**Introduction**

Suppliers are requested to read this document and confirm their interest by completing the market engagement questionnaire below, e-mailing a PDF version to [Ed.Butler@defra.gov.uk](mailto:Ed.Butler@defra.gov.uk) by the deadline of Wednesday 1st February 2023 12:00 GMT. The Environment Agency (EA) may then contact suppliers to discuss their responses in further detail.

**Drone imagery processing software user requirements**

In the last few years data derived from drones have become increasingly used within the EA to provide information for a range of purposes from habitat mapping to illegal waste volume analysis. Drones have the potential to provide cheap, fine spatial resolution, accurate data.

There are a number of challenges faced by EA inhouse drone pilots which relate to the size of the data created by the drone, where this data is stored, how it is accessed/shared and how to process it for additional outputs. Drone photogrammetry is the process by which vertical photographs are analysed to generate a digital elevation model. To do this specialist software is required to process drone imagery. The software is required to produce survey-grade deliverables such as 3D maps and models from drone images.

**Background**

The EA currently use an app that turns raw still imagery from drones into valuable information products, but the restriction is that it is a desktop only version and can only run on a high spec standalone machine. It does allow drone photogrammetry, however access to the software and subsequent sharing of the imagery is very restrictive. EA laptops generally don’t have the appropriate processing power and aren’t fit for purpose for running the software (e.g. no dedicated graphics cards).

**Key objectives**

Two key objectives, which are currently not easily available to our EA drone operators, are:

* Ease of access to online software to enable the processing of drone photogrammetry image data sets;
* Ease of sharing the output imagery – orthophotography and 3D models.

This should be a scalable solution to allow more drone operators to use the software as the number of users expands. This will include being scalable across DEFRA organisations.

A key benefit will be the ability to make the output imagery more accessible and therefore more useable to all our teams, realising the benefit of the investment in the drone technology. It should stop use of grey IT alternatives (cloud solutions) and improve data security. Some of the drone data generated can be called upon as legal evidence, reinforcing the importance of the right solution.

**Skill / Capability requirements**

*Essential*

* Cloud-based drone mapping software for imagery data collection, processing, and analysis. Securely process imagery in cloud environment to create high-quality 2D and 3D imagery products that can be quickly shared, on any device.
* Easily plan the drone flight and capture data and use repeatable flight plans.
* Load large volumes of data and remove the issue of high spec machine requirements to process the data.
* Share data securely and easily in the cloud. Directly publish drone data to perform further analytics and the ability to publish and share
* Export digital elevation surface models, 3D maps, true orthomosaics and 3D models to create final deliverables.
* Ensure accuracy with QC reports, editing tools, ability to add ground control points and checkpoints.

*Desirable*

* Process bare earth elevation models from the photogrammetry.
* Measurement and analysis tools e.g. volumetric calculations.
* Real Time Kinetic (RTK) drone support.
* Lidar drone data collection and point cloud viewing.

**Market Engagement Questionnaire**

| No. | Question | Response type |
| --- | --- | --- |
|  | Organisation details | Free text for:   * Organisation * Contact details |
|  | Are you happy to be contacted by EA for any follow on questions? | Yes/No |
|  | What software and services do you offer which meets any or all of the proposed capabilities?  If your solution relies on underlying software from another vendor, please describe this. | Free text |
|  | Do you provide Software-as-a-Service (SaaS)? | Free text |
|  | Who are your major customers for the solution? | Free text |