



# HOUSE OF LORDS

European Union Committee

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Sam Gyimah MP  
Minister of State for Universities, Science, Research and Innovation  
Department for Business, Energy & Industrial Strategy  
1 Victoria Street  
London, SW1H 0ET

23 April 2018

Dear Mr Gyimah

## House of Lords EU Internal Market Sub-Committee – Brexit: Space

1. On Thursday 15 March 2018, the Sub-Committee took oral evidence on the impact of Brexit on the UK space sector in the form of a roundtable discussion with 10 witnesses (listed in the appendix to this letter). We followed up on this session with a highly informative visit to the ‘space cluster’ at Harwell Campus, home to 80 space organisations, which collectively employ 800 people. We met with representatives from the Science and Technology Facilities Council (STFC), the European Centre for Space Applications and Telecommunications (ECSAT) and several businesses, including small businesses, that operate in the UK’s space sector.
2. This letter summarises the evidence and views put to us and our conclusions (in bold text). We would be grateful for a response to our findings and substantive conclusions by **23 May 2018**.

### *UK participation in EU space programmes*

3. Much of the evidence we heard underscored the UK’s position as a highly-valued and effective member of the European Space Agency (ESA). We recognise that ESA is not an EU agency, and therefore the UK’s membership is independent of Brexit.
4. Witnesses explained that ESA had two types of programmes: a mandatory programme which is largely space science, and optional programmes such as Earth observation, telecommunications, satellite navigation and space transportation. Some of ESA’s optional programmes are delivered in partnership with the EU. Witnesses impressed upon us the urgent need for clarity over the UK’s future relationship with EU programmes, in particular (but not exclusively) Galileo and Copernicus. Philip Davies, representing the Royal Aeronautical Society said: “[The] urgent problem, although not necessarily the biggest, is Galileo”.
5. The UK has a long relationship with the Galileo programme and continues to play a central role in its development and operation. Indeed, the UK-based company Surrey Satellite

Technology Ltd (SSTL) “built the first Galileo spacecraft, which was critical in enabling the EU to secure the frequencies for the Galileo system for Europe” and has gone on, in a partnership, to build all 22 of the current Galileo spacecraft. In addition, Andrew Stroomer, Business Development Director, Airbus Defence and Space, highlighted that Airbus Portsmouth was the incumbent for the Galileo ground control system.

6. Witnesses drew a distinction between access to the initial development phases of Galileo, which were carried out by ESA on a co-funded basis with the Commission and the current full operational capability phase—where ESA acted as procurement agent under the auspices of the EU. Philip Davies explained that under second phase “the EU set the procurement rules for how Galileo should be procured in terms of industrial policy and access by third countries outside the EU ... and ESA had to follow those rules”. Stuart Martin, CEO and Executive Director, Satellite Applications Catapult, cited the example of Canada, which funded some equipment development for Galileo but was subsequently excluded from bidding in the procurement phase.
7. The immediate implications of Brexit on industrial participation in Galileo were set out by Professor Sir Martin Sweeting OBE, Executive Chairman, SSTL, who told us that the company’s recently secured contracts to build a further 12 navigation payloads for Galileo included punitive penalty structures, which at their worst would threaten the viability of the company.
8. It was made clear to us that an assumption that the UK would not participate in the programme in future was already being reflected by changes to supply chains. Witnesses stressed the point that the die was already being cast and the establishment of industrial consortia would not wait for the outcome of a protracted negotiation. Philip Davies summarised: “Even if we come to an agreement in two or three years’ time, by then we will have lost a lot of expertise. Jobs will have moved out of the UK. There will be other incumbents and it will be impossible to bring that work back to the UK”.
9. The threat to UK participation and access to Galileo was felt most sharply in relation to the programme’s security aspects. During our visit to Harwell, ESA representatives confirmed that ESA had been instructed by the Commission to restrict access by UK companies to EU projects with security implications. We were told that the Commission had wide discretion to define security implications and that this definition could be subject to change in the future. Mr Stroomer noted that Airbus Defence and Space did not believe it would be possible to sustain the UK’s lead in Galileo ground control “due to the Brexit environment, the conditions of tender and the security constraints”.
10. We note the recent decision to move the back-up site of the Galileo Security Monitoring Centre from the UK to Spain. Witnesses considered this to be a bad sign for the UK’s future use of Galileo’s Public Regulated Service (PRS), which is restricted to qualified government users—one of which would have been the Ministry of Defence.
11. Although much of the evidence we heard related to Galileo, Dr Chris Mutlow, Director, RAL Space, drew attention to the similar issues facing UK participation in the EU’s Earth Observation programme, Copernicus. Dr Mutlow told us that “Brexit clauses” in contracts for Copernicus data delivery meant that post-Brexit, UK organisations may no longer be able to host Copernicus data or may have to pay to transfer data to other organisations.

12. As with Galileo, we were told that the UK has unique capabilities in the Copernicus programme. Dr Mutlow explained that these capabilities afford the UK a strong influence over the quality of data produced—data which is used by the Government and academic customers. Professor John Remedios, Director National Centre for Earth Observation, described the data collected by Copernicus satellites as “fundamental to our views of the planet”.
13. As with Galileo, witnesses observed that there was already an appetite to shift away from the use of UK organisations in order to minimise potential Brexit disruptions. Dr Mutlow concluded: “Brexit clauses are appearing and we are being squeezed out of things in practice. That will mean that our influence, which pays dividends for us, will disappear”.
14. **The UK has outstanding experience, expertise and heritage in EU space programmes. We share the unambiguous view of our witnesses that continued full participation is in the UK’s best interests. We also share the view that the loss of the UK’s expertise and capabilities would be to the significant detriment of the EU’s space strategy. Nonetheless, we consider it likely that EU space programmes will continue to increase in scale and ambition.**
15. **We call on the Government to act quickly to achieve an agreement that preserves UK access to EU space programmes.**
16. **We are concerned by the speed at which uncertainty has already impacted the UK space sector. Witnesses were clear that an agreement on participation in two or three years’ time would not be sufficient. In this scenario, the UK would face the prospect of paying into programmes after already losing its industrial position. This would represent a poorer return on investment. We urge the Government to confirm its position on the UK’s relationship with current and future EU space programmes—including those with security implications—and the timetable to which an agreement can be reached.**
17. **Can you clarify the Government’s assessment of the impact of a failure to reach an agreement on future UK participation in EU space programmes? What would be the specific implications for the UK of losing of access to the Galileo PRS?**
18. **We are concerned by the ‘Brexit clauses’ included in contracts for EU space programmes, some of which are punitive and potentially threaten the viability of affected UK companies. We welcome the evidence we heard that the Government was engaged with trying to mitigate the impact of these clauses and encourage you to continue these efforts. What action can the Government take to support UK space organisations that are currently being excluded from on-going calls for tender?**

*Support for the UK space sector*

19. Dr Lucy Berthoud, Senior Teaching Fellow, University of Bristol and Chair of the Space Universities Network told us that UK companies and higher education institutions are the beneficiaries of a substantial proportion of Horizon 2020 space funding. Professor John Zarnecki, President, Royal Astronomical Society and Emeritus Professor of Space Science,

The Open University added that the UK has been resoundingly successful at leveraging principal investigator (PI) roles to boost UK science return on space projects and missions.

20. Dr Berthoud shared the view of many of our witnesses that the UK must maintain its involvement with Horizon 2020 and should seek participation in its successor, Framework Programme 9 (FP9).
21. We note the Government's previous commitment to underwrite funding for approved Horizon 2020 projects and confirmation that Horizon 2020 is covered by the statement in the December Joint Report that "following withdrawal from the Union the UK will continue to participate in the Union programmes financed by the MFF 2014-2020 until their closure ...".
22. **We welcome the Government's efforts to secure the UK's continued participation in Horizon 2020. Please clarify if the abovementioned statement in the December Joint Report (and the Government's commitment to underwrite) includes Horizon 2020 space funding channelled through ESA, for example, some Copernicus funding.**
23. **We note the Government's intention to reach an "ambitious science and innovation agreement with the EU". Do you envisage this to include 'association' with FP9?**
24. Witnesses welcomed the Government's planned investments in the spaceport programme in addition to the substantial investment already made in the National Satellite Test Facility at Harwell. It was clear that the additional funding and the entering into force of the Space Industry Act 2018 were exciting prospects for commercial space opportunities and pioneering research. However, we were warned that these measures alone would not mitigate the loss of UK participation in EU space programmes.
25. Mr Martin was optimistic that the UK space sector was poised take advantage of an upsurge in interest from sources of private capital. He told us that the trend towards companies leveraging a mix of government grants and private capital was "proving extremely successful". Richard Peckham shared this view and echoed the call of many of our witnesses at the evidence session and participants at Harwell for the Government to bring forward a sector deal for UK space: "I hope that the Government press ahead with the sector deal, because it would put a good flag in the ground that the UK means business and, with or without Brexit, we are going ahead; we have a vibrant industry and we are pretty entrepreneurial".
26. **We welcome the Government's planned investment to enable new satellite launch services and low gravity spaceflights from UK spaceports and the legislative framework brought forward by the Space Act 2018. Nonetheless, we conclude that these measures alone would not be sufficient to compensate for a loss of participation in EU space programmes. We reiterate our earlier conclusion that an agreement for continued access must be reached swiftly.**
27. **We note calls for the Government to bring forward a sector deal for UK space. Please can you share with us the Government's stance in this regard?**

*Cross-cutting issues: movement of talent*

28. Several witnesses and participants reflected on their very positive experiences of working on academic or commercial projects overseas, often in other EU Member States. They set out the benefits of this type of collaboration and stressed that the UK must be proactive in maintaining its reputation as a welcoming place for overseas scientists and engineers.

*Cross-cutting issues: access to talent*

29. Dr Berthoud emphasised the importance of EU nationals to higher education institutions and said: “We are losing EU staff, and we have to clarify the visa situation”. Dr Mutlow, on behalf of RAL Space, added: “even with access to the European Union, we struggle to get engineers ... we have seen a massive reduction in the number of people from the European Union applying for the posts we have”.
30. During our visit to Harwell, ESA representatives raised with us the pressing need to secure a new ‘Host Agreement’ to secure certain rights for ESA and its employees in the UK. The inception of this agreement pre-dates the UK’s decision to leave the EU but has become more pressing as ESA staff seek clarity over their future status.

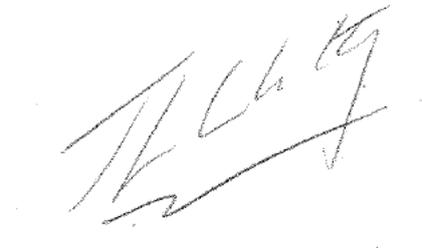
*Cross-cutting issues: customs*

31. The UK space sector is export-focused and sits within integrated EU supply chains. Some of the smaller businesses we met at Harwell explained the difficulties they faced, being required to bid for contracts fixed in Euros and inclusive of customs and taxes, despite being unable to quantify what these may be in future. Others felt that they could not produce accurate forward-looking cost models due to customs uncertainties and this hindered their competitiveness in trying to gain capital funding.
32. Professor Zarnecki reflected on the role of customs arrangements in the inherently cross-border nature of space projects:

“The question about customs controls and so on takes me back to the early 1980s when we were in the EU but the single market was not fully operating. I remember the difficulty. We had an instrument on the Giotto spacecraft that flew past Halley’s comet. It was built in the UK, it was tested in Germany and the spacecraft was built in France. The difficulty of moving the hardware around Europe and the days spent collecting all the paperwork in the UK and crossing every border were a potential nightmare”.
33. **We accept that concerns about the movement of talent and future customs arrangements are not peculiar to the UK’s space sector. Indeed, since the June 2016 referendum, the EU Committee has conducted inquiry work into these matters in far greater detail than could be afforded here. Nevertheless, we take this opportunity to present this evidence to you and highlight that some space activities, by nature, cannot succeed without large-scale multinational collaboration and this depends on the efficient movement of information, people and equipment.**
34. **We note that the statutory instrument for the ESA ‘Host Agreement’ was laid in both Houses on 29 March 2018 and support its entry into force.**

35. We look forward to your response to the findings and substantive conclusions set out in this letter.

Yours sincerely

A handwritten signature in black ink, appearing to read 'L Whitty', with a long horizontal stroke extending to the right.

Lord Whitty  
Chairman of the EU Internal Market Sub-Committee

**APPENDIX: Alphabetical list of witnesses to the 15 March 2018 evidence session**

Dr Lucy Berthoud University of Bristol and Space Universities Network

Philip Davies, Royal Aeronautical Society

Stuart Martin, Satellite Applications Catapult

Dr Chris Mutlow, RAL Space

Richard Peckham, Airbus Defence and Space and UKspace

Professor John Remedios, National Centre for Earth Observation

Professor Alan Smith, University College London

Andrew Stroomer, Airbus Defence and Space

Professor Sir Martin Sweeting OBE, Surrey Satellite Technology Ltd (SSTL)

Professor John Zarnecki, Royal Astronomical Society and The Open University