



DELIVERABLE 9.3

"Dissemination and outreach activities undertaken including an analysis of their impact (Progress Report 1)"

ABSTRACT

This document describes the dissemination and outreach activities undertaken by BRIDGES, including an analysis of its impacts. Its purpose is to report on all communication, dissemination actions undertaken in the framework of the project and to set out the key dates related to planned events and actions in the next reporting period.

More specifically, the objectives of the Dissemination Progress Report are:

- ❖ To report on all activities undertaken to promote BRIDGES to the outside world;
- ❖ To measure the impact of all activities undertaken;
- ❖ To provide an outlook for all activities planned in the next reporting period of 12 months;
- ❖ To keep track of all dissemination targets and key indicators, plus its level of completion.

D9.3 will be drafted yearly up to month 48. This document constitutes the first Progress Report with activities undertaken until month 14.

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AUTHORS, REVIEWERS			
AUTHOR(S):	Jessica Dirks, Sophie Leeuwenburgh		
AFFILIATION(S):	Ecorys		
FURTHER AUTHORS:	Johan Gille		
PEER REVIEWERS:	Bob Allwood(SUT), Michael Field (ARMINES)		
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STATUS		DISSEMINATION LEVEL	
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S1	Reviewed	CO	Confidential, restricted under conditions set out in the Grant Agreement
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S4	Under preparation		

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1 Introduction

1.1 Purpose of the Dissemination and Outreach Progress Report

This document describes the dissemination and outreach activities undertaken by BRIDGES, including an analysis of its impacts (D9.3) (hereafter: “the Dissemination and Outreach Progress Report”) of Work Package 9 of BRIDGES – a project co-funded by the EU Framework Programme for Research and Innovation (Horizon 2020). Its purpose is to report on all communication, dissemination actions undertaken in the previous reporting period (12 months) in the framework of the project and to set out the key dates related to planned events and actions in the next reporting period. This Dissemination and Outreach Progress Report is consistent with the activities and guidelines set out in the Dissemination and Exploitation Plan (hereafter: DEP).

More specifically, the objectives of the dissemination and communication plan are:

- ❖ To report on all activities undertaken to promote BRIDGES to the outside world;
- ❖ To measure the impact of all activities undertaken;
- ❖ To provide an outlook for all activities planned in the next reporting period of 12 months;
- ❖ To keep track of all dissemination targets and key indicators, plus its level of completion.

1.2 Responsibilities

Ecorys as WP leader is responsible for drafting and updating the Report (each year at the end of the reporting period) as well as coordinating the execution of the plan. Nevertheless, all project partners will contribute to the implementation of the actions as agreed upon in this plan.

The Central Dissemination and Exploitation Team is responsible for ensuring that activities undertaken within the project are disseminated beyond Europe thus maximising the impact of the research and increasing opportunities for commercial developments.

Outreach reports will be drafted each year (M12, M24, M36, M48) that will give a full overview of the dissemination and communication activities undertaken to research, industry and service providers including an analysis of their impact.

1.3 This report

This document constitutes the first Dissemination and Outreach Progress Report with activities undertaken until month 14. It should be noted that an actual impact analysis (change of knowledge, attitude and behaviour by target-groups) is quite complicated and can only be performed in view of certain communication tools (such as event evaluation and personal contacts at trade shows) at through the sales network. Impact analysis will therefore take place at the second half of the project following the seminars, showcases and (preliminary) implementation of the exploitation strategy.

2 Dissemination and communication activities

In this chapter the planned dissemination and communication activities are described, following the table listed in section 2.4. For each tool, the overall targets will be described as agreed upon in the Description of Action, indicators that will be used to monitor progress of dissemination activities in forthcoming versions of the DEP and in the annual outreach reports. In addition a second table is presented that will name specific *activities that are foreseen till M12*, as well as the responsible partner(s). In forthcoming versions of DEP the specific activities foreseen will be further specified for the subsequent periods.

2.1 Website and social media

An informative and enticing website is established to disseminate project news and results to possible end-users, stakeholders and the public at large. Ultimately two websites are foreseen, one for innovation dissemination (wide audience) and one for D/UD Explorer commercialization (customer oriented). The website includes social media like blogs and discussion forums. The website also includes a part restricted to the project partners. This private area will be a day-to-day working platform where the consortium will be able to exchange and work on any scientific or technical document (deliverables, reports) that is needed for the project.

2.1.1 Targets and completion

Targets	Completion planned	Indicators/verification
Set-up of a project website at the beginning of the project	M6	Website live Content updates (news, events, public deliverables) # website visits # requests for Newsletter # requests for feed-back
Specific areas for innovation dissemination (wide audience) and D/UD Explorer commercialization (customer oriented).	On-going till M48 specified.	See website
The domain name www.bridges.eu or similar, will be secured for project use.	M6	See website
The website will include social media like blogs and discussion forums (see annex 2 for the social media plan).	On-going till M48	See website # twitter views ("impressions") # followers # tweets # twitter "engagements"
Private area on the website restricted to the project partners (WP proceedings, restricted	M6	Private cloud service established, accessed via public website

Targets	Completion planned	Indicators/verification
deliverables, management/contractual issues and dissemination materials, etc.)		

Table 5 – Targets and completion of the website and social media

2.1.2 Progress of activities until April 2016

Activities	Responsible partner(s)	Progress/verification
Domain name www.bridges-h2020.eu secured	UPMC	See www.bridges-h2020.eu
Drafting initial structure contents of website	Central dissemination team	Initial structure and contents of website (August 2015)
Building public website	UPMC	See www.bridges-h2020.eu . As of March 2016 the temporary website has been replaced by the final website (facilitating use of multimedia, establishment of google analytics).
Specific areas for innovation dissemination (wide audience) and D/UD Explorer commercialization (customer oriented) on the website	UPMC (central dissemination team)	It has been decided to start with a common website aimed at all target-groups, since the D/UD Explorer is still being developed. As soon as the Market study report presenting economic viability of D/UD gliders has been completed and demonstrations of the various sensors have started (M24), a separate entrance for potential customers with dedicated information will be established.
Building private area on the website restricted to the project partners	UPMC	Private cloud service established, accessed by public website. See http://www.bridges-h2020.eu/owncloud/ . Login credentials upon request.
Content updates of the website	Ecorys (central dissemination team)	See www.bridges-h2020.eu (public deliverables not yet approved and therefore not available): # 1280 webpage views # 493 unique visitors since March 2016
Continuous updating of the BRIDGES repository with relevant documents to the partners	all	See website http://www.bridges-h2020.eu/owncloud/ . Login credentials upon request.
Posting messages (Twitter, Facebook, LinkedIn, blogs)	Ecorys (with support of the partners)	# 2.8 thousand twitter views ("impressions") # 75 followers # 17 tweets since march 2016

Table 6 – Progress of activities until April 2016 regarding website and social media

2.1.3 Planned activities until M24

Activities	Responsible partner(s)
Content updates of the website (public deliverables, news, events, animation movie)	Ecorys, SUT, UPMC
Delivery of web statistics	UPMC
Continuous updating of the BRIDGES repository with relevant documents to the partners	all
Posting messages (Twitter, Facebook, LinkedIn, blogs) and keeping track of views and followers	Ecorys (with support of the partners)

Table 7 – Planned activities until M24 regarding website and social media

2.2 Technical scientific publications

Scientific publications are one of the major contributors for project dissemination among the research community. Besides scientific publications, exposure to the public at large (i.e. papers and in particular specific user-groups (i.e. industry and professional associations news bulletins). To ensure maximum inputs from the Consortium, publication planning and actual publications will be closely monitored throughout the duration of the project. The publication plan is part of this monitoring and will be used as a tool for maximizing the Consortium's commitment, once established in M12.

2.2.1 Targets and completion

Targets	Completion planned	Indicators/verification
At least 10 articles on BRIDGES in renowned international journals	On-going till M48	Acceptance of article by editorial board Publication of article # articles # references in scientific publications
Drafting of other articles and publications	On-going till M48	Acceptance of article by editorial board Publication of article # articles # references

Table 8 – Targets and completion of (technical scientific) publications

As renowned international journals – that may offer excellent opportunities to reach the research community in the field of underwater technology – the following journals are considered:

- ❖ Ocean News & Technology;
- ❖ Ocean Science;
- ❖ Hydro International;
- ❖ Marine Technology Reporter;
- ❖ Sea Technology,
- ❖ ECO;
- ❖ IEEE Journal of Ocean Engineering;
- ❖ Journal of field robotics;
- ❖ Marine Systems Technologies journal (MTS);
- ❖ Ocean Systems;
- ❖ Sensors Journal;

- ❖ Journal of Atmospheric and Oceanic Technology;
- ❖ Journal of Risk Analysis;
- ❖ Journal of Reliability Engineering and Systems Safety;
- ❖ Environment Coastal & Offshore;
- ❖ Marine Technology Reporter;
- ❖ Underwater Technology .
- ❖ UT2

2.2.2 Progress of activities until April 2016

Activities	Responsible partner (s)	Progress/verification
Drafting plan for publication: which partners, which magazine, what scope and when (ongoing).	Ecorys (Central Dissemination Team)	See annex 3 for the current plan (to be completed and updated).
Drafting of articles and publications	All	No technical-scientific papers so far
Drafting of articles	All	Hydro International: http://www.hydro-international.com/content/article/major-european-h2020-blue-growth-project European Marine Board: Featured in EMB position paper 22 “Delving Deeper: Critical challenges for 21 st century research”, page 160

Table 9 – Progress of until April 2016 regarding (technical scientific) publications

2.2.3 Planned activities until M24

Activities	Responsible partner (s)
Drafting final plan for publication: which partners, which magazine, what scope and when (August 2016)	Ecorys (Central Dissemination Team)
Validation and approval of the final plan for publication (during GA in September 2016)	All
Drafting of articles and publications according plan	All

Table 10 – Planned activities till M24 regarding (technical scientific) publications

2.3 Dedicated workshops

Various workshops are foreseen within the scope of BRIDGES. First of all, 3-8 iterant seminars at the partners place will take with the aim to inform and engage key national stakeholders with the achieved results of the concerned partner with a view on maximal coverage of the Member States involved in BRIDGES. Stakeholders depend on the nature of the partner concerned, and may involve potential clients, collaboration partners, students and media.

Furthermore, two industry workshops organized by the Central Dissemination and Exploitation Team, will be organized in the third and final year of BRIDGES to engage industry and to substantiate and validate the commercialisation strategy of BRIDGES. It is expected that one workshop will target Oil & Gas industry and one workshop will target the sector of Deep sea Mining. A minimum of 25 representatives will be invited to each workshop.

If opportunities arise - tagged to other events for efficiency purposes - additional workshops will be organized.

2.3.1 Targets and completion

Targets	Completion planned	Indicators/verification
3 to 8 iterant seminars (1 day) at partners place	On-going till M48 (not before M18)	# seminars # and type of visitors Review by participants Follow-up
2 industry workshops related to various business strategies	M30 (workshop 1); M40 (workshop 2)	# workshops # and type of visitors Review by participants Follow-up

Table 11 – Targets and completion of dedicated workshops

2.3.2 Progress of activities until April 2016

Activities	Responsible partner (s)	Progress/verification
Drafting initial plan for distribution and organisation of iterant seminars	Ecorys (Central Dissemination Team)	Initial distribution of seminars

Table 12 – Progress of activities regarding dedicated workshops

The initial plan for the 3-8 iterant national seminars (+ showcase, see 4.4) at partner's place is as follows:

Country	Partners				Seminars
France	ARMINES	UPMC	ALSAEMAR	Hydroptic	1+ showcase
Cyprus	UCY	CSCS			1
UK	NERC	UoS	BMT Cadence	SUT	1 + showcase
Portugal	UPORTO	MST			1
Spain	AMT				
Germany	ENITECH	52North			1
Norway	CMR	IRIS			showcase
Israel	HUJ				
Netherlands	Ecorys				

For each seminar at least 50 attendants (on personal or public invitation) are expected.

2.3.3 Planned activities until M24

Activities	Responsible partner (s)
Drafting final plan for seminar organization: partners involvement, location, time schedule, invitations	Ecorys (Central Dissemination Team)
Validation and approval of the plan for seminar organization (during GA in September 2016)	All
First seminar at partner's takes place	To be determined during GA

Table 13 – Planned activities till M24 regarding dedicated workshops

2.4 Trade shows

To encourage exploitation at international level, ALSAEMAR brings its international sales network of about 20 representatives to visit and demonstrate at trade shows.

Furthermore, three showcases will be organized for which prospective clients and relevant media will be invited, following the industry workshop(s) and other direct contacts with potential user-groups.

2.4.1 Targets and completion

Targets	Completion planned	Indicators/verification
Support to international sales force network's show participation	Not until M24	# participations # visitors/contacts/requests Follow-up
3 international showcase organizations (2 days each: Scotland, Norway, France)	Not until M36	# participations # visitors/contacts/requests Follow-up

Table 14 – Targets and completion of tradeshow and showcase organizations

2.4.2 Planned activities until M24

Planned activities	Responsible partner(s)
Drafting plan for the organisation and implementation of ALSEAMAR's international sales force network	ALSEAMAR (supported by central dissemination team)

Table 15 – Planned activities till M24 regarding tradeshows and showcase organizations

2.5 Event participation

Each partner is dedicated, if visiting relevant events to BRIDGES, to broadcast the latest results of BRIDGES or distribute dissemination materials. Participation for the sole purpose of BRIDGES –thus at the expense of the BRIDGES budget - will be coordinated and tuned between partners.

2.5.1 Targets and completion

Targets	Completion planned	Indicators/verification
Participation as exhibitor to at least 2 major events (such as Oceanology International, Offshore Europe)	M30/M40	# participations # visitors/contacts/requests Follow-up
Participation by BRIDGES representatives to relevant conferences and seminars	On-going till M48	# participations # visitors/contacts/requests Speaker evaluations Follow-up

Table 16 – Targets and completion of event participation

2.5.2 Progress of activities until April 2016

Activities	Responsible partner (s)	Progress/verification
Drafting event calendar	Ecorys (Central Dissemination Team)	See www.bridges-h2020.eu
Participation as exhibitor, with reference to BRIDGES	Industry partners	Exhibitions at Oceanology International, London, March 2016 by: - ALSEAMAR (H300) - NOC (A235) - ENITECH (H600) - Oceanscan Ltd (N105) - SUT (N300) - Hydroptic (French pavilion)
Participation to relevant conferences and seminars - with reference to (parts of) BRIDGES	All	Presentation at Batsheva De Rothschild Seminar 2015 University of Jerusalem UK glider workshop at University of East Anglia EA (UoS)

		<p>Glider Data Management presentation at PLOCAN glider school 2015 (...)</p> <p>Safety and Reliability Society Solent Branch Presentation 2016 – “The Role of Standardisation and Guidance in the Development of Sub-sea Glider Technologies” (...)</p> <p>Safety Critical Systems Club 2016– “The Role of Standardisation and Guidance in the Development of Sub-sea Glider Technologies” (...)</p> <p>SUT stand present at: Oceans 2015, 19-22 oktober 2015, Washington, USA</p> <ul style="list-style-type: none"> • Oceans 2017, Aberdeen <p>World Maritime Technology Conference 2015 (WMTC), 3-6 November 2015, Providence, USA</p> <p>Australasian Oil and Gas 2016 (AOG), 24-26 February 2016, Perth, Australia</p> <p>Special event at Royal Academy of Engineering June 2015 on autonomy where the robotics lab of the University of Southampton was featured</p>
Participation to relevant conferences and seminars - dedicated to BRIDGES	All	<p>BRIDGES presentation (ALSEAMAR) at the (SUT led) Unmanned Vessel Showcase at Oceanology International 2016</p> <p>BRIDGES presentation at the Oceans of Tomorrow session at Oceanology International 2016 (ARMINES)</p> <p>BRIDGES presentation at Offshore Europe 2015 (ALSEAMAR)</p> <p>BRIDGES presentation at 6th Research Group Meeting on the Levant Basin and East Mediterranean, French Institute for Petrol and New Energies (IFPEN) 2015.</p>

Table 17 – Progress of activities regarding event participation

2.5.3 Planned activities until M24

Activities	Responsible partner (s)
Updating Events Calendar	ECORYS (Central Dissemination Team)
Representatives of BRIDGES will (most likely) attend the following conferences ¹ : <ul style="list-style-type: none"> • Offshore Technology Conference 2016 (OTC) , 2-5 May 2016, Houston, USA (SUT stand) • Underwater Technology Conference 2016 (UTC), (14)15-16 June 2016, Bergen, Norway (SUT presence) • International Conference on Marine Data and Information Systems 2016 • Challenger Society Meeting 2016 • Environmental and Safety Assurance Symposium 2016 • European Safety and Reliability Conference 2016 • 7th EGO meeting and Glider School 	SUT, ARMINES, CMR, NERC

Table 18 – Planned activities till M12 regarding event participation

N.B. As BRIDGES is operating in an international market and keen to export its European technology; it is essential to present BRIDGES to an international audience. The Central Dissemination and Exploitation Team, with its international footprint will take on an important role in ensuring information resulting from the BRIDGES project reaches the widest possible audience. Above are listed some important relevant events at which results emanating from the Bridges project will be reported. Many partners will be attending the above events in their own right and thus increase the opportunity to reach our potential market cost effectively. In addition, further opportunities will arise for other events not listed above that will be assessed on merit and cost. Presence at such additional events may simply be in the form of making information available to delegates.

2.6 Education tools

Outreach to young people to inform and involve them in the state of the ocean and how gliders may be used to preserve the environment, is much valued by the BRIDGES partners. Through UPMC that is involved in the FP7 GROOM project, ample opportunities exist to use and update existing successful youth platforms with BRIDGES accomplishments.

¹ Abstracts (to be) submitted, guarantee for participation not granted

2.6.1 Targets and completion

Targets	Completion planned	Indicators/verification
Update of the existing educational website and tools that have been established during the GROOM project.	On-going till M48.	# and type of updates

Table 19 – Targets and completion of education tools

2.6.2 Progress of activities until April 2016

Activities	Responsible partner (s)	Progress/verification
Updating existing educational websites, when it was appropriate	UPMC	See www.Monoceanetmoi.com
Promotion of BRIDGES at university open days of UoS	UoS	4 university open days through promotion of activities of maritime robotics lab

Table 20 – Planned activities till M12 regarding education tools

2.6.3 Planned activities until M24

Activities	Responsible partner(s)
Updating existing educational websites (such as www.Monoceanetmoi.com), when appropriate	UPMC

Table 21– Planned activities till M12 regarding education tools

2.7 Audio-visual media

2.7.1 Targets and completion

Audio-visual media offer strong possibilities to visualise and explain the merits of gliders (BRIDGES) and can easily be distributed through social media or for use during events.

Targets	Completion planned	Indicators/verification
Movie of (3) user cases	M24	Availability/access # movies # views Feed-back
Animation movie showing BRIDGES application	M24	Availability/access #views Feed-back

Table 22 – Targets and completion of audio visual media

2.7.2 Progress of activities until April 2016

Activities	Responsible partner (s)	Progress/verification
Drafting educational animation movie requirements and script	Armines, UPMC	Draft storyboard, initial designs made, gathering input from WP2 (D2.1) on target services to include based on market research.

Table 23 – Planned activities till M12 regarding audio visual media

2.7.3 Planned activities until M24

Activities	Responsible partner(s)
Drafting user cases movie requirements and script (M20)	Armines, UPMC
Production and delivery of animation movie through YouTube and the BRIDGES website (M16)	UPMC
Production and delivery of user cases movies through YouTube and on the BRIDGES website (M24)	UPMC

Table 24 – Planned activities till M12 regarding audio visual media

2.8 Poster and flyers

Clear product datasheets will be developed to inform potential buyers of gliders and sensors about the products and services available. During the course of the project posters and leaflets will be developed to facilitate partners with the dissemination of BRIDGES.

2.8.1 Targets and completion

Targets	Completion planned	Indicators/verification
D/UD Explorer datasheets	M48	Availability/access # downloads/requests Evidence of innovation into practice: patents applied for, prototypes delivered, licenses issued
Product datasheets	M18-M48	Availability/access # downloads/requests Evidence of innovation into practice: patents applied for, prototypes delivered, licenses issued
Posters and leaflets	On-going till M48.full colour posters, roll up banners and leaflets have been produced (suitable for printing on A1/A2) so far, see online repository See Annex 4.	Availability/access, see repository and www.bridges-h2020.eu . # and type of posters and leaflets # downloads/requests

Table 25 – Targets and completion of posters and flyers

2.8.2 Progress of activities until April 2016

Activities	Responsible partner (s)	Progress/verification
Production and updating of general leaflet about BRIDGES	ECORYS, UPMC	See attachment
Poster on BRIDGES	ARMINES, UPMC	See attachment

Table 26 – Progress of activities till M12 regarding audio visual media

The leaflet and poster are made available to partners and target-groups through the repository and the website. Additionally, the leaflet was distributed in hard-copy during Offshore Europe 2015 and Oceanology International 2016. Industry partners are provided with roll-up banners of the poster to be used during events and seminars when appropriate.

2.8.3 Planned activities until M24

Activities	Responsible partner(s)
Updating of the various dissemination material (M24)	Ecorys, UPMC

Table 27– Planned activities till M24 regarding posters and flyers

2.9 Newsletters and other printed and on-line press

Newsletters are an excellent way of being in contact with stakeholders on a more structural and continuous base. Furthermore, on-line newsletters and other press are easily distributed, adopted and multiplied by other relevant platforms. Newsletters will produced and distributed leading up to major project events, such as relevant conferences, important milestones and/or deliverables to gain maximal exposure. The newsletters will be published on the website; additionally they will be send directly as an email attachment to the EC for reporting purposes.

2.9.1 Targets and completion

Targets	Completion	Indicators/verification
Producing and distributing Newsletters (8 in total from M12 onwards)	Not until M11.	# Newsletter # Subscriptions # Dispatches/contacts Feed-back/follow-up
Other on-line press releases	On-going till M48	Availability/access # Press releases # References

Table 28– Targets and completion of newsletters and other press

2.9.2 Activities undertaken until April 2016

Activities	Responsible partner (s)	Progress
Producing and distributing of first newsletter	Ecorys (Central Dissemination team)	# 1 Newsletter (see attachment) # 1.018 Subscribers
Drafting template for press releases with general information of BRIDGES	Armines	Template available can be downloaded at the private cloud space on the BRIDGES website
Press releases by partners	All	Press releases by several partners, see: http://noc.ac.uk/news/europe%E2%80%99s-deepest-glider-be-developed , http://albatrosmt.com/deep-and-ultradeep-gliders/ http://blog.soton.ac.uk/fsiblog/?s=bridges
Other on-line press and publications		H2020 magazine (http://newsletter-europa.eu/RTD/Horizon/september20150918-a-4.php) Irish Times (http://www.thesundaytimes.co.uk/sto/news/ireland/News/Irish_News/article1583104.ece) US-based international TreeHugger website (http://www.treehugger.com/gadgets/deep-sea-robot-will-monitor-oceans-pollution.html) Gizmag (http://www.gizmag.com/bridges-ultra-deep-sea-robotic-glider/38336/) Engineering and Technology magazine (http://eandt.theiet.org/news/2015/jul/bridges-subsea-glider.cfm) Phys.org (http://phys.org/news/2015-07-europe-deepest-glider.html) Robotglobe (http://robotglobe.org/bridges-project-europes-deepest-autonomous-robot-glider-to-be-developed/) UST (http://www.unmannedsystemstechnology.com/2015/07/noc-and-european-partners-to-develop-deep-

		sea-unmanned-glider/ Case study of BRIDGES that shows evidence of excellence in research collaboration across the EU http://russellgroup.ac.uk/policy/case-studies/?area=russell-group-universities-and-the-european-union
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Table 29 – Progress of activities till April 2016 regarding newsletters and other press

2.9.3 Planned activities until M24

Activities M12	Responsible partner (s)
Updating contact database for newsletter.	Ecorys All partners
Drafting and distributing second, third and fourth Newsletter of BRIDGES	Ecorys (Central Dissemination team)

Table30 – Planned activities till M12 regarding newsletters and other press

2.10 Demonstration materials

2.10.1 Targets and completion

Targets	Completion planned	Indicators/verification
Scale models of gliders for demonstration purposes at workshops, seminars and trades shows available	M24	Availability/accessibility to partners # times employed during demonstrations

Table 31– Targets and completion of demonstration materials

2.10.2 Activities undertaken until April 2016

Activity	Responsible partner	Progress
Demonstration of sensor prototype	NERC	Lab-On-Chip prototype on display during Oceanology International 2016

Table 32– Progress of activities till April 2016 regarding demonstration materials

2.10.3 Planned activities until M24

Activities	Responsible partner
Building scale models	ALSEAMAR

Table 33– Planned activities till M12 regarding demonstration materials

ANNEX 1 Leaflet

WELCOME TO



BRIDGES

BRINGING TOGETHER RESEARCH AND INDUSTRY FOR
THE DEVELOPMENT OF GLIDER ENVIRONMENTAL SERVICES

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 635359.



BRIDGES

BRINGING TOGETHER RESEARCH AND INDUSTRY FOR
THE DEVELOPMENT OF GLIDER ENVIRONMENTAL SERVICES

ABOUT BRIDGES

BRIDGES (Bringing together Research and Industry for the Development of Glider Environmental Services) will provide ample and new opportunities for off-shore industries, such as oil & gas and sea mining and also marine research and environmental monitoring (Copernicus, MSFD). This new tool consisting of (ultra) deep ocean gliders – that are robust, cost-effective, re-locat-

able, versatile and easily-deployable - will support autonomous long-term in-situ exploration of the deep ocean over a wide range of spatial and temporal scales.

Two deep EXPLORER gliders will be developed that are built on the successful unique European underwater glider, the SEA EXPLORER. During **BRIDGES** the SEA EXPLORER will be modularized and adapted to more diverse operations.

Threefold enhancement of the SEA EXPLORER:

1. Adapting for deep basins (up to 5,000 m);
2. Implementing a modular payload architecture to plug the sensor packages devoted to each services;
3. Integrating the associated control support system for single and fleet operations.

From concept to market

Both the Deep and Ultra-Deep (D and UD) EXPLORER gliders will be tested and demonstrated multiple times in near-shore and deep waters, suited to different working environments and different services. In parallel the exploitation strategy of the EXPLORER gliders will be drafted and decided. Successful market introduction of the D and UD EXPLORER gliders is foreseen as of 2020.

Francois-Xavier Demotes Mainard, project manager at ALSEAMAR, the high-tech company that is ultimately responsible for the design and manufacturing of two D and UD gliders:

"The new (Ultra) Deep Gliders will be technologically and economically optimized to address identified growth markets in Science, Oil&Gas, and Sea Mining, thus strengthening the competitiveness of the European glider offer on the market."

Bringing together Research and Industry

The **BRIDGES** consortium is composed of 19 public and private partners from 7 EU countries (SP, PT, UK, FR, NL, D, CY) and 2 associated countries (Norway, Israel), covering renowned scientific institutes, industrial groups and innovative SMEs.

BRIDGES is coordinated by ARMINES ENSTA-ParisTech, one of the major French Engineering Schools. The scientific coordinator is Laurent Mortier, professor of oceanography at ENSTA-ParisTech. For more than 10

years, he has been developing glider technical solutions and glider infrastructure to carry out scientific missions and marine monitoring, giving Europe a leading role in autonomous underwater technology. Laurent Mortier about **BRIDGES**: "New generation gliders, such as the (U) Deep EXPLORER Gliders, will enable fast and explosive growth of knowledge and conscious use of the deep sea environment."



BRIDGES in figures

- 19 public and private partners
- From 9 (EU) countries
- 8 million euro awarded by the EU
- 2 multi-mission, autonomous gliders to be developed
- Adapted to 2,400m (Deep) and 5,000m (Ultra Deep) sea depth
- Potential reduction of total operating costs up to 95%, compared to traditional methods
- 4 year project (2015-2019)
- Market introduction of D and UD EXPLORER gliders as of 2020



UPCOMING BRIDGES PUBLICATIONS AND EVENTS

First deliverables of **BRIDGES** will be publicised end of April 2016 and include:

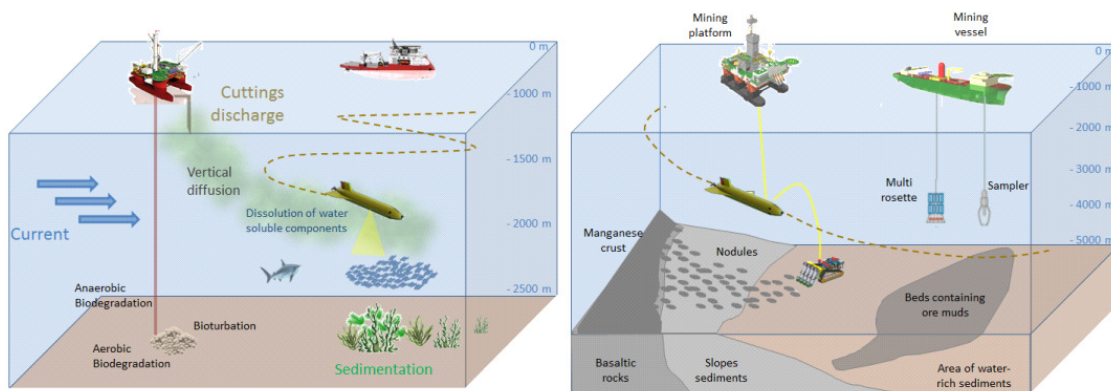
- Guidelines of a deep glider to support long-term in-situ exploration and protection services of the coastal and deep ocean (ARMINES);
- Interface standards for applications of Deep and Ultra Deep glider (52°North GmbH);
- Common interfaces and standards for sensors and their integration into the Deep and Ultra Deep EXPLORER science bay (NERC).

BRIDGES representatives will be present at leading international conferences on under water technology to catch you up with the latest news from **BRIDGES**. Upcoming events that will be visited by **BRIDGES** are:

- Oceanology International 2016, 15-17 March 2016, London, UK
- MCE Deepwater Development 2016, 5-7 April, 2016, Pau, France
- Offshore Technology Conference 2016 (OTC), 2-5 May 2016, Houston, USA
- Underwater Technology Conference 2016 (UTC), (14-)15-16 June 2016, Bergen, Norway
- Oceans MTS/IEEE Conference, 19-22 September 2016, Monterey CA USA
- SUT 2016 Technical Conference, 15-17 November, London, UK
- Oceans MTS/IEEE Conference, 19-22 June 2017, Aberdeen, UK

Keep informed on **BRIDGES**

To learn more about the progress and findings of **BRIDGES** please consult www.bridges-h2020.eu and make sure you receive our bi-annual **BRIDGES** Newsletter by sending your contact details to contact@bridges-h2020.eu.



Artistic view of typical deep EXPLORER missions for the O&G and sea-mining

Join our Exchange of Knowledge and Demonstration Programme!

BRIDGES is looking for interested and committed stakeholders throughout Europe to get involved in its Exchange of Knowledge and Demonstration Programme. This opportunity will be specifically of interest to industries and research institutions that are exploring the (ultra) deep sea (bed), but are looking for less expensive technol-

ogies that offer increased functionalities (stamina, depth, sensors, etc.). Our Exchange of Knowledge and Demonstration Programme gives you the opportunity to be on top of the latest **BRIDGES** progress and results and offers direct access to developers and manufacturers of (U)D gliders to discuss your specific user needs at all times.

For this purpose various international industry workshops and national seminars will be organized followed by a number of showcase organisations across the EU. Check the **BRIDGES** website at all times to find out about opportunities or email contact@bridges-h2020.eu to make sure you will be personally invited in time.

Our public and private partners:



BRIDGES project coordinator:

- ✉ Laurent.Mortier@ensta-paristech.fr or
- ✉ contact@bridges-h2020.eu
- ➦ www.bridges-h2020.eu



BRIDGES communication manager:

- ✉ Jessica.Dirks@ecorys.com or
- ✉ contact@bridges-h2020.eu

ANNEX 2 Banner/poster



INTRODUCING THE BRIDGES PROJECT

PROJECT PROFILE...

- **48 months** (March 2015 - February 2019)
- **7.8 million euro** funded by H2020 "Blue Growth"
- **19 Partners** from 9 countries
- **2 multi-mission autonomous gliders:**
 - **DEEP EXPLORER (2400m)**
 - **ULTRA DEEP EXPLORER (5000m)**
- **2018-2019** : At-sea qualification of gliders
- **2020** : Market introduction of gliders

MARKET APPLICATIONS FOR:

- ♦ Marine Science
- ♦ Monitoring Programmes (MSFD)
- ♦ Living Resources
- ♦ Offshore Industry (Oil & Gas, Renewables)
- ♦ Deep Sea Mining

OUR GOALS...

The main objective of BRIDGES in accordance with expected increase ocean industrialization, is to perform research on cost-effective, robust, re-locatable and easily-deployed autonomous platform with multiple sensing, surveying and monitoring capabilities to support long-term in-situ exploration and protection services of the coastal and deep ocean.

The BRIDGES project will develop, create and demonstrate at-sea two new deep-sea glider vehicles with improved sensing capabilities, enabling new and exciting opportunities for deep-sea monitoring and inspection at much lower costs than traditional missions. Wide use of gliders by the industry and research institutions will combine the economic benefits of the ocean (bed) exploitation with deeper knowledge of marine life and preservation of the ecosystem.

DEEP EXPLORER (2400M)

EXAMPLE PAYLOAD 1 : Water Column Habitats Service

SENSOR	PARAMETER
CTD	Depth, Temperature, Salinity
Optode	Oxygen
Microfluidic Cells	Nitrates, Phosphates
Fluorometer	Chlorophyll-a
Optical Sensor	Turbidity
Imaging System	Plankton Biomasses

Applications :

MSFD (1-Biodiversity, 4-Food Webs, 5-Eutrophication)
Monitoring Programs (Biodiversity, Eutrophication)
Copernicus (CMEMS, Biodiversity & Env Protection)

Mission Endurance : Up to 2 Months

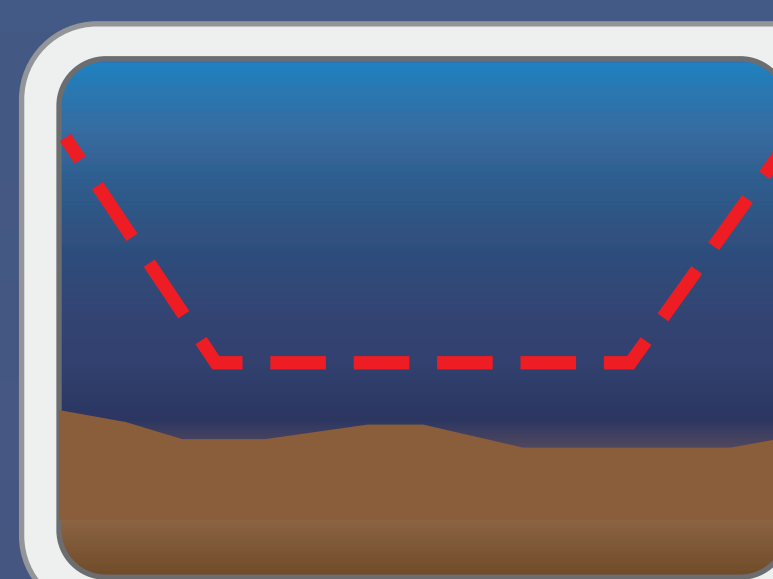
EXAMPLE PAYLOAD 2 : Oil and Gas Monitoring Service

SENSOR	PARAMETER
CTD	Depth, Temperature, Salinity
Optode	Oxygen
Fluorometer 1	Crude Oil
Fluorometer 2	Refined Oil
Optical Sensor	Turbidity
Imaging System	Emulsified/Suspended Oil

Applications :

Hydrocarbon exploration and leak monitoring
MSFD (8-Contaminants)
Copernicus (CMEMS, Biodiversity & Env Protection)

Mission Endurance : Up to 2 Months



Hybrid Fixed-Depth Surveying

Low-power hybrid propulsion (buoyancy and propeller) allows horizontal navigation for sea-bed and constant-depth water column exploration.



Automatic Water-Sampler

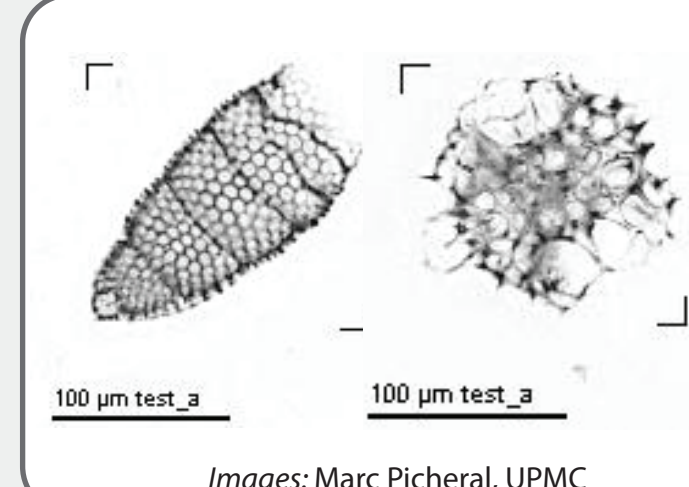
Glider-suitable automated water sampler to take 100ml samples during glider flight to allow posterior analysis of water properties and performance of on-board sensors.



Microfluidic Wet Chemical Sensors

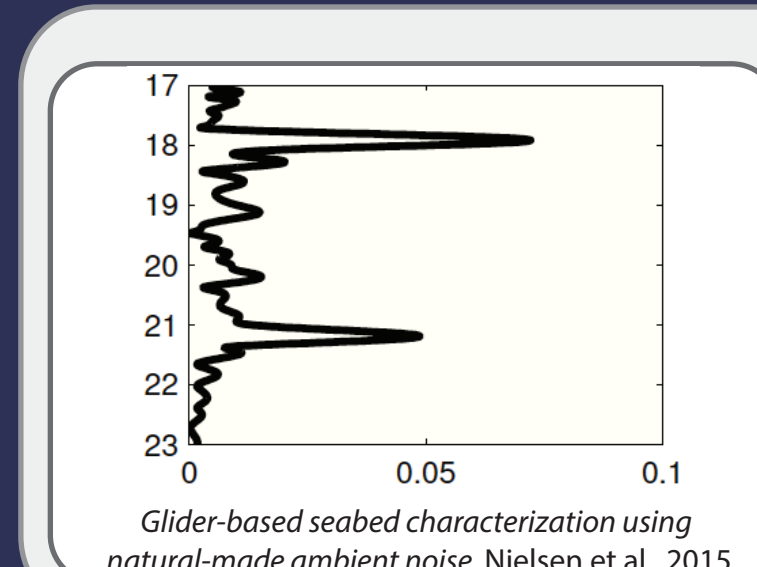
Miniaturized system for in-situ sampling, sensing and analysis of nutrients (Nitrate, Phosphate, Ammonia and Silicate) during a glider mission.

ULTRA DEEP EXPLORER (5000M)



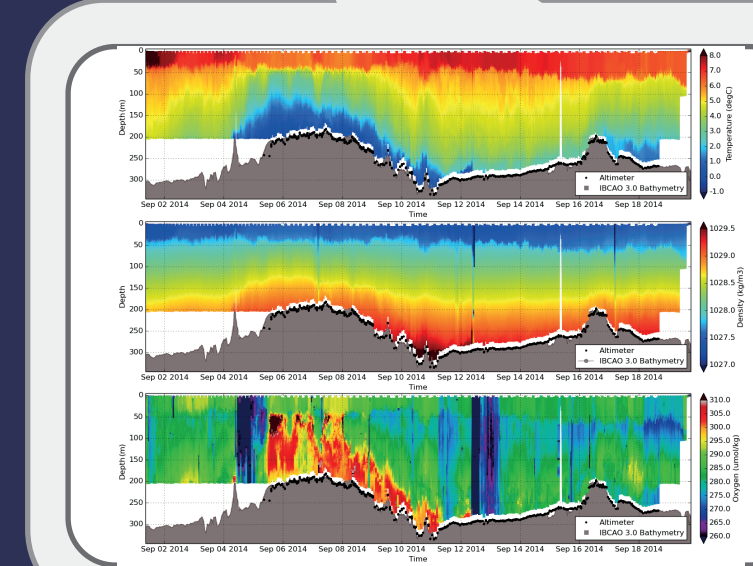
Microorganism and Particle Imaging

'Octopus' imaging system for image capture and onboard analysis of small particles and microorganisms (>100µm) during glider flight.



Sea-bed Penetrating Acoustic System

Miniaturized active acoustic system to obtain information on sea-bed characteristics, extract different acoustic impedances and sound speed profiles of the sea-bottom layers with a penetration of up to 10m.



Glider-Ready Sensor Packages

A suite of proven, high quality low-power sensors suitable for deep-sea glider payloads, including a pumped CTD, oxygen optodes, fluorescence and optical sensors (biology, turbidity, hydrocarbons) and passive acoustics.

PARTNERS

The BRIDGES consortium is formed by 19 partners from 9 countries: France, Cyprus, United Kingdom, Portugal, Spain, Germany, Norway, Israel, Netherlands.



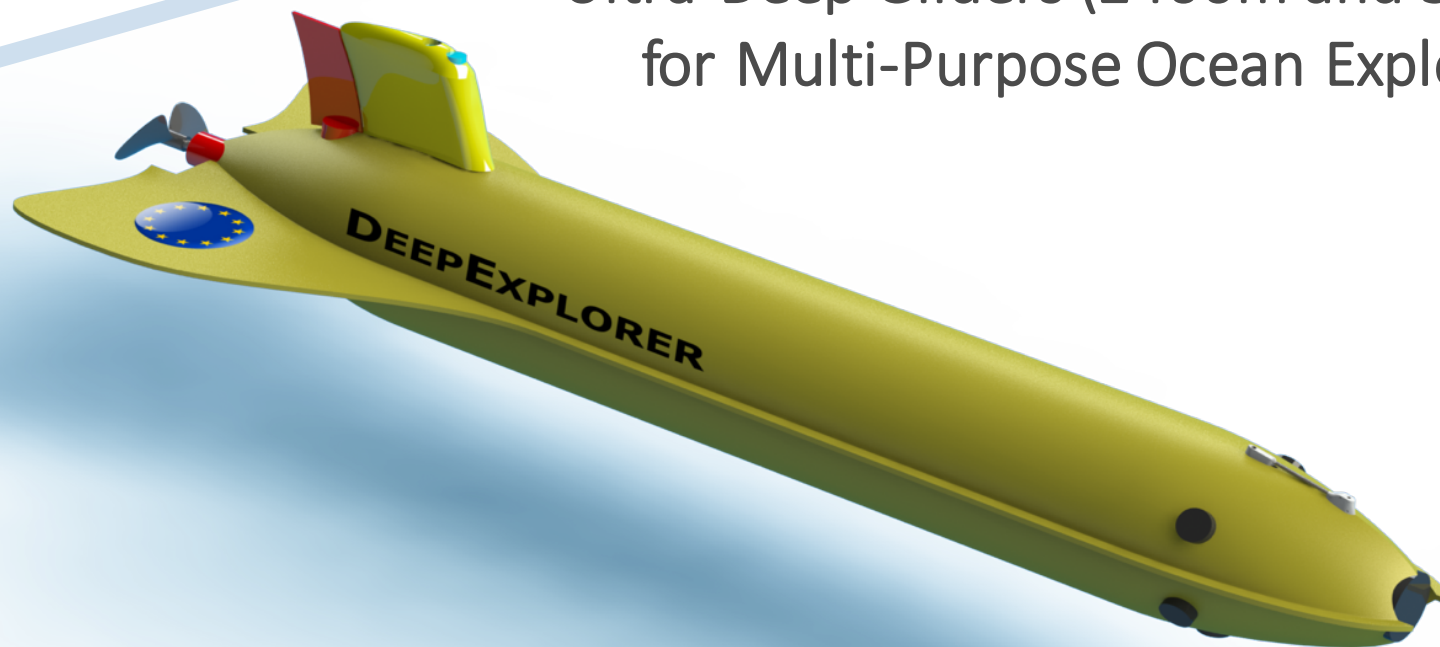
University of Cyprus
Oceanography Centre

ALSEAMAR
ALCEN



ANNEX 3 Oceanology presentation

Challenging Development of Ultra-Deep Gliders (2400m and 5000m) for Multi-Purpose Ocean Exploration



Vianney Rochet (ALSEAMAR), Michael Field (ARMINES)

VROCHET@alseamar-alcen.com, michael.field@locean-ipsl.upmc.fr

Oceanology International, London, 17/03/16



This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 635359

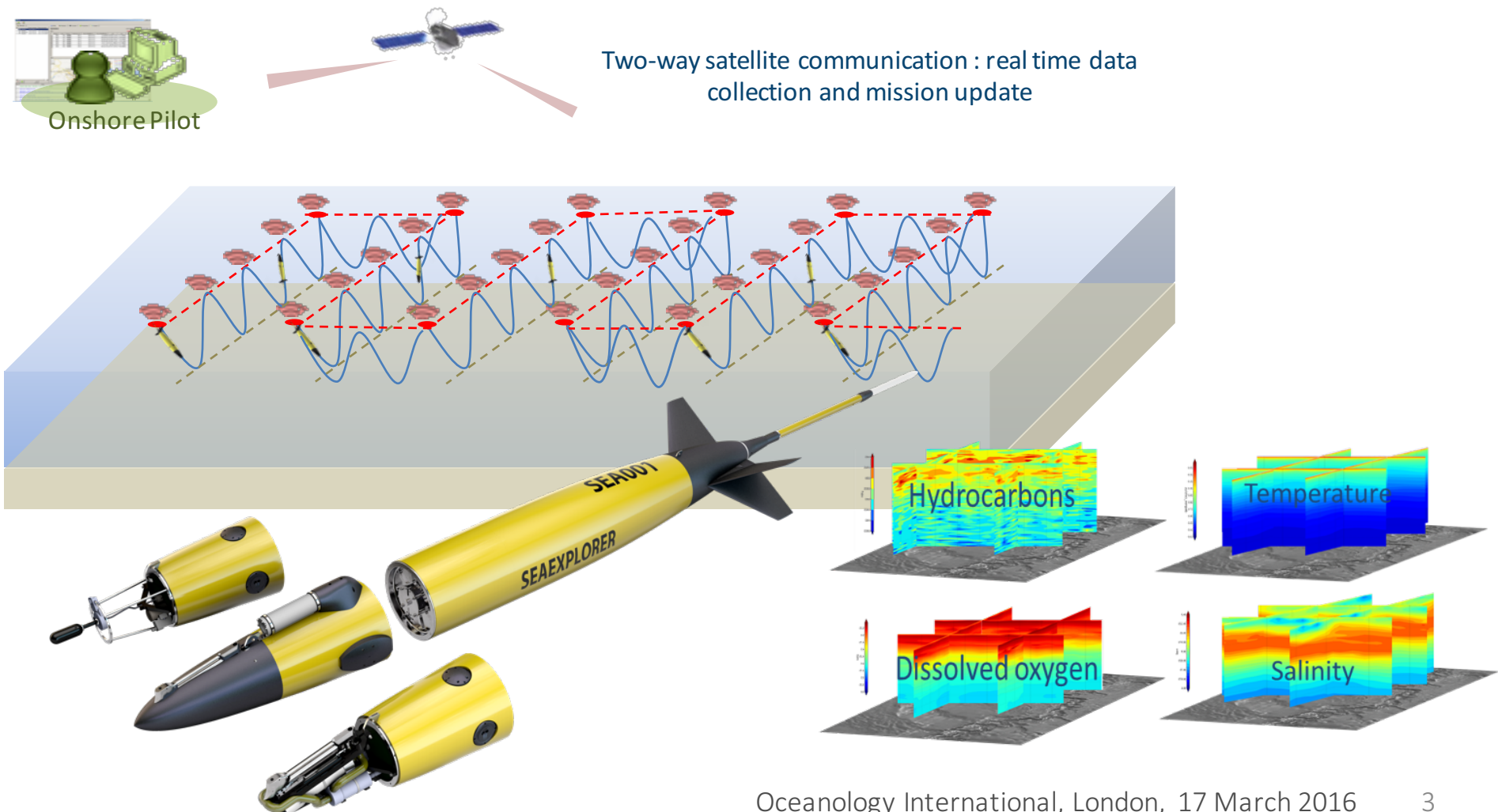
Ultra-Deep Gliders for Multi-Purpose Ocean Exploration

1. Underwater glider
2. Use cases
3. Future Market Applications
4. What is BRIDGES?
5. The Ultra-Deep Glider Platforms
6. Novel Sensors for Deep-Sea Exploration
7. Intelligent Behavior and Management

Ultra-Deep Gliders for Multi-Purpose Exploration

Underwater glider

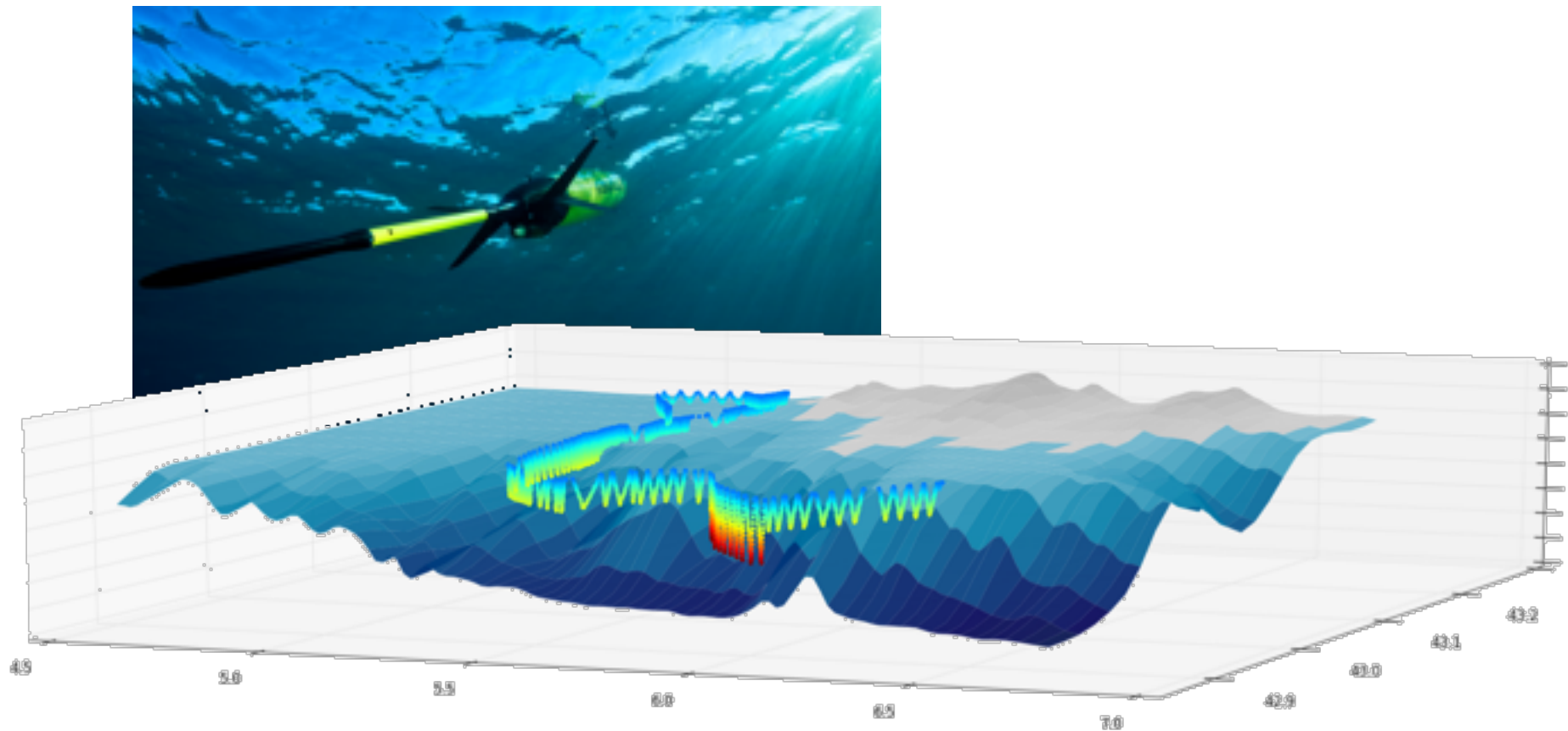
General principle :



Ultra-Deep Gliders for Multi-Purpose Exploration

Use cases

Glider mission :



Ultra-Deep Gliders for Multi-Purpose Exploration

Underwater glider

Operations :



Ultra-Deep Gliders for Multi-Purpose Exploration

What is BRIDGES?



- Horizon 2020 – Research & Innovation Action – Blue Growth
- 7.8M€, 48-month project (2015-2019)
- 19 project partners from 9 countries, including 6 European SMEs



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Oceanology International, London, 17 March 2016

Ultra-Deep Gliders for Multi-Purpose Exploration

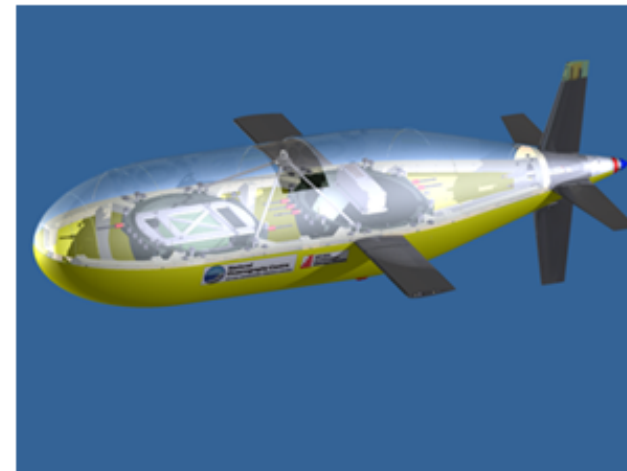
The Ultra-Deep Glider Platforms

Building on proven technology:

- SEAEXPLORER glider from ALSEAMAR



- Deep AUTOSUB-LR from NERC



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Oceanology International, London, 17 March 2016

Ultra-Deep Gliders for Multi-Purpose Exploration

The Ultra-Deep Glider Platforms

Introducing the DEEP and ULTRA-DEEP EXPLORERS:

- DEEP EXPLORER for services down to 2400m
- ULTRA-DEEP EXPLORER for services down to 5000m



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Oceanology International, London, 17 March 2016

Ultra-Deep Gliders for Multi-Purpose Exploration

The Ultra-Deep Glider Platforms

Main Features :

- Rechargeable battery, with primary cell capability (endurance x 2)
- Large payload bay
- Hybrid capability for horizontal flight (propeller and rudder)
- High modularity for battery and payload change



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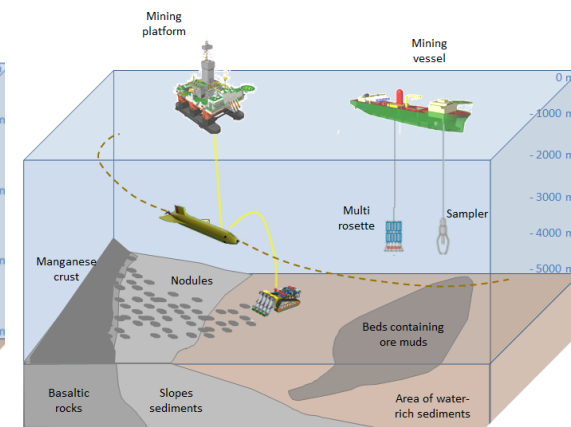
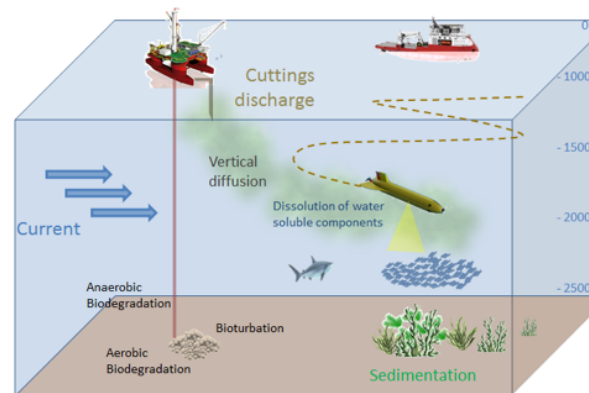
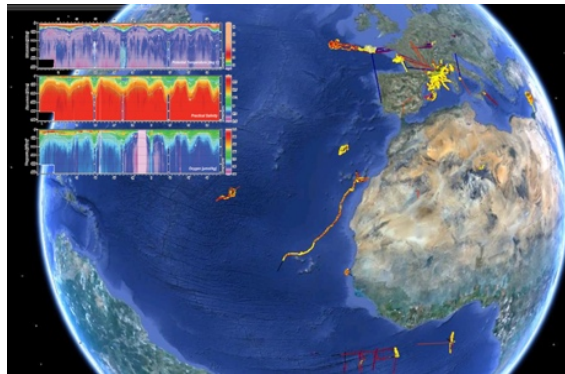
Oceanology International, London, 17 March 2016

Ultra-Deep Gliders for Multi-Purpose Exploration

The Ultra-Deep Glider Platforms

Providing Services to Key Markets

- Target key markets
 - Marine Science Research
 - Environmental Monitoring (MSFD)
 - Offshore Industry (Oil & Gas, Renewable Energy)
 - Sea Mining



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Oceanology International, London, 17 March 2016

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Ultra-Deep Gliders for Multi-Purpose Exploration

Novel Sensors for Deep-Sea Exploration

Development and Qualification of Multi-Purpose Glider Payloads:

- Development, testing and validation of four novel sensor packages:

NOC
Lab-On- Chip

OCTOPUS
Imaging

Mini Water
Sampler

Sea-Bed
Acoustics

- Testing and validation of glider-ready sensors for deep-sea operations:

Pumped
CTD

Temperature
Depth
Salinity

Optode

Oxygen

Optical
Sensors

Biology
Turbulence
Hydrocarbons
Methane

Hydro-
phone

Acoustics

ADCP

Current



Ultra-Deep Gliders for Multi-Purpose Exploration

Novel Sensors for Deep-Sea Exploration

Development and Qualification of Multi-Purpose Glider Payloads:

- Development, testing and validation of four novel sensor packages:

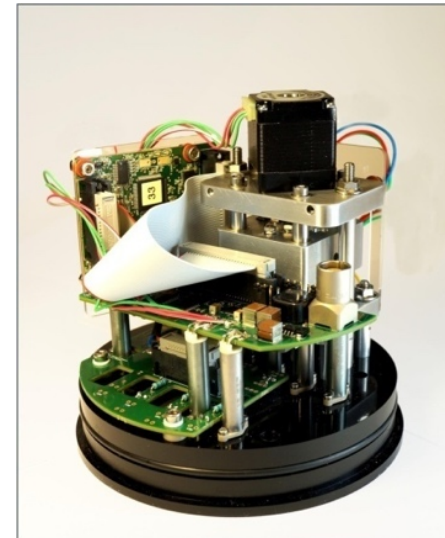
NOC
Lab-On- Chip

OCTOPUS
Imaging

Mini Water
Sampler

Sea-Bed
Acoustics

- Lab-On-Chip system developed by NOC
- In-situ sensing and analysis of:
 - Nitrate
 - Phosphate
 - Ammonia
 - Silicate
- Operation to 5000m depth



Ultra-Deep Gliders for Multi-Purpose Exploration

Novel Sensors for Deep-Sea Exploration

Development and Qualification of Multi-Purpose Glider Payloads:

- Development, testing and validation of four novel sensor packages:

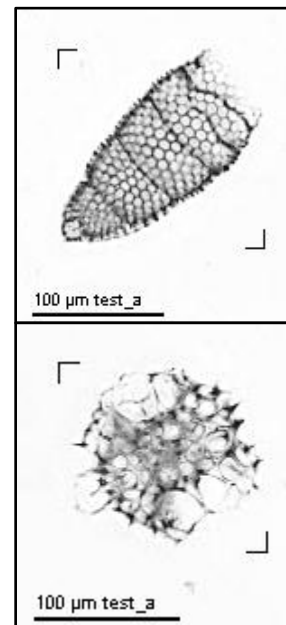
NOC
Lab-On- Chip

OCTOPUS
Imaging

Mini Water
Sampler

Sea-Bed
Acoustics

- OCTOPUS Imaging by Hydroptic/UPMC
- Image capture of micro organisms and micro particle/bubbles
- Onboard analysis and recognition of images



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Oceanology International, London, 17 March 2016

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Ultra-Deep Gliders for Multi-Purpose Exploration

Novel Sensors for Deep-Sea Exploration

Development and Qualification of Multi-Purpose Glider Payloads:

- Development, testing and validation of four novel sensor packages:

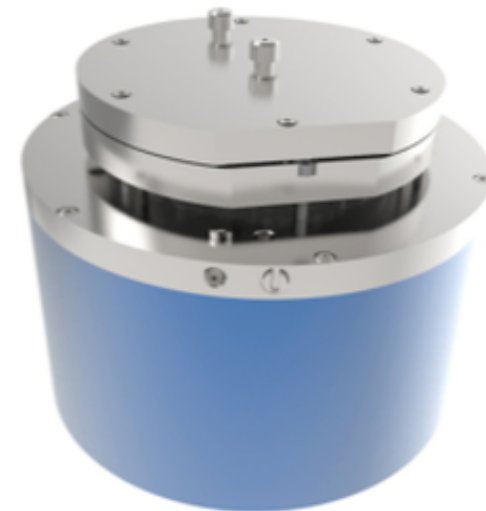
NOC
Lab-On- Chip

OCTOPUS
Imaging

Mini Water
Sampler

Sea-Bed
Acoustics

- Miniaturized water sampler for deep-sea glider operations
- Samples of 100ml each
- Activation at pre-programmed depth or triggered by local environment measurements
- Used to validate on-board sensor measurements



Ultra-Deep Gliders for Multi-Purpose Exploration

Novel Sensors for Deep-Sea Exploration

Development and Qualification of Multi-Purpose Glider Payloads:

- Development, testing and validation of four novel sensor packages:

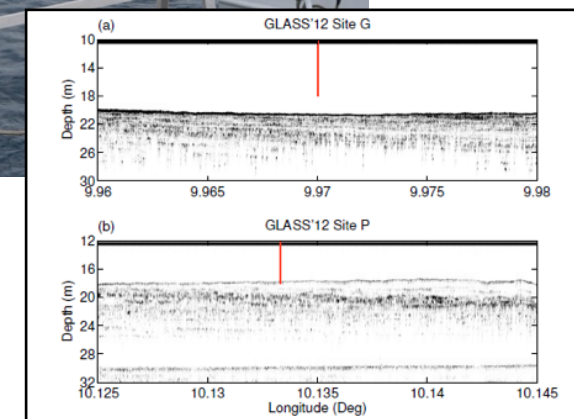
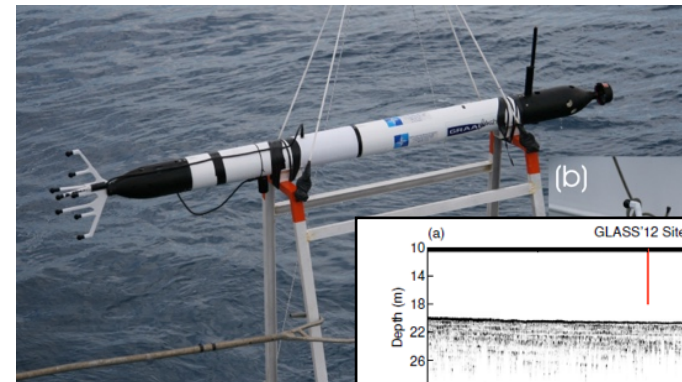
NOC
Lab-On- Chip

OCTOPUS
Imaging

Mini Water
Sampler

Sea-Bed
Acoustics

- Sea-bed penetrating acoustic system
- Active source for 10m penetration
- Provide sound characteristics of sediment layers



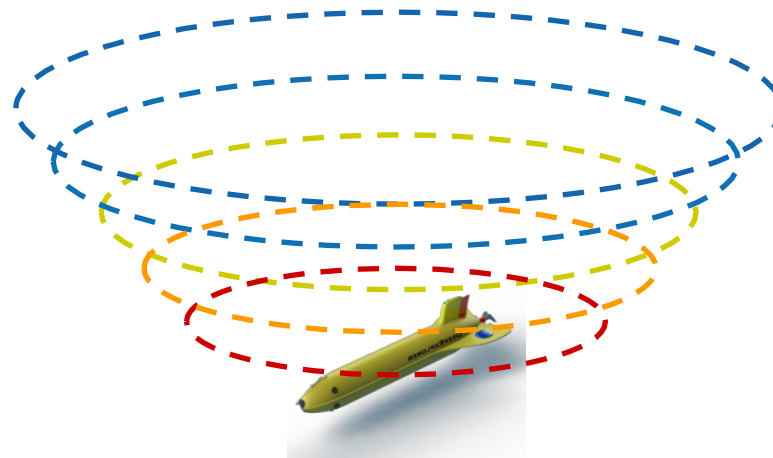
This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 635359

Ultra-Deep Gliders for Multi-Purpose Exploration

Intelligent Behavior and Management

Glider Autonomy and Adaptive Behaviour :

- One ULTRA-DEEP EXPLORER dive/ascent to 5000m = ~24hours
- BRIDGES is developing intelligence for platform autonomy and sensor management
- Activation and sampling rate of sensors depending on glider state, depth, onboard sensing
- Adapting glider behaviour and flight depending on sensed environment
 - Changing to hybrid horizontal surveying (fixed-depth, sea-bed)
 - Homing in on detection of interest



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Oceanology International, London, 17 March 2016

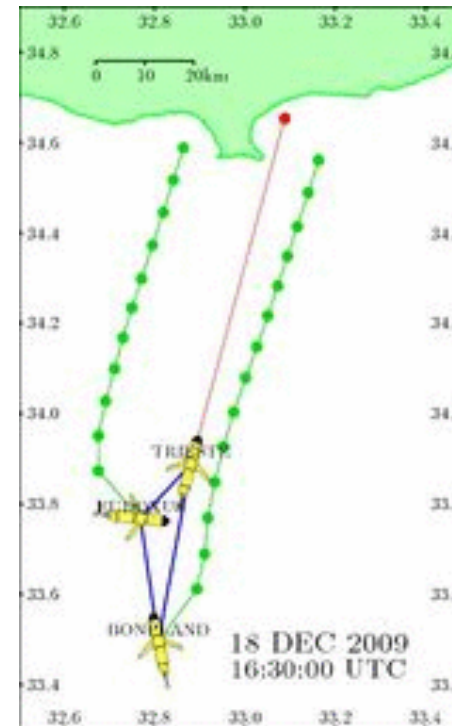
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Ultra-Deep Gliders for Multi-Purpose Exploration

Intelligent Behavior and Management

Glider Autonomy and Adaptive Behavior :

- BRIDGES is also building upon work of GROOM, EGO to develop intelligent on-shore management of glider operations and fleets
- Taking into account local observations and forecast models (weather, current, shipping activity) for safe and efficient glider tracks
- Maintaining fleet formations and automated flight paths
 - Tracking a front, eddy survey
 - Holding a fleet pattern
 - Completing an alternating grid

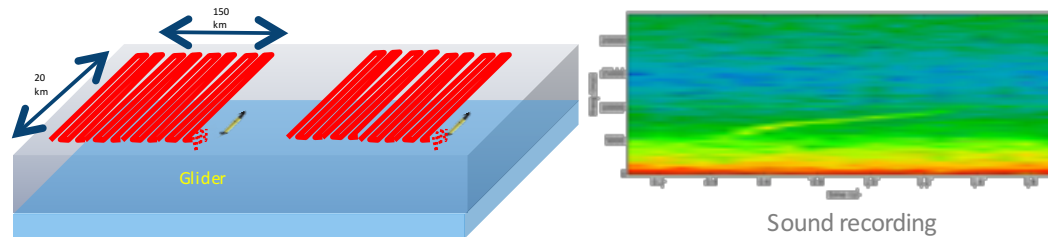


Ultra-Deep Gliders for Multi-Purpose Exploration

Market Applications

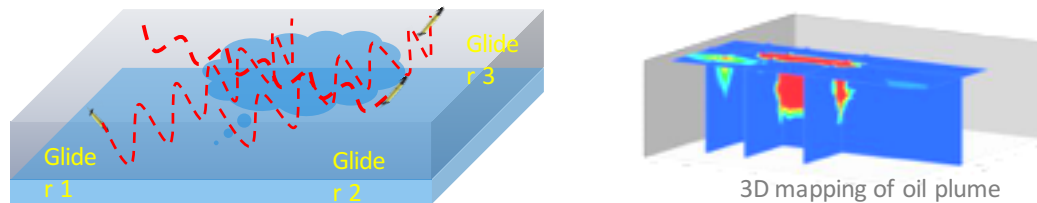
ENVIRONMENTAL BASELINE STUDIES (EBS)

- For mapping and tracking environmental parameters



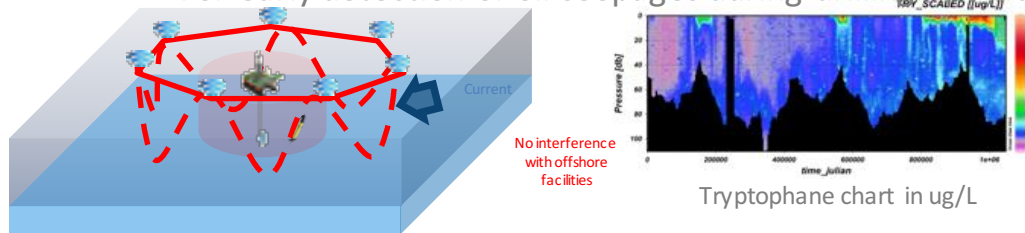
EMERGENCY PLAN

- For tracking Oil plume with 3D modeling



ENVIRONMENTAL MONITORING

- For early detection of oil seepages during drilling operations



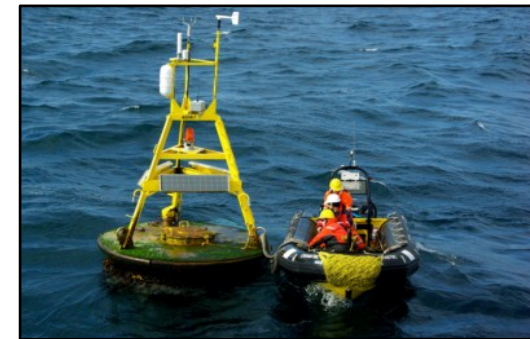
- Design of the offshore structure
 - Assistance during installation and marine operation
- Typical metocean data**
- Wave and Current

Traditional Monitoring means:

- Buoys, Current mooring

Advantage of the Glider compared to traditional means

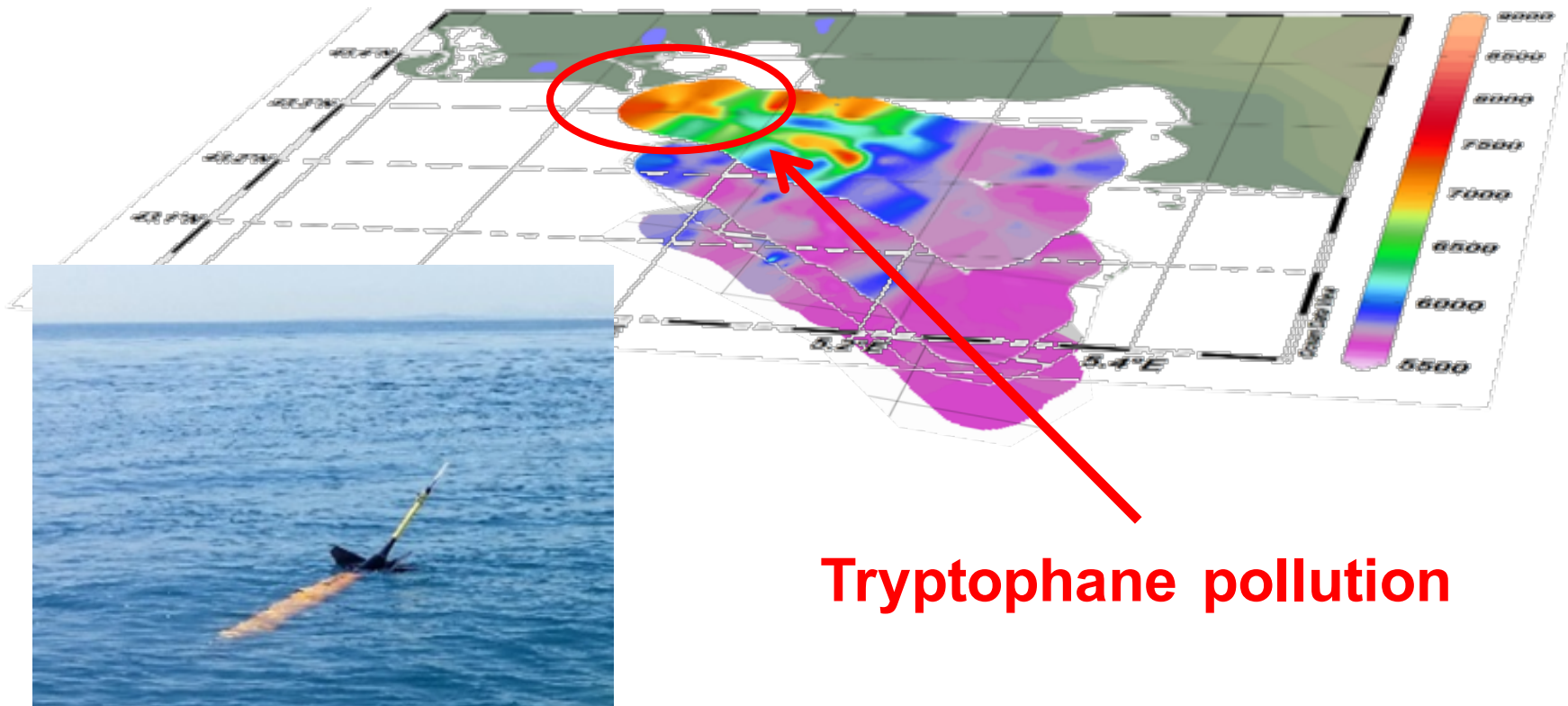
- Acquire data in Real Time
- Mapping of a large area.
- Require LOW logistic operations
- Low costs for deployment and maintenance



Ultra-Deep Gliders for Multi-Purpose Exploration

Market Applications

Pollution detection – Bay of Marseille :

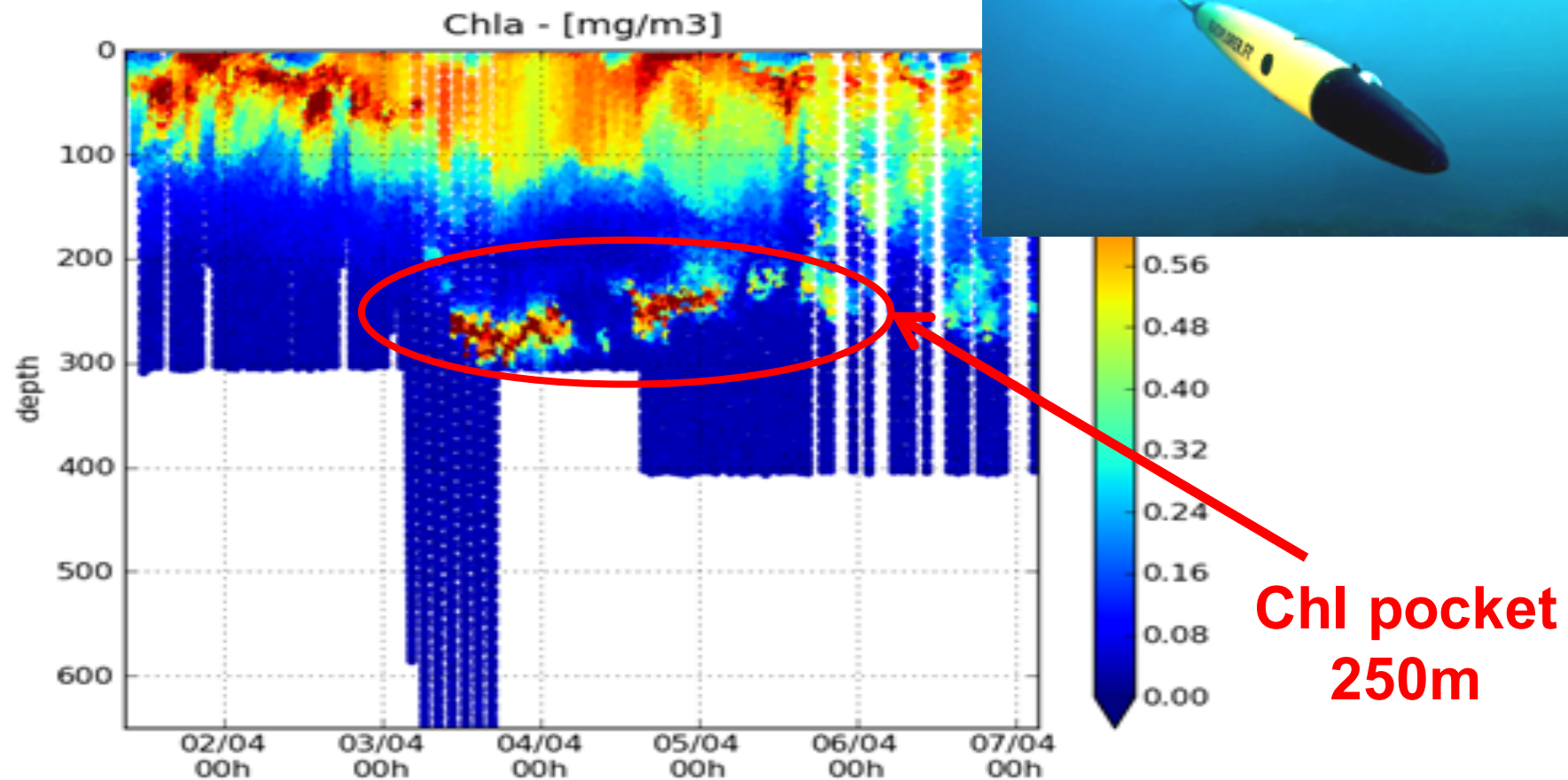


Tryptophane pollution

Ultra-Deep Gliders for Multi-Purpose Exploration

Market Applications

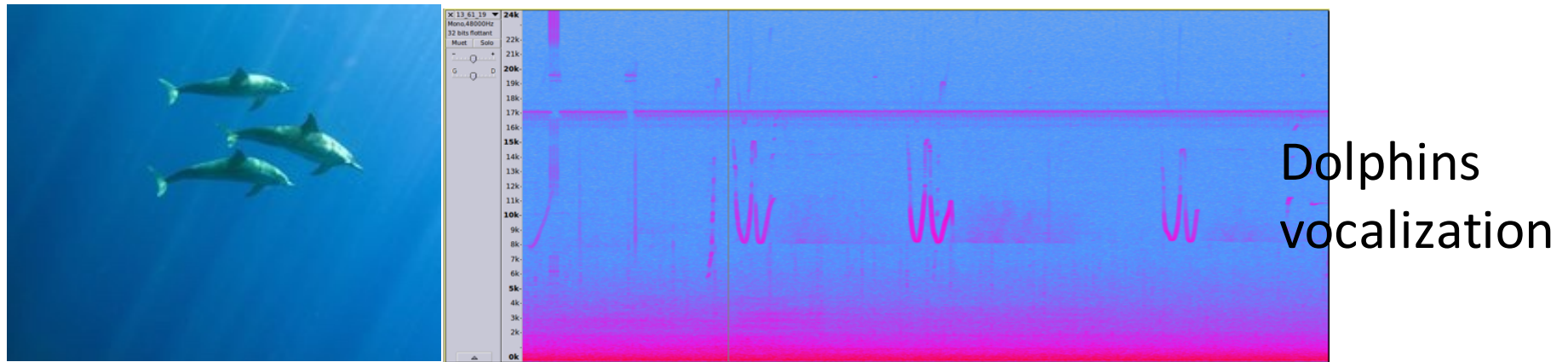
Pollution detection – Bay of Angels (Nice) :



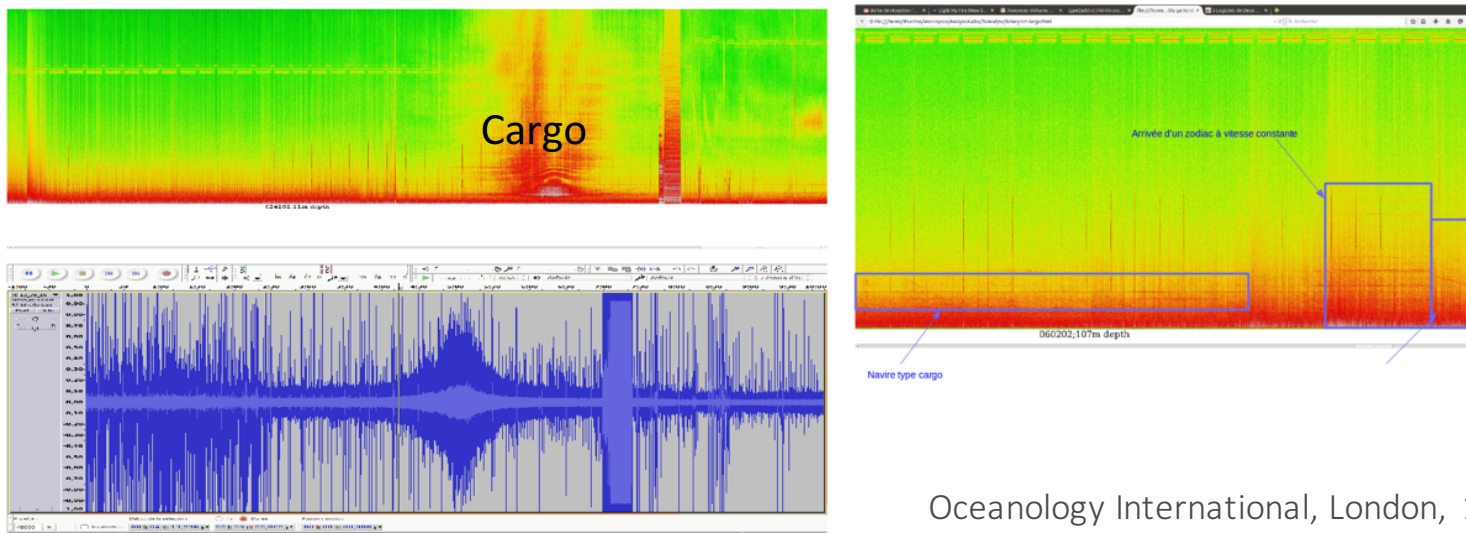
Ultra-Deep Gliders for Multi-Purpose Exploration

Market Applications

Acoustic recording : Marine mammal's observation – acoustic noise base line ...



Marine Traffic: Detection/Recording ranging from huge cargo to small boats



Ultra-Deep Gliders for Multi-Purpose Exploration

Market Applications

Example Service 1 – Water Column Habitat payload

Applications :

- MSFD descriptors
 - 1-Biodiversity
 - 4-Food Webs
 - 5-Eutrophication
- Monitoring programs
 - Biodiversity: water column habitats
 - Biodiversity: fish
 - Eutrophication
- Copernicus
 - CMEMS, Biodiversity and Environ. Protection

SENSOR	PARAMETER
CTD	Depth, Temperature, Salinity
Optode	Oxygen
Micro-fluidic Cells	Nitrates, Phosphates
Fluorometer	Chlorophyll-a
Optical sensor	Turbidity
Imaging System	Plankton biomasses

Endurance: up to 2 months



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Ultra-Deep Gliders for Multi-Purpose Exploration

Market Applications

Example Service 2 – Oil and Gas service payload

Applications :

- Support for exploration and extraction of hydrocarbons
- Leak monitoring
- MSFD descriptors
 - 8-Contaminants
- Monitoring programs
 - Contaminants
- Copernicus
 - CMEMS, Biodiversity and Environ. Protection

SENSOR	PARAMETER
CTD	Depth, Temperature, Salinity
Optode	Oxygen
Fluorometers (2)	Crude Oil, Refined Oil
Optical sensor	Turbidity
Imaging System	Emulsified/Suspended Oil

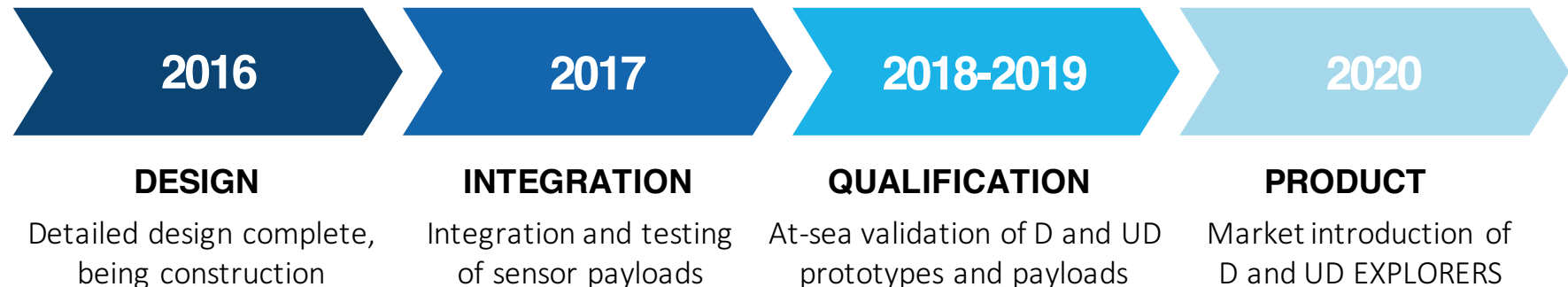
Endurance: up to 2 months



Ultra-Deep Gliders for Multi-Purpose Exploration

What's Next?

Coming soon...



- Keep up to date with BRIDGES!
 - www.bridges-h2020.eu
 - Sign-up for our regular newsletter
 - Follow BRIDGES on twitter [@BRIDGESh2020](https://twitter.com/BRIDGESh2020)
 - Organise a meeting/workshop with BRIDGES – contact@bridges-h2020.eu



Thank you for your attention!

Meet us at :

- SUT booth : S300
- ALSEAMAR booth : H300



ANNEX 4 Newsletter



Welcome to the first issue of our BRIDGES Newsletter!

The mission of the BRIDGES project is to develop, create and demonstrate at sea two new deep-sea gliders with improved sensing capabilities, enabling new and exciting opportunities for deep-sea monitoring and inspection at much lower costs than traditional missions. Wide use of gliders by the industry and research institutions will combine the economic benefits of ocean (bed) exploitation with deeper knowledge of marine life and preservation of the ecosystem. This newsletter, and any subsequent bi-annual newsletters, aims to keep you informed about the project's progress and results so far.



In this first issue you will learn more about the BRIDGES objectives, expected outputs and the work done so far, as well as the exciting opportunities for stakeholders to join the project through our Exchange of Knowledge and Demonstration Programme. Each issue will put one of BRIDGES partners and use cases in the spotlight starting with ALSEAMAR and the testing of the SEAEXPLORER glider in the Barents Sea (Arctic Ocean). Additionally, we will inform you about on-going EU funded projects and/or initiatives that are relevant to BRIDGES. Each issue will be concluded with a summary of the major events to come that are relevant to BRIDGES.

We wish you a pleasant read!

Introducing BRIDGES

The BRIDGES consortium is composed of [19 public and private partners from 7 EU countries and 2 associated countries](#), covering renowned scientific institutes, industrial groups and innovative SMEs. Together, we will develop and build [two ground-breaking Ultra\(Deep\) EXPLORER gliders](#) with increased sensor capabilities, suited to different user-groups and

operations, with far lesser VOC than traditional missions. Market introduction of Ultra(Deep) EXPLORER gliders is foreseen as of 2020.

“New generation of gliders, such as the (Ultra)Deep EXPLORER gliders, will enable explosive growth of knowledge and responsible use of the deep sea environment.”

Laurent Mortier, professor of oceanography at ENSTA-ParisTech and scientific coordinator of BRIDGES.



BRIDGES in figures:

- 19 public and private partners from 9 (EU) countries
- 8 million euros awarded by the EU
- 2 multi-mission, autonomous gliders to be developed
- adapted to 2.400m (deep) and 5.000m (ultra deep) sea depth
- multiple near-shore and deep sea trials and demonstrations
- 4 year project (2015-2019)
- market introduction of (Ultra)Deep EXPLORER as of 2020

Meet us at Oceanology International 2016!

Michael Field from ARMINES will present the BRIDGES project during Oceans of Tomorrow poster session (Tuesday March 15th, 1-3pm) and Oceans of Tomorrow flash talks and panel discussion (Wednesday March 16th, 1pm-5pm, talk at 2:50pm). He will also be presenting BRIDGES together with Vianney Rochet from ALSEAMAR during the Unmanned Vehicles and Vessels Showcase Part 2 (Thursday March 17th, 10am-5pm, talk at 2:15pm). We would welcome your participation!

BRIDGES will be represented on our partner's stand Society for Underwater Technology (S300) during the full length of the event. Please come along to meet us any time that suits you. If you have specific question(s) or want to make sure to speak to the relevant expert(s), please [contact](#) us and we will make further arrangements for meeting with you in the appropriate setting. Many BRIDGES partners will be present at OI2016 and happy to explain more about the project at their stands.

Partner in the spotlight: ALSEAMAR

[ALSEAMAR](#) plays a key role in the BRIDGES Consortium. This high tech company - belonging to the ALCEN Group - will be ultimately responsible for the design and manufacturing of two (Ultra)Deep glider products with commercial applications, building on their experience with the

present SEAEXPLORER's design.



“The new (Ultra)Deep EXPLORER gliders will be technologically and economically optimized to address identified growth markets in Science, Oil&Gas, and Sea Mining, thus strengthening the competitiveness of the European glider offer on the market.”

François Xavier Demotes Mainard, Project Manager of
ALSEAMAR.

Join our Exchange of Knowledge and Demonstration Programme!

BRIDGES is looking for interested and committed stakeholders throughout Europe to get involved in its Exchange of Knowledge and Demonstration Programme. This opportunity will be specifically of interest to industries and research institutions that are exploring the deep sea (bed), but are looking for less expensive technologies that offer increased functionalities (stamina, depth, sensing, etc.). [Read more about this exciting opportunity >](#)

Use case in the spotlight: SEAEXPLORER glider proven to be fit for use in the Polar Regions

In 2015 the SEAEXPLORER glider successfully completed a 3-week deployment in the central Barents Sea. It was concluded that the SEAEXPLORER glider provides excellent high-resolution data with significantly reduced costs and effort, thus enabling future application of autonomous monitoring missions in the Barents Sea and key Arctic shelf areas. The full factsheet of the Barents Sea mission can be read [here](#).

Project in the spotlight: ATLANTOS

The [H2020 project ATLANTOS](#) that was launched mid 2015 aims to define, establish and support an Integrated Atlantic Ocean Observing System (IAOOS), that will provide a clear framework for the trans-Atlantic integration and coordination of ocean activities and its observation. Over 60 partners are participating in ATLANTOS.

BRIDGES will make sure that the two (Ultra)Deep EXPLORER gliders to be developed are

optimally suited to support the framework, especially focusing on autonomously observing networks.

Newsbits from BRIDGES

On last April 22 the BRIDGES project was [officially launched in Paris](#). In the presence of EC Officer Mr. G. Mialocq the project was successfully "kicked-off" by its 19 partners.

Since then, significant progress has been made, such as the delivery of the preliminary design files, including justifications and vehicle testing procedures, for both Deep and UltraDeep EXPLORERS. First public deliverables of BRIDGES are expected to be available end of March 2016. These include user requirements of (Ultra)Deep EXPLORER gliders that support in-situ exploration and services of the deep ocean and common interface and sensor standards.

Meanwhile, BRIDGES project was presented in [Horizon Magazine](#) and we even made it to the [Irish Sunday Times](#). Check our website at any time to keep up with new developments of BRIDGES.

Upcoming events

- Oceanology International 2016 (OI2016), 15-17 March 2016, London (UK).

BRIDGES will be represented on our partner's stand Society for Underwater Technology (S300), please come along and see us we would be delighted to see you! For more information on OI2016 visit: www.oceanologyinternational.com.

- Subsea Expo, 3-5 February, 2016, Aberdeen (UK).

Another opportunity to learn more about BRIDGES at the stand of SUT(stand 36). Visit www.subseaexpo.com for more information.

- MCE Deepwater Development 2016, 5-7 April, 2016, Palais Beaumont, Pau (France).

Hosted by Total plc this conference engages key members of the oil and gas community. For more information visit: www.mcedd.com.

- Underwater Technology Conference, 15-16 June 2016, Bergen (Norway). Visit www.utc.no for more information.

- 7th EGO meeting and Glider School, 26-30th September 2016, Southampton (UK).

Visit www.ego-network.org for more information.

- SUT2016 Technical Conference, 15-17 November, London (UK).

Major international conference on all aspects ocean science, underwater and offshore engineering. For more information visit: <http://www.sut.org/event/sut-2016>.

Relevant deep sea research and news

- [Position Paper 22 "Delving Deeper: Critical challenges for 21st century deep-sea research"](#) was launched on 1 September 2015. The position paper underlines the increased need for deep sea monitoring and exploitation.



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Bringing together Research and Industry
for the Development of Glider Environmental
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