

Summary report of the 2nd meeting of the international Scientific Advisory Board (SAB)

Meeting of the French Oceanographic Fleet (FOF) held in Brest onboard R.V. Pourquoi pas?
(20-21. November 2019)

Three main topics were developed during the second SAB meeting:

1 - Fleet Activity indicators:

The first topic of the agenda was a comprehensive presentation of **existing Fleet activity indicators** together with ideas of potentially **new activity and impact indicators** for the Oceanographic Fleet given by Pascal Morin.

The existing Fleet Activity Indicators are separated by **Cruise Categories** as Scientific Research, Public Interest (Navy excepted), French Navy, Public-Private Partnership and Transit/Technical Stop/ Technical Test cruises. These detailed figures and tables are interesting for themselves because they accurately describe the distribution of the activity. However, it is difficult to use them all in the form of indicators, except those referring to the fleet programming specification, but they can be used for specific analyses on demand.

A **number of new activity indicators were presented** including for example the number of cruises (total and by research vessel), number of days at sea by scientific domains, number of scientific staff embarking, **nationality of scientific staff as an indicator of the attractivity of the FOF**, and fleet activity expressed as person x days produced in total and by each research vessel.

New impact indicators were suggested concerning the **quality of the scientific results** (metrics, citation numbers), **education and training** of the next generation of marine scientists, **knowledge transfer** (industrial collaboration, number of patents) and the **relevance for society** (job creation, company start-ups, economic impact on local companies, etc).

A recent 2019 OECD report “**Analysing infrastructures impact**” by Frédéric Sgard, OECD was given by **Pascal Morin**. That report proposed **25 core impact indicators** and **58 standard indicators**

The request from Fleet Direction to SAB was to provide advice on selecting and describing appropriate performance indicators (activity and impact) for the Fleet.

The SAB recommendation: In a first step, it is proposed to go on with the core existing figures indicating the level of reaching of objectives of the fleet programming specifications. In a second step FOF will have to adopt **a framework that may consist out of the previous cruise categories and set out purpose and objectives** (as per proposal from SAB in annex). Fleet direction will submit a proposal during next SAB. Emphasis is given on the fact that each objective has to be **SMART – Specific, Measurable, Achievable, Relevant, and Timely**. It might be worth to **benchmark the final proposal as a bi- or tri-lateral collaboration with European partners aiming at similar impact factor assessments**.

2 -State of Progress of the coastal and regional evolution plan

The updated plan for the renewal and modernization of the FOF during the period 2020-2035 was presented with some emphasis on coastal and regional vessels which are to be modernized or replaced during the next five years (*Thalia* and *Alis*). SAB point out that those vessels are of major importance

when addressing the scientific questions of coastal environment and regional scale studies. Based on the information given on the various impact factors at the beginning of the meeting, SAB notice that a vessel like "Alis" seems to be one of the research vessels with the highest productivity rate in terms of scientific papers published. In mainland, where *Thalia* operates, SAB agree with the introduction of a medium range vessel based on a foreseeable increase in the need for multidisciplinary campaigns requiring larger vessels.

SAB recommendation: according to the importance of coastal and regional scale researches around mainland and overseas, **SAB supports the planning of a replacement of those medium range research vessels in order to avoid losing capacity in this important vessel category for France** and encourage to seeks actively for suitable financial solutions to ensure in due time a proper replacement.

3 - Presentation of the preliminary results of the phase 1 for a two deep- sea ROVs scenario by the Scientific Working Group leaders

The SAB was satisfied with the comprehensive overview given by the presenters (Valérie Chavagnac, Pierre-Marie Sarradin) about the work done by the WG over the past 7 months and that there **exists a good interconnectivity between all the involved groups**. This work was what expected from the working group by SAB from the recommendations made during the first SAB meeting: this must continue.

The essentials identified by the WG for the new deep-sea ROV were:

- **An all oceans capacity** down to 6000 mbsl from exploration to site-survey and deep-sea observatory
- **Concerning exploration skills:**
 - o to navigate as freely as possible in the deep-sea without constraints from the research vessel positioning and its moving speed,
 - o to maintain excellent vehicle stability for precise sampling at the deep-sea and
 - o to supply higher power potential
- **a well balanced complementary and specificity in its functional and operational specificities in coherence** with the other deep-sea vehicles of the French Fleet
- **high payload capacity for both sampling and scientific tools** implemented on the new ROV scientific tools, interoperability with the ROV Victor6000
- to be associated with a **new shuttle to optimize its working potential**
- **to be equipped with a routine sensing package (EOV)** that could provide the mean to cross disciplinary research developed and used in an **environment friendly way**.
- **improved tools and functions for the perception of the sea floor environment**, implementing enhanced sensor packages as well as 3D processing and visualization tools, in the aim to overcome one of the major drawbacks of remote operated systems.

The WG identified the question of long-term research topics including research in **Arctic regions** which could impact the global specifications of the the future deep-sea ROV. On that subject the **SAB suggested intensified international collaboration to ensure access to the Arctic** on existing European or other icebreakers.

A number of ongoing activities until spring 2020 were further presented (including various video conferences and meetings). On the question of one SAB member on the TRL (Technology Readiness

Level) state concerning 3D imaging (real-time, resolution, interactivity) it was stated that this is an ongoing process but data management and processing are even more important.

Regarding the future campaigns with more complicated systems and sub-systems, in order to find appropriate solution, the implementation of specific sub-working groups was suggested.

SAB recommendation: SAB recognizes that the **work in progress is globally satisfying and must be continued by specifying the different identified use scenarios and by defining priorities among the essentials in case of all essentials would not be possible to be implemented simultaneously in the new deep-sea ROV.**

SAB will await the WG final report to give its opinion on the scenario with two deep ROVs.

4 - Members Renewal of Fleet Evaluation National Committees members (CNFH, Evaluation Local Committee)

Because of the retirement of Bernard Quéguiner as member of the CNFH Evaluation Local Committee it was proposed to nominate Ingrid Obernosterer as new member of this committee. The **SAB recommends that Ingrid Obernosterer receives the mandate to act as reviewer for incoming ship-time applications. The proposed change of the chair-person of the local committee in Villefranche was also approved by the SAB.**