

**Written Evidence Submitted by Fraunhofer UK Research Ltd
(RFA0093)**

**This evidence comments on submission RFA0013 by AIRTO (Association of Innovation,
Research and Technology Organisations)**

Dear Science and Technology Select Committee,

I fully support the submission from AIRTO with some key exceptions and some additions herein which are about how such an agency should be implemented. It should be implemented fully and boldly and this will require a cultural shift in how the UK normally plays to its strengths in research and innovation.

Our operation of the proven German 'Fraunhofer model' successfully in the UK has been a considered blend of respecting all aspects of the model whilst understanding how that should be implemented in a fundamentally different environment. Successful implementation of ARPA in the UK will only occur with a bold and honest appraisal of all our strengths and weaknesses and an understanding of all aspects of that model including strategic, operational and cultural.

Whilst it seems eminently sensible to ensure, as AIRTO submitted, '*co-ordination and cooperation between the UK ARPA and existing funding agencies (including UKRI) to ensure distinctions are maintained, benefits from collaboration are achieved...*', I vehemently disagree that '*...and unnecessary overlap is avoided.*'. This suggests discussion and compromise. I would expect that the Research Councils and InnovateUK would feel that there is a juggernaut coming through when UK ARPA put its weight behind a programme, that they out to make sure any pre-existing investments were realigned to avoid overlap. This will no doubt be unpopular but if UK ARPA is to be a bold success, it needs to be implemented in such a manner. If UK ARPA were implemented within UKRI it would be all but impossible to ensure it had free reign to pursue at speed and at scale the programmes it wished to back.

UK strengths in research and innovation include peer review, a considered approach, regular independent reviews, committee based scrutiny and layers of advisory panels. If we are to establish agility, flexibility and a high risk approach to gain high-rewards then these natural tendencies to create such structures and reviews must be abandoned wholesale. UK ARPA should be about placing bets others would shy away from.

I recognise in the AIRTO submission the importance of bold and trusted leadership to which I would underscore scientific and engineering leadership. Fraunhofer-Gesellschaft, in my personal view, has been a world-leading example of effective innovation principally because it has maintained scientific and engineering leadership in everything it does.

A key concern is the overall budget and scale. The scale of the US and ARPA budgets are such that there is a healthy competition between different groups with the strongest groups and technologies being backed more heavily. The UK must be honest about how many starting groups it can have in programmes which are of the quality and scale required to make rapid progress.

There are some key cultural hurdles and all the characteristics of the successful ARPA programmes, and the unsuccessful, should be weighed and measured and implemented as closely and boldly as possible if we expect to achieve the high-reward outcomes.

- ARPA success has required bold, visionary leaders who are trusted. The UK has strength in committees, advisory panels, oversight and review.
- ARPA was successful in taking risks and also stopping projects. The UK strength tends to be in perseverance rather than ruthlessness, with perhaps multiple reviews before anything is cut.
- ARPA success included making large bets on emerging gains. The UK strength is to spread resource to increase participation.
- ARPA success is easier to measure after some decades of hindsight The UK's strength is to have regular review. (one parallel might be the near annual-review of Catapult centres. These centres take some inspiration from the Fraunhofer model, which, in my personal view, had at least two or three decades in which to properly establish its model and demonstrate success.)

I appreciate this inquiry is asking many high-level questions I have not addressed. If this agency is prioritised as a political imperative my key concerns are:

- We must be honest with ourselves about the UK scale of budget and expertise and back a commensurate number of technologies/goals/groups.
- We must not overlook any of the UK's key infrastructure being able to contribute and participate (for example this inquiry seeks academic and industrial input, there are many others of us in AIRTO who are neither of those things)
- We must take the cultural norms of how we operate and implement research and innovation and be bold in doing this in a much more trusting, entrepreneurial and vision led manner.

Our experience of establishing a Fraunhofer centre in the UK has been a marvellous example of international collaboration, mutual respect between scientists and nations and we would be delighted to share what we have learned to help further.

Yours sincerely,

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