

ERICON

AURORA BOREALIS

EUROPEAN
RESEARCH
ICEBREAKER
CONSORTIUM



ICEBREAKER,
DRILLING PLATFORM
AND MULTI PURPOSE
RESEARCH VESSEL

WWW.ERI-AURORA-BOREALIS.EU



Federal Ministry
of Education
and Research





Perspectives of AURORA BOREALIS

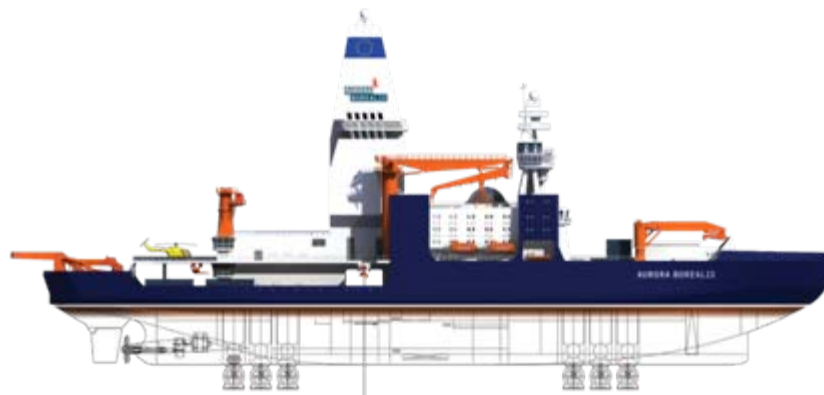
- **Novel icebreaker that operates autonomously** during all seasons and in summer on stations (dynamic positioning), no additional icebreaker support needed
- **Multi-purpose Research Vessel for a year-round deployment** in the Polar Regions (Central Arctic, Arctic basins, Antarctic Margins) and for international and interdisciplinary expeditions
- **Scientific Drillship** for drilling of 1000 m long cores in up to 5000 m water depth under a closed sea-ice cover





Main Dimensions

Length over all	199,85 m
Breadth moulded max.	49,00 m
Draught max.	13,00 m
Depth to Working Deck	17,75 m
Max. speed:	15 kn
Cruising speed:	12 kn
Personnel (crew + scientists):	120
Expedition duration:	90 days
Functionality of the vessel has to be ensured down to minus 50°C, research work from plus 45°C down to minus 30°C	
Power generation Diesel-electric; Generator capacity in total abt. 94 MW	



Geophysics / Pre-Site Survey Capacity

- Aft working deck: layout for geophysics,
- Sheltered, partly or fully opened.
- Deployment of 1-4 seismic arrays via built-in ramps for access close to waterline.
- Pressurized air supply: mult. 2 x 32 + add. manifold.
- Room for 4 streamer winches under shelter, add. capacity on open deck (containerized).
- Aft: geophysics tool and maintenance shops, lab. And winch room.
- Additional streamer deployment over sides with 3rd party equipment => **3D capacity** for open water/min. ice.





The AURORA BOREALIS Challenge:

- AB provides a unique **focal point** for European polar research
- Facilitates the development of **long term scientific perspectives and strategies**
- Requires **formation of an International Consortium** of motivated institutions/nations
- The abilities of the AB require a carefully balanced plan for **interdisciplinary expeditions**
- Enables the development of both, **Arctic and Antarctic** research perspectives

ERICON-AURORA BOREALIS

will generate the strategic, legal, financial and organisational frameworks for European ministries and funding agencies to decide about the construction and operation of AURORA BOREALIS.

Coordinator: ESF

48 Months duration

Budget: 4.5 Million Euro

**Project started March 1,
2008 and runs till
February 2012**

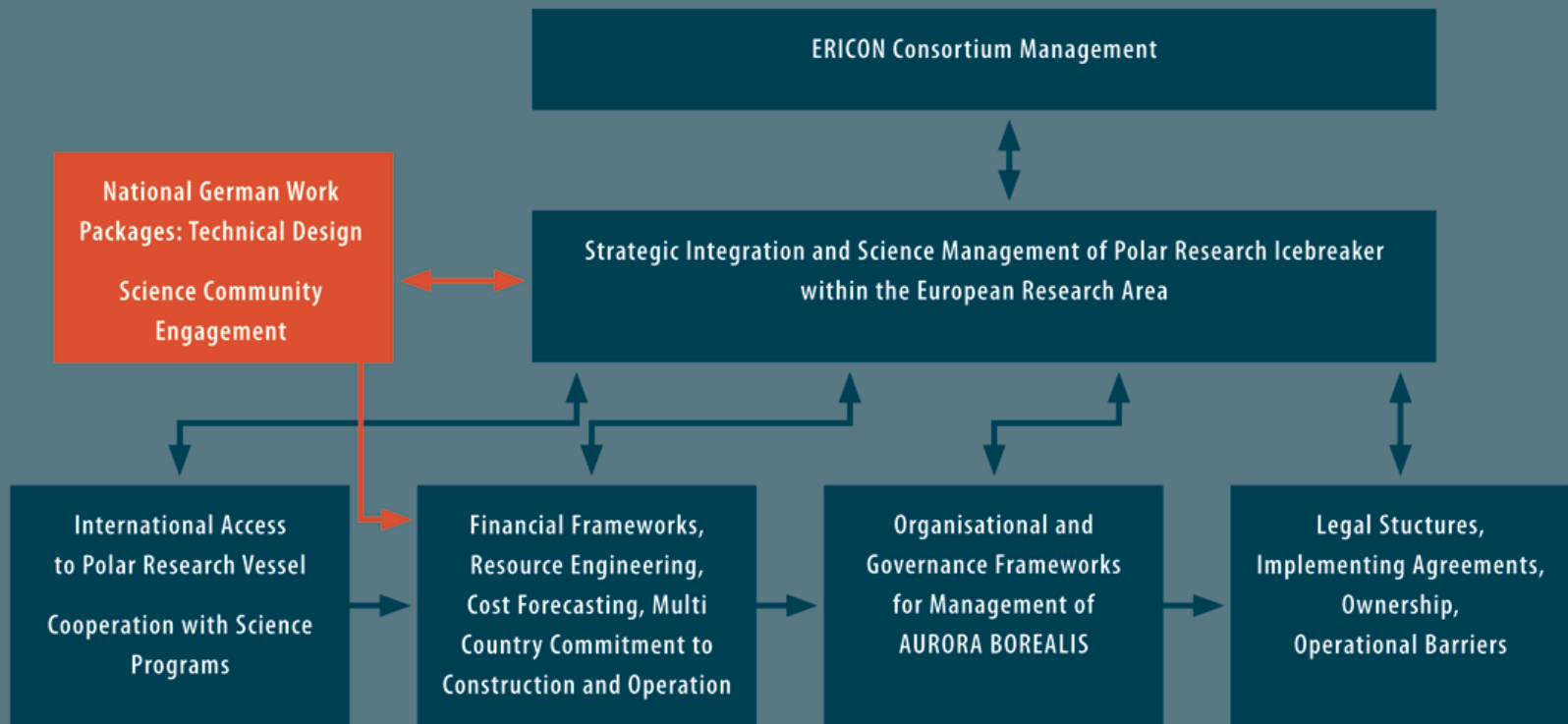
THE PARTNERS

ESF Fondation Européenne de la Science
AWI Alfred-Wegener-Institut für Polar- und Meeresforschung in der Helmholtz Gemeinschaft, Germany
CNR Consiglio Nazionale delle Ricerche, Italy
PNRA Programma Nazionale di Ricerche in Antartide, Italy
CNRS-INSU Centre National de la Recherche Scientifique - Institut National des sciences L'Univers, France
AARI Arctic and Antarctic Research Institute, Russia
IPEV Institut Polaire Français Paul Emile Victor, France
MTL Merentutkimuslaitos (Finnish Institute Marine Research), Finland
NWO Netherlands Organisation for Scientific Research, Netherlands
UIB University of Bergen, Norway
BMBF Bundesministerium für Bildung und Forschung, Germany
FNRS Fonds National de la Recherche Scientifique, Belgium
BAI Bulgarian Antarctic Institute, Bulgaria
FAR Fundatia Antarctica Romana, Romania
AARC Aker Arctic Technology Inc., Finland



ERICON-AURORA-BOREALIS:

PROGRESSION AND INTERRELATION



ERICON MANAGEMENT & FUNCTIONAL RESPONSIBILITIES

**ERICON
Stakeholder
Council**

**ERICON
Technical
Committee**

ESF
Coordinator
Political Director
Science Planning
Financial & Legal
Planning

AWI
Executive Manager
Communications
Research Services
Technical liaison



- Financial, legal contractual management
- Science planning – evaluation strategies
- Funding agency and ministry liaison
- Senior administrative support to the ERICON Council

- Daily operations, tasking and scheduling
- Communications and Outreach functions
- Science Research Service
- Technical, logistical and engineering liaison



WP2: Strategic integration and Science Management

Main Tasks:

Improve the scientific co-operation and integration by:

- 1) development of a project portfolios of international scientific objectives, suggested areas of deployment, and project proposals. It will be summarized in an **European Science Strategy** for AURORA BOREALIS for the next 15 years
- 2) to improve and integrate the AB technical capacities (technical design and scientific instrumentation) with the national capabilities, throughout suggestion and recommendations by international experts
- 3) to create a proper structure and a set of rules to facilitate the cooperation and the access of the scientific users

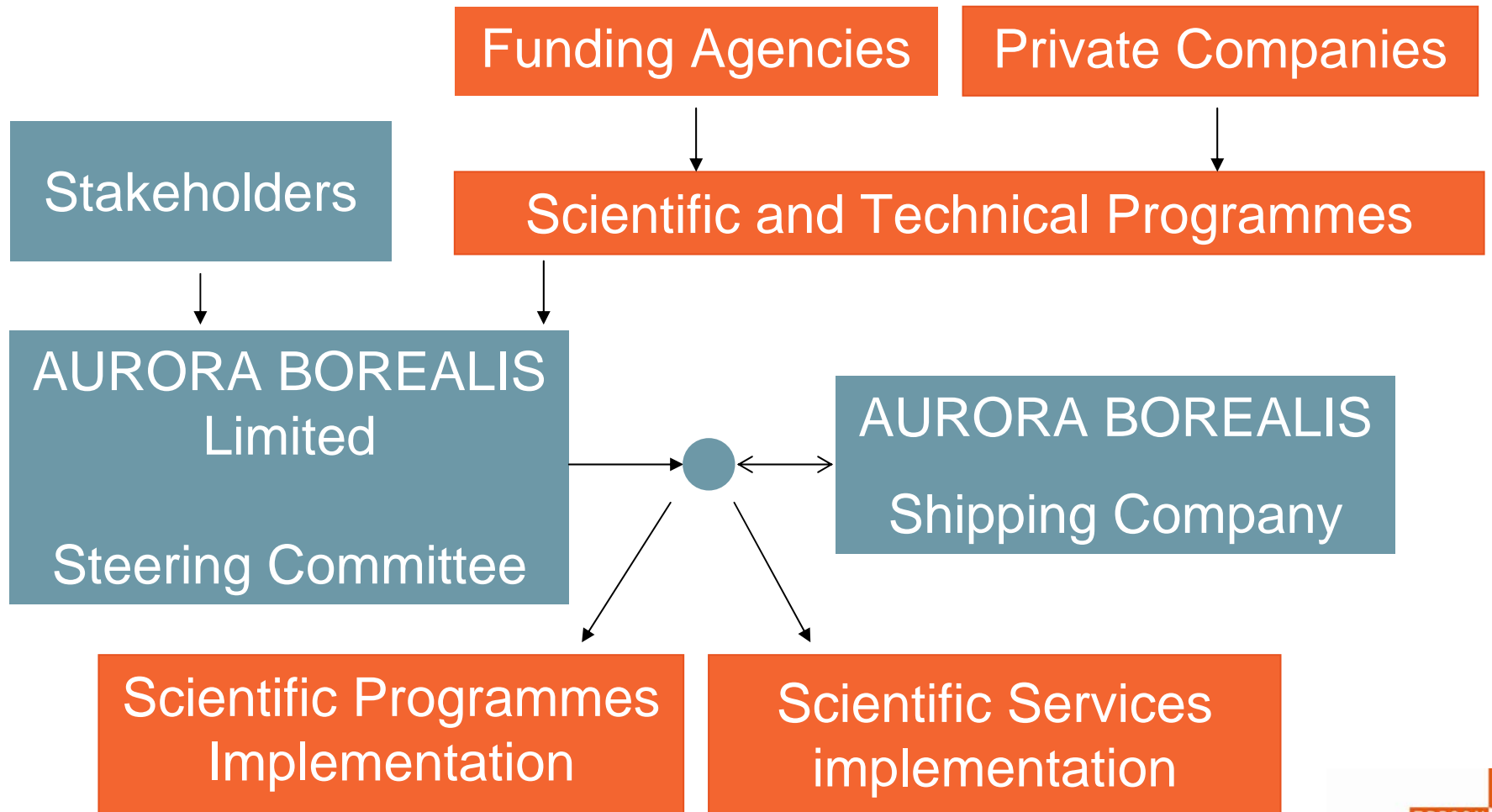


Strategic (Decadal) Programs could include:

- An Arctic Drilling Mission
- Arctic Winter Sea Ice Monitoring
- Deep Biosphere in the Arctic
- Geodynamics of the Mid-Ocean Ridge
- Census of Arctic Marine Life
- Seasonal variability of brine formation and deep-water renewal
- ...others...

A Scientific Advisory board will be set up soon.

WP5: Governance frameworks



WP4: Financial frameworks and cost forecasting

Advisory Panel to issue financial recommendations to ERICON Council validated by an independent consultancy company



WP6: Legal structures- implementing agreements

Advisory Panel to issue legal recommendations to ERICON Council
validated by an independent legal consultancy company





ERICON - AURORA BOREALIS

Status Report March 2009

- **Technical design** of the vessel finished (complete General Arrangement Planning)
- Complete **technical documentation** for later tendering process produced till II./2009
- The **European Research Icebreaker Consortium** within the FP7 is established.
- Setup of **ERICON Expert Advisory Panels** in progress for finance, legal and science.
- The **AURORA BOREALIS Science Perspective** updated in the next two years.
- For further consortium planning and **information of Science Community**: workshops in – Romania, Russia, Belgium, Italy, Germany (2007) - Russia, Germany, Ireland, Norway, Denmark, Canada (2008) - The Netherlands, possibly Spain & Russia (2009)



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THANK YOU FOR
YOUR ATTENTION

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