Trustworthy Autonomous Systems – Research Nodes Call

Frequently Asked Questions

UKRI held a webinar on the 8 January 2020 to discuss the Research Nodes Call, which is part of the £33m UKRI Trustworthy Autonomous Systems (TAS) programme funded as part of a Strategic Priorities fund (SPF).

The aim of this webinar was to provide information on the objectives of the programme, call requirements and provide an opportunity for the community to ask questions.

The webinar received significant interest and a high number of questions were submitted, to best address these we have grouped similar questions under topical areas and merged them with previous FAQ document.

Node-node interaction

- *How can we plan for overlaps and complementarity between nodes at an application stage?*

  The primary focus for applicants should be submitting a proposal to conduct fundamental research into one of the seven topics identified in the call document. It is up to the applicant team to produce an appropriate approach to collaborative working that is complementary to the proposal.

  UKRI is exploring routes to facilitate engagement between the node applicants that are invited to submit a full proposal. This could include publishing the details of successful outline proposals (subject to applicants' consent) and/or specific feedback from the outline panel. Any decisions will be notified to applicants (successful at the outline stage) and call documents will be updated as appropriate.

  Once the programme is running, it is expected that the nodes will work closely with the Hub and the other research nodes to identify overlaps, explore routes for collaboration across nodes and ensure that the resources across the programme are maximised. Applicants should consider the objectives of the TAS programme when developing their applications, as both the hub and the nodes will be required to work collaboratively to deliver those.

  Additional details are available within the call document published here: https://epsrc.ukri.org/funding/calls/trustworthy-autonomous-systems-research-nodes-call/

Hub-node interaction

- *How can we establish an approach to collaboration with the Hub, if we do not know who/where it will be funded?*

  The hub and the nodes are funded via the two independent calls managed by EPSRC on behalf of UKRI. We are fully aware that the applicants will not have details on the successful hub bid until the late stages of the application process. We encourage applicants to consider the objectives of the TAS programme when developing their applications, as both the hub and the nodes will be required to work collaboratively to deliver those. All relevant resources to the hub are accessible to nodes applicants (https://epsrc.ukri.org/funding/calls/trustworthy-autonomous-systems-hub-outline-call/)

- *Is the Hub responsible for co-ordinating all the Node activities?*

  No. The nodes will be responsible for designing and undertaking appropriate research programmes to address the key research challenges posed by the topics, building a suitable team, collaborating with the nodes and exploring new research opportunities through accessing the pump prime funds. The nodes will be expected to engage with various external partners, organisations and other nodes that would help them in delivery of their proposed fundamental research.

  It is expected that the nodes will work closely with the hub to maximise the benefits of the programme. The hub will be responsible for the delivery of the objectives of the programme, providing coordination to the nodes, identifying areas for collaboration across nodes, supporting the research activities of the nodes where appropriate, working as a platform to facilitate new collaborations and using the structure provided by the nodes to build a coherent autonomous systems community.

Pump-priming funds

- *How will the pump prime funds be managed by the Hub, and who can access them?*

  The Hub will distribute the pump-priming funds via a transparent, competitive process in line with UKRI principles. These funds will be available to both the nodes and the wider research community.

- *Examples of pump-priming funds usage? Should this be addressed at proposal stage?*

  As detailed in the call document, pump-priming may be used to (but not limited to):

  - Undertake risky research within, between and beyond the nodes.
  - Build new collaborations, nationally or internationally.

- Explore new research directions, particularly to address gaps identified.
- Tackle barriers to interdisciplinary working.
- Engage with stakeholders and users of the research to conduct application-oriented research, building on from the fundamental research undertaken.
- Conduct activities to demonstrate how the outcomes of the fundamental research undertaken in the nodes might be exploited in real-world applications.

(https://epsrc.ukri.org/files/funding/calls/2019/trustworthy-autonomous-systems-nodes-outline-call/).

Pump priming funds are a flexible way to address emerging opportunities that develop/arise during the lifetime of the programme, these maybe difficult to identify at the proposal stage.

- *How are pump-priming funds costed (i.e. full economic costs) and are hey independent of the main funding?*

  The pump priming funds are costed at 80% fEC (please see here: https://epsrc.ukri.org/funding/applicationprocess/fundingguide/resources/) with institution receiving the funds adding the remaining 20% and are independent of the main funding (i.e. around £3 million per node).

- *Do proposals address multidisciplinarity via pump-priming?*

  Multidisciplinarity is embedded at the core of this programme and is expected to be utilised by the nodes in order to best tackle the challenges that may be posed within their research topic (i.e. a chosen node). For example, in the case of the Security node this may require the inclusion of Social Scientists and Arts and Humanities in order to also assess and tackle specific challenges within that topic, such as identifying what security means to other disciplines, identifying the challenges to uptake and helping to drive the culture change. We understand that the form and degree of multidisciplinarity is specific to the challenges that are intended to be addressed within the applicant proposals for a given node topic and therefore will vary.

Project partners

- *Who is eligible to be a project partner? Are there any restrictions on the number of partners?*

  UKRI has not set any expectations on number project partners or leverage provided for this call, and it is up to the applicants to set an appropriate portfolio of project partners team for their node.

- *Does EPSRC have any expectations on how intellectual assets are managed between partners/collaborators?*

  The management of intellectual assets is delegated to the funded organisation and EPSRC makes no claim to the intellectual assets that arise from research and training. Guidance and more information on intellectual assets is available on the EPSRC website here https://epsrc.ukri.org/funding/applicationprocess/basics/ip/ .

Node application

- *Is the call restricted to applicants who propose research within a specific area?*

  Yes. As outlined in the call document, this call is open to applicants who are applying to conduct fundamental research within a topic of one of the seven research nodes (trust, responsibility, resilience, security, functionality, verifiability and governance & regulation). Applicants are required to follow the guidance provided in the call document here: https://epsrc.ukri.org/files/funding/calls/2019/trustworthy-autonomous-systems-nodes-outline-call/.

- *Are there any restrictions for* PI/Co-I to be on multiple node applications?

  No, there are no restrictions for the PI/Co-I to be included on multiple nodes.

- *What is the review process for the node applications?*

  The review process for the node applications is described in detail within the "Assessment" section of the call document. This programme and its component parts adhere to EPSRC peer review principles and policy. Please see https://epsrc.ukri.org/funding/assessmentprocess/ for more details on the EPSRC assessment process.

- *When will the nodes call open?*

  The call for research nodes opened on the 5th December 2019, with deadline of 20 February 2020 at 16:00 for the outline submissions. We would like to refer you to the nodes call document for additional information on this aspect of the TAS programme. https://epsrc.ukri.org/funding/calls/trustworthy-autonomoussystems-research-nodes-call/

- *How long will the node last?*

  This will be 42 months, with a fixed start date of 1 October 2020.

- *Why is the delivery timescale so short?*

  Strategic Priorities Fund investments have set financial spending profiles and fixed start/end dates that we must adhere when planning the calls.

Scope & Requirements of the Nodes call

- *Is the expectation that there will be 7 nodes funded, one per topic? How will UKRI manage imbalances in the portfolio?*

  Yes, the TAS programme will consist of a hub and seven research nodes, each covering one of the following topics: trust, responsibility, resilience, security, functionality, verifiability and legality. Applicants to this call are expected to develop a programme of research to address key research challenges one of those seven areas, with a team with suitable expertise, that is more or less multi- or interdisciplinary depending on the challenges posed by the topic. Due to the highly multidisciplinary nature of the programme, applications to this nodes call are welcome from across the UKRI portfolio.

  UKRI have not set any quotas or restrictions on the number of applications per node topic, and we anticipate that some topics will receive more applications than others. All node outline proposals will be assessed at the same outline panel meeting, regardless of the topic they focus on. Based on the recommendations made by the panel, UKRI will seek to balance the number of applications invited to submit a full proposal, with consideration to the topics covered by the proposals.

- *Can/should nodes focus on a particular sector or application?*

  No. As stated in the call document, the nodes will be expected not to focus on a single sector (e.g. transport, healthcare) and instead conduct cross-cutting fundamental, multidisciplinary research. For example, a node focusing on verification may undertake fundamental research to understand what an appropriate level of verification and testing of autonomous systems' operation looks like, considering all potential applications and scenarios within which they might be deployed. However, we do not expect to see proposals focusing on verification of driverless cars or drones only.

  UKRI appreciates that nodes may need to use a variety of use-cases to explore the impact and applicability of the fundamental research; application-oriented research may be undertaken in partnership with stakeholders and users of research to demonstrate how the outcomes of the fundamental research might be exploited in real-world and sector-specific contexts. Applicants may want to consider this when developing

their proposals, but they are reminded that these use-case studies or applications should not be the primary focus of the proposal.

- *The call document does not provide a great amount of detail on what each node is expected to cover. Do you have any more information available?*

  The call document provides a few prompts for each of the node topics, but applicants should not restrict their proposals to addressing those. Applicants should develop research programmes that are appropriate to address key research challenges posed by the topics (trust, responsibility, resilience, security, functionality, verifiability, and governance & regulation), and to do so with a suitable multidisciplinary team. Additionally, the applicants may find useful the summary of discussions on the topic of the hub and each of the nodes, that were held during the Town Hall Meeting and is available here: https://epsrc.ukri.org/files/newsevents/trustworthy-autonomous-systems-hub-2019-outline-call-summary-of-discussions/.

- *What do you mean by 'Autonomous Systems'?*

  For this programme, we are using 'Autonomous Systems' in the broad sense, covering a range of systems and technologies that can gain information about their environment, potentially learn, adapt and make decisions either without human control, or in partnership with humans.

- *What do you mean when you talk about "disciplines" that may need to be involved in the nodes?*

  In the case of the call for the nodes, we expect to fund seven research nodes and each of those nodes will cover a different topic (trust, responsibility, resilience, security, functionality, verifiability and governance & regulation). What expertise (or "discipline") is needed to address the challenges that are posed by those specific topics is something that applicant teams need to consider. Whether it requires computer science research, mathematical view, a perspective from the social scientist, humanities, or perhaps politics, law; this is what applicants would be expected to develop when putting their proposal together for the chosen research Node.

TAS programme

The TAS hub full proposal interview are being held during the week of 20th April 2020 and the successful proposal will be notified shortly after, in advance of the fixed start date of 1 June 2020. As there is an offset between the hub start date and the nodes start date (please see full delivery timeline in the webinar slides) UKRI is exploring the possibility and potential options of informing the node applicants about the status of the hub bid.

It is worth noting that detailed information on the different parts of the TAS programme, the hub and the nodes is available here https://epsrc.ukri.org/funding/calls/trustworthy-autonomous-systems-hub-outline-call/ and https://epsrc.ukri.org/funding/calls/trustworthy-autonomous-systems-research-nodes-call/ respectively. The information on these webpages is updated at regular intervals and in the first instance, the applicants are encouraged to consult these pages for any specific information related to call that they are applying for.