



**ADS/Aerospace Wales Forum Joint Response to Enterprise & Business Committee Inquiry on EU Research & Innovation funding proposals**

**1 ADS/AEROSPACE WALES FORUM SUBMISSION CONTEXT**

1.1 ADS is the trade organisation advancing the UK Advanced Engineering industries of Aerospace, Defence, Space and Security. Aerospace Wales Forum is the partner organisation of ADS within Wales and works in close collaboration with ADS and the other UK regionally based organisations.

1.2 ADS was formed on 1 October 2009 from the merger of the Association of Police and Public Security Suppliers (APPSS), the Defence Manufacturers Association (DMA) and the Society of British Aerospace Companies (SBAC). ADS comprises around 900 member companies within the industries it represents, of which over 850 are small and medium enterprises (SMEs). In Wales, ADS members include Airbus, General Dynamics UK, GE Aviation and Qioptiq. Together with its regional partners, ADS represents over 2,600 companies across the UK supply chain.

Aerospace Wales was launched in February 2002 with strong support from the Welsh Government. It currently represents over 100 member companies and continues to have a good working relationship with the Welsh Government.

1.3 The sectors that ADS represents are hi-tech, innovative and research intensive, investing around £3billion each year into Research & Development (R&D). They also contribute to the UK's economic growth and create and sustain high-value engineering jobs.

1.3.1 UK Aerospace is the second largest in the world (17 per cent market share), is worth over £23 bn. to the UK, of which £16 bn.. (70 per cent) is exported world-wide. The sector directly employs nearly 100,000 people in the UK, and supports a UK workforce of around 360,000.

1.3.2 The Defence Industry employs 314,000 people in the UK – directly and through the supply chain. The industry is highly skilled, with 59 percent of workers holding a university degree or equivalent. The industry invests 8per cent of annual sales revenue in R&D – amongst the highest in industrial sectors. Defence is not covered by Horizon 2020 (H2020) but there are long standing synergies between Defence and Civil Aerospace R&D.

1.3.3 Around 450 companies within the membership of ADS are engaged in growing Security, resilience and policing markets, at home and overseas, for which there are many interfaces with UK Government, the police service, the other emergency services and operators of the Critical National Infrastructure (CNI). Security-related SMEs maintain a heavy focus on upper tier technologies and comprise 93per cent of the ADS membership. A recent survey

completed by ADS found that its members generated around £2bn. worth of business in the UK security market during 2010.

- 1.3.4 The UK Space industry recorded a total turnover of over £7.5 bn. in 2008/09. This represented a real growth of 8 per cent since 2007/08 – the UK sector expects to grow 10 per cent each year. The sector is strong in areas such as satellite communications and satellite navigation, and well placed to capitalise on new emerging services derived from Earth Observation, Cyber Security, Cubesats, and Broadband Services. The global market is anticipated to continue to grow at a robust rate of 5 per cent on average in the next decade.
- 1.4 Both ADS and Aerospace Wales welcome the inquiry by the Enterprise and Business Committee of the Welsh Assembly into EU Research and Innovation funding proposals. The current Framework Programme (FP) 8 is now known as Horizon 2020 (H2020).
- 1.5 There is much evidence linking innovation to economic growth, and breakthroughs in knowledge afforded by R&D to long-term productivity advances. ADS sectors are intrinsically long-life cycle technology based industries, with high barriers to entry. While these sectors are comparatively difficult to break into, once companies establish themselves therein, particularly through innovation and R&D, the benefits are long-term, stable and substantial. H2020 can deliver long-term economic growth well beyond specific project lifetimes by focusing investment in such robust industrial sectors.
- 1.6 The long life-cycle innovation of the sectors ADS and Aerospace Wales represent carries the risk of financial markets failing to find such industries attractive for investment. EU funding in these areas enables technology maturation through these extended cycles. This is best achieved through dedicated sectoral programmes for aeronautics, space and security within H2020.
- 1.7 It is worth noting that R&D activity undertaken in one region also benefits other regions. This is through supply chains and the sharing of this knowledge within companies that have multiple facilities in the UK.
- 1.8 Comments in this submission are drawn from ADS's response to the European Commission's consultation on Research, Development and Innovation State Aid Framework, the Department for Business, Innovation and Skill's EU Framework Programme call for evidence and the EC's Green Paper on a common strategic framework for EU research and innovation funding.

## **2 Importance of EU Horizon 2020 Funding to ADS sectors**

2.1 EU framework funding is extremely important to ADS and Aerospace Wales members. Previous framework programmes have allocated £285m per annum to aeronautics related programmes, for example. There are a number of ways to measure the performance of UK industry in EU funding. The primary reason cited for participation in the H2020 is access to research funding, and so perhaps the most salient benchmark is the total drawdown of H2020 funding as a proportion of UK GDP. This is an area where the UK has the opportunity to improve. EU Member States contribute to the EU budget in proportion to their share of EU GDP. The UK's funding returns from current H2020 are below the level of its input. This 'deficit' has improved from FP6 to FP7, but there is room to gain more.

- 2.1.1 In addition, funding received by UK industry represents only 20per cent of UK's total draw down from FP7, lower than the share of funding obtained by industry across FP7 as a whole. The conclusion is that UK universities and research organisations have fared comparatively better, but concerns remain that the level of business participation lags behind academic involvement. In order to ensure better exploitation of research outputs, it is vital that Industry participation is

maximised and balanced against Academia participation.

2.1.2 It is also important to ensure that Industrial and academic focus are also aligned as to which priorities are pursued.

2.2 In sectors such as Aerospace and Defence, the largest companies are highly international, and have a choice as to where in the world to locate high value activities. The UK must remain the country of choice for such companies. Attracting high-value industrial activity, such as R&D, brings with it substantial benefits to the wider supply chain and economy through subsequent manufacturing and services, and hence economic growth. In R&D, it is public funding, such as that provided by H2020, that leverages private sector spending and is a magnet private investment and inward investment. Focusing public R&D spending (both EU and national) in areas where there is both substantial global market opportunity and existing technical leadership - such as Aeronautics, Space and Security, will anchor significant parts of the value chain to, and increase the attractiveness of, where that R&D is located.

2.3 In austere times, it is imperative that R&D resources are focused in the highest priority areas to ensure maximum societal and economic benefit. ADS sectors each have strong national technology strategies - the result of important partnerships and collaboration between business, government and academia. Examples including the National Aerospace Technology Strategy (NATS) and the National Space Technology Strategy. These national strategies have been designed with EU complementarity in mind - ensuring maximum gain and minimum duplication.

2.3.1 In Aeronautics for instance, the European R&D landscape is defined by the ACARE Strategic Research and Innovation Agenda (SRIA). UK Aeronautics R&D is defined by the UK National Aerospace Technology Strategy. Both strategies are aligned and therefore research programmes therein are complimentary. Both are vital to the future success of the sector in the UK. National and regional strengths shape FP participation, rather than vice versa. In assessing the quality of proposed projects, greater credence should be given to H2020 projects that clearly align, underpin or deliver against agreed national strategies.

2.4 In sectors where public procurement is strong, such as Security, H2020 should seek to generate even closer alignment between the EU's security research projects, the capabilities of Europe's security industries and the genuine national security priorities of end-users within Member States.

### **3 Improving Welsh access to EU Research & Innovation Funding**

3.1 ADS and Aerospace Wales would like to see a larger number of Wales based companies gain access to H2020 funding and believe that six major steps are required to achieve this:

3.2 Firstly, funding for aeronautics needs to remain at a consistent level to retain continuity in long-term programme - £285m pa (€2bn. over the Horizon 2020 period).

3.3 Secondly, ADS would like to see Aeronautics, Space and Security focused research budgets and clear delineation of funding for these sectors. It is vital that Aeronautics is not lost in the broader Transport framework, for example. Aeronautics, Space and Security need to be specifically recognised line items in the budget, this provides visibility on funding and allows companies to plan research programmes, thus making it more efficient and effective. For example, under the current H2020 theme of *"Transport including Aeronautics"*, there is a recognition of the importance of Aeronautics, but a clear risk that funds will be diverted from a high-technology Green Engine research programme into a new Highway project.

3.4 A barrier that often discourages industrial participation is the overly bureaucratic nature. A

proactive approach to reducing administrative burden is required. Assistance in writing bids, as is available in other countries, would also be very welcome.

3.4.1 Reducing the time to assess bids and award research funding would encourage UK companies of all sizes to participate in H2020. ADS and Aerospace Wales member companies often decline to participate in FP7 because, in their view, the process takes too long.

3.4.2 The overall level of bureaucracy and reporting means a disproportionate burden on smaller organisations and new entrants. SMEs often resort to third party consultancies to aid them through this complexity, using valuable budgets that would otherwise be better directed at R&D itself. The current system must be replaced by one that places greater trust in the participants, balanced with administrative control.

3.5 Fourthly, ADS and Aerospace Wales believe that Government needs to ensure the Catapult Centres are geared to compete for H2020 funding. ADS welcomed the Government's establishment of a network of Fraunhofer-style Technology and Innovation Centres. Experience in the UK and overseas indicates that centres will only deliver value if they are driven by industrial demand, have clearly defined "needs" and exploitation plans.

3.5.1 Such entities in the UK should be designed to provide a counterpoint to the powerful, publicly funded research institutes maintained by France (ONERA in aerospace, for example) and others. The presence of such entities has positively impacted industrial participation in the Framework Programme of countries where they are located. If pre-designed to do so, the Catapult Centres can play a vital role in facilitating business engagement in the European Framework Programme for Research, Technological Development and Innovation.

3.5.2 Integration and coordination is also a key function that should be fulfilled by the Centres; they should help avoid the risk of unnecessary duplication in different sectors, regions, technologies or research programmes (national or EU), which could otherwise dissipate limited resources by the pursuit of potentially duplicative/parallel paths of sub-critical mass.

3.5.3 Therefore, Catapults could not only be the best mechanism to further develop and apply research in collaboration with Industry, but could also be the hubs from which both national and EU research is disseminated and exploited. It is noteworthy that Security departments and agencies ("end-users") in other nations, e.g. Germany, have aligned their domestic R&D priorities for Security with FP7; and they have publicised this fact. This helps to provide industry with the assurance that there is a "route to market" for research undertaken through EU R&D funding.

3.5.4 The announcement of the Aerodynamics Centre in the March 2012 Budget was a welcomed move. The Centre will seek to represent the UK Aerospace sector in key European forums and enable further UK access to European programmes, to help maximise the value of Europe to UK Aerospace.

3.6 Fifthly, where EU and Welsh strategies align, for example in the improvement of competitiveness, creation or retention of high-value jobs and establishment of infrastructure, European, Regional and national funding can be successfully assembled to create the required levels of critical mass of a particular project. Continued increased alignment between these funds is positive, as long as it is not detrimental to those individual budgets.

3.6.1 Regional funding, in particular, will be especially accessible to SMEs, who often do not have the opportunity to reach beyond local regions in search of collaboration. Such "clustering" can lead to long-lasting supply chain relationships as well as promoting cross-sector technology transfer; it is often at the SME level where "develop once, use many times" technology is developed.

3.7 Finally, the UK should seek to ensure H2020 comprises of a range of Instruments that address

the whole innovation cycle from base research, technological development, demonstration and validation to the rapid deployment of results into markets. Coordination between these Instruments, their continuity from previous FP cycles, and recognition of long-lifecycle technology development processes in sectors such as Aerospace, are all key in order to efficiently commercialise research. The UK should press the message that the economic benefits of FP8 can only be realised if the Programme focuses on areas where:

- 3.7.1 There are substantial global market opportunities, e.g. Aeronautics, Space and Security.
- 3.7.2 EU member states have technical leadership and there is a defensible technology position.
- 3.7.3 R&D will anchor significant parts of value chains in the EU.

**ENDS**

10<sup>th</sup> May 2012