Recommendations and scenarios of legal implementation structures for the multi-purpose research icebreaker AURORA BOREALIS

Deliverable 6.1

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The information presented in this document summarises the discussions and the recommendations made in the course of the Legal Advisory Panel and has been developed in collaboration with its members.

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Legal Advisory Panel meeting, 16 November 2010
(From left to right)
Front row: Lidwien Van der Valk, Charlotte Breide, Bonnie Wolff-Boenisch, Julia Bobrova
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Foreword

Establishing a legal system for a pan-European vessel, which never existed before, and in addition will operate in the Arctic, implies a priori the necessity to set off for new shores and explore an important set of legal aspects and recommendations.

Based on these requirements, the ERICON AB contract "The European Polar Research Icebreaker Consortium Aurora Borealis" has already anticipated the creation of a Legal Advisory Panel (LAP) consisting of legal experts from ERICON AB stakeholder countries.

The first LAP took place in Strasbourg on April 01, 2010 and was organised by the former ERICON AB legal manager, Hélène Haslé, and the current financial manager Julien Weber. This first meeting laid down the roadmap and priorities for the first legal task, notably on the implementation structure for the multi-purpose research icebreaker Aurora Borealis. Already at that time it became apparent that the legal topics addressed by the LAP would be highly relevant, not only for the Aurora Borealis, but also for any future attempts or concepts aimed at establishing a multi-national owned vessel or a fleet type approach of nationally operated vessels.

In September 2010, the maritime law specialist Anastasiya Kozubovskaya-Pellé joined the ERICON management team. She started with the coordination of the expert panel, complementing missing legal expertise with her own expertise, and invited additional experts to join the panel. This panel member composition exists now since the second Legal Advisory Panel meeting on November 16, 2010.

As described in the introductory section, the main objective of this publication is to compare and assess different legal instruments that are suitable for the implementation of the research icebreaker Aurora Borealis as well as provide recommendations and scenarios for a legal implementation structure for such a unique vessel.

However, the added value of this document is not only its reflection on different legal tools for a pan-European vessel with no forerunner concept, but also the development of a set of recommendations applicable to similar or future projects regarding the operation and ownership of other research vessels with a pan-European approach. What is even more valuable is that the recommendations are not only useful for practitioners, such as fleet managers or ship operators for example, but are also highly up-to-date (at the writing of this report and subject to legislative changes in the future) and have been made to be used by policy and decision makers.

This document of course would not exist without essential contributions and the analytical work of its members who have discussed a broad range of legal fields ranging from international public and private law to European and national regulations with a specific focus on maritime law. In addition to the LAP members' commitment for the project, this document could not have been finalised without the dedication of Anastasiya Kozubovskaya-Pellé, who from the very beginning was enthusiastic about the project and had the challenging task of translating the perspectives of the legal experts to the non-legal experts, and vice versa.

As coordinator of the ERICON-AB Project I would like to express my gratitude to all the legal experts, collaborators and the ERICON management team who contributed to the publication of this document.

With best regards,

Bonnie Wolff-Boenisch

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1. Definitions, Acronyms, Abbreviations

Capitalised terms, expressions, acronyms and abbreviations – in alphabetic order – shall have the meaning which is attributed to them herein:

AURORA BOREALIS –
working name of the ownership structure of the vessel to be established.

AWI –
Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany.

CERN –
European Organisation for Nuclear Research.

EC –
European Commission.

ECORD –
European Consortium for Ocean Drilling Research.

EEIG –
European Economic Interest Grouping.

EEZ(s) –
Economic Exclusive Zone(s).

ERIC –
European Research Infrastructure Consortium.

ERIC Regulation –
Council Regulation (EC) Nº 723/2009, 25 June 2009 on the Community legal framework for a European Research Infrastructure Consortium (ERIC).

ERICON-AB –
European Research Icebreaker Consortium – *RV Aurora Borealis.*

ESA –
European Space Agency.

ESF –
European Science Foundation.

EU –
European Union.

Genavir
is a French economic interest grouping in charge of management of research vessels.

IFREMER –
Institut Français de Recherche pour l'Exploitation de la Mer.

IGA –
International Space Station Intergovernmental Agreement.

IMO –
International Maritime Organisation.

IODP –
Integrated Ocean Drilling Program.

ISS(P) –
International Space Station (Program).

LAP –
Legal Advisory Panel.

Long Term Users –
Users of the vessel entered into a long term agreement.

NASA –
US National Aeronautics and Space Administration.

NATO –
North Atlantic Treaty Organisation.

NERC –
UK Natural Environment Research Council.

NRV Alliance –
NATO Research Vessel Alliance.

NSF –
US National Science Foundation.

NURC –
NATO Undersea Research Center.

OFEG –
Ocean Facilities Exchange Group.

Owners –
States or other entities having the exclusive right to use, possess and dispose of the vessel in accordance with the terms of *AURORA BOREALIS* ownership agreement and other agreements entered into with a flag State.

Partners –
Owners and/or the Long Term Users of the vessel.

Project (or ***Aurora Borealis* Project**) –
Aurora Borealis research icebreaker project.

RIF –
French International (ship) Register.

RV Aurora Borealis –
Research Vessel *Aurora Borealis.*

SHARE –
Survey of Health, Ageing and Retirement in Europe.

Short Term Users –
Users of the vessel entered into a short term agreement.

Third Parties –
Institutions or entities not being *AURORA BOREALIS* Partners (neither Owners nor Long Term Users).

UNCLOS –
United Nations Convention on the Law of the Sea, 1982.

Users –
States or other private or public entities having the right to use the vessel in accordance with the terms of the vessel sharing agreement and other agreements.

2. Abstract

Introduction

The concept of the multipurpose research icebreaker *Aurora Borealis* was initiated in the context of the important role that rapid warming in the Arctic[1] is playing in the global climate, together with a relatively poor scientific knowledge of the polar ocean basins as well as their high importance for understanding the tectonic evolution of the Earth and global climate change, and their influence on people and ecosystems around the world[2].

To fulfil the demands of the scientific community *RV Aurora Borealis* was planned as a unique vessel integrating the concept of three different vessels – a multifunctional research vessel for all marine research fields, a scientific drilling vessel for extracting drilling cores from the deep sea, and a heavy ice breaker comparable with the most powerful icebreakers in the world. These integrated functionalities make her a new state-of-the-art polar research infrastructure, capable of operating year-round in all polar regions of the world's oceans.

The European project "European Research Icebreaker Consortium – *RV Aurora Borealis*" (ERICON-AB) was financed by the European Commission under the 7th Framework Program as a preparatory phase in order to prepare the strategic, scientific, legal, financial and governance frameworks for the vessel[3].

The present document is part of the legal work package. Its objective is to compare and assess different legal instruments suitable for the implementation of the research icebreaker *Aurora Borealis* in order to provide a list of recommended scenarios for a legal implementation structure to be used for the facility, but also to provide broader advice on the legal framework with regard to the implementation of the Project.

To achieve this goal the practice of different national and international entities and research institutes managing polar and marine research vessels, and in particular multinational vessel sharing agreements, have been analysed. We have also researched the ship management scheme and vessel and equipment sharing systems of the following entities and programmes: Genavir, NATO Undersea Research Center, European Consortium for Ocean Drilling Research, Integrated Ocean Drilling Program, US University National Oceanographic Laboratory System, Ocean Facilities Exchange Group, Eurofleets and the International Space Station Program.

The current study has been organised into two chapters. The first deals with the legal nature of the instrument establishing *AURORA BOREALIS*, the second is devoted to public vessel immunity and ship registry issues. Both chapters provide recommendations and a number of suitable scenarios for the implementation of the *Aurora Borealis* Project.

Chapter 1. Legal nature of the instrument establishing *AURORA BOREALIS*

As a result of this study three legal scenarios with regard to the ownership of the vessel have been identified as the most suitable for the establishment of *AURORA BOREALIS*:
1) International legally binding agreement;
2) European Research Infrastructure Consortium (ERIC)[4];
3) Contract (limited liability company or association).

The whole legal framework can be organised through several levels (as for the International Space Station Program), with only the first level being governed by a multinational agreement, ERIC or private law legal instrument that would either shape the general structure of the whole partnership[5] (ownership and operation of the vessel), or determine the legal relationship between the owners of the vessel (with respect to the shares in the case of the limited liability company). Such a multilevel legal structure will confer a sufficiently flexible framework for the Partners.

As for the operation of the vessel, she could be operated either via a European or International Polar Research Agency specifically set up for the purposes of the *Aurora Borealis* Project (similar to the NATO Undersea Center) or via a consortium of the Long Term Users[6] with the management office sited in one of the countries owning the vessel.

As the nature of the ownership of the vessel and the nature of the envisaged activities (mainly research) have an impact on the legal status of the vessel, these issues have been addressed in the second chapter of this document that deals with public vessel immunity and ship registry.

1. For more information on the effects of warming in the Arctic see "Scientific Facts on Arctic Climate Change", http://www.greenfacts.org/en/arctic-climate-change/index.htm
2. The long-term environmental history and tectonic structure of these realms are insufficiently known. The Arctic and polar Southern Ocean are critical for understanding the climate and tectonic evolution of the Earth, but currently remained essentially un-sampled.
3. http://www.eri-aurora-borealis.eu/
4. Council Regulation (EC) No 723/2009, 25 June 2009.
5. In the general and not legal meaning of this term.
6. The Users of the vessel entered into a long term agreement.

Chapter 2. Public vessel immunity and ship registry

Bearing in mind the projected areas of the operation of *RV Aurora Borealis* (waters under national jurisdiction of different States) and the nature of the envisaged activities (*RV Aurora Borealis* is envisaged to be employed mainly on government and non-commercial service), it has been recognised by the Legal Advisory Panel that it would be desirable for the vessel to enjoy the privileges granted by the Convention on the immunity of State-owned ships 1926[7] (immunity from civil suit and criminal prosecution of the coastal State; payments for obligations and settlement of disputes on a State-to-State basis), provided *AURORA BOREALIS* complies with the necessary legal requirements.

According to the Convention on the immunity of State-owned ships, immunity only applies if *RV Aurora Borealis* is exclusively employed on non-commercial governmental service. In this regard, specific attention has been drawn to the notion of "restrictive" immunity, i.e. immunity not available for commercial activities. The vessel will be immune while on non-commercial service, and will lose this immunity while on commercial work.

It appears from the Convention on the immunity of State-owned ships 1926 and customary law that to enjoy immunity the vessel has to be either owned or operated by a State. In the context of the multinational ownership of *RV Aurora Borealis*, the available legal tools permitting to the vessel to comply with these specific requirements have been successively analysed. We conclude the second chapter with recommendations on the necessary agreements for *AURORA BOREALIS* to enter into and address the ship registration issues.

Conclusion

The final choice of the most suitable ownership and operation structure for *AURORA BOREALIS* will naturally depend on its funding structure, and the will and commitment of the Partners involved in the Project at its implementation stage.

In this context, the recommendations provided and the proposed legal structures should be regarded as theoretical proposals based, however, on the experience of existing comparable successful legal structures as well as on assumptions of what could be advantageous for this kind of project. These proposals are broad enough to fit the particular needs and wishes of potential Partners who will therefore be able to choose one of them according to the specific requirements and wishes that may pertain at the implementation stage of the Project.

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7. Convention for the Unification of Certain Rules Concerning the Immunity of State-Owned Ships 1926.

3. Introduction

3.1 Background[8]

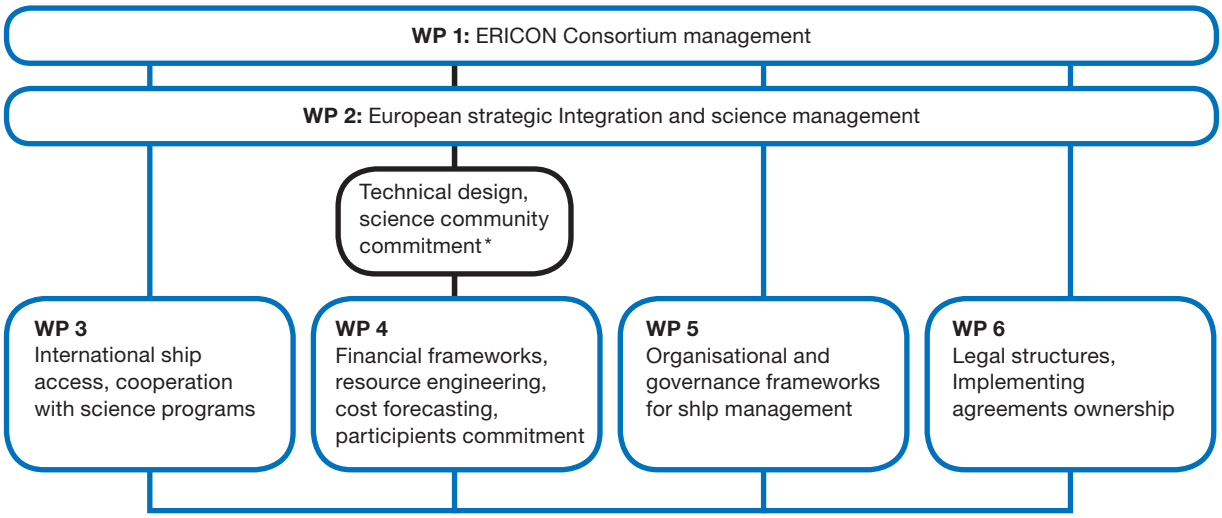
The European Project "European Research Icebreaker Consortium – *RV Aurora Borealis*" (ERICON-AB) is financed by the European Commission under the 7th Framework Program (with a budget of 4.56 million euros) and managed by the European Science Foundation (ESF, Strasbourg) and the Alfred Wegener Institute for Polar and Marine Research (AWI, Bremerhaven). Running from 2008 to 2012, it prepares the strategic, scientific, legal, financial and governance frameworks for the vessel. These are required for advancing the decision-making process of national governments to commit financial resources for the construction and operation of *RV Aurora Borealis*. Currently, eleven countries are participating in this preparatory project: Belgium, Bulgaria, Denmark, Finland, France, Germany, Italy, The Netherlands, Norway, Russia and Romania, with additional interest to cooperate with ERICON-AB expressed by Spain and Ireland.

The European Polar Board started the *Aurora Borealis* Project initiative around 2000. Ideas for a new type of research icebreaker was intended to provide the international polar research community with a new range of operational and technical capabilities, including scientific drilling within pack ice, that no other ship could offer.

The Arctic and polar Southern Ocean are critical for understanding the climate and tectonic evolution of the Earth, but currently remain essentially un-sampled. The long-term environmental history and tectonic structure of these realms are insufficiently understood. Therefore polar ocean basins remain a significant challenge for a future scientific ocean drilling programme to access. Dedicated research vessels capable of operating during all seasons of the year and under unfavourable weather conditions in the central Arctic Ocean and in the Southern Ocean are needed for polar ocean research in all marine disciplines. Based on cruise experiences of few existing research icebreakers and the scientific need to have access to the deep Arctic basin in winter and to drill in there in the summer time the European Polar Board under the lead of the its past chair Prof. Jörn Thiede took the initiative to develop a plan for a novel and unique European polar research icebreaker. The *RV Aurora Borealis* concept was born to fulfill the demands of diverse scientific communities: a polar science community requiring a vessel for conducting year-round marine work with a wide spectrum of scientific perspectives, and a deep-sea drilling community using the vessel mainly during the summer months with optimal ice conditions.

Taking into account the needs of the scientific community, the Alfred Wegener Institute (AWI) commissioned the University of Applied Sciences Bremen and Hamburg Ship Model Basin (HSVA) in 2004 to undertake a technical feasibility study for a vessel, and this provided the initial design concepts and proved that such a vessel could be technically realised.

8. Based on the extracts from B. Wolff-Boenisch, L. Lembke-Jene, R. Azzolini, N. Biebow, P. Egerton, O. Eldholm, J. Thiede, "White Paper, Drilling Polar Oceans: Aurora Borealis – potential future IODP Platform", Bremen, Germany, 23-25 September 2009, IODP Invest Conference as well as on the information provided by ERICON-AB Management Team and available on the web site http://www.eri-aurora-borealis.eu/.



* Funded by the German Federal Ministry of Science and Education

The science perspective and technical study were presented to the German Council of Science and Humanities (Wissenschaftsrat[9]) in 2006 for evaluation. Following the Wissenschaftsrat's positive evaluation and recommendation to realise the *RV Aurora Borealis* as an international platform in close collaboration with other European countries, pending the solution of remaining open technical questions, the Federal Ministry of Education and Research (BMBF) granted funds to the AWI to design new technical features and solutions required for the *RV Aurora Borealis* and to set up a European consortium of interested partner countries. The AWI tasked Wartsila Ship Design Germany (WSDG) with the conceptual technical design and developed the current scientific and technical layout of the research vessel. This current design is based on the recommendations of the Wissenschaftsrat and critical analysis of scientific users' needs combined with future logistical and technical demands of the international polar science community.

RV Aurora Borealis model tests were conducted in the ice tanks of Aker Arctic Technology in Helsinki and in the various facilities of the Hamburgische Schiffbau Versuchsanstalt (HSVA). The data gathered from these tests formed the basis and the confirmation of the ideas and development work of the design engineers on this ambitious and special vessel (see section 3.2 below).

ERICON-AB precedes as a preparatory phase the establishment of political and financial commitments for the realisation of the vessel in a pan-European context. Governance and financial models and long-term strategic science planning are being developed within other ERICON-AB work packages, each with advice from dedicated advisory panels consisting of experts nominated by stakeholders. ERICON-AB Work Package 6 in this context is tasked with resolving legal aspects and helping with expert advice in the foundation of a dedicated legal entity for the construction and operation of the research infrastructure *RV Aurora Borealis*.

3.2 Technological characteristics of *RV Aurora Borealis*[10]

RV Aurora Borealis is a technically unique multipurpose research vessel for deployment in polar areas and the open sea during any season of the year. She is designed for research activities in the Arctic and Antarctic and for intermediate ice-free seas, including warm tropical waters.

The vessel integrates the concept of three different vessels in one: a multifunctional research vessel for all marine research fields, a scientific drilling vessel for extracting drilling cores from the deep sea, and a heavy ice breaker comparable with the most powerful icebreakers in the world. This makes *RV Aurora Borealis* a new state-of-the-art polar research infrastructure, capable of operating year-round in all polar regions of the world's oceans.

RV Aurora Borealis has the capability of moving independently into the extreme ice areas of the poles without an escort at any time of the year. The specific hull shape of *RV* Aurora *Borealis* allows her to break through ice 2.5m thick and very firm multiannual ice at a continuous speed of about 3 knots and even to overcome ice reefs of up to 15m high by ramming. She is also able to position dynamically in the drift of ice surfaces that are at least 2.5m thick.

The vessel can be held at the drilling position for an extended period with the required precision under the most difficult ice conditions. To ensure drilling in the ice through a moon pool, dynamic positioning in drift ice from a stationary position was developed as a world's first. This entails holding position by employing powerful and robust manoeuvring facilities.

Currently this kind of expedition cannot be carried out by any other icebreaking ship in the world.

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9. The Wissenschaftsrat is the highest German scientific advisory body to the German Federal and State governments. It reviews and issues recommendations on national developments in science, research infrastructures as well as the university sector, and ensures the national and international excellence of German research and education in science and humanities.

10. A.Delius, B. Pruin, W. Dolling, Project Summary Extract related to Patents, "Icebreaker, drilling platform and multi-purpose research vessel *Aurora Borealis*", 7-990.01-0218.01.

3. Introduction

Principal technical characteristics of RV Aurora Borealis:

Vessel type: Heavy icebreaker with highest IACS Ice Class: Polar Class 1.

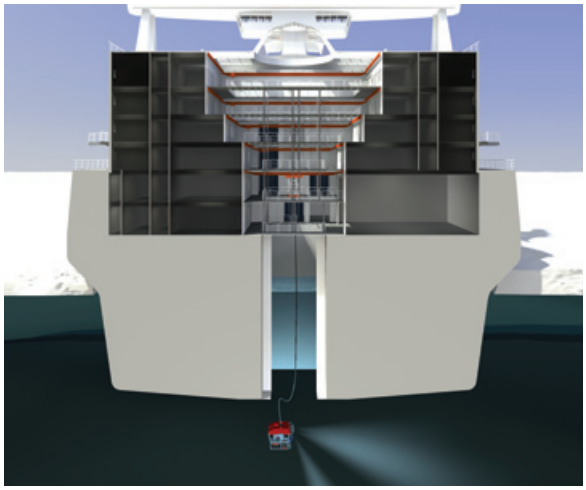
- Length overall: 199.85 m
- Max. cruise speed in open water: 15.5 kn
- Propulsion: diesel-electric
- Operational temperature limit: full functional capability to –50°C, working capacity +45°C to –30 °C
- Berthing capacity: 120 (science and crew)
- Dynamic positioning: in drifting ice of up to 2.5 m thickness and in open water
- Icebreaking capacity: more than 2.5 m multi-year ice with 2 – 3 kn
- Moon pools: 1 for scientific drilling, 1 for other science equipment deployment, 7×7 m size each.
- Drilling rig: riserless drilling, 85 m height above keel. Max. static hook load: 680 mT, heave compensated
- Max drilling depth: 5000 m water depth, >1000 m below mudline
- Helicopter hangar and landing deck capacity for 3 helicopters

The new technological features of the autonomous research icebreaker include dynamic positioning for precise station-keeping in closed sea-ice cover during drilling, advanced ice-forecasting and management as well as multiple helicopter support. The scientists are also able to deploy and operate remotely operated vehicles (ROV) and autonomous underwater vehicles (AUV) from the twin moon pools.

Due to her unique technical characteristics *RV Aurora Borealis* is able to conduct expeditions in the most extreme, hitherto barely explored regions of the Earth throughout the year and thereby gather knowledge about geological history, climatic development and current environmental impacts relating to the polar regions.

3.3 Scientific relevance of *RV Aurora Borealis*

RV Aurora Borealis offers possibilities extending beyond the capacities of an individual nation. Complex interdisciplinary experiments are mostly conducted in close international co-operation. Thus, the European Polar Board, the standing polar expert committee of the ESF, developed the scientific perspective for this new vessel and stressed the significant potential for major advances in the fields of climate change, biology and ecology, geosciences, chemical and physical oceanography and atmospheric sciences that control the central Arctic and



Fore moon pool with atrium and cupola roof as well as lateral icebreaking flanks © AWI/SCHIFFKO PRV 200

Antarctic environments[11]. It also specified the benefits of supporting research in socio-economical development, including future opening of passageways in the Arctic Ocean, the discovery of carbon energy resources or the development and design of mitigation plans for global change in the polar regions in a new and holistic way.

RV Aurora Borealis is optimally equipped for all research activities of geology, geophysics, oceanography, biology, glaciology, meteorology and other sciences. Spacious laboratory areas with appropriate ceiling heights are available on the large spaces of the free work deck around the forward moon pool. There are around 190 storage positions for laboratory containers, cooling containers for drilling cores and samples, provisions and other supply containers.

In addition to the possibilities of setting up scientific equipment, the forward moon pool is available in the weather-protected area. Arranged over several floors around the 7×7 m well shaft are laboratory rooms and storage positions for 32 mobile laboratory containers in an atrium. A transparent dome over the shaft with prismatic light deflection provides for optimal, energy-conserving lighting with a daytime atmosphere. This cover can be shifted to allow for the delivery of containers and larger devices.

The access to the moon pool at various levels allows for scientific work on each of the decks. In this regard it should be mentioned that one of the three patents

11. J. Thiede, P. Egerton, "Aurora Borealis: A Long-Term European Science Perspective for Deep Arctic Ocean Research 2006-2016", 2004, published on behalf of European Polar Board and ECORD by European Science Foundation, Strasbourg, France.

granted to Wärtsilä Ship Design Germany GmbH relating to the technical design is for the atrium concept for a covered moon pool working area.

Realising this new major infrastructure facility will add substantial new capacities to marine polar research; it will raise marine polar research in Europe to a new level and place the participating countries in a position of international leadership. It will free up capacities of existing polar research vessels and result in the generation of new joint research programmes at the European level – an important long-term aspect of this infrastructure. *RV Aurora Borealis*, as a multipurpose vessel, will serve all scientific disciplines allowing access to key Arctic areas in all seasons, including winter, enabling monitoring in transit as well as at specific research stations[12].

3.4 Methodology of work on the document

This report is the first document of work package 6 focusing on the "Legal Structures –implementing agreements, ownership and operational barriers".

Work package 6 aims to provide recommendations on substantial legal matters relating to the future adoption of a legal implementation structure for *RV Aurora Borealis*.

The objective of this document is to compare and assess different legal instruments suitable for the implementation of the research icebreaker *Aurora Borealis* in order to provide a list of recommended scenarios for a legal implementation structure for the facility, but also to provide broader advice on the legal framework with regard to the implementation of the Project.

The discussions held within the Legal Advisory Panel, composed of legal experts from various legal fields and countries, were used as guidelines in the course of the work on this document.

This study has been drawn upon the experience of similar initiatives carried out by either ESFRI projects[13] or the European Commission on the potential legal forms for research infrastructures[14].

Furthermore, the practices of different national and international entities and research institutes managing polar and marine research vessels, and in particular multinational vessel sharing agreements, have been analysed for the purposes of the present study. We have researched the ship management scheme and ship and equipment sharing systems of the following entities and programmes: Genavir, NATO Undersea Research Center, European Consortium for Ocean Drilling Research, Integrated Ocean Drilling Program, US University National Oceanographic Laboratory System, Ocean Facilities Exchange Group and Eurofleets.

The legal aspects of the International Space Station Program, a successful example of multinational ownership and operation of a large-scale infrastructure, have also been carefully examined.

A number of contractual and legal documents and legislation in relation to the issues addressed in the present report have also been analysed but will not be necessarily referred to for, notably, confidentiality reasons.

At this preliminary stage and in the absence of any definitive agreement and guidance from the countries that will take part in the implementation of the Project, it appeared to be crucial to assume, for the purpose of this document, the following working hypotheses:

1. The vessel will be owned solely by the EU Member States' interests. Non EU Member States' interests are involved in the operation of the vessel.

2. The vessel will be owned jointly by the EU Member States' interests and Non EU Member States' interests.

These working assumptions are broad enough to enable a broad overview of the existing legal instruments and their analysis in terms of suitability for *AURORA BOREALIS*, and also to elaborate a legal framework adaptable to different scenarios with regard to the future ownership of the vessel.

As the Project will require establishing a legal entity as owner of the vessel (or an agreement on a co-ownership structure), the legal nature of the instrument (international agreement, European instrument, contract) establishing *AURORA BOREALIS* will be analysed in the first Chapter of this document (Chapter 1).

As the nature of the ownership of the vessel and the nature of the envisaged activities (mainly research activities) have an impact on the legal status of the vessel, these issues will be addressed in the second Chapter of the document dealing with public vessel immunity and ship registry (Chapter 2).

12. V. Willmott Puig "AURORA BOREALIS: a two-pole approach", Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany.
13. For example, Deliverable 2.1.1 "Report on options for a legal entity", PRACE Partnership for Advanced Computing in Europe.
14. See the documents available on http://ec.europa.eu/research/infrastructures/index_en.cfm

Chapter 1. Legal nature of the instrument establishing *AURORA BOREALIS*

The selection of the most adequate legal instrument for the implementation of the *Aurora Borealis* Project has been performed in the light of several major criteria taking into account the specific nature of the Project itself and the nature of its potential funders, and therefore considered to be important for the Project.

The selected criteria are in line with and reflect the recommendations of the Financial Advisory Panel (FAP) and Legal Advisory Panel (LAP).

Section 1
Criteria for the selection of the most suitable legal instrument establishing *AURORA BOREALIS*

The important features to be considered when analysing different legal instruments suitable for *AURORA BOREALIS* are the following:

1. Recognised legal personality

First of all, the legal instrument opted for the establishment of *AURORA BOREALIS* should be the one recognised in all potential Project funder countries.

A legal entity with separate legal personality would be an obvious advantage for *AURORA BOREALIS* as it is considered separately from its individual members or shareholders. Therefore it shields its members from personal liability[15], it retains its own rights and responsibilities such as owning property, entering into contracts or incurring debt, and the separate legal entity is able to sue or to be sued in its own name.

A co-ownership structure should also be analysed as a possible alternative in the event of the Partners deciding not to opt for the establishment of a separate legal entity. This structure could appear appropriate if the funding and ownership is organised at an inter-State level, similar to the NATO research vessels scheme referred to hereunder. It should be mentioned however that the main and essential disadvantage of this structure is the absence of the 'corporate veil' protecting the co-owners from personal liability.

2. Limited liability

Limited liability, whereby a person's financial liability is limited to a fixed sum, allows the members (shareholders) of the legal entity (with working name *AURORA BOREALIS)* to be shielded from personal liability and also places a limit on their liability of the value of the investment in the legal entity.

Bearing in mind the importance of the construction and operational costs of *RV Aurora Borealis* (around 800 million euros foreseen for the construction phase and 40–45 million euros per year for the operation of the vessel[16]), as well as the potential claims that could occur in connection to *RV Aurora Borealis*'s research activity, the potential benefits afforded by limited liability appear to be of high importance.

In this regard it should be mentioned that the limitation of liability inherent to international maritime claims[17] cannot provide sufficient guarantees to the Partners because the specific maritime limitation of liability does not encompass all the spheres of potential claims to which *RV Aurora Borealis*' owners and operators could be subject to.

Moreover, the current representatives of the member countries of the Project expressed strong support for opting for a limited liability legal form. They furthermore underlined that limited liability would also facilitate the decision-making process of future participants, encouraging them to join the legal form selected.

3. Flexible governance

The rules on governance (a set of processes, policies and laws affecting the way the legal entity is directed, administered or controlled) of the legal structure should be adapted to the specificity of the operation of *AURORA BOREALIS*.

It would be preferable for the legal form to allow the necessary degree of freedom to ensure the most appropriate and flexible administration of the scientific and technical aspects of the facility and provide a convenient governing structure for the Partners.

In this context, the choice of the legal form should take into account the outcome of work package 5, dedicated to the organisational and governance framework for the management of the vessel[18].

4. Ownership and share transfer

The number of participants and the allocation of shares among participants is likely to vary during and after the

15. It is worth noting however that the doctrine of piercing the corporate veil allows in some situations the rights or duties of a corporation to be treated as the rights or liabilities of its shareholders or directors.

16. Figures obtained in 2010.

17. Ndende M., "Limitation de responsabilité des propriétaires de navires et autres opérateurs en présence de créances maritimes", Droits Maritimes, Dalloz Action 2009/2010, chapitre 364.

18. Notably Deliverable 5.1 "Advanced recommendations on the structure and decision making of parties involved in management of the vessel" (Aurora Borealis Project).

implementation of the Project. A legal form with a flexible share framework is therefore recommended. However, it should be mentioned that this issue will strongly depend on the will and wishes of the main funder–owners of the vessel.

5. Reputation of the legal form

A legal form which has already successfully been used in the past for the implementation of similar research infrastructures could be considered as a guarantee for potential funders. But a new legal form, European Research Infrastructure Consortium (ERIC), especially if it provides a more advantageous framework for the implementation of *AURORA BOREALIS,* should not be excluded from the analysis if it appears to be compatible with the requirements of the Project.

6. Designed for research

By its nature *AURORA BOREALIS* is designed as a research undertaking for the specific purpose of meeting needs in the general interest, not having an industrial or commercial character. Therefore existing research organisations should be analysed in order to identify the advantages of the legal forms they have adopted and their potential transferability to and compatibility with *AURORA BOREALIS*.

7. Non-profit purpose

Notwithstanding some residual sporadic commercial operation of *RV Aurora Borealis* (for instance, for the periods when the vessel is not employed for research activities or in the case of applied research), the vessel is intended to be mainly operated for non-commercial purposes. The nature of *AURORA BOREALIS* activities is therefore essentially not-for-profit; its primary aim is for scientific excellence and meeting needs in the general interest, not for distribution of funds to shareholders.

With regard to the financial criterion mentioned hereunder (criterion n°8), it should be underlined that non-profit organisations usually enjoy different tax exemptions.

8. Compatibility with funding model

The legal instrument for the establishment of *AURORA BOREALIS* should be compatible with the funding model and the cost-sharing strategy decided on and recommendations provided in the course of the work of the Financial Advisory Panel (FAP) within work package 4 “Financial frameworks, resource engineering and cost forecasting for multi-country commitments to construction and operations”.

Tax exemption

According to the FAP, the possibility to benefit from tax exemptions is important but is not necessarily a prerequisite for the selection of the legal form. However with a budget of around 800 million euros foreseen for the construction phase and 40–45 million euros for the operation of the vessel, any tax exemption is to be considered of high importance for the Project.

Exemption of procurement law

The status of the future *AURORA BOREALIS* and the nature and the value of the contract[19] are likely to trigger the application of Directive 2004/18/EC on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts[20], or of similar international or bilateral and plurilateral procurement regulations[21].

Article 1, §9 of Directive 2004/18/EC provides a broad definition of the contracting authority subject to procurement rules[22]. According to these rules, the future *AURORA BOREALIS* is most likely qualifies as a contracting authority under this Directive:

(a) the nature of the envisaged activities (mainly non-commercial research) of *AURORA BOREALIS* complies with the first Directive’s criterion of the body “established for the specific purpose of meeting needs in the general interest, not having an industrial or commercial character”;

(b) moreover, *AURORA BOREALIS* is likely to have a legal personality as required by the Directive’s second criterion (provided a co-ownership structure without a separate legal personality is not opted for by the Partners);
and finally,

(c) the financing expected for the construction of *AURORA BOREALIS* corresponds with the Directive’s third criterion referring to mostly public financing or public control of the legal entity.

19. The value of the contract is far above the threshold established by the Directive 2004/18/EC on procurement law.
20. Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts.
See, for example, EU procurement guidance, Introduction to the EU procurement rules, OGC Guidance, March 2008.
21. Public procurement rules also apply outside the EU according to the agreement on government procurement (GPA) negotiated by the World Trade Organisation and different agreements between EU and non EU countries. For example, the EU procurement law has been implemented into the EFTA countries via EEA Agreement.
22. Sousse M., “Marchés publics de travaux”, JurisClasseur Propriétés publiques, Fasc. 22, 2008, §11 et suiv. ; Noguellou R., « Notion des marchés publics », JurisClasseur Construction Urbanisme, Fasc. 70, 2008, § 86 et suiv.

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According to the FAP, the exemption of procurement rules would favour the use of in-kind contribution in the cost-sharing model of the vessel[23]. The exemption of procurement rules would allow better management of in-kind contributions which represent an important leverage to reach the necessary level of funding needed for the construction of *RV Aurora Borealis*.

Cost of set up

The costs for setting up the legal form should also be considered in order to avoid an additional financial burden for the future funders.

9. European or international character

The selected legal forms should comply with the requirements of the two above-mentioned working hypotheses, i.e. an exclusively European venture or an international partnership[24] involving the non-EU Member States. Consequently, an European law legal form or international binding agreement appear to be the most appropriate legal instruments.

According to the experts of the Legal Advisory Panel[25], the choice of a national law legal entity could be governed by practical reasons, as a lot of these forms have proved their efficiency. However, it has been emphasised that it is most likely that the States could be reluctant to transfer funds to a private company registered in a different country.

10. Time for implementation

The implementation time is an additional criterion that should be taken into account. A reasonable period of implementation compatible with the time requirements of the Project is obviously preferable.

In conclusion, it should be underlined that the final proposal of the most suitable ownership structure for *AURORA BOREALIS* depends in particular on the funding structure opted for, and the will and commitment of the Partners. Therefore, the final choice of the legal structure for the ownership and operation of *RV Aurora Borealis* will depend on the interests and commitments of the Partners involved in the Project at its implementation stage.

In this context, the proposed legal structures hereunder should be regarded as theoretical proposals based on the experience of existing comparable legal structures as well as on assumptions of what could be advantageous for this Project. These recommendations are broad enough to fit the particular needs and commitments of the potential Partners.

Without knowing specific requirements of future Partners a detailed and comprehensive investigation of all the legal issues could not be provided at this stage and moreover would have been inappropriate. Therefore, the purpose of the current study is to provide a general overview of existing legal instruments, underlining their advantages and disadvantages, in order to identify three legal scenarios with regard to ownership of the vessel that could be considered as the most suitable ones[26]. At the implementation stage of the Project, the Partners will thus be able to choose the proposed scenario which is most in line with their expectations.

We will first examine international agreement as a potential legal instrument establishing *AURORA BOREALIS* (Section 2). We will then assess relevant European law in order to establish whether a European instrument could be a suitable legal option (Section 3) and we will finish our study with an analysis of contract as a potential legal alternative for *AURORA BOREALIS* (Section 4).

Section 2
International agreement as the legal instrument establishing *AURORA BOREALIS*

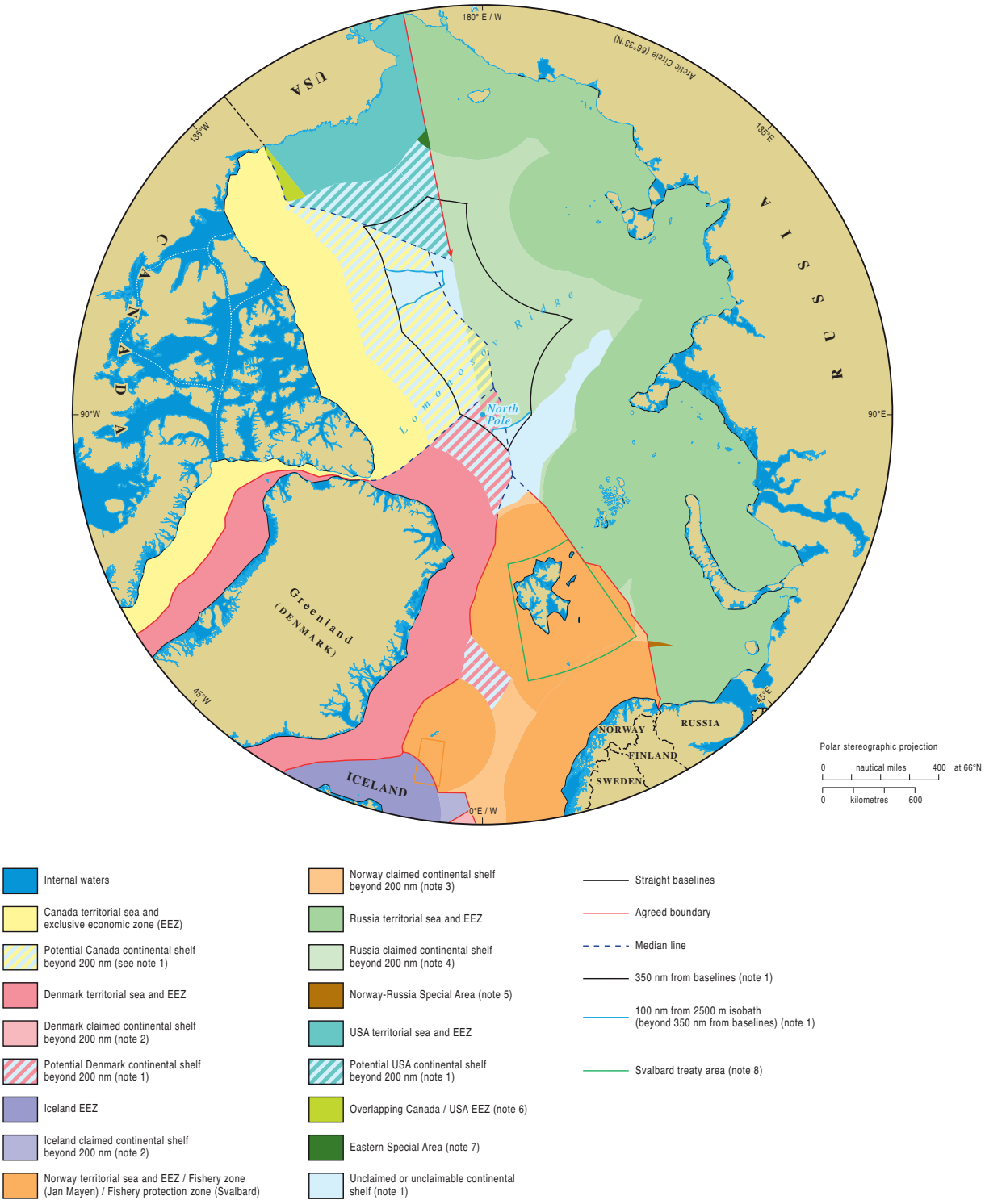
Bearing in mind the projected areas of the operation of the *RV Aurora Borealis* (areas under national jurisdiction) and the nature of envisaged activities, the necessity of government involvement was strongly emphasised by the Legal Advisory Panel at its second meeting in Strasbourg.

It has been stressed that a joint commitment from Arctic rim countries to provide permissions to conduct research on their continental shelf or in their EEZs, territorial or internal waters is an indispensable precondition for the *Aurora Borealis* Project.

In the context of such a large-scale project, an international legally binding agreement has been approved by the Legal Advisory Panel[27] to be a particularly suitable instrument for *AURORA BOREALIS*.

Moreover it perfectly suits both working hypotheses mentioned in the introduction to this study: it is appropriate in both cases whether the ownership of the vessel is held solely by the EU Member States' interests or jointly with Non-EU Member States' interests.

23. Weber J., Deliverable 4.2 "Initial business planning Perspective Document of Construction costs shares and Initial proposed models of participation", Annex 3-2.3.
24. In the general and not legal meaning of this term.
25. Minutes of the 2nd Legal Advisory Panel, p.6.
26. Subject to specific future needs or requirements that have not been expressed by the Partners at this stage.
27. Minutes of the 2nd Legal Advisory Panel meeting, p.3-4.



Maritime jurisdiction and boundaries in Arctic, International Boundaries Research Unit (IBRU), Durham University, Updated: 14 February 2011, © http://www.dur.ac.uk/ibru/resources/arctic/

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In this regard, it should be mentioned that there is a number of successful multinational programmes based on international agreements that could be used as a basis for *RV Aurora Borealis* cooperation (Integrated Ocean Drilling Program, NATO scientific vessels operation programmes, International Space Station Program, and others).

1. Constraints of international agreement as the legal instrument establishing *AURORA BOREALIS*

A lengthy and complicated negotiation process and ratification procedure were identified as the main constraints of an international legally binding agreement at the 1st Legal Advisory Panel meeting[28].

At the second Legal Advisory Panel meeting[29] some experts noted, however, that, contrary to common opinion, the establishment of an international agreement is not necessarily time-consuming. Much depends on political will.

Moreover, the Partners do not necessarily need to organise all their relationships on the basis of multiple international legally binding agreements that would require ratification at national level. The legal framework can be organised through several levels, with only the first level being a multinational agreement that would shape the general structure of the whole partnership[30].

The International Space Station Program (ISSP) is an example of how such a multilevel international legal framework can be used successfully.

2. A legal framework with several levels

The ISSP legal framework is built on three levels of international co-operation agreements[31].

The International Space Station (ISS) is a co-operative programme between the United States, Russia, Canada, Japan and Europe. It is governed by an international treaty, signed by the Member States on 29 January 1998, called the ISS Intergovernmental Agreement (the IGA), which provides the general framework for design, development, operation and utilisation of a permanently inhabited civil space station for peaceful purposes (**1st level**).

Furthermore, bilateral memoranda of understanding have been entered into between NASA and each of the four associated space agencies: The European Space Agency (ESA), Russian Federal Space Agency, (FKA or Roscosmos, formerly Rosaviakosmos), the Canadian Space Agency (CSA) and the Japanese Space Agency (JAXA, formerly NASDA), outlining relevant ISS responsibilities, obligations and rights between the agencies (**2nd level**).

International Space Station, © http://www.spaceflight.esa.int/users/index.cfm?act=default.page&level=11&page=iss01-atiss

The space agencies then entered into various bilateral implementing arrangements to implement the memoranda of understanding. These implementing arrangements distribute concrete guidelines and tasks among the national agencies (**3rd level**).

The ISSP agreements govern ownership of the various components of the ISS, rights to crewing, rights of utilisation of space and crew time and responsibilities for crew rotation and station resupply.

The "ISS utilisation pie" is shared as follows: US: 76.6%; Japan: 12.8%; Europe: 8.3%; Canada: 2.3%[32].

The ISSP appears to have similar needs to *AURORA BOREALIS* in terms of scientific crew rotations and time sharing. The allocation of ship time or berths for the scientists on board *RV Aurora Borealis* will depend on the financial or in-kind participation of the Partners in the construction and operational costs.

3. Co-ownership structure

The ownership structure of the International Space Station is rather complex: different States retain full ownership of different components of the Station (e.g. the Russian Federation retains full ownership of its own modules in the Russian Orbital Segment). This complex legal scheme does not need to be reproduced for *RV Aurora Borealis*. Space law and space programmes have their own characteristics, requirements and policies that

28. Minutes of the 1st Legal Advisory Panel meeting.
29. Minutes of the 2nd Legal Advisory Panel meeting, p. 3.
30. In the general and not legal meaning of this term.
31. See http://www.esa.int/ and http://search.nasa.gov/
32. Basic rules for ISS utilisation, Farand A., "Opening up ISS Utilisation Opportunities to New Participants", 17 February 2011, The International Space Station: maximising the return from extended operations, 15th ISU Annual International Symposium, Strasbourg 15-17 February 2011.

NRV Alliance, © Ivan S. Abram

are not necessarily easily transferable to projects of a different nature.

On the other hand, the ownership structure, management and operation of the NATO research vessels *Alliance* and *Leonardo* could be transposed to some extent to the *Aurora Borealis* Project.

NRV Alliance conducts underwater research and a wide range of experiments in all oceans of importance to NATO, from the Mediterranean to the polar margins of the North Atlantic. At 93 metres long and with 400 square metres of laboratory space, the *Alliance* facilities include extensive and sophisticated navigation, communications and computer equipment. She has also been designed with a reduction of ship-generated noise facilitating, for example, approach of the mammals[33].

The coastal research vessel *Leonardo* embraces a wide range of systems and hardware from numerous NATO nations and thus significantly enhances NATO's capabilities, especially in shallow seas.

The unique feature of these vessels is that they are the only two that are under joint ownership of the 28 member nations of NATO. The vessels' co-ownership structure is established on the basis of international agreement. The custody of the vessels is entrusted to the NATO Supreme Commander and delegated to the NATO Undersea Research Centre (NURC), located at La Spezia (Italy).

This successful example of ownership and operation of the *Leonardo* and *Alliance* vessels could be transposed to some extent to the *RV Aurora Borealis* Project as it has similar characteristics.

In this regard, it should be noted that even if both vessels are jointly owned by NATO States, the pre-existing North Atlantic organisation might have facilitated in some way the achievement of such agreements. In a similar way the European Union could be this existing framework that could facilitate the realisation of the necessary agreements between EU Member States, if the vessel is owned solely by EU Member States' interests. The vessel could be also operated via European or international polar/marine research agency (international, if the vessel is also owned by non-EU Member States) specifically set up (or pre-existing European or international body) for the purposes of the *RV Aurora Borealis*. Alternatively, the vessel could be operated through a consortium of Long Term Users with the management office situated in one of the countries that is a co-owner of the vessel.

The main disadvantage of the co-ownership structure described above is the absence of the corporate veil shielding the co-owners from personal liability[34]. Therefore, establishment of an international organisation with a separate legal personality could be preferable with regard to the 1st criterion selected for the purpose of this study.

4. Ship time sale and barter agreements

In order to optimise the utilisation of ship time the Partners can barter or sell their unused ship time among themselves and/or to other countries who are non-Partners in a similar way as ESA and the other **International Space Station** partners do with regard to their utilisation of the Space Station's resources[35]. According to article 9 of the IGA, "the Partners shall have the right to barter or sell any portion of their respective allocations. The terms and conditions of any barter or sale shall be determined on a case-by-case basis by the parties to the transaction".

In practice bilateral[36] and multilateral barter arrangements and vessel sharing agreements (such as OFEG and IODP) are already used in scientific cruises on international level.

The **Ocean Facilities Exchange Group (OFEG)** provides a forum for barter exchange and co-operation opportunities for the global and ocean class research fleet between its partners (UK, France, Germany, The Netherlands, Norway, and Spain).

OFEG originates from a tripartite agreement initially signed between NERC (Natural Environment Research Council, UK), IFREMER (Institut Français de Recherche pour l'Exploitation de la Mer, France) and BMBF (Bundesministerium für Bildung und Forschung, Germany)

33. See http://www.nurc.nato.int/

34. This disadvantage could be overcome by setting up a limited liability entity by the co-owners; this legal entity would then represent its members in the relationship with third parties.
35. See http://www.spaceflight.esa.int/users/index.cfm?act=default.page&level=11&page=1980
36. For example, bilateral barter arrangements between UK Natural Environment Research Council (NERC) and US National Science Foundation (NSF) exist since the mid-1980's, http://www.nerc.ac.uk/

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in February 1996 for the mutual cooperation of marine scientific interests and activities on a 'no-money-flow' basis (i.e. barter)[37]. The main objectives of the tripartite agreement were to facilitate joint cruises, exchange of ship-time and exchange of marine equipment.

Under the aegis of this agreement, the partners established then a permanent Working Group – the Ocean Facilities Exchange Group – comprising the managers and planners of the respective fleet of scientific research ships and major marine facilities. Today OFEG members aim at maximising overall scientific output using their state-of-the-art facilities in support of their national oceanographic communities. It allows scientists access to a wider range of facilities and equipment than would otherwise be possible: 90% of the European global class and more than 50% of the ocean class academic research ships are now represented through OFEG[38].

OFEG has the following goals: to barter ship time and major marine equipment whenever they are not available on a national basis at a certain period of time or in a geographic region; to exchange technological expertise by using the equipment and technicians of partners; to provide a better overview of 'large' and 'expensive' equipment, their technical specifications, and their availability; to promote coordination of large marine investments.

Although the underlying principle is that no money changes hands, the arrangement does not provide "free" ship time. For every cruise on another organisation's ship, the member organisation must mount a full cruise on one of its own ships in return, and to an equivalent 'value'. The operating costs still fall to the ship owners, and each organisation has an appropriate scheme of banking to support the process. An equivalence points system has been agreed for the value of each of the ships, to ensure like-for-like 'value'. Points are allocated per ship or equipment day used[39].

The European research Infrastructures project **EUROFLEETS**[40] is currently developing a more ambitious and opened concept of an alliance of marine research fleets across Europe. It presently regroups 24 institutes from 16 countries (Germany, Belgium, Bulgaria, Spain, Estonia, France, United Kingdom of Great Britain, Greece, Ireland, Italy, Norway, The Netherlands, Poland, Portugal, Romania and Turkey)[41]. EUROFLEETS aims to bring together the European research fleets to enhance their coordination and promote the cost-effective use of their facilities. EUROFLEETS' networking activities strive to create a common strategic vision for European research fleets and their associated heavy equipment. Moreover, the project promotes the 'vessel open access' concept, which represents a complementary approach from the one adopted by OFEG, and aims to provide a common infrastructure access to all researchers across Europe as well as to provide all European researchers with high-level training and education.

The **Integrated Ocean Drilling Program (IODP)** is another example of an international scientific research partnership[42]. The IODP provides research platforms and opportunities for the international scientific community by combining the resources of *Joides Resolution* (US), the *Chikyū Hakken* (Japan) and mission-specific platforms operated by 16 European countries[43].

ちきゅう*(Chikyū)* ©http://eesc.columbia.edu/courses/w4937/index.html

37. The NIOZ (Royal Netherlands Institute for Sea Research, Netherlands) became a member of this agreement in 2002, followed in 2006 by both the CSIC (Consejo Superior de Investigaciones Científicas, Spain), and the IMR (Institute of Marine Research, Norway). See http://www.ofeg.org/pages/ofeg/index.php
38. Moreover, the agreement enables a significant reduction in wasted time, and therefore wasted cost, spent on long passage legs between areas of scientific interest, and permits marine scientists access to a wider range of geographical areas in a given year.
39. For more information see http://www.ofeg.org/pages/ofeg/index.php
40. EUROFLEETS is a research Infrastructures project under the 7th Framework Programme of the European Commission, http://www.eurofleets.eu/np4/home.html
41. «Le projet européen EUROFLEETS : une première étape vers une plus large coordination des flottes de recherche en Europe», Communiqué de presse, IFREMER, 24 septembre 2009.
42. In the general and not legal meaning of this term.
43. "A Primer to the Integrated Ocean Drilling Program", IODP 2008; "Scientific Drilling in the Arctic Ocean: a summary document to encourage Academic and Industry cooperation", ECORD, IODP, January 2011.

5. Charter agreements

As with the NATO *Alliance* and *Leonardo* vessels, when *RV Aurora Borealis* is not engaged in Partners' joint programmes research, she could be available for charter to one of the Partners or to third parties.

While the main activity of *RV Aurora Borealis* will be non-profit and the *AURORA BOREALIS* will be inherently a non-commercial undertaking, the possibility of residual operation of the vessel for commercial purposes should not be completely ruled out, especially for those periods when the vessel is not occupied in non-commercial research.

RV Alliance, for example, has been used for different types of ocean charters: commercial, military, government or defense related within NATO nations. Previous *RV Alliance* charters have also included ocean archaeology, historical and environmental investigation and marine mammal research. The vessel has even been chartered for a motion picture[44].

6. Advantages of an international agreement as the legal instrument establishing *AURORA BOREALIS*

The above-mentioned arrangements (ship time sale and barter agreements, and charters) allow for no-cost or more cost-effective exchanges of ship time and major marine equipment, and promote a more efficient use of each country's resources by giving the scientific communities access to a wider range of marine facilities and geographical areas in a given year than would otherwise be impossible.

This kind of international strategic partnership[45] provides a large number of advantages that go far beyond the legal considerations: technical advance, development of complementary technology and research techniques, pooling assets, spreading risks, etc.

As for the legal instrument establishing the ownership structure of the *RV Aurora Borealis*, the following main advantages of an international agreement should be underlined:

– Tailor-made instrument;
– More flexible framework of settlement of disputes (usually on a State-to-State basis);
– Possible cross-waiver of liability[46];

XXXIII Antarctic Treaty Consultative Meeting, Punta del Este, Uruguay, 01.05-15.05 2010
©Teodor Gheorghe Negoiţă, Romanian Antarctic Foundation

– Tax regulation exemptions;
– Procurement regulation exemptions.

With regard to procurement regulation exemptions, it should be stressed that even when exempted from procurement rules, such a large-scale international public partnership[47] needs to respect basic international competition rules and comply with international market transparency and competition policy, but the *modus operandi* appears to be less stringent.

An international legally binding agreement has been approved by the Legal Advisory Panel[48] to be a particularly suitable instrument for *AURORA BOREALIS* because it perfectly suits both working hypotheses introduced in the preamble of this report (when the ownership of the vessel is held solely by the EU Member States' interests or jointly with non-EU Member States' interests).

Aurora Borealis Project is a European-driven project, supported by the European Commission under Framework Programme 7. Most of the ERICON partners are European countries. In this context, and even more so if *AURORA BOREALIS* benefits from European funding and the vessel is owned solely by EU Member States' interests, the European legal instrument, specifically tailored for the European-driven partnerships[49], could appear to be a viable option for the establishment of *AURORA BOREALIS*. Therefore in the next Section of this study we will analyse several European law instruments in order to assess their potential suitability for *Aurora Borealis* Project.

44. Motion picture entitled "The Life Aquatic with Steve Zissou", see http://www.nurc.nato.int/
45. In the general and not legal meaning of this term.
46. For example, article 16 of the ISS Intergovernmental Agreement establishes "a cross-waiver of liability by the Partner States and related entities in the interest of encouraging participation in the exploration, exploitation, and use of outer space through the Space Station […]".
47. In the general and not legal meaning of this term.
48. Minutes of the 2nd Legal Advisory Panel meeting, p.3-4.
49. In the general and not legal meaning of this term.

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Section 3
A European Instrument as the legal tool establishing *AURORA BOREALIS*

European legal instruments are usually tailored to achieve specific policy objectives under Community law. These instruments provide a sound legal framework for different European-scale projects. Therefore, an analysis of a European Instrument as the legal tool establishing *AURORA BOREALIS* is particularly important with regard to the first working assumption (ownership of the vessel held solely by EU Member States' interests).

The European Research Infrastructure Consortium (ERIC) is a new legal form that has been recently introduced into European legal order[50]. The existing legal national, international and European law forms appeared not to fully satisfy the needs of new European infrastructures[51]. In this context, "the European Commission, responding to requests from EU countries and the scientific community, proposed a legal framework for a European research infrastructure adapted to the needs of the European large scale facilities"[52].

The aim of this new regulation was to provide a flexible scheme keeping the acquisitions of existing pan-European institutions (CERN, ESA, etc.) and avoiding at the same time the complex and time-consuming process of ratification inherent to high-level intergovernmental treaties[53]. A new European legal form, positioned between national law and the status of an international organisation, might help to remedy to some disadvantages of the European Company and European Economic Interest Grouping[54].

An ERIC is designed to facilitate joint establishment and operation of research facilities of European interest but it also allows non-EU Member States to become members of the ERIC. The last characteristic of the ERIC permits analysis of this new legal instrument in the light of eventual joint establishment of *AURORA BOREALIS* by EU Member States' and Non-EU Member States' interests (*cf.* second working assumption).

First we will briefly analyse some of the existing European legal forms (in comparison with the new ERIC instrument) in order to assess their suitability for the *Aurora Borealis* Project (1).

Then we will proceed with a more detailed analysis of the new European legal instrument ERIC specifically conceived for new large-scale European research infrastructures (2).

1. European legal instruments

Bearing in mind the specific characteristics of the Project, the following European legal instruments have been briefly analysed: European Economic Interest Grouping, European Company, European Cooperative Society, European Grouping of Territorial Cooperation, and European Joint Undertaking.

The Legal Advisory Panel members agreed at the 2nd LAP meeting that all the forms of EU-legal entities mentioned above imply some constraints for the establishment of *AURORA BOREALIS* which are less or more important[55].

1.1 European Economic Interest Grouping (EEIG)

With regard to the specific features of the *Aurora Borealis* Project, the following characteristics of a European Economic Interest Grouping[56] could be identified as constraints for *AURORA BOREALIS*:
- EEIG is reduced to subsidiary actions of the main activities of its members;
- unlimited joint and several liability;
- restricted access to non-EU Member States' legal entities: non-EU Member States' legal entities are allowed only when they carry out an activity or provide professional or other services in the Community;
- different implementation of an EEIG in different national legal systems.

• *Reduced to subsidiary actions of the main activities of its members*

The purpose of the grouping is to facilitate or develop the economic activities[57] of its members by a pooling of

50. Council Regulation (EC) No 723/2009, 25 June 2009.
51. "A major difficulty in setting up such research infrastructures between EU countries is the lack of an adequate legal framework allowing the creation of appropriate partnerships. Existing legal forms under national law do not fulfill the needs of these new European infrastructures. The same applies to legal forms under international or EU law", http://ec.europa.eu/
See also "Legal Framework for European Research Infrastructures", EC seminar, 24 July 2008.
52. http://ec.europa.eu/
53. "Opinion of the Legal Service of the European Commission on the legal structure of a European Research Infrastructure Consortium (ERIC)", RTD/B/RJS/AT/D(2010)515012, Brussels, 9 mars 2010, Annex, p.1.
54. "Report of the Workshop on the Legal Forms of Research Infrastructures of pan-European Interests", ESFRI, 23 March 2006, Brussels.
55. Minutes of the 2nd Legal Advisory Panel meeting, p. 4.
56. Council Regulation (EEC) No 2137/85, 25 July 1985 on the European Economic Interest Grouping (EEIG).
57. The concept of economic activities is interpreted in the widest sense. Notably, research is included in the meaning of this Regulation, Riassetto I., "Groupement europeén d'intérêt économique (GEIE)", Jurisclasseur Sociétés Traité, Fasc. 166-10, 2009, §11.

resources, activities or skills[58]. The purpose of an EEIG appears to be restricted in its objectives as an EEIG's activities must be ancillary to the main economic activities of its members. The EEIG provides an alternative way to establish links between other Member States without losing individual identity and independence.

In this regard, the example of Genavir should be mentioned. Genavir is an Economic Interest Grouping (EIG) under French law[59] which aims to share and improve the management of research vessels and other research infrastructures and technical equipment.

At the moment of the establishment of the EIG the research institutions, members of Genavir, were already in possession of different relevant technical and scientific capacities and were carrying their own research programmes. The legal form of the EIG allowed them to pool the existing infrastructures in order to improve the management, operation and interconnection of their research programmes.

Genavir appears to be a distributed research infrastructure undertaking, whereas *RV Aurora Borealis* is a single-sited research infrastructure project which requires the establishment of a legal framework in which a legal entity or several Partners will jointly own and operate the main asset of the project (research icebreaker), the use of this research infrastructure being thereafter shared among the Partners of the Project.

• Unlimited joint and several liability

Bearing in mind the importance of the construction and operational costs of *RV Aurora Borealis*, as well as the potential range of claims that could occur in connection to *RV Aurora Borealis*'s research activity, unlimited joint and several liability appears to be one of the major inconveniences of an EEIG.

Unlimited joint and several liability means not only that there is no limit to the financial liability of any of the members for the activities of the EEIG, but also that each member can individually be held liable for the entire financial consequences of those activities. Consequently, the potential members of *AURORA BOREALIS* would be subject to level of financial risk that no investor or ship operator would normally be willing to take. In this context, the limitation of the liability inherent to the international maritime claims[60] would not be enough to provide them with the sufficient guarantees because the limitation of liability does not encompass all the spheres of potential claims that the "owners" of AB could be subject to.

• Restricted access for non-EU Members

Finally, restricted access for non-EU Member States' interests into an EEIG is inconsistent with the second working assumption, where the vessel is jointly owned by EU Member States' and non-EU Member States' interests.

• Fiscal transparency

Taxation operates under a system of fiscal transparency; that is to say, any profits, losses or gains are distributed between the members according to their shares. The members are then taxed according to the relevant national law in the normal way.

• Different implementation of an EEIG in different national legal systems

The EEIG Regulation is directly applicable under EC law but allows and requires for national law to determine a number of issues. As a result, there are some differences in the laws of Member States in areas such as legal personality, the managers, auditing requirements and insolvency procedures[61].

As for the legal personality (the first criterion selected for the purpose of this study), even though an EEIG has full and independent legal capacity (Article 1.2), the Regulation does not endow it with "legal personality" because of the differences in the legislations on the tax consequences linked to the granting of such personality. In Germany and Italy, for instance, fiscal transparency, which is essential for an EEIG, is accepted only in the cases of bodies that do not have legal personality. Thus, these Member States do not attribute legal personality to an EEIG[62].

1.2 European Company (*Societas Europaea* – SE)

The following characteristics of a European Company could be identified as constraints for *AURORA BOREALIS*:

– designed for companies with economic orientation, established to facilitate cross-border merger;
– formed by merger of at least two companies (with

58. Article 3 of the EEIG Regulation states that the purpose of an EEIG is "to facilitate or develop the economic activities of its members and to improve or increase the results of those activities…".
59. French Economic Interest Grouping was used as a model to establish the European Interest Grouping Regulation.
60. Ndende M., "Limitation de responsabilité des propriétaires de navires et autres opérateurs en présence de créances maritimes", Droits Maritimes, Dalloz Action 2009/2010, chapitre 364.
61. "European Economic Interest Groupings", GB 04, Department for Business Enterprise and Regulatory reform, UK, May 2009.
62. "The EEIG: an instrument for transnational cooperation", A practical handbook for SMEs, Commission of the European Communities, 2nd edition, Enterprise Policy, 23-1998-00331-01-00-EN-TRA-00, p.20.

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registered offices within the Community), by formation of either a holding/subsidiary or transformation of existing company;
– addresses mainly needs of large, already established industrial companies.

In tax matters, an SE is treated the same as any other multinational, i.e. it is subject to the tax regime of the national legislation applicable to the company and its subsidiaries. SEs are subject to taxes and charges in all Member States where their administrative centres are situated. Thus their tax status is not perfect as there is still no adequate harmonisation at the European level.

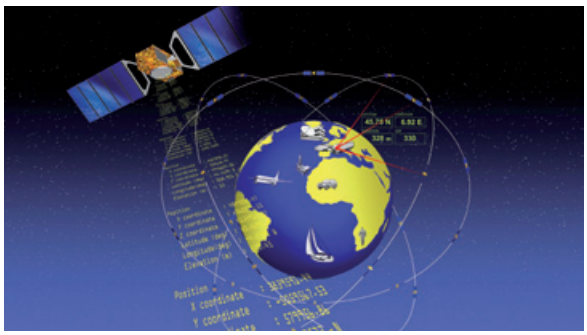
Similar disadvantages have been identified by the LAP with regard to the European Cooperative Society.

1.3 European Grouping of Territorial Cooperation

A European Grouping of Territorial Cooperation was considered at the second LAP meeting[63] as an inadequate instrument because the basis, objectives and geographical areas relevant to *AURORA BOREALIS* fall outside the criteria of this instrument. EGTC is a formula for cross-border cooperation in EU border regions. Its purpose is "to facilitate and promote cross-border, transnational and/or interregional cooperation… with the exclusive aim of strengthening economic and social cohesion".

1.4 European Joint Undertaking

At the second LAP meeting a European Joint Undertaking was considered to be an instrument with a complicated founding procedure relying on the initiative of the European Commission and a case-by-case decision by the Council (adoption by Council in form of Regulation)[64]. In all European Joint Undertakings the EC is a founding member and is involved in the decision-making process. It could be a feasible option provided there is a strong commitment and interest from the EU bodies. However,



Satellite navigation GALILEO, http://ec.europa.eu/enterprise/policies/satnav/galileo/index_en.htm – ©ESA

63. *Ibid.*
64. *Ibid.*

non-EU Member States (in particular the countries of the Arctic rim) will expect to have closer control on the actual management of *AURORA BOREALIS* than that which a Joint undertaking is able to offer.

GALILEO[65] was the first European Community joint research undertaking set up pursuant to Article 171 of the European Union Treaty. Since a number of joint research undertakings (such as IMI, ARTEMIS, Clean sky, ENIAC, FCH), also known as Joint Technology Initiatives (JTIs), has been created[66] . The LAP agreed at its 2nd meeting that this model can be used only when the EU appears to be the main player.

2. European Research Infrastructure Consortium

The Regulation on the Community legal framework for a European Research Infrastructure Consortium (ERIC)[67], based on the article 187[68] of the Treaty on the Functioning of the EU, has been adopted in order to facilitate the establishment and operation of large research infrastructures in Europe[69].

The ERIC Regulation, ERIC Practical Guidelines[70], as well as different EC explanatory notes have been analysed in order to identify the advantages and constraints of this legal tool for the *Aurora Borealis* Project. We have also followed the development of other research infrastructure projects aiming to adopt ERIC.

Being conceived as a legal tool for an inter-European partnership[71], an ERIC appears to be a suitable legal form for the establishment of *AURORA BOREALIS* in our first working hypothesis where the vessel is owned solely by EU Member States' interests and non-EU Member States are involved in the long-term operation of the vessel (as part of a Consortium between the Long Term Users, for example) according to a Vessel Sharing Agreement entered into with the Owners[72].

65. GALILEO is European initiative for a state-of-the-art global satellite navigation system, providing a highly accurate, guaranteed global positioning service under civilian control, http://ec.europa.eu/enterprise/policies/satnav/galileo/index_en.htm
66. For more information see http://cordis.europa.eu/fp7/jtis/ind-jti_en.html.
67. Council Regulation (EC) No 723/2009, 25 June 2009.
68. Former article 171.
69. ERIC Regulation entered into force on 28 August 2009.
70. "Legal framework for a European Research Infrastructure Consortium – ERIC", Practical Guidelines, European Commission, Directorate General for Research, April 2010.
71. In the general and not legal meaning of this term.
72. In this case, the Arctic rim countries should be associated to the decision-making process of the operation of the vessel (there could be a Governing Body with representatives on the Owners' side and Long Term Users' on the other).

Moreover, if *AURORA BOREALIS* is perceived as an EU-driven project and if it furthermore benefits from European funding, the option of ERIC on owners' side could be favoured.

In this regard, the following advantages of a European Research Infrastructure Consortium have been identified:
– Large support and encouragement by the EU;
– European label;
– Tailored to the EU research infrastructures;
– Legal personality recognised in all EU Member States;
– Limited liability;
– Exemption from procurement rules[73];
– Exemption from VAT[74];
– Possible membership of non-EU Member States;
– No need for ratification by EU Member States (in comparison with international treaties).

An ERIC has a legal personality based on EU law (Article 171 of the EC Treaty). Its main tasks are to establish and operate a research infrastructure.

2.1 ERIC versus international organisation, VAT and procurement law exemption

In comparison to an international organisation the European Commission stresses that an ERIC is an easy-to-use legal instrument that provides some privileges/exemptions allowed for intergovernmental organisations and a faster and more cost-efficient process than creating an international organisation. Indeed, an "ERIC can benefit from exemptions from VAT and excise duty in all EU Member States and it may adopt its own procurement procedures, which have to respect the principles of transparency, non-discrimination and competition but are not subject to public procurement procedures"[75].

The exemption from procurement law or the limitation of its influence has been identified as one of the main advantages of this legal entity for the Project by the Legal Advisory Panel as well as by the Financial Advisory Panel. The exemption of procurement rules would favour the use of in-kind contribution in the cost-sharing model of the vessel established by the Financial Advisory Panel[76].

73. An ERIC is recognised by the country hosting its seat as an international body or organisation for the purposes of the directive on public procurement (Directive of 31 March 2004), "Legal framework for a European Research Infrastructure Consortium – ERIC", Practical Guidelines, European Commission, Directorate General for Research, April 2010, p.5.
74. "In regard to the VAT exemption it has been underlined that two issues have to be distinguished: construction of the vessel and operation of the vessel. With regard to the both issues, it has been suggested to examine the VAT Directive 2006/112/EC", Minutes of the 2nd Legal Advisory Panel meeting, p. 5.
75. http://ec.europa.eu/
76. Deliverable 4.2 "Initial business planning Perspective Document of Construction costs shares and Initial proposed models of participation", Annex 3-2.3.

The ratification issue has been clarified in the opinion of the Legal Service of the EC on the legal nature of an ERIC. It has been stressed that even if an ERIC shares several features with international organisations, it does not share all of them. In particular, an ERIC does not need any ratification at any stage of its establishment. The EC underlines that an ERIC has "a different legal nature than a treaty-based international organisation" [77].

In this regard, the EC specifies that "upon notification of the decision setting up an ERIC, the ERIC comes into existence as a legal person without any other acts, neither at Union nor at national level, being required. This situation in law precludes the Member States from introducing or applying any parallel or additional procedures, based on national law, for setting up of an ERIC, such as specific ratification procedures. As a regulation within the meaning of Article 288, the ERIC Regulation has general application, is binding in its entirety and directly applicable in all Member States"[78].

The following several disadvantages or constraints of an ERIC have been identified with regard to our first working assumption when the Project remains entirely EU driven:
– Lack of precedent on ERIC;
– No private partners allowed;
– Minimum number members of EU countries: at least three EU States as Members.

2.2 Minimum EU States membership requirement

In the light of the current number of EU countries that seem to be interested in the implementation of the Project, the last requirement of the minimum number of EU States as Members for the ERIC does not appear to be a real constraint, but nevertheless it needs to be mentioned as an potential constraint if the number of EU Member States interested in the Project (and especially able to raise the necessary funds) decreases.

2.3 Lack of precedent on ERIC

There is a need to pay attention to the first constraint: lack of precedent on ERIC. At the second meeting of the Legal Advisory Panel, several legal experts stressed that ERIC is a new formula which needs more practical experience.

77. "Opinion of the Legal Service of the European Commission on the legal structure of a European Research Infrastructure Consortium (ERIC)", RTD/B/RJS/AT/D(2010)515012, Brussels, 9 mars 2010, Annex.
"Opinion of the Legal Service of the EC on the legal nature of an ERIC", RTD/B/AT/ D(2010) 523977, Brussels, 16 April 2010.
78. "Opinion of the Legal Service of the EC on the legal nature of an ERIC", RTD/B/AT/ D(2010) 523977, Brussels, 16 April 2010, §§ 11 – 13. See also §§ 9-18.

Chapter 1. Legal nature of the instrument establishing *AURORA BOREALIS*

As things stand, there are several ongoing distributed research infrastructure projects that are likely to adopt an ERIC, including Dariah (digital research infrastructure for arts and humanities), Clarin (language resources), and Life Watch (science and technology European research infrastructure consortium for biodiversity and observatories).[79]. The existence of such diverse research European-scale projects proves in practice that there is flexibility for an ERIC to adapt to the specific requirements of each infrastructure (the flexibility of an ERIC has been underlined by the EC as one of the main features of this new legal instrument).

At the moment there is already one distributed research infrastructure project, SHARE (Survey of Health, Ageing and Retirement in Europe)[80], that has officially opted for an ERIC. The formal request was received by the European Commission on 14 December 2010[81] and the European Commission set up SHARE-ERIC on 17 March 2011. It is the first ERIC to be set up by the European Commission at the current stage.

2.4 No private partners allowed

According to article 9.1 of ERIC Regulation, only the following entities can become members of an ERIC:
– EU Member States;
– Associated countries;
– Third countries other than associated countries;
– Intergovernmental organisations.

Private partners are consequently not allowed to become members of an ERIC. It should be mentioned however that EU Member States, associated countries or third countries could be represented by one or more public entities, including regions or private entities with a public service mission (e.g. research organisations or research councils; article 9.4 of ERIC Regulation).

Taking into account the importance of funding (789,982,179 euros[82]) necessary for the construction of the vessel, it could be envisaged that private partners (e.g. private equity) or private capital finance schemes may be inconsistent with ERIC requirements. In this context, the present restriction appears to be a major disadvantage of an ERIC for the Project.

The SHARE project mentioned above is a distributed research infrastructure[83], whereas the *Aurora Borealis* Project is a single-sited research infrastructure. The distributed research infrastructure projects differ from single-sited ones in that the former do not necessarily need a significant investment in order to be successfully launched. The main purpose of this kind of distributed infrastructure projects is to connect the existing infrastructures, to build an organised network of resources and to improve them.

With regard to the second hypothesis of our study (where the vessel is owned jointly by both EU Member States' and non-EU States' interests) the following disadvantages/constraints of an ERIC have been identified:
– Large control by EC;
– Application of the European law;
– Application of the jurisdiction of the European Court of Justice;
– Ratification issue for non-EU countries.

It was underlined at the second LAP meeting[84] that even if an ERIC represents a considerable advantage in comparison with other European instruments because of the possible membership of non-EU Member States, non-EU Member States (and in particular Arctic rim countries) are most likely not to be inclined to accept a large degree of control by the EC as well as the application of European law and jurisdiction of the European Court of Justice. There could also be simply a symbolic political reluctance of non-EU Member States particularly because of the pronounced spirit of a truly European venture of this instrument.

It has however been agreed that this structure could be used in the first working hypothesis where the ownership is held solely by EU Member States' interests and non-EU Member States are involved in the long-term operation of the vessel (as part of Consortium, for example) according to the Vessel Sharing Agreement entered into with the Owners. In this case, it has been stressed that the Arctic rim countries should be involved in the

79. 4th Workshop for exchange of experience on PP projects, Brussels, 15 December 2010.
80. SHARE is a joint project of Austria, the Czech Republic, Germany and The Netherlands that intends to establish an infrastructure of micro data of households and individuals necessary to understand individual and societal ageing. It is a multidisciplinary and cross-national panel database of micro data on health, socio-economic status, and social and family networks of more than 45,000 individuals aged 50 or over.
81. "Implementation of the Community Legal Framework for a European Research Infrastructure Consortium (ERIC)", PP workshop, 30 October 2009, p.11.
82. "Estimated Building Costs, General Planning, Icebreaker, drilling platform and multi-purpose research vessel *RV Aurora Borealis*", Alfred Wegener Institute for Polar and Marine Research (AWI), 7-990.01/0020.01, p.6.
83. According to the article 2 of ERIC Regulation, the expression "'research infrastructure" means facilities, resources and related services that are used by the scientific community to conduct top-level research in their respective fields and covers major scientific equipment or sets of instruments ; knowledge-based resources such as collections, archives or structures for scientific information ; enabling Information and Communications Technology-based infrastructures such as Grid, computing, software and communication, or any other entity of a unique nature essential to achieve excellence in research. Such infrastructures may be 'single-sited' or 'distributed' (an organised network of resources)".
84. Minutes of the 2nd Legal Advisory Panel meeting, p. 5.

decision-making process of the operation of the vessel (there should be a governing body with representatives on the Owners' side and Long Term Users' on the other).

In conclusion, if *AURORA BOREALIS* is perceived as an EU-driven project and if it furthermore benefits from European funding, the option of an ERIC on the Owners' side could be considered as a suitable scenario for the first working hypothesis of *AURORA BOREALIS*, provided that the Project's funding does not require any private partnership[85] and there is no any incompatibility between the finance scheme and ERIC Regulation requirements.

Section 4
Contract as the legal instrument establishing *AURORA BOREALIS*

By Viktor Tokushev, Assistant Professor of civil and commercial law, Sofia University "St. Kliment Ohridski", tokushev@gmail.com

Private law legal forms also offer viable options for *AURORA BOREALIS* as an entity. The main advantage of these legal forms is that they are similar in most European Union Member States and even in non-EU States such as Russia and Norway. The main disadvantage of these forms is that they are created to service the needs of private entities and not for performing international projects. Despite this important disadvantage the private law legal forms should be however examined for the purpose of this study because these forms have already proved their efficiency. Moreover, the choice of the national legal form could solve the issue of flagging in the simplest way.

1. Advantages of private law legal forms for *AURORA BOREALIS*

The private law legal forms addressed in this study present substantial advantages which make them a possible option for the *Aurora Borealis Project*. All of them are recognised and have similar characteristics in partner countries' national legal systems. Moreover, they are implemented in similar ways in different jurisdictions. Once the desired legal form and particular jurisdiction are chosen the incorporation of the entity can be completed within a few weeks without significant costs, which eliminates the risk of delay of the start of the core activities of the Project[86].

As the partners of the Project are both EU Member States and non-EU Member States a major advantage of the private law legal forms is the freedom of participation which allows all interested parties to take part in the Project on equal terms. Taking into account the prospective need of flexibility of the future entity it should be pointed out that private law entities are subject to relatively few mandatory rules and all other important issues related to the functioning of the legal entity are subject to their by-laws. The private law establishes a clear set of rights and obligations for the founders/members, including their liability being limited to their contribution. The structure of the governing bodies can be determined by the needs of the founders in accordance with the applicable legal requirements. Some of the private law legal forms discussed below have another significant advantage in terms of efficiency of project implementation – exemptions from the European procurement rules may apply depending on the respective national law. As a result of the analysis of the EU Member States' legislation as well as that of the non-EU Member States (Norway and Russia), the following three private law legal forms have been identified as the most suitable for *AURORA BOREALIS*:

- **Limited Company** - Gesellschaft mit beschränkter Haftung GmbH (Germany), Private Company Limited by Shares – LTD (UK), Société à responsabilité limitée – SARL (France), Society of Limited Liability – OOO (Russia);
- **Association** - Association (France), German Association, Dutch Association, Belgian Association (ASBL);
- **Foundation** - Stichting (Netherlands), Stiftung (Germany), Fundacion (Spain).

Although details of the regulation can vary depending on the applicable jurisdiction, the advantages and disadvantages of these three forms depend in general on and are related to their main purpose (commercial or non-commercial) and the existence or absence of personal structure.

2. Limited liability company

The limited liability company form has a number of **advantages** as follows:

– a separate legal personality from its members;
– limited liability of the shareholders, who are responsible only in proportion to the amount of their contribution to the capital (no shareholder bears personal responsibility for the entity's liabilities);
– equal treatment of the shareholders, who have equal rights, depending solely on their participation in the capital, but there is also the possibility that the articles of association require unanimity for taking substantial decisions;

85. In the general and not legal meaning of this term.
86. In this regard it should be mentioned that the option of creating a private legal entity at the beginning and then transformed into an international organisation was considered by the Legal Advisory Panel at its 2nd meeting to be a rather complicated one.

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– open funding model, which allows both cash and in-kind contributions of the shareholders that formed the company's capital;
– clear organisation structure – supreme body composed of all shareholders and managing body (individual or collective) elected by them;
– free transfer of shares – there are no special obstacles for leaving the company or transferring shares, but the acquisition of shares by a new shareholder requires the approval of the existing shareholders.

On the other hand two main **disadvantages** of a limited liability company for *AURORA BOREALIS* should be underlined:
– the commercial/business purpose of this entity
and
– the absence of tax advantages.

Although limited liability companies in principle are incorporated with a commercial purpose and are classified as a merchant in the most national legislations, some jurisdictions allow an option for those companies or similar legal forms to be created with a non-profit purpose, such as Gemeinnutzige GmbH (Germany) or Community Interest Company – CIC (UK). In this regard, the choice of an inherently non-profit legal form could appear to be more appropriate than opting for a company with a non-profit regime.

As for the tax regime it should be mentioned that it differs in different tax legislations, but as far as companies seek profit, it does not contain any advantages.

3. Association

The main **advantages** of the association are the following:
– separate legal entity from its members (all private law forms addressed in this study have separate legal personality);
– limited liability of the members, responsible only to the level of their contribution;
– non-profit purpose, which makes it a suitable form of legal entity for carrying out a scientific or research activity;
– equal treatment of the members, who have equal rights, regardless of the amount of their financial participation in the association;
– possibility for preferential tax treatment of the business in most national legislations;
– possibility for carrying out of a business activity, related to the assigned goal.

It should be mentioned, however, that even if an association can carry out commercial activities, in certain jurisdictions there are some restrictions on the amount of the association assets that could be assigned to such profit-making activities.

The absence of capital and shares of this entity can constitute a significant obstacle for changes in the membership of the entity – transfer of membership is impossible. New members are accepted only by decision of the governing bodies. The possible application of European procurement rules should be considered as well, while due to their non-profit nature, a lot of national legislations include those entities in the group of "contracting authority" pursuant to Directive 2004/18/EC. The existence of possible additional requirements related to public funding is another main **disadvantage** of this legal form. Associations that receive public funding are regularly expected in different legal systems to comply with additional legal obligations and requirements, which represent an additional administrative burden for its members.

4. Foundation

The foundation form possesses most of the **advantages** of the association:
– separate personality from its founders;
– limited liability of the founders;
– non-profit purpose and possibility for business activity;
– possibility for preferential tax treatment.

The governing bodies' structure and the powers of the different bodies are settled by the founders.

The main **disadvantages** of this form are related to the absence of personal structure. Since the foundation is a pool of assets assigned for achieving a particular goal and does not have members, the founders may participate in the foundation only through participation in its managing bodies. The absence of membership relations complicates the acceptance of new participants – the entrance of new participants is subject to individual contracts between each new participant and the foundation. Similar to the association, the foundation can be subject to restrictions on the volume of business, probable application of the European procurement rules and additional requirements for public funding.

With regard to what has been mentioned above it could be concluded that the first stage of the determination of the most suitable legal entity for *AURORA BOREALIS* is the assessment of the general characteristics of these three forms. Although each of the considered private national forms has its advantages in comparison to other European and international structures, a limited liability company and association should be identified as the most suitable private law legal entities for *AURORA BOREALIS* because, contrary to a foundation, these entities can possess personal staff.

5. General recommendations

It should be underlined that the choice of one of these two recommended legal forms (limited liability company or association) should be based on a comparative analysis and importance for *AURORA BOREALIS* of the following criteria: general approach to the business, tax treatment, and application of procurement procedures.

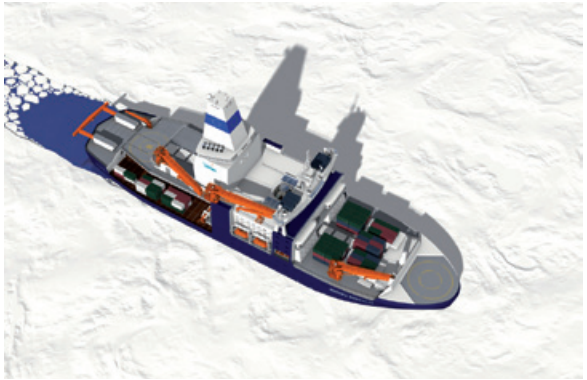
Once the most suitable legal form is determined a national jurisdiction of the entity should be chosen. The leading criterion for choosing a national jurisdiction should be the location where the main activities of the project will take place. In the case of *AURORA BOREALIS* clearly the operation of the vessel will not be concentrated only in one place. She will be operated both in the Arctic and Antarctic, remaining for several years in one of these two hemispheres. Therefore *RV Aurora Borealis* will be operated in waters under the jurisdiction of different States as well as in high seas where only flag State jurisdiction applies. In this regard the home port of the vessel and her flag should be taken into account.

In conclusion, the most suitable ownership structure for *AURORA BOREALIS* depends also on the funding structure opted for, and in particular on the will and commitment of each Partner. Therefore, the final choice of the legal structure for the ownership of *RV Aurora Borealis* will depend on the interests and commitments of the Partners involved in the Project.

At the 2nd LAP meeting it was agreed that one of these three legal entities (limited liability company, association and foundation) could be considered as a third suitable scenario for *AURORA BOREALIS*. The general preference has been expressed in favour of a limited liability company with non-profit activity[87].

It has been conversely underlined that it is most likely that States would be rather reluctant to transfer funds to a private law company registered in a different country.

87. Minutes of the 2nd LAP meeting, p.6, 7.



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Conclusion Chapter 1

This chapter provides a list of legal instruments that could be regarded as suitable scenarios for the establishment of *AURORA BOREALIS*.

At this preliminary stage of the Project and in the absence of any definitive agreement and guidance from the countries interested in its implementation, it appeared crucial to provide a wide range of possible scenarios for the Project. Therefore, the current study encompasses different legal domains: international public, European, comparative private law; and researches a number of viable legal structures for the ownership of *RV Aurora Borealis*.

The Legal Advisory Panel identified an international legally binding agreement as the most appropriate option for the establishment of *AURORA BOREALIS*, suitable for the both working hypotheses: when the vessel is owned solely by EU Member States' interests and when she is owned jointly by the EU and non-EU Member States' interests.

The new European legal instrument, ERIC, appeared also to be a suitable scenario for the implementation of the Project especially if *AURORA BOREALIS* is perceived as an EU-driven project and if it furthermore benefits from European funding.

A limited liability company with non-profit activity has been identified as the third possible scenario for *AURORA BOREALIS*.

The final proposal for the most suitable ownership structure for *AURORA BOREALIS* depends on the will and commitment of each Partner. Therefore, the final choice for the legal structure for the ownership and operation of *RV Aurora Borealis* will depend on the interests and commitment of the Partners involved in the implementation stage of the Project.

As the nature of the ownership of the vessel and the nature of the envisaged activities (mainly research) have an impact on the legal status of the vessel, these issues will be addressed in the second chapter of the document dealing with public vessel immunity and ship registry.

Drilling vessel Vidar Viking (nearest) was supported by two icebreakers, Oden (middle) and Sovetskiy Soyuz (distant) while drilling Hole M004A at 87°52'N, 136°111'E during the IODP Arctic Coring Expedition (M. Jakobsson ©ECORD/IODP)

Chapter 2. Public Vessel Immunity and Ship Registry

According to article 3 of the International Convention for the Unification of Certain Rules Concerning the Immunity of State-Owned Ships 1926 (Convention on immunity), the rules of liability and obligations applicable to privately owned ships do not apply to "vessels owned or operated by a State and employed exclusively at the time when the cause of action arises on Government and non-commercial service, and such ships shall not be subject to seizure, arrest or detention by any legal process, nor to any proceedings *in rem*". In other words, this article provides immunity to governmental ships employed in non-commercial service.

With a few exceptions[88], the United Nations Convention on the Law of the Sea (UNCLOS) reiterates the provisions of the Immunity of State-Owned Ships Convention. In fact, article 32 provides that "nothing in this Convention affects the immunities of warships and other governmental ships operated for non-commercial purposes".

As *RV Aurora Borealis* will be mainly operated for non-commercial purposes, she could enjoy the privileges granted by the Convention on the immunity of the State-owned ships 1926, provided *AURORA BOREALIS* complies with the necessary requirements. For those countries that are non-Parties to the Convention, immunity derives from customary law.

Even if the public status of the vessel implies additional diplomatic port clearance and consequently some additional paperwork and permissions[89], it has been decided by the LAP experts that sovereign immunity provides more advantages than constraints and thus should be considered as a recommended option for *RV Aurora Borealis*[90]. This recommendation was notably based on the successful example of the *Leonardo* and *Alliance* vessels operated by NURC[91].

The main advantages that sovereign immunity can provide to *RV Aurora Borealis* will be addressed in Section 1 of this chapter.

Then we will proceed to the requirements needed to be complied with by *RV Aurora Borealis* to enjoy immunity. According to the Convention on the immunity of State-owned ships, immunity only applies if *RV Aurora Borealis* is exclusively employed on non-commercial governmental service. In this regard, specific attention will be drawn to the notion of "restrictive" immunity, i.e. immunity not available for commercial activities. We will see that the status of the vessel can vary during her deployment. The vessel will be immune while on non-commercial service, and will lose this immunity while on commercial work (Section 2).

It appears from the Convention on immunity and customary law that to enjoy immunity the vessel has to be either owned or operated by a State[92]. In the context of the multinational ownership of *RV Aurora Borealis*, the available legal tools permitting the vessel to comply with these specific requirements should be analysed. Therefore we will conclude Section 3 with recommendations on the necessary agreements for *AURORA BOREALIS* to enter into and will address the ship registration issue.

Section 1
Main advantages of sovereign immunity for *RV Aurora Borealis*

Vessels owned or operated by a State and employed exclusively on government and non-commercial service enjoy several privileges that have been recognised by the LAP to be desirable for *RV Aurora Borealis*.

The following main advantages of sovereign immunity for *RV Aurora Borealis* have been identified: first, the vessel would be immune from civil suit and criminal prosecution by the coastal State (1). Furthermore, payments for obligations and settlement of disputes will be carried out on a State-to-State basis (3).

One should be aware however that regardless of the advantages that immunity from coastal jurisdiction could provide, sovereign immunity of a governmental non-commercial vessel is not absolute (2).

1. Immunity from the civil and criminal jurisdiction of the coastal State

The immunity protects from arrest, seizure[93] or attachment[94] while operating in the waters under jurisdiction of a coastal State or calling at its port.

The jurisdiction (civil and criminal) of a coastal State generally applies when the vessel enters the internal waters of this State. But a foreign non-governmental

88. Article 31 of the United Nations Convention on the Law of the Sea states that "The Flag State shall bear international responsibility for any loss or damage to the coastal State resulting from the non-compliance by a warship or other government ship operated for non-commercial purposes with the laws and regulations of the coastal State concerning passage through the territorial sea or with the provisions of this Convention or other rules of international law".
89. In any case the permissions are required in order to undertake research activities in the EEZ or in the territorial/internal waters of the coastal States.
90. Minutes of the 2nd LAP meeting, p.8.
91. NATO Undersea Research Centre.
92. International organisations can also enjoy this immunity, but only if granted by an agreement with a State or States.
93. Forcible possession.
94. The legal process of seizing property to ensure satisfaction of a judgment.

Chapter 2. Public Vessel Immunity and Ship Registry

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(or governmental commercial) ship lying in the territorial sea, or passing through the territorial sea after leaving internal waters of the coastal State, can still be arrested by the coastal State for civil obligations (article 28 of the UNCLOS). Moreover, article 27 stipulates conditions under which the criminal jurisdiction of a coastal State can be exercised over a foreign ship passing through or lying in its territorial waters.

The immunity of the vessel is particularly important in view of the high daily operating costs of *RV Aurora Borealis*:

$$125.000\ € \text{ per day} = \frac{40.000.000\ € \text{ of running costs}}{320 \text{ days of operation}}$$

It should be specified however that the real financial daily operation loss will not necessarily correspond to the amount of 125.000 euros per day. As the vessel would not be able to engage in science research activities (taking samples, etc.) while detained in the port, the assessment of the real financial loss should take into account only the fixed costs portion of the overall amount. However, it should be underlined that there would be some additional expenses due to the detention: the arrested ship normally bears the port costs as well as some custody costs. These expenses can be high, depending on the overall period of the detention.

Moreover, arrest would unavoidably interrupt the scientific programmes and would be therefore prejudicial to the scientific operation of *RV Aurora Borealis*.

Bearing in mind the uniqueness of the technical design of *RV Aurora Borealis* due to the development of the new technical concepts[95], it should be highlighted that immunity of the governmental non-commercial vessel could protect her from possible industrial espionage during the detention of the vessel or from searches on board.

With regard to criminal matters, if crew members/scientists suffer any injury or are subject, for one reason or another, to any offence or criminal act, the coastal State will normally[96] have no jurisdiction over the crew of a governmental non-commercial ship.

Effectively this means that, due to the sovereign immunity, *RV Aurora Borealis* scientists and crew members would be immune from civil suit or criminal prosecution by the courts of the coastal State. Therefore, the criminal and civil courts of the country under whose jurisdiction the governmental non-commercial vessel could be (e.g. Somalia while sailing from the northern to the southern hemisphere) would normally have no jurisdiction over the persons on board or over the vessel herself.

Moreover, according to article 96 of the UNCLOS, the "ships owned or operated by a State and used only on government non-commercial service" will "on the high seas, have complete immunity from the jurisdiction of any State other than the flag State".

2. Immunity from the civil and criminal jurisdiction of the coastal State is not absolute

It should be mentioned however that the immunity does not protect governmental non-commercial vessels in all circumstances.

With regard to civil matters, the vessel will be immune, for example, in case of assistance, salvage or collision disputes. However, according to French and German law the coastal jurisdiction will retain, for instance, its competence for disputes between its nationals and the vessel with respect to services and works carried out on the vessel[97] (e.g. bunker supply).

As for criminal offences, it depends on whether the criminal act is committed by or against the national of the coastal State or whether a crew member committed the

95. *RV Aurora Borealis* is the combination of an icebreaker, drilling ship and multi-purpose research vessel for use in polar regions as well as in the open sea in all seasons, http://www.eri-aurora-borealis.eu/
Three patents have been granted for the industrial design of *RV Aurora Borealis*.
96. See Section 1, § 2 below.
97. For French legislation on this issue see Beurier J.-P., Droits maritimes, 2009/2010, Dalloz Action, § 112.35.

criminal act on the mainland and not on board the ship. However, even in this case, the coastal State may waive its jurisdiction for reasons of political expediency[98].

In conclusion, sovereign immunity may prevent unreasonable and costly detentions of *RV Aurora Borealis* in foreign ports and thus prevent the possible interruption of science activities of the vessel.

Even though the immunity is not absolute, dealing with a governmental non-commercial ship may encourage the coastal State either to waive its jurisdiction or else seek an amiable settlement on a State-to-State basis.

3. The payments for obligations and settlement of disputes on a State-to-State basis

The payments for obligations and settlement of disputes on a State-to-State basis represent the other advantage of operating governmental non-commercial vessel.

Indeed the settlement of any dispute at a State-to-State level could be a more appropriate way of dispute resolution for *AURORA BOREALIS*.

In this regard, it should be mentioned that immunity does not infer the absence of responsibility, but rather offers a more flexible and suitable way of settling disagreements.

A view might be taken that sovereign immunity does not only offer a more flexible legal and political framework for *RV Aurora Borealis* but also exempts her from obligations with regard to the protection and preservation of the marine environment which do not apply to vessels owned or operated by a State and used on governmental, non-commercial service[99].

However, with regard to the nature of the activities of *RV Aurora Borealis*, which purports *inter alia* to protect the environment, violation of marine environment regulation would not be expected. Indeed it would be contrary to the purpose of the *RV Aurora Borealis* mission itself. Moreover the same article that exempts governmental non-commercial vessels from such obligations adds the following statement: “each State shall ensure, by the adoption of appropriate measures not impairing operations or operational capabilities of such vessels or aircraft owned or operated by it, that such vessels or aircraft act in a manner consistent, so far as is reasonable and practicable, with this Convention”.

In this regard, it was mentioned at the 2nd Legal Advisory Panel meeting that the standards observed by governmental vessels usually exceed the minimum requirements imposed by international conventions. NATO *RV Alliance*, a vessel observing high technical standards, is a good example in this respect.

4. Governmental vessels and international conventions’ requirements: the example of *NRV Alliance*

Today there is greater awareness of the fact that machine-generated noise pollution in the environment disrupts the activity or balance not only of humans but also of animal life. A large number of scientific publications have drawn attention to the destructive effect of vessel noise pollution on marine life[100]. A set of EU rules is concerned with noise pollution and focuses on reducing noise from specific sources, but mainly from road and air traffic[101]. The IMO regulations focus on the effect of mechanical vibrations on board seagoing vessels with regard to the wellbeing of shippersonnel and crew[102]. The IMO sets some technical standards for vessels in this regard.

98. Ex., *Troncoso case*, Cour d’appel de Rennes, 3 mars 1938, Beurier J.-P., Droits maritimes, 2009/2010, Dalloz Action, § 112.36.
99. Article 234 of the UNCLOS.

100. See, for example, Buckstaff, K.C. (2004). Effects of watercraft noise on the acoustic behavior of bottlenose dolphins, Tursiops truncatus, in Sarasota Bay, Florida. Marine Mammal Science 20(4): 709-725. ISSN: 0824-0469. Foote, A.D., R.W. Osborne, and A.R. Hoelzel (2004). Environment: whale-call response to masking boat noise. Nature (London) 428(6986): 910. ISSN: 1476-4687. For more publications on this issue see: http://www.nal.usda.gov/awic/pubs/MarineMammals/cetaceans_noise.htm
101. I.e., Hushkits Regulation, Regulation (EC) No 925/1999, Directive 2002/30/EC of the European Parliament and of the Council of 26 March 2002 on the establishment of rules and procedures with regard to the introduction of noise-related operating restrictions at Community airports. Regulation of chapter 3 civil subsonic aeroplanes, Directive 2006/93/ECDirective 2002 setting out a Community approach to the management and evaluation of ambient noise in order to protect public health. See also: http://ec.europa.eu/research/transport/news/article_1606_en.html
http://ec.europa.eu/environment/noise/sources.htm
Further to its 1996 Green Paper (COM(96)540), the European Commission continues to develop the Community measures concerning noise sources. In the EC Green Paper of 4 November 1996 on Future Noise Policy, the Commission puts forward two lines of action against noise, one of them being the reducing of the emissions at source (road and rail traffic, aircraft). With regard to the reducing of noise pollution by aircraft, the following measures have been announced: -setting stricter emission limits; -aid for building and using quieter aircraft; - protecting the areas around airports; -introducing a system for classifying aircraft according to their sound emission level.
102. Exposure to noise and vibrations is regulated and limits for maritime vessels are given in the ISO standard 6954: Guidelines for permissible mechanical vibrations on board seagoing vessels to protect personnel and crew.
The IMO publication Noise Levels on Board Ships contains the Code on Noise Levels on Board Ships (resolution A.468(XII)), developed to stimulate and promote noise control at a national level within the framework of internationally agreed guidelines, and the Recommendation on methods of measuring noise levels at listening posts (resolution A.343(IX)).

In this respect, *NRV Alliance* far exceeds the legal requirements in the field. "The vessel has been designed to operate in eight different 'noise states', such as "quiet drift", "semi-quiet drift" and "semi-quiet tow"[103]. All of these states are at noise levels below those of a conventional merchant vessel and this technology not only allows scientific observation of marine mammals, but also appears to be more generally environmentally friendly. "An auxiliary gas turbine generator provides the lowest noise pollution option, leading up to the full complement of diesel electric generators allowing the vessel to tow twenty tonnes at twelve knots. The gas turbine and diesel electric generators are mounted on individual vibration isolating rafts and enclosed within acoustic booths to reduce hull and airborne noise transmission"[104].

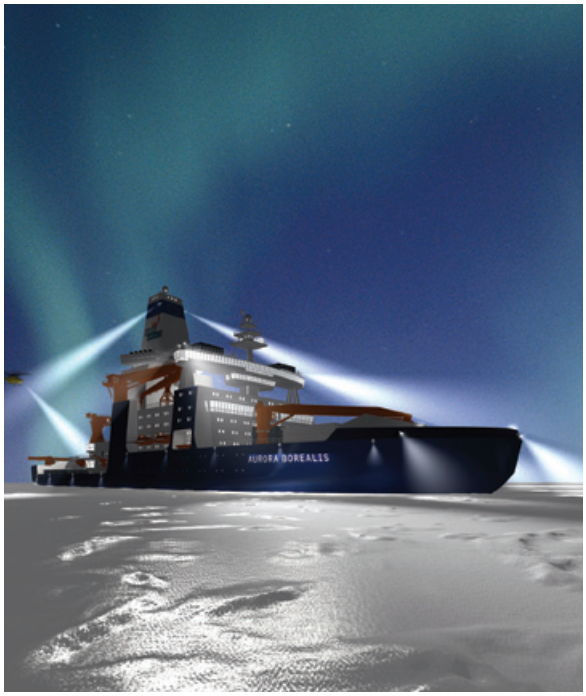
"*NRV Alliance* is accredited as being fully compliant with the ISM Code and IMO Resolution A741 (18). The major thrust of this Quality Assurance (QA) system is to ensure safe operations including effective measures to maintain a pollution free ship […]. The design and construction of *Alliance* was in accordance with the rules and regulations of the following classification societies: American Bureau of Shipping (ABS), Registro Italiano Navale (RINa), Italian State Agencies"[105].

Throughout her employment the *NRV Alliance* has been maintained at a high standard of quality, service and distinction. "This premium acoustic and oceanographic research platform is capable of providing any type of vessel chartering needs"[106].

5. Governmental vessels and international conventions' requirements: *RV Aurora Borealis*[107]

RV Aurora Borealis sets trends in icebreaking technology, dynamic positioning, scientific drilling technology, multidisciplinary maritime research, energy generation and exhaust heat recovery as well as in maritime operation technology.

Several **innovative solutions** have been developed for *RV Aurora Borealis*, notably to cope with the particularly severe weather conditions that the vessel and the crew will encounter in the polar regions. Several of these technical solutions go far beyond the legal requirements of international conventions for sea-going vessels and three of them (atrium concept for covered moon pool working area; heeling and trimming tank system for dynamic positioning in the ice (controlled icebreaking at a very low speed); integrated transport system and logistics management concept for installations on the vessel) have been granted patents.



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All systems of the vessel are designed for safety and reliability with a large degree of redundancy included.

Dynamic positioning in open waters with counter-thrust against wind, waves and currents by swivelling propulsion, through a technology termed azimuthing thrusters, has been already used successfully for many years by drilling and auxiliary vessels of the oil and gas industry. But quite different challenges exist in holding a vessel's position in a wide surface ice drift produced by wind and tides in order to continue drilling for at least a further 1000 metres without difficulty below the sea bed in water depths between 100 and 5000 metres. This is further complicated by the fact that the drift of the ice can change direction often and quickly and that the ice can vary in its thickness, firmness and pressed formation. *RV Aurora Borealis* has the **capability of dynamic positioning** in these conditions. She is therefore able to hold position as the surrounding ice slowly encroaches.

Moreover, the diesel-electric power generator offers the benefit of a **noticeably quieter vessel**. The diesel motors are always run in combination in optimal load areas for minimal fuel consumption. At all times, the

103. NATO Research vessel Alliance, NURC 2008, p.5 and 6.
104. See http://www.nurc.nato.int/
105. NATO Research vessel Alliance, NURC 2008, p.1 and 4.
106. See http://www.nurc.nato.int/
107. A. Delius, B. Pruin, W. Dolling, Project Summary Extract related to Patents, "Icebreaker, drilling platform and multi-purpose research vessel *Aurora Borealis*", 7-990.01-0218.01.

exhaust heat of the motors is exploited to the maximum to heat thermal oil in the exhaust boilers and generate steam for the air conditioning system, the combustion air, the heating of the work deck surfaces, the entry doors and so forth. There is also **energy recovery** from the consumed air before the remainder is **released, cleaned, cooled and returned to the environment**.

To sum up, all **regulations pertaining to air pollution** have been fulfilled in the design of *RV Aurora Borealis*, even those IMO regulation requirements that will become mandatory only from 2016. Moreover, at the design stage options were kept open to allow for future developments concerning sulphur content of fuel both in regard to the required operation costs of the vessel and also to obtain and maintain the **eco-label "Blue Angel"** designed to distinguish the positive environmental features of products on a voluntary basis and thus recognising the **environmentally friendly character of the vessel**.

Section 2
Immunity only applies if *RV Aurora Borealis* is exclusively employed on non-commercial governmental service

Even if the main activity of *RV Aurora Borealis* will be non-profit and *AURORA BOREALIS* will be inherently not a commercial undertaking, the possibility of residual operation of the vessel for commercial purposes should not be ruled out (for instance, during those periods when the vessel is not occupied for non-commercial research). Moreover, the possibility of a joint partnership[108] between academic institutions and other enterprises should not be excluded beforehand.

In this context, it should be mentioned that if *RV Aurora Borealis* ceases non-commercial activity and is operated for commercial purposes (even temporary), immunity will be lost in the course of her commercial employment even though she retains her public ownership/operation character. Under international law governmental vessels operated for commercial purposes are treated in the same way as merchant ships. This reflects the restrictive immunity concept.

Immunity of governmental vessels derives from the sovereign immunity concept of the State. The restrictive immunity doctrine was born as result of the emergence of State-owned companies pleading immunity from lawsuits and therefore being placed at a competivive advantage compared to private companies. Many nations engage in foreign trade through State-controlled corporations and trade delegations in foreign countries. The obvious advantage thus accorded to the foreign State-controlled merchant ships has led to a gradual abandonment of the absolute immunity principle. This situation led courts to reconsider the broad immunity concept and adopt instead a doctrine of restrictive immunity that excluded commercial activity and property[109].

With regard to *RV Aurora Borealis*, attention should be paid to the definition itself of "non-commercial" activity. It was, for instance, remarked at the 2nd LAP meeting that a geophysical survey could be considered as a commercial activity. Furthermore, the legal definition of commercial or non-commercial activity may vary between one coastal State and another. In this regard, the thorny concept of 'applied research' should also be taken into account, especially in relation to continental shelf assignments.

Section 3
Recommendations on the necessary agreements and ship registry

We will first briefly address the legal agreements enabling compliance with the Convention on the immunity of State-owned ships 1926 (Bareboat Charter and Trust Agreement) (1) and will then proceed with a brief overview on the flag of the vessel and ship registry with regard to the specific characteristics of *RV Aurora Borealis* (2).

1. Bareboat charter *versus* trust agreement

The specific provisions on ship immunity of article 3 of the Convention on the immunity of State-owned ships 1926 apply only to vessels "owned or operated by a State…" As *RV Aurora Borealis* is envisaged to be owned and operated[110] by several States (or public entities), the following legal tools could be used to enable compliance with the above-mentioned requirement:

(1) the vessel can be bareboat chartered under a bareboat charter agreement to one State

or

(2) one State can own the vessel on behalf of the 'real' owners via a trust agreement[111].

In this case, the legal ownership of property (vessel) is separate from the beneficial (equitable) ownership (i.e.

108. In the general and not legal meaning of this term.

109. Francis J. Nicholson, "Sucharitkul: State Immunities and Trading Activities", Boston College Law Review, Volume 2, Issue 2, 1961, article 42, p. 452.

110. Via berths sharing agreement.

111. On the concept of beneficial ownership see Section 21 (4) of the UK Supreme Court Act 1981.

the right to enjoy the property), "as when trustee[112] owns the legal estate in land for the benefit of another"[113].

This agreement is successfully used by NATO nations for the purpose of ownership of aircraft and vessels. Jointly owned by 28 States, *NRV Alliance* has the status of a public vessel of the Federal Republic of Germany and flies German Republic flag.

This legal tool is also frequently opted for when registering private aircraft by non-US residents in the United States of America (US).

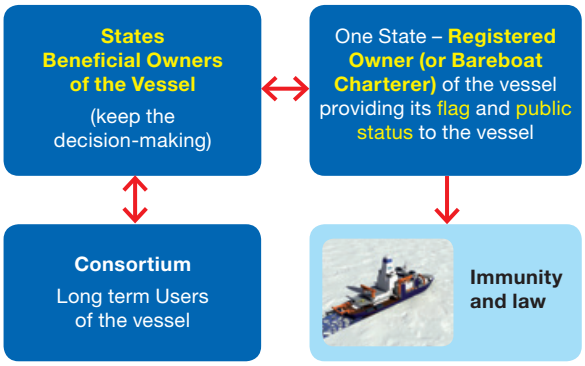
A bareboat charter agreement and a trust agreement are both suitable legal tools for *RV Aurora Borealis* for the purposes of the 1926 Convention[114].

Moreover, the Partners should carefully consider the terms and conditions of the operation agreement of the vessel and foresee the indemnification conditions of the Flag State for the damages it may incur and obligations it will have to honour. This could include a statement of the indemnification obligation and agreed means of settling any disputes (possibly by reference to an agreed party or panel). Potential disputes could include the fact of liability (i.e. whether the Flag State was correct in acknowledging liability) and the quantum of liability.

2. Flag of the ship and ship registry

With regard to the flag of the vessel, first it should be mentioned that, as the proposal of the EU ship register, the EUROS, envisaged in 1989, had not been finally adopted (neither as a fully-fledged EU registry, nor as voluntary parallel register)[115], *RV Aurora Borealis* cannot fly the EU flag[116].

The flag attributes a nationality to the vessel, i.e. a legal regime that will apply to the vessel and to the persons on board. For this reason the choice of the flag is crucial.



Regarding the Flag State the following alternatives were addressed by the Legal Advisory Panel at its 2nd meeting:

1. State of the major financial contributor;
2. State of the location of the logistical port;
3. State granting an open registry flag/flag of convenience.

This issue will naturally strongly depend on the will and wishes of the main funder-owners of the vessel. It seems most likely that the State providing the biggest financial contribution will intend to be the Flag State of the vessel or to have the last word on the choice of the ship registry.

At the 2nd Legal Panel meeting it was emphasised that *RV Aurora Borealis* should opt for a governmental flag[117], because of its symbolism and the high standards that it imputes[118]. The vessel would, in most States, be on the "public" registry; i.e. explicitly registered as a government vessel .

Although open registries usually offer a number of financial advantages to the ship-owners (i.e. lower registration, maintenance and operating costs) and the existing practice of German bareboat flagging out into so called "good convenience flags" (e.g. Antigua) was highlighted at the second LAP meeting, the Panel agreed that the open registry was not an appropriate option for a project of this magnitude[119].

In this regard, it should be mentioned that nowadays a number of European countries, aware of the financial attractiveness of flags of convenience, have established so-called international registries with a competitive financial framework but at the same time fully complying with all mandatory requirements regarding the ships' safety and security. For example, France currently has six ship registries. The French International Register (RIF) was

112. "One to whom property is entrusted to be administered for the benefit of another", Oxford English Law Dictionary, LexisNexis – Butterworths.
113. Dictionary of Law, 6 Ed., by E. A. Martin, J. Law, Oxford, 2006, p. 377.
114. Minutes of the 2nd LAP, p.8.
115. H. Ringbom, « The EU Maritime Safety Policy and International Law', Martinus Nijhoff Publishers, Leiden, Boston, 2008, p. 33 and 34.
However it should be mentioned that assessment of the feasibility of the creation of an EU register and EU flag for maritime and inland waterway transport is pointed out as one of the actions on transport safety in the EU White Paper on transport 2011.
116. « L'Union Européenne […] si elle a un drapeau, elle ne peut octroyer son pavillon. L'immatriculation des navires est donc de la compétence exclusive des Etats membres », CJCE 19 Janvier 1988, n°223/86, Pesca Valentia c/Min. de la Pêche et des Forêts, Rec. CJCE 83 quoted in Chaumette P., "Liberté d'établissement ou du droit communautaire du navire", Droits Maritimes, Dalloz Action 2009/2010, chapitre 212, § 212.11.
117. It should be mentioned however that a so-called governmental flag does not exist in all jurisdictions.
118. Minutes of the 2nd LAP, p.8.
119. Minutes of the 2nd LAP, p.8.

created in 2005 as a captive register[120]. It provides different financial reductions and tax exemptions, as well as benefits for the crew. It should however be investigated whether such international registries are open for governmental research vessels or not. As for the RIF, it appears that it is open only for vessels engaged in the deep sea trade or in international *cabotage* (international costal navigation) and commercially operated leisure vessels over 24 m in overall length, manned with a professional crew[121].

In conclusion of the chapter 2, it should be noted that as *RV Aurora Borealis* is intended to be operated mainly for non-commercial purposes, it has been strongly recommended by the Legal Advisory Panel that she enjoys the privileges granted by the Convention on the immunity of State-owned ships 1926. It has been also agreed that either a bareboat charter agreement or a trust agreement could be used to comply with specific maritime law requirements. As for the choice of the flag and ship registry, it will mainly depend on the will and wishes of the main funder-owners of the vessel.

120. Law No.2005-412 of May 3, 2005.
121. International French Registry, "France Ship Registry" (updated in 2010), Marine Money Guide to Ship Registries.

Conclusion

This document provides recommended scenarios for the legal implementation structure to be used on the facility, as well as broader advice on a legal framework with regard to the implementation of the *Aurora Borealis* Project. These legal recommendations have been generated in the course of the Legal Advisory Panel discussions and have been developed in collaboration with LAP members.

The study has been organised into two chapters, the first dealing with the legal nature of the instrument establishing *AURORA BOREALIS* and the second devoted to public vessel immunity and ship registry issues.

The outcome of the second chapter can be summarised in the following way: bearing in mind the projected areas of the operation of *RV Aurora Borealis* (waters under national jurisdiction of different States) and the nature of the envisaged activities (*RV Aurora Borealis* is envisaged to be employed mainly on government and non-commercial service), it has been recognised that it would be desirable for the vessel to enjoy the privileges granted by the Convention on the immunity of the State-owned ships 1926, provided *AURORA BOREALIS* complies with the necessary legal requirements.

As a result of this study three legal scenarios with regard to the ownership of the vessel have been identified by the Legal Advisory Panel as the most suitable for the establishment of *AURORA BOREALIS*:

1) International legally binding agreement;

2) European Research Infrastructure Consortium (ERIC);

3) Contract (limited liability company or association).

Furthermore, the whole legal framework can be organised through several levels (similar to the International Space Station Program), with only the first level being governed by a multinational agreement, ERIC or private law legal instrument that would either shape the general structure of the whole partnership[122] (ownership and operation of the vessel), or determine the legal relationship between the owners of the vessel (with respect to the shares in the case of the limited liability company).

Such a multilevel legal structure would confer a sufficiently flexible framework for the potential Partners of the *RV Aurora Borealis*.

As for the operation of the vessel, she could be operated either via a European or international polar research agency (if the vessel is also owned by the non-EU Member States) specifically set up for the purposes of the *Aurora Borealis* Project (similar to NURC) or via a consortium of the Long Term Users with the management

122. In the general and not legal meaning of this term.

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office situated in one of the countries owning the vessel.

The final choice of the most suitable ownership and operation structure for *AURORA BOREALIS* will naturally depend on the funding structure opted for, and the will and commitment of the Partners involved into the Project at its implementation stage.

In this context, the proposed legal structures should be regarded as theoretical proposals albeit based on the experience of the existing comparable successful legal structures, as well as on the assumptions of what could be advantageous for this unique undertaking. These recommendations are broad enough to fit the particular needs and wishes of the potential Partners, enabling them to opt for the proposal according to the specific requirements and wishes that prevail at implementation stage of the Project. Moreover, these recommendations, subject to legislative changes, are transposable to similar projects and therefore remain topical and relevant for European policy makers in the future for any potential European vessel. However, more detailed legal analysis should be provided in each specific case.

1. If the vessel is owned jointly by the EU Member States and Non EU Member States: co-ownership structure or international organisation established by an international treaty.
(parallel with Leonardo and Alliance vessels experience)
Consortium/Agency for the Long Term Users who are not involved in the ownership

2. If the vessel is owned solely by the EU Member States: establishing of an ERIC Non EU Member States will be involved in the operation of the vessel and decision-making as Long Term Users. They will establish a Consortium
(parallel with IODP experience)

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