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The Scottish Government
Riaghaltas na h-Alba

Marine Licence Application for Scientific Instrument Deployments

Version 1.0

Marine (Scotland) Act 2010

Marine and Coastal Access Act 2009

Marine Scotland, 375 Victoria Road, Aberdeen, AB11 9DB
http://www.gov.scot/Topics/marine/Licensing/marine

Acronyms

Please note the following acronyms referred to in this application form:

ADCP	Acoustic Doppler Current Profiler
MHWS	Mean High Water Springs
MPA	Marine Protected Area
MS-LOT	Marine Scotland – Licensing Operations Team
ROV	Remotely Operated Vehicle
SAC	Special Area of Conservation
SNH	Scottish Natural Heritage
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
WGS84	World Geodetic System 1984

Explanatory Notes

The following numbered paragraphs correspond to the questions on the application form and are intended to assist in completing the form. These explanatory notes are specific to this application and so you are advised to read these in conjunction with the Marine Scotland Guidance for Marine Licence Applicants document.

1. Applicant Details

The person making the application who will be named as the licensee.

2. Agent Details

Any person acting under contract (or other agreement) on behalf of any party listed as the applicant and having responsibility for the control, management or physical deposit or removal of any substance(s) or object(s).

3. Payment

Indicate payment method. Cheques must be made payable to: The Scottish Government.

Marine licence applications will not be accepted unless accompanied by a cheque for the correct application fee, or if an invoice is requested, until that invoice is settled. Target timelines for determining applications do not begin until the application fee is paid.

4. Application Type

Indicate if the application is for a new scientific instrument deployment site or an existing scientific instrument deployment site. Provide the existing or previous consent/licence number or any other reference details and the expiry date if applicable.

5. Project Details

(a) Give a brief description of the project e.g. wave rider buoy deployment.

(b) Provide the proposed start date of the project. The start date will not be backdated, since to commence a project for which a licence has not been obtained will constitute an offence, which may result in appropriate legal action. A licence is normally valid for the duration of the project but not exceeding 6 years. If a project will not be completed before a marine licence lapses, it will be necessary for licence holders to re-apply for a further licence to continue any ongoing work at least 14 weeks prior to the expiry date of the licence. **Target duration for determination of a marine licence application is 14 weeks.**

(c) Provide the proposed completion date of the project.

(d) Provide the cost of the works seawards of the tidal limit of MHWS. This estimate should only cover work taking place below the tidal level of MHWS and must take into consideration the cost of materials, labour fees etc.

(e) Describe the location of the proposed works. Include a list of the latitude and longitude co-ordinates (WGS84) for each instrument location. WGS84 is the World Geodetic System 1984 and the reference co-ordinate system used for marine licence applications. Co-ordinates taken from GPS equipment should be set to WGS84. Coordinates taken from recent admiralty charts will be on a WGS84 compatible datum. Ordnance survey maps do not use WGS84.

Example: For positions read from charts the format should be as in the example: 55°55.555'N 002°22.222'W (WGS84). The decimal point specifies that decimals of minutes are used and the datum is stated explicitly. If seconds are used then the format should be as in the example: 55°55'44''N 2°22'11''W (WGS84).

It is important that the correct positions, in the correct format, are included with this application, as any errors will result in the application being refused or delayed.

To supplement your application, please provide a suitably scaled extract of an Ordnance Survey Map (1:2,500 scale but not more than 1:10,000) or Admiralty Chart which must be marked to indicate:

- the full extent of the works in relation to the surrounding area;
- latitude and longitude co-ordinates defining the location of the works;
- the level of MHWS;
- any adjacent SAC, SPA, SSSI, MPA, Ramsar or similar conservation area boundary.

Drawings and plans will be consulted upon. If they are subject to copyright, **it is the responsibility of the applicant to obtain necessary approvals to reproduce the documents and to submit suitably annotated copies with the application.**

(f) Indicate if the project is located within the jurisdiction of a statutory harbour authority and provide details of the statutory harbour authority where relevant.

(g) Provide a full method statement, including schedule of work, the period of time it will be in place, it's purpose and expected position (e.g. sea bed or water column).

(h) Provide assessment of the potential impacts the works may have, including interference with other uses of the sea. Please include details of areas of concern e.g designated conservation areas, such as a SAC, SPA, SSSI, MPA or Ramsar site and shellfish harvesting areas. Further guidance on designated conservation areas can be obtained from SNH at this website: http://gateway.snh.gov.uk/sitelink/index.jsp and guidance on shellfish harvesting areas can be obtained from http://www.foodstandards.gov.scot/ with regards to the Shellfish Waters Directive (2006/113/EC) which has parameters set to protect the water quality in which edible shellfish are grown.

Applicants should also be aware of the need to pay due regard to coastal and marine archaeological matters and attention is drawn to Historic Scotland's Operational Policy Paper HP6, "Conserving the Underwater Heritage".

Where there are potential impacts from the works, please provide details of proposed mitigation in response to potential impacts.

6. Deposits

(a) Indicate all instruments to be deployed, providing further information about the quantity and further details about the instrument to be deployed. Please include the details below depending on type of instrument:

Deployment of buoys (e.g scientific buoy, marker buoy, associated guard buoy)

- Description
- Type
- Size

Towed equipment (e.g profiling instruments):

- Description including number of cables
- Type
- Size including length, width and depth of towed equipment (metres)

Deposits on the sea bed:

- Description including how long proposed to be deposited
- Type
- Size including full dimensions (metres)

Where the project involves a number of elements, please complete all appropriate sections.

(b) Provide the vessel name, vessel type and name and address of all vessel operators to be used for scientific instrument deployment. If vessel details are not available at the time of application, please indicate this on the form as these details will be required prior to licence issue. Continue on a separate sheet if necessary.

(c) Provide details of the vessel role (e.g guard or fisheries liaison), indicate if the vessel(s) will be stationary during any survey work and provide details of the length of time that the vessel(s) will be stationary.

7. Noise Monitoring

Under the Marine Strategy Regulations (2010), there is now a requirement to monitor loud, low to mid frequency (10Hz to 10kHz) impulsive noise. Activities where this type of noise is produced include seismic airguns, other geophysical surveys (<10kHz), pile driving, explosives and certain acoustic deterrent devices. Where noisy activity is being undertaken, you must complete an initial registration form for the noise registry which allows you to provide details on the proposed work. Completion of a 'close-out' form, which allows licensees to provide details of the actual dates and locations where the activities occurred, is also required within 12 weeks of the completion of the 'noisy' activity or, in the case of prolonged activities such as piling for harbour construction or wind farms, at quarterly intervals or after each phase of foundation installation.

These forms can be downloaded from:
http://www.scotland.gov.uk/Topics/marine/science/MSInteractive/Themes/noise-reduction

Marine licence applications will not be accepted until this form has been completed and submitted.

8. Scotland's National Marine Plan

Scotland's National Marine Plan has been prepared in accordance with the EU Directive 2014/89/EU, which came into force in July 2014. The Directive introduces a framework for maritime spatial planning and aims to promote the sustainable development of marine areas and the sustainable use of marine resources. It also sets out a number of minimum requirements all of which have been addressed in this plan. In doing so, and in accordance with article 5(3) of the Directive, Marine Scotland have considered a wide range of sectoral uses and activities and have determined how these different objectives are reflected and weighted in the marine plan. Land-sea interactions have also been taken into account as part of the marine planning process. Any applicant for a marine licence should consider their proposals with reference to Scotland's National Marine Plan. A copy of Scotland's National Marine Plan can be found at: http://www.gov.scot/Publications/2015/03/6517/0

Indicate whether you have considered the project with reference to Scotland's National Marine Plan and provide details of considerations made including reference to the policies that have been considered. If you have not considered the project with reference to Scotland's National Marine Plan please provide an explanation.

9. Consultation

Provide details of all bodies consulted and give details of any consents issued including date of issue.

10. Associated Works

Indicate whether the application is associated with any other marine projects (e.g. land reclamation, marine/harbour construction works, dredging and sea disposal etc). If this is the case, provide reference/licence number for the related marine projects

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It is the responsibility of the applicant to obtain any other consents or authorisations that may be required.

Under Section 54 of the Marine (Scotland) Act 2010 and Section 101 of the Marine and Coastal Access Act 2009, all information contained within and provided in support of this application will be placed on a Public Register. There are no national security grounds for application information not going on the Register under the 2010 Act. Under the 2009 Act, application information goes on the Register unless the Secretary of State determines that its disclosure in the Register would be contrary to the interests of national security.

Public Register

Do you consider that any of the information contained within or provided in support of this application should not be disclosed:

(a) for reasons of national security; YES ☐ NO ■

(b) for reasons of confidentiality of commercial or industrial information where such confidentiality is provided by law to protect a legitimate commercial interest? YES ☐ NO ■

If **YES**, to either (a) or (b), please provide full justification as to why all or part of the information you have provided should be withheld.

WARNING

It is an offence under the Act under which this application is made to fail to disclose information or to provide false or misleading information.

Target duration for determination is 14 weeks. Please note that missing or erroneous information in your application and complications resulting from consultation may result in the application being refused or delayed.

Marine licence applications will not be accepted unless accompanied by a cheque for the correct application fee, or if an invoice is requested, until that invoice is settled. Target timelines for determining applications do not begin until the application fee is paid.

Declaration

I declare to the best of my knowledge and belief that the information given in this form and related papers is true.

Signature <Redacted> Date 22/12/23

Name in BLOCK LETTERS JAMES SLAUGHTER

Application Check List

Please check that you provide all relevant information in support of your application, including but not limited to the following:

- Completed and signed application form ☑
- Maps/Charts ☐
- Co-ordinates of the boundary points of the area of harbour jurisdiction (if you are a statutory harbour authority) ☐
- Method Statement ☐
- Additional information e.g. photographs, consultation correspondence (if applicable) ☐
- Noise Registry – Initial Registration Form (if applicable) ☐
- Payment (if paying by cheque) ☐

1. Applicant Details

Title: Mr Initials: J T Surname: Gauger

Trading Title (if appropriate): Rocket Factory Augsburg AG

Address: Berliner Allee 65, 86153, Augsburg, Germany

Name of contact (if different):

Telephone No. (inc. dialing code): <Redacted>

Email: licensing@rfa.space

Statutory Harbour Authority? YES ☐ NO ■

If **YES**, please provide a list of the latitude and longitude co-ordinates (WGS84) of the boundary points of the area of harbour jurisdiction using Appendix 01 Additional Co-ordinates form if necessary.

2. Agent Details (if any)

Title: Mr Initials: J D Surname: Slaughter

Trading Title (if appropriate): SaxaVord Spaceport

Address: Orbital House, 15 Castle Road, Grantown on Spey, PH26 3HN

Name of contact (if different):

Telephone No. (inc. dialing code): 01479 782042

Email: james.slaughter@shetlandspacecentre.com

3. Payment

Enclosed Cheque ☐ Invoice ■

Contact and address to send invoice to:

Applicant ☐ Agent ■ Other ☐

If **OTHER**, please provide contact details:

Title: Initials: Surname:

Address:

Email:

4. Application Type

Is this application for a new scientific instrument deployment site or an existing scientific instrument deployment site:

New Site ☒ Existing Site ☐

If an **EXISTING SITE**, please provide the consent/licence number or any other reference details and the expiry date if applicable and expiry date:

Consent/Licence Number or Other Reference Details	Expiry Date

5. Project Details

(a) Brief description of the project (e.g. wave rider buoy deployment):

Launch of orbital rocket from SaxaVord Spaceport. The rocket will deposit its first stage and fairing in the Atlantic Ocean to the south of Jan Mayen. The second stage will be deposited in the Arctic Ocean to the north of Canada.

(b) Proposed start date **(Target duration for determination of a marine licence application is 14 weeks):**

01/08/2024

(c) Proposed completion date:

31/07/2025

(d) Cost of the works seawards of the tidal limit of MHWS:

<Redacted>

(e) Location:

Launch point 60°49.127'N 0°46.504'W
Lat and Long co-ords below show splashdown area for stage 1 and fairing, and stage 2.
See attached document for more information.

Latitude and Longitude co-ordinates (WGS84) defining the extent of the project (continue on Appendix 01 Additional Co-ordinates form if necessary):

Latitude											Longitude										
6	5	°	0	3	.	9	2	0	' N		0	0	5	°	0	8	.	7	7	6	' W
6	9	°	1	0	.	9	4	6	' N		0	0	9	°	1	8	.	9	9	9	' W
6	9	°	3	7	.	3	0	6	' N		0	0	6	°	2	3	.	8	7	7	' W
6	5	°	2	5	.	9	2	3	' N		0	0	2	°	3	7	.	4	1	6	' W
		°			.				' N					°			.				' W
8	0	°	3	1	.	4	4	1	' N		0	9	1	°	5	2	.	0	8	9	' W
7	1	°	5	5	.	4	9	3	' N		1	4	0	°	1	9	.	7	2	2	' W
7	3	°	4	0	.	1	3	0	' N		1	5	2	°	3	3	.	0	9	4	' W
8	4	°	2	3	.	6	4	1	' N		0	9	9	°	3	8	.	3	9	8	' W
		°			.				' N					°			.				' W

(f) Is the project located within the jurisdiction of a statutory harbour authority?

YES ☐ NO ■

If **YES**, please specify statutory harbour authority:

(g) Method statement including schedule of work (continue on separate sheet if necessary):

The launch vehicle is developed and manufactured by RFA. The total length of the RFA ONE MVP micro-launcher is about 28 m with a diameter of 2.15 m. It contains about 55 t of propellant on all three stages combined and has a gross lift-off weight of around 64 t. It is intended to place a total payload mass in the range of 120 to 500 kg into a 700 km polar orbit.
The vehicle has three stages. The two main stages are powered by RFA kerolox staged-combustion engines. The two main stage tanks are tandem tanks with a common bulkhead separation. The upper compartment is the oxidizer reservoir for liquid oxygen. It is LOX compatible and designed for cryogenic temperature. The lower compartment is the fuel reservoir for RP1. It is sufficiently insulated to minimize freeze of the fuel free surface during fueling. The tank domes are made of flow formed stainless steel, while the barrel is a welded stainless-steel construction. The two main stages are planned to be deposited in the sea after their mission phases have been completed and fuel has been depleted.
The fairing is made from lightweight carbon epoxy composite. It features a monocoque design, capable of withstanding the pressure and heat experienced during the mission. It protects the payload and provides insulation against thermal and acoustic effects. The fairing will be jettisoned from the vehicle and deposited in the sea shortly after the first stage has been discarded.

RFA One will be launched from SaxaVord Spaceport. The launcher follows a nominal trajectory which takes off vertically at T+0. The first stage burns for 175 seconds and is then jettisoned at an altitude of 68km. The second stage is ignited after stage separation and burns during 315 s and is jettisoned after the burn, at an altitude of 158km. During the flight of the second stage, the fairing is released 240 seconds after liftoff at an altitude of 110 km.

(h) Potential impacts the works may have (including details of areas of concern e.g designated conservation and shellfish harvesting areas) and proposed mitigation in response to potential impacts (continue on separate sheet if necessary):

Any potential impacts on other maritime activities will be mitigated through coordination with local fisher folk and other maritime users in the area through the notifications process laid down by the Space Industry Regulations 2021. The UKHO, MCA, HMCG, and NLB have also been briefed on this activity and are fully engaged with SaxaVord Spaceport.

This launch will also bring forward any lessons identified from Exercise Freya training launch undertaken at the beginning of July 2022.

6. Deposits

(a) Please indicate the instruments to be deployed:

Instruments	**Instrument Details** (e.g description, type and size)	**Quantity**
Scientific Buoys (e.g waveriders or wave-powered)		
Marker Buoys		
Associated Guard Buoys		
Profiling Instruments (e.g ADCP)		
ROV		
Other (please specify) Stage 1 Fairing Stage 2	Stage 1 will be a roughly 18.5m long, 2.15m diameter stainless steel cylinder with 9x metal 3D-printed Helix engines at its base and a CFRP interstage at the top. The dry mass is projected to be around 4 tons. The engines are largely constructed out of stainless steel, various copper and nickel alloys and titanium. Stage 2 will be a roughly 7m long, 2.15m diameter stainless steel cylinder with one metal 3D-printed Helix engine at its base and a CFRP interstage at the top. The dry mass is projected to be around 1.2 tons. The engines are largely constructed out of stainless steel, various copper and nickel alloys and titanium. The fairing is fully constructed out of CFRP with aluminum interface points. The fairing has an outer diameter of 2.15m, a total length of 4m, and weighs roughly 300kg. The fairing will be jettisoned and deposited in two halves.	Stage 1: 1 Stage 2: 1 Fairing: 2 fairing halves

(b) Details of any vessel(s) undertaking deposit or removal activities (please note that a marine licence cannot be issued until the vessel details have been confirmed. Continue on a separate sheet if necessary):

Vessel	Vessel Name	Type of Vessel	Name and Address of Operator
1	Boundary Vessel - TBD	TBD	TBD
2			
3			
4			
5			

(c) Further details of any vessel(s) undertaking deposit or removal activities (please note that a marine licence cannot be issued until the vessel details have been confirmed. Continue on a separate sheet if necessary):

Vessel	Vessel Role (e.g guard or fisheries liaison)	Vessel to be Stationary (include length of time to be stationary)
1	Boundary Vessel - TBD	TBD
2		
3		
4		
5		

7. Noise Monitoring

Will loud, low to mid frequency (10Hz to 10kHz) impulsive noise be produced by the project? YES ☐ NO ■

If **YES**, which please indicate the noise generating activities and sound frequencies:

Noise Generating Activity	Sound Frequency (Hertz)
Use of Explosives	
Use of Acoustic Deterrent Devices	

Other (please describe below):	

If you have ticked **YES**, please complete the Noise Registry – Initial Registration form located at: http://www.scotland.gov.uk/Topics/marine/science/MSInteractive/Themes/noise-reduction

A marine licence application will not be accepted until this form has been completed and submitted.

8. Scotland's National Marine Plan

Have you considered the application with reference to Scotland's National Marine Plan? YES ■ NO ☐

If **YES**, provide details of considerations made including reference to the policies that have been considered:

We have considered the 9 General Policies within the NMP.

This activity supports General Policies 2, 3, 4, and 9.
Gen 2, Economic Benefit: This activity will be the first launch of this vehicle by Rocket Factory Augsberg and will form the cornerstone for their future launch activity from SaxaVord Spaceport. It will require coordination with multiple agencies (maritime and land-based).
Gen 3, Social Benefit: as SaxaVord Spaceport grows so will the number of high value jobs and enhanced opportunities for the Shetlanders.
Gen 4, Co-existence: SaxaVord Spacpeport cannot operate in isolation and is reliant on other actors within the maritime sector to achieve its goals.
Gen 9, Natural Heritage: This activity will not impact on any marine protected areas.

If **NO**, please provide an explanation of why you haven't considered the National Marine Plan?

9. Consultation

List all bodies you have consulted and provide copies of correspondence:

UKHO, NLB, MCA, HMCG, Marine Directorate

10. Associated Works

Provide details of other related marine projects, including reference/licence numbers (if applicable):

Marine Licence application 00009942, which is also for a rocket launch from SaxaVord Spaceport.