

Written Evidence Submitted by the British Standards Institution (BSI)

(RFA0089)

Summary

- Standards and standards development are an important part of research and innovation and form part of the country's knowledge infrastructure.
- Standards should be considered early in the development of the new agency.
- At an appropriate stage, a formal relationship between BSI and the new agency should be made.

Introduction

1. The British Standards Institution (BSI) is responding to this Inquiry as the National Standards Body for the United Kingdom. BSI has a public function in support of the UK economy and consumers. We bring together stakeholders (including government, industry, research institutions and consumers) to facilitate the development of consensus knowledge in standards: what might be described as "what good looks like" in any given subject.
2. The role of BSI in support of emerging technologies has been acknowledged in HM Government's International Research and Innovation Strategy (IRIS); we form part of the UK's Innovation Infrastructure. The report notes that the strengths and global reach of the UK's governance, intellectual property and standards frameworks can support the design of common, global regulatory approaches to support emerging, transformative technologies.
3. BSI believes that alignment of government innovation funding and policy to BSI's unique purpose allows for better outcomes domestically and globally for the UK. Standards in an innovative sector can:
 - a. support and de-risk investment, and accelerate adoption of new technologies through confidence and trust;
 - b. drive commercialization and scaling of new markets at home and internationally;
 - c. allow consolidation of emerging supply chains, prevent the risk of technology lock-in, and help disseminate knowledge from large-scale R&D demonstrators and test beds; and
 - d. encourage responsible innovation that is fair and sustainable for innovators, consumers and the environment.
4. Alongside full standards, whether developed solely in the UK or as part of international or regional/European initiatives, BSI can support sectors with more targeted, iterative and agile outputs, but still based on principles of consensus and stakeholder participation.

Detailed responses to the Inquiry questions

What gaps in the current UK research and development system might be addressed by an ARPA style approach?

5. ARPA style investment towards "moonshot" projects or demonstrators would be different to existing innovation and funding mechanisms and could offer a path from early research to exploitation and scale-up. Selecting the correct projects would offer the UK a global advantage, particularly when integrated to existing mechanisms for research, development and innovation – such as UKRI. With projects that are speculative or innovative in nature, it may not seem an obvious choice to consider standards early on, but thinking about and mapping standards needs, their potential and their use can be a means to building a community of practice, to considering fundamental questions where agreement is needed, and to providing greater certainty in high-risk, high-opportunity projects.
6. New standards can support research and programmes by disseminating knowledge to industry, society and public administrations. They facilitate market acceptance by enabling interoperability and compatibility; they can also be used to influence global markets. The consensus-building process

(driving the development of standards) can even accelerate innovation by supporting innovators to frame problems and focus on the novel aspects.

7. Even in the case that a programme achieve does not achieve the full intended outcome, standards and standards development activity can permit benefits to be realized, such as: new collaborations and partnerships, attraction and retention of talent (to the UK or STEM subjects), thought leadership and influence, spin-off technology, and capturing and codifying consensus-based knowledge.
8. Use of existing standards should also be considered on a programme and agency basis as a foundation to de-risk investment, create resilience and support responsibility. This can be done with or without bespoke BSI support.

What should be the focus be of the new research funding agency and how should it be structured?

9. BSI, as the UK's National Standards Body and a part of the UK's National Quality Infrastructure, should be considered early with an aim to formalizing a relationship with the new agency – and the UK – to benefit from the unique purpose we fulfil for the country.
10. Standards and standards development offer a powerful means to unlock trade, boost productivity, embed ethics and accelerate innovation in sectors which they are applied. BSI offers the mechanisms to do this, as well as the strategic capability to partner with the new agency to explore the most effective exploitation of these tools domestically and globally.
11. Standards play an important role in enabling innovation and are 'a key component of modern economic infrastructure and play a vital and often invisible role in supporting economic growth'. There is a widespread recognition of the increasing urgency for standardization in technological systems, which are becoming more complex and interdisciplinary. Standardization is playing an ever-expanding role as:
 - a. new generations of products and services require the integration of complex technologies;
 - b. there is greater specialization and distribution of R&D across supply chains; and
 - c. there is a need to scale up at faster rates and develop new production processes targeting particular levels of quality and cost. This is resulting in a substantial increase in market transactions, and an ever-increasing need to demonstrate confidence in performance of components, products and services.

What funding should ARPA receive, and how should it distribute this funding to maximise effectiveness?

12. BSI would welcome a mechanism to formalize a relationship with ARPA, taking into account BSI's existing Memorandum of Understanding with Government ("The Government and BSI agree that: Standardization is a key factor in support of a number of government policies, including competitiveness, innovation, reduction of trade barriers, fair trading and protection of consumer interests, environmental protection and public procurement.")
13. ARPA consideration for funding should recognise the important "gearing" that a quality infrastructure brings researchers and innovators. Infrastructure offers support to a range of different players: it embeds benefit in "place". Most critically it is important that ARPA recognizes the role that non-physical knowledge-based infrastructure, such as standards, plays. Standards are knowledge, built by consensus and applicable in all relevant sectors.
14. Whilst it is difficult to suggest the quantity of funding that should be distributed to BSI, or other infrastructure organizations and initiatives, as projects and demonstrators are announced this is a topic that can be explored.

About BSI

BSI is the UK's National Standards Body, incorporated by Royal Charter and responsible independently for preparing British Standards and related publications and for coordinating the input of UK experts to European and international standards committees. BSI has almost 120 years of experience in serving the interest of a wide range of stakeholders including government, business and society.

BSI's status as the National Standards Body is recognized in a Memorandum of Understanding with the UK Government. This acknowledges the role that standardization plays in support of a number of government policies, including competitiveness, innovation, reduction of trade barriers, fair trading and protection of consumer interests, environmental protection and public procurement. It notes the importance of standardization to the convergence of technologies and for international trade, in particular through the World Trade Organization's Technical Barriers to Trade (WTO TBT) Agreement.

BSI represents the UK view on standards internationally (via the international organizations ISO and IEC) and regionally (via non-EU independent bodies CEN and CENELEC). BSI is also a member of ETSI (European Telecommunications Standards Institute) and provides support to DCMS and its membership of ITU (the International Telecommunication Union). BSI has a globally recognized reputation for independence, integrity and innovation ensuring standards are useful, relevant and authoritative.

BSI is a constituent part of the UK's Quality Infrastructure, alongside the United Kingdom Accreditation Service (UKAS) and the National Physical Laboratory (NPL). This provides the UK with the standardization, accreditation, metrology and conformity assessment (testing, inspection and certification) that is required to support businesses to innovate and enable research to be commercialized.

BSI is responsible for maintaining the integrity of the national standards-making system for the benefit of UK industry and society, and to ensure that standards developed by UK experts meet international expectations of open consultation, stakeholder involvement and market relevance.

British Standards (including UK implementations of CEN, CENELEC or ISO/IEC standards) are all documents defining best practice, established by consensus. Each standard is kept current through a process of maintenance and review whereby it is updated, revised or withdrawn as necessary.

Standards are designed to set out clear and unambiguous provisions and objectives. Although standards are voluntary and separate from legal and regulatory systems, they can be used to support or complement legislation.

Standards are developed when there is a defined market need through consultation with stakeholders and a rigorous development process. National committee members represent their communities in order to develop standards and related documents. They include representatives from a range of bodies, including government, business, consumers, academic institutions, social interests, regulators and trade unions.

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