

Statement of Work – TALOS 26 Challenge

List of Abbreviations

Abbreviation Meaning

IABG Industrieanlagen-Betriebsgesellschaft mbH

SME Small and Medium-sized Enterprises

SVI Security and Defence Industry

TALOS Acronym for: Diver and AUV Situation Awareness in the Operational Maritime Environment

WTD 71 Technical Center 71 (Wehrtechnische Dienststelle 71)

WTSH Business Development and Technology Transfer Corporation of Schleswig-Holstein (Wirtschaftsförderung und Technologietransfer Schleswig-Holstein GmbH)

Preamble

The TechHUB SVI Nord was established in 2025 with the objective of creating a neutral platform that brings together industry, academia, and the navy. TechHUB SVI Nord is operated under the umbrella of Wirtschaftsförderung und Technologietransfer Schleswig-Holstein GmbH (WTSH).

TechHUB SVI Nord sees itself as a driving force in fostering an innovation culture between public procurement authorities (e.g., the German Navy and the Bundeswehr) and industry. As a neutral platform, its mission is to accelerate the transition of innovations to market readiness. Advancing innovation in the maritime security and defence industry, as well as in related key technologies supporting internal and external security, is a core mandate of TechHUB SVI Nord.

This challenge is announced in cooperation with the German Navy, Technical Center 71 (WTD 71), Industrieanlagen-Betriebsgesellschaft mbH (IABG), the Hamburg Port Authority (HPA), and TechHUB SVI Nord (WTSH).

1. Organizations and Hosts of the TALOS 26 Challenge

German Navy, Naval Innovation Management, Navy Command Rostock

Technical Center 71 (WTD 71)

WTSH – TechHUB SVI Nord

Hamburg Port Authority (HPA)

Industrieanlagen-Betriebsgesellschaft mbH (IABG)

2. Background and Objectives of the Competition

The security of military port facilities is facing an increasingly complex threat environment, significantly shaped by the rapid technological advancement of unmanned underwater systems. Miniature drones, known as Unmanned Underwater Vehicles (UUVs), are now capable of transporting compact payloads, conducting reconnaissance of infrastructure, or causing damage while evading conventional surveillance systems. At the same time, unauthorized diver activity constitutes a difficult-to-manage threat that cannot be reliably addressed by traditional surface-level perimeter security.

Both forms of threats share several characteristics: they operate underwater, remain largely invisible to conventional monitoring methods, and require rapid response times.

With the TALOS 26 Challenge, TechHUB SVI Nord invites companies and research institutions from industry and technology sectors to develop solution concepts for the underwater protection of harbor basins and to demonstrate them within a structured competition framework.

The challenge seeks approaches capable of reliably detecting and classifying miniature underwater drones and divers, ideally complemented by response or countermeasure capabilities. Potential technological approaches include:

- Acoustic and sonar-based detection systems
- Optical and electro-optical sensors
- AI-supported pattern recognition and object classification
- Autonomous or semi-autonomous countermeasure systems
- Data fusion concepts that combine multiple sensor modalities into a unified situational picture

Solutions that can be integrated into existing port infrastructure are particularly welcome.

Submitted concepts should address the specific requirements of maritime operational environments, including:

- Limited visibility conditions
- Complex acoustic conditions within harbor basins
- High detection reliability combined with low false alarm rates

Solutions addressing several of these challenges while demonstrating a clear path toward operational deployment are especially encouraged.

The objective of the competition is to identify the most promising concepts from a broad submission phase and advance selected participants to a testing phase, during which prototypes will be evaluated under real-world conditions directly at facilities of the German Navy. In this way, the transition from innovative ideas to operationally deployable solutions is intended to be significantly accelerated.

3. Submission Format (Project Concept Description)

The project concept description should include:

1. Solution Approach

- Core idea and technical principle

2. Technology Readiness Level (TRL)

- Current status and development roadmap

3. Prototype Development Path

- What are the next milestones in prototype development?
- Description of the innovative aspects

4. Company Profile

- Competencies, references, and partnerships

4. Confidentiality

All submitted project concept descriptions will be treated confidentially upon receipt and will only be made accessible to members of the expert jury.

No information will be disclosed to third parties.

By submitting an entry, participants agree that the title of the submitted concept and the name of the submitting institution may be published as part of communications relating to the challenge.

5. Minimum Requirements for Submitted Concept and Solution Proposals

No.	Requirement	Description
1	Scope / Format	Maximum length of the concept paper, excluding cover page, table of contents, references, appendix, team introduction, and CVs: 10,000 characters including spaces . Submission must be provided as a single searchable PDF document. Appendix: Up to 3 additional pages are permitted exclusively for supplementary illustrations, technical diagrams, or photographs (e.g., of existing components or test setups).
2	Language	Documents may be submitted in either German or English .

No.	Requirement	Description
3	References	The concept paper must provide all necessary references relevant to the subject matter presented.
4	Publication	The ideas presented in the submitted concept paper must not have been published elsewhere.

Supporting Documentation and Materials

No.	Requirement	Description
5	Technical Documentation	Detailed description of the system architecture and technical functionality of the prototype. Presentation of the technical advantages and disruptive potential compared with the current state of the art. Must include an Executive Summary (maximum one A4 page) concisely describing the innovation and its operational benefits. Submission as a searchable PDF document.
6	Presentation Materials	A presentation in .pptx format for the final pitch before the jury. Scope: minimum 5 slides , maximum 10 slides . Contents: problem statement, technical approach, results of sandbox testing, and outlook regarding scalability.
7	Additional Materials (Optional)	Supplementary materials illustrating the functionality of the prototype, such as videos of field trials, screencasts of software interfaces, CAD models, or comparable supporting materials.