Maritime & Coastguard Agency

PROJECT DOCUMENTATION

MARKET ENGAGEMENT - SINGLE STATEMENT OF USER NEED (SSUN)

Aerial Surveillance Service

Maritime & Coastguard Agency

Document Number: FINAL

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Statement of Systems Requirements History

Document Brief

Document Name:	Single Statement of User Need for Aerial Surveillance
Document Version No.:	Final
Brief Description:	This document is the Maritime & Coastguard Agency's (MCA) Single Statement of User Need (SSUN) for the provision of an Aerial Surveillance Service. .
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Document Revision

Version Number	Revision Date	Changed By	Summary of Changes
1.0	18/04/18	MCA	Initial Draft Document created.
2.0	23/04/18	MCA	Minor Drafting

Contents

1 Introduction

1.1 Purpose of SSUN Document

The purpose of this document is to define the requirements for the Aerial Surveillance Service.

2 Aerial Surveillance (Requirement)

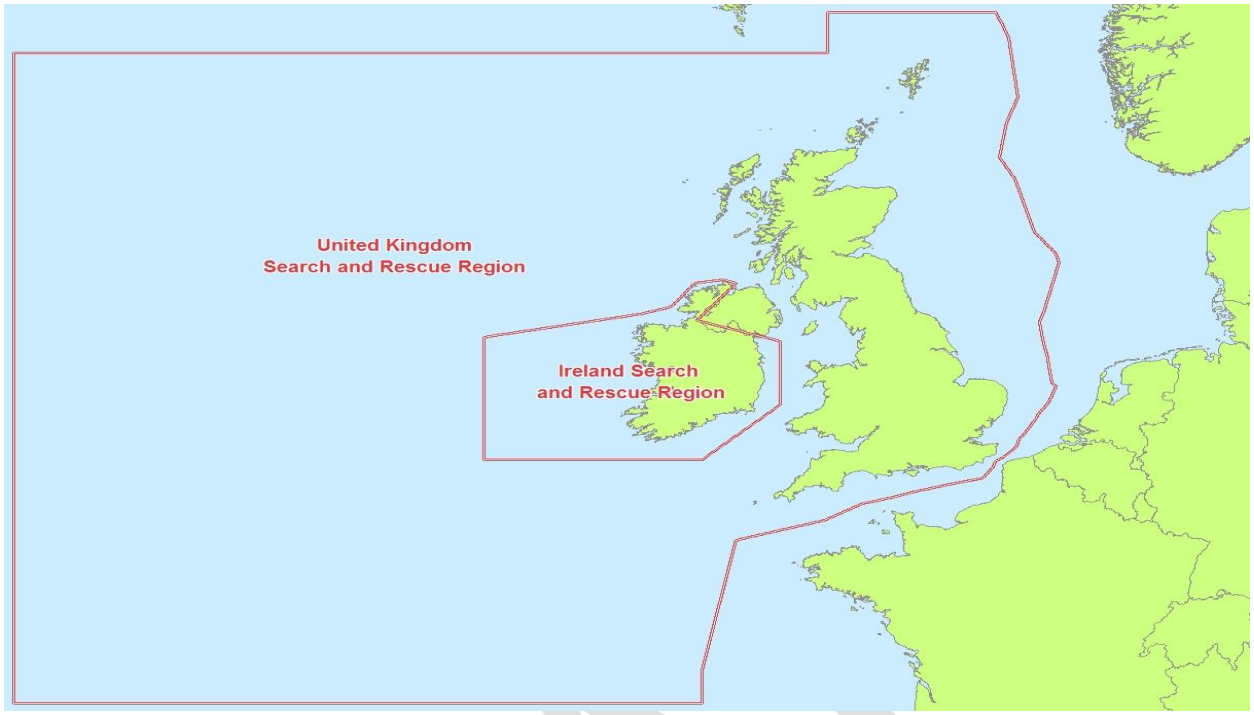
2.1 Background

The Maritime & Coastguard Agency (MCA) has a statutory obligation to protect the marine environment. Aerial Surveillance is the means by which the size and type of pollution is identified. Historically the MCA has conducted a series of year-round patrols as the principal means by which to first detect pollution before determining the size and type of pollution. Today, the initial pollution alert is triggered by the CleanSeaNet service, which is a satellite-based surveillance service. That alert is followed-up by a targeted flight to determine the presence, size and type of pollution first observed by the satellite.

The nature of this requirement means that there is the potential for collaboration with partners, including the Marine Management Organisation. This requirement has been broadened to capture possible requirements from other Government Departments including the Marine Management Organisation. The precise scope and contracting approach will be set out in the full tender documentation to follow this consultation exercise.

The UK's Search and Rescue Region (UKSRR) covers a large geographical area and extends to a longitude of 30 degrees west and to the midpoint of the sea between the UK and its European neighbours.

Figure 1 – Displays the geographical extent of the MCA UK Search and Rescue Region (UKSRR) and includes the UK Exclusive Economic Zone (UK EEZ).



2.2 SSUN PART 2 – TECHNICAL REQUIREMENTS

1. This is a draft version of the SSUN which is subject to potential further changes and refinements, it should be used at this stage to gain an understanding of the overall user need. [In responding to this document, consultees should refer to the Consultation Questions and do not need to complete the table].

2. ~~The response to each requirement shall be summarised in the "Bidder Response" column. Detailed evidence to support the claim for each requirement shall be provided in an Appendix:~~
   a. ~~This evidence shall contain sufficient detail to allow independent assessment and verification.~~
   b. ~~Supporting evidence provided in an Appendix shall be identified by a unique identifying number and be clearly referenced and linked within the summary in the bidder response column.~~
   c. ~~Identifying number format shall be Date of Response (YYYYMMDD) _ Bidder(Company Name) _ UR No (e.g. 1.2_001) if more than one supporting document is required against a single UR the suffix index number (_001) will numerically increase.~~
   ~~*Example:* ***20180230_Fantastic_Aerial_Solutions_UR3.1_001***~~
3. The Measure of effectiveness – Threshold is the minimum the authority will accept, with the objective measure being that which exceeds the threshold and gives enhanced user utility and capability.

UR No.	User Requirement	Links to other Req.	Measure of effectiveness (threshold)	Measure of effectiveness (objective)	Bidder Response [Internal Notes*]	Remarks
1.	**Availability**					
1.1.	Availability shall be stated.	2.2 2.3 2.8 3.6 7.1	Greater than 90% Availability	100% Availability		Availability lower than 95% will only be accepted in if the solution demonstrated significant VfM argument. An evidence based delivery model shall be provided in the response. This shall be measured with an incentivised KPI's
1.2.	Any airborne system shall be able to deliver capability	All				The system capabilities shall be clearly articulated.

UR No.	User Requirement	Links to other Req.	Measure of effectiveness (threshold)	Measure of effectiveness (objective)	Bidder Response [Internal Notes*]	Remarks
2.	**Tasking**					
2.1.	The system shall only accept tasking from Aeronautical Rescue Coordination Centre (ARCC).	2.2 2.3 2.4 2.8				The ARCC will be the single tasking authority, operational control will then be handed over to the requesting department. The expected usage rates for the system are detailed in Appendix A.
2.2.	The contractor shall deliver the agreed programme of planned tasking.	2.1 2.4 2.8 3.6				Stakeholders shall provide the coming months flying programme to the authority contract manager no later than the 14th of the preceding month. The authority contract manager shall provide a provisional flying programme to the contractor for agreement no later than 21st of the month for the following months' activity. The agreed flying programme shall be provided to the tasking authority.
2.3.	Upon acceptance of an unplanned tasking request, between 08:00 – 22:00 local, the system shall be airborne and in transit to task.	2.1 2.4 2.8 3.6	Within 60 minutes .	Within 30 minutes		A response shall clearly demonstrate how each of this can be achieved. This shall be measured with an incentivised KPI

UR No.	User Requirement	Links to other Req.	Measure of effectiveness (threshold)	Measure of effectiveness (objective)	Bidder Response [Internal Notes*]	Remarks
2.4.	Upon acceptance of an unplanned tasking request, between 22:01 – 07:59 local, the system shall be airborne and in transit to task.	2.1 2.4 2.8 3.6	Within 120 minutes	Within 45 minutes		A response shall clearly demonstrate how each of this can be achieved. This shall be measured with an incentivised KPI *Note: A proposal demonstrating significant value for money savings would be considered with a greater than 120 minutes, but no more than 200 minutes availability.*
2.5.	The authority shall be able to reschedule or re-task planned activity, between 08:00 – 22:00 local.	2.1 2.8	Manual intervention. A minimum of 6 hours' notice shall be given any changes to planned activity	Shared data environment. A minimum of 2 hours' notice shall be given for changes to planned activity		The response shall detail the procedure followed in the event of a re-planed or re-scheduled activity.
2.6.	The authority shall be able to reschedule or re-task planned activity between 22:01 – 07:59 local,.	2.1 2.4 2.8 3.6	Manual intervention. A minimum of 10 hours' notice shall be given for changes to planned activity	Shared data environment. A minimum of 4 hours' notice shall be given for changes to planned activity		The response shall detail the procedure followed in the event of a re-planed or re-scheduled activity.
2.7.	The system shall be capable of producing flight patterns within the area of interest.	2.1 2.6 2.8 5.3				Whilst engaged upon non-routine tasking, opportunities to conduct concurrent or subsequent routine activity shall be utilised.

UR No.	User Requirement	Links to other Req.	Measure of effectiveness (threshold)	Measure of effectiveness (objective)	Bidder Response [Internal Notes*]	Remarks
2.8.	The system shall be capable of displaying and sharing the flight patterns within the area of interest	2.5 5.3	Display on aircraft in flight. Ability share during flight and display off aircraft in near real time	Display on aircraft in flight. Electronically share search areas to the tasking/coordination authority and other assets engaged in the task in near real time whilst airborne The ability to electronically accept search coordinates and patterns from the tasking/coordination Authority		Whilst engaged upon non-routine tasking, opportunities to conduct concurrent or subsequent routine activity shall be utilised.
2.9.	The system shall be capable of responding to an incident that requires operations over an extended timeframe in a geographical area, whilst minimizing effect upon scheduled tasking.	2.1 3.6	Minimal effect on routine tasking, during and post incident	No effect on routine tasking, during and post incident		Details shall be provided that demonstrates how a response to a major incident, which may require the use of multiple assets, to provide continual monitoring over an extended period (eg 48 hours} and concurrent support to routine tasking. This shall include details of adherence to EU Working Time Directive and Flight Time Limitations. Any downstream impact upon personnel availability shall be clearly articulated.
2.10.	The system shall be able to conduct concurrent tasking	All	Two	Greater than two		This could be planned or unplanned tasking or any mixture thereof.
3.	**Operations**					

UR No.	User Requirement	Links to other Req.	Measure of effectiveness (threshold)	Measure of effectiveness (objective)	Bidder Response [Internal Notes*]	Remarks
3.1.	The system shall be capable of operating throughout the UK.	2.1	UK EEZ – Not including overseas territories	UK SSR – As far out to 30ºW as practicable.		The relevant Air Operators Certificate (AOC) shall be provided as evidence to support the delivery of the requirement or if an AOC is not currently held a method statement of how the AOC will be achieved. The system radius of action (ROA) shall be clearly stated in the response. It is accepted that the UK SRR is a large area, therefore all responses shall state any limitation related to this requirement.
3.2.	The system shall be capable of operating, upon request, in neighbouring states.					It may be necessary on occasion to operate in neighbouring states airspace in order to complete a task, bidder shall provide detail on how this will be achieved. The contractor shall clearly state any limitation to operations
3.3.	The system shall be capable of detecting targets and areas of interest anywhere in the UK EEZ within 150 Minutes of take off	2.1 3.1	No greater than 150 minutes	Less than 150 minutes		
3.4.	The endurance of the system shall be stated	3.1 3.2	Minimum: 120 minutes on scene once transit to area of interest is complete.	Maximum: greater than120 minutes on scene once transit to area of interest is complete.		Definition shall be provided detailing the operating duration at the extreme of range in the UK

UR No.	User Requirement	Links to other Req.	Measure of effectiveness (threshold)	Measure of effectiveness (objective)	Bidder Response [Internal Notes*]	Remarks
3.5.	The system shall operate in all UK weather conditions	3.1 6.1	Minimal limitations	No limitations		Any weather limitations shall be clearly articulated within the response. This shall include, as a minimum, platform operating limits, infrastructure and airfield(s)/airspace restrictions
3.6.	The system shall operate day or night in Visual Flight Rules (VFR) and Instrument Flight Rules (IFR) conditions with no restrictions	1.6 2.1 3.4				Any restrictions shall be clearly stated in the response. This shall include details of adherence to EU Working Time Directive and Flight Time Limitations.
3.7.	Limitations on system performance shall be communicated, immediately, to the tasking authority.	1 2.1 6.1 7.1				This shall include, but not limited to: • Platform • Sensors • Personnel • Support equipment • Infrastructure • Climatic conditions
3.8.	Near Real time asset position information shall be provided to the tasking and coordination authority.	2.6 5.3	Electronically provided in a format that is capable of being integrated into the tasking/coordination Authority's system(s)			The update rate of the positional information shall be clearly stated. Positional information shall comply with WGS84 standard and provide Latitude, Longitude and date/time stamp for position fix. Information format and data exchange requirements shall be provided by the authority.

UR No.	User Requirement	Links to other Req.	Measure of effectiveness (threshold)	Measure of effectiveness (objective)	Bidder Response [Internal Notes*]	Remarks
3.9.	The system shall be able to detect and track target(s) vessels in all light and weather conditions.	3.10 3.11				The following shall be clearly identified using evidence based supporting statements in the response: Detection range. Tracking functionality and range. Minimum size of detectable vessels Minimum and Maximum Sea States for detection Probability of detection. Passive or active detection. Weather and Light minima.
3.10.	The system shall be capable of detecting and categorising static targets; on land, on sea and in air, in all light and weather conditions.	3.9 3.11	2 Targets	3+ Targets		The following shall be clearly identified using evidence based supporting statements in the response Detection range. Tracking functionality and range. Minimum size of detectable Targets Minimum and Maximum Sea States for detection Probability of detection. Passive or active detection. Weather and Light minima.
3.11.	The system shall be able to identify and home on transponders and emergency emitters					Examples include but not limited to: AIS, Aircraft Transponders, PLB, SARTs, EPIRB VMS etc.

UR No.	User Requirement	Links to other Req.	Measure of effectiveness (threshold)	Measure of effectiveness (objective)	Bidder Response [Internal Notes*]	Remarks
3.12.	The system shall be capable of detecting and categorising moving targets; on land, on sea and in air, in all light and weather conditions.	3.9 3.10 3.11	The information shall be made available to the coordination authority in near real time. 2 Targets	3+ Targets		The following shall be clearly identified using evidence based supporting statements in the response. Detection range. Tracking functionality and range. Minimum size of detectable Targets Minimum and Maximum Sea States for detection Probability of detection. Passive or active detection. Weather and Light minima.
3.13.	The system shall be capable of capturing video and still imagery in all light levels at all stages of flight. Images/videos shall be date time, and position stamped in accordance with PACE and disclosure principals for evidential purposes	3.7 3.13	HD	4K		Identify vessels via PLN (Port Letter Numbers) or name as displayed on the side (specified in EC Regulation 1381/1987 Annexe 2) Data provided shall be fully compliant with EU Inspire directive Positional information (of target and capture system)shall comply with WGS84 standard and provide Latitude, Longitude and date/time stamp for position fix of the target.
3.14.	The imagery captured shall be viewable in flight	3.12 5.3	On board the air vehicle Viewable in near real time on the Authority's tasking/coordination system			Positional information (of target and capture system) shall comply with WGS84 standard and provide Latitude, Longitude and date/time stamp for position fix of the target.

UR No.	User Requirement	Links to other Req.	Measure of effectiveness (threshold)	Measure of effectiveness (objective)	Bidder Response [Internal Notes*]	Remarks
3.15.	The imagery captured shall be viewable within 45 minutes post flight		Viewable on Authority's tasking/coordination system			Positional information (of target and capture system) shall comply with WGS84 standard and provide Latitude, Longitude and date/time stamp for position fix of the target.
3.16.	The system shall enable the detection and classification of oil pollutants in all light levels by day and night.	3.17 5.3 6.1	Provide a report to the authority classifying, by day only, the pollutant by type, thickness and coverage within an hour of finding the pollutant.	Provide a near real time report to the authority classifying the pollutant, by day and night, by type, thickness and coverage.		Limitations for system operation and performance shall be clearly stated, including but not limited to those between day night capability. Information gathered will provide, volume, coverage area and movement over time. Oil pollutants are currently assessed by the Bonn Agreement Oil Appearance Code (BAOAC) by appearance and coverage.
3.17.	The system shall enable the detection and classification of other pollutants in all light levels, by day and night.	3.16 5.3 6.1	By day, provide a report to the authority classifying the pollutant(s) by type and coverage within an hour of finding the pollutant(s). By night, provide a report to the authority of the location of solid pollutants (lost cargo) within an hour of finding the pollutant(s).	By day and night, provide near real time report to the authority classifying the pollutant(s) by type and coverage.		Feasibility and limitations for system operation and performance shall be clearly stated, including but not limited to those between day night capability.

UR No.	User Requirement	Links to other Req.	Measure of effectiveness (threshold)	Measure of effectiveness (objective)	Bidder Response [Internal Notes*]	Remarks
3.18.	The contractor shall state the sea surface coverage rate per hour to enable the detection of pollutants.	3.16 3.17 6.1	Ability to detect the presence of oil (beyond a sheen) and floating pollutants within the search area.			Limitations for system operation and performance shall be clearly stated, including but not limited to those between day night capability. The current delivery for search area is 5,600NM²/hour based on the ability to search 20NM either side of an aircraft, at a speed of 140kts
4.	**Equipment and Support**					
4.1.	The full equipment that is required to deliver the capability shall be stated	4.2				This list shall include as a minimum: • aircraft • Infrastructure • Maintenance and support equipment and Philosophy Any shared equipment shall be stated, together with the approximate usage percentage against this contract
4.2.	The livery of the assets shall be proposed.	4.1				The assets engaged in the delivery of this capability shall be immediately visibly identifiable and include HMCG (Example at Appendix D) and OGD branding.

UR No.	User Requirement	Links to other Req.	Measure of effectiveness (threshold)	Measure of effectiveness (objective)	Bidder Response [Internal Notes*]	Remarks
4.3.	The contractor shall provide all training relevant to the operation and support of the system in accordance with appropriate regulations, prior to the commencement of service delivery.	4.1			To be added: Training requirements for security considerations, data handling etc. Data to be provided by OGD's. GFX? Continuation training? No foreign nationals – or appropriate checks by Acro	Training plans for all operational and support staff shall be provided as evidence together with the relevant approvals. An agreed Acceptance plan will be required NOTE: - Personnel could be called to court for legal purposes. Contractor shall comply with data handling rules.
4.4.	The system shall comply with SD-2016/006					FDR/CVR/VDR data could be called in evidence, contractor shall define how this information will be stored and made available upon request.
4.5.	Contractor shall comply with data handling rules.					System storage Back up Control of Access
5.	**Communications**					

UR No.	User Requirement	Links to other Req.	Measure of effectiveness (threshold)	Measure of effectiveness (objective)	Bidder Response [Internal Notes*]	Remarks
5.1.	The system shall be able to communicate by voice to facilitate safe operation and conduct of the task.		Beyond Line of Sight (BLOS)			The communications methods shall be articulated within the response, detailing any significant cost drivers. Communication with the following shall be achieved. Note this list is not exhaustive: • Tasking/Coordination authority • Other air vehicles • Air Traffic Services • Surface vessels and installations • Emergency responders • Military assets • Ground assets • Persons in distress or potential distress equipped with mobile phones • Linking communications between coordinating authority and vessels / aircraft / assets.
5.2.	The system shall be able to communicate securely by voice.		Beyond Line of Sight (BLOS)			The communications methods shall be articulated within the response. Communication with the following shall be achieved. Note that this list is not exhaustive: • Tasking/Coordination authority • Other air vehicles • Emergency responders • Military assets • Border Force Cutters

UR No.	User Requirement	Links to other Req.	Measure of effectiveness (threshold)	Measure of effectiveness (objective)	Bidder Response [Internal Notes*]	Remarks
5.3.	The system shall be able to send and receive digital information in near real time.		Beyond Line of Sight (BLOS) Digital images Documents Video	4K HD Video		The data communications methods and resolution shall be articulated within the response. Digital data communication with the following shall be achieved and should be compatible with existing ADL/National Data Programme. Note that this list is not exhaustive: • Tasking/Coordination authority • Other air vehicles • Surface vessels and installations • Emergency responders • Military assets • Ground assets • Persons in distress or potential distress equipped with mobile phones
5.4.	The system shall be able to send and receive secure digital information in near real time.		Beyond Line of Sight (BLOS) Digital images Documents Video	4K HD Video		The data communications methods and resolution shall be articulated within the response. Digital data communication with the following shall be achieved and should be compatible with existing ADL/National Data Programme. Note that this list is not exhaustive: • Coordination authority • Other air vehicles • Emergency responders • Military assets • Border Force Cutters

UR No.	User Requirement	Links to other Req.	Measure of effectiveness (threshold)	Measure of effectiveness (objective)	Bidder Response [Internal Notes*]	Remarks
5.5.	Concurrent communications shall be provided on all communications systems.		One data, one voice channel for mission system.	Greater than one voice and one data channel.		Safe aircraft operations shall remain unaffected by this requirement.
6.	**Personnel**					
6.1.	Organisational charts and Job descriptions of key staff involved in delivering this contract shall be provided together with details of the process against how these posts are filled.	3.4 3.6 3.15 3.16 3.17 4.1				This shall include, as a minimum: Accountable Manager(s), aircrew, operators, engineers, support staff, and contract managers. In the event that the resources are shared, an approximate percentage of use against this Contract shall be stated.
6.2.	All personnel with access to sensitive information shall be hold appropriate security clearance	6.1	Baseline	CTC		All Foreign National must be cleared via ACRO in addition to Baseline or CTC checks.
6.3.	The system shall be able to carry Supernumerary crew upon request	6.1 6.2 6.3	1 Person	0 Person		To be provided as a costed option. If a drone is planned tom be used to deliver, all or part, of the solution, the “supernumerary crew” member shall have near real time access to the all voice and data captured during flight.
6.4.	System operators shall be trained and warranted as Marine Enforcement Officers		1 Warranted Marine Enforcement Officer.			Training to qualify as a Marine Enforcement Officer will be provided at nil expense to the contractor by MMO at the contractors convenience.

EXPECTED USAGE RATES

The table below captures the foreseeable maximum expected usage rates by organisation broken down by calendar month.

ORGANISATION	FLYING HOURS PER CALENDAR MONTHS											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MCA	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
MMO & OGD's	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

IN RESPONDING TO THIS CONSULTATION PLEASE CONSIDER ROM COSTS FOR THE FOLLOWING THREE SCENARIOS:

1. 1000 HOURS PER ANNUM
2. 2000 HOURS PER ANNUM
3. 3000 HOURS PER ANNUM

2.3 DEFINED TERMS

Term	Definition
Aeronautical Rescue Coordination Centre (ARCC)	ARCC is the UK SAR tasking authority for HMCG aircraft
Authority	The contract owner
Beyond Line of Sight (BLOS)	
Contract Manager (CM)	
European Maritime Safety Association (EMSA)	
Joint Maritime Operations Coordination Centre (JMOCC)	
Key Performance Indicator (KPI)	
Media	
National Maritime Information Centre (NMIC)	
Other Government Department (OGD)	For the purpose of this document, those Government Departments outside the Maritime & Coastguard Agency.
Planned Activity	Activity that is foreseen and for which a minimum of 10 hour notice is given to the operator for acceptance (cognisant of the time taken by the tasking authority will have to process this request). All notice period shall be given within normal working hours.
Pollutant	Pollutants are contaminants that have been introduced into the natural environment and cause adverse change. They can take the form of chemical substances, foreign objects (such as containers or other lost cargo) or naturally occurring contaminants. Oil pollutants are currently assessed by the Bonn Agreement Oil Appearance Code (BAOAC) by appearance and coverage.
Radius of Action (ROA)	The range the aircraft can operate from parent base with 120 minutes endurance on station and return to parent base.

UK Search and Rescue Region (UKSRR)	Defined at Annex A of the attached link: UK SRR
UK Exclusive Economic Zone (UKEEZ)	A sea zone prescribed by the United Nations Convention on the Law of the Sea over which a state has special rights regarding the exploration and use of marine resources, including energy production from water and wind. Defined at https://www.gov.uk/guidance/uk-maritime-limits-and-law-of-the-sea
Unplanned activity	Unplanned activity are requests that are dynamic in nature and responding to an unforeseen need.
VMS	Vessel Monitoring System (VSM) is a satellite-based monitoring system which at regular intervals provides data to the fisheries authorities on the location, course and speed of fishing vessels. Access to VMS can be obtained through either data forwarding or through a web based solution.