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3.6

Report on the engagement with private sector, technology platforms

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INTRODUCTION

The CSA-Oceans2 supporting the Joint Programming identifies among its tasks the need of engaging more efficiently and continuously with the private sector, as part of the wider activities foreseen in Work Package on 'Connectivity to support implementation'.

As stated in the Description of Action – Annex I to the Grant Agreement, main objectives of Task 3.3 are:

- increase the awareness of JPI Oceans itself;
- stay informed on the research needs of EU private sector by continuously check updates of the SRIAs of technology platforms;
- maximize the use of knowledge from joint actions with an innovation potential to create an economic impact, as regard for example development of technologies;
- collect and discuss suggestions of typologies of actions for a public intervention in support to the private sector, as regard for example ocean literacy and training for marine jobs.

In order to reach advancement on these aspects, works have been undertaken to:

- provide background analysis on best practice developed by JPI-O and former CSA-Oceans as regard interaction with private sector, as well as on available methodologies to support and consolidate public-private collaborations;
- design tailored engagement activities for JPI Joint Actions and for the JPI in general;
- implement concrete supporting activities for enhancing public-private collaboration, i.e. the support to the organization of the European Maritime Day;
- suggest recommendations for further discussion and follow-up at the JPI Management Board level.

This report, due in month 17, will be updated by the end of the project to include relevant developments and implemented activities in line with preliminary findings here reported and according to possible specific requests from the JPI Secretariat.

BACKGROUND ANALYSIS

Best practice on industry engagement are lightly assessed through a review of achievements of relevant projects and initiatives. This is a preliminary step in order not to start from scratch. In fact, this report builds on CSA-Oceans, including industry and technology needs (2013); JPI-Oceans Strategic Research and Innovation Agenda, Implementation & Operational Plan. Furthermore, tools for developing strategic methodologies for engagement are explored looking also at experiences developed within other initiatives/sectors and best practices identified within other projects of the framework programme, e.g. funded via the SwafS-06-2017 H2020 call on 'Engaging industry – Champions for RRI in Industrial Sectors', as soon as first results will be available.

REVISION OF RELEVANT ACHIEVEMENTS

CSA Oceans – WP6: Mapping and gap analysis of ocean observation, research infrastructures, capacity building

Mapping and preliminary analysis of infrastructures, observations/data and human capacity building, CSA Oceans Deliverable 6.1

In order to collect views of stakeholders on addressing the three main issues of the mapping exercise, CSA Oceans hosted a series of workshops. Stakeholders took part in workshops, relating to different stakeholders groups and interests, where their inputs on potential needs/actions/tools to achieve the JPI Oceans goals were discussed. After the workshops, stakeholders were encouraged to elaborate on their responses through an online open consultation. This allowed stakeholders from the marine and maritime community to have an input into JPI Oceans SRIA. The output of this consultation was used to feed into the mapping and preliminary analysis of MRIs and HCB and was further analysed in the subsequent phase of the project.

CSA Oceans – WP4: Identification of barriers to science based innovation

Identification of new and cross-cutting technologies and solutions to boost blue growth, CSA Oceans Deliverable 4.2

Identification of industry stakeholder networks at pan-European and international level was carried out as an integrated part of the overall identification of JPI Oceans stakeholders. In this process, JPI Oceans Management Board and the Strategic Advisory Board were consulted. The list of stakeholders, including the selection criteria, was endorsed by the Management Board.

The following two main criteria were used to identify the most relevant stakeholders for JPI Oceans:

- Geographical coverage: only stakeholders that are involved in at least three or more European Countries
- Relevance: the goals and objectives of the stakeholder should be directly linked to at least one of the goals of JPI Oceans.

The industry reference list that emerged from this exercise was mainly categorised under Industry Associations and Technology Platforms. Around 20 Industry Associations and Technology Platforms

were identified as relevant to give input to the development of the SRIA¹. This identification of stakeholders was used when the CSA Oceans partners carried out their consultation. A workshop was dedicated to the stakeholders from industry. The identified list of industry experts at a pan-European and international level includes both individual names and the Industry Association or Technology Platform they represent.

Some specific objectives involving private stakeholders' role within the frame of JPI Oceans goal 1 "Enable the knowledge based maritime economy":

- Involve industry and public administration in knowledge-building activities.
- Financial support, tax deduction schemes or other mechanisms should be explored.
- Market stimulation and mechanisms to attract investors from traditional marine and maritime sectors.
- Establish a common understanding and agreement of economic, social and ecological sustainability.
- Understand the ecological risks and consequences of industrial and economic development in a long term perspective.

Few suggested actions listed in the final recommendations are in order:

1. JPI Oceans should lead an initiative to facilitate a maritime engineering and technology community.

A public-private innovation partnership on technology development for the blue industries could create substantial synergy across sectors and regions. A Key Innovation Community would be one way of organizing such a partnership.

2. JPI Oceans should facilitate research on prioritised, cross-cutting issues of common interest to the blue industry.

It should aim to maximise the knowledge outcome with a commercial potential, and a plan for identifying such outcome and transfer of such knowledge to those who can make use of it.

3. JPI Oceans should facilitate research for more sector-specific knowledge needs, thus supporting the development of the bio-economies, marine renewable energies and deep-sea exploitations. Furthermore, calls or actions should be initiated and conducted in collaboration with the relevant sectors, ongoing activities, ERA-nets, technology platforms and interested member countries.

4. JPI Oceans should establish networking venues

With its long-term and cross-cutting perspectives, JPI Oceans could be a home and facilitator of knowledge transfer and collaboration between science and industry, among industrial sectors, and between science and technology disciplines.

¹ Stakeholders in the category Tech Platforms and Industry, Innovation & Economic Associations in the list are: European Aquaculture Technology and Innovation Platform (EATiP), European Fisheries Technology Platform (EFTP), Maritime Technologies (MARTEC), WATERBORNE.

Industry and technology needs expressed from Industry and Technology Platforms

- Promising research, technology and /or innovation potentials are related to advances in:
 1. Blue biotechnologies dedicated to health, cosmetics, food and energy (μ -algae) through marine biodiversity
 2. Harvesting marine energy resources: energy (wave, tidal and temperature) and deep water mining
 3. Fisheries and aquaculture.
- Development of new instrumentation for oceanography, in order to measure the ocean to such an extent that it will be possible to initiate ocean forecasting.
- Pushing the “deep – far – cold – big” boundaries through
 1. Exploration / knowledge building (resources, yes, but where, and how much of it? in which environmental context?)
 2. Long term, maintainable, anchored multiuse surface offshore platforms (artificial islands). E.g.: steel will not probably be the main material any more...
 3. Unmanned deep water systems
 4. Deep water anaerobic energy production to support deep water activities
 5. Underwater COMs.
- Selective fishing gears, improved on board energy management, utilization of raw materials, and planned and sustainable aquaculture.

TAILORED ENGAGEMENT

Specific inputs collected about Joint Actions (JAs) developed within JPI-Oceans can be offered to private companies to get their engagement and interest. To this end, the activities for the first release of this report, encompassed the following steps:

- review of on-going JPI Oceans actions for industry engagement potential;
- development, distribution and analysis of focused questions (Annex II) for developing engagement solutions of the private sectors into JPIO JAs;
- targeted interaction with the Coordinators of the ERANET on Marine and Maritime Technologies on the organization of the B2B event;
- implementation of a matrix suggesting for each action the typology of interaction with the private sector;
- define and implement complementary actions for continuous engagement;
- transfer the achievements of Task 3.3 into the toolkit (<http://www.jpi-oceans.eu/toolkit>, developed within WP2) in order to concretely support the process of effective stakeholders' involvement in JPIO JAs by taking into account industry needs and perspectives.

PRELIMINARY REVIEW OF JOINT ACTIONS

JPI Joint Actions (JPI-JAs) were screened at first by gathering information on the website (<http://www.jpi-oceans.eu/joint-actions-0>) and through the JPI-O Secretariat. For each action it has been reported a fact sheet, including summary of tools used for the implementation, objectives/expected results, main target, status, composition of the consortium. According to the perception on the opportunity of involving industry, this allowed a restriction on the JA to which a dedicated questionnaire was addressed.

THE ON-LINE QUESTIONNAIRE 'PERSPECTIVE OF JPI OCEANS JOINT ACTIONS ON ENHANCING THE PUBLIC-PRIVATE CONNECTION

A questionnaire was indeed addressed to key persons in the Secretariat with the aim of formulating fit-to-purpose solutions for engaging the private sector within an action. Preliminary outcomes of the answers to the 13 questions of the survey "Perspective of JPI Oceans Joint Actions on enhancing the public-private connection" to be used for recommendations as basis for tailored realistic proposals of engagement. General issues could also feed 'engagement guidelines'. The table below offers an overview of the answers together with some comments provided for the following actions:

- ERA-NET COFUND on Maritime Technologies, acronym MarTERA;
- Munitions in the Sea, acronym Munitions;
- Building an efficient transdisciplinary scientific community for policy-relevant knowledge on coastal and maritime planning and management, acronym MSP.

Full questions and answers are reported in Annex 1.

Question	MarTERA	Munitions	MSP
Involvement of the private sector: phase and modalities	<ul style="list-style-type: none"> - Industry involvement in all projects funded by the call - B2B events - Ocean Technology Community - Dissemination 	Possible joint projects dealing with the technology line of activity	Private sector representatives in the initial workshop
Big companies VS SMEs, who is better to interact with?	Both	Both	Big companies or associations of small companies
Target	<ul style="list-style-type: none"> - European Technology Platforms (and branch organizations) - EEN - Associations 	<ul style="list-style-type: none"> - Local technology districts; - Ad hoc contacts 	<ul style="list-style-type: none"> - European Technology Platforms - Associations - National technology clusters on the sea (in a second stage)
Typology of public-private interaction	<ul style="list-style-type: none"> - B2B event - Involve the industry in the action as partner - Organize a tailored workshop - Invite an expert from the private sector as advisor of project's activities <i>[to be matched with type of company]</i> 	<ul style="list-style-type: none"> - Sign a collaboration agreement - Organize a tailored workshop - Organize a bilateral meeting - Invite an expert from the private sector as advisor of project's activities - Develop teaching material - Technology transfer 	<ul style="list-style-type: none"> - Organize a tailored workshop - Invite an expert from the private sector as observer to project's activities <i>[to be matched with type of company]</i>
What to be transferred in terms of ideas/results	<ul style="list-style-type: none"> - Relevant results - Opportunities to get funding and involved in a broader community 	<ul style="list-style-type: none"> - Prototypes to be developed for large use - Knowledge transfer for user-friendly products 	<ul style="list-style-type: none"> - Importance of coordination and possible synergy between economic sectors in the use of the maritime space
Importance of receiving inputs from the private sector	High	Few inputs, since needs are dictated by the users (navy and public authorities mostly) <i>[to be matched with type of interaction]</i>	Essential

Question	MarTERA	Munitions	MSP
Typology of companies suitable for the JA	<ul style="list-style-type: none"> - Oil and gas - New materials - ICT - Energy solutions and sensor technology on land 	From materials to ICT	Companies able to provide support in planning process
How CSA-O2 can act as facilitator	Sharing best practices for engagement	<ul style="list-style-type: none"> - Support the organization of meetings/events - Supporting knowledge/instrumentation transfer during a sea exercise 	<ul style="list-style-type: none"> - Favouring contacts through representativeness - Support the organization of meetings/events
Interaction envisaged with the private sector in the next two years	Yes	Yes	Yes
Feasibility to promote/design training courses for marine jobs and/or initiatives to improve ocean literacy	Future perspective (e.g. within the possible Blue Economy COFUND) <i>[enough time to address the importance of this action]</i>	No	The awareness of the MSP principles would be useful for the private sector in order to properly participate to shared planning process, that will occur both at national and at local level <i>[even though this action doesn't fit with the phase of the action, an effort to improve awareness on MPS towards private sector can be made]</i>
Main barriers for collaborating	<ul style="list-style-type: none"> - Lacking interest and vision (to see the correspondences between all areas) at Member States level - Consciousness of importance at MB level 	<ul style="list-style-type: none"> - The market for some technologies could be limited or protected - Technologies linked to SMEs which have to be selected 	<ul style="list-style-type: none"> - High number of actors - Increasing fragmentation from the national to the local level
Additional remarks	Strong willingness to create industry, make jobs and products from the sea, also because they are key to solve challenges/ problems		

Reading the table along each column, preliminary suggestions for each action can be formulated, while a horizontal reading offers some indications on general common approach.

Joint Action	What and how
MarTERA	National Contact Points to stimulate interaction at national level with companies dealing with oil and gas, new materials, ICT, energy solutions and sensor technology for enhancing dissemination on progress of the activities. A simultaneous engagement day can be organized in different countries leveraging on the national branches of relevant EU technology platforms.
Munitions	Develop a knowledge/technology transfer action for user-friendly products addressing the technology needed for the JA activities.
MSP	Organize case study workshop at regional/local level contacting companies able to provide support in planning process.
Transversal	Establish a discussion forum to address the following issues and publish a common paper on need of high technological value for contributing to the vision; market limitations for some technologies; how to decrease fragmentation from the national to the local level: European Technology Platforms meet local technology districts.

With reference to other JPI-O consolidated actions, results of ‘Ecological aspects of deep-sea mining’ were presented in Deep Sea Mining summit 2016 in Singapore. This event is mainly visited by companies interested in the issue. Considering the interest expressed by DEME Group for Dredging, Environmental and Marine Engineering NV for JPIO, it would be interesting to learn which companies participated to the European summit in London in 2017 (<http://deepsea-mining-summit.com/>) and explore the feasibility to also plan a mining text in the near future. Moreover, it could be foreseen a tailored link with the UNEXMIN project (www.unexmin.eu/) aiming at developing a novel robotic system for the autonomous exploration and mapping of European flooded mines.

FOCUS ON THE B2B APPROACH: INTERVIEW WITH MARTERA COORDINATORS

This paragraph reports the main outputs of the interview performed via teleconference on March 13th 2017 with MarTERA Coordinator (Filiz Aslan, Juelich, Germany) and the MarTERA partner that supported the organization of the B2B event (Hanna Lee Behrens, Forskningsradet, Norway) held on February 15th in Brussels.

MarTERA, ‘Maritime and Marine Technologies for a new Era’ (www.martera.eu) is a COFUND ERANET implemented by a Consortium of 17 Funding Agencies from 16 countries and co-funded by the EC. The first joint call for proposal has been launched in 2017. Successful projects will be announced in June 2017.

The objective of the interview was to explore outcomes, including sharing information and data on participants (with particular reference to private companies), approaches, and impressions on strengths and weaknesses of the B2match, the brokerage event for the presentation of the projects for the first MarTERA call.

The following discussion points have been touched. Answers could serve at methodological level to orient future similar activities.

Preparatory work: methodologies for addressing invitations to the event; selection of suitable companies; communication and possible distributed material

- The event has been organized 2 months after the launch of the call, giving enough time with respect to the deadline for proposals' submission;
- Information was massively spread (10.000 emails) through supporting networks and industry organizations (also to reach SMEs) without any specific target and shared on the MarTERA;
- The impact of the dissemination, in charge of each National Contact Point, has been non-homogenous at country level. For example, in Germany all associations were contacted, in Norway relevant programme websites reported the news;
- Some countries that are not partner of the MarTERA Consortium were also reached.

Technical aspects and details of the organization

- Usage of standardized and service oriented tool (www.b2match.eu/martera), B2match handbook easy to set-up;
- Organization of the matching after the networking lunch;
- Registration and priority areas thick off required. (information related to the priorities (bullet = exact wording).

Expected VS real impacts

- Enthusiastic and proactive discussion, good feedbacks received as well as Applicants were looking for German partners after the event;
- It is not easy to monitor the effects of the chain matching results-submitted proposals-granted projects to understand the effectiveness of the B2match, also because not many answers were gathered through the evaluation form after the event;
- Some registered companies did not attend.

Available data/information on: participants (typology of companies);

- 104 participants, of which 17 from Belgium, 21 from Norway; 30 companies;
- 20' as average duration of the matching.

Opinions: pros and contra; attitude of the RFAs towards the private sector and viceversa.

- To break down barriers between the two sectors, networking needs its time, allowing both pre-scheduled meeting but also free talks; it is important to keep these stakeholders involved by organizing a conference at least each year, and/or a mid-term meeting bringing funded projects together;
- The positive attitude to a public-private matching event depends on the cultural background at country level. For instance, the oil and gas companies in Norway are well connected with the public sector.

COMPLEMENTARY ACTIONS FOR CONTINUOUS ENGAGEMENT

The following actions can complement the day-by-day management of engagement measures.

- Keep the stakeholders' repository up-to-date. The CSA-O2 provided an updated list of stakeholders contacts transmitted to the JPI-O Secretariat via email on March 23rd 2017;
- Develop a tool for relevant events screening and *ad hoc* participation and follow-up. A list of events where relevant industry representatives are likely to attend should be continuously updated. High technological contents (e.g. <http://marinerobotics.eu/>), high-level representativeness, cross-sectoral approaches, and possibility of follow-up can be adopted as preliminary drivers for selecting the most important opportunities.
- Liaising with specific actors:
 - (European) Technology Platforms >> set up procedures to maintain a constant dialogue, through public meetings and concrete actions (e.g. development/implementation of joint actions), reinforcing in particular collaboration with sectors not directly dealing with marine environment that could be added value (e.g. chemical, materials, ICT, ...); check updates of the SRIAs of technology platforms; in particular, the CSA-Task3.3 can support the drafting of a brief overview on interactions performed between the Secretariat/CSA-O2 and the technology platforms, including the target, the typology of interaction (e.g. participation to key meetings) and few metrics if available (e.g. number of interactions per year per platform).
 - World Ocean Council (WOC) >> defined as a “global, cross-sectoral ocean industry leadership alliance committed to “Corporate Ocean Responsibility”, developed by and for the private sector”. With 34,000 ocean industry stakeholders, WOC mission is to bring together the multi-sectoral ocean business community to catalyze global leadership and collaboration in ocean sustainability. It thus works as an arena for information sharing and a channel towards industries globally. In particular, they expressed interest in where JPI Oceans can take forward “global partnerships” on topics of interest.
One relevant aspect for the JPIO is the WOC intention to create an “Ocean Investment Platform” to bring together ocean industries, innovators and investors and accelerate investment in ocean sustainable development. In addition to this, WOC cross-cutting ocean priorities, e.g. ocean governance, marine spatial planning, marine debris/plastics, ... are in line with the JPIO JAs themes.
In view of reinforcing collaborations with the private sector, the JPI-O could benefit from WOC strong mission to ensure business involvement in major circumstances (e.g. the WOC has been among the organizers of the conference on “Our Oceans, Our Future: Partnering for the Implementation of Sustainable Development Goal 14” at UN Head Quarters from 5 to 9 June 2017). However, the following specificities have to be highlighted: with particular regard to the UN Sustainable Development Goal 8/14, JPI Oceans vision includes amongst others SDG 8/14, but does not focus on conservation as such (SDG 14), but on sustainable use. Moreover, industry and WOC partners rely on level playing field and science based and stable framework conditions; while recognizing the importance of policy/industry uptake, in *Engage user and producer – Mining Impact*, although industry was deliberately not invited to join, the JPIO recommended that “Knowledge exchange

between industry and science is necessary to ensure the best methodologies are ready for industry use”.

The above mentioned points could be brought to the attention of the JPI-O MB for discussing possible consolidation of a collaboration with the WOC. A light and flexible agreement, to be resolvable at any time, could be a suitable solution.

- Integrate in the communication strategy the linking with key events by private sector, e.g. <https://twitter.com/OceanBusiness>; <http://www.seafuture.it/index.php/euronaval>.
- Keep the awareness on relevant initiatives that links private sector and skills’ development: e.g. by the EC call on “BLUE Labs” (funded by the EMFF-EASME) and the Call for proposal to set up the European platform for sectorial skills cooperation in the maritime technology sector, funded under ERASMUS + Programme, Sector Skills Alliance instrument, Lot 3 (https://eacea.ec.europa.eu/erasmus-plus/funding/sector-skills-alliances-eacea-042017_en).

PRELIMINARY RECOMMENDATIONS FOR STAKEHOLDERS’ ENGAGEMENT IN THE JPI PROCESS

The following inputs resulting from the WP3-Task3.3 activities can be discussed with JPI-O MB members.

- At project level: connect CSAO2 WP3 partners, JPI secretariat and the Management Board to share results and ideas and inject inputs in other tasks of the project (e.g. foresight activities).
- At the JPI-O Secretariat level:
 - make sure industry perspective is represented/industry representatives take part in the process of SRIA implementation;
 - collect (with the support of the CSA) information on specific actions undertaken and/or recommendations addressed at the Strategic Advisory Board (StAB) level on engagement with private sector;
 - be in time, ensuring that the knowledge developed in the JAs is passed to the private sector at the right time of the implementation phase; the identification and selection of key private players according to the specific action/process development, since they are based on the fit-to-purpose principle;
 - be flexible towards innovative solutions for private stakeholders’ involvement;
 - implement a systematic approach for the selection of relevant engagement opportunities. This yearly process for industry engagement can be organized in three steps: 1. JPI-O Secretariat and MB members inform about relevant opportunities; 2. a list of opportunities is validated according to previously agreed criteria; 3. the event is participated and followed-up.

ENGAGEMENT ACTIONS

The following paragraphs report concrete support activities for engaging with private sector and proposals for future ones.

JPI WORKSHOP AT THE EUROPEAN MARITIME DAY

The following action has been implemented in the framework of the JPI-Oceans activities with the support of the CSA-Oceans2.

Liaising with Technology Platforms is recognized of the uttermost importance for consolidating the engagement with the private sector. In order to support the undertaking of tailored initiatives to set up procedure to maintain a constant dialogue, the CSA-O2 supported the organization of the JPI-O workshop held in Poole on May 18th 2017 in the framework of the European Maritime Day 2017 (EMD)², under the theme 'Innovation and Growth'. 600 stakeholders took part to the EMD Conference, of which about 20% industry representatives.

Entitled *Enabling and Cross-Cutting Maritime Technologies*, the workshop aim was to encourage experts from different industries to break the "silo mentality" and to identify cross-cutting technology-related challenges, exchange good practice and propose appropriate PPP-based activities to address them. About 50 stakeholders participated to the session.

Pierre Perrocheau, representing SEA Europe, presented cross-cutting technologies related to maritime industries from oil & gas, to offshore renewables, aquaculture, deepsea mining, and shipping. The complexity of systems, products, tooling, equipment, engineering, technology for doing business at Sea requires clear targets, worldwide competition, as well as clear steps and responsibilities, skilled and fit for purpose players, proper interfaces and use of available knowledge and results. In particular, RDI enabling actions include:

- Technologies and engineering for seaborne and subsea activities;
- New Materials;
- Exploration, resource evaluation and monitoring;
- Environmental baseline and impact assessment;
- Technologies and engineering ;
- Acceptability, Regulation and Legal issues.

Iain Shepherd of Marine Southeast business-led consortium addressed the following opportunity for future blue growth: off-shore aquaculture and multiple uses of large offshore platforms along with Blue Economy autonomous systems, connectivity and applications serving multiple end-users. In this regard, relevant inputs can be transferred to the possible COFUND ERANET on Blue Bioeconomy.

Gilles Lericolais, member of the JPIO MB, highlighted the importance of public-private collaboration on underwater technologies as driver for innovation on future exploration of the Sea.

The briefing note and the short report of the JPIO workshop at the EMD-2017 are included in Annex 2.

² Report of the Conference available at [https://ec.europa.eu/maritimeaffairs/maritimeday/sites/mare-emd/files/2017-conference-report_en .pdf](https://ec.europa.eu/maritimeaffairs/maritimeday/sites/mare-emd/files/2017-conference-report_en.pdf).

PROPOSALS FOR FURTHER ENGAGEMENT ACTIONS

- *Session on engaging with industry at the JPIO Conference in Lisbon, 26 October 2017.* As follow-up of the JPIO workshop at the EMD, CSA-O2 will support the organization of one parallel session, devoted to “cooperation with industry”. A couple of possibilities can be considered, both concerning a kind of follow up of the EMD 2017 workshop “Enabling and Cross-Cutting Maritime Technologies”. The first one stems from the attempt of recovering the original panel, with representatives from the European Technology and Innovation Platform for Ocean Energy (TP Ocean) and the European Aquaculture Technology and Innovation Platform (EATiP), along with the one from SEA Europe. The objective will be to further explore opportunities for cooperation. In addition, TPWind, ETP-Alice on logistics innovation, and EUROP on robotics could be invited. In order to favour the engagement of sectors not usually involved in marine and maritime fora and to expand the horizon with reference to the first JPIO Conference in 2015, an attempt to connect with EuMaT, the European Technology Platform for Advanced Engineering Materials and Technologies can be pursued; as well as to link with the ICT EU Technology Platforms, such as EpoSS on Smart Systems Integration; NESSI, dedicated to Software, Services and Data; and ETP4HCP for high performance computing. A second chance may be focussing on the maritime technology sector only, closest to the Waterborne TP.

- *JPIO-SEA Europe joint meeting on MarTERA not funded projects.* Taking into account MarTERA answers to the questionnaire on “Perspective of JPIO Oceans Joint Actions on enhancing the public-private connection” and on what MarTERA coordinators shared during the interview we had about the B2B event they organized, the list of “not finally funded” projects in MarTERA can be used as a basis to make a selection of those which can be appealing for industries or venture capitalists in order to be further developed. CSA Oceans 2 will make this selection according to agreed criteria and will contact the coordinators in a first phase, SEA Europe will receive our suggestions and select the end-users' audience. Then JPIO and SEA Europe organize a meeting between the coordinators of not retained proposals and industry/capitalists.
In particular, this meeting looks like a “mentoring/coaching” exercise the Commission is promoting for FP9 to bridge the gap between ideas and market, and increase the visibility and impact of JPIO, MarTERA, and SEA Europe as well as developing joint activities.
Concerns can arise about how to manage IPR and possible conflicts between some private partners involved in the “not-funded” projects when asked to promote their proposals. They can be overcome by discussion timing, rules and best practice of such action.

- *JPIO engages small and medium enterprises.* According to the answers to the questionnaire, SMEs are indicated as suitable targets for some JPIO Joint Actions. In particular, some countries and some Joint Actions are more suitable for implementing collaboration activities with SMEs. To this end, the organization of a B2B session with the European Enterprises Network is suggested.

- *Public-private collaboration on training for marine jobs and/or on ocean literacy.* As highlighted in the DoA, a focus on the training component is key in public-private collaboration. The Ocean Business Forum and the Blueprint on maritime technology implemented by the EC are interesting frameworks to be explored for developing such activities.

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ANNEX 1 – QUESTIONNAIRE ON 'PERSPECTIVE OF JPI OCEANS JOINT ACTIONS ON ENHANCING THE PUBLIC-PRIVATE CONNECTION'

Dear JPI Oceans Secretariat members,

as you may know, in the framework of the CSA Oceans 2, within the Work Package n.3 'Connectivity to support implementation' Task3.3 is devoted to 'Tackle societal challenge through cooperation, engagement of stakeholders, private sector, technology platforms'.

We kindly ask your contribution to investigate how the public-private collaboration is developed, can be enhanced or even started within the joint action you support as members of the Secretariat.

Please find the link to the on-line questionnaire 'Perspective of JPI Oceans Joint Actions on enhancing the public-private connection':

https://docs.google.com/forms/d/e/1FAIpQLScM3mC3vywplowlXr9NXIN0DlakdryK_I5q3ncSnHBnr-rhVQ/viewform.

Together with the review of existing best practices and tools for public-private interaction, the questionnaire is a key component of the methodology to develop specific suggestions on what JPI Oceans can offer to industry so as to get their engagement and interest, looking also at innovative solutions for ensuring continuous private stakeholders' involvement.

The aim is also to maximize the use of knowledge from joint actions with an innovation potential to create an economic impact, as regard for example development of technologies. When looking at existing JPI Oceans actions for industry engagement potential, the involvement can be sought before launching the action, during the action or after the end of the action.

Review of on-going actions and targeted interaction with coordinators/supporting staff of JPI joint actions on the topic of engaging with the private stakeholders is therefore fundamental in conceiving and implementing fit-to-purpose initiatives for public-private collaboration. In case of favourable conditions, the CSA could provide feedback to possibly facilitate the development of such engagement, including on the typology of interaction with the private sector and the timing.

Please fill-in the questionnaire within February 20th 2017. This should not take more than 30 minutes of your time.

Thank you very much in advance for your precious collaboration. Please feel free to forward it to colleagues that could provide relevant inputs.

Best regards,

Margherita Cappelletto

CSA-O2 Task3.3 leader

Perspective of JPI Oceans Joint Actions on enhancing the public-private connection

Please fill-in preliminary information

*Campo obbligatorio

1. Name *

2. Institution *

3. e-mail address *

4. Acronym and title of the Joint Action *

5. Q1 - Does the Joint Action envisage the involvement of the private sector? *

Contrassegna solo un ovale.

No >> Go to Q2

Yes >> Go to Q1A

Altro: _____

6. Q1A - If the Joint Action envisages the involvement of the private sector, please indicate in the field below in which phase of the action development (e.g. design, consultation, dissemination, ...) and how the private sector has been involved (e.g. partnership agreement, formal collaboration, meeting, request of inputs, ...)

7. Q2 - Would the Joint Action obtain any benefit from the engagement with the private sector? *

Contrassegna solo un ovale.

- Yes >> Go to Q3
- No >> Go to Q2A
- Altro: _____

8. Q2A - Why the Joint Action wouldn't obtain any benefit from engaging with the private sector? (answer and then go to Q11)

9. Q3 - Would the Joint Action profit more from interactions with big companies or with SMEs?

10. Q4 - Who would you target for engaging with private stakeholders? *

Seleziona tutte le voci applicabili.

- European Technology Platforms
- Local technology districts
- European Enterprises Network
- Associations
- Ad hoc contacts
- Altro: _____

11. **Q5 - According to the implementation phase of the Joint Action, which typology of public-private interaction would you consider more appropriate for possible engagement? (maximum 4 options) ***

Seleziona tutte le voci applicabili.

- B2B event
- Set-up/implement a training course
- Involve the industry in the action as partner
- Implement a different project together
- Sign a collaboration agreement
- Organize a tailored workshop
- Organize a bilateral meeting
- Exchange staff
- Invite an expert from the private sector as observer to project's activities
- Invite an expert from the private sector as advisor of project's activities
- Deliver guidebooks targeting the industry
- Develop teaching material
- Technology transfer
- Altro: _____

12. **Q6 - In relation to the Joint Action, which idea will you share and/or result will you transfer to a private stakeholder? (the answer doesn't need to be too specific)**

13. **Q7 - According to the objectives of the Joint Action, how would you value the opportunity of receiving inputs by the private sector on its needs? ***

14. **Q8 - Which typology of company, including outside the specific domain of marine and maritime sectors, do you think is most appropriate for bringing innovation into the Joint Action? ***

15. **Q9 - In which way the CSA-O2 can facilitate the interaction between JPI-O and the private sector on Joint Actions? ***

Seleziona tutte le voci applicabili.

- Sharing best practices for engagement
- Favouring contacts through representativeness
- Support the organization of meetings/events
- Altro: _____

16. **Q10 - According to the implementation phase of the Joint Action, could an interaction with industry be envisaged in the next two years? ***

Contrassegna solo un ovale.

- Yes
- No

17. **Q11 - According to the state/capacity of the Joint Action, in order to respond to general needs of the private sector, do you consider feasible to promote/design training courses for marine jobs and/or initiatives to improve ocean literacy? ***

Contrassegna solo un ovale.

- Yes, please elaborate in the field below (Q11A)
- No, please add inputs to Q9
- Altro: _____

18. **Q11A - Please elaborate on training courses for marine jobs and/or initiatives to improve ocean literacy to be possibly promoted/designed to respond to general needs of the private sectors**

19. **Q12 - What barriers/obstacles do you encounter for collaborating with the private sector in the framework of the JPI Oceans Joint Actions? ***

20. **Q13 Do you have anything to add? (free text)**

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ANNEX 2 – BRIEFING PAPER OF THE JPIO WORKSHOP ON “ENABLING AND CROSS-CUTTING MARITIME TECHNOLOGIES” AT THE EUROPEAN MARITIME DAY, POOLE (UK) – 18/05/2017



European Maritime Day 2016, 18-19 May, Poole (UK)

Enabling and Cross-Cutting Maritime Technologies

An Innovation & Growth Workshop

Thursday, 18 May, 13.30-15.00. *Room: Gallery*

Objective

Encourage experts from different industries to break the “silo mentality” and identify cross-cutting technology-related challenges that act as bottlenecks for multiple sectors. Gain evidence for intervention, exchange good practice and propose appropriate PPP activities to address the challenges.

Background

The importance of the Ocean Sector for the European economy cannot be overstated: Almost 90% of the EU’s external freight trade is seaborne¹; Europe is the largest market for fish in the world and its self-sufficiency is currently estimated to 47.5%²; The majority of oil and gas production in Europe takes place offshore³; Deep sea mining is already high in the agenda of a number of EU countries⁴, and so on.

Europe’s ability to innovate and be considered as a strong technology developer has been well-documented. The European maritime technology industry remains a strong competitor at a global level with a turnover of 91bn Euro, of which 60bn Euro corresponds to marine equipment, and a workforce exceeding 500,000 employees⁵. In addition to the waterborne transport sector, it is crucially important that the European blue economy continues to develop by allowing innovation to be the main driving force for promoting Blue Growth and creating new jobs. To a large extent, this achievement can be attributed to the focus on innovative solutions by Europe’s highly-specialised engineers and world leading research. Europe faces significant international competition in sectors such as aquaculture, deep sea mining, subsea technology, offshore, renewable energy. It is clear that Europe must continue to focus on technological innovation to remain competitive, while maintaining sustainability in activities.

Recent years have seen dramatic changes in the way research is being conducted in a number of fields. One of the main drivers has been the exponential increase in data collection, due to increases in computational power as well as the rapid development of new sensors and platforms. The quantity, quality and variety of data have inspired developments in ICT (AI, machine learning, neural networks) which are turning out to be game changers in a number of closely-related fields. Equally impressive is the rate at which these research developments are being commercialised. Recommender systems, self-driving cars, identification of diseases, animal protection, and learning

¹ https://ec.europa.eu/transport/modes/maritime_en

² https://stecf.jrc.ec.europa.eu/documents/43805/1491449/_2016-10_STECF+16-19+-+EU+Aquaculture_JRCxxx.pdf

³ <https://ec.europa.eu/energy/en/topics/oil-gas-and-coal/offshore-oil-and-gas-safety>

⁴ https://www.bmw.de/Redaktion/DE/Downloads/M-O/memorandum-of-understanding-between-french-maritime-cluster-and-deep-sea-mining-alliance.pdf?__blob=publicationFile&v=1

⁵ <http://www.seaeurope.eu/template.asp?f=publications.asp&jaar=2013>

by demonstration for robotics, are but a few examples of application areas where products have entered the market, or are at least close.

Moreover, the advent of new technologies such as 3-D printing and the development new materials that adjust to their environment, have added a new dimension to what is feasible from a manufacturing viewpoint. Not only are there materials able to change between hard and soft states, but some can also be used to design components that take specific shapes after being placed in the water, or exposed to certain temperature ranges or other environmental conditions. Developments in 3D printing have shown a number of benefits including:

- Material cost savings, since it is possible to minimise the material needed for a given component/part,
- Affordability of a lower volume of parts, contrary to traditional manufacturing where expensive setups are required,
- The possibility for *in-situ* production of numerous components that might need replacing, since it is easier to print parts when needed from rather than carry a large number of spare parts,
- The ability to modify the design of products at a very low cost.

It is clear that there are a number of cross-cutting technologies which would enable innovation in several sectors. But these recent developments have not been adopted uniformly across different marine/maritime industries, despite the benefits which are expected. For example, a more efficient merger between the fields of marine robotics with AI could help create truly autonomous systems capable of reliable real-time decision making in uncertain environments. The same is could be true for materials designed to adjust their properties depending on the marine environment they operate in (deep sea, high salinity, strong currents, etc.).

The objective of this workshop is to discuss these fundamental cross-cutting technologies which will ultimately create a new era for marine and maritime industries.

Potential Discussion Topics

1 Recent Advances in Artificial Intelligence (AI) and the potential for the Oceans

Over the last years, rapid developments have taken place in the fields of Computer Science and Artificial Intelligence (AI). Considering the commercial success in other areas, what is the potential to use these technologies in the oceans in areas such as:

- Autonomous shipping,
- Fully autonomous subsea systems,
- Traffic management and navigation,
- Aquaculture facilities,
- Observation systems.

How should the European industry act to incorporate cutting edge developments and maintain a strong advantage when it comes to creating the next generations of autonomous ocean systems?

2 New Materials and Manufacturing Technologies

2.1 Materials

A number of new materials with impressive shape-shifting properties have been developed very recently. Such developments could be disruptive for many industries related to the oceans. What could the potential be for:

- Increasing safety of marine structures,
- Improving the way subsea structures are installed.

2.2 3D Printing and Manufacturing Technologies

Several industries, including aerospace, automotive, and defence, are already benefitting from the advent of 3D printing. 3D printing has been used in the maritime industry at a small scale, possibly due to the size of the components needed for marine/maritime operations.

- How could this technology be used to deliver a strong advantage for the European maritime industry?
- What are the bottlenecks for making this technology a standard option for a number of components and products related to the maritime sector?

3. JPI Oceans

How in practice could foresight activity and knowledge transfer be carried out or be stimulated across sectors to inform such future developments?

What needs to happen, what role for funders, such as the JPI Oceans community, technology platforms, and the research community?

Workshop Structure

Introduction and Moderation

Gilles Lericolais, JPI Oceans Management Board

Presentations

1. Cross-cutting marine/maritime technologies related to the aquaculture industry
Karl Almås, *Special Adviser at SINTEF and Director of the European Aquaculture Technology and Innovation Platform (EATIP)*
2. Cross-cutting marine/maritime technologies related to maritime industries
Pierre Perrocheau, *Technical Advisor at SEA Europe and Waterborne Technology Platform*
3. The Digital Ocean: An opportunity for value creation in Europe
Ingrid Schjølberg, *Director of NTNU Oceans (Norwegian University of Science and Technology)*
4. The Role of JPI Oceans and the MarTERA Cofund
Ulrich Wolf, *Senior Officer at Project Management Juelich and CSA Oceans 2*

Discussion and Q&A

Next steps



CSA
OCEANS 2
JPI Oceans support action

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