Advanced Research + Invention Agency ARIA

Massively Scalable Neurotechnologies for Human Health

Call for proposals

Date: 24 February 2026

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SUMMARY OF CALL FOR PROPOSALS

What is ARIA? ARIA is an R&D funding agency created to unlock technological breakthroughs that benefit everyone. Created by an Act of Parliament, and sponsored by the Department for Science, Innovation, and Technology, we fund teams of scientists and engineers to pursue research at the edge of what is scientifically and technologically possible.

Massively Scalable Neurotechnologies. Backed by £50 million, the programme aims to address the procedural burden that bottlenecks the deployment of high-performance neurotechnologies. Our "North Star" is a responsive neurotechnology that can be delivered systemically or minimally invasively in less than 30 minutes in an outpatient setting.

This Solicitation. This solicitation is for applications to **TA1, Phase 1 only**. This TA is focused on developing responsive neural interfaces that can reliably reach deep or other clinically validated brain targets without transcranial surgery.

Ideal Applicants. We expect applications from both integrated teams developing end-to-end solutions and collaborative teams that bring together complementary expertise in delivery and neural interface design.

Logistics Summary. TA1 projects will include two phases with this solicitation focusing on the first phase only. Only teams selected for Phase 1 will be invited to submit a proposal for Phase 2.

Concept paper deadline	17 March 2026 (14:00 GMT)
Full proposal deadline	11 May 2026 (14:00 BST)
Successful/Unsuccessful applicants notified	7 July 2026
Total funding available	£50m with project sizes of £2m to £4m
Total number of teams	Approximately 8 projects

Advanced Research + Invention Agency ARIA

SECTION 1: Programme Thesis and Overview

This solicitation is derived from the published programme thesis Massively Scalable Neurotechnologies for Human Health, which sits in the ARIA Opportunity Space Scalable Neural Interfaces. We strongly recommend reading both of these documents before proceeding.

Neurological and neuropsychiatric disorders are now the leading cause of ill health and disability worldwide[1]. In Europe and the USA alone, their annual economic cost exceeds USD 1.7 trillion[2]. Technologies that can precisely *sense, interpret and modulate pathological neural activity* could potentially functionally cure many brain disorders. However, state-of-the-art treatments typically require complex surgical procedures, restricting access to only the most severely-affected individuals and excluding the vast majority who could benefit from earlier intervention.

The Massively Scalable Neurotechnologies (MSN) programme aims to break these bottlenecks by developing a new class of *brain surgery-free* neurotechnologies that leverage the body's natural pathways to reach the central nervous system without breaching the skull. These new therapies will be *responsive* — capable of reporting timevarying neural data to the user or their clinician and actively modulating the brain towards a desired, more physiological state — and deployable in less than 30 minutes, in an outpatient setting.

Background

We are at a pivotal moment where next-generation therapies for complex, severe and prevalent brain disorders are beginning to demonstrate clinical efficacy. Targeted neuromodulation of deep brain structures is showing promise for a range of otherwise intractable conditions[3], including treatment resistant depression[4], refractory epilepsy[5], addiction[6] and even chronic pain[7]. Concurrently, cell and gene therapies are emerging as credible treatment options for neurodegenerative disorders[8,9].

These early signals highlight the vast potential for neurotechnologies. However, they will struggle to scale to the people who need them most. Consider deep brain stimulation for Parkinson's disease — one of the most well established neurotechnology indications. Annual global procedures only account for 0.1% of the people living with Parkinson's disease[10,11]. Even under conservative eligibility assumptions[12], the vast majority of potential beneficiaries remain untreated. If this is the reality for a therapy which has been FDA-approved for over 20 years, with high response rates[13] and a clear reimbursement pathway then emerging therapies — with more complex procedures, uncertain reimbursement models and untested patient acceptability — may face even greater barriers to adoption.

SECTION 2: Programme Objectives

The goal of this programme is to address the **procedural burden** that bottlenecks the deployment of high-performance neurotechnologies. Advanced therapies such as brain–computer interfaces, deep brain stimulation, and cell or gene therapies typically require complex surgical procedures that impose stacked, multiplicative barriers across workforce capacity, infrastructure cost, and patient risk, fundamentally limiting scalability. As a result, these technologies are largely confined to the most severe, treatment-refractory patients, excluding the vast majority who could benefit from earlier, lower-procedural burden intervention.

The MSN programme is seeking radically new solutions for delivering high-performance neurotechnologies to the brain **without the need for transcranial surgery**. Here, 'neurotechnologies' should be understood as broadly as possible as any engineered system that can report time-series neural data or dynamically modulate the brain in response to endogenous or exogenous signals (see Figure 1, inset). This may span a wide range of implementations, from fully electronic systems, through to biological approaches such as cells, AAVs, or other vectors, to hybrid systems that combine elements of both.

Our "North Star" is a family of responsive neurotechnologies that can be delivered systemically or via minimally invasive routes, in less than 30 minutes in an outpatient setting. To achieve population-scale impact, these systems should meet the following criteria outlined in Box 1.

Box 1 — North Star Goals

+ **Non-transcranial access:** Systems developed in this programme should access the brain without transcranial surgery, leveraging systemic delivery or natural access routes (e.g. intravascular, intrathecal, intranasal), *or entirely new approaches.*
+ **Radical simplicity of deployment:** The end-to-end procedure should be executable in under 30 minutes, with minimal training, by a broad range of clinical (and potentially non-clinical) staff, within a standard outpatient or catheterisation setting.
+ **Responsive therapy:** Therapies should be responsive rather than static: capable of reporting time-varying neural signals or modulating brain activity in response to endogenous or exogenous inputs, rather than delivering a fixed dose.
+ **Clinical efficacy at validated targets:** Technologies should demonstrate functional impact (e.g. therapeutic efficacy or readout performance) at least equivalent to, and ideally exceeding, today's best-in-class interventions, with a particular focus on clinically validated brain targets for high-burden neurological and neuropsychiatric conditions.

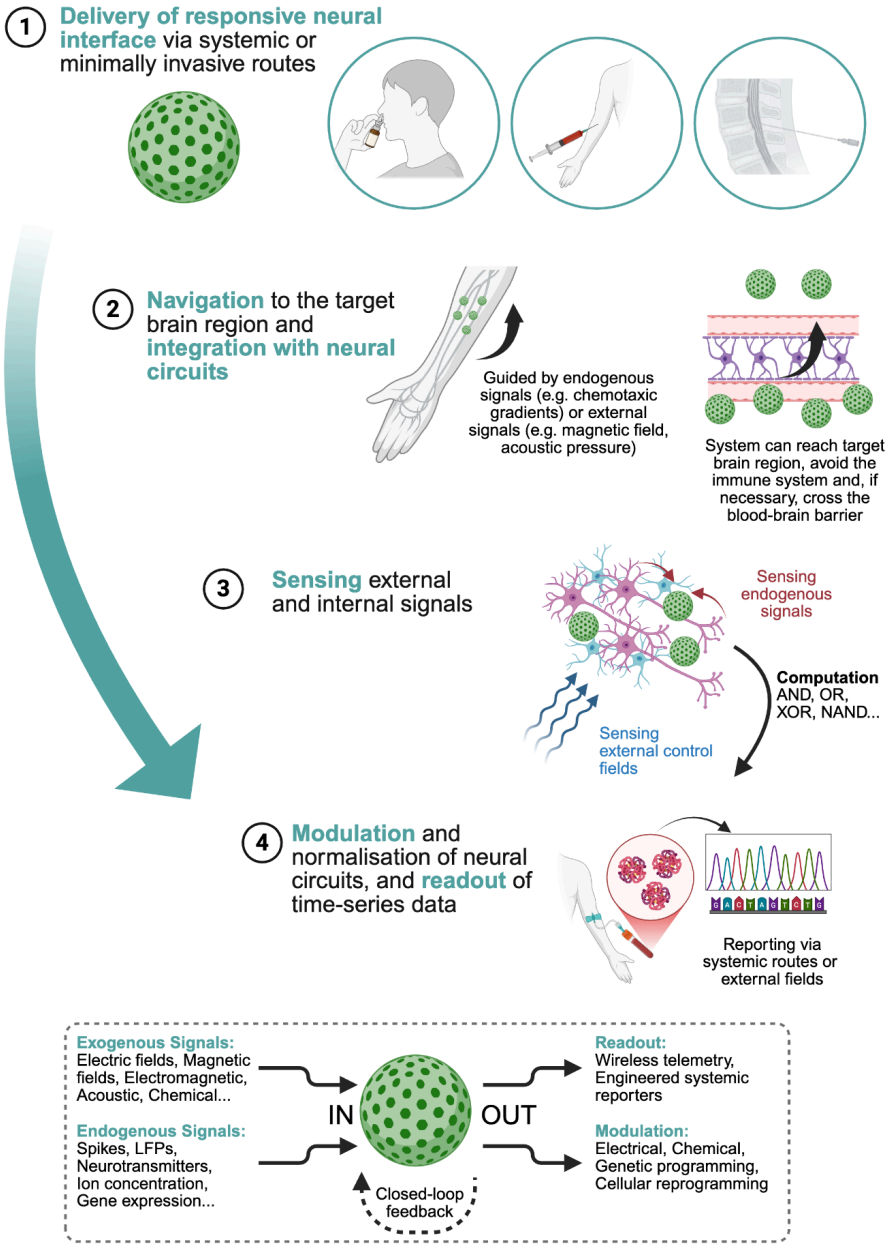

Figure 1. Responsive neural interfaces should be (1) delivered to the body without transcranial surgery, leveraging access points such as direct neural pathways (left), the vasculature (centre) or the CSF (right); (2) navigate to target brain regions; (3) sense endogenous or exogenous signals, and based on these signals (4) modulate and report neural activity. Inset: example signals that may be recorded, modulated or read out by a responsive neural interface.

We believe that recent advances at the intersection of engineered biology and electronics now make this paradigm shift possible. By combining the natural ability of biological systems to traverse peripheral pathways, cross biological barriers[14] and evade the immune system[15] with the precision, controllability, and programmability of bioelectronic systems, it is now possible to engineer neurotechnologies that are simultaneously high-performance (e.g. increased spatiotemporal resolution; see Performance metrics for further details) and more scalable. If successful, this programme will move neurotechnology from a low-volume, last-resort intervention confined to specialised centres, to a deployable platform for earlier intervention — unlocking new therapeutic indications, generating real-world neural data at scale, and expanding access to powerful brain therapies for millions of people.

Technical Areas

The programme is structured around three Technical Areas (TAs):

+ **Technology Area 1 (TA1) — Delivery + Performance:** The core technology development activity of the programme, this TA is focused on developing responsive neural interfaces that can reliably reach deep or other clinically validated brain targets without transcranial surgery.
+ **Technology Area 2 (TA2) — Prototyping + Translation:** This TA funds a network of organisations ("Activation Creators") to support TA1 teams with rapid prototyping in Phase 1 and translational support in Phase 2.
+ **Technology Area 3 (TA3) — Adoption:** This TA is focused on public understanding and adoption, funding individuals with lived experience of brain disorders — including users of neurotechnologies — as well as organisations that work with these communities, to develop high-quality narrative content (e.g. articles, podcasts, video) that communicates the realities, benefits, and limitations of emerging neurotechnologies.

The programme's central thesis is that **delivery is the gating factor for scale**: safe, reliable and targeted access to the brain must be established before advancing system performance. Consequently, the programme will run in two consecutive phases: Phase 1 (three years) will develop technologies that establish safe, reliable and targeted access and provide effective neural interface performance, and Phase 2 (two years) will down-select the most promising approaches from Phase 1, to advance performance and move towards translation.

This solicitation is for applications to TA1, Phase 1 only. We intend to launch calls for TA2 and TA3 in Summer 2026. Further details about our TA2 and TA3 calls can be found in Appendix 1 and you can sign up to be notified about the calls here.

Programme Structure

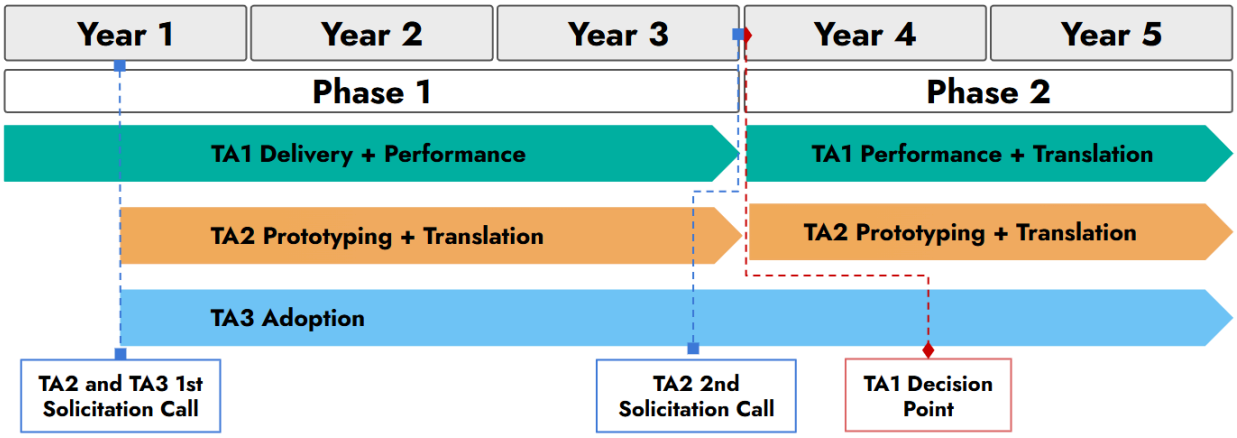

Figure 2. MSN programme structure. The programme consists of two phases with a downselection in TA1 at the end of Year 3.

All TA1 projects will be required to start simultaneously to ensure a fair and rigorous down-selection process at the end of Phase 1. Six months before the end of Phase 1, TA1 teams will be required to submit a proposal for the work they intend to carry out in Phase 2 along with an updated budget for their Phase 2 work. Only a subset of projects will be selected to transition into the two-year Phase 2. All TA1 teams remaining at the end of Phase will have the opportunity to submit a proposal for Phase 2. There is also the possibility of assembling new teams for Phase 2, composed of members of the teams in Phase 1. We do not intend to issue a new funding call for Phase 2.

TA1 applicants are required to include a brief section in their application detailing their intentions for Phase 2.

We anticipate funding approximately eight projects in TA1 Phase 1, with indicative budgets of £2m–£4m per project, and around three projects in TA1 Phase 2, with indicative budgets of £3m–£4m per project.

Technical Area 1 (TA1): Delivery + Performance

This technical area will form the core technology development activity of the MSN programme, comprising three sub-areas defined by interface functionality: readout and biomarkers (TA1.1), remote modulation (TA1.2) and closed-loop control (TA1.3). Applicants may submit to one or more of the TA1 sub-areas.

All projects in TA1 must solve the delivery challenge: achieving safe, reliable, and targeted access to the brain without transcranial surgery. This may leverage access routes such as the vasculature, intrathecal, intranasal or direct neural pathways — as well as systemic or other minimally invasive delivery paradigms, or *entirely new access paradigms*. Please see Section 4 for further details about what we are looking for, alongside illustrative case studies.

TA1.1 Readout + biomarkers

This sub-area will develop neural interfaces capable of *recording and reporting time-series neural data* (e.g. neural activity, local field potentials, molecular or genetic markers related to neural activity) and transmitting this information to external systems. Transmission may span a range of mechanisms, from wireless communication to peripheral sampling such as a blood test. We are particularly looking for approaches that can record signals from well defined brain regions rather than integrating signals across the entire brain. These capabilities will enable minimally invasive monitoring of disease state and therapeutic response.

TA1.2 Remote modulation

This technical area will develop neural interfaces capable of *remotely modulating neural activity*. We are particularly interested in approaches that can target and modulate well defined, clinically validated deep brain regions, or other clinically validated brain targets. Examples include, but are not limited to, the subthalamic nucleus (Parkinson's disease), anterior nucleus of the thalamus (refractory epilepsy), ventral capsule/ventral striatum or subcallosal cingulate (treatment-resistant depression).

Remote triggering may be achieved through a range of energy/signal transfer modalities, including (but not limited to) magnetic, acoustic, optical, electrical, or chemical means. The mechanism by which neural activity is modulated does not need to be directly electrophysiological, and may instead act via chemical, genetic, cellular, or other intermediate processes, provided that modulation of neural activity is reliably and controllably achieved. Critically, modulation must be tunable rather than static, enabling adjustment of therapeutic effect.

TA1.3 Closed-loop control

This technical area will develop closed-loop neural interfaces that integrate neural sensing and modulation, to restore and maintain a desired neural state. The brain is inherently a dynamical system[16] and many brain disorders can be understood as disruptions in the regulation of these dynamics — oscillations that are too strong or weak, or feedback loops that no longer stabilise neural activity or behaviour[17]. To treat such conditions, a therapeutic must do more than deliver a fixed dose of stimulation; it must sense, compute, and respond on disease relevant timescales. Closed-loop neuromodulation applies the principles of control theory to the brain. This sub-technical area may draw on tools from diverse fields such as synthetic biology[18], molecular biology[19] or CMOS engineering[20] to enable closed-loop control of neural circuits, providing a foundation for dynamic, self-regulating therapies.

Safety

A central challenge in developing scalable neurotechnologies is generating representative, human-relevant safety data in preclinical models. We are therefore particularly interested in approaches that:

+ Leverage novel preclinical models (e.g. brain organoids[21]) that recapitulate critical structural and functional features of the human brain.
+ Incorporate novel safety mechanisms such as biological off-switches[22] or bioreabsorbable electronics[23].
+ Employ delivery strategies that significantly enhance targeting specificity and reduce systemic exposure[14].

In addition, throughout the course of the programme all teams will be required to report critical safety metrics such as peripheral accumulation, toxicity and tissue damage (see Technical Metrics). During the application process teams will be expected to describe safety aspects for their approach and any mitigations that will be explored (e.g. reversible explantation).

Clinical relevance

To maximise the translational impact of the programme, all applicants must address several key areas in their proposals:

+ Describe the intended clinical context — specifying the condition(s) targeted, how the technology could be deployed in outpatient or community settings, and how non-specialist staff could deliver or monitor its use.

+ Based on the target condition, propose relevant performance targets (e.g. brain region, spatial precision, temporal resolution — see Technical Metrics).
+ Describe the validation methods to be used, including any ground-truth measurements for verifying performance.
+ Justify the model system to be used and explain its translational relevance to human applications (noting that all ARIA-funded animal research must comply with ARIA's policy on animal testing).

Phase 1 deliverables

At the end of Phase 1, we expect teams to demonstrate:

1. **Delivery:** Successful deployment of the system in a relevant *in vivo* model within a 30-minute procedure. For device-based technologies, this may involve a large-animal model (e.g. ovine or porcine); for biologics-based technologies, this may involve a rodent model.
2. **Baseline functional performance:** Reliable *in vivo* system operation demonstrating baseline functional capability (readout, modulation, or closed-loop operation), verified using appropriate ground-truth methods.
3. **Safety:** Reporting of critical safety metrics, including toxicity, peripheral accumulation, and tissue damage.

Decisions on progression to Phase 2 will be made across multiple criteria aligned with the programme's core thesis, including demonstrated potential for scalability, system performance and safety profile. Approaches that demonstrate system performance but fail to materially reduce procedural burden, or show limited scope for further scaling, are unlikely to progress. Conversely, approaches that do not yet strictly meet the 30-minute deployment window but demonstrate a clear and credible trajectory toward lower-burden access may be selected for Phase 2.

In addition to individual team performance, down-selection decisions will consider portfolio-level optimisation, including balance of technical risk and strategic complementarity across approaches. Where appropriate, ARIA may also bring together complementary teams in Phase 2, for example, combining different teams with readout and remote modulation capabilities to enable a fully integrated closed-loop system.

Phase 2 deliverables

In Phase 2, teams will build on Phase 1 progress to advance performance (e.g. spatiotemporal resolution, signal stability) and expand functionality (e.g. multiplexed read/write, reprogrammable closed-loop control). Technologies will be applied in disease-relevant contexts to demonstrate rescue

of a pathological state in a translationally relevant animal model (see example activities in Table 1). The objective of Phase 2 is to generate pre-clinical therapeutic evidence and establish a credible pathway toward clinical translation. While projects are expected to be primarily pre-clinical, we are open to approaches that culminate in a first-in-human demonstration, particularly in Phase 2. Although this solicitation is for Phase 1, applicants must briefly outline their anticipated Phase 2 activities.

	Phase 1	Phase 2
Target	Reliable access to the brain in a 30 minute procedure, without transcranial surgery.	Rescue disease state, or equivalent physiological response, in a large-animal model system (e.g. ovine, porcine).
TA1.1 Readout & Biomarkers	Demonstrate readout and reporting of time-series biological data from a well defined brain region.	Achieve advanced performance in e.g. signal fidelity, spatiotemporal resolution, field-of-view. Demonstrate multiplexed readout of multiple biomarkers using systemic or remote readout.
TA1.2 Remote Modulation	Demonstrate user-controlled modulation of neural activity at a validated deep-brain target.	Achieve advanced performance in e.g. efficiency, spatiotemporal resolution, selectivity. Demonstrate multiplexed modulation of distinct neural populations (e.g., excitatory, inhibitory, different brain regions).
TA1.3 Closed-loop Control	Demonstrate closed-loop control of at least one biomarker-based input to restore or maintain a physiological state.	Achieve advanced performance in e.g. latency, spatiotemporal resolution. Achieve programmable closed-loop operation integrating multiple inputs and outputs.
Safety	Report key safety parameters e.g. toxicity, peripheral accumulation, tissue damage.	Validate long-term safety, performance, and biocompatibility. Explore methods for reversibility.

Table 1. Example activities across Phase 1 and Phase 2 of the programme.

Animal testing and clinical trials

You can find more information on ARIA's policy on animal testing here, and clinical trials here. If you intend to carry out animal testing or clinical trials as part of the proposed project you will be required to answer some additional questions in your proposal submission. These questions can be found in the concept paper guidance here and full proposal guidance here.

SECTIONS 3: Technical Metrics

In line with the programme's delivery-first thesis, we define two categories of metric: **delivery metrics**, which capture how easily a system can be deployed, and **performance metrics**, which capture how well the neural interface functions once deployed. Teams will be required to report regularly against progress toward both (see Table 2, below).

Delivery metrics

We will evaluate delivery as the time required to physically deploy the interface, defined as the duration from the initial administration (e.g., incision, injection, or catheter insertion) to the final closure or removal of the delivery device.

This metric explicitly excludes:

- Pre-operative imaging and trajectory planning.
- Anesthesia induction or sedation setup.
- Device calibration or time to establish functional operation.
- Post-procedure patient recovery and monitoring.

Target < 30 minutes

In addition to deployment time, teams must characterise and report a full safety profile relevant to their modality, including:

+ **Adverse Events:** Reporting of the frequency and severity of all adverse events (AEs) and serious adverse events (SAEs).
+ **Biocompatibility:** Assessment of toxicology, immunogenicity, and acute/chronic tissue damage.
+ **Biodistribution:** Quantitative measurement of off-target accumulation (particularly for chemical/genetic agents).
+ **Reliability:** The proportion of procedures which give rise to usable data for the target brain region.

Performance metrics

Each sub-technical area is defined by a single core metric and target that captures overall neural interface performance, independent of disease state or technology. In addition, applicants are required to specify indication-dependent performance targets relevant to their intended use case, reflecting the fact that performance requirements (e.g. readout bandwidth) may differ substantially across indications (e.g. epilepsy versus mood disorders). These indication-dependent targets will be proposed as part of the application and if the project is selected for award, refined with ARIA during the contracting phase.

TA1.1 Readout and biomarkers

We will evaluate readout performance using a core metric of 'ground-truth readout fidelity': the degree to which a reported signal reflects a known independently measured biological ground truth. Fidelity will be quantified as the statistical correlation (e.g. Pearson correlation (ρ), or equivalent) between the measured signal and a contemporaneous ground-truth biological signal, such as electrophysiology, calcium imaging, fiber photometry, or molecular expression levels.

Target: $\rho > 0.8$
Indication specific metrics (targets to be defined by creator): Indication; Readout modality (e.g. ephys, Ca^{2+}, gene expression); Readout bandwidth (Hz); Time to functional use (s); Functional lifetime (s); Brain region; Effective readout volume (mm^3).

TA1.2 Remote modulation

We will evaluate remote neuromodulation approaches using a core metric of modulation reliability: the proportion, P, of stimulation trials that evoke a time-locked biological response within a physiologically safe stimulation threshold.

Where possible, this should be validated against cellular-level ground truth signals such as electrophysiology, calcium imaging, or fiber photometry. If such ground truth is not appropriate or feasible, trial-locked responses such as motor-evoked potentials (MEPs), compound muscle action potentials (CMAPs), or other physiologically meaningful biomarkers may be used.

Target: $P > 0.9$
Indication specific metrics (targets to be defined by creator): Indication; Actuation modality (e.g. electrical, chemical, genetic); Max modulation bandwidth (Hz); Time to functional use (s); Functional lifetime (s); Brain region; Effective modulation volume (mm^3).

TA1.3 Closed-loop operation

We will evaluate closed-loop systems using a core metric of closed-loop rescue capacity: the magnitude of deviation from a physiological baseline that the neural interface can reliably correct, quantified in units of standard deviation relative to baseline variability.

Rescue capacity will be assessed using ground-truth physiological measurements — preferably electrophysiology, but also including validated imaging or biomarker-based signals where appropriate — by measuring how far a pathological signal deviates from baseline prior to intervention, and the extent to which closed-loop control reduces this deviation. Performance should be reported as the maximum number of standard deviations, σ , from baseline that can be corrected under closed-loop operation, within predefined safety constraints.

Target: $\sigma > 3.0$
Indication specific metrics (targets to be defined by creator): Indication; Readout and actuation modality; Closed-loop latency (s); Time to functional use (s); Functional lifetime (s); Brain region; Effective operational volume (mm^3).

Programme aligned milestones

To enable fair, portfolio-level assessment across all TA1 projects, the programme will use a small number of aligned milestones against which progress can be compared. While the specifics will necessarily be technology-dependent, all teams will be expected to demonstrate meaningful progress at 18 and 32 months, aligned with the Phase 1 objectives.

Applicants must propose what these demonstrations will be. For example, a device-based approach may propose a cadaveric demonstration at Month 18 and a large-animal demonstration at Month 32, while a biologics-based approach may propose an *in vitro* demonstration at Month 18 and a rodent demonstration at Month 32. These milestones will be refined and agreed with ARIA during contracting.

Category	Technical Area	Metric	Target
Delivery	All TA1	Deployment time	<30 minutes
		Safety	AEs and SAEs, biocompatibility, biodistribution, reliability
Performance	TA1.1	Readout fidelity	$\rho > 0.8$
		Indication specific	Readout modality; Readout bandwidth (Hz); Time to functional use (s); Functional lifetime (s); Brain region; Effective readout volume (mm^3).
	TA1.2	Modulation reliability	$P > 0.9$
		Indication specific	Actuation modality; Max modulation bandwidth (Hz); Time to functional use (s); Functional lifetime (s); Brain region; Effective modulation volume (mm^3).
	TA1.3	Rescue capacity	$\sigma > 3.0$
		Indication specific	Readout and actuation modality; Closed-loop latency (s); Time to functional use (s); Functional lifetime (s); Brain region; Effective operational volume (mm^3).

Table 2. A summary of MSN programme metrics.

SECTION 4: What are we looking for/what are we not looking for

Who should apply?

This programme seeks to seed a new R&D ecosystem to address the critical scaling challenges facing neurotechnologies. We anticipate innovative solutions emerging both from established neurotechnology fields (e.g. neuroengineering, neuroscience, bioengineering, neurosurgery) and from disciplines that may not traditionally consider themselves 'neurotechnologists', including molecular and cellular biology, synthetic biology, immunotherapy, and developmental biology.

We expect applicant teams to span a wide range of organisations, including academic research labs, non-profit research organisations, hospitals, veterinary labs (for large-animal work), early-stage VC-backed startups, small and medium-sized enterprises, and established industry partners.

We expect applications from both integrated teams developing end-to-end solutions and collaborative teams that bring together complementary expertise in delivery and neural interface design. For further information on how to find potential collaborators, see Section 6.

What are we looking for?

Applicants are encouraged to explore radically new solutions rather than incremental improvements to existing systems. Approaches that build on existing systems are also acceptable, only where they represent a step-change in scalability or performance. Delivery solutions may include, but are not limited to:

+ Systemic delivery
+ Intranasal delivery
+ Vascular routes (including intravascular or endovascular approaches)
+ Intrathecal or cerebrospinal fluid–based routes
+ Direct neural pathways, for example via trans-synaptic transport
+ **Entirely new access paradigms.**

Potential neural interface systems may include, but are not limited to:

+ Bioelectronic devices
+ Engineered cellular systems
+ Biohybrid systems combining biological and electronic components
+ Magnetic or other remotely addressable nanoparticles

- Genetically encoded systems that enable externally triggered neural modulation (e.g. sonogenetic or magnetogenetic actuation)
- *In vivo* reprogramming approaches that modify neuronal or non-neuronal cells to enable sensing and/or modulation of neural activity
- Peripheral readouts that report neural activity or gene expression outside the brain (e.g. blood-based reporters or molecular recording systems)
- **Radically new approaches that can plausibly meet our metrics.**

Box 2 — Illustrative case studies

The following case studies are provided for illustrative purposes only. They are intended to demonstrate the types of technical trajectories and programme interactions that may be supported through MSN, rather than to prescribe specific approaches, modalities, or disease targets.

Case study 1 — Endovascular neuromodulation

A team develops a novel endovascular neural interface capable of accessing deep brain regions catheter placement. The team applies under TA1.2 (Remote modulation) and, during Phase 1, demonstrates safe deployment of the system in an ovine model within a 30-minute procedure. The team selects Parkinson's disease as a target indication and shows reliable modulation of the subthalamic nucleus, achieving a volume of activation comparable to existing deep brain stimulation systems and a modulation reliability exceeding 0.9.

In Phase 2, the team expands system functionality to include recording of local field potentials, enabling closed-loop operation. They demonstrate rescue of chemically induced Parkonsonian tremor in a large-animal model using closed-loop control. By the end of Phase 2, the team submits a regulatory package to support progression toward first-in-human studies.

Case study 2 — Engineered cells

A team develops an engineered cellular system designed to suppress pathological overexcitability. They apply under TA1.3 (Closed-loop control) and, during Phase 1, demonstrate in a vascularised organoid model that the engineered cells can traverse a blood–brain barrier–like interface and selectively localise to regions of hyperexcitability. The team selects epilepsy as a target indication and shows, in a rodent model, that the cells can be delivered via a ≤30-minute infusion procedure, integrate within a defined brain region, and respond to increases in pathological activity. Activity-dependent modulation is verified using two-photon imaging and electrophysiological ground-truth measurements.

In Phase 2, the team establishes non-invasive confirmation of cell survival and circuit integration via secretion of engineered serum biomarkers measurable through a peripheral blood test. They also incorporate a small-molecule–activated safety switch to enable selective elimination of the engineered cells if required. The team then demonstrates suppression of chemically induced seizures in a porcine model, generating pre-clinical therapeutic evidence to support progression toward clinical translation.

What are we not looking for?

The following activities are likely to be out of scope for this programme:

- Fully non-invasive systems that do not incorporate any implantable or biological component in the brain (though external devices for monitoring, power delivery or control are acceptable).
- Incremental improvements to existing neurotechnology systems.
- Approaches that fundamentally rely on large-scale or capital-intensive equipment for day-to-day operation.
- Technologies that are not responsive — for example, those delivering a fixed therapeutic dose rather than one that can be tuned by endogenous or exogenous signals.
- Approaches that do not, either directly or indirectly, modulate or readout neural activity (e.g. approaches whose primary goal is to modulate the immune system would not be in scope).

SECTION 5: Programme Duration and Project Management

Project Milestones

In addition to the Programme milestones described above, each project's progress will be monitored using clearly defined project milestones. Project milestones will first be suggested by the applicant in their proposal. Applicants selected for an award will enter a negotiation phase with ARIA, where the programme team will work with applicants to further refine the project's milestones.

Milestones should:

+ Be specific, measurable, and signify a meaningful step towards reaching the overall programme goals.
+ Include details on methods used to achieve each milestone.
+ Include major "Go/No-Go" decision points.
+ Include a key demonstration at Month 18 and Month 32.

Success/pivot/closure criteria for each project will be determined by the applicant's ability to meet these agreed-upon milestones. Further guidance on ARIA milestones can be found here.

Programme & Project Management

Progress reviews will occur quarterly and will consist of a written progress update from teams as well as a yearly site visit from the programme team. During each quarterly meeting, teams and the programme team will review the agreed upon milestones and discuss further details of each project.

As part of that discussion, teams will be encouraged to think through the following questions:

+ Has the milestone for this quarter been met? If not, why not – and what might be mechanisms to get back on track?
+ What has been learned this quarter that may inform future stages of the project? E.g., is there a case to be made to pivot or scale up the project?
+ Are there any additional resources, tools, or services that you've learned would significantly accelerate your progress?

Written and/or verbal feedback will be delivered to teams following each quarterly review.

In addition to the above, each project will undergo a deeper mid point review, including a rigorous assessment of technical progress. Based on insights gained in the first half of the project, later milestones may be revised where appropriate.

Intellectual Property

TA1 will use ARIA's standard approach to Intellectual Property (IP) — TA1 teams will own any new IP generated as a result of the grant/contract, and will retain full ownership of any background IP they bring to the project.

We do not envisage TA1 teams needing to share IP during Phase 1 with other TA1 teams. However, if new TA1 teams assemble at the end of Phase 1 to progress into Phase 2, sharing of IP between the original teams may be required.

TA1 teams may be required to share their IP/methodology/results with TA2 Activation teams to enable their effective support. Where this is required, it will be done so under strict confidentiality protections.

Collaboration between Teams and Community Events

The programme team's goal is to create an environment where teams feel supported — and incentivised — to share protocols, insights, and networks where appropriate with other teams. To

enable this, we will host annual in-person meetings where all teams share progress, alongside focused virtual convenings every six months on cross-cutting topics such as device design, animal models, or toxicology. All these events will be held in the UK. Project leads and key researchers from funded teams will be required to attend and members of the wider team are strongly encouraged to join these events. Please include an estimation of costs related to attendance at these events in your budget proposals.

There may be opportunities to coordinate efforts around shared infrastructure — for example, standardised safety and efficacy testing, large-animal studies, or manufacturing facilities. However, we won't have a clear view of where coordination is most valuable until we see the funded TA1 projects.

SECTION 6: Eligibility & Application process

Eligibility

We welcome applications from across the R&D ecosystem, including individuals, universities, research institutions, small, medium and large companies, hospitals, non-profit organisations, charities and public sector research organisations.

Finding potential collaborators and teaming

We expect applications from both integrated teams developing end-to-end solutions and collaborative teams that bring together complementary expertise in delivery and neural interface design. We have created a teaming request form to facilitate finding potential team members who have registered their interest in this programme. By following the link to the sign up form here you will be able to register, submit your details, and gain access to a list of other individuals seeking to find/share their expertise. All requests are screened via ARIA's internal team prior to access, after which connections will be made by individual users based on aligned expertise.

Webinar

We are hosting a webinar on 02 March 2026 at 16:00 GMT to provide an overview of the programme's objectives, scope, and application process, and to give potential applicants an opportunity to ask questions to the ARIA team. Please register your interest and submit questions in advance for this event here.

Application Process

The application process for TA1 consists of two stages:

Stage 1 — Concept paper

Concept Papers are designed to make the solicitation process as efficient as possible for applicants. By soliciting short concept papers (no more than three pages) ARIA reviewers are able to gauge the feasibility and relevance of the proposed project and give an initial indication of whether we think a full proposal would be competitive. Based on this feedback you can then decide whether you want to submit a full proposal. You can find out more about ARIAs review process here.

If you miss the deadline for submission of concept papers you can still submit a full proposal. However, we strongly encourage you to submit a concept paper. Applicants who submitted concept papers received funding at approximately twice the rate of those who didn't.

To ensure the process is quick and open we do not require your organisation's consent prior to submission of a concept paper.

You can find guidance on what to include in a concept paper here.

Following review of concept papers applicants will either be encouraged or discouraged from submitting a full proposal. For more details on the evaluation criteria we'll use, click here.

Stage 2 — Full proposals

This step requires you to submit a detailed proposal including:

+ **Project & Technical information** to help us gain a detailed understanding of your proposal.
+ **Information about the team** to help us learn more about who will be doing the research, their expertise, and why you/the team are motivated to solve the problem.
+ **Administrative questions** to help ensure we are responsibly funding R&D. Questions relate to budgets, IP, potential COIs etc.

You can find more detailed guidance on what to include in a full proposal here. **You can submit a full proposal even if you did not submit a concept paper.**

For more details on the evaluation criteria we'll use, click here.

Non-UK funding

Our primary focus is on funding those who are based in the UK. However, funding will be awarded to organisations outside the UK if we believe it can boost the net impact of a programme in the UK.

In these instances, you must outline your proposed plans or commitments that will contribute to the programme in the UK within the project's duration.

If you are successfully selected for an award subject to negotiations this proposal will form part of those negotiations and any resultant contract/grant.

More information on the evaluation criteria we will use to assess your answers can be found later in the document here.

We have provided some additional guidance on non-UK funding in our FAQs including available visa options.

SECTION 7: Timelines

This call for proposals will be open for applications as follows (we may update timelines based on the volume of responses we receive):

Applications open	**24 February 2026**
Webinar	**2 March 2026 (16:00 GMT)**
Concept paper submission deadline	**17 March 2026 (14:00 GMT)**
Concept paper review & notification of encouraged/not encouraged to submit full proposal sent	**17 March 2026 - 13 April 2026**
At this stage and based on your concept paper, you will either be encouraged/ discouraged to submit a full proposal. If you receive feedback indicating that you are not encouraged to submit a full proposal you can still choose to submit a full proposal. You should note that this preliminary assessment/encouragement provides no guarantee of any full proposal being selected for award of funding.	
Full proposal submission deadline	**11 May (14:00 BST)**
Full proposal review	**11 May 2026 - 29 June 2026**
As part of our review we may invite applicants to meet with the Programme Director to discuss any critical questions/concerns prior to final selection — this discussion can happen virtually or we may seek clarification on certain aspects of your proposal via email.	

Successful/Unsuccessful applicants notified	**7 July 2026**

At this stage you will be notified if you have or have not been selected for an award subject to due diligence and negotiation. If you have been selected for an award (subject to negotiations) we expect a 1 hour initial call to take place between the PD and your lead researcher within 10 working days of being notified.

We expect contract/grant signature to be no later than 6 weeks from successful/ unsuccessful notifications. During this period the following activity will take place:

- Due diligence will be carried out
- The PD and the applicant will discuss, negotiate and agree the project activities, milestones and budget details
- Agreement to the set Terms and Conditions of the Grant/Contract. Please note ARIA does not negotiate these terms. You can find a copy of our funding agreements here

Please note, for those applicants not selected for shortlisting or award we will not provide feedback.

Award	**14 August 2026**

Please note, contract/grant must be signed on, or before, this date for the project to be funded by ARIA. The offer of funding may be withdrawn if contracts cannot be signed by this date.

SECTION 8: Evaluation Criteria

Concept Paper and Proposal Evaluation Principles

To build a programme at ARIA, each Programme Director directs the review, selection, and funding of a portfolio of projects, whose collective aim is to unlock breakthroughs that impact society. As such, we empower Programme Directors to make robust selection decisions in service of their programme's objectives ensuring they justify their selection recommendations internally for consistency of process and fairness prior to final selection.

We take a criteria-led approach to evaluation, as such all proposals are evaluated against the criteria outlined below. We expect proposals to spike against our criteria and have different strengths and weaknesses. Expert technical reviewers (both internal and external to ARIA) evaluate proposals to

provide independent views, stimulate discussion and inform decision-making. Final selection will be based on an assessment of the programme portfolio as a whole, its alignment with the overall programme goals and objectives and the diversity of applicants across the programme.

Further information on ARIAs proposal review process can be found here.

Proposal evaluation process and criteria

Proposals will pass through an initial screening and compliance review to ensure proposals conform to the format guidance and they are within the scope of the solicitation. At this stage we will also carry out some checks to verify your identity, review any national security risks and check for any conflicts of interest. Prior to review of applications Programme Directors and all other reviewers are required to recuse themselves from decision making related to any party that represents a real or perceived conflict.

Where it is clear that a proposal is not compliant, outside the scope and/or does not pass a quality assurance review, these proposals will be rejected prior to a full review on the basis they are not compliant or non-eligible.

Proposals that pass through the initial screening and compliance review will then proceed to full review by the Programme Director and expert technical reviewers (this may include the use of AI. Further information on ARIAs proposal review process can be found here and the use of AI in the conditions of the call available here).

In conducting a full review of the proposal we'll consider the following criteria:

1. **Worth Shooting For:**
    a. The proposed project uniquely contributes to the overall portfolio of approaches needed to advance the programme goals and objectives.
    b. It has the potential to be transformative and/or address critical challenges within and/or meaningfully contribute to the programme thesis, metrics or measures. In the context of this programme, this means the proposed approach demonstrates a credible pathway toward the North Star: materially reducing the procedural burden of deploying high-performance, responsive neural interfaces while meeting the programme's delivery and performance metrics.

2. **Differentiated** – The proposed approach is innovative and differentiated from commercial or emerging technologies being funded or developed elsewhere.

3. **Well defined** – The proposed project clearly identifies what R&D will be done to advance the programme thesis, metrics or measures, is feasible and supported by data and/or strong scientific rationale. The composition and planned coordination and management of the team is clearly defined and reasonable. Task descriptions and associated technical elements provided are complete and in a logical sequence with all proposed stage-gates and deliverables clearly defined. The costs and timelines proposed are reasonable/realistic.

4. **Responsible** – The proposal identifies major ethical, legal or regulatory risks and that planned mitigation efforts are clearly defined and feasible. Any proposed use of animal models is appropriately justified, including clear rationale for species selection and adherence to relevant regulatory and ethical frameworks.

5. **Intrinsic motivation** – The individual or team proposed demonstrates deep problem knowledge, have advanced skills in the proposed area and shows intrinsic motivation to work on the project and key individuals are dedicating sufficient time to the project. The proposal brings together disciplines from diverse backgrounds.

6. **Benefit to the UK** – There is a clear case for how the project will benefit the UK. Strong cases for benefit to the UK include proposals that:
    a. are led by an applicant within the UK who will perform the majority (>50% of project costs spent in the UK) of the project within the UK
    b. are led by an applicant outside the UK who seeks to establish operations inside the UK and perform a majority (>50% of project costs spent in the UK) of the project inside the UK and present a credible plan for achieving this within the programme duration.

    For all other applicants we will evaluate the proposal based on its potential to boost the net impact of the programme in the UK. This could include:

    c. A commitment to providing a direct benefit to the UK economy, scientific innovation, invention, or quality of life, commensurate with the value of the award;
    d. The project's inclusion in the programme significantly boosts the probability of success and/or increases the net benefit of specific UK-based programme elements, for example, the project represents a small but essential component of the programme for which there is no reasonable, comparably capable UK alternative.

When considering the benefit to the UK, the proposal will be considered on a portfolio basis and with regard to the next best alternative proposal from a UK organisation/individual.

Proposal Feedback

At the concept paper stage, applicants will be notified whether or not they are encouraged to submit a full proposal. If you are encouraged to submit a full proposal, we will provide feedback to help inform your full proposal. For those applicants not encouraged to submit full proposals we will not provide feedback.

At the full proposal stage, applicants will be notified whether or not they have been successfully selected for an award. For those applicants not selected for award, we will not provide feedback.

SECTION 9: How to apply

Before submitting an application we strongly encourage you to read this call in full, as well as the general ARIA funding FAQs.

If you have any questions, please use the chat function on the funding call page for the quickest response. It can guide you to the right information or connect you with the ARIA team if needed.

Any questions or responses containing information relevant to all applicants will be provided to everyone that has started a submission within the application portal. We'll also periodically publish questions and answers on our website, to keep up to date click here.

Please read the portal instructions below and create your account before the application deadline.

If you are disabled or have a long-term health condition, we can offer support to help you engage with ARIA, navigate our funding application process, or carry out your project, you can find more information here.

Application Portal instructions

APPLY HERE

SECTION 10: References

1. GBD 2021 Nervous System Disorders Collaborators. Global, regional, and national burden of disorders affecting the nervous system, 1990-2021: a systematic analysis for the Global Burden of Disease Study 2021. *Lancet Neurol.* **23**, 344–381 (2024).
2. Feigin, V. L. The evolution of neuroepidemiology: Marking the 40-year anniversary of publishing studies on epidemiology of neurological disorders. *Neuroepidemiology* **56**, 2–3 (2022).
3. Harmsen, I. E. *et al.* Clinical trials for deep brain stimulation: Current state of affairs. *Brain Stimul.* **13**, 378–385 (2020).
4. Alagapan, S. *et al.* Cingulate dynamics track depression recovery with deep brain stimulation. *Nature* **622**, 130–138 (2023).
5. Nair, D. R. *et al.* Nine-year prospective efficacy and safety of brain-responsive neurostimulation for focal epilepsy. *Neurology* **95**, e1244–e1256 (2020).
6. Bach, P. *et al.* Deep brain stimulation of the nucleus accumbens in treatment-resistant alcohol use disorder: a double-blind randomized controlled multi-center trial. *Transl. Psychiatry* **13**, 49 (2023).
7. Shirvalkar, P. *et al.* Personalized, closed-loop deep brain stimulation for chronic pain. *medRxiv* (2025).
8. Dolgin, E. Huntington's disease treated for first time using gene therapy. *Nature* **646**, 15 (2025).
9. Fraint, A. *et al.* Safety, tolerability, and efficacy of intracranial delivery of autologous iPSC-derived dopaminergic precursors in moderate to advanced Parkinson's Disease. *Parkinsonism Relat. Disord.* **134**, 107630 (2025).
10. Lee, D. J., Lozano, C. S., Dallapiazza, R. F. & Lozano, A. M. Current and future directions of deep brain stimulation for neurological and psychiatric disorders: JNSPG 75th Anniversary Invited Review Article. *J. Neurosurg.* **131**, 333–342 (2019).
11. Su, D. *et al.* Projections for prevalence of Parkinson's disease and its driving factors in 195 countries and territories to 2050: modelling study of Global Burden of Disease Study 2021. *BMJ* **388**, e080952 (2025).
12. Stein, A. & Gericke, C. A. PND23 treatment gaps in deep brain stimulation for patients with Parkinson's disease: A comparative analysis of nine high-income countries. *Value Health Reg. Issues* **22**, S78–S79 (2020).
13. Deuschl, G. *et al.* A randomized trial of deep-brain stimulation for Parkinson's disease. *N. Engl.*

J. Med. **355**, 896–908 (2006).

14. Chuapoco, M. R. *et al.* Adeno-associated viral vectors for functional intravenous gene transfer throughout the non-human primate brain. *Nat. Nanotechnol.* **18**, 1241–1251 (2023).
15. Carlsson, P.-O. *et al.* Survival of transplanted allogeneic beta cells with no immunosuppression. *N. Engl. J. Med.* **393**, 887–894 (2025).
16. Breakspear, M. Dynamic models of large-scale brain activity. *Nat. Neurosci.* **20**, 340–352 (2017).
17. Uhlhaas, P. J. & Singer, W. Neural synchrony in brain disorders: relevance for cognitive dysfunctions and pathophysiology. *Neuron* **52**, 155–168 (2006).
18. Stefanov, B.-A. & Fussenegger, M. Biomarker-driven feedback control of synthetic biology systems for next-generation personalized medicine. *Front. Bioeng. Biotechnol.* **10**, 986210 (2022).
19. Qiu, Y. *et al.* On-demand cell-autonomous gene therapy for brain circuit disorders. *Science* **378**, 523–532 (2022).
20. Qu, J. *et al.* Multifunctional hydrogel electronics for closed-loop antiepileptic treatment. *Sci. Adv.* **10**, eadq9207 (2024).
21. Dao, L. *et al.* Modeling blood-brain barrier formation and cerebral cavernous malformations in human PSC-derived organoids. *Cell Stem Cell* **31**, 818–833.e11 (2024).
22. Lu, L., Xie, M., Yang, B., Zhao, W.-B. & Cao, J. Enhancing the safety of CAR-T cell therapy: Synthetic genetic switch for spatiotemporal control. *Sci. Adv.* **10**, eadj6251 (2024).
23. Lee, D.-M. *et al.* An on-demand bioresorbable neurostimulator. *Nat Commun* **14**, (2023).

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Concept Papers Guidelines

How to Format your proposal

+ Page count: A maximum of 3 pages, including figures but excluding references
+ Format: Single line spacing, standard character spacing (neither expanded nor condensed)
+ Font: Arial. Colour: black. Size: 11-point font or larger
+ Margins: At least 0.5" margins all around
+ File Type: PDF only

Section 1: Technical concept

Applicants are required to provide a concept paper no longer than 3 pages in length that outlines:

+ TA1 sub-area(s) (TA1.1, TA1.2, TA1.3) the proposal addresses.
+ A concise description of the proposed solution and how it advances the objectives of the selected TA1 sub-area and the programme North Star.
+ A high-level description of the technical approach and workplan:
    - The core scientific or engineering approach and how it advances the state-of-the-art.
    - Key activities to be undertaken in Phase 1.
    - Proposed milestones (including 18- and 32-month demonstrations) further guidance on how to think about milestones can be found here.
    - Any critical dependencies or assumptions.
+ Clinical context and performance targets:
    - The intended clinical indication(s).
    - How the technology could be deployed in outpatient or community settings, including use by non-specialist staff.
    - Proposed indication-specific performance targets (see Technical Metrics).
+ Risks, safety, and rationale:
    - Key technical challenges and mitigation strategies.
    - Safety considerations and regulatory implications (where relevant).
    - Supporting data or scientific rationale (data, journal articles, blogs, code or other materials may be referenced or linked to in the submission if they directly support your proposal, but do not necessarily have to be your own work).
+ A brief overview of the project team, relevant expertise, experience, skills, and capabilities.
+ A short description of anticipated Phase 2 objectives.

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Section 2: Timeline, Budget and Additional questions

In completing your application you must also provide answers to the following questions. Answers to these questions are not included in the 3 page cap. You should complete these questions in the application portal so there is no need to format these in a specific way.

Budget: How much funding do you need?

Please complete the table below providing an estimate in GBP (inclusive of VAT where applicable and all other costs) of what you consider a reasonable funding amount for your project. It's ok if you're not sure – give your best estimate.

Cost Type	Budget (£ Inc VAT)
Labour	
Materials	
Subcontract	
Equipment & Facilities	
Travel	
Other	
Subtotal	
Indirect Costs	
Total	

Timeline and additional questions:

Question	Guidance
Are you proposing to contribute funding?	*Where you or your organisation are proposing to contribute funding to the project please let us know. If yes, tell us how much funding you/your organisation plan to contribute.*

	ARIA will fund 100% of project costs and contribution of funding is not essential however, we welcome proposals that contribute funding in cases when such funding will strengthen the potential success. In these cases, this funding contribution will be considered as part of the overall strength of the project proposal.
How many months will you need to work on your proposed project?	*There is no minimum length for a proposed project. The maximum length is 3 years for TA1 Phase 1.*
Are you planning to give a portion of the work to external subcontractors?	*If yes, let us know what work you plan to give to a subcontractor. Subcontractors are any proposed third parties that you plan to enter into a contract or agreement with for services necessary for the delivery or management of the project.*
Do you consent to ARIA introducing you to other programme applicants to facilitate potential collaborations?	*The primary goal is to facilitate potential collaborations that can strengthen the applicants proposed projects. Please note that we will not share any information about your proposal. All personal data provided to ARIA will be processed in accordance with UK data protection legislation, including the Data Protection Act (2018) and the General Data Protection Regulation (GDPR). Further information on how we use personal data and how you can exercise your right as a data subject can be found in the ARIA Privacy Policy.*

Please indicate any programme wide partnerships that would be beneficial to your project?	*Please provide a brief summary of any additional expertise or resources that you believe could strengthen your proposal if provided partnerships (either via ARIA's Activation Partners or programme-specific partners).*
Do you intend to use animals as part of your proposed project (even if you don't intend for us to cover the costs of such research)?	*If yes, what type of animal do you foresee using and roughly how many?* *Why do you think there is a need to use animals as part of your proposal?*
Are you planning on including a clinical trial as part of your proposal?	*If yes, please describe any expected timeline implications, required regulatory approvals, or other resultant dependencies which may have an impact on your proposal.*
Do you intend to use human tissue as part of your proposed project?	*If yes, please describe any expected timeline implications, required regulatory approvals, or other resultant dependencies which may have an impact on your proposal.*
Are there any conflicts of interest?	*Please provide a short description of any potential conflicts of interest.*
Are there any other factors or restrictions that might impact your freedom to operate and deliver the project?	*Please provide a short description of any import/export restrictions; security, ethical, legal and regulatory restrictions that you are aware of.*
Are you proposing to perform the majority of the proposed project outside of the UK?	*Our primary focus is on funding those who are based in the UK. For the vast majority of applicants, we therefore require the majority of the project work*

	to be conducted in the UK (i.e. >50% of project costs and personnel time). *However, we can award funding to applicants whose projects will primarily take place outside of the UK, if we believe it can boost the net impact of a programme. In these instances, you must outline any proposed plans or commitments in the UK that will contribute to the programme within the project's duration.* *Please provide a brief summary of your proposed plans or commitments*
Additional questions about you/your organisation that can be found in the application portal.	

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Full Proposal Guidelines

How to Format your proposal

- Page count: 10 pages, (including figures, excluding references)
- Format: Single line spacing, standard character spacing (neither expanded nor condensed)
- Font: Arial. Colour: black. Size: 11-point font or larger
- Margins: At least 0.5" margins all around
- File Type: PDF

Applicants are required to provide a proposal no longer than 10 pages in length that outlines:

Section 1: Programme & Technical

The aim of this section is to gain in-depth, technical information about the project being proposed. This should include:

- An abstract of 150-200 words summarising the proposed technical approach, how it advances upon what is currently possible or known, and how it will enable achievement of one or more TA1 goals.
- A detailed explanation of the proposed idea/solution, how it supports the technical objectives of the chosen pathway.
    - This should be supported by visual aids, data and/or strong scientific rationale for why what you are proposing would work.
- A comprehensive list of the known technical risks/unknowns standing in the way of achieving the stated goals.
- How the proposed approach is differentiated, e.g. from commercial or emerging technologies being funded or developed elsewhere.
- A description of the proposed activity of work, key metrics and milestones (including 18- and 32-month demonstrations) and any dependencies and assumptions (further guidance on how to think about milestones can be found here).
- Estimated timelines — applicants should provide a Project Plan for the lifecycle of the project, showing what you plan to achieve for each period of the project, potentially displayed in a Gantt chart.
- A brief description of anticipated Phase 2 activities.
- Please include any required technical information, as specified in Sections 2 and 3 of the call for proposals document, including:

- The intended clinical indication(s).
- How the technology could be deployed in outpatient or community settings, including use by non-specialist staff.
- Proposed indication-specific performance targets (see Technical Metrics).
- Describe and justify the validation methods to be used, including any ground-truth measurements for verifying performance.
- Describe and justify the safety metrics that will be reported, such as AEs and SAEs, biocompatibility, biodistribution and reliability.
- Describe any safety mitigations that will be explored (such as reversability).
- Justify the model system to be used and explain its translational relevance to human applications.

Section 2: The Team

This section includes information about the proposed individuals or teams that will conduct the research and management structures. This must include:

+ Details of the project team — we want to know who will be doing the work (not just the principal investigator or project lead) and what portion of their time will be dedicated to this project. We usually prefer any lead or key researchers to be spending at least 50%, ideally 80%, of their time on the project.
+ You could include short bios about each team member (we discourage you from submitting CVs).
+ If you intend to collaborate with or rely on any third parties, sub contractors/grantees, who they are and which elements of the project they will support/deliver.
+ How you intend to coordinate and manage the teams including any collaborations with third parties.
+ Any potential gaps in your core competency which would be required in order to achieve the overall goals.
+ We also want to know what motivates you or the team to want to do this project and why you are the right person/team to work on this project.

In addition to the above the following table should be completed and attached as an annex to your proposal

Individual	Role / expertise	Already in place? If not, how long after project kickoff are they likely to start?	FTE	Total time on project (months, rounded)
Sophia Fleissig	*Synthetic biologist, project lead (TA1.2)*	*Currently assigned to a different project but could transfer to this project with 6 weeks notice*	*80%*	*28*
Unknown	*Expert in plant tissue culture and transformation (TA1.3)*	*To be recruited, aiming to start within 3 months*	*100%*	*33*
Magnus Formaggio	*Plant geneticist advising on synthetic unit design (TA1.1)*	*Yes*	*40% during months 1-12, 20% during months 13-36*	*10*
Etc	*Etc*	*Etc*	*Etc*	*Etc*

Labour table to be completed for all individuals working on the proposed project (*filled here with hypothetical examples*).

Section 3: Administrative Response

This section includes information about the budget, intellectual property that you intend to rely on, any perceived conflicts of interest and for non-UK applicants how the proposed project may benefit the UK.

In completing your application you must also provide answers to the following questions. Answers to these questions are not included in the 10 page cap. You should complete these questions in the application portal so there is no need to format these in a specific way.

Application	Guidance

How much funding do you need?	*Please provide a cost breakdown by completing the spreadsheet here. In your proposal you may submit your budget using yearly, quarterly, or monthly phasing.* *Prior to completing this template you should review ARIA's Eligible cost guidance here.* *If your proposal is successful, prior to contract signature when the scope of work has been agreed, you will be required to provide a monthly cost breakdown.*
Are you proposing to contribute funding?	*If you or your organisation are proposing to contribute funding to the project please let us know how much funding you plan to contribute, who is contributing the funding, is the funding already secured and any other relevant details.* *ARIA will fund 100% of project costs and contribution of funding is not essential however, we welcome proposals that contribute funding in cases when such funding will strengthen the potential success. In these cases, this funding contribution will be considered as part of the overall strength of the project proposal.*
Does your proposal depend on background IP (pre existing)?	*If yes, give us an Indication of: What background IP is required, Whether you currently have rights to that IP.*

Have you already secured funding for a similar project or are you currently in the process of seeking support from other funding sources for the same project?	*If yes, tell us more about the funding you already have or are applying for.*
Any other factors or restrictions that might impact your freedom to operate and deliver the project?	*Please provide a detailed description of any perceived conflicts of interest with the programme director, import/export or security restrictions that you are aware of*
How do you envision commercialisation of the proposed project?	*Please complete and upload a commercial hypothesis for your project using the guidelines here.*
Are you proposing to perform the majority of the proposed project outside of the UK?	*Our primary focus is on funding those who are based in the UK. For the vast majority of applicants, we therefore require the majority of the project work to be conducted in the UK (i.e. >50% of project costs and personnel time).* *However, we can award funding to applicants whose projects will primarily take place outside of the UK, if we believe it can boost the net impact of a programme.* *In these instances, you must outline any proposed plans or commitments in the UK that will contribute to the programme within the project's duration.* *Please provide a detailed description of any proposed plans (including a timeline) or commitments).*

Has a suitably authorised member of your Organisation approved the submission of this proposal?	*In the application portal, please select the option that best describes your situation and provide details where required.*
Do you intend to use animals as part of your proposed project (even if you don't intend for us to cover the costs of such research)?	*If yes, applicants will be required to answer the additional questions in the portal (included here in this document).*
Are you planning on including a clinical trial as part of your proposal?	*If yes, applicants will be required to answer the additional questions in the portal (also included here in this document).*
Do you intend to use human tissue as part of your proposed project (even if you don't intend for us to cover the costs of such research)?	*If yes, applicants will be required to answer the additional questions in the portal (also included here in this document).*
Have you read and understood our funding terms?	*Our goal is to ensure your research can get going quickly, so we want to ensure a fast negotiation and award process. We aim to have agreements signed within 6 weeks, which we recognise can be much faster than standard at some organisations. Before proceeding, please confirm that you have read and understand our funding terms. If you are unsure which terms apply to you, you can find more guidance here.*
Additional questions about you/your organisation that can be found in the application portal.	

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Additional questions for projects that include animals

Note: You can find more information on ARIA's policy on funding animal testing here: ARIA's Policy on Research and Innovation Involving Animals.
Applicants should design their proposals in line with the above, the NC3Rs guidance and NC3Rs 'Experimental Design Assistant' for experimental design support.

1: Need - Describe (i) the need to use animals as part of your proposal, (ii) the use and current limitations of replacement technologies or non-animal methods in the research area, and (iii) how the proposed animal use is proportionate in light of your research objectives and the potential breakthrough that might be achieved.

2: Location - Specify the location of the proposed animal use (including details of the establishment where that information is available).
(Please note that the appropriate additional NC3Rs questionnaire must be provided alongside your application if (a) the location is outside of the UK and (b) the animals involved are one or more of the following: rodents; rabbits; sheep; goats; pigs; cattle; xenopus laevis and xenopus tropicalis; or zebrafish.)

3: Species - Indicate the choice of species to be used, the rationale for this choice, and the decision making process used.
(Please ensure that you address why the animal species and models being used can address the scientific objectives of your proposal and the relevance to human biology.)

4: Animal characteristics - Indicate the characteristics of the animal(s) to be used, for example, strain or substrain, sexes, age or developmental stage, weight range, genetic modification status, pathogen status, and the rationale for this choice and the decision-making process used.
(Both sexes should be used throughout the research pipeline unless appropriately justified. If the use of only one sex is proposed, please provide a scientific justification for this.)

5: Experimental procedures - Outline the planned experimental procedures, including the frequency, duration and timing of all procedures. Include details of the maximum prospective severity rating (and, for activity undertaken in the UK, with reference to the Home Office severity ratings). For moderate or severe procedures, detail the percentage of animals expected to reach this classification. Provide details of the refinements in place to reduce the pain, suffering and

harms to the animals and give information on the expected clinical signs and humane endpoints that will be put in place.

6: Experimental design - Outline the total number of animals required and how this number was reached. Provide details of the (i) control and experimental groups, (ii) the experimental unit, (iii) sample size per group, including a justification for the chosen sample size, and (iv) the methods implemented to reduce confounders during the conduct of the studies (e.g randomisation and blinding strategies). If randomisation or blinding is not used, provide rationale for this. For research generating inferential statistics, provide details of any power calculations used to determine the sample size.

7: Licences and ethical approval - Where the proposed research is to take place:

A. In the UK, please provide details of the Home Office licences in place in respect of the proposed research, researchers, and venue. If the necessary licences under the Animals (Scientific Procedures) Act 1986 are not yet in place, please outline your plans to ensure that such licences are acquired and estimated timelines; OR
B. Outside of the UK, please provide details of any relevant licences in place in respect of the proposed research, researchers, and venue to the extent applicable. If licences or other approvals are not yet in place but will be required, please outline your plans to ensure that such licences are acquired and estimated timelines.

(Please note that it is the responsibility of all applicants to ensure that the appropriate licences and approvals are obtained where this is required. This includes the approval by a local ethical review process (and, where UK based applicants are undertaking research outside of the UK, additional approval from any relevant UK institutional Animal Welfare and Ethical Review Board). Licences (or amendments to existing licences) do not have to be obtained before your application is submitted to us, but if your application is successful you must have the necessary licences in place before any animal experimentation begins.)

8: Outcomes and analysis - Outline primary outcomes to be assessed and describe the planned statistical analyses.

(Provide details of all the outcome measures taken during the conduct of each study and indicate the primary outcome measure, that is the outcome measure that is used to determine the sample sizes. Provide a description of the statistical analysis methods that will be used, explaining how they relate to the experimental design used and the experimental unit (that is, there is a difference between N samples from one animal, as distinct from one sample from each of N animals, or

combining samples from multiple animals), and showing that they are appropriate for the types of data that will be collected. Applicants should consider whether and how to access statistical support.)

Non-human primate questions *(to be answered if you answer yes to use of non human primates in question 3)*

Before answering the questions, please read the NC3Rs guidance on 'Non-human primate accommodation, care and use' and 'Responsibility in the Use of Animals in Bioscience Research'.

1. Provide the name and location of the supplier from where non-human primates will be sourced. State the approximate journey times and the measures in place to minimise transport stress.
2. Will the non-human primates used in this study be the offspring of animals born in captivity (i.e. F2 generation or later)?
3. Provide the name and location of the establishment where the animal work will take place.
4. Provide details of the housing for non-human primates. Include the following:
    a. The enclosure size, including vertical space and space allocation per animal in metres/centimetres.
    b. The flooring type, stating whether the floor is solid and covered with substrate. Note that if the use of solid floors is not feasible due to study restrictions provide the scientific rationale for this.
    c. Representative photographs of the monkey enclosures.
5. What environmental enrichment will be provided for the non-human primates to promote good health and psychological well-being? Include information on the following:
    a. The physical/structural, social, cognitive/occupational and sensory enrichment that will be available to the monkeys in their home environment.
    b. The food-based enrichment that will be available to monkeys to facilitate extended bouts of daily foraging behaviour.

6. Will single housing of the non-human primates be necessary at any time? If so, provide the scientific or veterinary rationale for this. State the duration of the single housing and what steps will be in place to minimise the impact on animal welfare.

7. List the procedures that the non-human primates will experience during this study. Include information on the following:
    a. How often the procedure will occur, the number of occasions that the animals will undergo the procedure and how long each procedure will typically last.
    b. How the procedures will be refined to minimise the welfare impact on the non-human primates on this study. Examples of welfare refinements include, home cage training for behavioural tasks (Tulip et al. 2017); protective cap for macaque cranial implants, Perry at al. 2020).
    c. If the non-human primates will undergo blood sampling or dosing, include the blood volumes and routes of sampling or compound administration.
    d. If the non-human primates will undergo surgical procedures, include information on the anesthesia and analgesia that will be used and outline the welfare monitoring that will take place during the surgery and the post-operative period.
8. Will any of the experimental procedures involve food and/or water control? If so, include information on the following:
    a. The scientific rationale for why food/water restriction is necessary and what alternatives have been considered.
    b. The food/water restriction schedule and limits. State how these will be set for individual monkeys.
    c. The refinements in place to minimise the welfare impact on the non-human primates. Note that the NC3Rs guidance on Refining food and fluid control in macaques should be implemented.

9. Will any of the experimental procedures involve chemical or physical restraint? Has the use of positive reinforcement to train the animals to co-operate been considered? Describe the nature of the restraint, its duration and frequency, and what will be done to minimise distress. Note that, if relevant to the species, you are encouraged to adopt the best practice recommendations in the handling section of the Macaque Website.

10. What adverse effects might the non-human primates experience? List the clinical and other signs that will be monitored, the frequency of monitoring and where relevant state the humane endpoint criteria established for the study. Note that this information should provide insight into the typical and worst-case scenarios for the welfare of the animals on this study.

11. When were the procedures last reviewed by the Animal Welfare and Ethical Review Body (AWERB), Institutional Animal Care and Use Committee (IACUC) or equivalent?
12. What prior experience and training in non-human primate use, care and welfare do those conducting the research have? What provision is made for continuing professional development in these areas?
13. Will any of the staff involved require specific training for any of the procedures concerned? Please provide details of the training needed, where it will be undertaken and the criteria used to assess competency.

Advanced Research + Invention Agency ARIA

Additional questions for projects that include clinical trials

Note: Applicants should design their proposals in line with ARIA's policy here.

Please provide answers to the following questions to assist ARIA in assessing your application for funding. If you cannot answer all of these questions please answer as fully as possible. You will need to complete all questions at a later stage within the project to enable funding of a clinical trial:

1. Which entity will be the intended sponsor?
2. Has the protocol (describing the objectives, design, methodology, statistical considerations, and organisation of a clinical trial) been finalised?
3. What stage of obtaining regulatory/ethical approval have you reached?
4. What is your regulatory strategy, if you have developed one? Do you intend to engage a regulatory consultant to assist with developing this?
5. Are any licences or approvals required to carry out the trial which need to be obtained in addition to regulatory approval of the trial itself?
6. What is the subject matter of the trial? For example:
    a. a new medical device;
    b. an Investigational Medicinal Product ("IMP");
    c. an Advanced Therapy Medicinal Product ("ATMP");
    d. an existing medicine or medical device for a new indication or use;
    e. an app or software as a medical device; or
    f. something else?
7. Where will the trial take place?
8. How long is the trial expected to take? Are there any factors that may affect this?
9. Are there any factors that may affect the cost of the trial? Have any assumptions been made in developing the budget?
10. What type of trial is this? (for example - pilot/feasibility trial, trial of a form of screening or treatment, a cohort/cross-sectional study, decentralised clinical trial)?
11. Are there any unusual aspects to the trial design?
12. How many patients will be recruited and in what manner?

13. Who are the key personnel who will work on the trial?
14. How will patient confidentiality/data protection and patient safety (pharmacovigilance) be assured?
15. Will any of the work be subcontracted and has a contract research organisation ("CRO") been selected?
16. What will be done with the results of the trial in addition to publication? (Further research, commercialisation etc.)
17. How will any intellectual property in the results be protected?
18. Are there any obstacles (regulatory, logistical, etc) which need to be overcome in order for the trial to proceed? For example, does a drug need to be manufactured, specific intellectual property licensed in, or a key person recruited?
19. Are there any particular risks involved in the trial and how will you approach mitigating them?

Advanced Research + Invention Agency ARIA

Additional questions for projects that include human tissue

Note: Applicants should design their proposals in line with ARIA's policy here.

Please provide answers to the following questions to assist ARIA in assessing your application for funding. If you cannot answer all of these questions please answer as fully as possible. You will need to complete all questions at a later stage within the project to enable funding for the use of human tissue in your project:

1. Identify whether you will be using or storing 'relevant material' under the HT Act? If the research will be conducted outside of the UK please provide a high level overview of the regulatory regime in the jurisdiction as part of your application and answer all of the following questions with reference to local legislation.
2. Will you obtain consent from donors for your use of human tissue?
3. If you do not think consent is required, what exceptions apply?
4. If you are using human tissue from deceased donors, have you confirmed with the tissue bank that the donor tissue was donated with appropriate consent for your specific use?
5. If you are using cadavers for your project, have you confirmed with the HTA licensed premises that consent for research was obtained for all cadavers to be used? Have you arranged with the HTA licensed premises for the use of cadavers on their premises as part of your project or have you obtained authorisation in writing for possession outside of the HTA licensed premises? If you are based in a jurisdiction outside of the UK, is your use in compliance with local regulations for use of cadavers?
6. What stage of obtaining regulatory/ethical approval for use of human tissue, if relevant, have you reached?
7. Are you planning to analyse DNA or RNA from samples? If yes, will you obtain consent or utilise an exception for its use? If so, what exception will be used? If you are using human tissue from deceased donors, have you confirmed with the tissue bank that the donor did not exclude DNA analysis from their consent?
8. Where will the human tissue samples for your project be stored and does that location have an HTA licence or other relevant permit if storage will be outside of the UK? If not, when will that licence be in place?
9. Will you use samples from a registered tissue bank? Does that tissue bank have a generic approval in place and will this apply to your research?

10. Do you have a process in place for reporting of SAEs or SARs, if relevant for your project?
11. Will you apply for a licence from the HTA for storage of samples in your project?
12. Have you considered what will happen to human tissue samples after the project?
13. How do you plan to dispose of any remaining human tissue after the project? Do you have a system in place to inform donors?

Advanced Research + Invention Agency ARIA

Appendix 1

Technology Area 2 (TA2): Prototyping + Translation

As TA1 Phase 1 requires rapid technical progress, a first TA2 call will identify partners with capabilities in rapid prototyping, electronics and mechanical design, and capabilities for safety testing — helping teams to iterate rapidly and accelerate R&D. We also believe that AI will play a crucial role in scientific research and are therefore soliciting potential AI partners to work across funded teams to accelerate critical parts of their technology development pipeline. This may include supporting TA1 teams with AI assisted biological or materials engineering, *in silico* safety testing, biomarker analysis or novel closed-loop control strategies.

TA1 Phase 2 will focus on translation. At the time of the Phase 2 transition (Month 36), ARIA will launch a second TA2 call to identify partners who can support all aspects of the translational pipeline, enabling the most promising approaches from Phase 1 to progress efficiently toward real-world deployment. This call will build on learnings from Phase 1 and may include partners providing regulatory support, target product profile development, lived-experience engagement, GMP manufacturing, and preclinical GLP testing.

TA2 will be launched shortly after the main TA1 call, allowing the programme to tailor support to the specific technical and translational needs of funded teams.

Technology Area 3 (TA3): Adoption

TA3 recognises that scalability is as much a socio-technical challenge as a technical one, and treats public trust, understanding, and acceptability as critical components of deployment. TA3 will therefore focus on public understanding and adoption as a core activity of the programme.

TA3 will fund individuals with lived experience of brain disorders — including users of neurotechnologies — as well as organisations that work with these communities, to develop high-quality narrative content (e.g. articles, podcasts, video) that communicates the realities, benefits, and limitations of emerging neurotechnologies. In addition, TA3 may support structured data collection alongside this work to understand how different forms of engagement shape perception and adoption among people with lived experience, clinicians and policymakers.

We intend to launch TA3 shortly after the main TA1 call in Summer 2026.

You can sign up to be notified about the TA2 and TA3 calls here.