AUTOASSESS

AI & robotics for safe vessel inspection

OPEN CALL #2 FOR TECH INNOVATIONS

Annex 1: Guide for Applicants

Funded by the European Union

AUTOASSESS
AI & robotics for safe vessel inspection

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1 WHAT IS AUTOASSESS?

AUTOASSESS is a European Project under the Horizon Europe Programme (HORIZON-CL4-2022-DIGITAL-EMERGING-02) – Grant Agreement no. 101120732. The 48-month project kicked-off in October 2023 and counts in total 17 partners (including 4 associated countries) from multiple sectors and European countries.

AUTOASSESS aims to find solutions to ensure the structural safety of ships, oil and gas and other marine infrastructures. Currently, this task is done by human surveyors who must climb into confined areas such as ballast tanks or cargo holds, which represent extremely dangerous GNSS-denied environments. The inspection is a physically demanding task, done in tight enclosed spaces, difficult to access, with low/no light, slippery surfaces and with low/no oxygen and toxic gases.

Further, during the inspection process the ship cannot operate, posing high pressure on surveyors to work quickly. Major 5-year dry dock inspections are associated with around 1 M€ per vessel, resulting in about 11B€ per year for the whole industry. The reason for these high costs is that an average inspection takes up to 15 days, during which the vessel cannot operate. If the inspection time could be reduced to 3 days, the industry would save 80% (i.e. 0.8M€ per vessel).

The overall goal of AUTOASSESS is to remove human surveyors and workers from dangerous and dirty confined areas of offshore structures by employing an autonomous robotic system that exceeds human capabilities and is able to perform maritime vessel classifications. To address this goal, AUTOASSESS aims to employ a robot and remove human surveyors out of harm's way, while at the same time obtaining an accurate, repeatable, and quick vessel inspection.

In recent years progress has been made in aerial systems, or drones for mapping and inspection. Even though the inspection of enclosed marine structures in challenging conditions is still a problematic task, an aerial multi-robotic human centric system, with automated AI based scanning, mapping and Non-Destructive Testing (NDT) has the potential to remove the need for human inspection. Only by combining and integrating the latest developments in collision-tolerant UAS, multi-modal Simultaneous Localization and Mapping, path planning, autonomous drone racing, aerial manipulation, miniaturized NDT sensors and Machine Learning-based defect identification is it possible to deploy drones in these tight spaces for inspection purposes.

2 WHAT IS THE AUTOASSESS OPEN CALL #2 FOR TECH INNOVATIONS OFFER?

The core innovation of AUTOASSESS focuses on a fully autonomous inspection of ballast tanks and cargo holds of vessels. AUTOASSESS employs an open approach to innovation that relies upon using the entire value chain of the consortium and external stakeholders to assess the best ideas, regardless of their origin. This includes embracing the possibilities enabled by the Financial Support to Third Parties (FSTP) mechanism. Such an approach ensures that the consortium will be able to leverage the possibilities of cocreation to create solutions that are ready to go to market before project completion.

The overall objective of the AUTOASSESS FSTP mechanism is to further promote the development & deployment of the AUTOASSESS solution through the engagement of innovative technological third parties, providing solutions to specific project's challenges or proposing new ideas/ concepts that generate value to AUTOASSESS.

The AUTOASSESS Open Call #2 for Tech Innovations is a competitive process that invites entities to propose innovative technology solutions that are aligned with the project's use cases and answer to project defined challenges.

Applications to the open call are accepted from **02 March 2026 to 05 May 2026** (17:00 CET). After the evaluation process is completed, selected applicants will be invited to sign the sub-grant agreement and participate in the AUTOASSESS Funding Programme.

The AUTOASSESS Funding Programme is organised in three stages covering a period of nine months. Each stage is characterised by a set of objectives and requirements as defined in Section 6. The programme aims to provide sub-grantees with specific support to ensure the successful development and impact of their projects.

The programme aims to select and award **nine (9) applications** that have submitted the most technologically advanced and impactful solutions aligned with the defined challenge topics defined.

Relevant links and contacts

- Project website: https://autoassess.eu/
- Open call application form: https://www.f6s.com/autoassess-oc2-tech-innovations/apply
- Contact us: autoassess-opencall@f6s.com

3 WHO CAN APPLY AND HOW?

3.1 TYPES OF APPLICANTS

The AUTOASSESS Open Call #2 for Tech Innovations invites high-potential, technology-driven entities to propose innovative technology solutions that are aligned with the project's use cases and answer to project defined challenges (see Section 3.2).

3.1.1 ACCEPTED APPLICANTS

The accepted applicants for the AUTOASSESS Open Call #2 for Tech Innovations are:

- Single legal entities, either startups or SMEs.
- Consortia of (a maximum) two entities are **eligible**.
    - The Coordinator/ Lead Partner can be a startup or an SME.
    - The second consortium partner can be a startup or an SME.
- Entities that have applied to Open Call #1 for Tech Solutions can apply to Open Call #2, individually or as part of a consortia.
- Entities that have been awarded as part of the Open Call #1 Funding Programme are not eligible to participate in Open Call #2.
- Also consider:
    - A valid VAT and PIC number are required for all entities (applying individually or as a consortia) and will be verified as part of the administrative eligibility check.
    - Please consult the EU SME Definition for details on what constitutes an SME.
    - For the purposes of this Open Call #2, an entity will be considered a startup[1] if it complies with EU SME Definition and all the following:
        - Has been incorporated for less than 10 years (i.e. after 1 January 2015),
        - Has an *innovation* focus business,
        - Has a specific intention to grow as a business.
    - A signed version of the Declaration of Honour or Consortium Declaration of Honour (if applicable), and the SME Declaration will be requested during the contract preparation phase.

[1] Considering the startup definition provided in the European Startup Monitor 2019/2020

3.1.2 COUNTRIES

Legal entities from the following countries are eligible to **receive funding** through this open call:

- European Union Member States, including their outermost regions.
- Horizon Europe Associated countries eligible for funding, as defined in Horizon Europe rules for participation, as applicable at the date of signature of the AUTOASSESS Grant Agreement (29 June 2023).
- Specific considerations:
    - Entities from the UK are eligible to participate as long as these entities **ensure their own funding** (i.e. AUTOASSESS will not provide FSTP funding to UK entities). Note that the EC will not fund UK entities in programmes from EU projects that have started before 1 January 2024 (the AUTOASSESS project started in October 2023).
    - Entities from Switzerland are eligible to participate as long as these entities **ensure their own funding** (i.e. AUTOASSESS will not provide FSTP funding to Swiss entities). Note that the EC will not fund Swiss entities in programmes from EU projects that have started before 24 March 2024.
    - For UK or Swiss entities, if selected to participate in the programme, these must provide proof of having ensured their own funding during the contracting phase or will otherwise be excluded.

3.1.3 MULTIPLE SUBMISSIONS

The following rules apply for multiple submissions:

- An entity can participate either individually **or** in a consortium. Any entity participating both individually and in a consortium will disqualify both applications.
- Any single entity or consortia can **only submit one application**. Different applications to different challenges are **not accepted**. If more than one application is received, only the first submitted (as registered on the system) will be considered.
- Note that the regular functioning of the F6S platform limits to one application submission per F6S user in each call.

3.2 TYPES OF PROJECTS

The AUTOASSESS Open Call #2 for Tech Innovations is looking for projects that propose innovative technology solutions that are aligned with the project's use cases and answer to project defined challenges. Therefore, applicants are required to select one of the following challenges (Table 1) and demonstrate in their proposal how it responds to the challenge description and requirements. Selection is done in the application form on F6S and should be also identified in the technical proposal template.

The specifications of each challenge are presented in the respective tables in Appendix 1 of this Guide for Applicants.

TABLE 1. AUTOASSESS OPEN CALL #2 FOR TECH INNOVATIONS CHALLENGES

Challenge	Title (Challenge Owner)
C1	SOT-aided NDT Thickness Tool for a Fully-Actuated Aerial Robot
C2	Remote Inspection Support and Augmented Collaboration between Onboard and Shore-Based Experts
C3	Autonomous Patrolling Concepts and Early Event Detection Frameworks for Engine Rooms
C4	Vessel Structural Condition Analysis and Hotspot Identification via Digital Representation and Modelling for Robotic Inspection
C5	Combined Qualitative and Quantitative Assessment of Structural Integrity Using Imaging and Measurements
C6	NDT-MINI: Ultra-Lightweight, low power (<10W) ACFM/ECT Sensor for Autonomous Drone Inspection
C7	Graphical User Interface for UAS
C8	Open Challenge: Tell us what AUTOASSESS needs (within the project framework)

3.3 FUNDING CONDITIONS

Any entity, applying individually or as a consortia, will only be considered for funding once. The following conditions apply:

- Each application (submitted individually or in a consortia), regardless of the challenge (C1-C8) may request a maximum contribution of up to **€150,000** (total grant contribution).
- The requested contribution must cover the project costs and respect the following funding rates for startups and SMEs:
    - Startups are funded at 100%
    - SMEs are funded at 70%
- In the case of a consortia, the budget distribution should be decided by the partners considering (1) their involvement in the project, (2) the applicable funding rate, and (3) be within the maximum grant amount.
- Eligible costs include **staff costs** for project management, research, technical work, testing activities; communication and promotion activities; **travel** (as required); project-specific **equipment**, participation in promotional and AUTOASSESS activities (including events and trainings); work linked to demonstration activities. Indirect costs should be foreseen, representing 25% of other direct costs.
- Subcontracting is eligible, representing a maximum of up to 25% of the total project budget. Any foreseen subcontracting must be described in the technical proposal and be aligned with the purpose of the project and not delivered by any AUTOASSESS beneficiary.
- All applications will be required to include a justification of the planned budget to assess the project's value for money.

The AUTOASSESS Project reserves the right to fund additional projects if there are funds available.

Funds will be disbursed in lump sums at the end of the three stages of the Funding Programme and pending the achievement of agreed upon milestones and reports.

3.4 APPLICATION PROCESS

The F6S platform will be the only accepted platform for all applications to the AUTOASSESS Open Call #2 for Tech Innovations. Interested applicants must register at the AUTOASSESS F6S page. Table 2 presents the application process and respective timeline. Note that these are subject to change.

TABLE 2. AUTOASSESS OPEN CALL #2 FOR TECH INNOVATIONS APPLICATION PROCESS & TIMELINE

Phase	Description	Timeline
Application submission	Fill in and submit the application, including: • Application form on F6S (https://www.f6s.com/autoassess-oc2-tech-innovations/apply). • Application technical proposal (using provided template)	Launch date: **02 March 2026** Submission deadline: **05 May 2026** (17:00 CET)
Eligibility check	An eligibility check is performed against the criteria defined in Section 3.	**06 May 2026 – 08 May 2026**
Application evaluation	An evaluation board, consisting of internal AUTOASSESS reviewers, evaluate the received applications, scoring them based on the defined evaluation criteria. The evaluators rank the applications and select the top-ranked applications.	**11 May 2026 – 12 June 2026**
Announcement of results	All applicants receive a written letter by email about approval or rejection of their application. Successful projects start the onboarding phase for the AUTOASSESS Funding Programme.	Second half of June 2026

The application submission date is final. All other dates, including those of the programme, may be subject to change.

3.4.1 OTHER APPLICATION REQUIREMENTS AND CONSIDERATIONS

- **Submission**: Applications must be submitted via https://www.f6s.com/autoassess-oc2-tech-innovations/apply. Submissions via any other means will not be accepted.
- **Complete application**: All mandatory questions must be answered, and all requested documents, using defined templated, must be uploaded. Incomplete applications will be disqualified.
- **Accept terms**: Applicants must agree to the application's terms and conditions.
- **English language**: All applications and programme communication must be in English.
- Document format: Unless otherwise agreed, all documents in all phases must be submitted electronically in PDF format without printing restrictions.

- **Deadlines**:
    - Failure to submit the application by the submission deadline, regardless of cause (e.g., network issues, multiple browsers or windows), is not acceptable as an extenuating circumstance. It is recommended to apply well before the deadline.
    - Resubmissions are possible provided the call deadline has not passed but are only guaranteed if requested at least **2 business days** before the deadline via support@f6s.com.
    - The deadline may be extended only in case of unforeseen F6S platform technical issues. All applicants will be notified of the new deadline.
- **Review administrative documents**: Applicants are encouraged to get familiar with the documents that will be required in the contracting phase (see Section 5).
- **Confidentiality**: Any information regarding the third-party proposal will be treated in a strictly confidential manner.
- **Applicants list**: A full list of applicants containing their basic information will be created for statistical and transparency purposes and shared with the EC.
- **Misconduct and integrity**: Issues of scientific misconduct and research integrity are taken very seriously. In line with the Horizon Europe Rules for Participation, appropriate action such as termination of the Sub-grant Agreement Preparation phase or, if the Sub-grant Agreement has been signed, the implementation of liquidated damages and financial penalties, suspension of payments, recoveries, and termination of the Sub-grant Agreement, will be taken against any applicants/beneficiaries found to have misrepresented, fabricated or plagiarised any part of their proposal.

3.4.2 INFORMATION SESSIONS

AUTOASSESS will hold two information sessions to present the objectives and requirements of the open call. These sessions are tentatively scheduled for:

- **Session 1: Thursday 12 March 2026, 11h00 CET**. Focused on general presentation of the AUTOASSESS – Open Call #2. Register here.
- **Session 2: Thursday 2 April 2026, 11h00 CET**. Focused on an overview of the AUTOASSESS project and opportunities for 'open challenge' applicants. Register here.

Registration will be mandatory and links to the sessions will be provided on the website and social media accounts.

4 HOW WILL APPLICATIONS BE EVALUATED AND SELECTED?

AUTOASSESS adopts a coherent evaluation framework to the Open Call for Tech Innovators to ensure transparency in all phases of the process. Figure 1 summarises the open call phases starting from the applications submission phase to the evaluation and selection phase, which leads to the funding programme.

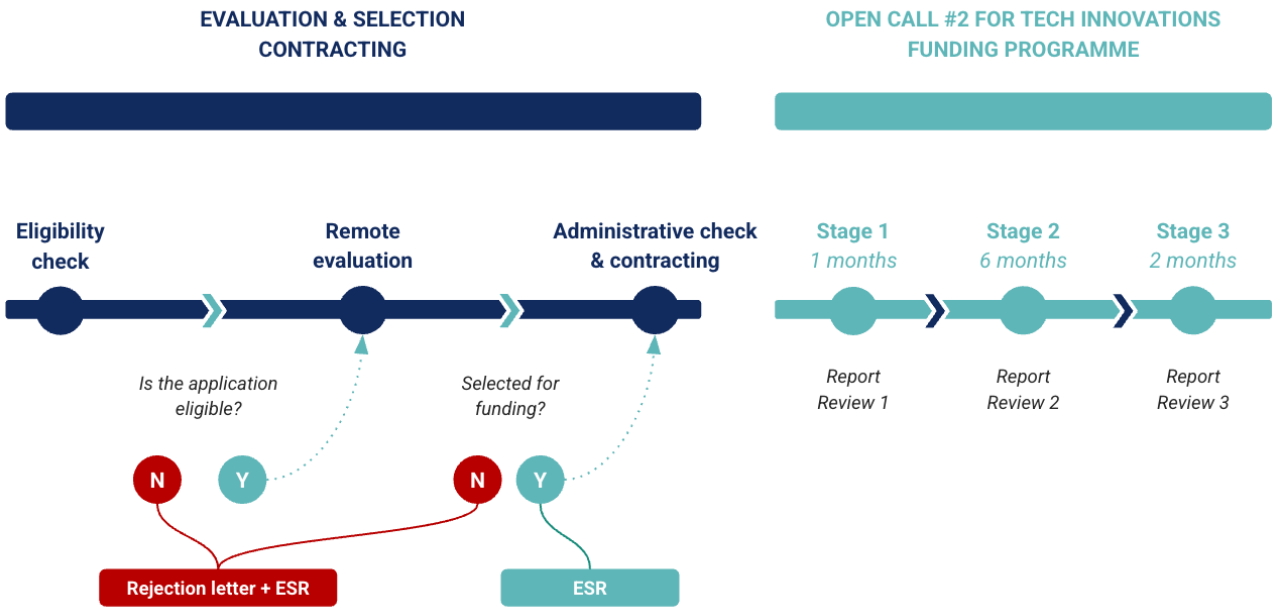

FIGURE 1. AUTOASSESS APPLICATION AND EVALUATION PROCESS

The AUTOASSESS project reserves the right to request at any moment of the process additional information and/or documentation to clarify any doubts regarding the eligibility of the applicant(s) and/or the submitted application.

4.1 ELIGIBILITY CHECK

An eligibility check will be done to filter out and discard non-eligible applications. The eligibility check will focus on administrative aspects defined in Section 3.

An application is only considered eligible if it meets **all** the eligibility criteria and requirements listed in Section 3, related with, among others: applicant type, applicant's country, origin of submission, number of submissions, requested funding, language, and provision of the correct and required documentation.

The eligibility check establishes a shortlist of applications to be evaluated in the next step of the evaluation process. Applications marked as non-eligible (for not meeting one or more of the eligibility criteria) will receive a rejection letter with a justification.

4.2 FULL EVALUATION

4.2.1 EVALUATION AND CRITERIA SCORING

The expert evaluation will be carried out by an innovation board consisting of the AUTOASSESS partners. These partners participated in the definition of the challenges and have the knowledge and expertise required to carry out an independent and objective evaluation of applications.

The innovation board will review each proposal, scoring them based on the following criteria (Table 3). The description items provided are non-exhaustive; the applicant must address and will be evaluated against all items in the proposal template (Annex 2).

TABLE 3. AUTOASSESS OPEN CALL #2 FOR TECH INNOVATIONS EVALUATION CRITERIA

Criteria	Description
Technology Concept	• Alignment of the application with the AUTOASSESS project objectives and impact. • Alignment of the proposed innovation/ solution with the selected challenge. • Novelty of the proposed innovation/ solution considering current state of the art.
Ambition & Scalability Potential	• Alignment with and contribution to the broader impact foreseen within the AUTOASSESS project. • Ambition and contribution to industry transformation towards resilience and sustainability. • Measures to promote the project and exploit results, ensuring medium to long-term scalability of the solution.
Implementation	• Proposed project work plan, referencing activities and outputs (linked to project objectives), KPIs (including rationale, baselines, evaluation and targets) respective timeline. • Barriers and risks that may affect the work plan and proposed mitigation actions. • Rationale of the project costs, including personnel and other costs, and their allocation across project objectives and activities.
Team Skills & Expertise	• Knowledge and skills to implement the project, and capacity to ensure the scalability of the solution. • Complementarity of the team aligned with project activities. • Commitment to and demonstration of gender balance.

Table 14 (*item 'Score, Expert'*) defines how individual criteria will be scored. The minimum threshold for each criterion will be three (3) out of five (5) (i.e., the overall score threshold is 12 out of 20). Applications that do not meet the minimum thresholds will be excluded from the programme.

Each evaluator will record their individual evaluations using an Individual Evaluation Report. After the individual evaluation by the experts, the Open Call Management Team will:

- Check for large differences (over 2 points per criterion) between evaluators.
- If differences exist, evaluators meet to discuss and agree on scores and comments.
- Updated and final scores are used to define the ranking.

A single Evaluation Summary Report (ESR) will be prepared by the Innovation Board, representing opinions and scores on which the evaluators agree.

4.2.2 RANKING AND SELECTION

All applications will be ranked based on their overall score, calculated from the average scores given by the evaluators. Therefore, scores may be a decimal.

First, the highest ranked applications for each of the seven specific challenges (C1-C7) will be selected (a minimum of one), followed by the two highest ranked applications for the open challenge (C8). Second, and if there are insufficient applications to cover all challenges (C1-C8), applications will be distributed, with priority to those addressing challenge (C8), increasing the plurality of ideas from the industry.

Only applications above the defined thresholds, per criteria and overall, will be considered for funding, which also encompasses the mentioned selection rules.

In case of a tie in overall scores, the following tie-breaking criteria will be used in order: (1) Technology Concept; (2) Implementation; (3) Ambition & Scalability Potential; and (4) Team Skills & Expertise. In case these criteria do not break the tie, the application with a share of women and men in the team closest to 50/50, following European guidelines on gender equality[2] will prevail.

The AUTOASSESS Innovation Board will validate the final ranking of applications in a consensus meeting. It reserves the right to select a proposal over another better ranked proposal. The rationale for this decision will be communicated to the EC.

[2] Horizon Europe guidance on gender equality plans (https://op.europa.eu/s/z6Sb)

4.3 INTERVIEW

In case of doubts, clarifications or ties, the AUTOASSESS team reserves the right to organise interviews with applicants. The interviews will focus on better understanding and evaluating the project's technological concept, ambition, implementation plan, and the team (assessing specific items as defined in Table 3. Scoring will be done according to Table 14 (*item 'Score, Expert'*).

If during the interview applicants do not commit to what has been presented in the application form, these will be declassified. Results of the interview made override those of the full evaluation.

If interviews are carried out, the ESR will reflect the interview results and will represent the opinions and scores on which the evaluators agree.

4.4 APPEAL PROCESS

Within three working days of receiving (1) a rejection letter informing the application as non-eligible or (2) an ESR of non-acceptance, an applicant may submit an appeal if they believe the results of the eligibility checks have not been correctly applied, or if they feel that there has been a shortcoming in the way their application has been evaluated.

All appeals must be sent to autoassess-opencall@f6s.com and must:

- Focus exclusively on aspects concerning the evaluation of the application (e.g. admissibility or eligibility checks, evaluation procedure, etc), not their merits.
- Clearly describe the complaint.
- Received within the time limit (three working days) from the reception of a rejection letter considering the application as non-eligible or the ESR information letter delivered.
- Sent by the entity's legal representative who has also submitted the application.

Note that the evaluation is carried out by qualified experts of the AUTOASSESS project, particularly those involved in the challenge definition. Repetitions of the content of the application or disagreements with the result or reasoning of the technical evaluation will not be considered.

5 WHAT HAPPENS AFTER SELECTION?

Selected applications will be invited to the contracting phase, where administrative and financial details and documents will be verified and validated.

The steps of this phase are (see Table 14 for complementary information):

1. Inclusion of comments (if any) provided in the Evaluation Summary Report as part of the sub-grant agreement (contract).
2. Validation of entities (including all those participating in a consortia) based on the provision of the following documentation:
    - **Proof of the entity's legal existence**.
    - **Proof of the SME status** (applicable for all SMEs, including startups), using the SME Declaration Form (Annex 6).
    - **Declaration of Honour**, for all participating entities, signed by the legal representative of the entity (Annex 4).
    - **Consortium Declaration of Honour**, for all entities participating in a consortium, signed by the legal representatives of the entity (Annex 5).
3. Signing of the **sub-grant agreement** (Annex 3) between the AUTOASSESS Consortium represented by its Coordinator (DTU) and the Lead Beneficiary.
4. Applicants must also consider:
    - A valid VAT is mandatory.
    - The sub-grant agreement (contract) is final and cannot be changed. Applicants are recommended to share the template with their respective legal departments to check the contract in advance and receive approval.
    - Electronic digital signatures are required for signed documents (unless otherwise agreed).
    - Deadlines for the provision of required documents will be provided and will typically be concluded within two weeks.
    - Failure to complete the negotiation in time will result in rejection of the application.

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6 WHAT IS THE AUTOASSESS FUNDING PROGRAMME AND ITS REQUIREMENTS?

The awarded sub-granted projects will participate and benefit from the AUTOASSESS Open Call #2 Call for Tech Innovators Funding Programme. The programme includes an onboarding meeting, mentoring, training (as applicable), and a monitoring process.

6.1 PROGRAMME FRAMEWORK

The AUTOASSESS Open Call #2 Call for Tech Innovators Funding Programme has a duration of nine months, during with the sub-grantees are required to develop, test and evaluate their solution.

The third-parties will be supported by the AUTOASSESS team, particularly by an allocated mentor who is linked to the definition of the challenge the project addresses. In general, the Funding Programme aims to:

- Engage third parties in the development and validation of the AUTOASSESS framework;
- Provide support and guidance to third parties by delivering mentorship, training (as relevant) and access to infrastructure (demonstrators);
- Create real impact on demonstrators and end-user entities;
- Develop a set of success stories to foster industry uptake of AUTOASSESS solution.

The financial support will be made in the form of a grant (lump sum), of up to €150,000, paid against the delivery and approval of results linked to each stage of the programme.

6.2 PROGRAMME TIMELINE

The AUTOASSESS Open Call #2 Call for Tech Innovators Funding Programme consists of three stages (Table 4), each with objectives and requirements. The successful achievement of these objectives, which should also respect what is defined in the challenge the sub-granted project is addressing, will lead to the payment of the instalment associated to the respective stage.

Planned dates for the implementation of these three stages are defined in the Table but are subject to change, as needed, and with notification by the AUTOASSESS team.

The start of the programme, tentatively scheduled for 1 July 2026, will include an online kick-off meeting involving all awarded third-parties.

TABLE 4. AUTOASSESS FUNDING PROGRAMME TIMELINE & REQUIREMENTS OVERVIEW

Stage	Item	Description
Stage 1 – Plan	**Objective**	Review, fine-tune and submit a complete plan of activities for the programme, particularly Stage 2 and Stage 3. Sub-grantees should review and focus on milestones, KPIs, implementation plan and the expected outcomes in each programme stage. The plan should also be in full alignment, with support of the mentor, with the objectives/ requirements of the challenge.
	Requirement	Report 1 – Plan
	Result	1st instalment of the grant: **40%**
	Timeline	• Duration: 1 month (1 July 2026 – 31 July 2026) • Report delivery: 31 July 2026
Stage 2 – Develop & Integrate	**Objective**	Development of the solution/ innovation aligned with what was defined and approved in Stage 1; proceed with integration as defined in workplan. Development and integration activities should be aligned with what is defined in the objectives/ requirements of the challenge.
	Requirement	• Report 2 – Develop & Integrate • Mid-term interview (tentatively at the end of M5) to assess progress.
	Result	2nd instalment of the grant: **40%**
	Timeline	• Duration: 6 months (1 August 2026 – 31 January 2027) • Report delivery: 31 January 2027
Stage 3 - Assess	**Objective**	Testing, validation, final demonstration, and general assessment of the solution, highlight conclusions, identifying lessons learned, and future work. Testing, validation, and demonstration activities should be aligned with what is defined in the objectives/ requirements of the challenge.
	Requirement	Report 3 – Assess
	Result	3rd instalment of the grant: **20%**
	Timeline	• Duration: 2 months (1 February 2027 – 31 March 2027) • Report delivery: 31 March 2027

6.3 PAYMENTS

In general, the payments linked with each stage are done against the approval of the steps indicated below. Specific steps and requirements will be defined in the sub-grant agreement:

- Reception of the report defined for each stage.
- A favourable review by the designated reviewer(s) responsible for assessing the report and the sub-granted project execution.
- Reception of the Request for Payment, using the defined and provided template.
- The subgrantee's Bank Account matches the details issued by the bank of the Subgrantee.
- Finally, the payments to the subgrantee will be made by the Treasurer.

6.4 ADDITIONAL REPORTING AND CONTRIBUTION REQUIREMENTS

At any moment during the Funding Programme and after the applicant ends its activities, the AUTOASSESS consortium may require additional reporting and/ or contributions beyond those mandatory to release payments. This may be done to respect specific requests of the EC, ensure compliance with internal AUTOASSESS procedures, or to support the promotion of the sub-granted projects. Such request may include, but are not limited to:

- Details on data management practices and origin and use of data by the beneficiaries.
- Information about the implementation and conclusions of the project to develop promotional materials (e.g., videos, success stories).
- Statistics on employees working on the project for the beneficiary.
- Information on planned exploitation/ IP measures.

Additionally, applicants are required to foresee and deliver the following contributions:

- Publish at least one news piece/ feature story on their project and results in a specialised magazine in the maritime, robotics, or similar domain(s).
- Provide an open-access contribution linked to achieved results (e.g. open-source code releases, even if partial, for broader public use).
- Deliver at least one public demonstration of the project and work being developed.
- Demonstrate interest from industrial organisations on the work delivered, formalised through an agreement (e.g. Letter of Interest).

These requirements should be presented and discussed in the application, particularly in section 2 - Ambition & Scalability Potential.

7 WHAT ELSE IS IMPORTANT TO KNOW?

7.1 INTELLECTUAL PROPERTY RIGHTS (IPR)

The work, solutions and results developed belong to the funded third parties. They will remain the sole owners of their respective IPR and retain the IPR for their solutions.

Through the AUTOASSESS Funding Programme, third parties will be provided support to help their solution reach the market and have commercial potential.

Likewise, being beneficiaries of EU funding, it is expected that the third parties contribute with open results, such as open source/ open data contributions, and must make available and known their results, guidelines, and lessons learnt.

Regarding the expert evaluation processes, internal evaluators will be bound by confidentiality rules and the handling of sensitive information established by the AUTOASSESS Grant Agreement.

7.2 ABSENCE OF CONFLICT OF INTEREST

Applicants must not have any actual and/or potential conflict of interest with the AUTOASSESS evaluation and selection process, as well as during the project implementation. Furthermore, applicants cannot be in any way formally/legally connected with AUTOASSESS Consortium partners or its affiliated entities, nor their employees or co-operators under a contractual agreement. All conflicts of interest will be assessed on a case-by-case basis.

7.3 ETHICAL ISSUES

AUTOASSESS complies with fundamental ethical issues particularly those outlined in the “European Code of Conduct for Research Integrity”.

- All applicants must submit a self-assessment ethics questionnaire, available in the Proposal Template.
- If a selected applicant confirms the existence of potential ethical issues, the AUTOASSESSS team will work with the applicant to address such issues.
- The AUTOASSESS team will verify the declaration's consistency with the application contents and may contact applicants to resolve any ethical issues.

- Applications that fail to adequately address ethical issues or inadequately deal with privacy aspects will be rejected.

7.4 DATA PROTECTION

The AUTOASSESS consortium needs to collect Personal and Industrial Data to process and evaluate applications and manage project implementation.

- F6S Network Ireland Limited will act as Data Controller for data submitted through the F6S platform for these purposes. Please see our privacy policy here.
- A Data Protection Officer (DPO) has been appointed by F6S to ensure compliance with data protection regulations, such as the General Data Protection Regulation (GDPR), and that personal data is collected, processed, and stored securely.
- The F6S platform's system design and operational procedures ensure that data is managed in compliance with the General Data Protection Regulation (EU) 2016/679 (GDPR).
- Each applicant will accept the F6S terms to ensure compliance. Please refer to https://www.f6s.com/privacy-policy to review the F6S platform's privacy policy and data security policy.
- Apart from the F6S platform, data will also be stored in the F6S Google Drive and in the project repository (NextCloud), managed DTU (AUTOASSESS Coordinator).
- The AUTOASSESS Consortium must retain generated data until five years after the balance of the AUTOASSSESS project is paid or longer if there are ongoing procedures (such as audits, investigations, or litigation). In this case, the data must be kept until their conclusion.

7.5 CONFIDENTIALITY

The following confidentiality obligations apply:

- Selected applicants must maintain confidential project data, documents, invoices and any other materials (in any form) during the implementation of the activities and for five years after project completion.
- This confidentiality period can be extended by agreement with the EC and the AUTOASSESS Consortium.

- Information shared during the project, whether written or spoken, is only considered confidential if the AUTOASSESS Consortium agrees and confirms it in writing within 15 days.
- Confidential information must only be used for project implementation, unless otherwise agreed upon.
- Any information shared during the application stage will be treated as confidential.

7.6 PROMOTE THE ACTION AND GIVE VISIBILITY TO EU FUNDING

The beneficiary must promote their project and achieved results as well as the AUTOASSESS project by providing targeted information to multiple audiences (including the media and the public) in a strategic and effective manner. It must also highlight the financial support of the EC, including on the official third-party website.

The AUTOASSESS Communication team will guide and support these communication activities to selected beneficiaries.

7.7 CHECKS AND REVIEWS

The EC may, at any time during the implementation of the sub-project and up to five years after the end of the sub-project, arrange for a check and review to be carried out by external auditors or by the EC services themselves, including the European Anti-Fraud Office (OLAF). The procedure shall be deemed initiated on receipt of the relevant letter sent by the EC.

There will be no financial checks, reviews, or audits to check costs, since beneficiaries have no obligation to document the costs incurred for the action. Checks, reviews, and audits will focus on the technical implementation of the action.

8 RELEVANT LINKS AND CONTACTS

The AUTOASSESS Consortium will provide information to the applicants via the F6S page, so that all information (questions and answers) is visible to all participants. No binding information will be provided via any other means (e.g., telephone, or video calls).

- Project website: https://autoassess.eu/
- Open call application form: https://www.f6s.com/autoassess-oc2-tech-innovations/apply
- Contact us: autoassess-opencall@f6s.com
- Online discussion board: https://www.f6s.com/autoassess-oc2-tech-innovations/discuss
- F6S platform support team: support@f6s.com (to be used for issues with the submission, resubmission, access to the platform, etc.)
- Registration for Webinar 1 (Thursday 12 March 2026, 11h00 CET).
- Registration for Webinar 2 (Thursday 2 April 2026, 11h00 CET).

APPENDIX 1. CHALLENGE DESCRIPTIONS

CHALLENGE 1 - SOT-AIDED NDT THICKNESS TOOL FOR A FULLY-ACTUATED AERIAL ROBOT

TABLE 5. CHALLENGE 1 DESCRIPTION

ITEM	DESCRIPTION
Title	SOT-aided NDT Thickness Tool for a Fully-Actuated Aerial Robot
Topics/ Domains	NDT contact-based inspection; aerial physical interaction; soft optical tactile sensors
Challenge Context	To assess the structural integrity of infrastructures, reliable thickness measurements are needed. The quality of the measurements depends on the stability of the contact with the surface. A common solution in the industry is using magnets to dock with metallic surfaces. However, this solution is not viable for all types of materials. Besides, it does not provide information about the contact status, which can be used to minimize the energy consumption by adapting the pushing force. This challenge addresses the integration of a Soft Optical Tactile (SOT) sensor into an NDT end-effector. In the state-of-the-art of fixed-base robotic manipulation, SOT sensors have successfully been used to detect slippage and maintain stable contact. Leveraging such results, the proposed solution will apply the sensor technology to an aerial manipulation task and improve the measurement quality of autonomous robotic inspection by guaranteeing stable contact.
Objectives	The objective is to develop and integrate an NDT end-effector tool equipped with a SOT sensor, such as https://softroboticstoolkit.com/tactip, for stable contact maintenance in aerial physical interaction. The overall objective breaks down into (1) the mechanical design and integration of the SOT sensor into an NDT end-effector for the fully-actuated miniThex provided by the consortium, (2) a software stack compatible with the GenoM-based framework of the miniThex, allowing to use the data stream from the sensor as feedback for stable contact, and (3) the experimental validation.
Specifications/ Integration requirements	The miniThex is a fully-actuated aerial robot developed at the University of Twente and used in the context of the AUTOASSESS project to perform NDT contact-based inspection. An end-effector equipped with sensors for NDT thickness testing has been under development. A User Interface and Autonomy Stack is also under development within the context of the FSTP Call1. The expected result of this challenge is to integrate the SOT sensor in

ITEM	DESCRIPTION
	the under-development end-effector, to enhance its functionality and reliability, by improving the stability of the contact, and to test the integration with the Autonomy Stack using the under-development User Interface.
Alignment with AUTOASSESS	Within the overall AUTOASSESS framework, the miniThex is complementary to the commercial platforms, and is used in comparison with them to showcase the performance improvement obtained thanks to the full-actuation capabilities. For example, the miniThex does not need to pitch to move forward or slide on a surface, which makes the contact more stable. The integration of the SOT sensor will allow to further exploit this distinctive aspect of the miniThex, by providing rich information on the contact status through the images of the soft skin under deformation. Such information can be used to detect sliding, and therefore, to gracefully adjust the platform for contact maintenance, with the minimum energy consumption. Ultimately, the objective of the challenge is to develop the control algorithms to make the integration fruitful at the aim of getting better NDT measurements.
Expected results	The expected results are: (1) SOT data acquisition and processing software with documented and reusable dataset for model-based and model-free identification of the contact status; (2) SOT-based control algorithms for physical interaction, compatible with the GenoM-based miniThex framework; (3) experimental validation showing the reduced energy consumption compared to the original end-effector and repeatable performances in a controlled lab-scenario at the University of Twente, partner in the consortium proposing the challenge; (4) video recorded in the labs of the University of Twente; (5) software documentation; (6) CAD model of the SOT-enhanced NDT EE.

CHALLENGE 2 - REMOTE INSPECTION SUPPORT AND AUGMENTED COLLABORATION BETWEEN ONBOARD AND SHORE-BASED EXPERTS

TABLE 6. CHALLENGE 2 DESCRIPTION

ITEM	DESCRIPTION
Title	Remote Inspection Support and Augmented Collaboration between Onboard and Shore-Based Experts
Topics/ Domains	Remote ship inspections, augmented reality collaboration, robotic inspection platforms, human–robot hybrid workflows, structural monitoring, operational maritime knowledge, classification-compliant reporting, and real-time decision support.
Challenge Context	Inspections of critical ship structures are often constrained by the limited availability of qualified experts onboard, hazardous or confined spaces, and operational schedules. Traditional methods relying solely on onboard surveyors may result in incomplete inspections, delayed maintenance, and increased operational risk. The project addresses this challenge by combining robotic platforms, AR-guided collaboration, and shore-based expert oversight. Leveraging proven experience in remote/ hybrid inspection with robotic assets onboard (at least 1 relevant past project), operational knowledge from experts with onboard survey experience, and alignment with SOLAS, ISM, and class rules, the approach ensures inspections are safe, consistent, and technically precise. The solution builds on prior lessons from other related projects, which have demonstrated the successful deployment of hybrid remote inspection workflows in real operational contexts.
Objectives	The primary objective is to establish a fully functional system enabling remote expert supervision of onboard inspections through real-time AR interfaces and robotic platforms. Specific goals include improving inspection accuracy, enabling expert guidance without physical presence, prioritizing inspection tasks using operational and historical risk data, validating inspection procedures on operational vessels through live demonstrations, where feasible, with a preference for arranging vessel access independently of consortium member support., and ensuring that all outputs meet regulatory and classification requirements. The project leverages SERMAS's experience to ensure workflow maturity, technological readiness, and practical applicability.
Specifications/ Integration requirements	The system must integrate robotic inspection platforms with AR-enabled interfaces that overlay expert guidance and annotations. It requires proven experience in robotic and human hybrid inspection workflows, enabling effective coordination between automated and manual processes. All

ITEM	DESCRIPTION
	outputs must be class-acceptable digital reports, compatible with remote survey protocols (e.g., SOLAS/ISM, RINA Remote Survey), and targeted to meet relevant class requirements; full certification is not required. In-house experts with onboard survey experience must perform remote supervision, and the system must be validated through direct access to operational vessels for live demonstrations. The methodology builds upon prior knowledge, ensuring operational reliability, safety in hazardous areas, and rapid deployability.
Alignment with AUTOASSESS	The project aligns with AUTOASSESS objectives by advancing digital inspection methodologies, integrating robotics and AR into operational workflows, and enabling the safe and remote supervision of ship inspections. It contributes to the standardization of hybrid inspection processes, enhances data-driven decision-making, and promotes operational efficiency and safety in maritime inspections, while leveraging existing technological and operational expertise from SERMAS for immediate applicability.
Expected results	Expected results include a validated remote inspection platform combining AR-guided interfaces and robotic data collection, multi-modal inspection reports, real-time collaboration tools for shore-based experts, and fully class-compliant digital reports. The system will demonstrate improved inspection coverage, reduced onboard expert hours, enhanced safety, and operationally relevant outputs. Field trials will confirm reliability, usability, and adherence to survey protocols/standards, while the workflow ensures replicability and scalability for future vessel inspections.

CHALLENGE 3 – AUTONOMOUS PATROLLING CONCEPTS AND EARLY EVENT DETECTION FRAMEWORKS FOR ENGINE ROOMS

TABLE 7. CHALLENGE 3 DESCRIPTION

ITEM	DESCRIPTION
Title	Autonomous Patrolling Concepts and Early Event Detection Frameworks for Engine Rooms
Topics/ Domains	Autonomous ship monitoring, engine room inspection, robotics, multi-sensor data integration, predictive maintenance, anomaly detection, operational maritime knowledge, safety and regulatory compliance.
Challenge Context	Engine rooms are high-risk, confined spaces where manual inspections are limited by operational conditions, moving machinery, high temperatures, and reliance on human personnel. Delayed detection of critical anomalies such as leaks, overheating, vibration issues, or equipment degradation can compromise vessel safety, reliability, and regulatory compliance. This challenge addresses the need to define, model, and specify autonomous patrolling concepts and early event detection frameworks suitable for engine room environments. The focus is on establishing system requirements, sensor integration strategies, data processing workflows, and operational scenarios that enable reliable anomaly detection, while accounting for maritime operational conditions, safety regulations, and maintenance practices. By leveraging existing relevant operational knowledge, historical degradation patterns, and maritime engineering expertise, the project aims to prepare the groundwork for future autonomous monitoring solutions without requiring full physical deployment at this stage.
Objectives	The primary objective is to design and specify an autonomous monitoring framework capable of supporting continuous patrolling and early anomaly detection in ship engine rooms. The framework will define effective patrol concepts and coverage strategies for autonomous inspection systems operating within the confined and complex environments of engine rooms, ensuring reliable and repeatable monitoring of critical areas. It will specify the integration of thermal, acoustic, vibration, and gas sensing modalities to enable early detection of abnormal conditions and emerging hazards. The framework will also develop data correlation and analysis methodologies that support robust anomaly detection and predictive maintenance, allowing early identification of degradation trends and potential failures. In addition, it will establish safety, regulatory, and operational requirements in alignment with SOLAS, the ISM Code, and established engine room safety standards. Finally, it will prepare validation

ITEM	DESCRIPTION
	methodologies and performance metrics suitable for future testing and demonstration on operational vessels, ensuring the framework can be objectively assessed under real-world conditions.
Specifications/ Integration requirements	The project shall focus on the specification and architectural definition of autonomous monitoring systems rather than their full physical realization. It will define the requirements for autonomous platforms capable of operating reliably in confined and hazardous engine room environments, taking into account space limitations, environmental conditions, and operational risks. The project will specify multi-sensor payload configurations and associated data interfaces to support thermal, acoustic, vibration, and gas sensing for comprehensive condition monitoring. It will also develop data fusion, anomaly detection, and predictive maintenance algorithms based on existing datasets, simulations, and representative test data, rather than newly generated operational data. In addition, the project will identify operational constraints, safety considerations, and compliance requirements derived from relevant engine room safety regulations, including SOLAS Chapter II-2, the IGC Code, the FSS Code, and the ISM Code. Finally, it will prepare validation plans, test protocols, and performance indicators suitable for future field trials, without mandating demonstration on live operational vessels.
Alignment with AUTOASSESS	The project aligns with AUTOASSESS objectives by contributing conceptual architectures, technical specifications, and integration frameworks that support the long-term development of autonomous inspection technologies. It enhances system-level understanding of how multi-sensor data can be combined for predictive maintenance and decision support, while ensuring that future implementations are grounded in maritime operational realities and regulatory constraints. By focusing on specification and framework development, the project strengthens the robustness, safety, and scalability of future autonomous monitoring solutions within the AUTOASSESS ecosystem.
Expected results	Expected results include a comprehensive system architecture for autonomous engine room monitoring, providing a clear and coherent blueprint for future system development. The project will deliver detailed specifications for sensor integration, data processing pipelines, and anomaly detection workflows that support early event detection and predictive maintenance. It will define representative operational scenarios, patrol concepts, and coverage strategies tailored to the constraints and risks of engine room environments. In addition, the results will include

ITEM	DESCRIPTION
	regulatory and safety compliance guidelines applicable to future implementations, ensuring alignment with relevant maritime standards and codes. Finally, the project will produce validation and testing plans suitable for subsequent physical demonstrations and trials beyond the scope of the present work.

CHALLENGE 4 – VESSEL STRUCTURAL CONDITION ANALYSIS AND HOTSPOT IDENTIFICATION VIA DIGITAL REPRESENTATION AND MODELLING FOR ROBOTIC INSPECTION

TABLE 8. CHALLENGE 4 DESCRIPTION

ITEM	DESCRIPTION
Title	Vessel Structural Condition Analysis and Hotspot Identification via Digital Representation and Modelling for Robotic Inspection
Topics/ Domains	Digital twins for maritime applications; hotspot identification; robotic inspection technologies; structural integrity assessment; ultrasonic measurement integration; predictive maintenance; FE/CAD-based vessel modelling; automated inspection workflows; and AI-assisted analysis for maritime safety.
Challenge Context	Currently, the inspection of vessels is performed by expert surveyors who visually assess the condition of the vessel as well as corrosion spots. According to classification societies' regulations and IMO's rules, condition assessment of vessels requires at a minimum the inspection of specific points on the vessel, which become more numerous and more detailed as a vessel ages. Currently, the inspection of vessels is performed by expert surveyors who visually assess the condition of the vessel as well as corrosion spots. According to classification societies' regulations and IMO's rules, condition assessment of vessels requires at minimum the inspection of specific points on the vessel, which become more numerous and more detailed as a vessel ages. The classification societies' regulations rely on statistical analyses on theoretical structural models that do not accurately reflect any specific real vessel condition, because empirical inspection data, historical corrosion progress, and operational knowledge are often not integrated. This challenge seeks to address these limitations by enabling the creation of a continuously updated, operationally proven digital twin that merges real onboard inspection data with existing CAD ship models and Finite Element Modelling - FEM (and Finite Element Analysis - FEA) which will lead to better informed inspection targets.
Objectives	The primary objective is to develop a digital twin that accurately represents the vessel's structural condition by consolidating archival FEM/CAD data, prior UTM records, historical inspection documentation, and live robotic measurements. This will in turn enable the identification of inspection hotspot that can be prioritized for robotic inspection.

ITEM	DESCRIPTION
	The solution aims to integrate several modalities: (e.g., visual, thermal, and ultrasonic data) collected through advanced inspection platforms and to interpret these outputs using class-approved maritime engineering expertise. This ensures that evaluations reflect actual structural degradation rather than theoretical approximations. Specific objectives include continuously updating the digital twin with certified UTM measurements, enhancing predictive maintenance through structural simulations and scenario analyses, optimizing inspection planning, and validating the system through shipboard trials on operational vessels. All objectives support the creation of a decision-support tool that ship operators, class societies, inspection personnel and robotic inspection systems can reliably use.
Specifications/ Integration requirements	Here are the specifications for the project: • Access to real vessel archives, including FEM models, CAD representations, historical UTM datasets and shipyard collaboration data, ensuring that the digital twin is grounded in authentic structural information. • Access to operational vessels, enabling practical assessment and refinement under real conditions via shipboard verification trials. • The consortium shall have track record of shipboard structural surveys, preferably supported by strong experience in UTM and confined-space inspections across various vessel types using ship-grade commercial instruments as well as visual inspection. • Maritime engineering teams with class-approved experience to validate structural outputs and ensure their compatibility with classification rules are preferred. • Prior deployment in EU-funded projects focused on maritime inspection automation is preferred.
Alignment with AUTOASSESS	This challenge aligns with AUTOASSESS by advancing the use of digital twins to integrate robotic inspection data, historical models, and AI-driven analysis for identifying structural hotspots, thereby enhancing autonomous exploration, comprehensive inspection with NDT, defect detection, and decision support systems to improve safety, accuracy, and efficiency in GNSS-denied maritime environments.

ITEM	DESCRIPTION
Expected results	The project should deliver a functional digital twin framework capable of generating/merging FE/CAD models, robotic inspection data, certified UTM measurements, and predictive analytics. It should provide: • Automatic hotspot identification tools, • Scenario-based predictive models, • Preferably, structural condition reports. The results will reduce inspection risks, improve hotspot prioritization, and support better decision-making for operators, class societies, and asset owners. The outcome is a more accurate, scalable, and empirically grounded inspection process.

CHALLENGE 5 – COMBINED QUALITATIVE AND QUANTITATIVE ASSESSMENT OF STRUCTURAL INTEGRITY USING IMAGING AND MEASUREMENTS

TABLE 9. CHALLENGE 5 DESCRIPTION

ITEM	DESCRIPTION
Title	Combined Qualitative and Quantitative Assessment of Structural Integrity Using Imaging and Measurements
Topics/ Domains	Visual Inspection; Ultrasonic measurements; Expert Knowledge; Deep Learning Corrosion Detection; operational maritime assessment; corrosion analysis; classification-compliant reporting systems; and repair specification generation.
Challenge Context	Currently, the inspection of vessels is performed by expert surveyors who visually assess the condition of the vessel as well as corrosion spots. According to classification societies' regulations and IMO's rules, condition assessment of vessels requires both visual inspection and thickness measurements (typically with ultrasonic sensors). However, there exists a persistent separation of visual and quantitative data streams during ship inspections. Visual imagery can identify and measure surface-level defects but lacks depth information, while ultrasonic and sensor-based numerical measurements fail to capture contextual or spatial correlations of defects. This fragmentation leads to incomplete evaluations, missed degradation patterns and operational inefficiencies, especially in hazardous or hard-to-access spaces such as ballast tanks and confined compartments. Even in the case of the AUTOASSESS solution where Deep Learning is used to detect defects in images, the training dataset is based on annotations of the visual data. Additionally, while the AUTOASSESS project performs automatic thickness measurements, the extent of measured spots is limited by the robot flying time and, therefore, prioritization of "hotspots" with respect to severity is necessary. The proposed solution should introduce a unified methodology that merges visual and ultrasonic datasets, supported by real operational expertise and long-term historical records, ensuring that assessments are both technically accurate and operationally meaningful.
Objectives	The objective is to infuse human expert knowledge in a unifying structural assessment framework that integrates long-term visual and thickness measurements. The framework should generate detailed condition maps, identify high-risk zones using operational knowledge and validate the methodology against historical data and real-world vessel conditions.

ITEM	DESCRIPTION
	This work will ensure that assessments reflect actual degradation behaviour and provide actionable maintenance guidance, grounded in practical maritime experience.
Specifications/ Integration requirements	Here are the specifications for the project: • Considerable historical data per vessel (e.g.: 5 years) including visual and UTM logs • Full implementation of ultrasonic and visual data fusion using ship-grade commercial instruments • Output corrosion zones, thickness maps and potentially and intervention methods • Since we need to infuse human expert opinions, include operational domain knowledge from experts (e.g., naval architects) with experience in shipyards and repairs, excluding purely software-driven approaches • Inspection capability in ballast tanks and hazardous spaces, supporting data collection in corrosive and constrained environments • Investigate class-standards (e.g., IACS UR-Z10)
Alignment with AUTOASSESS	This challenge aligns with the AUTOASSESS vision by enhancing the integration of visual inspections and ultrasonic thickness measurements through expert-infused machine learning, enabling defect detection across vessel ages and environments. It works in the direction of unified digital twins with actionable maps, trend analysis, and class-compliant reports, while prioritizing hotspots for efficient autonomous NDT in confined spaces, ultimately advancing repeatable, beyond-human structural integrity assessments for maritime vessels.
Expected results	The project should deliver a unified inspection methodology capable of producing multi-layered condition assessments that merge visual and ultrasonic insights. It should provide: • Degradation maps, • Structural anomaly classifications, • Trend-based evaluations, • Condition reports targeting class surveyors, The results will reduce missed defects, enhance prediction accuracy, and support informed decision-making for operators, class societies and shipyards. The outcome is a significantly more reliable, efficient and operationally relevant inspection process.

CHALLENGE 6 – NDT-MINI: ULTRA-LIGHTWEIGHT, LOW POWER (<10W) ACFM/ECT SENSOR FOR AUTONOMOUS DRONE INSPECTION

TABLE 10. CHALLENGE 6 DESCRIPTION

ITEM	DESCRIPTION
Title	NDT-MINI: Ultra-Lightweight, low power (<10W) ACFM/ECT Sensor for Autonomous Drone Inspection
Topics/ Domains	Non-Destructive Testing (NDT), Drone/UAV Systems, Asset Integrity Management, Maritime Inspection, Sensor Miniaturization, Advanced Electromagnetics (ACFM/ECT).
Challenge Context	The visual mapping and drone-based inspection of ballast tanks as envisioned in the AUTOASSESS project are guaranteed to find crack-like indications (CLIs). These CLIs could be minor paint defects or serious structural cracks. This critical distinction cannot be made using the thickness measurement tools envisioned so far, compromising the goal of a fully drone-based inspection solution. This challenge addresses this by driving radical instrument and sensor miniaturization and simplification to enable autonomous, reliable, and standardized aerial NDT inspection for definitive crack assessment. The primary challenge in using drones for detailed crack detection is the excessive weight, power consumption, and complexity of conventional NDT instruments (e.g., typical ACFM/MFL systems weigh several kilograms and lack simple interfaces). This prevents integration onto small, high-endurance industrial UAVs essential for inspecting complex maritime and industrial structures. Additionally, it requires integration not only with drones but also with compact magnetic crawlers, which are essential for close-contact NDT in vertical, overhead, or highly confined areas where drones cannot reliably maintain a stable standoff distance. The solution must also operate within the constraints of maritime rules and regulations set by classification societies (DNV, ABS, LR) and IMO guidelines related to Remote Inspection Techniques, electromagnetic emissions, and intrinsic safety.
Objectives	General Objective: To successfully design, prototype, and validate the NDT performance of a field-ready, USB-C powered, dual-mode ACFM/ECT NDT instrument + sensor payload, targeting ~200 g for drone-optimized versions Specific Objectives: • Develop an ACFM/ECT sensor and electronics package with a total mass compatible with mobile robotic deployment, targeting ≤ 1 kg overall and pursuing further weight reduction toward ~200 g for drone-optimized versions where feasible.

ITEM	DESCRIPTION
	• Achieve reliable operation and data output via a single 5V USB interface or other appropriate drone-compatible power supply solution. • Demonstrate the ability to detect representative surface-breaking defects on steel structures, with a target sensitivity approaching cracks of approximately 0.5 mm depth and 5 mm length, using ECT and/or ACFM modes under controlled validation conditions. • Evaluate and aim to maintain stable detection performance at practical sensor lift-off distances up to ~2 mm, representative of typical coating or surface conditions. • Ensure mechanical and data-interface compatibility with magnetic crawlers for surface-following or contact inspections. • Consider applicable maritime inspection practices and relevant electromagnetic compatibility and regulatory requirements, with the objective of facilitating future certification and operational acceptance (e.g., RIT or equivalent).
Specifications/ Integration requirements	• Sensing Modes: Must be compatible with ACFM and standard ECT modes. • Integration: The physical form factor must be minimal and robust, suitable for integration onto small-scale, collision-tolerant inspection drones (e.g., Scout 137, Flyability Elios 3, or similar industrial platforms). Requires an established digital communication protocol over USB for integration with the drone's on-board computer. An Ethernet, USB or other appropriate interface would also be suitable. Must also support integration with compact magnetic crawlers, including low-profile mounting options and stable sensor lift-off under crawler motion. The system shall conform to maritime operational and safety requirements applicable to onboard inspection tools.
Alignment with AUTOASSESS	The solution provides a critical hardware enabler for autonomous integrity assessment. It aligns with AUTOASSESS by: • Standardization: Offering dual-mode NDT (ACFM/ECT) from a single standardized unit, supporting diverse material inspections. • Automation: The low SWaP (Size, Weight, and Power) constraints are fundamental to achieving long-endurance, autonomous flight profiles. • Digitalization: Simplifies data acquisition via a standard digital interface (USB-C or ethernet), facilitating seamless integration with

ITEM	DESCRIPTION
	centralized data processing and digital twin platforms being developed within the project. • It also enables ground-based inspection via crawlers, extending autonomous coverage beyond what drones alone can achieve. Furthermore, its design considers maritime regulatory frameworks that govern the acceptance and deployment of Remote Inspection Techniques, increasing the likelihood of classification society approval.
Expected results	• Validated ACFM/ECT Sensor Prototype: A physical, working payload prototype meeting all weight, power, and performance specifications. • Performance Validation Report: Data and analysis demonstrating successful crack detection on steel and non-ferromagnetic materials, including lift-off tolerance tests. • Principle demonstration of dual-platform compatibility (drones + crawlers) and documentation of compliance considerations with maritime inspection standards.

CHALLENGE 7 – GRAPHICAL USER INTERFACE FOR UAS

TABLE 11. CHALLENGE 7 DESCRIPTION

ITEM	DESCRIPTION
Title	Graphical User Interface for UAS
Topics/ Domains	Cargo Halls, Ballast Water Tanks, and Computer Vision
Challenge Context	AUTOASSESS aims to enable end-to-end autonomous ship inspections using unmanned aerial systems (UAS). While a high degree of autonomy is targeted, regulatory constraints require that a human operator remains in a safe location and supervises the inspection drone through a dedicated interface. This interface must allow the operator to monitor sensor health and data streams, and to initiate high-level missions such as inspection, exploration, or Non-Destructive Testing (NDT). Within AUTOASSESS Work Package 7 (WP7), a user interface and cloud-based backend are being developed to support high-level mission planning, visualization of raw and post-processed inspection data, and advanced analytics. However, the mission execution capability originally envisaged in Task 7.4 is not yet addressed. As a result, a critical gap remains between mission planning and reliable execution in real industrial environments. To achieve the overall project ambition of enabling users to plan, execute, and analyse UAS-based inspection missions in an integrated and seamless manner, an external, specialized mission execution solution is required. This solution shall (i) ingest mission plans generated by the AUTOASSESS UI-DSS, (ii) safely execute these plans on heterogeneous UAS platforms under real-world industrial conditions, and (iii) provide continuous feedback of mission status, telemetry, and results to the AUTOASSESS ecosystem. This challenge therefore targets startups and SMEs with demonstrated expertise in UAS mission control, autonomy, and real-time robotic systems, to design and implement a robust mission execution layer that complements and integrates with the AUTOASSESS UI-DSS and cloud backend.
Objectives	General Objective The overall objective is to design, implement, and demonstrate a robust, vendor-agnostic mission execution framework that enables reliable execution of UAS-based inspection missions. The framework shall execute mission plans generated by the AUTOASSESS UI-DSS, be fully integrated

ITEM	DESCRIPTION

	with the project's cloud backend and industrial digital twin, and support deployment in real industrial inspection scenarios.
	In parallel, the project aims to deliver a high-TRL operator interface that provides full control and situational awareness to a supervising operator during inspection and exploration missions, in line with regulatory and safety requirements.
	Specific Objectives
	To achieve this goal, the following specific objectives are defined:
	• Define and implement a clear and extensible mission execution API and data contract enabling seamless interaction between the AUTOASSESS UI-DSS, the cloud backend, and on-premise or edge-based mission execution components.
	• Develop a mission execution service capable of:
	  ○ Receiving high-level mission plans expressed in the agreed mission definition format,
	  ○ Translating these plans into UAS- and autopilot-specific commands,
	  ○ Managing mission lifecycle actions (start, pause, resume, stop, and abort), and
	  ○ Providing real-time mission status, health indicators, and telemetry.
	• Integrate the mission execution engine with one or more UAS platforms used in the AUTOASSESS pilot demonstrations, covering heterogeneous platforms and, where feasible, different vendors and autopilot stacks.
	• Expose mission execution state, logs, and outcomes to the AUTOASSESS data infrastructure, including Cognite Data Fusion and the industrial digital twin, enabling downstream visualization (Task 7.5) as well as historical analysis and predictive capabilities (Task 7.6).
	• Design and validate a high-TRL operator interface that supports supervisory control, mission monitoring, and situational awareness throughout inspection and exploration missions.
	• Ensure safe, secure, and regulation-aware operation of the mission execution framework, including basic fail-safe mechanisms, secure communication, and comprehensive audit logging suitable for industrial inspection and certification contexts.

Specifications/ Integration requirements	**Specifications and Integration Requirements** The proposed solution shall comply with the following minimum technical and integration requirements to ensure seamless interoperability within

ITEM	DESCRIPTION
	the AUTOASSESS ecosystem and successful validation within the project timeframe. Mission Execution and Backend Integration • Consume mission plans generated by the AUTOASSESS UI-DSS using a shared and formally defined mission specification. The mission definition format (e.g. JSON or Protobuf schema) shall be jointly defined and agreed with WP7 partners. • Provide well-defined, documented, and extensible APIs for mission submission, control, and monitoring. Supported interaction paradigms may include REST, gRPC, and/or event-based interfaces, enabling flexible integration with cloud and edge components. • Support integration with Cognite's existing robotics solutions and Cognite Data Fusion platform, including the ability to write mission execution state, telemetry, logs, and relevant metadata into the industrial digital twin for traceability, visualization, and analytics. • Enable human-in-the-loop operation, allowing operators to review and approve mission execution, receive alerts and notifications, and intervene when required via the AUTOASSESS UI-DSS. • Be designed, implemented, and validated within the 9-month funding period, with clearly defined milestones covering system design, prototype implementation, integration, and pilot-scale demonstration. • Operator Interface (GUI) Requirements • The graphical user interface shall support high-TRL supervisory operation and situational awareness, and at a minimum provide the following capabilities: • Display real-time system health information, including battery status and the operational state of all onboard sensors. • Visualize sensor outputs, such as live or recorded camera streams and other relevant inspection data. • Display navigation and perception outputs, including reconstructed maps, odometry, and semantic information where available. • Allow the operator to initiate and supervise different mission types, including inspection and exploration missions, and to intervene in mission execution when necessary, by with the capabilities pause, continue and return home.
Alignment with AUTOASSESS	The goal of this challenge is to develop an intuitive, user-friendly GUI for human operators. Integrating an advanced interface enhances the

ITEM	DESCRIPTION
	effectiveness of AUTOASSESS by increasing flexibility and mission control capabilities during real operations.
Expected results	By the end of the 9-month project duration, the following results are expected to be delivered and demonstrated (to be adapted as appropriate within the proposal): • A fully functional mission execution engine integrated with the AUTOASSESS UI-DSS and cloud backend, demonstrating an increase in Technology Readiness Level (TRL) compared to the initial starting point, and validated in a relevant industrial or industrial-like environment. • Well-defined and documented APIs and data models for mission ingestion and control, including a formal specification of the mission definition format and representative example payloads. • Demonstrated integration with one or more UAS platforms relevant to the AUTOASSESS pilot use cases, supported by test reports, validation results, and a performance assessment of mission execution capabilities. • Mission execution status, logs, and telemetry persistently stored within the AUTOASSESS data environment, enabling downstream visualization, analysis, and analytics workflows. • Demonstration and dissemination material showcasing the developed solution, including recorded videos of mission execution in AUTOASSESS-relevant scenarios and a concise technical presentation describing the architecture, integration, and achieved results.

CHALLENGE 8 – OPEN CHALLENGE

TABLE 12. CHALLENGE 8 DESCRIPTION

ITEM	DESCRIPTION
Title	Open Challenge
Topics/ Domains	Autonomous Robotic Inspection, Autonomous Navigation in GNSS-denied Confined Spaces, Domain Adaptive and Probabilistic Deep Learning, Digital Twin, Historical Defect Evolution, Decision Support, *others related to AUTOASSSES and justifiable*
Challenge Context	Applicants are invited to submit an application for a project/ solution that is not covered by the other open call challenges. The application should demonstrate that it is providing something that the AUTOASSESS project is missing, but that is aligned with the problem and solutions offered by the project: employing robot-driven surveillance of marine infrastructures obtaining an accurate, repeatable, and quick vessel inspection. It is expected that a minimum of two Open Challenge projects be funded in this call.
Objectives	Objectives are to be set by the applicant but must respect the guidance defined in the Challenge context and additional requirements.
Specifications/ Integration requirements	The minimum requirements are: 1. Solution should achieve a minimum TRL 7 by project end. 2. Solution should be integrated and tested in real-world conditions. 3. Items 1 and 2 should be properly justified in the proposal document submitted with the application.
Alignment with AUTOASSESS	Applicants should consult the project website for information on alignment with AUTOASSESS.
Expected results	Results are to be defined by the applicant in their proposal, but solution should achieve a minimum TRL 7.

RELEVANT OPEN CALL DEFINITIONS

TABLE 13. ACRONYMS & DEFINITIONS

Acronym	Explanation/ Definition
AWU	Annual Work Unit
EC	European Commission
FSTP	Financial Support to Third Parties
SME	Small and Medium Sized Enterprise
ESR	Evaluation Summary Report

TABLE 14. TERMS & DEFINITIONS

Term	Definition
Applicant(s)	The legal entity or group of legal entities that intend(s) to submit or has submitted an application to the Open Call.
Application Eligibility Criteria	Criteria used to assess if an application can be considered for the open call. Possible values (*Yes/No*).
Application Eligible or Non-Eligible	Application that is or is not compliant with eligibility criteria.
Application Timestamp	Timestamp of the final submission of an application. If the application is reopened and resubmitted the last date will be considered.
Bank Account Information	Form where the beneficiary provides information of the bank account to which payments will be made during the project implementation.
Beneficiary, third-party, or sub-grantee	An entity or a consortium that applies to the open call that was accepted to be funded, and has/have signed, or are in the process of signing, a sub-grant agreement.
Consortium	Set of legal entities that are cumulatively responsible to implement the project as defined in the Grant Agreement signed with the European Commission.
Consortium Declaration of Honour (CDoH)	Declaration where the applicants/ beneficiaries, participating as a consortium, declare they accept all conditions of the open call, acceleration process & programme; and agree - if applicable - on budget share. One CDoH is required for each sub-granted project.
Contract Deadline	Date and time until when the selected entities need to provide contractual information.
Declaration of Honour (DoH)	Declaration where the applicant/ beneficiary declares they accept all conditions of the open call, acceleration process & programme. One DoH is required for each applicant/ beneficiary.
F6S Application Form	Application form available in F6S Platform. For AUTOASSESS: https://www.f6s.com/autoassess-oc2-tech-innovations/apply
F6S Platform	Platform provided by F6S.

Term	Definition
FSTP	Financial support to third parties: payments made to entities that are not members of the consortium.
FSTP – Lump Sum	Payment made to the third party based on the achievement of a milestone.
Internal evaluation committee	Group of appropriately qualified persons of the consortium partners that are assigned the responsibility of performing evaluations or reviews at any stage of the open call implementation or programme.
Mentor	Person from the consortium that works closely with the beneficiary to foster communication with the consortium and assess progress of the project.
Open Call	Competitive process to access a (Funding) Programme.
Open Call and Programme deadlines	The project has planned the programme carefully, but unexpected things can happen. The application deadline is fixed and will only change if something unforeseen occurs. Other dates, including of the programme, are flexible and may be adjusted as needed, and communicated to all applicants.
Open Call close date	Date and time when applications close.
Open Call selection prioritisation	Rules used to order applications.
Proof of Legal Existence	Company/ organisation register, official journal or other official document showing the name of the organisation, the legal address and registration number; copy of a document proving VAT registration (in case the VAT number does not show on the registration extract or its equivalent).
Proof of SME Status	Proof of the SME condition is required: • If the applicant has been fully validated as an SME on the Beneficiary Register of the EC Participant Portal, the PIC number must be provided. • Provision of the signed (with a valid e-signature) SME Declaration (Annex 6): in the event the beneficiary declares being non-autonomous, the balance sheet and profit and loss account (with annexes) for the last period for upstream and downstream organisations is required. A Status Information Form may be requested, which includes the headcount (AWU), balance, profit & loss accounts of the latest closed financial year and the relation, upstream and downstream, of any linked or partner company. • Supporting documents: In cases where either the number of employees or the ownership is not clearly identified: any other supporting documents which demonstrate headcount and ownership such as payroll details, annual reports, national regional, association records, etc.
Reserve List	Eligible applications that were not selected for funding which can be invited in case selected applications do not provide contractual data.
Schedule for payments to Beneficiaries	All payments to beneficiaries are dependent on the successful review of deliverables/ reports at the end of each stage, and reception by the consortium of the corresponding payment request.

Term	Definition
	All payments will be made with undue delay preferably no later than 30 calendar days after the reception of the financial statement (unless otherwise defined in the sub-grant agreement).
Score, Expert	Unless otherwise stated, experts will score each criterion with marks between 0 and 5. Half point scores are not given. Score values will indicate the following assessments for the criteria: • 0: Fail. The application fails to address the criterion under examination or cannot be judged due to missing or incomplete information. • 1: Very poor. The criterion is addressed in an unsatisfactory manner. • 2: Poor. There are serious inherent weaknesses. • 3: Good. While the application broadly addresses the criterion, there are significant weaknesses that would need correcting. • 4: Very Good. The application addresses the criterion well, although certain improvements are possible. • 5: Excellent. The application successfully addresses all relevant aspects of the criterion in question. Any shortcomings are minor.
Score, Per Committee	When the evaluation is made by a committee, the average score of each criterion is rounded to the nearest point or half point (1, 1.5, 2, …, 4, 4.5, 5), before computing the overall score. Overall score is the sum of the scores of each criterion rounded to the nearest integer value.
Selected application	Application that was selected to participate in the Funding Programme.
SME	An incorporated enterprise that complies with the rules defined by the European Commission to be qualified as an SME
SME – Autonomous Enterprise	An autonomous enterprise is not a partner with or linked to another enterprise
SME – Linked Enterprise	Linked enterprises are those that form a group through the direct or indirect control of the majority of voting rights of an enterprise by another or through the ability to exercise a dominant influence on an enterprise.
SME – Partner Enterprise	The enterprise holds a minimum of 25% (Capital or voting rights in another enterprise, or 25% (Capital or voting rights) are owned by another enterprise.
SME Declaration Form	Declaration where the SME status is assessed.
Sub-grant Agreement	Signed between the Project Consortium, represented by its Coordinator and the beneficiary (sub-grantee). The sub-grant agreement will also include the comments (if any) of the application's ESR to the work plan.