



Acronym: COLUMBUS

Title: Monitoring, Managing and Transferring Marine and Maritime
Knowledge for Sustainable Blue Growth
Grant agreement n° 652690

Deliverable 7.3

Brokerage Event Reports

01-2018

Lead parties for Deliverable: Marine South East

Due date of deliverable: M36

Actual submission date: M36

Revision: V.1.6

Project co-funded by the European Commission within the H2020 Programme (2004-2020)	
Dissemination Level	
PU Public	X
PP Restricted to other programme participants (including the Commission Services)	
RE Restricted to a group specified by the consortium (including the Commission Services)	
CO Confidential, only for members of the consortium (including the Commission Services)	

All rights reserved

This document may not be copied, reproduced or modified in whole or in part for any purpose without the written permission from the COLUMBUS Consortium. In addition to such written permission to copy, reproduce or modify this document in whole or part, an acknowledgement of the authors of the document and all applicable portions of the copyright must be clearly referenced.

Acknowledgement

The work described in this report has been funded by the European Commission under the Horizon 2020 Framework Programme.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.



CONTENTS

1	METHODOLOGY	6
2	INDIVIDUAL BROKERAGE EVENT REPORTS	7
2.1	'Power of Open Marine Data for the Blue Economy' 11-12 October 2016	7
2.2	'Cutting Edge Solutions for Marine Coatings' 16 May 2017	10
2.3	'Blue Growth Knowledge Transfer on Marine Physical Resources and Observations' 24 May 2017	11
2.4	'Aquaculture Knowledge Transfer – Facilitating the pathway from research outputs to industry products' 18 October 2017	14
2.5	'Knowledge Transfer in Maritime Lightweight Applications' 11 October 2017	17
2.6	'Knowledge Transfer in Maritime Sensing Technologies' 23 November 2017	19
3	CONCLUSION.....	23
4	ACRONYMS.....	26
	ANNEX A: INDIVIDUAL BROKERAGE EVENT AGENDAS.....	27
	ANNEX B: SPEAKER FEEBACK FROM THE 'BLUE GROWTH KNOWLEDGE TRANSFER ON MARINE PHYSICAL RESOURCES AND OBSERVATIONS' BROKERAGE EVENT.....	36
	ANNEX C: 2017 COLUMBUS BROKERAGE EVENTS FOR KNOWLEDGE TRANSFER, GUIDELINES DOCUMENT	39



EXECUTIVE SUMMARY

Six COLUMBUS brokerage events were held in five 5 countries across Europe. The Events presented Knowledge Outputs, (KOs), relevant to the subject areas of the COLUMBUS Competence Nodes: Aquaculture; Monitoring and Observation; Marine Physical Resources and Transport and Logistics. The events focused upon KOs from between two and six relevant research projects, except the more generalised marine data event.

Reports from the organisers of each event are included in the report, each detailing the specific outputs achieved. All events were successful in stimulating engagement between targeted knowledge users, SME companies, larger companies and knowledge owners. They generated new relationships with key people with valuable relevant competences. Additional Knowledge Transfer opportunities were identified, and discussions started with potential target users. Knowledge owners have reported renewed interest in the outputs of their projects having been approached by COLUMBUS event delegates. Opportunities for the field testing of KOs have been identified.

Brokerage Events have demonstrated value in reaching a wider range of potential Target Users than, in turn, can be reached by individual Knowledge Fellows (KFs). However, as events are time-limited, there is always a need for follow-up interactions. The conduct of Knowledge Transfer (KT) and realisation of Eventual Impact can take a long time, often well beyond the end of the COLUMBUS project. Consequently, it is not possible to make an accurate assessment of the total potential impact that may eventually be achieved through Brokerage Event activities.

Being itself time-limited, the COLUMBUS project is unable to track the progress of many KOs successfully transferred to target users because of brokerage events. The timeframe from knowledge transfer to eventual impact varies greatly, it is difficult to predict but it can be a number of years. There is a need for more permanent knowledge brokers that can maintain the dialogue with all those involved in knowledge transfer, from knowledge owners, through one or more target users to users responsible for achieving the eventual impact of the knowledge outputs.

Full reports for each event are given in the body of this document, they are summarised in the table below:

Summary Table

Title Date & Location	Organisers	Delegates targeted	Knowledge presented	Key Outputs & Impacts
'Power of Open Marine Data for the Blue Economy' 11-12 Oct 16 Brest	EuroGOOS, EMODnet SmartBay Marine South East PLOCAN	Industrial users of marine data	Interoperable marine data Marine Open Data in Europe EU AtlantOS project	- Contributed to: 'COLUMBUS Engaging Industry Best Practice Guide', April 2017. - Event allowed interactions and exchanges with knowledge users, SMEs, knowledge owners and European marine data initiatives. - Demonstrated the role of SMEs is critical as intermediaries in the marine data value chain.



'Cutting Edge Solutions for Marine Coatings' 16 May 17 Brussels	ECMAR CMT	Invited experts in the field of marine coatings	"ACORN" coating and "SELEKTOPE" coating	New contacts made (especially between I-Tech and IFAM) and potential applications identified.
'Blue Growth Knowledge Transfer on Marine Physical Resources and Observations' 24 May 17 Dublin	SmartBay Ireland	Researchers and industry representatives involved in Sensors, Antifouling, Moorings and Communications.	FP7 projects: MARIABOX, ACORN, Sense Ocean, LAKHSMI and H2OCEAN. H2020 project: ACORN	<ul style="list-style-type: none"> - Knowledge Transfer opportunities initiated. - Meeting between Aquatera and SmartBay in relation to the Lakhsmi scalable sensor array. - Possibility of collaborations with National Oceanography Centre. - Aquatera discussions with Openhydro, in relation to Lakhsmi sensors. - Opportunity SenseOcean project sensors in offshore wind operations.
'Aquaculture Knowledge Transfer - Facilitating the pathway from research outputs to industry products' 18 Oct 17 EAS Aquaculture Europe, Dubrovnik, Croatia	AQUARK (COLUMBUS Aquaculture Node) and EAS	Participants covering a very broad spectrum of potential applications for all stages of the aquaculture production cycle.	7 COLUMBUS case studies presented to 60 event participants: <ul style="list-style-type: none"> - ABALONE IMTA - W42 VNN-VER VLP IP VACCINE - FAMORAS - Monitoring Water Quality in RAS - Nutritional interventions to mitigate Parasitic enteritis - FISH SHAPE APP - NOVEL FEED ADDITIVES 	<ul style="list-style-type: none"> - FAMORAS sensors, new applications in waste water, drinking water and aquaculture RAS systems. - NOVEL FEED ADDITIVES, potential avenue for transfer probably specialised feed companies looking for incremental improvements. - FISH SHAPE APP, opportunity to pick up the onset of juvenile malformations before they become visible. - COLUMBUS Case Studies presented are useful to demonstrate their diverse nature. - EAS will implement brokerage events as part of its AE events.
'Knowledge Transfer in Maritime Lightweight Applications' 11 Oct 17 Pula, Croatia	E-LASS CMT MDC, (CN Maritime Transport & Logistics)	Design offices, ship operators, shipyard engineers, suppliers and material developers	FAUSST Project: KO "Steel-FRP Transition joint made from Multi-Material Hybrid Fabric" THROUGH LIFE Project: KO "Composite Sundeck"	<ul style="list-style-type: none"> - Two KOs presented to a large audience of potential target and end users. - FAUSST KO, cooperation ongoing with two European Shipyards.



<p>'Knowledge Transfer in Maritime Sensing Technologies'</p> <p>23 Nov 17 Las Palmas de Gran Canaria</p>	PLOCAN	<p>Companies focused on maritime sensing technologies and/or observing platforms.</p> <p>Companies and institutions in marine sensor interoperability, data collection and transmission, and data sharing.</p> <p>Potential users, representing the European oceanographic and ocean observing and monitoring community.</p>	<p>SMS project - Novel Algal sensor Lakshmi project - Sensor CommonSense project - MicroPlastics Sensor</p>	<ul style="list-style-type: none"> - Need for a second dedicated workshop - Two of the knowledge owners (SMS algal sensor and Lakshmi) reported positive feedback. - SMS-algal sensor owner approached by a research infrastructure representative and offered two sites to sea-trial their sensor. - Relationships established between companies and representatives from key European initiatives, EuroGOOS and EMODnet. - Decided to produce a COLUMBUS Best Practice Guide, 'how to advance technology readiness levels during initial R&D funding'. - SMS knowledge owner offered an opportunity to contribute a chapter to a book to advance knowledge on the state-of the art in sensor development.
--	--------	--	---	---

Objectives

One of the specific objectives of Work Package (WP) 7, 'Communication, Engagement and Knowledge Transfer towards a Blue Society', has been to facilitate events and activities to bridge the gap between research communities and target/end users.

As well as the KT activities organised by each Competence Node (CN), six cross-cutting Brokerage Events have been conducted with relevant COLUMBUS partners to reach different groups of target and end users. The aim of these events has been to present selected high potential Knowledge Outputs (KOs) identified by COLUMBUS to an audience of relevant potential target and end users to make new contacts and build partnerships to explore additional KT uptake opportunities.

Rationale

The COLUMBUS methodology recognises that the one barrier to the successful transfer and exploitation of KOs generated by research projects is the lack of sustained visibility to potential end users. Throughout COLUMBUS, a team of eight KF used their combined expertise and networks to identify suitable TUs to receive KOs using individually developed Knowledge Transfer Plans. The Brokerage Events were a means to expand the reach of the KFs and Nodes through events whilst simultaneously targeting multiple potential TUs. Whereas KFs normally identify and approach potential TUs, Brokerage Events are an opportunity for TUs to identify themselves and register interest in KOs directly.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.

1 METHODOLOGY

To aid the CNs organise Brokerage Events, the WP7 Leaders, Nausicaá, provided a set of guidelines for organising Brokerage events for KT (see Annex A of this document). A range of communications support tools were also made available. These were detailed in a ‘Communications Tools Catalogue.’

To monitor the development of Brokerage Events, the Task Leader, Marine South East, used a template system to collect planning information from partners organising events.

The lead organisers of the six Brokerage Events were requested to submit reports. In order for the reporting template to be relatively uniform, suggested topics were made available, covering:

- Details of the event, venue, date, organisers etc.
- Aims of the Event
- Agenda
- KOs and other knowledge presented and discussed
- Post-event observations:
 - o What went well
 - o Format
 - o Content
 - o Attendees
 - o Improvements
 - o Mistakes
- Key Outputs
 - o Relevance
 - o Brokerage transactions initiated
 - o Relationships established
 - o Impacts
- Follow-up actions
 - o Communication with attendees
 - o KT opportunities pursued



2 INDIVIDUAL BROKERAGE EVENT REPORTS

2.1 *'Power of Open Marine Data for the Blue Economy' 11-12 October 2016*

Summary

In October 2016, EuroGOOS, EMODnet and three partners of the EU COLUMBUS project had a successful marine data brokerage event for Small and Medium-sized Enterprises (SMEs). The workshop, titled 'Power of open marine data for the blue economy', took place as part of 'A Connected Ocean' conference and SeaTech Week 2016 in Brest, France.

Publicly available marine data resources offer a great potential for SMEs to create value-added products and services for their customers. The workshop aimed to connect partners with SMEs, as well as other users working in the public-private interface, and collect their feedback on experiences, needs, bottlenecks, and suggestions for improvements.

The engagement of the industrial users of marine data has been identified as a priority by the COLUMBUS Marine Observation CN, bringing together EuroGOOS, NOC (UK), VLIZ (Belgium), and Marine South East (UK), with the Node coordination by Seascope Consultants (UK).



It has been recognised that making public marine data available to the private sector will drive innovation and competition. EU Member States and European institutions fund a large number of ocean observing research and infrastructure activities to derive marine data for various science, policy, and societal needs. It has been estimated that making high-quality marine data held by public bodies in the EU widely available would improve productivity by over €1 billion a year (European Commission (EC) Roadmap for Marine Knowledge 2020).

The workshop included a mixture of open-floor discussions and presentations. It involved both the EU marine data community – EuroGOOS, EMODnet, and Copernicus Marine Service (CMEMS) – the private sector – Open Ocean, France and dotOcean, Belgium – the EU AtlantOS project, the French maritime cluster Mer Bretagne Atlantique, and St. Lawrence Global Observatory, Canada.



Several European initiatives have been harvesting marine data previously collected by publicly-funded national and pan-European initiatives. Commonly called data aggregators, these initiatives include, among others, CMEMS, EMODnet, and SeaDataNet. Much progress has been made over the last few years in informing users of the data available, helping them to download and visualise the data in the required geographical location and format. There has also been progress in helping users acquire the metadata for the required dataset. Despite this progress, however, several bottlenecks still exist, spanning data availability, quality, user-friendly format, and web services.



In addition to these issues, the workshop further demonstrated that the role of SMEs as intermediaries in the marine data value chain is critical since they act in the interface between the public marine data resources and industrial end users. SMEs know their clients much better than the public data initiatives. They can therefore orient them in their search for required information; or they can create bespoke value-added products for their users' specific needs. This is why SMEs are well-suited to advising public marine data initiatives, like EMODnet and CMEMS, on ways of improving their service.

The issue of confidentiality was also discussed at the workshop. While competition will automatically entail restrictions on opening data, progress may be achieved through sharing a very broad range of data and making a distinction between 'strategic' and 'non-strategic' data (for example, sea temperature data). Promotion and recognition of open data are also critical to attract more data from private companies into the open repositories. One of the ways in which this can be achieved is through the recognition of the companies' corporate responsibility. Another idea which arose from the workshop is for public and private initiatives to co-write papers together. This would allow them both to benefit from having a publication while the data would be made available with a Digital Object Identifier (DOI).

It was re-emphasised that brokerage is important for gaining trust and understanding among public and private partners and promoting a data-sharing ethos. This should also take into account the development of business models and an openness to speak the same language. The role of maritime clusters was stressed in this respect. Finally, it was outlined that data discovery should be made attractive and complete with an efficient, user-friendly interface.

Location & Date

Brest, France, 11 and 12 October 2016,

Lead organiser/supporting COLUMBUS Partners/supporting external Organisations

EuroGOOS, EMODnet and three partners of the EU COLUMBUS project (SmartBay, Ireland; Marine South East, UK; and PLOCAN, Spain)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.



Post-event observations

The workshop was very successful, allowing enough time for the participants to engage with the speakers, panellists and each other. The workshop was specifically designed to stimulate interactions and exchanges between highly targeted knowledge users, SME companies, concrete knowledge owners and European marine data initiatives.

Fruitful discussions and exchanges took place both during and after the event. Many of the outputs and ideas were reflected in the COLUMBUS guide on engaging with industry, released by the brokerage event's organising partners (COLUMBUS Engaging Industry Best Practice Guide, April 2017). The guide was extremely well-received by the community and has been quoted in a few best practice catalogues and at relevant conferences.

The event received a lot of interest from the organisers of A Connected Ocean conference at SeaTech. It was profiled on the website and via social media.

Another means to attract SME participants was to offer them exhibition space at the joint EuroGOOS-EMODnet stand at the SeaTech week. This worked very well, allowing SMEs to have publicity for their activities while also advertising the relevance of the EMODnet and EuroGOOS activities. Furthermore, this contributed greatly to building trust with the SMEs and made follow-up interactions smooth and productive.

Further information about the event is available on the EuroGOOS website:

Programme : <http://eurogoos.eu/events/marine-information-workshop-industry-showcasing-publicly-available-resources-support-innovation/>

Summary outputs and photo gallery: <http://eurogoos.eu/2016/10/17/european-open-access-marine-data-untapped-resource-summary-seatech-workshop-smes/>



2.2 'Cutting Edge Solutions for Marine Coatings' 16 May 2017

Summary

The event was carried out in Brussels under the umbrella of the European Council for Maritime Applied Research & Development (ECMAR) General Assembly meeting in Brussels. The event was organised as a relatively small, informal meeting with invited experts in the field of marine coatings to share the latest advances in this industry with ECMAR members. Project "ACORN" was presented and showed how its marine coating extends the lifespan of offshore maritime structures. Project "SELEKTOPE" was presented by the founder of this coating, Dr. Lena Lindblad from I-Tech AB in Sweden, showing the path of development from the lab to commercial sales. Dr. Lindblad also presented the tests conducted worldwide on the coating, including the latest field trial results on marine monitoring buoys in a heavy biofouling area within the northwestern coast of Spain. The potential of self-healing and friction-reducing coatings were also represented by Fraunhofer IFAM, Germany. The meeting brought new contacts, interactions and agreements on the latest testing and possible future applications. As a result, ECMAR members were suggesting making such small, educative and state-of-the-art sessions a part of their own ECMAR meetings.

Location & Date

16 May 2017, ECMAR, 67 Rue de la Loi, B-1000 Brussels, Belgium

Lead organiser/supporting COLUMBUS Partners/supporting external Organisations

Dr. Alina Stadnitskaia, Consultant in ECMAR and ECMAR representative within the COLUMBUS project.

Aim and goals of Event

Marine coatings are a big market, but high-quality products are difficult to find. Within the ECMAR, together with CMT, several marine coatings projects were selected. Aside from bringing together people in the coating industry, the main object was to showcase the KOs obtained in these projects to ECMAR members and interest them in potential applications within their companies.

- Relevance – did the event meet the aims and goals of COLUMBUS and the expectations of the attendees?
Yes, it did.
- Relationships established
The relationships between I-Tech and IFAM were established and possibility for future collaborative interactions was discussed.
- Impacts
 - Did the event help any KO source projects or COLUMBUS Knowledge Transfer Pathways (KTPs) achieve their intended impacts?
Yes, it did.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.

2.3 'Blue Growth Knowledge Transfer on Marine Physical Resources and Observations' 24 May 2017

Summary

A COLUMBUS brokerage event was held in Dublin City University on 24 May 2017 and was attended by 23 researchers and industry representatives. The objective of the event was to bridge the gap between research communities and end users. There were five presentations on the day: four on projects from the EC's 7th Framework Programme (FP7) – MARIABOX, ACORN, Sense Ocean, LAKHSMI and H2OCEAN – and one on H2020 project ACORN. Sensors, Antifouling, Moorings and Communications were just some of the challenges addressed at the Blue Growth Knowledge Transfer Workshop held in Dublin. The event was organised by John Breslin, Eoin Nicholson and Niamh Flavin.



Viktor Ekstrom, GeoWave

Location & Date

National Centre for Sensor Research Building, Dublin City University 24 May 2017

Lead organiser / supporting COLUMBUS Partners/ supporting external Organisations

Eoin Nicholson, SmartBay Ireland

Aim and goals of Event

The event was aimed at both industry and research to share knowledge and seek opportunities for the transfer of EU projects findings.

COLUMBUS KOs presented

The KOs presented were for Marine Physical Resources and monitoring, specifically: Sensors, Antifouling, Moorings and Communications.

Post-event observations

- Format

The traditional workshop method was used and was satisfactory. Each presenter had 30 minutes to present and carry out a Q&A. This format worked well and there was a lot of engagement with the audience.

"I would comment on the excellent organisation of the meeting and the schedule was a good balance between presentations and time to ask questions and to network." – Doug Connelly from the National Oceanography Centre, SenseOcean Project

- Content



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.

There were five presentations on the day: four FP7 projects (MARIABOX, ACORN, Sense Ocean, LAKHSMI and H2OCEAN) and one H2020 project, ACORN. Overall, the presentations were of a high standard and attendees were engaged throughout.

- Number, quality and diversity of attendees

The attendees were comprised of representatives from both industry and research, delivering a good balance of perspectives and allowing for an increased opportunity of KT – thus delivering on the aim of the event. There were five registered people who did not attend on the day. The presence of industry representatives allowed for useful feedback on the application of the technologies to be gathered – feedback such as the business plan and cost of technology beyond the end of the EU-funded project in question.

“All of the presentations were excellent, and the mix of scientist and end users and other stakeholders was good” – Doug Connelly from the National Oceanography Centre, SenseOcean Project

- Improvements?
 - Inclusion of some form of interactive networking in small groups to try and facilitate more detailed conversations
- Observation
 - For these workshops to be useful in transferring knowledge to industry, the projects need to be current or very recent
- Mistakes
 - An attendee survey was not collected – a missed opportunity to obtain formal feedback from the audience
- Key points from Q&A session
 - There were Q&A sessions after each presentation which were specific to each project
- Outputs
 - Relevance – did the event meet the aims and goals of COLUMBUS and the expectations of the attendees?

General feedback from those who attended was very positive. The event generated a number of KT opportunities which were subsequently pursued, and the COLUMBUS videos were well-received.

- Brokerage transactions initiated

A meeting between Aquatera and SmartBay, in relation to the LAKHSMI KO, took place after the event. The aim of the meeting was to discuss possible target/end users. As a result of the discussion, it was found that the LAKHSMI sensor is not yet at a stage that would allow a successful KT to third parties and needs further development. There was some discussion about possible funding sources for these developments and OceanERAnet was suggested by SmartBay. Additionally, the contact of an investment company that is looking for novel products to invest in (Schmidt Marine) was also forwarded to Natalia.

SmartBay Ireland contacted Cathx Ocean before the event for a possible KO transfer with the Danish Technical University (DTU) project, UTOFIA. Cathx expressed interest in the technology later in the summer. SmartBay have since followed up with DTU but, to date, this opportunity has not yet advanced. SmartBay intend to follow up again with the aim of advancing this opportunity.



Doug Connelly, of the National Oceanography Centre, commented that he had been in touch with some of the presenters since the meeting and put forth the possibility of doing collaborative work.

Aquatera had discussions with Openhydro, who have their technology in Orkney, in relation to placing LAKHSMI sensors around their technology with the aim of calibrating the data with the Acoustic Doppler Current Profiler (ADCP) they already have in place.

- Relationships established
 - Aquatera & SmartBay possible Knowledge Transfer Opportunity
 - Cathx and DTU possible Knowledge Transfer Opportunity
 - Aquatera and Openhydro Validation Project Opportunity
 - Aquatera & National Oceanography Centre EU Project Collaboration
- Impacts
 - Did the event help any KO source projects or COLUMBUS KTPs achieve their intended impacts?

Feedback from the workshop indicated that the brokerage workshops are of great value. Comments were made on the value of COLUMBUS operating as a hub for people from diverse projects to meet with potential stakeholders.

The workshop also highlighted the opportunity for the sensors developed by the SenseOcean project to be used in offshore wind operations. Such a proposal had not been identified prior to the workshop. This opportunity will be pursued further by Doug Connelly.

- Other Impacts

The event presented the opportunity for projects to reach a wider audience, thus delivering new opportunities for collaborations.

“The workshop has made me realise how relatively poorly we have handled communicating the outputs of our project. People were clearly excited by some of our results and I have had a number of emails following up discussions I had there. We are now producing a more focussed set of articles to promulgate our results more widely and in a more focussed way, by catering the output to the audience.” – Feedback from a presenter present (see Annexes below)

- Follow-up actions
 - Communication with attendees. A feedback survey was received from four speakers.
 - KT opportunities pursued

There are ongoing discussions between SmartBay and Aquatera with regards to future maximising of the KO from the LAKHSMI project (scalable sensor array for hydrodynamic visualisation and large-scale oceanography to understand sub-surface flow conditions). Some opportunities for further funding have been identified.

There is also the possibility for KT between Cathx Ocean and the UTOFIA project. The opportunity, however, requires further action.



2.4 'Aquaculture Knowledge Transfer – Facilitating the pathway from research outputs to industry products' 18 October 2017

Summary

COLUMBUS Aquaculture Node partners organised a half-day brokerage event during the annual European Aquaculture Society (EAS) Aquaculture Europe 2017 (AE2017) event in Dubrovnik, Croatia. AE2017 had a total participation of 1700 delegates from 62 countries and attracted 92 companies to the trade show.

The workshop attracted around 60 participants from 10 countries, representing the general stakeholder participation of the full event.

Seven COLUMBUS case studies were presented, covering a very broad spectrum of potential applications for all stages of the aquaculture production cycle at different stages of the COLUMBUS Knowledge Transfer Pathway (KTP).



Cliona Ní Cheallacháin (AquaTT) & Dr. Panos Christofilogiannis (AQUARK)

Moderated by the COLUMBUS Aquaculture Node, Dr. Panos Christofilogiannis (AQUARK), an open discussion forum showed the potential value to aquaculture of using new applications of products already being applied in other sectors. It also highlighted potential methods to increase the technology readiness level (TRL) of certain products, with clear success factors being the ability to judge market demand and the importance of external identification and assessment by potential end users.

Location & Date

EAS Aquaculture Europe, Dubrovnik, Croatia, 18 October 2017

Co-organisers

AQUARK (Columbus Aquaculture Node) and EAS

COLUMBUS Aquaculture Node: Dr. Panos Christofilogiannis – AQUARK managing director: panos@aquark.gr

Scope and Aims of Event

A special event was organised at AE2017 by the COLUMBUS Aquaculture Node (AQUARK). This event presented several aquaculture case studies that are currently going through the COLUMBUS process of identifying KOs and developing KTPs – this process is ultimately to facilitate an increase in TRL and help bring the knowledge to market. The event was targeted principally at participants of AE2017 (researchers, suppliers, producers etc.) to present the process and showcase some examples.

The COLUMBUS Brokerage Stand enjoyed a steady flow of COLUMBUS partners and transfer experts throughout the lifespan of AE2017. Scientists with potential products in their KOs could therefore look further into the transfer pathway and receive advice and accompaniment to pursue their ideas.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.

COLUMBUS Knowledge Outputs (KOs) presented

- FISH TEXTURE EVALUATION TOOL – Kriton Grigorakis, HCMR
- ABALONE IMTA in the MEDITERRANEAN – Gercende Courtois De Viçose, GIA ULPGC
- W42 VNN-VER VLP IP VACCINE – Ansgar Stratmann, W42 GmbH
- FAMORAS - Monitoring Water Quality in RAS – Adam Hambly, DTU
- Nutritional interventions to mitigate Parasitic enteritis – Ariadna Sitja Bobadilla, IATS, CSIC
- FISH SHAPE APP – Giorgos Koumoundouros, UoC
- NOVEL FEED ADDITIVES – Lidia Robaina, GIA ULPGC

Post-event observations

Discussion around the KOs and Case Studies:

- FAMORAS – Like many sensors, this technology is originally from the oceanographic sector (used to measure ice-melt) and finds new applications in waste water, drinking water and recirculating aquaculture systems (RAS).
- NOVEL FEED ADDITIVES – The potential avenue for transfer is most probably the smaller, specialised feed companies that are routinely involved in testing new ingredients/additives and look towards incremental improvements.
- FISH SHAPE APP – The unique selling point of this application lies in the opportunity to pick up the onset of juvenile malformations before they become visible. Increasing user data supplied to the lab can help it provide a better benchmark, and hence increase the accuracy of the app. In turn, this can then help validate (or even determine) standards required for the industry's need of robust juveniles prior to on growing.

General discussion points

- KOs can come from many different activities – both individual initiatives and from long-term, incremental knowledge build-up.
- TRL 4-7 is the so-called “valley of death” and crossing this can take considerable time and effort. While TRL 1-3 is mostly research-driven – and hence publicly funded – TRL 4-7 may be facilitated through public-private funding, and TRL 8-9 – commercialisation – is almost always privately funded. However, the investment required to cross the “valley of death” is not necessarily high for many of these applications; it is more incremental and similar to the knowledge build-up that precedes it. The key element is the recognition of market demand at that time.
- KOs and their potential applications are not always obvious to researchers (as they are ‘too close’ to their work), hence their external identification and qualification is an important element.
- In this case, the COLUMBUS approach was very useful, and the case studies presented exemplified the diverse nature of the KOs.
- Furthermore, many KOs are also applicable to other sectors. In general, more innovation is of an inter-sector, rather than an intra-sector, nature.





- **Outputs & Conclusions**

- The EAS AE2017 event has developed into a place to share and communicate the latest scientific research, attracting a dynamic and multi-disciplinary audience. AE2017 attracted total participation of 1700 from more than 60 countries. 92 exhibitors were present at the AE2017 trade show. EAS has decided to implement brokerage events as an integral part of its AE events – for knowledge management between researchers and exhibitors (using the COLUMBUS approach), for student mentoring, and for B2B contacts between companies present at the trade show.
- KOs can come from many different activities – both individual initiatives and from long-term, incremental knowledge build-up. The COLUMBUS approach is very useful to identify and validate them and the case studies presented here exemplify the diverse nature of the KOs.
- Many KOs are also applicable to other sectors. In general, more innovation is of an inter-sector, rather than an intra-sector, nature.
- A lot of work has been done by COLUMBUS partners to develop the knowledge transfer process. Future steps involve validating and showcasing more outputs and transferring case studies to potential end users.
- In terms of the research-to-impact cycle, industry defines research and innovation priorities, the alignment of tools and financing, doing the project, and communicating the outcomes. In this context, the COLUMBUS approach has a clear role to play. While the cycle is long (more than 5 years), industry is moving forward – by trial and error and by ‘micro-management’ of the TRL scale.
- If, in the future, the COLUMBUS approach is incorporated into the research-to-impact cycle, we will no longer be doing a ‘post-mortem’ but more a ‘continuous live monitoring’ of impact potential and knowledge transfer.



2.5 'Knowledge Transfer in Maritime Lightweight Applications' 11 October 2017

Summary

The COLUMBUS project supported one of the most progressive lightweight networks for maritime applications: "E-Lass". The network focuses on knowledge transfer among all stakeholders with a focus on industrial applications. During the latest E-Lass event in October 2017, an industrial tour at two shipyards coupled with a conference offered insight into excellent knowledge on lightweight solutions. The audience, of around 90 people from industry and academia, were discussing the seven technical presentations along with rules and regulations. A COLUMBUS



Delegates Shipyard Visit

Brokerage event was part of the conference, where two of the project KOs selected by COLUMBUS were presented during two separate presentations. The feedback and interest received afterwards was passed into further discussions and transfer activities. Moreover, CMT and MDC could also give insight into the COLUMBUS project to interested participants. For further information about the E-Lass network and the conference, please visit the website: <http://e-lass.eu>.

Location & Date

Hotel Park Plaza HISTORIA, Pula, Croatia, 11 October 2017

Lead organiser / supporting COLUMBUS Partners/ supporting external Organisations

E-LASS (under the lead of RISE), supported by COLUMBUS (partners CMT and MDC, Competence Node Maritime Transport & Logistics)

Aim and Goals of Event

The event was initiated to provide the participants with first-hand knowledge on Maritime Lightweight Applications, providing an industry-focused view on the technologies, their benefits, risks and the next steps towards a wider application.

To attract a large audience of possible target and end users, the COLUMBUS Brokerage Event was set up as part of the E-LASS conference as this conference already attracted a relevant target audience for the COLUMBUS-identified KOs.

Addressed topics during the event were:

- Lightweight materials and designs for maritime applications (SOLAS Vessels and OFFSHORE)
- Joining techniques for multi-material structures



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.

- Latest developments on rules and regulations (IMO, Classification Society)
- New research projects on innovative ship design and sustainable operation

FAUSST Project: KO “Steel-FRP Transition joint made from Multi-Material Hybrid Fabric”
 THROUGH LIFE Project: KO “Composite Sundeck”



Speaker, Rafael Luterbacher, presented the FAUSST KO

Post-event observations

- What went well?
 - Combining the COLUMBUS Brokerage Event with another conference that already attracted the required target audience was seen to have a positive effect.
 - A good diversity of relevant participants was present at the event:
 From design offices to ship operators, the event attracted various shipyard engineers, suppliers and material developers etc. In total, around 90 people participated in the event. The group and diversity of attendance was as expected due to previous experiences with E-LASS events that all attracted a large audience of relevant people.
- Improvements (earlier promotion of the event via the network)
 - Post-event documentation (e.g. publication of press release, short video of KO presentations)
- Outputs

The event met the aims and goals of COLUMBUS. Two KOs were presented to a large audience of potential target and end users. The attendees received valuable information on lightweight topics as promised and showed interest in the two KOs. In-depth discussions on the KOs were intensified during the coffee and lunch breaks.

- Impacts

In addition to the transfer activities that had already occurred for the two KOs, additional Target Users were pursued during the Brokerage Event.

For the FAUSST KO, two European Shipyards (one a composite supplier and the other a large car manufacturer) showed their interest in the clustered FAUSST KO. During the event, it was agreed to foster cooperation with these additional Target Users and to provide them with additional and detailed KO information. This process is still ongoing, so additional impact measurement for this activity will not be finalised within the lifetime of COLUMBUS. However, the fact that additional Target Users were attracted and identified during the event further strengthened the KO impact that was achieved during the initial transfer activity.

- Follow-up actions

Post-event publicity (see comment above under “Improvements”)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.

2.6 *'Knowledge Transfer in Maritime Sensing Technologies' 23 November 2017*

Summary

The Knowledge Transfer in Maritime Sensing Technologies Brokerage Event was organised in Gran Canaria in the framework of the EU project AtlantOS. The event brought together relevant stakeholders of the sector, including maritime sensor developers, SMEs, specialised research centres and data management experts.

Location & Date

Auditoria Alfredo Krauss, las Palmas de Gran Canaria 23/11/2017

Lead organiser

PLOCAN

Aim and goals of Event

The main objectives of this event were to:

- Offer European companies – those focused on maritime sensing technologies and/or observing platforms that have recently participated in the development of new sensors – the support of the EC within the framework of funded Research and Innovation Projects.
- Facilitate expert companies and institutions – those dedicated to marine sensor interoperability; data collection and transmission; and data sharing and use – in their pursuit to find innovative, cutting-edge solutions mostly developed with the support of the EC in the framework of Research and Innovation Projects.
- Aid potential users that represent the European oceanographic and ocean observing and monitoring communities.

COLUMBUS KOs presented

SMS project – Novel Algal sensor

LAKHSMI project – Sensor

CommonSense project – MicroPlastics Sensor

Post-event observations

- What went well?
 - Involvement of industry
It is generally extremely difficult to engage representatives from the private sector (SME or larger organisations) to participate in events like these that are often seen as box-ticking 'project' events. The fact that eight companies were represented in this event is quite an achievement.
 - The venue/opportunity
Hosting the event in the context of the AtlantOS general assembly, where the audience comprised representatives from all key European ocean observing infrastructures, as well as trans-Atlantic representatives, meant that the knowledge owners were able to pitch their KOs to potential Target Users and influencers. These influencers could then



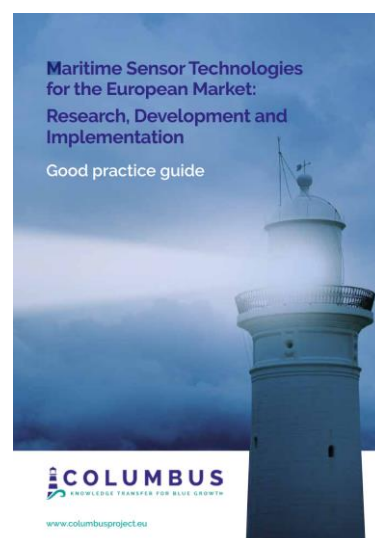
help them in terms of future funding opportunities or advise them on future steps to take.

- The pitches and content
The organisers made considerable effort in advance of the meeting to define key points for the presenters. They were also provided with PowerPoint slides prompting these key points. This ensured that the pitches remained focused on the topics being discussed.
- Networking/Timing
The Brokerage event was organised to take place immediately before lunch (dubbed as a 'networking lunch'). As a result, once the event had finished there was ample time for the audience to approach the presenters and make contacts or arrange follow-ups.
- Improvements
 - Insufficient time
Despite all efforts to curtail the pitch presentations, some ran over time. This meant there was insufficient time for the panel discussion and follow-up questions. Despite this, an interesting discussion was still had whereupon the need for a second dedicated workshop was highlighted – one for focusing specifically on some of the aspects that had been discussed that day.
- Key points from Q&A session
 - What happens after research and development (R&D) funding ends? This is what's known as the "valley of death" period for technology developers – to move from TRL 5 to TRL8. This can be the role of research infrastructures.
 - Often the market is not aware that these innovative sensors have been developed.
 - Communication at all stages of development is vital. This can often be between very different sectors; for example, molecular biologists and hardware engineers. Lack of effective communication can slow down development, with one party or another not fully understanding the vision.
 - There is a need for a bottom-up strategy to test products after a project ends.
 - Projects must be co-designed with industry from their inception to commercial scale development. Involvement of industry from the start can prevent duplications of effort and also mean that developments are market-orientated, as opposed to scientific projects.
 - New technology must be useful for industry and there must be market pull.
 - End-user feedback is crucial and potential end users of the technology should be consulted from the start to ensure the technology is fit-for-purpose.
 - Sensors must be developed to consider data provenance, and end-to-end data flow, from sensors to users.
- Outputs





- Relevance – did the event meet the aims and goals of COLUMBUS and the expectations of the attendees?
Yes, two of the knowledge owners (SMS algal sensor and Lakshmi) have reported positive feedback and these are being detailed in COLUMBUS case studies, one for each KO.
- Brokerage transactions initiated
The SMS algal sensor owner was approached by a research infrastructure representative and offered two opportunities to sea-trial their sensor. Others are awaiting feedback.
- Relationships established
All the companies received information on a survey from the Directorate-General for Maritime Affairs and Fisheries (DG MARE) to identify interesting future funding priorities. The survey was sent to all participants following the event. DG MARE had been trying to encourage knowledge owners to complete this survey, so this was a win-win opportunity. There was also a good relationship established between the company representatives and representatives from key European initiatives, EuroGOOS and EMODnet.
- Other
It was decided upon to produce a COLUMBUS Best Practice Guide, exploring how to advance TRLs during initial R&D funding and ways of reaching the market when funding ceases. It also summarises challenges and opportunities and makes key recommendations for effective knowledge transfer.



The guide can be downloaded from:

http://eurogoos.eu/download/publications/COLUMBUS_Sensor_Tech_Transfer_Guide_2018.pdf

• Impacts

- Did the event help any KO source projects or COLUMBUS KTPs achieve their intended impacts?
Yes, the SMS algal sensor knowledge owner was keen to advance to sea trials, but unfortunately the project had ended. They are currently in contact with a research infrastructure that may be able to offer support.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.

- Other Impacts

The SMS knowledge owner has been offered the opportunity to contribute a chapter to a book designed to advance state-of-the-art knowledge in sensor development.

- Follow-up actions

- Post event publicity

Communication for the follow-up event has been active.

<https://columbus-sensors-workshop-23jan2018.eventbrite.com>

- Communication with attendees

All attendees received a follow-up email to thank them for their participation and ask them to contribute to a short feedback survey. They were also all forwarded the information on the DG MARE survey so that they could be considered for future funding. Finally, they have all received invitations to attend the COLUMBUS follow-up workshop on 23 January.

- KT opportunities pursued

An interesting KT activity involving the NeXOS project was identified whereby TriOS had used NeXOS for their sensor web enablement.



3 CONCLUSION

Reports from the organisers of each event are included in the report, each details the specific outputs achieved. All events generated new relationships with key people with valuable relevant competences. Additional Knowledge Transfer opportunities were identified, and discussions started with potential target users. Knowledge owners have reported renewed interest in the outputs of their projects having been approached by COLUMBUS event delegates. Opportunities for the field testing of kOs have been identified.

This deliverable presents reports of the six individual brokerage events. Each of these reports details the outcomes and impacts of the event. These are summarised in this table:

Title Date & Location	Organisers	Delegates targeted	Knowledge presented	Key Outputs & Impacts
'Power of Open Marine Data for the Blue Economy' 11-12 Oct 16 Brest	EuroGOOS, EMODnet SmartBay Marine South East PLOCAN	Industrial users of marine data	Interoperable marine data Marine Open Data in Europe EU AtlantOS project	- Contributed to: 'COLUMBUS Engaging Industry Best Practice Guide', April 2017. - Event allowed interactions and exchanges with knowledge users, SMEs, knowledge owners and European marine data initiatives. - Demonstrated the role of SMEs is critical as intermediaries in the marine data value chain.
'Cutting Edge Solutions for Marine Coatings' 16 May 17 Brussels	ECMAR CMT	Invited experts in the field of marine coatings	"ACORN" coating and "SELEKTOPE" coating	New contacts made (especially between I-Tech and IFAM) and potential applications identified.
'Blue Growth Knowledge Transfer on Marine Physical Resources and Observations' 24 May 17 Dublin	SmartBay Ireland	Researchers and industry representatives involved in Sensors, Antifouling, Mooring and Communications.	FP7 projects: MARIABOX, ACORN, Sense Ocean, LAKHSMI and H2OCEAN. H2020 project: ACORN	- Knowledge Transfer opportunities initiated. - Meeting between Aquatera and SmartBay in relation to the Lakshmi scalable sensor array. - Possibility of collaborations with National Oceanography Centre - Aquatera discussions with Openhydro, in relation to Lakshmi sensors. - Opportunity SenseOcean project sensors in offshore wind operations.
'Aquaculture Knowledge Transfer - Facilitating the pathway from research outputs to industry products' 18 Oct 17	AQUARK (COLUMBUS Aquaculture Node) and EAS	Participants covering a very broad spectrum of potential applications for all stages of the aquaculture production cycle.	7 COLUMBUS case studies presented to 60 event participants: - ABALONE IMTA - W42 VNN-VER VLP IP VACCINE - FAMORAS - Monitoring	- FAMORAS sensors, new applications in waste water, drinking water and aquaculture RAS systems. - NOVEL FEED ADDITIVES, potential avenue for transfer probably specialised feed companies looking for incremental improvements - FISH SHAPE APP, opportunity to pick up the onset of juvenile malformations before they become visible. - COLUMBUS Case Studies presented are useful to demonstrate their diverse nature.



EAS Aquaculture Europe, Dubrovnik, Croatia			Water Quality in RAS - Nutritional interventions to mitigate Parasitic enteritis - FISH SHAPE APP - NOVEL FEED ADDITIVES	- EAS will implement brokerage events as part of its AE events.
'Knowledge Transfer in Maritime Lightweight Applications' 11 Oct 17 Pula, Croatia	E-LASS CMT MDC, (CN Maritime Transport & Logistics)	Design offices, ship operators, shipyard engineers, suppliers and material developers	FAUSST Project: KO "Steel-FRP Transition joint made from Multi- Material Hybrid Fabric" THROUGH LIFE Project: KO "Composite Sundeck"	- Two KOs presented to a large audience of potential target and end users. - FAUSST KO, cooperation ongoing with two European Shipyards.
'Knowledge Transfer in Maritime Sensing Technologies' 23 Nov 17 las Palmas de Gran Canaria	PLOCAN		SMS project - Novel Algal sensor Lakshmi project - Sensor CommonSense project - MicroPlastics Sensor	- Need for a second dedicated workshop - Two of the knowledge owners (SMS algal sensor and Lakshmi) reported positive feedback - SMS-algal sensor owner approached by a research infrastructure representative and offered two sites to sea-trial their sensor. - Relationships established between companies and representatives from key European initiatives, EuroGOOS and EMODnet. - Decided to produce a COLUMBUS Best Practice Guide, 'how to advance technology readiness levels during initial R&D funding'. - SMS knowledge owner offered an opportunity to contribute a chapter to a book to advance knowledge on the state-of the art in sensor development.

The reports demonstrate the value of Brokerage Events in reaching a wider range of potential Target Users than can be reached by individual KFs.

Following the COLUMBUS methodology, the KFs validate and prioritise KOs before identifying potential Target Users. Despite the collaboration between KFs and CNs, this approach can exclude some potential Target Users outside of the normal networks of KFs and CNs. Brokerage Events are an effective way to identify additional Target Users and to allow others to be 'self-selecting'.

Brokerage events aimed at industry give potential Target Users the opportunity to learn about KOs that would otherwise have remained hidden. The events provide a valuable forum to introduce potential Target Users to knowledge owners and begin exploring possibilities for KT and future collaboration. However, as events are time-limited, there is a need for follow-up actions. The conduct of KT and realisation of Eventual Impact can take a long time, often well beyond the end of the COLUMBUS project. Consequently, it is not possible to make an accurate assessment of total potential impact that may be achieved through Brokerage Event activities. There is a need for more permanent



knowledge brokers that can maintain the dialogue with all those involved in knowledge transfer, from knowledge owners, through one or more target users to users responsible for achieving the eventual impact of the knowledge.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.



4 ACRONYMS

CN	Competence Node
CNL	Competence Node Leader
EC	European Commission
EU	European Union
EurOcean_KG	Marine Knowledge Gate InfoBase
FP7	Seventh Framework Programme for research and innovation
H2020	Horizon 2020 EU Framework Programme for Research and Innovation
II	Impact Indicator
IM	Impact Measurement
KF	Knowledge Fellow
KO	Knowledge Output
KOP	Knowledge Output Pathway
KOT	Knowledge Output Table (1 per project listing of all collected KO)
KT	Knowledge Transfer
KTF	Knowledge Transfer Fellow
KTP	Knowledge Transfer Plan
MSFD	Marine Strategy Framework Directive
PC	Project Coordinator
WP	Work Package



ANNEX A: INDIVIDUAL BROKERAGE EVENT AGENDAS

‘Power of Open Marine Data for the Blue Economy’ 11-12 October 2016

Agenda

Marine Information Workshop for Industry

Power of open marine data for the blue economy

Tuesday 11 October 2016, 14:00-18:00

- **Interoperable marine data: What is the Blue Growth potential?**
(A Connected Ocean Conference Plenary Session 2)
- **Marine Open Data in Europe: opportunities for industrial Blue Growth stakeholders**
Vicente Fernandez, Science Officer, **EuroGOOS**
- **User Perspectives**
François Batifoulier, Project Manager, **Open Ocean**, France
Pieterjan Serruys, International Business Developer, **dotOcean**, Belgium
- **Atlantic data integration through the EU AtlantOS project**
Sylvie Pouliquen, Project Manager, **Ifremer**, France
- **Discussion**
Moderator: Jan-Bart Calewaert, Head of Secretariat, **EMODnet**

Wednesday 12 October 2016, 09:00-13:00

The power of open-access interoperable marine data for the maritime sector: An untapped resource?

Moderator: Jonathan Williams, CEO, **Marine South East**, UK

- **Introduction to the workshop objectives**
Jonathan Williams, CEO, Marine South East, UK
- **How can publicly funded marine information sharing initiatives develop to meet industry user needs? What are the specific needs of SMEs? What are the bottlenecks?**
Stéphane Alain Riou, Deputy Director, **Mer Bretagne Atlantique** cluster, France
Pieterjan Serruys, International Business Developer, **dotOcean**, Belgium
- **What are industrial applications of open access marine data? How to maximise uptake?**
Oonagh McMeel, Knowledge Transfer Officer, **EMODnet** and **COLUMBUS** project
Vicente Fernandez, Science Officer, **EuroGOOS**
- **How can observatories maximise stakeholder engagement with the private sector? How can test facilities engage effectively with users to maximise technological development and innovation in the marine and maritime sectors?**
Ayoze Castro, R&D Manager, **Plocan**, Spain



Rogério Chumbinho, Technical Project Manager, **SmartBay Ireland**
Claude Tremblay, Executive Director, **St. Lawrence Global Observatory**, Canada

- **Summing up: How to enmesh users in the marine data value net, from data acquisition to exploitation? What are the next steps to improve collaborations between public data initiatives and the private sector catalysing the conversion of information to innovation?**

Workshop dates and times

11 October: 16:00-18:00 – opening plenary

12 October: 09:00-12:30 – interactive workshop (A Connected Ocean parallel session)

This workshop was organised in partnership by EuroGOOS and Seascope Consultants within the activities of the EU H2020 COLUMBUS project.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.

‘Cutting Edge Solutions for Marine Coatings’ 16 May 2017

Agenda

- 8:30 – 9:00 Welcome coffee, Meet & Greet, Short Introduction
- 9:00 – 9:30 Rosa Fernández Otero (CETMAR, ES) COLUMBUS project: What is it and Why?
- 9:30 – 10:00 Pablo Herrera (Degima, ES) ACORN” coating extends the lifespan of offshore maritime structures
- 10:00 – 10:15 Networking Coffee Break
- 10:15 – 10:30 Dr. Alina Stadnitskaia (ECMAR, BE) Rules and regulations for marine & offshore coatings
- 10:30 – 11:00 Dr. Lena Lindblad (I-Tech AB, SE) “SELEKTOPE” – from the lab bench to commercial sales
- 11:00 – 11:30 Rosa Fernández Otero (CETMAR, ES) "SELEKTOPE" – an innovative selective antifouling agent: the latest field trial results on marine monitoring buoys in a heavy biofouling area within the northwestern coast of Spain
- 11:30 – 12:00 Dr. Volkmar Stenzel (IFAM, DE) Potential of self-healing coatings
- 12:00 – 12:30 Dr. Volkmar Stenzel (IFAM, DE) Potential of Friction-reducing coatings
- 12:30 – 13:30 Networking Lunch
- 13:30 – 14:30 EU Commission member: Presentation about the next call within the Transport programme
- 14:30 – 15:30 EU Commission member: Presentation about the next call within the Blue Growth programme
- 15:30 – 16:00 Discussion and Closing remarks
- 16:00 The end of the brokerage event, coffee and networking



‘Blue Growth Knowledge Transfer on Marine Physical Resources and Observations’ 24 May 2017

Agenda

9:30 – 10:00 Registration and coffee

10:00 – 10:30 Welcome and Introduction to COLUMBUS project

- Welcome – Eoin Nicholson from SmartBay Ireland
- Introduction to the COLUMBUS project – David Murphy from AquaTT

10:30 – 10:50 LAKHSMI

10:50 – 11:00 Q&A

- Natalia Rojas from Aquatera
- LAKHSMI will develop a new bio-inspired technology to make continuous and cost-effective measurements of the near-field, large-scale hydrodynamic situation for environmental monitoring in cabled ocean observatories, performance and damage detection in marine renewable energy, and unwanted ingress in port/harbour security.
- The project will design, manufacture, and field test prototype smart sensor cables that measure differential pressure and temperature on the ocean floor, enabling high resolution imaging of the surrounding volume in space and time through simple, inexpensive, very low power transduction. The cables can be connecting with existing cabled ocean observatories. The technology is inspired by the biophysics of fish hydrodynamic sensing and is scalable from meters to possibly hundreds of kilometres with a high sampling frequency. Software interfaces developed during the project will be integrated with existing observatory systems (such as EUROGOOS). Tests will be conducted in a tank, a pool, and in an ocean observatory.

11:00 – 11:20 H2OCEAN

11:20 – 11:30 Q&A

- Jose Vidal from AWS Truepower
- A wireless sensor network for a multi-use platform. The network can communicate through long distances and is flexible to adapt to multiple layouts. Earlier adaptations have been used in a number of applications such as structural health monitoring of wind turbines.

11:30 – 11:50 ACORN

11:50 – 12:00 Q&A

- Pablo Herrera from Degima
- ACORN has taken advantage of the proven long-term corrosion resistance of thermally sprayed aluminium (TSA) to develop a matrix coating with a proven life of 20+ years in the sea. Porous TSA was produced, and, into this porous TSA matrix, the ACORN research team introduced islands of environmentally friendly antifouling substances. These substances are gradually exposed at the active surface of the coating as the TSA corrodes away at the rate of few μm per year. The ACORN coating represents an entirely new, non-paint approach to the long-term protection of offshore structures. In addition to this, the project has developed a corrosion and cavitation-resistant coating with a 10+ year design life, suitable for tidal turbines.

12:00 – 1:15 Lunch



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.

1:15 - 1:30 Brief Re-Introduction to COLUMBUS project

1:30 – 2:00 GeoWAVE

1:50 – 2:00 Q&A

- Viktor Ekstrom from Seaflex
- GeoWAVE aims to provide a structure whereby industry-specified research will be conducted on a new generation of offshore anchors and mooring components deemed to have the highest economical and technical merit for mooring wave energy devices. In so doing, GeoWAVE will remove the technical and economical hurdle of mooring wave energy converters to the seabed so that widespread deployment on a commercial scale becomes viable. This, in turn, provides new business opportunities for the SMEs.

2:00 – 2:20 SenseOCEAN

2:20 – 2:30 Q&A

- Doug Connelly from the National Oceanography Centre
- SenseOCEAN draws together world-leading marine sensor developers to create a highly integrated, multifunctional and cost-effective, *in situ* marine biogeochemical sensor system. The marine environment plays an essential role in the earth's climate, as well as providing resources, recreational opportunities and acting as a vital transportation route. However, the inherent vastness of the oceans means that our ability to monitor the health of this important system remains limited. This project provides a giant leap forward in the ability to measure crucial biogeochemical parameters. Innovations will be combined with state-of-the-art sensor technology to produce a modular sensor system that can be deployed on many platforms. Prototypes will be optimised for scale-up and commercialisation. These will be tested and demonstrated on profiling floats, deep-sea observatories, autonomous underwater vehicles, and fishing vessels. Ultimately, the developed sensors will be launched as commercially available products.

2:30 - 2:50 MariaBOX

2:50 – 3:00 Q&A

- Rogerio Chumbinho from SmartBay Ireland
- MariaBox will develop a wireless marine environment analysis device for monitoring chemical and biological pollutants while installed into a buoy, a maritime means of transport or mooring. The device, based on novel biosensors, will be of high-sensitivity, portable and capable of repeating measurements over a long period of time, allowing permanent deployment at sea. The word "MARIA" is the plural of the Latin "mar" (sea) and expresses the wide applicability that this system offers in multiple locations where low-cost and real-time *in situ* analytical monitoring devices are required.

3.00 - 3:30 Closing Remarks

- David Murphy from AquaTT

'Aquaculture Knowledge Transfer – Facilitating the pathway from research outputs to industry products' 18 October 2017



Agenda

- A general introduction to COLUMBUS and its process
- Presentation of Case Studies
 - FISH TEXTURE EVALUATION TOOL – Kriton Grigorakis, HCMR
 - ABALONE IMTA in the MEDITERRANEAN – Gercende Courtois De Viçose, GIA ULPGC
 - W42 VNN-VER VLP IP VACCINE – Ansgar Stratmann, W42 GmbH
 - FAMORAS - Monitoring Water Quality in RAS – Adam Hambly, DTU
 - Nutritional interventions to mitigate Parasitic enteritis – Ariadna Sitja Bobadilla, IATS, CSIC
 - FISH SHAPE APP – Giorgos Koumoundouros, UoC
 - NOVEL FEED ADDITIVES – Lidia Robaina, GIA ULPGC
- Open forum with Q&A





‘Knowledge Transfer in Maritime Lightweight Applications’ 11 October 2017

Agenda

E-LASS		E-Lass Conference 11.10.2017, Hotel Histria, Pula		
Lightweight Applications				
08:15	08:30	Welcome to Uljanik	Aleksandar Kajtez	Uljanik
08:30	09:10	Uljanik composite RoRo-deck project	Vito Radolovic, Michael Rahm	Uljanik / RISE
09:10	10:00	Composite Tween Deck for Bulk Carrier – Testing of a Full-scale Prototype	Philippe Noury, Ragnar Hansen, Lars Espen Holm	DNVGL/ HEAC/ CompOcean
10:00	10:20	FAUSST - novel solutions for composite-steel joints	Rafael Luterbacher	Center of Maritime Technologies e.V.
10:20	10:45	Coffee break		
10:45	11:05	Lightweight structures	Lars Molter	Center of Maritime Technologies e.V.
11:05	11:25	Composite hatches and doors	Arnold Vaandrager	Vabocomposites
11:25	11:45	PET-based core material	Stefan Reuterlöv	Armacell
11:45	12:05	Basalt fibres for composites	Wouter Verbouwe	Basaltex NV
12:05	13:00	Lunch		
Innovation Actions				
13:00	13:30	The RAMSSES project	Carlo Cau, Matthias Krause	Cetena, Center of Maritime Technologies e.V.
13:30	14:00	Project cooperation opportunities in RAMSSES	Frank Roland	Center of Maritime Technologies e.V.
14:00	14:30	GasVessel - technologies and its application in the maritime and civil sector	Pierluigi Busetto	Navalprogetti
14:30	15:00	Coffee break		
Rules and Regulations				
15:00	15:20	New materials attached to offshore practice	Agnes-M. Horn, Ramin Moslemian, Philippe Noury	DNVGL
15:20	15:40	IMO FRP regulation status	Franz Evegren	RISE
15:40	16:00	Modernising composite materials regulations	Simon Quinn	University of Southampton
16:00	17:00	Discussion: approaches to improve innovation capabilities	Arnold de Bruijn (moderator)	Netherlands Maritime Technology Foundation
Supported by:				
				
				
				
				



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.

‘Knowledge Transfer in Maritime Sensing Technologies’ 23 November 2017

Agenda

TIME	TOPICS	PARTICIPANT	EC PROJECT
11:15 11:20	– Opening: ATLANTOS WP6: Knowledge transfer in new sensors & instrumentation	Jay Pearlman, WP6 Co-leader	ATLANTOS
11:20 11:25	– Introduction to COLUMBUS and Ocean of Tomorrow Sensor Clustering	Oonagh McMeel, COLUMBUS Observation and Monitoring Competence Node	COLUMBUS
11:25 11:30	– Knowledge transfer and Innovation in Optical Sensors	Harald Rohr, TRIOS Ltd	NeXOS
11:30 11:35	– Knowledge transfer and Innovation: Nutrient Electrochemical Sensor and EAF Sensor	Yves Dégrés, Managing Director of NKE instrumentation -	NeXOS SenseOcean
11:35 11:40	– Knowledge transfer and Innovation: new interoperable pH sensor	Hervé Precheur, CEO of SensorLab S.L.	NeXOS
11:40 11:45	– Knowledge transfer and Innovation: Compact Autonomous Sensor for Toxic Algal Species	Carmem-Lara, R&D Director, MICROBIA ENVIRONMENT	SMS
11:45 11:50	– Knowledge transfer and Innovation: Low cost scalable sensor arrays for large scale hydrodynamics measurement	Natalia Rojas, AQUATERA Ltd.	LAKHSMI
11:50 11:55	- Knowledge transfer and Innovation: A novel MicroPlastics Sensor	Sergio Martínez, Senior Researcher in Smart System Area, LEITAT	COMMONSENSE
11:55 12:00	– Knowledge transfer and Innovation: The COSTOF2 Controller	Corentin Troussard, International Sales Manager - RTsys	EMSODEV
12:00 12:05	– Knowledge transfer and Innovation: Marine Sensors Interoperability	Christian Autermann, Manager in 52 North	NeXOS, BRIDGES
12:05 13:00	– Expert Panel among all participants: <ul style="list-style-type: none"> Setting the Scene: Overall view from the perspective of Research and Data Management European Infrastructures: Matt Mowlem (National Oceanographic Centre), Erik Buck (EuroGOOS) and Jan-Bart Calewaert (EMODnet). Moderator: Jay Pearlman (IEEE) Knowledge and Technology Transfer from Research to Market; Speakers: SMEs participants. Moderator: Jay Pearlman (IEEE). 		





This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.



ANNEX B: SPEAKER FEEBACK FROM THE 'BLUE GROWTH KNOWLEDGE TRANSFER ON MARINE PHYSICAL RESOURCES AND OBSERVATIONS' BROKERAGE EVENT

Speaker Survey One

1. How did you find the structure of the workshop?

The structure was very good, and I have a much better idea of what the ideas behind the COLUMBUS project are and I am very glad I was able to come and present. All the presentations were excellent, and the mix of scientists and end users and other stakeholders was good.

2. Did the presentation of your project and outputs result in useful feedback?

Yes, the feedback was good, and I have been in touch with some of the presenters since the meeting with regard to doing collaborative work together.

3. Do you feel the workshop will help you accelerate the impact of your project outputs in any way?

The workshop has made me realise how relatively poorly we have handled communicating the outputs of our project. People were clearly excited by some of our results and I have had a number of emails following up discussions I had there. We are now producing a more focussed set of articles to promulgate our results more widely and in a more focussed way, by catering the output to the audience.

4. Did the workshop help you identify any end users for your technology or advance the development of your technology?

The stakeholders developing offshore wind operations were relatively new to me and I can see how our technology could be used in that environment, as sensor packages can be attached to the cables, the distributed arrays are something else we could look at instrumenting and enhancing the outputs in a collaborative way.

5. Other than additional funds, what could/would be of most value to you in terms of accelerating the impact of your project outputs?

Workshops, such as the one you hosted, have been very valuable and COLUMBUS operating as a hub for getting people from diverse projects together along with interested stakeholders is extremely useful.

6. What could a third-party project, such as COLUMBUS, do to support you in ensuring that your project outputs are used?

As I have mentioned, similar clustering events to the one in Dublin would provide an easy means of reaching a wider audience. It is all too common to just speak to stakeholders you already know.

7. Do you see value in further knowledge transfer workshops?

Yes, I would see other workshops as very valuable.

8. Would you participate in another such event? If so why? If not, why not?

I certainly would, I found the whole day very exciting and stimulating.



Any other comments?

I would comment on the excellent organisation of the meeting and the schedule was a good balance between presentations and time to ask questions and to network.

Speaker Survey Two

1. How did you find the structure of the workshop?

Excellent!

2. Did the presentation of your project and outputs result in useful feedback?

Just sharing LAKHSMI with other people who ask questions etc. has been very helpful. In LAKHSMI, I am surrounded by researchers and sometimes it is very difficult to see useful ways for deployments, sector needs etc. I guess that so many EU-funded projects have or are having these kinds of problems.

3. Do you feel the workshop will help you accelerate the impact of your project outputs in any way?

Yes, I do.

4. Did the workshop help you identify any end users for your technology or advance the development of your technology?

Openhydro has their technology in Orkney and I discussed with one of the guys if we can place LAKHSMI sensors around the technology and calibrate the data with the ADCP that they have in place. In my opinion, that's impact created through the workshop. Also, I had a chat with Doug about coordinating in the future an EU project with different sensors in place at the same time in different EU countries. He said that when we finish with the marinisation to speak to him again. If we do the LAKHSMI marinisation well, and we do future trials with Doug's sensors or Maria Box, again, that's impact from the workshop.

5. Other than additional funds, what could/would be of most value to you in terms of accelerating the impact of your project outputs?

In the future Columbus could provide support to undergoing EU projects to facilitate their impact at a more dedicated time/budget level.

6. What could a third-party project, such as COLUMBUS, do to support you in ensuring that your project outputs are used?

Just having an SME in the consortium of LAKHSMI is not enough to create impact with the outputs. Columbus methodology support would be very helpful.

7. Do you see value in further knowledge transfer workshops?

Yes, I do.

8. Would you participate in another such event? If so why? If not, why not?

Yes, I found it very useful. Looking at the other presentations has been great, we don't see just a presentation of the project and we get in 20 minutes valuable KO that if not through COLUMBUS I will never know!



Any other comments?

Maybe the following brokerage events could be divided depending on end users' needs – that could be the one of the main criteria.

Speaker Survey Three

1. How did you find the structure of the workshop?

The structure was perfect for me, we had time enough to explain ourselves and the time at the meeting has passed really fast.

2. Did the presentation of your project and outputs result in useful feedback?

Yes, it was good to share with other companies our project and to see some other interesting projects at the end we have really good feedback.

3. Do you feel the workshop will help you accelerate the impact of your project outputs in any way?

Yes, I am completely sure because we made contact with interested companies.

4. Did the workshop help you identify any end users for your technology or advance the development of your technology?

For example, Smartbay is one of the new partners that we have for the continuation of the project ACORN, called MAT4OEC.

5. Other than additional funds, what could/would be of most value to you in terms of accelerating the impact of your project outputs?

I think that we are in the good way and we just have to work and get results to prove that our coating is working.

6. What could a third-party project, such as COLUMBUS, do to support you in ensuring that your project outputs are used?

Inviting us to this event I think that was the best way to make improvements.

7. Do you see value in further knowledge transfer workshops?

Yes, I think that is important. You can compare your project with another, you can see different points of view and you can contact other companies. I don't see any negative point in all this value.

8. Would you participate in another such event? If so why? If not, why not?

Yes, for sure. We participated, one week before the Dublin Brokerage, in a Brussels brokerage and everything was perfect. We just have positive comments of these 2 brokerages.

Any other comments?

None given.

Speaker Survey 4

1. How did you find the structure of the workshop?



The structure and the agenda of the workshop were working well.

2. Did the presentation of your project and outputs result in useful feedback?

Yes.

3. Do you feel the workshop will help you accelerate the impact of your project outputs in any way?

It is always good to spread the results from projects and get input from other projects.

4. Did the workshop help you identify any end users for your technology or advance the development of your technology?

Yes, there were some end users at the conference that we have approached.

5. Other than additional funds, what could/would be of most value to you in terms of accelerating the impact of your project outputs?

To present the results in different forums, where COLUMBUS is one of them.

6. What could a third-party project, such as COLUMBUS, do to support you in ensuring that your project outputs are used?

Help us spread the word and connect with other projects and share outputs and results.

7. Do you see value in further knowledge transfer workshops?

Definitely.

8. Would you participate in another such event? If so why? If not, why not?

Yes, it is always of interest to network and listen to other projects as well as get more feedback on your own.

Any other comments?

None given.

ANNEX C: 2017 COLUMBUS BROKERAGE EVENTS FOR KNOWLEDGE TRANSFER, GUIDELINES DOCUMENT

2017 COLUMBUS Brokerage events for Knowledge Transfer



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.

GUIDELINES DOCUMENT

1 REMINDER OF THE TASK WP7 – TASK 7.3 COLUMBUS BROKERAGE EVENTS

Task 7.3 COLUMBUS Brokerage Events (M12-M36) Leader: MSE (P6) Partners involved: Partners (1, 8, 9, 13, 17, 18, 19, 21, 22, 24, 26)

One of the specific objectives of WP7 will be to facilitate events and activities to bridge the gap between research communities and end users. As well as the KT activities organised by each Competence Node, cross-cutting Brokerage Events will be planned with relevant COLUMBUS partners to reach different groups of end users: for instance, ECMAR (maritime community), MSE or MCDE (clusters), UPMC/CNRS (Euromarine), and PLOCAN/SMARTBAY (IT, Platforms, multiuse platforms).

Specific activities will also target all maritime clusters throughout Europe.



1 Guidelines: Overview table

COMPONENT	ACTION
<i>Team</i>	<ol style="list-style-type: none"> 1. Recruit a brokerage event workshop team (three to four people). 2. Make them understand the purpose and the framework of a COLUMBUS knowledge transfer brokerage event.
<i>Theme / Purpose</i>	<ol style="list-style-type: none"> 3. Review the KO(s) you will broker during the COLUMBUS knowledge transfer brokerage event. 4. Review the KTP to make sure that the brokerage event will be consistent with the plan.
<i>When and where</i>	<ol style="list-style-type: none"> 5. Determine the date and location of the workshop while considering other related major/bigger events to facilitate the recruitment process.
<i>Participants recruitment process</i>	<ol style="list-style-type: none"> 6. Set up a stakeholder involvement strategy and design a recruitment plan including the follow-up after the brokerage event. 7. Start two months ahead of the potential date. 8. Identify which stakeholders to involve and why. Create a list. Describe all potential end users you want to recruit/make a quick analysis answering to the “what’s in it for me” question. 9. Think of various incentives for stakeholder participation, such as professional development credit, presence of keynote speakers, publication of results, networking opportunity, an attractive setting linked to the workshop topic, etc. 10. Describe the KO using straight wording (Who, What, Where, When, Why?). 11. Ask WP7 and WP6 for support in communication/fulfill the template to order communication materials. 12. Share the KO description, the KOP and the targeted users/end users, date and location of the workshop on Basecamp to the whole partnership. 13. Attach an invitation for the Brokerage event including all useful information and communication materials. 14. Ask COLUMBUS partners to spread the word to their networks. 15. Send invitations and recruit participants one month ahead of the date of the workshop at the latest. Be sure the purpose of the workshop is clearly detailed.
<i>Communication</i>	<ol style="list-style-type: none"> 16. In collaboration with the WP7 team, prepare a coherent communication strategy and communication tools (e.g. press releases, COLUMBUS project presentation, leaflet, posters, free gifts and gadgets, etc.). 17. Ask AquaTT to spread the word on COLUMBUS website, Twitter account and LinkedIn account.
<i>Facilitator</i>	<ol style="list-style-type: none"> 18. Choose a facilitator (an experienced person) and include him/her in the recruitment process so as he/she has time to get used to the topics and the audience.
<i>Content</i>	<ol style="list-style-type: none"> 19. Prepare a detailed programme of the COLUMBUS brokerage event. You will find detailed information about different formats for the COLUMBUS brokerage event at http://actioncatalogue.eu/search. You can use the one of the methodology sheets proposed in Action Catalogue.
<i>Format</i>	<ol style="list-style-type: none"> 20. Choose the format of the workshop from the Action Catalogue.



<i>Materials</i>	21. Prepare refreshments.
	22. Ensure that the location and room are adapted to the format and the number of expected attendees (prevents you from having a too large conference room).
<i>Participants</i>	23. Prepare the workshop participant specific materials, content documents, photos, posters, films, etc.
	24. Upload the materials on BaseCamp and share them with the workshop participants and the COLUMBUS partners.
<i>Workshop</i>	25. If you have not managed to recruit many participants yet, contact them again by telephone and e-mail. Revise the participant list, broaden the scope and look for new names. Use COLUMBUS partners networks to connect you to the desired participants.
	26. Carry out the workshop face-to-face and online with the support of video streaming app (Periscope/Facebook live).
<i>Analysis</i>	27. Take pictures of the event.
	28. Evaluate the process and results. Complete the Reporting Template. Collect and report best practices and policy issues.
<i>Follow up</i>	29. After the end of the workshop, encourage participants to stay in touch with COLUMBUS partnership.
	30. Disseminate the workshop results to external and internal stakeholders: workshop participants, COLUMBUS partners, your staff, external stakeholders and partners.
	31. Follow up on the COLUMBUS brokerage event workshop. Keep the stakeholders involved while sending them the COLUMBUS Newsletter and invitation for COLUMBUS related events (awards, conference).



2 Practical tips to set up your event

1. DETERMINING THE DATE

When setting the date of the COLUMBUS Brokerage Event for Knowledge Transfer, consider community activities that can boost your workshop. Try to avoid conflicts with major school, sports, church and other community activities and avoid holidays. Weekdays are generally better than weekend sessions. Bear in mind that good planning and preparation may require two months.

2. CHOOSING THE LOCATION

Investigate if you can collaborate with another partner or another project consortium that is in the same member state and/or working on a cross-cutting theme so as to increase synergies.

When choosing the location of the COLUMBUS Brokerage Event for Knowledge Transfer consider the following:

- The room should be large enough to accommodate all participants and an audience (if applicable).
- A flexible space with extra rooms available is an advantage.
- The facility should be centrally located and easily accessible.
- The room should have the required furniture (table, chairs, etc.), sufficient electrical power to accommodate the electronic media, appropriate electric outlets for lights, computers and Internet connections, a cooling/heating system, etc.
- Provide water and coffee for the participants.
- The facility should be politically neutral.
- The room should provide a comfortable atmosphere, in which the participants can feel at ease.
- If an audience is expected, there must be room to set up chairs for them.
- Bathroom facilities should be available.
- An attractive setting is a plus (e.g. a local science center, a natural history museum etc.).

3. RECRUITING PARTICIPANTS

Identifying stakeholders who will be engaged in the COLUMBUS Brokerage Event for Knowledge Transfer is an important part of a planning process and the key to the overall success of the event. Therefore, we suggest to:

- Make a list of stakeholders, organisations and networks potentially targeted in the KOP.
- Analyse the needs and potential contribution of various stakeholder groups to the selected KO.
- Be inclusive and involve participants who live on the coast and in the hinterland and who represent the activity sectors linked to the KO and the competence theme it is attached to.
- Don't just reach the 'usual suspects.' Do not exclude opponents groups. Involving them creates ownership and greater commitment.
- Ask your colleagues and staff about other contacts.
- Identify key-note speakers. Well-chosen key-note speakers are important to the success of the workshop. Moreover, their presence may motivate and attract others.
- Communicate with the stakeholders and obtain their commitment for the workshops & the COLUMBUS project.



- Contact the key-note speakers by telephone or in person to invite them and obtain their commitment. If you do not know them personally, ask people in your network and staff to connect you to them.
- Contact and invite other potential participants of COLUMBUS Brokerage Event for Knowledge Transfer the by telephone, e-mail, or in person on the occasion of professional meetings and appointments. Ask them to suggest other stakeholders and link you to them.
- Utilise partners with other project consortia and invite their members and stakeholders.
- Send the stakeholders an official invitation message and supporting readings (if relevant).

The recruiting team will make sure that there is a gender balance (50% male and 50% female participants).

The number of participants in each COLUMBUS Brokerage Event for Knowledge Transfer will be 20-25.

4. CHOOSING THE FORMAT <http://actioncatalogue.eu/search>

In deciding which format to adopt in your COLUMBUS Brokerage Event, please take into account the following elements:

- Objectives: The reasons for involvement and expected outcomes
- KO(s)/KOP The nature and scope of the issue
- Participants based on the KOP: Who is affected, interested or can find an interest in the KO(s)
- Amount of time available (one day minimum)
- Budget Availability of resources

5. PREPARING A RECRUITMENT MESSAGE

A letter of invitation along with a short presentation of the COLUMBUS project and the Knowledge Transfer methodology and of the KO(s) to be discussed will be sent to participants.

The message will include:

- Who is doing the COLUMBUS brokerage event for Knowledge Transfer and why
- The topic of the workshop
- How the COLUMBUS brokerage event for Knowledge Transfer is placed in the overall COLUMBUS knowledge transfer process
- The information material relating to the KO(s) (it is possible to share documents describing the KO(s) in straight wordings with the potential participants)
- The expected role and contribution of the stakeholder during the COLUMBUS brokerage event for Knowledge Transfer
- What is involved in terms of required data, if the person participates (their name, family name, e-mail, organisation, activity sector, interests, etc.)
- An overview of potential risks and benefits
- How to contact the COLUMBUS brokerage event for Knowledge Transfer team
- Where to obtain answers to additional questions



6. TRAVEL AND SUBSISTENCE

Arrangements may need to be made for the following:

- Refreshments and food during the MML workshop (coffee breaks, lunch, buffet)
- Hotel accommodation (for keynote speakers)
- Travel arrangements (for keynote speakers)

Please contact the Coordinator before the workshops to check the eligibility of travel and subsistence costs.

7. PROMOTING THE COLUMBUS BROKERAGE EVENT FOR KNOWLEDGE TRANSFER

The promotion of the workshop will begin with the recruitment of the participants. Stakeholder recruitment and promotion methods may differ from country to country due to cultural and technological differences.

The promotion and communication material will be developed in cooperation with the WP7.

One of the easiest and most effective means of informing and involving the community is through the media and social media. Comprehensive media coverage is one of the keys to success. Promotion may include newspaper and television coverage, radio, advertisements, posters, stakeholder mail-outs, presentations to interested groups, social media announcements and word-of-mouth. Some possibilities for developing public awareness of the event include:

- Contact local, national and regional mass media (newspaper, radio, television)
- Produce and distribute posters and flyers
- Write and publish press releases
- Write and publish articles supporting the COLUMBUS brokerage event for Knowledge Transfer and illustrating the KO(s) to be transferred

8. THE ROLE OF THE FACILITATOR

The role of the facilitator is essential. By facilitating the discussion and activities, they ensure the quality of the results. The facilitator will be flexible, unbiased, empathetic, a good listener and enthusiastic. He/she will develop a trustful relationship with the participants, be respectful and communicate in a clear and friendly manner.

The facilitator will lead the discussion without dominating it. He/she will fade into the background as the discussion evolves and participants gain more confidence.

A successful facilitator:

- Listens attentively to each participant
- Does not give their own point of view at any time
- Seeks to give equal time to all sides of the issue and to all group members
- Pays attention to see how everyone in the group is doing
- Encourages everyone to join in the discussion, including online participants
- Helps participants to find common ground
- Looks for the bright spots (focuses on where and why things are successful)
- Encourages deeper reflection
- Structures the interactions between the participants
- Clarifies and summarises both individual opinions and a group position.

Where to find a facilitator:





- Among your staff
- Among stakeholders and participants of the COLUMBUS brokerage event for Knowledge Transfer
- Among science communicators (get in touch with a neighbouring science centre, museum, aquarium or the ECSITE network <http://www.ecsite.eu>)
- Among journalists
- Among free-lance consultants and advisors
- By word-of-mouth.

Please contact the Coordinator before the workshops to check the eligibility of facilitating costs.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652690. This output reflects the views only of the author(s), and the European Union cannot be held responsible for any use which may be made of the information contained therein.