Antarctica shall be exchanged to permit maximum economy and efficiency of operations;
- (b) scientific personnel shall be exchanged in Antarctica between expeditions and stations;
- (c) scientific observations and results from Antarctica shall be exchanged and made freely available.

2. In implementing this Article, every encouragement shall be given to the establishment of co-operative working relations with those Specialized Agencies of the United Nations and other international organizations having a scientific or technical interest in Antarctica.”

Recalling that EPB aids in developing joint scientific programmes, in optimized use of European research infrastructures, in representation of polar issues within European research framework programmes, and that its main missions, scientific priorities and infrastructure projects are the following:

- Identify future scientific areas and strategic priorities of polar science within Europe (Foresight Workshops and Papers)

In particular, EPB identifies issues of specific interest to its member countries, with relevance at the European and international level.

- Coordinate scientific agenda setting and represent it in European Policy Formulation (policy information and briefs on topics of common interest of members).

EPB creates and maintains strong links to European and international decision makers and funding agencies, in order to provide timely and relevant information on strategic scientific issues and scientific needs, to highlight important results, and to provide forward-looking perspectives on polar research;

Recalling that research in Antarctica needs the complementary use of terrestrial, marine and space means, therefore both Signatories would take benefit from joint collaboration.

Recalling that the Signatories have indicated their common interest to increase the cooperation between ESA and the entities managing the European Antarctic Stations located in some of the most inhospitable environments on Earth. The focus of the cooperation is on science and technology, including planetary simulation studies and European-wide research projects on medical and psychological issues and life support, using technologies and methods developed by space agencies, and by extending existing cooperation.

Referring to:

- i) the workshop held on 4 April 2012 between ESA and EPB together with representatives of EPB Member organizations in the area,
- ii) the Memorandum of Understanding of a “European Polar Framework” concluded in 2009 under the auspices of the European Science Foundation/European Polar Board between national polar authorities, funding agencies and national polar operators.

PURPOSE

The purpose of the present Memorandum of Understanding (MoU) is to foster cooperation between ESA and the EPB, and to define the use of European Antarctic Stations for scientific and technological purposes. This MoU is not a legal agreement and in particular it is without prejudice to the application of rights and obligations pursuant to the Antarctic Treaty System and to former agreements, arrangements or letters of intent which may bind the Signatories.

TYPES OF ACTIVITIES

A successful collaboration between space and the Antarctic communities must rely on common, shared and well understood goals. ESA and EPB will therefore agree on common science aims and objectives. Also, given the political constraints, collaboration must address the grand societal challenges facing humanity – water security, energy security, food security, and human well-being.

The following four categories have been identified:

- Activity category 1:

Cooperation in evaluation and selection of research proposals, following a call for proposals defined and launched jointly by EPB or EPB members and ESA on specific topics specified in section d) below;

- Activity category 2:

Common investigations on specific goals or interests of the Signatories (e.g. selection and training of winter-over crewmembers);

- Activity category 3:

Common development of systems/devices/instrumentation for the implementation of space technologies;

- Activity category 4:

Provision of manpower, provision of data, expertise or specific technological developments in support of category 1, 2 or 3 activities. This will include exchanging information on models for management and processes.

PREPARATION OF ACTIVITIES

ESA and EPB will use all reasonable efforts to:

(a) define and develop the requirements and considerations related to their own projects and, after having proceeded with research announcements or invitations to tender in accordance with their own rules and procedures, concluding and managing their own industrial contracts, and other types of arrangements with third parties;

(b) prepare, together with the other organizations concerned, joint project plans and all other documents necessary for the implementation of such projects;

(c) exchange information on relevant technologies or procedures, and collaborating in the implementation of those technologies or procedures at European Antarctic Stations or research vessels whenever such a set-up is considered beneficial and feasible for the organizations concerned, on the understanding that the fields of interest for these include:

- energy production and storage;
- automation and robotics;
- satellite communication and earth observation, including ground calibration and validation;
- thermal control and life support systems (water recycling, air and microbial contamination monitoring, green houses, etc.);
- medical and psychological research;
- organization and management of international endeavours;

(d) establishing a procedure for evaluation and selection of research proposals to be conducted at European Antarctic Stations or research vessels, in order to harmonise research activities, maximise scientific results, and to avoid duplication, on the understanding that the fields of interest for such research include:

- analogue studies between space and Antarctic environments (personnel recruitment, selection, training, performance and pre/post mission monitoring methods);
- physical countermeasures protocols (fitness exercising, nutrition guidelines);
- psychological and physiological adaptive processes to isolation, confinement and high altitude;
- remote or on site medical assistance and psychological support (incl. training of medical doctors);
- life support;
- habitability;
- radiation;
- weather/ice forecasting, space weather forecasting, climate research; and
- general survivability in hostile environments.

In addition, if there are identified needs for telecommunications, logistics, safety or security matters that could be covered/partly covered via satellite means, ESA will investigate whether its programmes (existing or planned) could be used or adapted.

Each Signatory shall conduct the experiments it manages in compliance with laws, regulations, rules and policies applicable to its activities, in particular those addressing the protection of human subjects in biomedical research.

IMPLEMENTATION

In order to implement joint activities envisioned under this MoU, ESA may conclude with EPB or directly with EPB member organizations, specific bi- or multi-lateral activity agreements or arrangements, outlining the specific activities agreed upon and detailing, within the framework of this MoU, the responsibilities of each party. Such agreements or arrangements may *inter alia* include:

- exchange of technical data and goods;
- exchange of personnel
- data policy and rights;
- reporting, monitoring and evaluating results and the impact of specific joint activities;
- liability

Such separate, legally binding, agreements between ESA and EPB or ESA and EPB member organizations, would be subject to prior approval of ESA Member States.

COORDINATION OF ACTIVITIES

A Steering Committee will be established and will meet periodically over the lifetime of the cooperation, or promptly at the request of any of the Signatories, with the task to ensure coordination of the activities conducted pursuant to this Arrangement. The Steering Committee comprises one representative for each Signatory ("Arrangement Coordinator"), and one representative for each specific cooperation undertaken pursuant to an agreement or arrangement concluded between ESA and an EPB member organization, as detailed in the paragraph above. Representatives may be accompanied by advisors. The Committee's meetings are chaired alternatively by each Signatory and decisions will be made by consensus.

In order to have full knowledge of plans and activities, EPB will forward to ESA for information requests from other space agencies for their involvement in activities covered by this Arrangement and vice versa for polar/Antarctic organizations on the ESA side.

The Arrangement Coordinators will be responsible for addressing all matters related to the functioning of this Arrangement, including for the purpose of furthering its routine implementation. Changes in the appointment of Arrangement Coordinators will be communicated in writing by the corresponding Signatory to the other.

FUNDING

Each Signatory will bear the costs of discharging its responsibilities under this MoU, including travel and subsistence of its own personnel and transportation of all equipment for which it is responsible, on the understanding that this cooperation will, in principle not entail exchange of funds between the Signatories.. However, activities of common interest carried out by EPB Members could be partially / totally funded by ESA on a contractual basis. The ability of the Signatories to carry out the activities provided for in this MoU is subject to their respective funding procedures and the availability of appropriate funds. In the event that funding problems arise that may affect a Signatory's ability to carry out its activities pursuant to this MoU, that Signatory will notify and consult with the other.

TECHNICAL DATA

The technical data exchanged under the MoU shall be used only for the purposes of conducting the cooperation provided for in this MoU and shall not be communicated or transferred to a third party without prior authorization of the Party having transferred the technical data in the first place.

INVENTION RIGHTS

Nothing in this MoU shall be construed as granting or implying any right to, or interest in, patents or inventions of the Signatories or their contractors or subcontractors.

PUBLIC INFORMATION

Information regarding the activities carried out pursuant to this MoU may be made public by the interested Signatory for its own portion of these activities as desired. Insofar as participation of the other Signatory is involved, the Signatories will coordinate with each other prior to any release, consistent with applicable policies.

CONSULTATIONS

Following a request to this effect, the Signatories will consult with each other promptly when events occur or matters arise which may occasion a question of interpretation or implementation of the terms of this MoU.

DENUNCIATION

Either Signatory may notify the other in writing of its denunciation thereof, in which case such denunciation shall take effect, if not revoked, six months after receipt of such notification.

ENTRY INTO FORCE and AMENDMENTS

The MoU will become effective upon its signature by Signatories for a period of three years. *It will be automatically renewed for the same duration, unless denounced in accordance with the provisions of the paragraph above. It may be amended by written agreement of the Signatories. Amendments will enter into effect on the date of their signature by the Signatories.*

Done at *Paris* on *3 February 2016*

In two originals in the English language



For the European Polar Board

Ms. Maaike Van Cauwenberghe

Chair of the European Polar Board



For the European Space Agency

Mr Johann-Dietrich Wörner

Director General