

UNITED KINGDOM PERSPECTIVE ON TWO ISSUES

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Introduction

By their nature, mobile telecommunications systems based on Low Earth Orbit ("LOE") satellites, span jurisdictions and give rise to the same issues to be considered by all countries they serve. The legal and regulatory matters to be considered included standardization, licensing, intellectual property rights, regulation of competition, access to networks and de-regulation of basic services. The philosophy and methodology of dealing with these issues differ from jurisdiction to jurisdiction.

The most interesting and challenging aspects of mobile satellite systems, based on LEOs, is the shaping of a solution that accommodates the differences among jurisdictions. These differences are not confined to legal and regulatory matters. They encompass political, industrial and economic policy.

In devising any solution to these problems, it is necessary to examine the existing rules and regulations in each country that may be affected. This paper considers briefly the impact of mobile satellite communication system on the regulatory environment in the United Kingdom. In particular, the ability of the United Kingdom authorities to exercise

licensing jurisdiction on the operators of LEOs is addressed.

Connections with United Kingdom Jurisdiction

The relevant laws of the United Kingdom affecting LEO systems are those governing activity in outer space,¹ the running of telecommunication systems,² and the management of the spectrum resource.³ Each of these is limited in application to activities and persons who can be brought within the jurisdiction of the United Kingdom. Therefore, the extent of their application to LEOs will depend on the factors connecting the relevant activities with the United Kingdom.

1. Space Activity

If the LEO system is launched⁴ or operated⁵ by a United Kingdom entity⁶, a licence⁷ will need to be obtained by the entity authorizing the space activity of launching and operating the satellites. Of the systems currently proposed, the only involvement by a United Kingdom corporation has been that of British Aerospace in the Iridium system.

2. Telecommunications Activity

Telecommunications regulation in the United Kingdom governs the running⁸ of telecommunication systems.

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2.1 The LEO Satellite System

Although the space segments of satellite mobile communication systems based on LEOs are "telecommunication systems"⁹, they are not "within the United Kingdom". Therefore, they are not covered by the licensing requirements¹⁰ of the United Kingdom telecommunications legislation.

2.2 The Hand-sets

The hand-sets, which directly communicate with such systems, are telecommunications systems requiring a licence.¹¹ However, there exists a Class Licence¹² which covers the operation of handsets necessary for operation with the LEO satellite systems ("Satellite Services Licence"). This Licence, which was issued in 1991 and expires in 2016¹³, was not intended for the operation of LEO system hand-sets. The primary aim of the Licence is to liberalize the operation of VSAT¹⁴ systems. But, it applies to any telecommunication system, such as the hand-set, irrespective of whether the system is fixed or mobile.¹⁵

However, the Satellite Services Licence only authorizes connections between the hand-set and some satellites which meet certain conditions.¹⁶ The main conditions are that the satellite meets the technical coordination and economic harm consultation requirements of international satellite organizations. In addition, the Government has power to withdraw the Licence in relation to specified satellites.¹⁷

Therefore, once the LEO satellite systems become operational, it is possible for the United Kingdom Government to withdraw authorization for connection to those systems under the Satellite Services Licence. Such withdrawal would pose both political difficulties and enforcement problems. The United Kingdom Government is reluctant to take steps that are seen as inconsistent with a policy of liberalization. Also, like all governments, it avoids regulation which cannot be effectively enforced.

2.3 Connection to Other Terrestrial Systems

Similar considerations apply to the connection between LEO satellite systems and the fixed terrestrial systems, be they systems providing fixed or mobile services. In the case of public fixed networks, such as the of BT, the relevant telecommunications licence permits the connection of such systems to satellites.¹⁸ The licences relating to systems providing mobile services¹⁹ do not directly permit connections²⁰ to satellite systems. However, there is a right of connection between mobile service systems and the fixed networks which gives them indirect access to LEO systems.²¹

3. Spectrum Assignment

Unlike many other jurisdictions, including those in Europe²², the United Kingdom has separate legislation and licensing procedures for authorizing the running of telecommunications systems²³ and the management

and assignment of frequencies.²⁴ The Wireless Telegraphy Act does not apply to the LEO system itself.²⁵ The requirements for licensing under the legislation²⁶ apply to wireless telegraphy apparatus used in the United Kingdom. Therefore, once again, the Government has to look to the hand-sets and to the public telecommunication networks for exercising any licensing regulation over satellite mobile communications based on LEO systems.

The administration of the licensing system for radio communications generally is entrusted to the Radio Communications Agency. Wireless telegraphy licences are specific to the frequency bands and can be restricted to the types of services for which the equipment is licensed.²⁷

This structure of control is designed for and suited to terrestrial systems, where the distance from which a national network can be accessed is limited. For example, leaving aside the question of standards a mobile hand-set on a cellular system which is enabled and authorized in France will not be able to gain access to the network in the United Kingdom, unless it is similarly authorized in the United Kingdom. However, with the LEO systems, a hand-set which has no specific or general licence for wireless telegraphy in the United Kingdom can nevertheless access the United Kingdom network or a subscriber on the United Kingdom fixed system. This may be achieved indirectly through the public network of another country for which there is authorization and

appropriate licences for connection of the LEO system to the public network.

Therefore, even though the United Kingdom Government may choose not to licence BT or Mercury or any other public telecommunications operator to run its apparatus for communication with a LEO system, without the cooperation of other countries, it cannot prevent access to the United Kingdom public network through another international operator.

Revenue Generation and Taxation

The commercial success of the cellular networks in the United Kingdom underlines the growing economic significance of the telecommunications sector. There are varying views on the potential success of satellite mobile communication systems in the short term. But there is no doubt that for international corporations operating in remote regions of the world these systems are going to be immensely attractive. Other telecommunications users are also strongly attracted to satellite mobile communications for economic reasons. For example, it has been estimated that United Airlines could save as much as \$500 million by using such systems.²⁸

The emergence of satellite mobile communication systems will have an impact on telecommunications revenues in two ways. First, it will divert revenue from existing systems. Secondly, and more significantly, it will divert that revenue to an operator with no presence in the overwhelming majority of the

countries in which the revenue is generated.

This shifting of revenues will, in time, have an impact on the economy of the telecommunications sector. Although the national fixed system operators will derive revenue from calls to and from customers connected to their networks by users of the LEO based systems, this may not fully compensate them for the loss of their revenues from international calls.

From a national point of view, the effect of revenue shifts of this kind may be more significant. As the revenues of the LEO system operators increases, the loss of taxation will become more relevant. Typically, the operators of the LEO systems will be located in the United States or elsewhere outside the taxation jurisdiction of the United Kingdom.

The tax income arising on the profits of such operators, attributable to the revenue they generate from the United Kingdom, will be lost to the Government. Additionally, with a supplier operating outside the United Kingdom, there is no basis for the imposition of Value Added Tax²⁹ on the charges made for the telecommunications service provided.

Conclusion

As already indicated, the concerns associated with LEO systems are common to all countries which perceive themselves as users, rather than providers, of such systems. The differences in

emphasis on specific issues are due to the political, economic and technological state of the countries concerned.

Within the European Community, the attitudes and responses of Member States are coloured by conflicting factors. Their national preoccupations and the desire to protect domestic telecommunications industries are at variance with the Community policy of harmonization, mutual recognition of licences and mutual recognition of terminal equipment type approvals.

Ultimately, in this as in other areas of space activity, technological progress will lead regulation and policy.

1. In particular the *Outer Space Act 1986*.
2. *Telecommunications Act 1984*.
3. *Wireless Telegraphy Act 1949*.
4. This includes procuring the launch of such a system; *Outer Space Act 1986*, Section 1(a). Compare *Convention on Registration of Objects Launched into Outer Space*, Article I (a) (i).
5. *Outer Space Act 1986*, Section 1 (b).
6. *Outer Space Act 1986*, Section 2 (1).
7. *Outer Space Act 1986*, Section 3 (1).
8. *Telecommunications Act 1984*, Section 5 (1).
9. The definition of telecommunication systems in the *Telecommunications Act 1984*, Section 4 (1), is sufficiently broad to cover LEOs.
10. *Telecommunications Act 1984*, Section 5 (1).
11. *Telecommunications Act 1984*, Sections 4 (2) and 5 (1). The persons running such systems are the individuals who are the customers of LEO system operators.
12. *Class License to Run Telecommunication Systems for the Provision of Satellite Telecommunication Services*, 2 August 1991.
13. *Satellite Service License*, para. 3.
14. *Very Small Aperture Terminal*.
15. *Satellite Services License*, Annex A.
16. *Satellite Services License*, Schedule 3, para. 2 (ii).
17. *Satellite Services License*, Schedule 3, para. 2 (ii.cc).
18. *License granted to British Telecommunications*, Schedule 3, para. 1 (a)(ii).
19. Such as the cellular licences and the PCN licences.
20. The satellite services license, which can be used by any person, is of a limited value to the mobile service operators. This because the License does not permit any messages going over the licensed system to be carried on the public networks; Schedule 3.

21. See for example the Cellular License of Telecom Securicor Cellular Radio Limited, Schedule 3, para. 1 (a)(ii).
22. Notably Germany and France.
23. Primarily the *Telecommunications Act 1984*.
24. Primarily the *Wireless Telegraphy Act 1949*.
25. *Wireless Telegraphy Act 1949*, Section 1.
26. *Wireless Telegraphy act 1949*, Section 1.
27. *Wireless Telegraphy Act 1949*, Section 2.
28. Figures given at the European Centre for Space Law, First practitioners' Forum, 18 November 1992, ESA HQ Paris.
29. Value Added Tax is imposed on supplies of goods and service and is similar in nature to sales tax.