Advanced Research + Invention Agency ARIA

# Request for Proposal: Standards and benchmarks for dexterous robotics

15/10/2026

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## SECTION 1: THE REQUIREMENT AND CONDITIONS

### Introduction

ARIA invites proposals to develop standards, benchmarks, interfaces or other shared capabilities that make it easier to develop and deploy dexterous robots. Teams may request up to £3 million each for projects lasting up to two years.

Launched in January 2023, ARIA is a Research & Development (R&D) funding agency designed to take bold bets that complement and amplify the UK's world-class research ecosystem. We fund transformative science and technology capabilities that will benefit the UK and help humanity thrive.

We believe that progress in robot dexterity will be best facilitated if different developers can combine technologies and build on one another's work. We want to support practical efforts that remove shared barriers to progress across the field.

Standards for tactile sense data are a particular priority. The call also welcomes wider work on benchmarking, standardisation and related efforts across dexterous robotics and manipulation. International adoption is central to our ambition: outputs should be useful to, and shaped by, the wider robotics community, with benefits extending well beyond the UK.

### The Requirement (the "Services")

We seek proposals addressing a clearly defined barrier that affects multiple developers or users of dexterous robotic systems. Proposals may focus on one area or combine several. Applicants should justify a coherent scope that can deliver useful, validated outputs within two years; they are not expected to address every area below.

Examples of work in scope include:

- Tactile data standards: common data formats, representations, interfaces, calibration methods or communication protocols that enable tactile data from different sensing technologies and geometries to be understood and used across systems. Approaches may use physically defined quantities, learned representations or other methods, with clear treatment of uncertainty and sensor limitations.
- Benchmarking and performance evaluation: frameworks that define the dimensions of dexterity and connect component performance, manipulation capabilities and application-level outcomes; repeatable test methods, metrics and reporting protocols; and ways to assess reliability, robustness, adaptability and readiness for deployment.

- Shared testing and adoption infrastructure: reproducible test rigs, datasets, tools, coordinated trials across laboratories, accessible test facilities or benchmarking services that allow others to evaluate and improve their technologies.
- Other enabling work that addresses a significant shared barrier to dexterous robotics and manipulation, with a clear explanation of how it will benefit the wider field.

Applicants may build on previous work, including work funded by ARIA, but prior involvement in ARIA-funded work is not required. All proposals should explain what they will reuse, improve or connect, and why further work is needed.

**Successful projects will be expected to:**

- Submit a clear project plan for what they plan to achieve, with specific milestones.
- Define the problem with the developers and users affected by it, and show how the proposed outputs will improve their ability to develop, compare, integrate or deploy robotic systems.
- Deliver practical, reusable outputs with measurable success criteria. Frameworks and proposed standards should be exercised through test methods, implementations or trials appropriate to their scope, with sufficient documentation for others to use them.
- Validate their work across independently developed technologies and with different organisations and test sites. Evaluation should establish reproducibility, limitations and relevance to real manipulation tasks. For tactile data, this could include the effort and performance involved in adding a new sensor; for benchmarking, consistency across sites and the relationship between measured capabilities and useful task performance.
- Engage relevant ARIA-funded creators and the wider robotics community, while making clear which access arrangements and partner contributions are already agreed and which remain to be secured.
- Demonstrate a route to international adoption during or after the project timeline, including participation by non-UK and/or international organisations able to implement, test, maintain or promote the outputs. Where appropriate, engage established standards bodies and related initiatives, and explain how the work will complement them.
- Explain who will own IP generated through the work and on what terms others can use it. We favour arrangements that support broad international adoption while capturing lasting value for the UK, which may include licensing revenues for UK organisations.

Applications will be stronger where they bring together a broad range of organisations, including overseas partners and influential developers, manufacturers, research groups, end users, test facilities or standards organisations. These organisations may contribute as delivery partners, trial users, advisers or participants in wider working groups. We will assess the substance of their

involvement and their ability to support adoption. Organisations based overseas may apply, however international applicants should explain how ARIA-funded work overseas will benefit the UK robotics ecosystem.

Community consultation, consortium building and standardisation activity are in scope when they lead to concrete technical outputs and their use. Projects need not secure formal ratification of a standard within two years, but should distinguish clearly between a proposed specification, demonstrated adoption and formal standardisation. Hardware or algorithm development may be included where needed to create or validate a shared capability; a standalone product or research advance with no credible wider use would not meet the purpose of this call.

### Implementation and Deployment Timeline

Projects will run for up to 24 months from the agreed contract start date. Teams may request up to £3 million in ARIA funding per project for this period. Proposals addressing a focused subset of the RfP are also in scope, with the funding requested proportional to the proposed work. However, preference will be given to consortia with a credible plan to encourage wider uptake across the global robotics community, rather than small groups working in isolation. We expect to make up to four awards.

Matched funding is not required but is permissible. Applicants may include cash or in-kind contributions and should identify their source, status and any conditions. The absence of matched funding will not in itself disadvantage an application.

Applicants should propose a phased delivery plan with milestones for early testing, independent validation, community use and handover. State the earliest possible start date and any dependencies. Any extension would be subject to separate agreement; proposals should deliver their stated outcomes within the two-year period.

### Key Contract Terms

#### Terms and Conditions

The contract will be placed on terms and conditions (T&Cs) provided by ARIA to the preferred bidder. The proposed terms will include the following principles:

- The supplier will be contracted on ARIA's Service Agreement Terms.
- ARIA shall have the right to terminate the contract or part of the contract for convenience upon ninety days' prior notice.
- ARIA shall have the right to terminate the contract or part of the contract where the supplier fails to provide the service contracted, jwith immediate effect.
- The supplier shall indemnify ARIA, its employees, officers and agents against the supplier's infringement of third party Intellectual Property Rights.

All information shared with the supplier shall be subject to confidentiality terms.

## SECTION 2: PROPOSAL RESPONSE STRUCTURE AND SELECTION CRITERIA

Bidders are invited to explain how they will deliver the Services outlined in Section 1. The format below is a guide; alternative formats are acceptable if they provide comparable information within the stated page limit.

Proposals will be assessed against the following criteria and weightings, using the written response and, for shortlisted applicants, a presentation. The criteria apply to the applicant's chosen scope; proposals do not need to cover every example in Section 1.

#### Executive Summary

Summarise the shared barrier you will address, the outputs and outcomes you will deliver over two years, the organisations involved and the amount of ARIA funding requested. Explain who will use the outputs and why your approach offers a credible route to international adoption.

#### Criterion A - Team, Relevant Background and Track Record (10%)

Demonstrate relevant technical experience and the ability to deliver work that others can use. This will usually include:

- Named key personnel, roles, effort and expertise, with access to the equipment, platforms, data and facilities needed.

- Each partner's contribution, including overseas collaborators, and the status of commitments. Explain how the collaboration brings the technical breadth, influence and access needed for the proposed outcomes.
- A brief description of your organisation or consortium and its relevant capabilities, with evidence such as previous projects, test methods, datasets, software, hardware, standards contributions or deployment experience.
- Experience of collaboration across organisations, sectors or countries, including evidence of adoption or independent use of previous outputs where available.
- Any case studies or examples of relevant past work. ARIA may seek to verify examples with your consent and suitable contact details.

Commercial revenue, client numbers and experience of serving fast-scaling organisations are not required.

### Criterion B - Technical Approach and Proposed Delivery Plan (40%)

Set out a technically credible plan, including:

- The barrier, users and use cases you will prioritise; the proposed scope; and why it will materially benefit dexterous robotics or manipulation.
- Your technical approach and relationship to relevant existing benchmarks, standards, interfaces or other work. Explain the need for new work and how you will avoid unnecessary fragmentation.
- Deliverables and evaluation methods, including baselines where appropriate, measurable success criteria, independent validation, reproducibility and known limitations.
- A phased 24-month plan with milestones, decision points, dependencies and technical and adoption risks. Include when external users will first test the outputs and how their feedback will influence development.

### Criterion C - Delivery Capability and Value for Money (15%)

Demonstrate that the team can deliver the proposed work effectively. Please include:

- A transparent budget in pounds sterling, showing the ARIA request and costs by work package and major cost category. State assumptions, exclusions and the treatment of VAT. Identify any matched funding or in-kind support separately and explain any delivery dependencies on it. Matched funding is optional.
- Management and decision-making arrangements, responsibilities across organisations, and how you will manage dependencies and report progress.

### Criterion D - Openness, Reuse and Community Adoption (35%)

Explain how the outputs will be used beyond the funded team, including:

- The organisations and communities you intend to reach, in the UK and overseas; their involvement in defining, testing and adopting the outputs; and evidence supporting those plans. Distinguish confirmed participation from intended engagement.
- How other organisations could implement the specification, reproduce the tests, contribute a technology or use the facilities, as relevant. Explain access costs and practical barriers to participation.
- Plans for publishing specifications, software, data, test protocols and documentation; proposed licences; and any third-party IP or other restrictions. Explain how these arrangements support broad implementation and reuse.
- Governance, versioning, maintenance and support after the project ends, including a credible route to sustained international use and, where appropriate, formal standardisation.

## Additional requirements

Applicants should address the following requirements in their submission.

### Mandatory

- Identify the lead organisation, delivery partners and their responsibilities, and disclose relevant conflicts of interest.
- Confirm the ability to provide or secure the rights and access needed to deliver the proposed work and make the outputs available as described.
- Describe proportionate arrangements for data management, information security and continuity of delivery, including any implications of collaboration across countries.

### Desirable

- Evidence of intended participation from independent users, overseas collaborators and relevant standards or industry organisations, specifying what they will contribute.
- Practical access to technologies or test sites beyond the core team will strengthen the proposed validation and adoption plans.

### Format of Proposal Submission

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| **Format** | PDF, with numbered pages and the bidder's name in the header. |
| **Page Guide** | ***5 pages***, plus references. |
| **Font size** | Arial 10, with appropriate spacing. |
| **Responses to** | ARIA's application portal<br>In case of any technical issues with the portal please contact clarifications@aria.org.uk |

## SECTION 3: TIMELINES, REVIEW AND SELECTION PROCESS

### Procurement Timeline

The dates in the following timetable are provisional and may be subject to change at the reasonable discretion of ARIA.

| Event | Date |
|---|---|
| Deadline for submission of clarification questions | 24 November 2026 (13:00 BST/GMT) |
| Deadline for proposal submission | 01 December 2026 (13:00 BST/GMT) |
| Notification of selection for presentation | 09 December 2026 |
| Presentation by bidders to ARIA selection panel | w/c 14 December 2026 |
| Preferred bidder chosen and informed | 18 December 2026 |
| Target Award date | 10 January 2027 |
| Target Contract Start date | 01 February 2027 |

### Review Stages

The review is intended to consist of four stages:

- Stage 1 - Assessment of written proposals against the criteria in Section 2.
- Stage 2 – Presentations by shortlisted applicants to the ARIA selection panel, with questions on the technical approach, delivery and adoption plans.
- Stage 3 – Selection and notification of preferred bidders. ARIA may support more than one team with complementary approaches.
- Stage 4 – Discussions and negotiations with preferred bidders, onboarding planning and contract agreement.

The ARIA selection panel will be chaired by the Programme Director.

### Clarification Questions

Bidders are urged to review the RFP documentation, identify and submit any clarification requests no later than 24 November 2026 (13:00 BST/GMT), via email to clarifications@aria.org.uk. Clarification requests received after this date will not be reviewed.

Any clarification request or responses containing information that is of relevance to all bidders will be provided to all bidders that confirm their intention to participate. Answers to clarification requests will also be posted to the ARIA website, following the deadline for submission of clarification requests. If bidders do not wish a query or response to be disclosed to other bidders, they must communicate this and the reason why, with the clarification question.

## CONDITIONS OF RFP

**Confidentiality, Publicity, Conduct and Conflicts of Interest:**

ARIA will treat the information you provide in your Proposal as confidential and will not disclose it other than as necessary for the purposes of this RFP, the associated procurement process and ARIA's functions. ARIA may use the information you provide to assess and compare submissions, administer this RFP, agree and manage any resulting Contract, and support ARIA's operational activities, including the development, testing and improvement of internal tools, systems and processes.

ARIA may share Proposals with relevant employees, contractors, advisers and third-party expert reviewers for evaluation purposes. Any such recipients will be subject to appropriate confidentiality, non-use and conflict of interest obligations. ARIA will process any personal data contained in your Proposal in accordance with applicable data protection legislation and its privacy notice and may contact individuals named in the Proposal using the details provided.

In support of its internal processes and operations, ARIA may use secure* generative AI tools. This may include using information from Proposals to assist with assessment, comparison, analysis, summarisation and identification of themes, risks or opportunities, and to support the development and improvement of internal tools and processes. Any AI-assisted outputs will be reviewed by ARIA staff and will not be used as the sole basis for contract award decisions.

*For ARIA, "secure" means enterprise-approved generative AI tools that have undergone ARIA's Technology Security Assessment Process to ensure appropriate security controls, transparency over data storage and processing, and that data provided by ARIA is not used to train external AI models or shared beyond authorised environments.

Although ARIA will treat Proposals as confidential, bidders are advised not to submit potentially patentable or highly commercially sensitive information before appropriate protections are in place. ARIA may disclose confidential information where required in order to meet its obligations as a public body, including for parliamentary, ministerial, judicial or audit purposes (including disclosure to the Comptroller and Auditor General). ARIA may publish statistics or high-level information relating to this RFP or any resulting Contract, but will not publish confidential or personal data.

The contents of this RFP are confidential and must not be not copied, reproduced, distributed or disclosed except for the purpose of preparing and submitting a Proposal. No publicity regarding this RFP or the award of any Contract will be permitted without ARIA's prior written consent. ARIA may use ideas or concepts contained in a Proposal for any reasonable purpose connected with this RFP or subsequent discussions, provided that it does not disclose the identity of the originating bidder.

ARIA reserves the right to amend, clarify or withdraw this RFP at any time and may extend submission deadlines where appropriate. ARIA may reject any non-compliant Proposal, disqualify any bidder guilty of serious misrepresentation, fraud, regulatory breach or conduct giving rise to material risk to ARIA, re-run the procurement on the same or an alternative basis, choose not to award any Contract, or amend the timetable, structure or content of the procurement process as it considers appropriate. ARIA will not be liable for any costs, expenditure or effort incurred by bidders in connection with this RFP or the procurement process, including where the process is amended or terminated. It is at ARIA's sole discretion as to which, if any, Proposal is accepted.

Any attempt by a bidder or its advisers to influence the contract award process in any way may result in disqualification. Bidders must not enter into any agreement or arrangement with any other person as to the form or content of any other Proposal, offer any inducement to alter another Proposal, enter into arrangements that prevent or restrict another party from submitting a Proposal, canvass ARIA or its employees or advisers in relation to this procurement, or attempt to obtain confidential information concerning another bidder or Proposal. Bidders are responsible for ensuring that no actual or potential conflicts of interest exist between the

bidder (or its advisers) and ARIA, its employees or advisers, and must declare any such conflicts in their Proposal. ARIA reserves the right to disqualify a bidder where a conflict cannot be appropriately managed.

ARIA staff (employees, secondees, individual contractors engaged by ARIA in a staff-like capacity, and Board members), and their immediate family members (including spouse, civil partner or unmarried partner; sibling; child whether biological, adopted or step-child; and parent) are not eligible to submit a Proposal. Any entity in which such an individual is a board director or person of significant control (as defined on gov.uk) is also ineligible. Any Proposal falling within these categories will be rejected on eligibility grounds.

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## Clarification Questions and Responses

| Category | Question | Answer |
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