



# HM Government

## TECHNICAL NOTE: UK PARTICIPATION IN GALILEO

### Summary

1. The UK wants to continue participating in Galileo. This is in the mutual interests of the UK and EU, benefitting European competitiveness, security, capability development and interoperability. An end to close UK participation will be to the detriment of Europe's prosperity and security and could result in delays and additional costs to the programme.
2. Future UK participation in Galileo should be agreed as part of the future security partnership between the UK and the EU. The UK and EU must work through issues relating to access to security-related elements of the programme in the framework of negotiations on the security partnership.
3. These negotiations should not be preempted or prejudged by actions that restrict UK participation.
4. If agreement cannot be reached on the future balance of rights and obligations, and UK security and industrial requirements consequently cannot be met, the UK could not justify future participation in Galileo. In parallel, the UK is therefore exploring alternatives to fulfil its needs for secure and resilient position, navigation and timing information, including the option for a domestic satellite system.

### Introduction

5. Galileo is an EU Global Navigation Satellite System (GNSS) that once fully operational will provide accurate position, navigation and timing information. It will benefit governments, citizens and industry alike.
6. Europe is increasingly reliant on GNSS. Its mass-market applications now number in the hundreds, and the users in billions. The most common areas are smartphone and in-car navigation applications, based on low-power, limited functionality chipsets. Professional applications usually involve more sophisticated equipment with high-accuracy outputs, such as surveying equipment and the devices used to timestamp financial transactions. Security-critical military applications - such as target acquisition and tracking and precision ordnance - require the greatest level of resilience.
7. With increased reliance comes increased risk. The exploitation of system vulnerabilities, including through jamming, spoofing or cyber attack, or the failure or withdrawal of service, can have significant security and economic consequences. The UK and EU therefore share a requirement for access to resilient GNSS, to protect and promote our mutual security and prosperity.
8. Continued close collaboration in Galileo following the UK's withdrawal is in the mutual strategic interests of the UK and the EU. It will:
  - a. Improve the global competitiveness of the European space sector, leveraging the best ideas, skills and expertise across the continent. The UK space sector has a turnover of £14 billion per year, representing approximately 7% of the global share. The UK's integration with the European space economy supports rates of labour productivity and annual growth in the sector that far outstrip the European average;

UK industrial participation also increases competition and so reduces commercial costs for the programme;

- b. Support joint capability development and improve interoperability among our armed forces. This will best enable the UK and EU Member States to train, exercise and fight together, at home and overseas. Using the same encrypted services will enable us to jointly develop operating procedures in the most testing conditions. Like our European partners, the UK is developing receivers for military platforms that will incorporate Galileo's encrypted Public Regulated Service (PRS). Collaborative programmes with European partners are increasingly dependent on us being able to export PRS-operable equipment; we would seek to maintain the advantages this delivers to UK and our partners. Future UK participation in Galileo is a strategic choice which will have a permanent effect on our future defence and defence industrial collaboration;
  - c. Ensure the most effective delivery of the programme. UK entities have played an integral part in designing, developing and managing Galileo to date, particularly the delivery of payloads for satellites, the ground control segment and the development of the PRS software. Excluding industrial participation by UK industry in security-related areas risks delays of up to three years and additional costs of up to €1 billion to the programme. It will not be straightforward to effectively fulfil all Galileo security work elsewhere. Continued UK industrial involvement will ensure the maintenance and operability of the existing system into the future; and,
  - d. Ensure Galileo will provide secure global coverage. Through hosting Galileo and EGNOS infrastructure securely on their territories, Member States will ensure Galileo's services will be accessible from anywhere in the world. The UK contributes to this coverage through hosting two sensor stations from secure locations in the South Atlantic.
9. The UK and EU should therefore aspire to innovate and establish a relationship that will provide for close UK involvement in Galileo's open service and encrypted PRS.

## **UK Position**

10. The UK wants Galileo to be a core component of a future UK-EU security partnership. The UK agrees that this will require the UK and EU to work through the critical issues relating to access to sensitive security-related information and involvement in the design and development of areas of Galileo and the PRS. This will not be straightforward, but the UK will enter these negotiations in good faith, and we do not believe there are any insurmountable challenges.
11. Negotiations on the future partnership should not be preempted or prejudiced. A gap in the UK's participation in Galileo prior to, during or after the implementation period will have the effect of precluding future UK involvement on security and industrial grounds.
12. The UK therefore has a strong objection to its ongoing exclusion from security-related discussions and exchanges pertaining to the post-2019 development of Galileo and the PRS, which serves to limit UK assurance in the programme and discourage UK industrial participation.
13. Firstly, it has the effect of prejudging the depth of operational cooperation and information sharing that could be agreed as part of the security partnership. The UK believes this approach risks limiting the scope of the Article 50 guidelines agreed by the EU27 in March, calling for strong cooperation on defence and security.<sup>1</sup>

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<sup>1</sup> [European Council \(Art. 50\) Guidelines](#), 23 March 2018

14. Secondly, the UK believes it is inconsistent with the agreement reached in the December Joint Report. Paragraph 71 of the Report provides for continued UK participation in Galileo for the remainder of this Multiannual Financial Framework (MFF) 2014-2020. The UK's *"eligibility to apply to participate in Union programmes and Union funding for UK participants and projects will be unaffected by the UK's withdrawal from the Union for the entire lifetime of such projects"*. No restrictions are placed on UK participation. Furthermore, paragraph 66 of the Report states that *"Union assets relating to Union space programmes (EGNOS, Galileo & Copernicus) are not part of the financial settlement"*.<sup>2</sup> The exclusion of these UK sunk costs was agreed on the basis that the UK would retain full access. Should the UK's future access be restricted, the UK's past contribution to the financing of space assets should be discussed.
15. Thirdly, the Commission's suggestion that UK involvement in such exchanges and discussions *"could irretrievably compromise the integrity"* of the system risks being interpreted as a lack of trust in the United Kingdom.<sup>3</sup> Such a suggestion is out of balance with the considerable contribution the UK makes to pan-European security. The UK and the EU have already agreed, in negotiations on the Withdrawal Agreement, that classified information exchanged by both sides until the end of the implementation period will retain the same level of protection as before withdrawal. The UK has also indicated its intent to reach a Security of Information Agreement with the EU as soon as possible.
16. Continuation of the current exclusion will time out the possibility of future UK participation in Galileo. Ongoing ineligibility of UK entities to participate in tendering for secure contracts, and subsequent risks of novation resulting from the Commission exclusion will severely weaken the UK's industrial case for participation. So too will the maintenance of liability penalty clauses in Galileo and EGNOS contracts which demand that industry put in place plans to define how they would comply with participation conditions to deliver contracts from the EU before March 2019; this dissuades bids from the UK and the involvement of UK entities in international bidding consortia. From a security perspective, any gap in UK involvement in the design and development of Galileo and PRS, whereby the UK is unable to manufacture components or assure those manufactured by Member States at any point, will constitute an irreparable security risk. It will mean the UK will not be able to rely on the system for our own security and defence needs.
17. The UK and the EU should therefore seek an urgent resolution to the exclusion, to keep open the possibility of future UK participation in Galileo.
18. Current EU restrictions on UK participation will have implications for the ceiling placed on future UK-EU security cooperation. The UK has been repeatedly clear that it is unconditionally committed to Europe's security and wants a security partnership that best leverages our full spectrum of capabilities to keep our citizens safe. Such a partnership will need to be based on strong mutual trust, codified through the appropriate information sharing arrangements. The UK's proposed approach to Galileo is consistent with this vision.

## **UK Proposal for the Future UK-EU Galileo Relationship**

19. The UK proposes a balance of rights, distinct from Member State access, and obligations. The proposal will fulfil the UK's industrial and minimum security requirements. The proposal would enable a continued partnership that best supports European security and prosperity.

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<sup>2</sup> [Joint Report](#), 8 December 2017

<sup>3</sup> Letter from Commission Secretary-General Alexander Italianer to the UK Permanent Representative, 24 January 2018.

## Rights

20. To protect the EU's decision-making autonomy, the UK accepts that there should be rights relating to the Galileo programme that are reserved for Member States only. The UK does not seek equivalence in Galileo. In a future Galileo partnership, we do not envisage:
- a. Attendance for UK officials at non-security comitology and programme meetings;
  - b. UK officials' representation in non-security meetings and bodies at the European GNSS Agency (GSA);
  - c. Membership of AQUA (for the evaluation of cryptographic products);
  - d. An ability to trigger any restriction in the Galileo service, except where related to UK infrastructure; and,
  - e. Participation in discussions on European Commission third-party PRS access agreements, or programme delegation agreements, except on security grounds.
21. However, future participation by the UK in Galileo is dependent on its ability to independently assure the integrity of the system, so we can rely on it for strategic defence and security uses. The programme must also offer value for money to justify an ongoing UK contribution. This determines a package of requirements which the UK considers essential as set out below.
22. *Access to the Galileo Public Regulated Service (PRS) and PRS Information (this will benefit capability development, national resilience and interoperability, ensuring the UK can continue to use the PRS for our mutual defence and security.)*
- a. Unrestricted use of PRS and guaranteed unrestricted access to PRS. The UK would be subject to the same constraints as Member States with regard to the deployment, operation and use of Galileo (Council Decision 2014/496/CFSP), and the UK Competent PRS Authority (CPA) should be treated equally to EU Member States CPAs. PRS 'user access' would not fulfil UK requirements, as it would not provide sufficient assurance of the integrity of the service;<sup>4</sup>
  - b. Access to all programme information, including agreement that the UK has 'need to know' access to all security-related sensitive information that allows assurance of system performance so that it can be used for sensitive applications; and,
  - c. Right to manufacture PRS receiver Security Modules, with domestic cryptography products being subject to reasonable second evaluation processes through the Appropriately Qualified Authority (AQUA).
23. *Industrial involvement in secure elements (this will facilitate continued UK-EU commercial collaboration, whilst increased competition will deliver cost savings for the programme. It will support the UK's value-for-money case, and reinforce the UK's assurance and ability to rely on the PRS for strategic defence purposes.)*
- a. UK companies should be able to compete fairly for all contract work, including sensitive work and work related to the PRS and the evolution of the system;
  - b. Ability to export and transfer domestically produced PRS equipment to EU Member States and third parties who have a PRS agreement with the EU; and

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<sup>4</sup> Council Decision [2014/496/CFSP](#) of 22 July 2014 on aspects of the deployment, operation and use of the European Global Navigation Satellite System affecting the security of the European Union.

- c. The UK should be subject to the same set of handling rules for PRS information and other security related information (the Common Minimum Standards outlined in the Annex of the PRS Decision).<sup>5</sup>

24. *Attendance at security meetings (this will enable an ongoing exchange of views to help protect the security of the system, and respond to threats to its operation. It will enable the EU to benefit from the UK's technical and security expertise.)*

- a. In order to be able to rely on Galileo for its security needs, the UK will need to attend programme discussions related to the design of PRS and the security of the system, including but not limited to the GNSS Security Board and its technical working groups, the Security Accreditation Board (SAB), as well as working groups relevant to the deployment, operation and use of Galileo (Council Decision 2014/496/CFSP).<sup>6</sup> The UK will need sufficient guarantee of the concerns it has voiced in these security fora are being addressed.

### **Obligations**

25. The UK's rights would be balanced by its obligations. The UK has said it would be willing to make appropriate financial contributions to EU programmes where UK participation could benefit both the UK and the EU. The UK intend that Galileo would be one of these programmes and, if participation in Galileo continued to offer value for money to the UK, it would be willing to make an appropriate contribution to the costs of building and running the system.

26. Moreover, the UK would be willing to offer the following measures in the interest of preserving our joint security cooperation in Galileo and EGNOS programmes:

- a. If desired, to continue our agreements to host the Galileo Security Monitoring Centre (GSMC) site in Swanwick as a back up to the GSMC sites in France and Spain;
- b. To continue to host Galileo sensor stations on UK territory (Falklands Islands and Ascension Islands);
- c. To continue to host EGNOS sensor stations in the UK;
- d. To abide by all commitments and obligations under the EU GNSS regulations, security rules and PRS export restrictions to the same level as EU Member States; and,
- e. To agree to report anomalies reported by users and potential threats identified during our use and testing of the system.

27. If agreement cannot be reached on the future balance of rights and obligations, and UK security and industrial requirements consequently cannot be met, the UK could not justify future participation in Galileo.

28. As a logical consequence of the exclusion and uncertainty surrounding future UK participation, the UK is exploring alternatives to fulfil its needs for secure and resilient position, navigation and timing information. These contingency options would be assessed on their own merits. The development of a domestic system is economically viable and made possible by the expertise of the UK space sector. However, it remains the UK's

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<sup>5</sup> Decision No [1104/2011/EU](#) of the European Parliament and of the Council of 25 October 2011.

<sup>6</sup> See note 4.

immediate preference to collaborate in Galileo, on mutually acceptable terms, to jointly develop a single European GNSS system.

## **Next Steps**

### ***Future Partnership***

29. By the end of the implementation period, the UK and EU will need to conclude all relevant agreements necessary to ensure there is no gap in legal rights for UK industry and nationals to participate in the programme. These include: a GNSS Cooperation Agreement, a PRS Access Agreement, and a Security of Information Agreement.
30. The UK proposes that discussions on these agreements are taken forward as part of negotiations on the framework for the future security partnership between the UK and EU.

### ***Immediate and Implementation Period***

31. To avoid precluding UK participation in Galileo and EGNOS prior to or during discussions on a future partnership, the following measures should be taken and maintained while negotiations run their course:
  - a. Re-open the tenders for the Ground Mission Segment and the recently launched Invitations to Tender for the Batch 4 transition satellites;
  - b. Make a clear declaration that UK industry is able to bid for all contracts including those relating to security and PRS;
  - c. Permit UK officials, nationals and industry to participate in meetings relating to security and PRS;
  - d. Provide explicit assurance that Article 122.7b in the draft Withdrawal Agreement relating to 'security-related sensitive information' shall not be applicable to the exclusion of the UK in relation to Galileo and EGNOS in the implementation period;<sup>7</sup>
  - e. Flowing from this, provide revised direction to the European Space Agency (ESA) that UK industry will not need to move delivery of their contracts to Europe by March 2019; and,
  - f. Provide legal assurance (by way of amending contracts or providing waivers) to ensure that UK industry will not be regarded as non-compliant to existing 'participation conditions' in Galileo and EGNOS contracts which currently restrict work to EU nationals and companies based in the EU.

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<sup>7</sup> [Draft Agreement](#) on the withdrawal of the United Kingdom of Great Britain and Northern Ireland from the European Union and the European Atomic Energy Community, 19 March 2018.