TAS Pump Priming Programme Round 1 Feedback

Rond 1 of the Pump Priming programme, which ran in early 2021, was very popular resulting in 77 bids from a diverse set of teams from across the UK. Based on the budget assigned to this round of funding, the top 12 projects were funded following a review process and a panel involving an independent chair and a UKRI observer.

Here we have collated the key points that may be useful in future bids to the programme (we expect to run at least two more calls). These points are drawn from our analysis of the reviews and meta-reviews from the current round.

The bids that went to panel and were highly rated had the following attributes:

- **Multidisciplinarity**: the team and the research clearly involved multiple disciplines. The proposal clearly demonstrated how joint research cutting across two or more disciplines would be carried out by the team rather than individual members of the team working on separate work packages.
- **Good mix of fundamental research and articulation of trust issues**: there was a clear definition of what elements of trust were to be addressed (by who, for whom) as part of the research objectives and the activities involved. The trust issues were articulated around an autonomous system (robot or algorithm) as opposed to a specific technology (e.g., security protocol).
- **Involvement of Early Career Researchers (ECRs) in the leadership team:** ECRs were directly involved in the leadership of the team (e.g., as Researcher Co-Is, Co-Is or leads). They led work packages and their mentoring and the impact on their career was clearly described.
- **Good engagement with stakeholders**: the proposal was co-created with key stakeholders, with due consideration for those impacted by the research to be carried out. Proposals explained how their research was going to be informed over the course of the project and what the outcomes would be for their stakeholders.
- **Complementarity to Hub and Node projects:** the proposals demonstrated a dialogue with a member of the Nodes or Hub to ensure their objectives were complementary. In some cases, they also involved Hub or Node Co-Is donating their time to the project. Their involvement was clearly explained (either as advisor, liaison or collaborator) to make it clear how they would keep engaged with the wider programme rather than be stand-alone projects.
- **Strong RRI and EDI statements:** Responsible Research and Innovation (RRI) and Equality, Diversity and Inclusion (EDI) was not only discussed in the reserved section but implemented across the programme of work and in the team. Considerations for RRI were built into their involvement with stakeholders, their reflections on how the project may need to engage beyond the listed set of partners, and how the research will be adapted based on the outcomes observed.

Many bids did not meet one or more essential criteria of the call. We highlight some of the issues that may be helpful to reflect upon before submitting a bid in the future:

- **Multidisciplinarity**: proposals had investigators from only one disciplinary background, or in cases where research areas are inherently interdisciplinary (e.g., Human Factors / Human-Robot Interaction), the proposals did not engage other disciplinary perspectives. To avoid this issue, it may be worth bringing together teams that involve researchers that submit to different research councils (e.g., AHRC, ESRC, EPSRC) to clearly delineate their focus areas.

- **Resourcing and risks**: the amount requested didn't match the activities required to deliver on the objectives of the proposal. Some were overambitious and didn't account for risks such as delays in recruiting or the ability to recruit someone with the expertise required. Due to the strict conditions on the spend profile specified in the call, these bids were exposed to risks which, in many cases, were not mitigated in a risk mitigation strategy.
- **Contributions to the state of the art or advancement of knowledge**: proposals didn't demonstrate how they would build upon existing research or branch into exciting new areas. Proposals focusing on knowledge exchange didn't articulate the benefits of what they were proposing in terms of advancing TAS research and how this was complementary to other ongoing activities in the UK landscape.
- **Contribution to Trustworthy Autonomous Systems research**: some proposals focused on the application of an autonomous system to a particular problem. However, the proposal lacked plans to investigate the trust issues associated with the application.
- **Focus on trust issues**: some proposals treated trust (or related issues such as responsibility, accountability etc.) as side-issues. Questions around trust (or related concepts) were not clearly built into the proposed research.
- **ECR involvement**: In some cases, ECRs were not involved from the outset; they were not named and instead were 'to be hired'. In other cases, ECRs were named they did not have a clear leadership role (e.g., work package leads).
- **RRI**: while the EPSRC AREA framework was often referred to, some degree of the Anticipate and Reflect stages can usefully be performed during the proposal writing, to define a clear plan for subsequent engagement.