



Network Cooperation – How to increase the relevance and impact and facilitate cooperation between the P2Ps?

Experiences of joint use of marine research infrastructure – BONUS, Article 185 programme

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Session 2: Environment and Climate Change

19 themes

Coast and catchment

Societal responses

Ecosystem

**Five
strategic
objectives**



**Sustainable use of
goods and services**

**Observation and
data management**



- Research vessels (from small to large)
- Research submersibles and unmanned vehicles
- Research aircraft
- Moored instruments
- Tide gauges
- Lagrangian observations facilities (drifters)
- Marine observatories and laboratories
- Satellite Oceanography Centres
- Numerical modelling centres
- Ships of Opportunity (commercial ships equipped with measuring systems)

Benefits from joint use of marine research infrastructures



- allows scientists access to a wider range of facilities and equipment than would otherwise be possible (submersibles, remotely operated vehicles (ROVs), towed arrays and shipboard surveying systems)
- significantly reduce wasted time, and therefore wasted cost, spent on passage legs between areas of scientific interest, and allow marine scientists access to a wider range of geographical areas

By its nature BONUS is facilitating joint use of infrastructure

Joint use of infrastructure is included in reports on statistics:

- Number of persons and working days spent by foreign scientists on research vessels participating in the cruises arranged by the project
- Number of persons and working days spent by foreign scientists using other major research facilities involved in the project

BONUS Article 185 decision

-*During the implementation phase, up to 25 % of the contribution from the Participating States may consist in providing in-kind infrastructure contribution.....*

Putting it into practice

- Matching EU funding acted as a strong incentive - 25 % means that EU matching funding EUR 12.5 million could generated
- One task during the first years was to create the implementation modalities for including the infrastructure contributions
- BONUS decided to restrict to three types: ship-time, use of computer facilities and marine laboratories

What is the value in €?

<i>Baltic Sea research vessels</i>	<i>EUR per day</i>
• <i>MARIA S. MERIAN (DE)</i>	<i>33 000</i>
• <i>DANA (DK)</i>	<i>28 000</i>
• <i>POSEIDON (DE)</i>	<i>11 500</i>
• <i>ALKOR (DE)</i>	<i>8 500</i>
• <i>ELIZABETH MANN BORGHESE (DE)</i>	<i>8 500</i>
• <i>SOLEA (DE)</i>	<i>8 100</i>
• <i>BALTICA (PL)</i>	<i>5 200</i>
• <i>HAVSFISKEN (PL)</i>	<i>4 600</i>
• <i>CLUPEA (DE)</i>	<i>3 000</i>

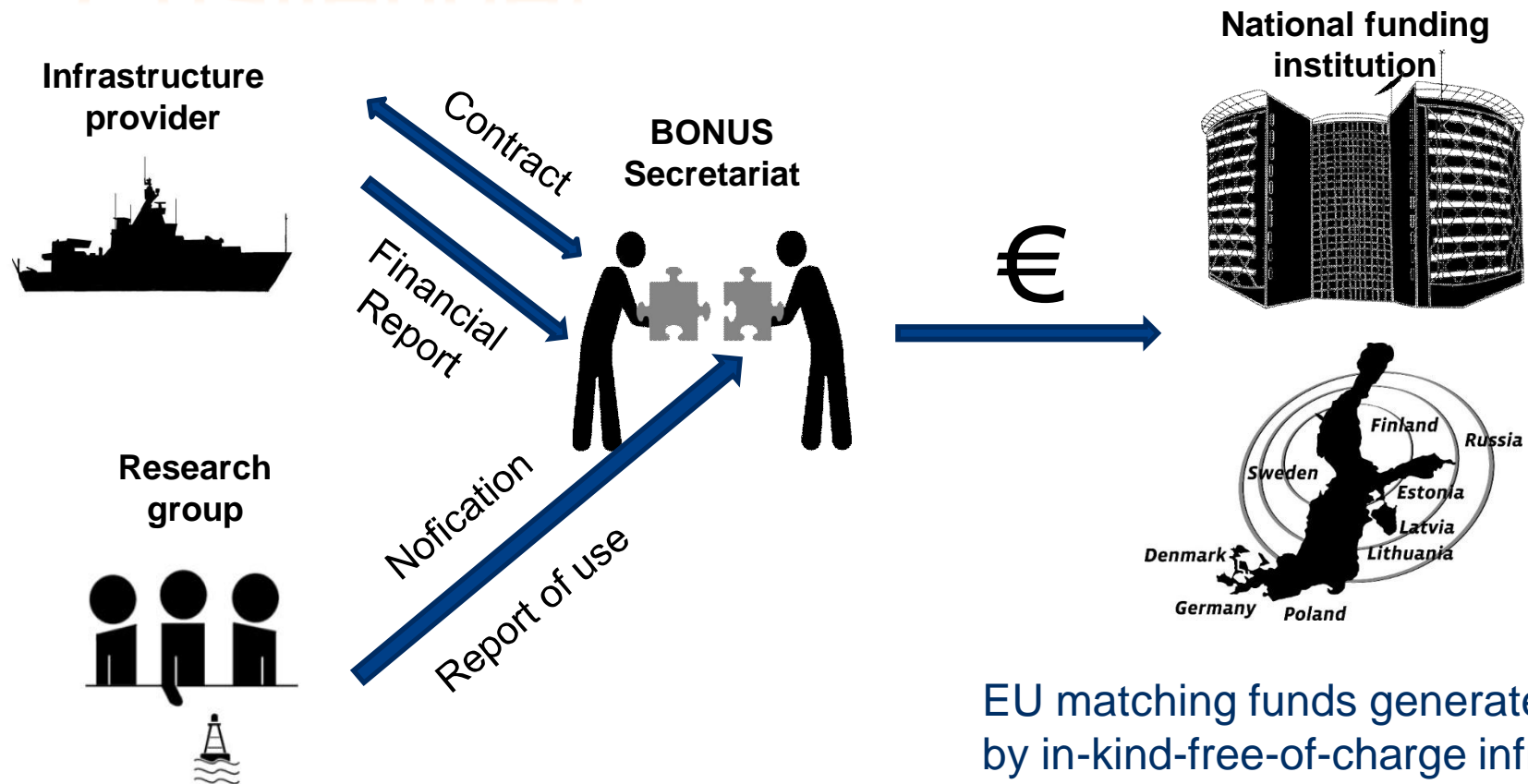
The highest reported cost per one cruise is EUR 420 000

Free of charge use

- Provider should be a public entity
- Provider should conclude the bilateral agreement with BONUS
- Two-folded reporting – user (evidence report) and provider (financial report)
- Costs should be clearly identifiable and auditable

Only if all abovementioned conditions are fulfilled, the matching EU funds will be generated

Challenge!



How does it work?

EU matching funds generated by in-kind-free-of-charge infrastructures have been used as a common pot

Joint use (free of charge + charged)

During three years of implementation, the seven BONUS call 2012: Viable ecosystem call projects have reported:

- 77 foreign persons participated for 608 days on research vessels participating in the cruises arranged by the projects
- 73 foreign persons used for 1249 working days the other major research facilities involved in the project

Reported so far ...

- Altogether 44 research cruises

Germany: ALKOR, ELISABETH MANN BORGHESE, SOLEA, CLUPEA, POSEIDON

Poland: BALTICA, OCEANOGRAPH2, OCEANIA

Denmark: DANA, HAVFISKEN (DK)

- 4 field stations

Sweden: År and Askö,

Finland: Tvärminne

Denmark: Roskilde (DK)

- 2 computing facilities

Germany: North German computing facility,

Sweden: Swedish Genomics Infrastructure

=> EUR 3.6 million
(EUR 5.1 million)

Research cruises

- 28 out of 44 cruises have been jointly used
- In most of these cases researchers from two countries participated but in 5 cases researchers from three or more countries
- Most frequently appearing partnerships:
 - Germany – Denmark
 - Denmark – Poland
 - Germany – Poland
 - Germany – Sweden

Examples: ALKOR 449

Insights into the biogeochemistry work of the COCOA project: from the water column to the sediment, from the field to the lab. Secrets of the coastal filter and a life in aquatic sciences.

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AL 449, Bay of Gdansk – the science party

DANA HELLEMANN

For two weeks, we are on board R/V Alkor and sample the coastal zone along the Vistula estuary in the Bay of Gdansk, Poland. The aim is to sample both water column and sediment in transects along the river plume to get more insights into coastal nutrient dynamics along a gradient of high nutrient load (river plume) to lower nutrient load (more offshore waters).

12 scientists from 5 institutes, highly motivated and well equipped with samplers, corers and grabs, as well as empty bottles, boxes and bags to be filled with water, filters and sediments. While the first day started off bumpy, the weather calmed down when arriving in the Bay of Gdansk and sampling started off well under cold winter sunshine.

[Entire cruise blog](#)

Other solutions in Europe and US

- OFEG – Ocean Facilities Exchange Group
 - FR, DE, UK agreement to share shiptime without transferring money
 - Ship days valued by points in relation to size and facilities
- UNOLS – University-National Oceanographic Laboratory System
 - involves 58 academic institutions joined for the purpose of coordinating oceanographic ships' schedules and research facilities

- Köikuste station of University of Tartu hosted researchers from BONUS BAMBI for sampling and experiments of bladder wrack
- Roskilde Fjord learning site of Aarhus University hosted sampling campaigns of BONUS BLUEPRINT and COCOA
- År Research Station of University of Uppsala hosted BONUS INSPIRE experiments on flounder eggs
- Tvärminne Zoological Station, of University of Helsinki hosted field experiments of BONUS BALTICAPP, BLUEPRINT, COCOA and SHEBA projects

BONUS innovation projects develop new methodologies for climate change observations to be used/mounted on larger infrastructures

- *BONUS PINBAL Development of a spectrophotometric pH-measurement system for monitoring the Baltic Sea*
- *BONUS AFISMON Development of the current Automatic Flow Injection Sampler to monitor microbially driven biogeochemical processes in the Baltic Sea water*
- *BONUS FERRYSCOPE Bridging the divide between satellite and shipborne sensing for Baltic Sea water quality assessment*
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- Seas and oceans have a central role in climate regulation
- Major economic, scientific and policy benefits for climate change research, mitigation and adaptation could be gained by boosting shared use of marine research infrastructures
- Current sector based infrastructures/RTDI governance structures create barriers for optimising the shared use of these infrastructures
- There is a need for developing incentive/bartering or other systems which are mutually benefiting the infrastructure providers, users and RTDI funders

THANK YOU!

Further information
www.bonusportal.org
www.bonusprojects.org



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Lietuvos
mokslo
taryba

