

RFI:

RFI-ACT-SACT-25-07-Maritime Autonomous Systems Capabilities

Reference:

Q&A #1

Date of Issue:

1/10/2025

The following questions were raised with respect to subject **RFI-ACT-SACT-25-07-Maritime Autonomous Systems Capabilities**. Responses are to provide clarification.

Questions	Responses
1. Are only small drones considered in the framework of that RFI?	We are looking for UAV systems that can be considered as Class 1 systems.
2. Would it be possible to participate only to the aerial component or would we have to subcontract underwater and surface components too?	You can choose to participate only for the aerial component, but priority will be given to providers that can provide the full spectrum of the requested capabilities.
3. Would we have to be able to operate both in Mediterranean and Baltic areas or would it be possible to operate only in the Mediterranean part?	The systems will need to be able to operate in the area of responsibility of NATO.
4. Would we have to be able to operate both in Mediterranean and Baltic areas or would it be possible to operate only in the Mediterranean part?	The systems will need to be able to operate in the area of responsibility of NATO.
5. Is it only possible to operate within a fleet	Systems need to be able to operate independently and optionally in a fleet/swarm configuration.
6. What is the estimated full-service leasing cost per year for a fleet of 3 small UAV (non attritable)" Is here meant a system using 3 UAVs or 3 completely independent Unmanned Air Systems?	The control of the UAV may be integrated in a single control system, but each UAV needs to be controlled individually.
7. Over what length of time would the lease be required	This is an RFI so unknown currently.
8. . Classified Information. NATO information that is CLASSIFIED is not included herein but can be passed to authorized Industry and Academia recipients with appropriate clearances and control measures. How can we request access to the information referenced in this information?	For the moment, there is no additional information that was not published due to classification limitations.
9. Cost Assessment". It is understood that six events will be conducted annually, and the annual leasing cost is being	This is an RFI so unknown currently.

requested. Significant cost reductions are possible with a multi-year lease for non attritable USVs. What duration should we assume for the lease of non attritable USVs?	
10. Please clarify the definition of a “small UAV”, is it Class 1 – Small (15kg to 150kg) in accordance with STANAG 4670 – ATP-3.3.7?	We consider for this RFI only UAV of Class I, systems less than 150 kg.
11. Please clarify your interest in UAVs that are larger than “small” (as defined as Class 1 – Small (15kg to 150kg) in accordance with STANAG 4670 – ATP-3.3.7), for example, ~200kg.	We consider for this RFI only UAV of Class I, systems less than 150 kg.
12. Annex A, “1. Capability Overview”, Question 11. Please clarify if the systems required to be integrated would form a part of the service provision.	We are in a first priority looking at suppliers that can provide both the systems and integrate them where needed.
13. Please indicate the number of years for which the service will be required.	The lease period would be ONE year with potential for two optional years.
14. Please define the initial contracting period, i.e. target start and end date of the period.	This is unknown currently.
15. Please clarify if the destroyed attritable assets need to be recovered.	Destroyed assets will have to be recovered as much as possible to reduce environmental impacts.
16. What are the primary objectives and expected outcomes of the Maritime Autonomous Systems project?	See 3.2 in the RFI. We want to facilitate training with and against MAS.
17. Can you provide more details on the specific capabilities that NATO is looking to develop in the maritime domain?	The capabilities we are looking for are explained in the annex A.
18. How will the responses to this RFI influence future procurement decisions or capability development within NATO?	This RFI will assist in assessing market dynamics and identify qualified suppliers and clarify, refine procurement requirements, which will guide decision making as to whether NATO will proceed to RFP.
19. What criteria will be used to evaluate the submissions received in response to this RFI?	This is a request for information, and answers will be used to give ACT a better understanding of the industry capabilities in this field. There will be no evaluation of responses.
20. Are there any specific technologies or methodologies that NATO is particularly interested in exploring?	We are interested in learning more about autonomous capabilities of the current available systems and optional swarming capabilities.

21. What is the anticipated timeline for the next steps following the RFI submission deadline?	HQ SACT will review responses and if there are any questions HQ SACT will contact suppliers.
22. What specific operational roles are envisioned for Unmanned Surface Vehicles (USVs) within NATO's maritime strategy?	The roles we are looking for are explained in Annex A.
23. Are there particular performance metrics or capabilities that NATO expects from USVs (e.g., endurance, payload capacity, autonomy)? What level of modularity and adaptability is supported for future upgrades?	We are looking for future proof systems that can operate in a modular way and easily be upgraded.
24. Is there a focus on interoperability with USV systems of allied nations, and if so, what standards or protocols are being considered?	For the role of OPFOR, there are no interoperability requirements.
25. Can you provide insights into any ongoing experiments or trials involving USVs that NATO is currently conducting?	Planned exercises and experiments are communicated by the relevant NATO entities on their public websites.
26. What testing and validation methods that NATO expects for assessing USV performance under operational stress scenarios?	MAS will be used to facilitate training for maritime NATO capabilities. These forces will be evaluated following the existing NATO training standards.
27. What specific operational scenarios are prioritized for MAS deployment? (Ref: Section 3.1 - Vision)	MAS will be used as an opposing force for training.
28. What are the main evaluation criteria for MAS capabilities? (Ref: Section 3.3 - Capability Requirements)	Evaluation criteria is not applicable, as this is a RFI.
29. What collaborative models are envisioned for industry participation? (Ref: Section 2.1 - Collaboration Framework)	A possible collaboration framework will be determined based on the feedback from industry for this RFI.
30. How will intellectual property and data-sharing agreements be structured? (Ref: Section 4.15 - Proprietary Information)	This is not applicable as this is an RFI. If you would like to review HQ SACT General Terms & Conditions, please visit https://www.act.nato.int/wp-content/uploads/2024/03/HQ-SACT-General-Terms-and-Conditions-2024.pdf
31. What timeline is expected for phased development and testing? (Ref: Section 4.7 - Response Date)	This is an RFI so unknown.
32. What level of autonomy is expected (as a distinctive feature) for MAS operations? (Ref: Document 43 - Autonomy Considerations)	For the use of the MAS as OPFOR, autonomy is optional, and systems need to remain under human control.

33. How should communication disruptions or GPS loss be handled operationally? (Ref: Document 43 - Autonomy Considerations)	We are interested in learning about Industry capabilities and procedures to deal with a loss of communication or localisation capabilities.
34. What environmental and operational constraints must be considered? (Ref: Document 43 - Operational Use Considerations)	MAS need to operate in the NATO AOR.
35. What integration standards (e.g., STANAG) are required for compatibility with NATO systems (manned, unmanned, C2, non-C2)? (Ref: Document 43 - Operational Use Considerations)	For the role of OPFOR, there are no interoperability requirements.
36. What auxiliary support systems are needed for MAS deployment and sustainment? (Ref: Document 43 - Auxiliary Equipment)	NATO will be guided by suppliers and their suggestions.
37. What expectations are there for industry-provided training and operational support? (Ref: Document 43 - Personnel Requirements)	Industry needs to be able to project, deploy, operate and maintain the systems.
38. How should sustainment and lifecycle management be structured for MAS fleets? (Ref: Document 43 - MAS Sustainment & Use)	NATO will be guided by suppliers and their suggestions.
39. What logistical requirements and lead times apply for deployment in specified regions? (Ref: Document 43 - Deployment Logistics)	Industry will be informed at least 3 months in advance of training events and their location. Industry is responsible for transport, customs, storage and all other related activities.
40. What scalability options should be factored into MAS fleet planning? (Ref: Document 43 - Scalability)	We are looking for solutions that have the potential to scale up when needed. The quantities mentioned in Annexe A are the most relevant for now.
41. What are the cost structures for leasing different configurations of MAS fleets? (Ref: Document 43 - Cost Assessment)	The goal of the RFI is to better understand what options Industry can propose.
42. How should attritable vs. non-attritable systems be factored into financial planning? (Ref: Document 43 - Cost Assessment)	Attritable systems will have to be replenished, based on the consumption rates mentioned in Annex A.
43. What contractual frameworks support phased delivery and upgrades? (Ref: Document 43 - Legal Considerations)	Assets will remain under control of Industry and used for training events. Upgrades are not part of the current requirement.
44. UUV (Unmanned Underwater Vehicle) is general description. AUV (Autonomous Underwater Vehicle), ROV (Remotely Operated Vehicle), Gliders are all under this description. Which system is exactly pointed in the RFI?	We are looking at the broad spectrum of MAS, all these systems can all be included in the RFI.

45. What will be the main warfare area for the UUVs? (e.g. ASW, MCM)	UUV will be used as OPFOR for NATO Maritime capabilities.
46. Which payloads are required for the UUVs? (e.g. SSS (Side Scan Sonar), SAS (Synthetic Aperture Sonar), ASW Training Module, FLS (Forward Looking Sonar), MBES (Multi-Beam Echo Sounder), Thin Array etc.)	UUV will be used as OPFOR for NATO Maritime capabilities and will have to be able to navigate safely.
47. Is there a limit for the UUV dimensions (Length, weight etc.) & operating depth?	No
48. Is it planned to have swarm capability for UUVs?	No
49. What will be the main warfare area for the USVs? (e.g. ASW, ASuW, MCM, ISR, Fast Target etc.) What type of composition is envisioned for a USV Task Unit?	Anti Surface Warfare. Composition types will be defined in the scenario for the training.
50. What are the limits for the USV dimensions, weight & min/max speed (for non-attributable & attributable)?	USV should be as small as possible to reduce observability by NATO forces.
51.	
52. Is there any desired Sea State limit for the use of USVs? This will affect the design and the dimensions of the systems.	USV's should be able to operate with a sea state of 4-5 (moderate to rough seas)
53. Is there a maximum USV RCS level expected? Is there any IR signature requirement?	We seek solutions with a RCS & IR signature that is as low as possible. There are no maximum levels.
54. What type of autonomy level expected (fully autonomous, remote controlled etc.) for which type of USV (if it is considered)? (e.g. Remote Control for Fast Surface Target USV, fully or semi-autonomous for ASW USV)	Autonomy is not considered for the moment.
55. What is the limit of simultaneous number of USVs for operations? Is it planned to have swarm capability for USVs?	The maximum amount of simultaneous assets is explained in Annex A
56. Is there any desired control center structure (e.g. mobile portable bag type, containerized, building/HQ for UxVs etc.)?	Industry will have to determine which capabilities they need to support & control the MAS fleet
57. Is there a need to operate USVs as simulator of anti-surface missiles and other RF/ IR / Laser seeker threats?	This is an optional requirement that would provide more realism to the training.
58. What type of UAVs does NATO require (for non-attributable & attributable)? (VTOL (Vertical Take Off and Landing)/STOL (Short Take Off and Landing), FPV (First Person View), Loitering munition type etc.)	All types of UAV can be considered for this RFI.

59. Is there a limit for the UAV dimensions & speed (for non-attributable & attributable)? (Length, weight etc.)	Class 1 (less than 150 Kg)
60. Which payloads are required for the UAVs (for non-attributable & attributable)?	Navigation & communication.
61. Is there a maximum UAV RCS level expected?	No
62. What type of autonomy level expected (fully autonomous, remote controlled etc.) for which type of UAV?	Remote control is required, autonomy is optional
63. Will there be any weapon payload on UxVs?	No
64. Are there any pre-planned locations for UxVs in Med/Baltic Seas? (e.g. Italy & Poland)	No
65. Is there a specific protocol for the UxVs to communicate with NATO systems? (e.g. STANAG 4817 CATL or STANAG 5518 JREAP etc.)	For the role of OPFOR, there are no interoperability requirements.
66. Can firms give industry solutions only for UUV/USV systems or should it be completely for MAS fleet?	Both options are possible
67. Is there any requirement for UxVs to deploy them from NATO surface ships? If so what will be the launch and recovery method?	This is not a requirement. Industry can provide more information about the launch requirements and capabilities of their systems in the RFI.
68. Will the UxV systems operate as a heterogeneous swarm (e.g. USV + UAV + UUV)?	This is optional
69. What is the timeline for establishment of the MAS fleet?	This is an RFI so unknown.
70. Does the use of "UUV" expressly mean torpedo-shaped vehicles used for long-range survey/search, or does it include crawlers, ROVs, bio-mimetic vehicles, mid-water buoys/drifters, etc.?	All types of systems can be proposed.
71. What unit cost (order of magnitude) is considered attributable/expendable for the UUV component?	The goal of the RFI is to better understand the costs related to these systems.
72. Are over-the-horizon communication schemes desired/required for the undersea systems while at the surface?	Yes
73. What is the desired communication range for the vehicles mid-mission?	10 nm
74. Are there any expectations for clandestine deployment and/or operation?	No
75. What stand-off distances are expected for operation of undersea vehicles?	This depends on the scenario and is not yet determined.
76. What is the expected OPTEMPO and how often will undersea equipment be	The number of events is described in Annex A

expected to undergo depot-level maintenance/servicing?	
77. What is the desired fully-operational duty cycle and deployment duration for undersea systems? (I.e. how long in-transit/at sea, how long in active use, how long in storage, etc.)	The number of events is described in Annex A
78. How long are the vehicles desired to survive in a dormant state underwater?	24 Hr
79. What is the expected operational lifetime for the undersea systems?	Industry will be required to generate sufficient serviceable equipment for the events mentioned in Annexe A. Logistical support will be a responsibility of industry.
80. What level of in-field maintenance and spares is expected for undersea equipment?	Industry will be required to generate sufficient serviceable equipment for the events mentioned in Annexe A. Logistical support will be a responsibility of industry.
81. What deployment logistics are available for undersea vehicle operations? Cranes, davits, small boats, etc.	The necessary logistical support will be provided at the port where training events will be conducted.
82. Are there any battery chemistry restrictions or preferences?	No
83. For autonomous operations, what level of explainability and traceability, if any, is desired/required?	Remote control is required, autonomy is optional.
84. Is there a plan for deprecation, upgrades, and/or replacements over time?	No
85. What kind of encryption, if any, is necessary for data at rest onboard the vehicles, for data in motion between nodes within the platform, and wireless communication back to command/operation centers?	Data needs to be protected following industry standard practices.
86. Platform-based kinetic end-effectors are often included in the air and surface domains, but not undersea. Is this an act of omission or is it by design? A) Traditional torpedo-shaped UUVs are typically used for "Find/Fix" whereas ROVs offer intervention/neutralization through manipulator arms and multi-end-effector solutions. This provides a more wholistic approach providing Find/Fix/Finish/Exploit capabilities from the F3EAD dynamic tasking process.	We are interested in all capabilities and solutions that Industry can provide in the MAS domain.
87. Under assumptions, it is stated that NATO plans to execute 6 events per year..., please provide duration of each event	An event is typically 10 days.

88. Please share the Non-disclosure Principles and provide Non-Disclosure Agreement (NDA)	This is a RFI and if required the NDA will be shared when necessary.
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