Report on the 1st Digital BASTA Stakeholder Event

December 16, 2020

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1. About the Event

The 1st Digital BASTA Stakeholder Event took place on December 16, 2020. The event featured numerous presentations on the project progress and the next steps, all of which were given by the project partners. On December 12, the BASTA consortium had held its internal annual project meeting. During this meeting, the content of the digital stakeholder event had been defined. The stakeholder event is therefore fully integrated in the consortium's discussions on the project progress and execution.

Targets of the Event

The stakeholder event was directed at interested experts on offshore unexploded ordnance (UXO) surveys from the industry, authorities and the scientific community. With the event the BASTA project partners sought to achieve the following targets:

- Inform experts about the project progress, initial results and upcoming work
- Receive feedback on the project status and initial results, in order to be able to continue steering the project in a meaningful direction
- Strengthen the connection with existing associated partners
- Connect with other potential associated partners and interested parties in order to ensure high level achievement of project goals. This includes:
  - Continuing the stakeholder dialogue
  - Requesting the provision of survey data for the training of neural networks
  - Encouraging the use and testing of methods and technologies that will be developed over the course of the project
  - Driving the formalization of workflows and quality indicators

Event Preparations and Subsequent Work

Due to the CoVid-19 pandemic, the BASTA consortium decided to organize the stakeholder event in digital fashion. For reasons of technical feasibility, the potential auditorium was divided into two groups.

- Group 1: Stakeholders, who are closely associated to the project, were invited to join the event that was hosted via Cisco WebEx. An invitation was extended to 77 stakeholders.
- Group 2: A live video stream of the event was established, with the aim of allowing additional interested parties, to follow the event via YouTube. The link was distributed to over 750 parties via a BASTA Newsletter.

Inviting all potentially interested parties to the event itself might have led to bandwidth problems. The invitation to group 2 is shown in Annex I. Participants of both groups were able to ask questions via the chat function of WebEx and YouTube. The recording of the stream is available on YouTube: https://youtu.be/r6s5vSP2FaQ. The stream operated problem-free continuously throughout the event. The maximum number of viewers of the live stream during the event was 59. At the time of publication of this report, the resulting video has been viewed more than 350 times, 129 of which occurred during the event. The video has since been used to communicate the preliminary results of BASTA to numerous experts, who were not able to participate in the event during the stream.

All presentations by project partners, the stream of the event and this report were made available on the project website (here).

Agenda

The agenda of the event is shown in Table 1. It was developed to meet the targets laid out above. While an on-site event would have warranted the organization of a morning and an afternoon session, the consortium decided to condense the content of the digital event into 2,5 hours. The reasoning for this lies in the lack of networking opportunities that are present during a digital event and the limited attention span of the auditorium of a digital event as compared to an on-site event. The consortium hopes to be able to organize a more comprehensive exchange, once the CoVid-19 pandemic allows it.

During the event, the BASTA project progress and initial results were presented. Each presentation was followed by a brief discussion with the auditorium. The discussions are summarized in chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**. Following the final presentation, Jens Greinert (GEOMAR) gave a brief presentation, introducing additional activities concerning the issue of munitions in the sea.

Table 1: Agenda of the BASTA project kick-off

Presenter	Affiliation	Title of presentation
Chaired by Torsten Frey – GEOMAR		
Jens Greinert	GEOMAR	Where are we standing with respect to the project goals after one year?
Jann Wendt	EGEOS	Are my Data Sufficient? On the Development of Quality Metrics
Mareike Kampmeier Patrick Michaelis	GEOMAR	Finding UXO in Multibeam Data – Avoiding Human Error with AI and GIS
J. Felipe Barradas	VLIZ	Making use of SBP and Towed Magnetics Data
Marc Seidel	GEOMAR	Magnetics on Hovering AUVs – A New Tool for Target Point Investigation

Impressions

The following images show some impressions of the event.

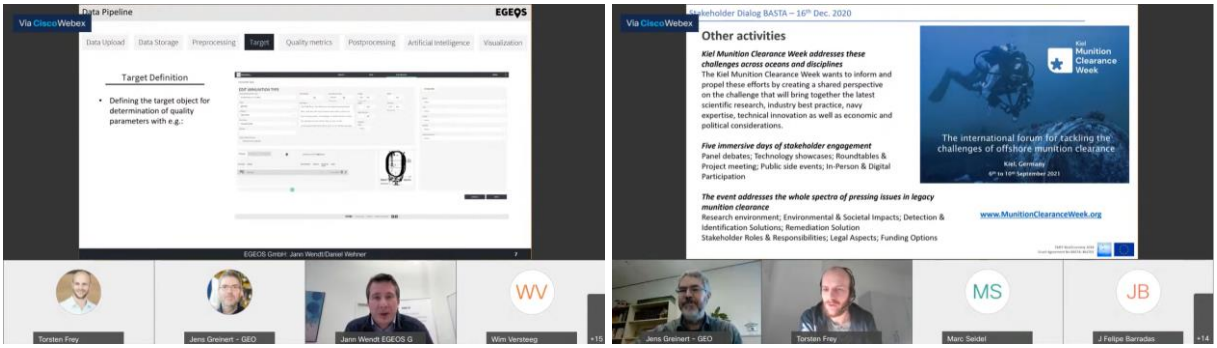


Figure 1: Impressions of the 1st Digital BASTA Stakeholder Event.

2. Minutes of the Morning Session

This section summarizes the most important points that were addressed during the discussions following the presentations of the project partners. It does not describe the content of the presentations, since this is somewhat provided by the presentation slides.

Introductory BASTA presentation by Jens Greinert (GEOMAR)

- During the presentation the preliminary results of the project ExPloTect were introduced. Like BASTA, ExPloTect is led by GEOMAR and co-funded by the European Maritime and Fisheries Fund (EMFF) programme of the European Union (Grant Agreement No. 863693). The question concerned the depth range of the ExPloTector. The device is depth independent since water depth is essentially limited by the length of the hose that is used to pump the water on board of a vessel, where the analysis of the sample takes place. Water could be pumped on board continuously. The MARTERA project AMMOTRACe, which will likely kick-off later in 2021 is working on a system for in-situ analysis.

Partner presentation by Jann Wendt (EGEOS)

After this presentation, no discussion took place.

Partner presentation by Mareike Kampmeier and Patrick Michaelis (GEOMAR)

- Multibeam surveys that were performed during the BASTA project meet the requirements of the IHO S-44 special order requirements. However, that does not mean that one can differentiate between particular small-scale objects and other features.
- The artificial intelligence (AI) shown in the presentation deals with multibeam data and is therefore unsuitable for the detection of buried objects. For that requirement, a multisensory approach is needed and AI would need to be trained to interpret the layered data of the different sensors.

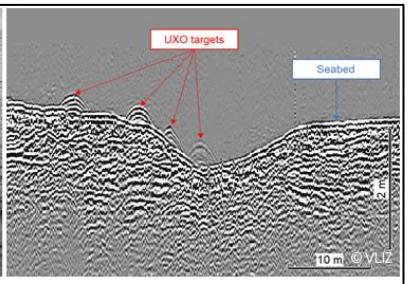
Partner presentation by J. Felipe Barradas (VLIZ)

- Although it is the preferred method, 3D-subbottom profiler cannot be used at any given location. Its utility strongly depends on the water depth and the sediment properties. Instead the project currently focuses on picking hyperbolas in the 2D-subbottom profiler images to train the AI.

Partner presentation by Marc Seidel (GEOMAR)

- The hovering AUVs used in the project have a higher subjectivity to currents than torpedo-shaped ones. Therefore, currents have an impact on the measurements of the AUV-based magnetometers. Currents flowing in parallel to survey lines have low impact but perpendicular currents lead to less accurate survey lines. Overall, the AUVs are probably not useful for use in the North Sea with its tidal currents.
- Positioning of the AUV underwater is in the orders of 1-2 m. However, the longer an AUV mission takes without intermediate surfacing, the less accurate the positioning. This is because, once the GPS fix is lost, underwater positioning depends on calculating the relative position based on measuring the motion of the AUV.

Annex I



Digital BASTA Stakeholder Event – December 16, 2020

YouTube Link: https://youtu.be/r6s5vSP2FaQ

BASTA
Boost Applied munition detection through Smart data inTegration and AI workflows

AGENDA

10:00	**Welcoming Words** Jens Greinert (GEOMAR)
10:05	**One Year of BASTA – Where do we Stand?** Jens Greinert (GEOMAR)
10:30	**Are my Data Sufficient? On the Development of Quality Metrics** Jann Wendt (EGEOS)
11:00	**Finding UXO in Multibeam Data – Avoiding Human Error with AI and GIS** Mareike Kampmeier, Patrick Michaelis (GEOMAR)
11:30	**Making use of SBP and Towed Magnetics Data** Tine Missiaen, Felipe Barradas (VLIZ), Aline Renson (G-tec)
12:00	**Magnetics on Hovering AUVs – A New Tool for Target Point Investigation** Marc Seidel (GEOMAR)
12:30	**End of the Event**

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For Questions:

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