Advanced Research + Invention Agency ARIA

Massively Scalable Neurotechnologies for Human Health

FAQs from the webinar

The Massively Scalable Neurotechnologies (MSN) team hosted a webinar 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.

The following questions were submitted:

Technical Scope & Modality Definitions

Q: Is the focus on electrode-based systems like Neuralink, or non-surgical, biologically accessible technologies that access the brain parenchyma to deliver therapeutics?

A: These types of devices are in scope. Whether that's based on electro-systems, whether it's based on some kind of engineered biological systems, we don't have a specific preference within this programme, provided they meet the "North Star" goal of safe, reliable access to validated brain targets without transcranial surgery and a 30-minute procedure. Both biologics and electrodes are technically in scope.

Additional Information: To be in scope, a system must have a component that is placed within the brain (e.g. an implantable or biological component). We are not looking for fully non-invasive systems with no implantable element (e.g., pure transcranial ultrasound).

Q: Does "closed-loop" mandate bidirectional electrodes/stimulation, or do platforms using molecular receptors for diagnostics and delivery qualify?

A: We are not specifically looking for electrical neuromodulation. If there are molecular approaches for doing these diagnostics, provided they meet the targets of the programme (such as recording from well-defined brain regions), they are in scope.

Additional Information: TA 1.3 (Closed-loop) focuses on the functional ability to sense an endogenous signal and perturb the brain back to a physiological state.

Q: Do remote modulation strategies (e.g., nanotechnology-enabled gene or drug delivery) fit the scope of TA 1.2?

A: Yes. In principle, those technologies can be in scope, provided they can meet the targets laid out in the solicitation.

Additional Information: The technology must be responsive, meaning it delivers a controllable and tunable dose rather than a fixed therapeutic dose.

Q: Is this call brain-focused, or are other regions of the central and peripheral nervous system applicable (e.g., spinal cord and DRGs)?

A: This is focused on directly interfacing with the brain; things that are purely in the periphery or the spinal cord would be out of scope.

Additional Information: Brainstem targets are considered in scope.

Q: Is transcranial focused ultrasound, including higher precision targeting, considered out of scope?

A: Yes, that is considered out of scope unless there is a component (such as a transducer) that is placed within the brain.

Technical Readiness & Entry Evidence

Q: Is cortical modulation evidence sufficient for entry if the plan validates deep-target engagement, or is direct evidence of deep-target modulation required at submission?

A: In principle both of those things can be in scope. We are very interested in approaches that can access validated deep brain targets, but we are also open to approaches that can access cortical targets as well, provided they have either been clinically validated or there is strong scientific rationale.

Q: Does TA 1.2 require a full neuromodulation system to be developed during Phase 1? Or can Phase 1 focus on a new delivery system with the actual neuromodulation component taking place during Phase 2?

A: Yes, teams must develop both the delivery system and neuromodulation system in Phase 1. In Phase 2, teams can increase the performance of the neuromodulation system.

Q: Must a concept paper address all three pillars (Readout, Modulation, and Control), or can it focus on a subset?

A: No. Teams can focus on a subset. Indeed, we anticipate that the majority of teams will be focusing on just a single sub-technical area.

Programme Structure & Phasing

Q: How does the down-selection work between Phase 1 and Phase 2?

A: Decisions will be based on the potential for scalability, the performance of the system, the safety profile, and portfolio-level optimisation.

Additional Information: Phase 1 (Delivery + Performance) lasts 3 years, followed by a down-selection to 2-3 teams for Phase 2 (Advanced Performance + Translation) which lasts 2 years.

Collaborations & Submission Guidance

Q: Can an institution submit multiple complementary proposals, and can one individual serve as PI on more than one?

A: Yes. The ideas in the proposals should be distinct, though they can be complementary.

Additional Information: If a PI is on multiple proposals that are selected for award, we may need to discuss with them their bandwidth and capacity to deliver on all projects.

Q: Does applying for TA 1.3 preclude or disadvantage a consortium from applying to future TA 2 calls?

A: In principle, no, that shouldn't disadvantage you. However, we will look at the capacity of the team to deliver on both projects.

Q: Can new companies be created for the purpose of the project?

A: Yes. We welcome start-ups and small companies and can fund whoever can deliver the project.

Finance & IP

Q: Does the >50% UK spend requirement apply annually or to the total aggregate project budget?

A: It is for the aggregate project budget rather than the annual spend.

Additional Information: 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 in proposals any proposed plans or commitments in the UK that will contribute to the programme within the project's duration. If you are selected for an award subject to negotiation, these plans will form part of those negotiations and any resultant contract/grant.

Q: Is the funding the same if US-based?

A: We use the same funding terms regardless of where a Creator is located.

Additional information: If you are successful, the type of funding agreement you will receive is dependent on a couple of factors: the activity being funded and the type of recipient.

Where the activity being funded is considered basic research (experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of

phenomena and observable facts, without any particular application or use in view/TRLs 1-3) and you are an Enterprise, ARIA will provide funding via a Basic Research Grant Agreement. Where the activity being funded is considered to be more technologically mature but still research and development (TRLs 3-6) and you are an Enterprise, ARIA will provide funding via a Research Contract. Where the activity being funded is between TRLs 1-6 and you are not an Enterprise (e.g. a university), ARIA will provide funding via a Standard Grant Agreement. If you are an individual working outside of any organisation, and are not an Enterprise (e.g. a sole trader), ARIA will provide funding via a Research Grant to an Individual.

This framework of agreements has been developed to ensure compliance with the Subsidy Control Act.

If IP generated under the ARIA funded project goes on to be commercialised outside of the UK, there is a small royalty fee (the 'AIRA non-UK fee') that is payable to ARIA. Further information on this, including a copy of our template funding agreements can be found in our FAQs on the ARIA website here.

Q: Is there an indicative budget range per Phase 1 project that applicants should target?

A: We anticipate funding projects with budgets of £2 million to £4 million each for TA1 Phase 1 (3 years).

Additional Information: Applicants should propose the budget they need to be able to deliver the project; if the budget is higher or lower, that is fine, please provide a clear justification for the proposed budget.

Q: In terms of ownership, does ARIA retain any rights over the IP generated during a project?

A: Our creators will own the IP they generate under the project. ARIA retains very limited rights on IP usage strictly to evaluate outputs in connection with the programme.

Additional information: ARIA's standard approach is that funding recipients will own any new intellectual property generated as a result of the grant/contract. We'll need some

rights to the new intellectual property to help us evaluate the outputs during the funding agreement period. We've also included some provisions to support our mission of benefiting both the UK and the world, with this goal in mind, these provisions are carefully designed to avoid imposing significant hindrances on commercialisation. We'll need some rights to the new intellectual property to help us evaluate the outputs during the funding agreement period. We may adapt this approach depending on the needs of the programme, so please ensure to check the information specific to the funding call you are applying for.