Fugro provides a complete solution for unexploded ordnance (UXO) risk mitigation on marine projects. Through a predictable and optimised process, your project will benefit from on-time delivery of the ALARP certificate, the highest safety standards, innovative solutions and operational excellence.

**INTEGRATED PHASED APPROACH**

UXO is a key risk in global marine projects and can negatively impact budgets and timelines if not effectively managed and derisked due to the uncertainty associated with conventional UXO and explosive remnants of war (ERW) programmes, which are rarely holistically integrated. Fugro’s integrated approach to UXO risk mitigation optimises your target lists and reduces the need for visual inspection. Our full turnkey solution helps maximise clarity and predictability to keep your offshore projects on track.

**STATE-OF-THE-ART RISK MITIGATION TOOLS**

Fugro’s complete solution optimises UXO risk mitigation by reducing the time taken from initial awareness of a potential UXO or ERW risk through to final UXO derisking certification. Supported by state-of-the-art survey and identification tools, combined with our extensive Geo-data insights and modelling techniques, we mitigate your UXO risk according to typical as low as reasonably practicable (ALARP) principles.

Our UXO risk mitigation tools include the GeoWing 3D, which was an industry first. It continues to deliver world-leading results through our ongoing improvements and as part of our dedicated UXO research and development (R&D) programme.

**BENEFITS**

- Minimised false positives through higher resolution data and an efficient identification process
- Increased schedule control and reliability by using 3D sub-bottom imaging, which reduces the need for costly and time-consuming target dredging
- Reduced HSSE risk and exposure as less personnel required onsite
- Streamlined operations through dealing with one solution provider ensures operational excellence and peace of mind.
INTEGRATED PHASES FOR AN OPTIMISED PROCESS

From our extensive experience in phased UXO risk mitigation projects, we know that the most costly and time-intensive phase is the identification phase, as it presents the highest risk of impacting overall project schedules.

Our UXO risk mitigation strategy optimises UXO identification by providing higher resolution and accurate survey data acquired through combining magnetometry and acoustic techniques. Our holistic target interpretation results in a significantly reduced target list, which significantly shortens the identification phase, saving you time and money.

ACOUSTIC 3D IMAGING

Another example of our innovative approach to UXO risk mitigation is our use of acoustic 3D imaging before the remotely operated vehicle (ROV) inspection phase. The data accuracy of acoustic 3D imaging better identifies targets and so significantly reduces the number of targets that need further time-consuming target investigation activities, such as visual inspection. This strategy of refining the target list through better data improves project control and predictability.

BETTER SURVEY FOR FEWER FALSE POSITIVES

We are continually investing in R&D to bring new tools to market to further optimise our UXO risk mitigation solution. Our aim is to reduce overall target lists and provide a higher probability of remaining targets that need visual inspection.

Our experts also utilise a number of dedicated and fully mobilised survey-and-identification vessels to execute better surveys. For example, Fugro’s Atlantis Dweller is one of a fleet of multipurpose vessels that we operate globally to execute UXO identification through ROV operations.

REMOTE OPERATIONS CENTRES

With the increasing need to reduce costs, carbon dioxide emissions and HSSE risk exposure, along with the need to ensure the highest standards of UXO risk mitigation, Fugro has developed remote operations centres (ROCs) to deliver these operational benefits worldwide. ROCs reduce the number of personnel required onboard vessels; instead, our onshore teams oversee and guide target identification operations in real-time. ROCs centralise project UXO experts in one location and allow for better collaboration between you, our UXO consultants, and other supporting parties, such as archaeology and environmental experts.

THE FUGRO DIFFERENCE

With a long history and extensive track record in providing complete or tailored UXO risk mitigation solutions, Fugro solves and mitigates your UXO risks. We offer a predictable and optimised UXO derisking service based on minimal false positives, increased schedule control and reliability, and reduced HSSE exposure. Our continuous development to support and optimise UXO risk mitigation contributes to derisking the seabed for a safe and liveable world.