

BALANCE OF COMPETENCES REVIEW
CALL FOR EVIDENCE – RESEARCH AND DEVELOPMENT
RESPONSE BY BAE SYSTEMS PLC

Impact on the national interest

1. Where has EU action had a **positive impact** for the UK on research, technological development, innovation or space? What evidence is there for this? Has EU action encouraged national action in any areas?

EU active has had positive impacts through the Framework Programmes in areas of interest to our business, primarily in civil aerospace and security. Historically civil aerospace examples include AVTAC, AERONAOX, EUROSLOSH; more recent examples include DAPHNE, HIRF-SE, NEFS, Actuation 2015, ALICIA, PRIMAE, ACROSS, AFLONEXT Structural programmes such as the Clean Sky JTI and the Single European Sky (SESAR) Joint Undertaking have major impacts.

Security research has had an impact on dual use technology development, and the Commission has indicated in its recent Communication (COM(2013)542) that it intends to increase its support to dual use technology. But it is too early to provide an assessment of the impacts of the security and dual use actions

We recall that a company survey conducted by Technopolis in 2010 found that positive impacts arose in new products and market share from EU-funded programmes.

2. Where has EU action had a **negative impact** for the UK in these fields? What evidence is there for this? Has EU action prevented potentially useful national action in any areas?

We observe that in infrastructure development, many specialist research facilities are now centralised in mainland Europe rather than in the UK – for example, the European Transonic Wind Tunnel. Compensatory national actions via TSB investment may mitigate the effect on national assets, but these actions can also pose strategic questions about concentration of effort.

Generally we consider that EU-led R&D is too slow in fast-moving markets, such as cyber security. National investment has given the UK an advanced position in this sector, yet development of EU standards is more likely to follow the slower path dictated by EU-funded research which, from a UK perspective, offers little added value. There are therefore questions about time to market and about the efficiency of EU action, and its effective negative impact in areas where UK industry is particularly dynamic.

3. How and where has UK engagement with partner countries or international bodies, both within and outside the EU, been helped or hindered by EU involvement?

EU involvement is beneficial in relation to setting standards – e.g. civil aerospace standards through RTCA and EUROCAE. This is important in relation to the single market but also in international negotiation where an EU position (e.g. on open architectures) carries real weight.

But this can also interact with national initiatives. Current Commission-led action to desegregate airspace to permit Remotely Piloted Aircraft Systems (RPAS) is welcome and necessary at EU level, and the resultant standards will be a matter for international negotiation in due course. But some of this action effectively replicates activity already conducted in the UK under the government-industry funded ASTRAEA programmes; and in certain respects the leadership gained in this area will find a difficult route to exploitation at EU level. There is, therefore, a question about the articulation of R&D investment between national and EU sources and a challenge for the EU to better exploit the product of national investments and leadership, rather than to encourage other nations via Framework programme funding to build up alternative and competing expertise in slower time.

4. What benefits or difficulties has the objective of a European research area (ERA) delivered for the UK?

Although ERA should give industry easier access to experts and expertise of different nationalities, it is unclear whether this has really been the case. We employ more people of non-UK European origin than used to be the case, but whether this is as a result of the ERA is a moot point.

The inevitable dilution of expertise and diffusion of centres of excellence makes it more difficult to tap into the real experts and weakens our standing with respect to other parts of the world which have retained a stronger, more focused centre of excellence strategy.

There is a problem about dilution of expertise: current EU programmes tend to spread expertise across Member States rather than concentrate it in centres or countries of excellence. Our previous answers have highlighted the cases of cyber security and RPAS. Looking ahead it appears that the same will happen with Graphene, where a couple of centres of excellence in the UK will be supplemented by many others across the EU, funded by the EU to conduct less cutting edge research. The ERA should have actions to redistribute the wealth rather than redistribute expertise.

5. How has the EU sought to coordinate the policy instruments at its disposal across different policy areas to create an enabling environment for researchers and innovators? How successful has this been?

No response

Future opportunities and challenges

6. What could the EU most helpfully do to promote scientific and technological progress and innovation (including in the space sector)?

- How could the EU use its existing competence differently to deliver more in your area?
- How might a greater or lesser degree of EU competence deliver more in your area?
- How could improvements to existing EU activities make them more effective and efficient?

- a *Develop centres of excellence and focus on these, without feeling compelled to spread expertise widely across the EU*
- b *Drive standards for the benefit of industry in Europe, using centres where the expertise lies rather than a member state consensus*
- c *Be faster to react to technology advances, with faster contracting mechanisms and initiatives. National governments are generally slow, but the EU is much slower. With the pace and rate of change of business, technology and innovation only getting faster, this cannot continue if EU mechanisms are to be useful and a genuine instrument in support of competitiveness.*
- d *Provided that new disciplines are introduced to speed up decisions and processes, the EU can play a role in bringing technology closer to market. "Pre-commercial procurement" for technologies / systems that are primarily destined for public sector use and have potential for use by the EU and/or Member States should be a useful means for continuing R&D investment beyond low TRLs (Technology Readiness Levels) towards specific applications, and hence pulling through upstream technology that may otherwise not reach market. This is of high relevance to the security market, and carries the additional potential benefit of encouraging the definition of standards. However, it is essential that the requirements are driven by final customers (typically in the Member States) and so respond to genuine demand. Where the consequence of EU involvement would be to delay or otherwise deform such programmes, Member States would have the option to proceed on the basis of intergovernmental cooperation (for example as defined in the Defence and Security Public Procurement Directive 2009/81).*

7. Where might future EU level action be detrimental to your work in this area?

Through continuance to spread funds to non-experts which will dilute the ability of EU entities to compete globally and hamper those which have world class expertise.

8. Where might action at national rather than EU level be more appropriate / effective?

Key national strategic areas and high security areas

In areas where the EU has little or no focus and/or where definition of EU standards is an unlikely outcome

As noted in 6d above, in higher TRL activities for public sector uses where the EU is not a customer or where individual or cooperative intergovernmental action would be more effective

9. How could EU and national policies and funding streams interact better?

Generally by avoiding overlap of EU and national funding: the EU should focus on areas of wide interest, concentrating on fewer priorities.

But there is also a more general question about the relative attractiveness of EU funding streams compared to national funding. National funding routes will generally allow researchers to focus on the problem of interest, get to contract quickly (often on better terms), and avoid the overhead and inefficiency of involving partners who add little value but who are effectively required to satisfy EU selection criteria. National funding is therefore generally preferred unless EU dimension can itself be expected to generate real benefits, eg. in definition of standards. Industry, government and the EU desirably need to be clear at an early stage which route is likely to offer the best and most globally competitive outcomes. But there are severe risks of dislocation in this dialogue, with the result that nothing is done until too late. There may be a strong case for supporting bi- or tri-lateral intergovernmental initiatives as a means to break these deadlocks.

10. What impact would any future enlargement of the EU have on this area of competence?

We see no particular impact except the risk of greater complexity and bureaucracy

11. Are there any other points you wish to make which are not captured above?

The Call for Evidence document does not refer to defence. However, Arts 42(3) and 45(d) TEU state that, under the authority of the Council, the European Defence Agency (EDA) :

- shall identify operational requirements, shall promote measures to satisfy those requirements, shall contribute to identifying and, where appropriate, implementing any measure needed to strengthen the industrial and technological base of the defence sector*
- support defence technology research, and coordinate and plan joint research activities and the study of technical solutions meeting future operational needs;*

The EU does therefore have responsibilities in this area. EDA programmes are generally funded by specific governmental contributions, but the UK rarely participates. While we do not query MOD's specific investment decisions (which in many cases may

be driven by the fact that the UK already has capability in relevant areas), we observe that one effect of non-investment is that UK defence industry can find itself in a poor position to influence future developments among its counterparts in continental Member States. The Commission's recent Communication (COM(2013)542) concerning the defence industry envisages greater efforts in support of dual use capabilities, and many of these will be conducted in conjunction with EDA. HMG will need to consider carefully the impact of this policy if UK industry is to benefit from investments in this area.

August 2013