RFQ [699] **Taxonomy of Artificial Intelligence related technologies for scientific research**

1. Background

You are invited by The Royal Society to quote for the provision of services for a Taxonomy of Artificial intelligence related technologies for scientific research.

The Society is a registered charity, the national academy for science in the UK, and a self-governing Fellowship of many of the world's most distinguished scientists drawn from all areas of science, engineering, and medicine. The Society's fundamental purpose, as it has been since its foundation in 1660, is to recognise, promote, and support excellence in science and to encourage the development and use of science for the benefit of humanity.

The Society has played a part in some of the most fundamental, significant and life-changing discoveries in history and Royal Society scientists – our Fellows and those people we fund – continue to make outstanding contributions to science and help to shape the world we live in.

Drawing on the expertise of our Fellowship, we provide expert, independent advice to policy-makers and to the general public, championing the contributions that science can make to economic prosperity, quality of life and environmental sustainability. Recent policy studies have covered topics such as ocean resources, machine learning, school-business collaboration and synthetic biology.

We also provide a forum for debate, bringing together diverse audiences to discuss the impact of science on current and emerging policy issues.

2. Background to Royal Society's project/programme

The work will take place as part of the Royal Society's Disruptive Technology for Research project, a project conducted by the Science Policy team. The project aims to understand the landscape of data-driven and artificial intelligence-based technologies across different fields of scientific research. The project will further articulate the impact and risks data-driven technologies can have, outline cases of success and seeks to understand the factors that have slowed adoption and how this might be improved. The project will look at different scientific fields as case studies to offer recommendations on how the UK government can best support the development, adoption, and uses of such technologies.

It will seek to highlight:

- Which fields have been uniquely transformed by data driven technologies
- How digital technologies are contributing to novel scientific research methods
- How data-driven technologies are reshaping the process of scientific research and impact reproducibility
- How the UK government (and others) can best support the development, adoption and uses of such technologies
- How universities will need to respond to these changes, in particular when it comes to the training of technicians and scientific infrastructure needs
- The role and of interdisciplinary work and how to best support it
- The risks and limitations of the use of some of these technologies for scientific research.

As part of this project the Royal society is commissioning a taxonomy of AI related technologies and their current applications to scientific research.

The findings of this research in terms of a visual representation of the taxonomy as well as a written summary of key insights and trends will be presented in the Disruptive Technology for Research report.

The inclusion of this research will enable end-users to have an overview of the different types of artificial intelligence related technologies used in different fields of scientific research. This will therefore add context to the challenges, opportunities and Royal Society's recommendations presented through the reports chosen case studies. Moreover, the presentation of this taxonomy will allow end-users, including researchers, to identify what technology is being applied in different fields and therefore lead to new uses. It will also serve as a tool for those in Government considering which fields are underutilising artificial intelligence at present and may need more funding or a renewed focus in strategic planning going forwards.

3. Service Requirements

The purpose of this RFQ is to engage a supplier to conduct a taxonomy analysis of Artificial Intelligence related technologies used in different fields of scientific research. The outputs of this work will include a list of the types of technology classified as artificial intelligence and their application across different scientific research fields. The work will also produce a visual representation of this taxonomy and will present how specific identified technologies are utilised across different fields of research. As part of the taxonomy there will be further detail presented of which organisations and companies own specific technologies.

Delivery will be monitored through an appropriate number of check-in meetings (approximately once per month) as the research progresses with progress noted against a project Gantt chart the commissioned supplier will produce setting out milestones and deadlines for delivery as directed by the Royal Society. Updates will be provided as necessary on the request of the Royal Society via email.

The outputs of this research will be presented in the Disruptive Technology for Research report the audience for which will include but not be limited to stakeholders in Government, academia and industry.

4. Specific deliverables/outputs

Below sets out the specific deliverables to be supplied to meet the service requirements and their due date within the project's timeline.

Stage	Deliverable	Due date
1	Summarised report of the key themes identified from the literature review	21 March 2023

Stage	Deliverable	Due date
2	Visual representations of the taxonomy (in the form of a presentation)	31 March 2023
3	One-page summary of the core insights from the taxonomy including principal technologies applied across different research fields.	7 April 2023
4	Final report presenting the taxonomy as well as any insights resulting from the literature review and appropriate references and methodology	28 April 2023

5. Budget for agreement

The budget for this project is a VAT Exclusive Amount in GBP up to a maximum of £15,000

5. Timeframe for RFQ

	RFQ Stage	Dates
1	RFQ Opens	5 December 2022
2	RFQ Closes	19 January 2023
3	Panel Evaluation Short-listing meeting	23 -25 January 2023
4	(If applicable) Interview/Presentations	29 -31 January 2023
5	Final Panel meeting and confirmation of recommendation/s	1 February 2023 (30 mins to 1 hour)
6	Drafting of recommendations using Quote Summary template then send to Procurement for review and approval. Then review by budget holder for approval	5 -6 February 2023 (1-2 days)
7	Approval of Recommendation and Award letter signed	12-14 February 2023 (1-3 days)
8	Successful Supplier advised	15 February 2023 (4 hours)
9	Contract Award	16 February 2023 (1 day)
10	Contract Start Date	19 February 2023
11	Research Works to be completed by	**By 1 April 2023**

6. Criteria Questions

Below sets out the criteria questions that will be used to assess the submitted quotes

Criteria No.	Criteria Question	Weighting
Mandatory A	Have you demonstrated experience of delivering similar projects within the last 5 years? Yes, or no?	Pass/Fail
1	Demonstrate your understanding of the brief requirements and objectives	10%
2	Detail your proposed project team's experience of delivering similar project	10%
3	Detail how you will achieve the delivery of the services including any innovative approaches, detailed timeline and methodology in consideration of the audience and subject matter in line with the Tender brief at **RFQ [699] Taxonomy of Artificial intelligence related technologies for scientific research**	40%
4	Please detail the experience of the individuals proposed for the project team including provision of CVs. Please also provide references of those who will be undertaking the work.	10%
Pricing Schedule	Pricing and demonstrating value for money by completing the template at Attachment – Project Costs	30%
Total		**100%**

Based on those responses received and the responses to the criteria questions set out above the top 3 highest scoring entries will be shortlisted for award of the contract. The three shortlisted providers will then be subject to interview by an interview panel comprising Kyle Bennett, Eva Blum-Dumontet and Areeq Chowdhury. Consideration of the shortlisted candidates will then be based on their answers to the criteria questions noted above as well as a cost benefit analysis of the services provided for their quote and whether they address the aims and objective of the piece of work as set out in sections 2 and 3.

7. How to submit Quote

Closing date and time of RFQ: 19 January 2023

Please provide a quote comprising Project Costs and Declaration Form. We request that any submitted quotes are provided including and excluding VAT.

Correspondance and submission of a quote should be provided to Kyle Bennett at the following address kyle.bennett@royalsociety.org