Department
for Environment
Food & Rural Affairs

www.gov.uk/Defra

Appendix 2 – Call-Off Procedure:

Research, Development and Evidence Framework Lot 3.1

Tender Reference: C21348

Date: 12 October 2023

Contract Version_v0.1

1.0 Request for Proposal

1.1 The following document is to be used as a Call-Off template to be sent to all Contractors on a sub-lot by the Project Manager of the Contracting Authority for completion and return in accordance with the Call-Off procedures detailed in the Form of Agreement.

Research, Development and Evidence Framework

REQUEST FOR PROPOSAL

Project title:	Selection and analysis of satellite data for regulating air quality			
Call off Reference:	RDE411			
Atamis project ref (if required):	C21348			
Date:	19th September 2023			
Contracting Authority (Defra and its arms-length bodies etc)	Environment Agency (EA)			
Project Manager:	[redacted]	**Phone number:**	[redacted]	
Authorised by:	[redacted]	**Email:**	[redacted]	
Commercial Contact (if applicable):	[redacted]			
Project Start Date	15 November 2023			
Project Completion Date	31st March 2025			
For any projects over the direct award threshold, full competition is required (i.e., all contractors on the Sub-Lot are invited to quote).	**Direct Award**	No	**Mini-comp**	Yes
Call off from Sub-Lot number	3.1 – Air Quality Analysis and Expert Services			
Proposal return date:	**7th November 2023 15:00**			

Evaluation criteria
Contractors: Failure to meet the minimum score threshold stated will result in the bid being removed from the process with no further evaluation regardless of other quality or price scores.

Quality	**Weighting**	**70%**
Price	**Weighting**	**30%**
Quality Sub-Criteria Weightings:		
Approach & Methodology **A minimum score threshold of 50 will be applied to this question**	Please set out in detail how you propose to deliver this project. Your reply must include the following information: a) A proposed overall project plan b) Proposed methodology and timeline for each phase of the project c) Detailed description of how you propose to develop preliminary protocols that could be used for regulatory purposes	**40%**
Proposed Staff (inc Pen Portraits) and Contractor's experience/accreditations. **A minimum score threshold of 50 will be applied to this question.**	Please provide details of proposed project team and team structure, clearly identifying any partnerships, subcontractors and/or associates you intend to use in the delivery of this project. Your reply must evidence: • Extensive expertise of converting aerometric observations into reliable evidence for regulatory purposes including of the design, drafting and administration of formal standards • Wide experience of air quality, including detailed understanding and experience of satellite images of air pollution and how they may be selected and interpreted to infer emissions from industrial sources, taking account of weather variations, confounding sources, and background. • Familiarity with statistics and uncertainties in schemes for measuring and interpreting air quality data, so the uncertainty and representativeness of emission estimates can be estimated and compared with regulatory requirements. • Ability to formulate, demonstrate and evaluate a test protocol to investigate what is needed in a practical scheme for satellite observations, and to advise on what data and methods are priorities for further development,	**25%**

	• Proven experience of working with air-quality regulators to convert novel technical tools into robust evidence on industrial emissions, including experience of communicating new measurement and interpretation methods to practitioners in industry and regulation. • Ability to start work quickly and to mobilise a suitably senior team of researchers so that appropriate skills and experience are substantially involved throughout the project. Include a table showing the staff days expected to be spent on the project per phase, this table should match the staff days in the cost proposal. Include pen portraits for key members of staff, including sub-contracted staff, (max 250 words per person), as a separate attachment, setting out their experience, qualifications and expertise relevant to the project	
Project Management (including project plan) **A minimum score threshold of 20 will be applied to this question.**	Please set out your proposed project management arrangements including day to day working for the project, quality assurance, timetable for the project and a Gantt chart, which may be provided as a separate attachment, presenting milestones, deliverables, timelines and inter-dependencies. Your reply should include the management of sub-contractors or other partners if applicable.	**20%**
Risk: **A minimum score threshold of 20 will be applied to this question.**	Please set out the key risks you have identified for this project, including proposed mitigations and managing actions. A risk register may be attached with your response.	***10%***
Sustainability **A minimum score threshold of 20 will be applied to this question.**	The Environment Agency has set itself challenging commitments and targets to improve the environmental economic and social impacts of its work. These support the Government's green commitments. Within this context, please briefly explain your approach to delivering the services and how you intend to reduce negative sustainability impacts. Please discuss the methods that you will employ to demonstrate and monitor the effectiveness of your organisation's approach for this requirement and how you will minimise the Carbon Footprint of the project.	**5%**

Specification

1. Description of work required – overall purpose & scope (including reporting requirements)

Poor air quality has been described as the top environmental risk to human health in the UK (Department for Environment, Food & Rural Affairs 2019), and has been linked to around 40,000 deaths per year in the UK (Royal College of Physicians 2016).

Although ambient air quality in the UK has improved significantly in recent decades (National Statistics 2020), significant challenges remain, for example:

- Legal limits for nitrogen dioxide are frequently exceeded in parts of the UK, especially urban areas.
- Concentrations of particulate matter are generally within legal limits but remain at levels of concern for human health in many locations and may exceed revised limits for fine particulates.
- Most nitrogen-sensitive habitats in England are subject to excess airborne deposition.

The Environment Agency regulates large, complex industrial processes, and local authorities regulate other sources such as transport and smaller industrial processes. In our role, we must be able to assess industrial emissions to determine and issue permits, monitor compliance, and investigate pollution incidents. Hence, we need to be able to quantify pollutant emissions and concentrations for industrial sites, and for this we use a range of conventional/terrestrial techniques including emission factors, flue-gas monitors, and ambient monitors - which may be static or mobile.

Earth observation satellites have previously been suggested as potential sources of data, that could deliver additional advantages over the conventional/terrestrial techniques because of their spatial coverage, regular timing, and utility for attributing pollutant plumes to sources.

Historically earth observation was seen as an emergent / low quality / unproven technology; so we've not used satellite data to augment our other air quality monitoring methods. But recent advances in the sensitivity of satellite sensors and increases in the spatial and temporal resolution of satellite sampling, mean that we now need to assess the suitability of satellite data for regulatory purposes.

What we want the contractors to do?

- Carry out a desktop review of regulatory requirements for air-quality evidence from industrial processes and identify those types of situations in which currently available satellite data would be most likely to provide the evidence required.

- Develop and demonstrate a preliminary protocol that would pilot a robust standard for the selection and use of satellite data for regulatory purposes – including the identification of additional information that would be required to underpin this use.
- Undertake case studies using current earth observation and underpinning data to evaluate:

  (a) the difference in levels of confidence between this and conventional/terrestrial data.
  (b) whether the quality of the data currently available from satellites provides the levels of confidence needed to enable its use for regulatory purposes

Phasing of the work

We envisage the work being undertaken in three phases as set out below:

Phase 1: Preparatory

To study the regulatory requirements for air-quality data and identify 5 data types/situations where currently available satellite data would be most likely to provide the evidence required. For each of the 5 types/situations, assess the levels of confidence achievable from satellite data and compare them with those available from existing conventional/terrestrial techniques.

Phase 2: Develop and evaluate protocols

Based on the outputs of Phase 1 develop preliminary protocols for the 5 data types/situations that would provide a robust standard for the use of satellite data for regulatory purposes, setting out the additional information that would be required to underpin this use.

Evaluate the availability and quality of the satellite and underpinning data and the levels of confidence that could be achieved using the protocols for regulatory purposes.

Evaluate whether protocol-based satellite data could augment or replace conventional/terrestrial data for regulatory purposes, identifying any improvements in the protocols and satellite measurements needed to increase levels of confidence so satellite data are usable for regulatory purposes.

Phase 3: Case studies and Reporting

Carry out desk top case studies for a range of industrial sites to compare the regulatory decisions that would be made using protocol-based satellite data against those made using conventional/terrestrial techniques and data. It is anticipated that 2-3 case studies will be agreed and completed to provide a representative overview of the feasibility of using satellite data for regulatory purposes. The case studies would also evaluate the resources needed to collate and evaluate protocol-based satellite data and advise on potential improvements in practicality/efficiency. The location and final number of studies to be undertaken will be discussed and agreed with the Environment Agency Project Manager once the project has commenced.

Prepare a written final project report setting out the approach, methodology and findings of the project and advise on what is currently possible / improvements needed for further development. Complete with a simple high level PowerPoint summarising the key findings.

Other information

- This project is not to develop definitive protocols, but to carry out the research needed to assess the potential to use satellite data to develop robust protocols.
- The contractor will be expected to deliver and project manage this contract.
- The Environment Agency will provide data, bring together technical staff and experts as necessary to support delivery of the project. However, this project is being tendered to secure the necessary capacity to undertake this work and therefore we cannot commit to inputting significant time/resources.
- The contractor will allow for a contract start-up meeting, 8 virtual review meetings with an Environment Agency Technical Advisory Group, and meetings at the end of Phases 1 and 2 to appraise and agree options for Phases 2 and 3, respectively.
- There will be regular project meetings where the contractor will provide project progress updates to the Environment Agency Project Manager against the project plan.
- The contractor will allow for two meetings to present the final report to Environment Agency stakeholders.
- The contractor will be expected to identify, acquire and collate satellite data, ancillary data, and terrestrial data for the site for the chosen industrial sites from the Public Register and other

available open sources. It is not anticipated that the Environment Agency will provide any substantial data.

Required Contractor outputs

- An interim report at the end of each phase, complete with a simple high level PowerPoint summary of the key findings
- Documented protocols for the use of earth observation data for the regulatory purposes identified.
- A written final project report and simple high level PowerPoint summarising the key findings.

2. Required skills / experience from the contractor and staff

- Proven ability to deliver and project manage the delivery of research projects.
- Extensive experience of converting aerometric observations into reliable evidence for regulatory purposes.
- Extensive experience of working with statutory legislation and developing protocols that can be used to implement requirements, which can withstand scrutiny.
- Detailed understanding of satellite images of air pollution and how they may be selected and interpreted to infer emissions from target sources.
- Familiarity with statistics and uncertainties in schemes for measuring and interpreting air quality data, so the uncertainty and representativeness of emission estimates can be estimated and compared with regulatory requirements.
- Ability to formulate, test and evaluate protocol(s) of a quality required for use for regulatory purposes
- Proven experience of working with air-quality regulators to convert technical tools into robust evidence on industrial-scale emissions, including experience of communicating new measurement methods to practitioners in industry and regulation, both nationally and internationally
- Skills in writing reports on aerometric studies and proven ability in disseminating results to users in policy teams, industry and regulators.

3. Proposed programme of work and payment table (Detailing specific tasks, key milestones, deliverables & completion date where appropriate)

Task no.	Task and deliverable	Completion date	Payment schedule
1	Preparatory work	March 2024	25%
2	Develop and evaluate protocols	September 2024	60%
3	Case studies and Final Report	January 2025	15%

Contractors may provide their own milestones based on the ‘Contractor output’ requirements detailed above.

4. Risk

Risks identified by the Authority:

- Ability of contractor to access the data on industrial sites from the Public Register and other sources.
- Limited Authority time and resource for technical input/support.

5. Further Sustainability Considerations

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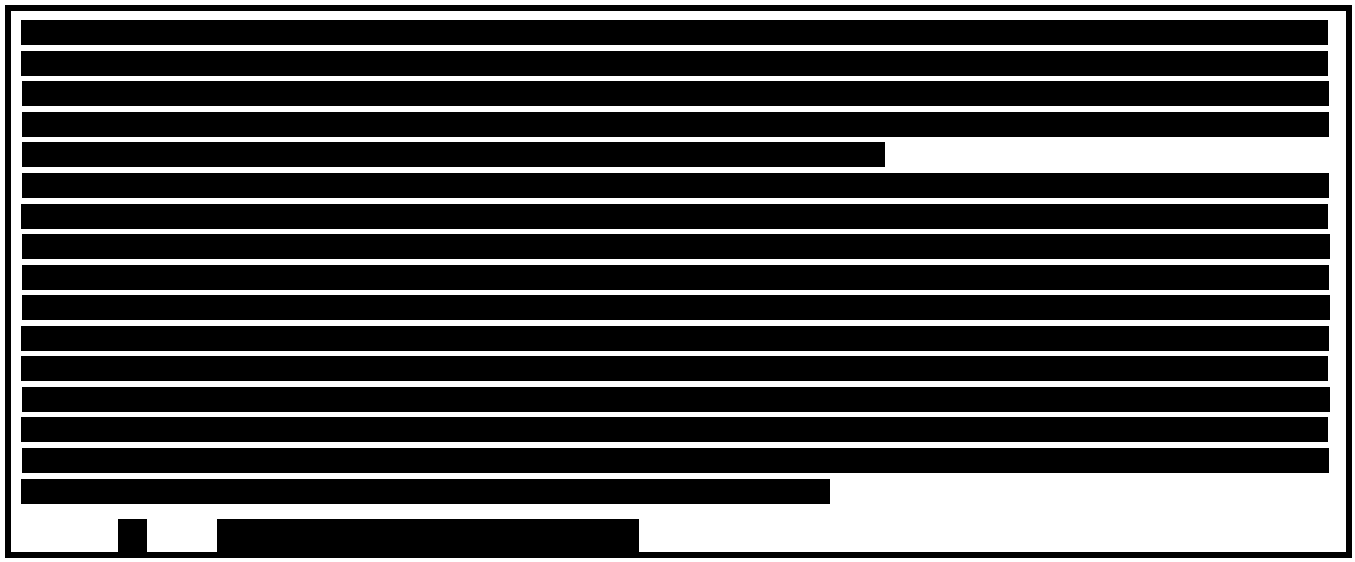
The Authority has set itself challenging commitments and targets to improve the environmental economic and social impacts of its estate management, operation, and procurement. These support the Government's green commitments. The policies are included in the Authority's sustainable procurement policy statement published at:
https://www.gov.uk/government/publications/defra-s-sustainable-procurement-policy-statement

Within this context, please briefly explain your approach to delivering the services and how you intend to reduce negative sustainability impacts. Please discuss the methods that you will employ to demonstrate and monitor the effectiveness of your organisation's approach for this requirement & how you will minimise the Carbon Footprint of the project.

2.0 Proposal

2.1 The following document is to be used as a Call-Off template to be sent to all Contractors on a sub-lot for completion and return in accordance with the Call-Off procedures detailed in the Form of Agreement.

Research, Development and Evidence Framework 2 **PROPOSAL**
To be completed by the Contractor
Contractor's Name: Ricardo AEA Ltd **Call off Reference: C21348** **Date:6/11/2023**
Note: Your proposal must not 6 sides of A4. Attachments must not be a port ded unless requested, with the ception of ogramme diagram, staff egister and full cost schedule to ensupport your proposal. **ot make or append Caveats – any points of osal uncertainty must be raise ubmitting the proposal. Manager. e, these will l Project** **(, with the exception of section 6 e complete the following secti form each question in the Technical Proposal), and attach the c envelope in the eSourcing syst**
1. Approach & Methodology



[redacted]

[redacted]

[redacted]

[redacted]

2. Project Management (inc outline Project plan). A full project plan should be provided as an attachment with your reply.

2. PROJECT MANAGEMENT

[redacted]

[redacted]

3. Proposed Staff (please provide pen portraits for key members of staff, including sub-contracted staff, (max 250 words per person), as a separate attachment)

3. PROPOSED STAFF AND CONTRACTOR'S EXPERIENCE

[redacted]

Risk Management (please provide Risk register as a separate attachment)

4. RISK

[redacted]

5. Sustainability

5. SUSTAINABILITY

[redacted]

6. Cost Proposal – Please complete the table below with the details of the Cost Proposal provided for Question C2 in the Commercial Requirement envelope.

Task No.	Name	Framework grade	Day rate	No. of Days or part thereof	Cost
Project Management (includes inception and meetings)	[redacted]	Consultant	£[redacted]	[redacted]	[redacted]
	[redacted]	Senior	[redacted]	[redacted]	[redacted]
	[redacted]	Consultant	[redacted]	[redacted]	[redacted]
	[redacted]	Junior	[redacted]	[redacted]	[redacted]
	[redacted]	Junior	[redacted]	[redacted]	[redacted]
	[redacted]	Junior	[redacted]	[redacted]	[redacted]
	[redacted]	Director	[redacted]	[redacted]	[redacted]
	[redacted]	Senior	[redacted]	[redacted]	[redacted]
	[redacted]	Senior	[redacted]	[redacted]	[redacted]

1.Preparatory Work	[redacted]	Consultant	£[redacted]	[redacted]	[redacted]
	[redacted]	Senior	[redacted]	[redacted]	[redacted]

	[redacted]	Consultant	£[redacted]	[redacted]	[redacted]
	[redacted]	Junior	£[redacted]	[redacted]	[redacted]
	[redacted]	Junior	£[redacted]	[redacted]	[redacted]
	[redacted]	Junior	£[redacted]	[redacted]	[redacted]
	[redacted]	Director	£[redacted]	[redacted]	[redacted]
	[redacted]	Senior	£[redacted]	[redacted]	[redacted]
	[redacted]	Senior	£[redacted]	[redacted]	[redacted]
2.Develop and evaluate protocols	[redacted]	Consultant	£[redacted]	[redacted]	[redacted]
	[redacted]	Senior	£[redacted]	[redacted]	[redacted]
	[redacted]	Consultant	£[redacted]	[redacted]	[redacted]
	[redacted]	Junior	£[redacted]	[redacted]	[redacted]
	[redacted]	Junior	£[redacted]	[redacted]	[redacted]
	[redacted]	Junior	£[redacted]	[redacted]	[redacted]
	[redacted]	Director	£[redacted]	[redacted]	[redacted]
	[redacted]	Senior	£[redacted]	[redacted]	[redacted]
	[redacted]	Senior	£[redacted]	[redacted]	[redacted]
3.Case Studies (3*) and Final Report	[redacted]	Consultant	£[redacted]	[redacted]	[redacted]
	[redacted]	Senior	£[redacted]	[redacted]	[redacted]
	[redacted]	Consultant	£[redacted]	[redacted]	[redacted]
	[redacted]	Junior	£[redacted]	[redacted]	[redacted]
	[redacted]	Junior	£[redacted]	[redacted]	[redacted]
	[redacted]	Junior	£[redacted]	[redacted]	[redacted]

		Director	£		
		Senior	£		
		Senior	£		
			Total Staff Costs	**£114,081.16**	
Expenses (please detail type i.e.					

STAFF DAYS

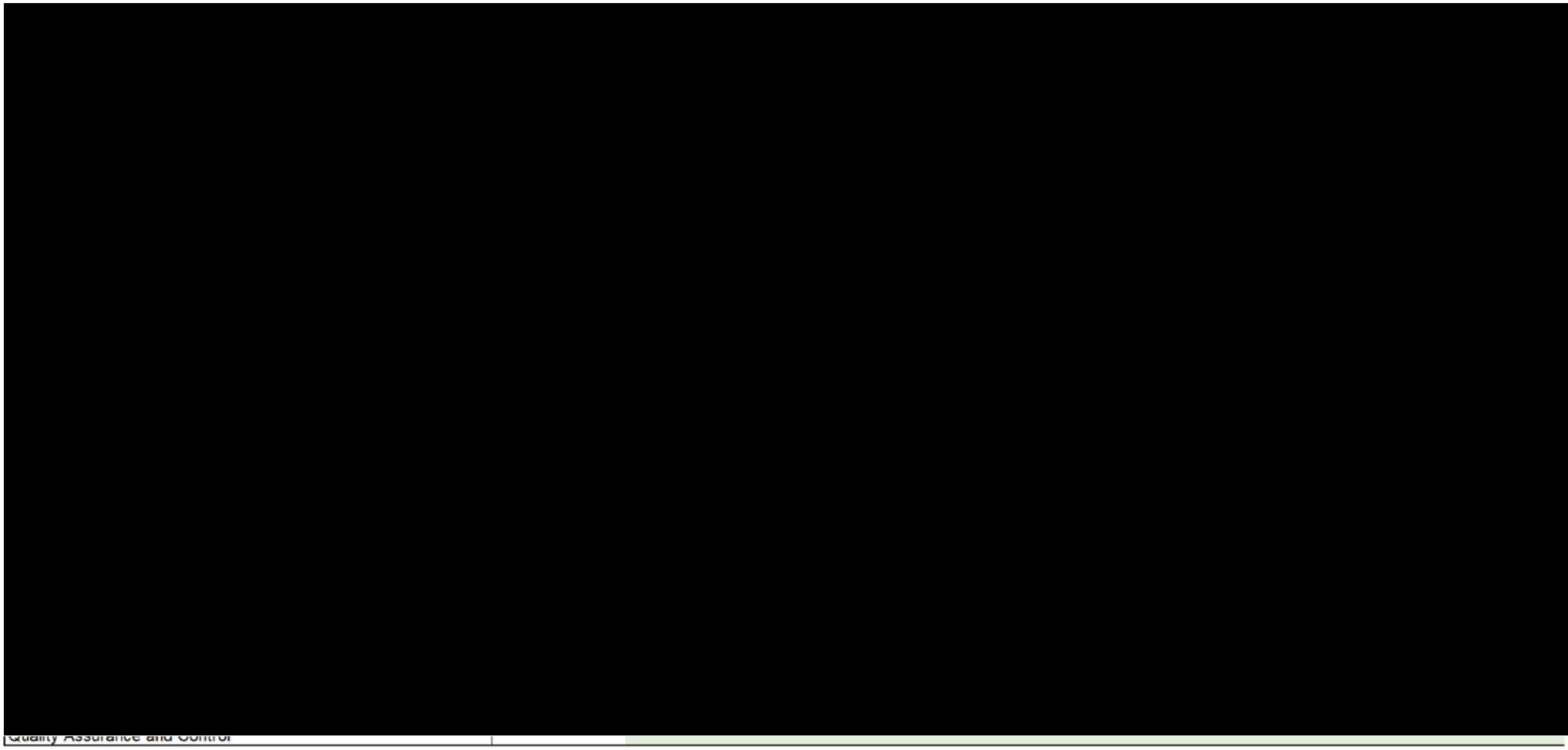
	0.Project management	1.Preparatory Work	2.Develop protocols	3.Case Studies and Final Report

Appendix 1 Project Plan

MILESTONES

Deliverable no.	Task and deliverable	Completion date	Payment schedule

[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	25%
[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	60%
[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	15%


Quality Assurance and Control
M Meeting
♦ Deliverable
Ongoing work

GANTT CHART

3.0 Order Form

3.1 The following document is to be completed by the Contracting Authority and sent to the Contractor for counter signature to form a Call-Off contract.

Research, Development and Evidence Framework 2 **ORDER FORM**
To be completed by Contracting Authority Project Manager and sent to Contractor for countersignature
Project title: Selection and analysis of satellite data for regulating air quality Call off Reference: **Atamis project ref: C21348** **Date: 28/11/2023**

THE Contracting Authority: Environment Agency, Horizon House, Deanery Road, Bristol, BS1 5EH

THE CONTRACTOR: Ricardo AEA Limited Gemini Building, Fermi Avenue, Harwell IBC, Oxon, OX11 0QR

APPLICABLE FRAMEWORK CONTRACT

This Order Form is for the provision of the Call-Off Deliverables and dated 28 November

2023. It's issued under the Research Development & Evidence Framework Agreement reference 30210 for the provision of services for the Selection and analysis of satellite data for regulating air quality project.

CALL-OFF SUB-LOT: 3.1

CALL-OFF INCORPORATED TERMS The following documents are incorporated into this Call-Off Contract. Where numbers are missing we are not using those schedules. If the documents conflict, the following order of precedence applies:

1. Defra Framework Terms and Conditions;
2. Request for Proposal;
3. Proposal;

No other Supplier terms are part of the Call-Off Contract. That includes any terms written on

the back of, added to this Order Form, or presented at the time of delivery.

CALL-OFF START DATE: 1 December 2023

CALL-OFF EXPIRY DATE: 31 March 2025

CALL-OFF INITIAL PERIOD: 14 months

For and on behalf of the Supplier: For and on behalf of the Authority:

Signature: [redacted]

Name: [redacted]

Role: Head of Commercial

Date: 7th December 2023

Signature: [redacted]

Name: [redacted]

Role: SCO Defra group Commercial

Date: 11 December 2023