

## REQUEST FOR INFORMATION

REFERENCE NO: 3424 & 3425



**CUSTOMER:** Civil Aviation Authority

**START DATE:** 01/06/2023

**RESPONSE DATE:** 14/06/2023 (17:00 deadline)

Dear Supplier,

We would like to notify you of an upcoming requirement, and by doing so we are keen to understand where the market stands in terms of our requirements below. This Request for Information (RFI) seeks information relating to two components;

- RID Integration Provider (Section A) (CAA Ref 3424)
- RID Service Provider (Section B) (CAA Ref 3425)

Please note the following general conditions:

- This RFI will help us to refine the requirements.
- This RFI does not commit us to order and nothing shall constitute a commitment to ordering. We reserve the right not to proceed with an award.
- Any and all costs associated with the production of such a response to a RFI must be borne by the Supplier. We will not contribute in any way to meeting production costs of any response.
- Information contained within this document is confidential and must not be revealed to any third party without prior written consent from us.
- We expect that all responses to this RFI will be provided by Potential Providers in good faith to the best of their ability in the light of information available at the time of their response.
- No information provided by a Potential Provider in response to this RFI will be carried forward, used or acknowledged in any way for the purpose of evaluating the Potential Provider, in any subsequent formal procurement process.

## CAA BACKGROUND

The Civil Aviation Authority (CAA) was established by Parliament in 1972 as an independent specialist aviation regulator and provider of air traffic services. Following separation from National Air Traffic Services in 2001, CAA is now the UK's independent aviation regulator, with all civil aviation regulatory functions (economic regulation, airspace policy, safety regulation consumer protection, and most recently cyber security) being integrated within a single specialist body.

Through its skills and expertise, CAA is recognised as a world leader in its field. Its specific responsibilities include Aviation Safety and Airspace Regulation, Economic Regulation, Consumer Protection and Aviation Security. These areas provide the main groupings in CAA with the following responsibilities:

- **Safety and Airspace Regulation Group (SARG)** – Ensuring UK civil aviation safety standards are set and achieved; and the planning and regulation of all UK airspace to support safe and efficient operations;
- **Consumers and Markets Group (CMG)** – Regulating airlines’, airports’ and Air Traffic Services’ economic activities and encouraging a diverse and competitive industry. Managing the UK’s principal travel protection scheme; the Air Travel Organisers’ Licensing (ATOL) scheme; licensing UK airlines and managing consumer issues.
- **Aviation Security (Avsec)** – Overseeing how the aviation industry meets UK and international legal security requirements.
- **UK space regulatory function** – undertaking all Space Industry Act 2018 functions in addition to regulating in orbit activities under the Outer Space Act 1986.
- A central **Corporate Centre** group provides Finance, Human Resources, Information Services, Information Management, Procurement, Estates, Legal and other corporate functions.

In addition, CAA has two subsidiaries:

- **Air Safety Support International Ltd (“ASSI”)**, a not-for-profit organisation, which provides a cohesive system of civil aviation safety and security regulation in the UK’s Overseas Territories; and
- **CAA International Ltd (“CAAI”)**, the CAA commercial subsidiary, which provides technical advice and training to Civil Aviation Authorities and aviation industry worldwide, as well as examinations for pilots.

## CURRENT SITUATION AND WORK DONE TO DATE

In simple terms, Remote ID (RID) is the ability of a UAS in flight to provide identification and location information that can be received by other parties. It is closely analogous to the number plate required by cars – the serial number(s) electronically emitted by the UAS can be used to identify the UAS and its operator (via matching with data held in a central database), with additional information added to the broadcast as required.

The Civil Aviation Authority (CAA) on behalf of the Department for Transport (DFT) are reviewing whether to implement RID ahead of the regulatory deadline, set by the UK government, of 01 January 2026. If a decision is made to implement RID, this will see the implementation of both the technology and regulation required to establish remote identification for UASs across the UK.

At this stage, the CAA is part way through its Design phase and so the information contained here represents the current view of the components required for the Remote ID Service and these are subject to change.

If RID is implemented, it is currently estimated that that implementation of all system components for

the RID solution will take 18-24 months. We expect both the components outlined in this RFI to be highly complex, taking approximately 18 months to be delivered. The project is currently in the design phase, with a planned start for the implementation in Oct 23, pending agreement to proceed.

### Work done to date

- We have completed a Strategic Outline Case, considering the option for implementation to be the hybrid RID solution. This concluded the strategy phase (Phase 1).
- The project is currently in the middle of the design phase (Phase 2), in which the solution design is maturing and an OBC will be developed.
- The project is looking to engage suppliers to build understanding of the market and the associated costs and timelines for implementation.

## TECHNICAL OVERVIEW OF THE REMOTE ID SOLUTION

Subject to a decision to implement RID, the RID solution will implement the technology which enables UASs to emit data, which can be remotely captured, identified and accessed to determine information and data about a UAS. The RID solution for the UK would look to combine both Direct and Networked transmission routes for data from UASs. The direct transmission method means UASs send data (location, ID etc) directly to nearby devices, allowing anyone nearby to monitor the UAS via mobile signal and coverage. The networked method utilises a digital network (Wi-Fi/Bluetooth) to obtain and share data from the UAS. Combining both routes provides both a simple local solution that works without mobile signal and a networked solution.

The RID solution would follow a decentralised model. A core component of this decentralised model is the RID Integration Provider (often known as the InterUSS Layer or component), which serves as a critical communication backbone, enabling the efficient gathering and exchange of data between multiple network RID Service Providers and the Master Data Hub. This essential element promotes interoperability and collaboration within the UAS ecosystem, ensuring that relevant information is securely transmitted and shared across various system components, enhancing overall connectivity and coordination. It will enable the efficient and secure exchange of information between components, allowing stakeholders to interact with the Remote ID solution. Figure 1.1 shows the technical solution overview for RID and the arrangement of the various components. The definitions of each component are as follows:

- **Operator Portal** (supported by existing CAA teams) The CAA already has an operator portal (the Drone and Model Aircraft Registration & Education Service – DMARES) which currently enables UAS operators to register themselves, where required by the CAA. This platform is known to industry and captures the majority of the information needed. However, to fully enable Remote ID, this operator portal will require updates to capture and communicate all required information to Operators and to enable the Operator Portal to integrate with the Master Data Hub that will record and store all flight data associated with each UAS.

- **Net RID Service Provider / Remote ID Service Providers** (this RFI): RID Service Providers will enable the real-time identification and tracking of UASs by ensuring that registered UAS can be easily identified. UASs will transmit a standard set of data whilst in operation (the Remote ID message) via Remote ID Service Providers and the Remote ID Integration Provider, that will be captured and stored in the Master Data Hub.
- **The Remote ID Integration Provider** (this RFI): The RID Integration Provider will be a critical communication backbone, enabling the efficient gathering and exchange of data between Remote ID Service Providers and the Master Data Hub. This layer enables interoperability and collaboration within the UAS ecosystem, ensuring that relevant information is securely transmitted and shared across various system components.
- **Cloud Server/DB - Master Data Hub** (separate RFI): Data emitted from UASs will be transmitted to the Master Data Hub via a Remote ID Service Provider and the Remote ID Integration Provider. Integration between the UAS data held in the Master Data Hub and Operator data held in the Operator Portal will enable the identification of UAS users by the CAA and third parties where requirements and access controls permit. The Master Data Hub will contain historical RID data and the data will be made available via APIs to Authorised Parties.

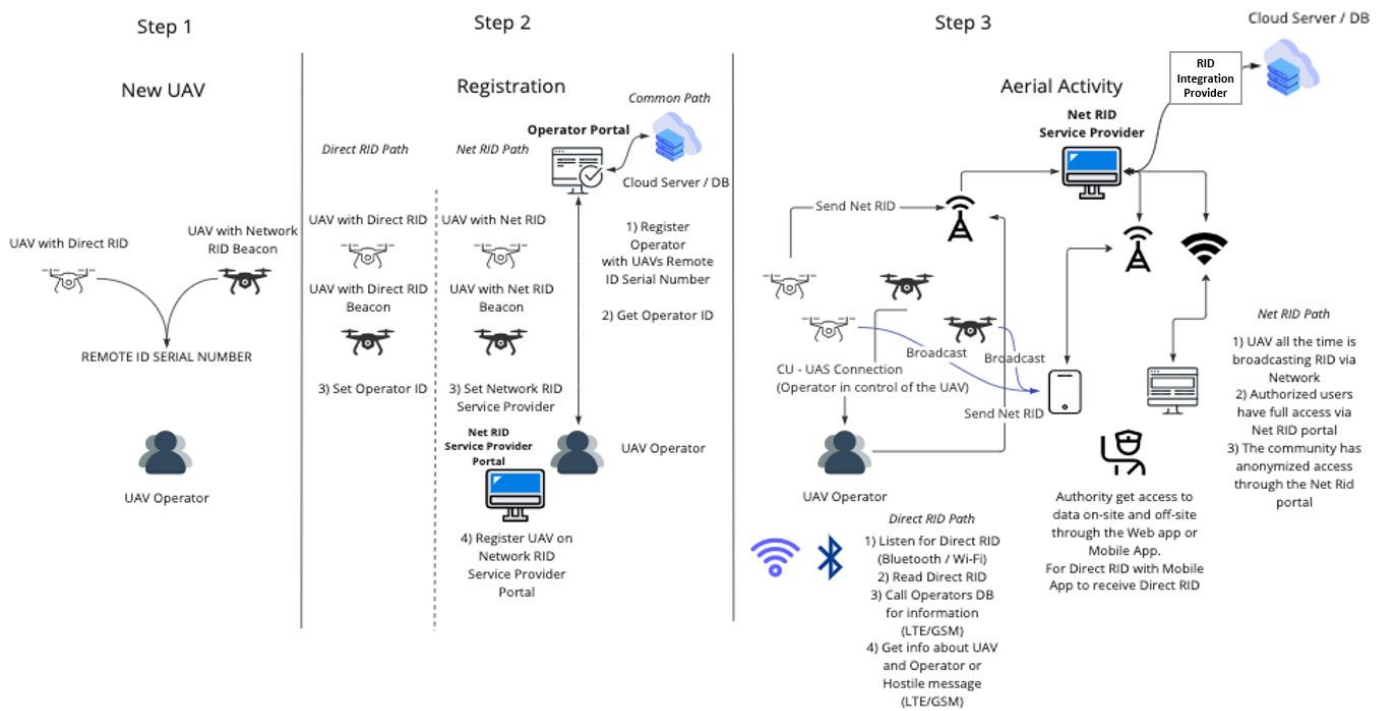


Figure 1: Technical solution overview of RID components

## OUR TIMETABLE

The below are indicative timelines for this RFI and next steps for this procurement.

Date	Activity
01 June 2023	Publication of the Request for Information
14 June 2023	Deadline for the written responses to RFI questions and suppliers to confirm interest
14 June – 21 June 2023	Review of RFI responses
22 June 2023	Supplier event: We intend to hold a supplier event/supplier engagement on this date. More information will be issued to suppliers following the deadline for RFI responses.
Mid June - July 2023	After the returns have been reviewed additional questions might arise in addition to potential supplier events. Suppliers will be contacted in due course to clarify or provide additional information.
October 2023	Procurement issued

## QUESTIONS AND CLARIFICATIONS

- Potential Providers may raise questions or seek clarification regarding any aspect of this RFI document at any time prior to the Response Deadline. Questions must be submitted to [scott.taggart@caa.co.uk](mailto:scott.taggart@caa.co.uk).
- To ensure that all Potential Providers have equal access to information regarding this Procurement, responses to questions raised by Potential Providers will be published in a questions and answers document, which will be made available to all potential bidders prior to the release of this procurement.
- Responses to questions will not identify the originator of the question.
- If a Potential Provider wishes to ask a question or seek clarification without the question and answer being published in this way, then the Potential Provider must notify us and provide its justification for withholding the question and any response. If we do not consider that there is sufficient justification for withholding the question and the corresponding response, the Potential Provider will be invited to decide whether:
  - the question/clarification and the response should in fact be published; or
  - It wishes to withdraw the question/clarification.

## GENERAL CONTACT POINT FOR THIS RFI

**RFI Lead (Name):** Scott Taggart

**Email Address:** [scott.taggart@caa.co.uk](mailto:scott.taggart@caa.co.uk)

## SECTION A – REMOTE ID INTEGRATION PROVIDER

### Our aims – what we want to achieve

Subject to a decision to implement RID, the CAA would intend to contract for the development, implementation and maintenance of the RID Integration Provider, which is a new system for the CAA. The Remote ID Integration Provider (often known as the InterUSS Layer or component) will serve as a critical communication backbone for the overall Remote ID service, enabling the efficient gathering and exchange of data between multiple network RID service providers (*Section B of this RFI*) and the Master Data Hub (*a separate RFI*). This essential element promotes interoperability and collaboration within the UAS ecosystem, ensuring that relevant information is securely transmitted and shared across various system components, enhancing overall connectivity and coordination. It will enable the efficient and secure exchange of information between components, allowing stakeholders to interact with the hybrid Remote ID system.

The Remote ID Integration Provider will develop, implement and maintain the Integration Layer for all the Remote ID Service Providers, ensuring the Remote ID Service Providers can communicate with one other and that all Remote ID data is coordinated centrally and then shared with the Master Data Hub.

UASs in flight will emit Remote ID data (time stamp, ID, location etc). This data will be emitted for every second that required Open Category and all Specific Category UASs are in operation, and will be picked up by the Remote ID Service Providers. The Remote ID Integration Provider will establish the coordination Layer between the Service Providers, and the Master Data Hub which will store all RID data in real time and create historical records. Current data shows there are around 200,000 active UAS Operators and taking a conservative estimate, there are forecast to be around 350,000 UAS Operators by 2030. The current and projected number of actual UAS and UAS flights is not yet known but the overall Remote ID solution must be scalable and future-proof to meet the growing industry demands.

The Remote ID Integration Provider would be expected to build, operate and maintain a service which:

- Provides robust authentication and authorization (supporting OAuth2.0) to provide role-based access control based on user privileges.
- Is able to receive and store UAS Remote ID information including operator ID, location, altitude and time, supporting multiple data formats and validates incoming UAS RID information for correctness and completeness.
- Maintains a history of UAS flight data and changes made by users and supports the creation, update and deletion of UAS flight data.
- Supports the sharing of UAS flight data among multiple Remote ID Service Providers, making UAS flight data discoverable to other Remote ID Service Providers based on location and time and regulates access of Remote ID Service Providers to shared flight data.

- Detects and resolves conflicts between UAS flight plans, notifying Remote ID Service Providers involved and provides a mechanism for conflict resolution.
- Is able to send notifications and alerts to registered Remote ID Service Providers and is able to customize these based on user-defined parameters (distance, time) and support different notification channels, including email, SMS and in-app.
- Ensures all data transmission between components is encrypted using industry-standard protocols such as TLS, complies with relevant data protection regulations and undergoes regular security audits and vulnerability assessments.
- Is able to handle a large number of concurrent users and UAS flight data, scaling to accommodate increasing users loads and data volumes, whilst maintaining high availability.
- Supports monitoring and logging of components, including API requests, response times and error rates, providing a centralized logging solution that enables aggregation, analysis, export and storage.
- Provides comprehensive documentation including API reference and user guides, providing a support channel for users to report issues and request assistance.

In addition, the supplier must:

- Hold a current Cyber Essentials certificate and be able to demonstrate compliance with Information Security Standards (e.g. ISO/IEC 27001 or the wider ISO 27000 Series, SSAE18 SOC Compliance, CSA Star).
- Have appropriate Business Continuity, Disaster Recovery, Information Security Risk Management Policies and Incident Management processes in place to protect the CAA against information security breaches, physical security or incidents affecting the confidentiality, integrity or availability of CAA data and be able to explain the arrangements in place.
- Provide details of any third party that will have access to CAA data or the environment in which CAA data is hosted and be able to explain what Policies, Standards and Procedures they have in place to govern and manage any third party that may have access to CAA systems and/or data, ensuring any third party provides services using exclusively SC cleared staff.

The Remote ID Integration Provider would provide a new service for the CAA which integrates with other technical components of the Remote ID solution and ensures data is transferred to the Master Data Hub.

Subject to a decision to implement RID, the CAA would look to contract for the initial implementation and build, then followed by operation and maintenance of the service up the three years. CAA would require rights of access to its data, which would be stored and managed in accordance with UK law. On demand CAA may request migration or duplication of data.

## What we are looking for?



As part of this RFI we are only requesting suppliers to respond to the questions in the section below, please note suppliers are required to keep their responses succinct and stick to the word limits where stipulated.

**Questions**

Question Ref	Questions	Word limits and description of information expected
1	Can you supply the Remote ID Integration Layer and are you interested in this procurement?	Yes/No Response
2	Can you provide a Remote ID Integration Layer which is compliant with GDPR laws and UK data compliance? <i>(This is a mandatory requirement)</i>	Yes/No Response
3	Would you be willing to provide a universally available Remote ID Service as part of supplying the Remote ID Integration Layer?	Yes/No Response
4	If you would be willing to provide a universally available Remote ID Service as part of supplying the Remote ID Integration Layer, how would you deliver these two components together?	500 words
5	Can you provide the service using exclusively SC cleared staff for any required contact with CAA data and confirm that any staff working with CAA data would sign a non-disclosure agreement prior to being granted access? <i>(This is a mandatory requirement)</i>	Yes/No Response
6	How long would you envisage the implementation phase based on our requirements? <i>Please make a clear distinction in your timelines for each component, making it clear which are for the Remote ID Integration Layer and which are for the Remote ID Service Provider, if you are willing to provide both.</i>	500 words (can include an approx. range of dates)
7	Do you have experience of providing a Remote ID Integration Layer in other geographies?	Yes/No response
8	If you have experience of providing this service, please outline details of this previous experience, where you have done this previously and information on the volumes of data involved. Additionally, please indicate if you provided a Remote ID Service in addition to providing a Remote ID Integration Layer.	500 words

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<p><b>9</b></p>	<p>Can you provide approximate cost estimates which include implementation costs and ongoing operational costs? Please include any key assumptions.</p> <p><i>Please make a clear distinction in your costs for each component, making it clear which are for the Remote ID Integration Layer and which are for the Remote ID Service Provider, if you are willing to provide both.</i></p>	<p>500 words</p>
<p><b>10</b></p>	<p>What information and metrics would you require from the CAA within our ITT to accurately cost for the service (e.g., users, stakeholders, system architecture diagrams, system data, required integrations with the Master Data Hub etc)?</p> <p><i>Please make a clear distinction in your requirements for each component, making it clear which are for the Remote ID Integration Layer and which are for the Remote ID Service Provider, if you are willing to provide both.</i></p>	<p>1000 words</p>
<p><b>11</b></p>	<p>What do you consider to be the key performance metrics for a service of this nature?</p> <p><i>Please make a clear distinction between your requirements for each component, making it clear which are for the Remote ID Integration Layer and which are for the Remote ID Service Provider, if you are willing to provide both.</i></p>	<p>250 words</p>
<p><b>12</b></p>	<p>Is there any further information needed to further your understanding of the requirements to enable you to provide more accurate costs and timelines to deliver and implement a Remote ID Integration Layer?</p>	<p>500 words</p>
<p><b>13</b></p>	<p>We are planning to host a supplier event on 22<sup>nd</sup> June (time and format to be confirmed). Please indicate if you would be interested in attending, and if so provide contact details for maximum 2 attendees.</p>	<p>Yes/No response (Plus contact details for 2 attendees including, Name, Job title/role, email address, phone number)</p>

Responses must be submitted via email to [scott.taggart@caa.co.uk](mailto:scott.taggart@caa.co.uk) by **17:00 on the 14 June 2023**

## SECTION B – REMOTE ID SERVICE PROVIDER/S

### Our aims – what we want to achieve

Remote ID Service Providers enable the real-time identification and tracking of UASs by ensuring that registered UASs can be easily identified and that their operators are in compliance with the established regulations. The chosen decentralised architecture features multiple instances of network Remote ID service APIs, representing various network Remote ID Service Providers, which in turn bolsters scalability, reliability and service accessibility.

Remote ID Service Providers would be expected to build, operate and maintain a service which:

- Supports the input and management of UAS identification information, including aircraft registration, operator details and UAS type and the real-time location data including latitude, longitude, altitude and time.
- Implements Remote ID Integration Provider APIs for seamless integration and data exchange with other Remote ID Service Providers, supporting querying, retrieval of UAS identification and location data and the provision of location data to other Remote ID Service Providers using the Remote ID integration Layer.
- Ensures data encryption during transmission to and from the Remote ID Integration Provider to other Remote ID Service Providers to maintain data privacy and security, controlling data access to authorized Remote ID Service Providers only.
- Is scalable to handle increasing numbers of UAS and Remote ID Service Providers, whilst maintaining performance, high availability and low latency during data exchange with the Remote ID Integration Provider and other Remote ID Service Providers.
- Provides monitoring and reporting tools to track performance and status of the Network Remote ID Service, providing customizable reports of UAS identification, location and overall system performance.
- Complies with all applicable aviation regulations and guidelines related to remote identification of UASs and maintains up-to-date documentation of regulatory compliance that is available to stakeholders on request.
- Provides periodic system maintenance and updates to ensure continued compatibility with the Remote ID Integration Provider and other Remote ID Service Providers, notifying registered Remote ID Service Providers of upcoming changes, maintenance or updates that may impact availability of functionality of the Remote ID Service.
- Enables the secure registration and authentication process for end users (as part of the OAuth2.0 authentication layer and UAV software), including the collection of necessary information to allow end users to access the Network Remote ID Service.

In addition, suppliers must:

- Hold a current Cyber Essentials certificate and be able to demonstrate compliance with Information Security Standards (e.g. ISO/IEC 27001 or the wider ISO 27000 Series, SSAE18 SOC Compliance, CSA Star).

Remote ID Service Providers would be expected to meet and then operate under the Remote ID Service Provider certification requirements, which will be developed by the CAA.

## What we are looking for?

As part of this RFI we are only requesting suppliers to respond to the questions in the section below, please note suppliers are required to keep their responses succinct and stick to the word limits where stipulated.

Question Ref	Questions	Word limits and description of information expected
1	Can you provide a Remote ID Service and are you interested in providing one as part of the UK's Remote ID solution?	Yes/No Response
2	Are you interested in Procurement A (Remote ID Integration Provider)?	Yes/No Response
3	Are you planning on delivering a Remote ID Service as part of a consortium or a group? <i>If yes, please provide details of the consortium members and their roles.</i>	Yes/No response and 250 words
4	If not already, would you be interested in delivering a Remote ID Service as part of a consortium? <i>If yes, please indicate if you are happy for us to share your details with other interested parties and supply the relevant contact details for us to share.</i>	Yes/No and 250 words (Company, Name, Role/job title, email, phone number)
5	Can you provide a Remote ID Service which is compliant with GDPR laws and UK data compliance? <i>(This is a mandatory requirement)</i>	Yes/No Response
6	Do you already provide a Remote ID Service in other geographies?	Yes/No Response 500 words (further detail on how you have delivered this)
7	Will your existing Remote ID service require adaptation to operate in line with the UK RID solution?	500 words
8	How long would you envisage the implementation phase based our requirements?	500 words (can include an approx. range of dates)
9	Can you provide approximate cost estimates to provide the Remote ID service? Please include any key assumptions (whether the costs are per Operator, per UAS, a flat fee, whether annual, monthly etc.)	500 words
10	Can provide information on whether you would have different pricing models for different types of UAS (Open or Specific Category for example)?	250 words

<b>11</b>	What information and metrics would you require from the CAA to accurately cost for the service (e.g., users, stakeholders, system architecture diagrams, system data etc)?	500 words
<b>12</b>	Can you provide any information of additional services that you would be interested in providing to the UK market, beyond Remote ID and any relevant pricing information?	500 words
<b>13</b>	Do you have any concerns with the proposed certification/licencing model to become a Remote ID Service Provider in the UK?	500 words
<b>14</b>	Is there any further information needed to further your understanding of the requirements to enable you to provide more accurate costs and timelines to deliver and implement a Remote ID Service?	500 words
<b>15</b>	We are planning to host a supplier event on 22 <sup>nd</sup> June (time and format to be confirmed). Please indicate if you would be interested in attending, and if so provide contact details for maximum 2 attendees.	Yes/No response (Plus contact details for 2 attendees including, Name, Job title/role, email address, phone number)

Responses must be submitted via email to [scott.taggart@caa.co.uk](mailto:scott.taggart@caa.co.uk) by **17:00 on the 14 June 2023**