

## ON THE PRIVATISATION OF SPACE

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### I. PRELIMINARY

Privatisation is a neologism. Until recently it did not appear in standard UK English dictionaries. In them its closest analogue was “privateer”—generally defined as a privately owned, armed vessel authorised by a government for use against a hostile nation. That has interesting resonances. More recently, however, the new word is usually taken to refer to the transfer of assets and responsibilities from government to the private sector. It can also be applied to the diversification that has happened in which private enterprise has expanded from the provision of technologies and support services to governmental agencies to developing free-standing private enterprises of their own. I hold no dogmatic views as to privatisation *per se*,<sup>1</sup> viewing its application differently in different circumstances. For this paper, I look at three areas of space activities: communications (subdivided into telecommunications and direct broadcasting), remote sensing, and global positioning. They illustrate the potentiality of the privatisation of space but raise questions as to whether the result is the common benefit that space law requires.

### II. BACKGROUND

We are now half a century into the Space Age. Much has changed from the early days. When we began to use space, only states were involved. The Second World War was recent, the Cold War was current. For understandable reasons, states controlled rocketry and other space-relevant technologies—a satellite launcher could double as an intercontinental ballistic missile. Further, space activities were expensive and hazardous. In the early days,

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<sup>1</sup> In this sphere a dogmatic approach is stupid.

only the two super-powers could afford the investment and undertake the risks involved.<sup>2</sup> Today, states continue to spend on space projects, but to a major degree, the privatisation of space is under way. Some private enterprises entered space business as suppliers to governments and international organisations, either by being approached to undertake tasks for which they are thought capable or by bidding for contracts. Others have entered as system providers and operators, sometimes making use of technologies developed for state purposes. In both instances, private enterprise often chafes under the constraints laid down under international and national law, but there is no escape from these—nor should there be.

Once begun, space activities burgeoned. Scientific exploration led the way, as was only natural given that it was the International Geophysical Year of 1957, an international scientific project, that first opened up the use of space. Remote sensing was an obvious development for probing the Earth's environment, though its military importance was always also clear. Satellite telecommunications became possible in a simpler form than the space stations foreseen by Arthur C. Clarke.<sup>3</sup> New endeavours spawned inventions, which had to be incorporated in new technologies. Government alone could not do the job, and so private enterprise found new opportunities.

### III. THE INTERNATIONAL LAW CONTEXT

Space is different from terrestrial. The legal regulation of space is not necessarily a linear prolongation of prior terrestrial law, whether direct or by analogy. Still less is space to be considered as an unregulated frontier somehow law free. It is a new field of law, which, while drawing on history, has its own special characteristics, rules, and principles.<sup>4</sup> These are

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<sup>2</sup> The Prospectus for the Communications Satellite Corporation was categorized as "a litany of caveats". NEWSWEEK, May 18, 1964, at 87.

<sup>3</sup> Arthur C. Clarke, *Extra-terrestrial Relays: Can Rocket Stations Give World-Wide Radio Coverage?*, WIRELESS WORLD, Oct. 1945, at 303-08.

<sup>4</sup> MANFRED LACHS, *THE LAW OF OUTER SPACE: AN EXPERIENCE IN CONTEMPORARY LAW-MAKING* (Tanja Masson-Swaan & Stephan Hobe eds., Martinus Nijhoff Publishers 2010) (1972) (particularly chapters 1-3).

relevant in the privatisation of space, albeit the terrestrial rules as to company organisation, taxation, and such-like otherwise apply.

Early in the Space Age, the nations of the world affirmed that the use of space is to be for the benefit of all.<sup>5</sup> This principle was translated into paragraph one of the 1963 Space Principles Declaration,<sup>6</sup> and broadened in the terms of Article I of the 1967 Outer Space Treaty.<sup>7</sup> Other provisions of that treaty further distinguished the legal regime of outer space from those applicable in other environments. Thus the second and third paragraphs of Article I provided for the freedom of exploration, for the use of space by all states without discrimination, and for states' lawful access to all areas of celestial bodies; Article II excluded the national appropriation of space by claim of sovereignty, whether by use, occupation, or any other means; and Article VI imposed international responsibility for national activities in space, including requiring the licensing and supervision of nationals (including companies) to ensure that the provisions of the Treaty were complied with.<sup>8</sup> Later space treaties expand and extend these international rules. The legal systems of states which ratify these treaties incorporate the rules by appropriate processes, or lay themselves open to a charge of failure to comply with their international obligations whatever their national laws provide.<sup>9</sup> In addition, a number of UN General Assembly (UNGA) Resolutions are relevant to the use of space. States should also take these into account in their licensing of space activities. For the purpose of this paper, the two most important UN Resolutions are on

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<sup>5</sup> See International Cooperation in the Peaceful Uses of Outer Space, G.A. Res. 1802 (XVIII) (Dec. 14, 1962); International Cooperation in the Peaceful Uses of Outer Space, G.A. Res. 1721 (XVI) (Dec. 20, 1961). Both Resolutions were adopted without vote, the highest form of UNGA approval.

<sup>6</sup> "The exploration and use of outer space shall be carried on for the benefit and in the interest of all mankind." Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, G.A. Res. 1962 (XVIII), ¶ 1 (Dec. 13, 1963). Adopted without vote, see *supra* note 5.

<sup>7</sup> "The exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind." Treaty on Principles Governing the Activity of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, art. 5, para. 1, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 (entered into force October 10, 1967).

<sup>8</sup> These provisions, *inter alia*, mean that it is not competent to argue from the long title of the treaty that it applies only to the activities of states and not to the activities of private entities or persons.

<sup>9</sup> One hundred and one states, including all those space-competent, have ratified the Outer Space Treaty and a further twenty-five have signed it.

cooperation in space, including the participation by all states in its benefits,<sup>10</sup> and the remote sensing principles of 1986.<sup>11</sup> Taken together the space treaties and UN resolutions establish an altruistic approach to the dissemination of the benefits of space, which privatising devotees of Ayn Rand may find unacceptable, but that is how the law stands.

How does privatisation interact with these obligations? I suggest that there are differences between the case where a space activity is or should be classified as a “public service” and that where a service is provided to the public but for which a charge, through which the provider looks to profit on its investment, is payable. In any event, as a simple matter of general morality in privatisation, a balance must be kept between the service provided and the profit to be garnered from investment. Value for money must be present.

#### IV. COMMUNICATIONS

The role of economics soon became important in the development of space. If taxpayers were to be content to continue paying for space activities they needed to see benefits somewhat more practical than those offered by pure scientific inquiry. Radiocommunication is essential for space activities so invention and innovation were stimulated swiftly to improve. Telecommunication systems (as opposed to individual links to a satellite) became possible and offered that needed opportunity to show benefit for expenditures on space. World and national communication services could be improved and extended by satellite links. Business and inter-personal telecommunications, data transfer, and TV interchange became possible. So did direct broadcasting. I take these elements separately.

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<sup>10</sup> Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries, G.A. Res. 51/122 (Dec. 13, 1996).

<sup>11</sup> Principles Relating to the Remote Sensing of the Earth from Outer Space, G.A. Res. 41/65 (Dec. 3, 1986).

## A. TELECOMMUNICATIONS

It is a basic fact that satellites require reliable interference-free radio links for command, control, and the monitoring of the health of the satellite as well as the reception and transmission of messages and data of all kinds. That need stimulated technical invention. It also made possible our satellite telecommunications systems. In the 1960s and before modern fibre-optic cabling was invented, telecommunication by satellite provided a system that had more versatile linkages, was less subject to outage, was capable of providing many telephony and data channels between points remote from each other, and offered a more generous bandwidth than the then cable systems.<sup>12</sup> In the world's interest, improved telecommunication facilities were therefore an obvious development.<sup>13</sup> Who would provide it? Unlike in other jurisdictions, the United States' telecommunications, including broadcasting, were in private hands. Private finance saw an opportunity. At first, therefore, the United States hoped, through the creation of the Communications Satellite Corporation, to establish a commercial world system from which others would purchase service. Other states, however, were unwilling to forego the technological and other benefits implicit in the creation of such a system. Accordingly COMSAT became instead the major partner in the curious hybrids of the International Telecommunications Satellite Organisation (INTELSAT) that were first Interim Intelsat and subsequently definitive INTELSAT.<sup>14</sup> The latter was constituted by an inter-state agreement and an operating agreement between operator entities, each designated by their home state. Apart from COMSAT, the other signatories to the INTELSAT operating agreement were governmental agencies of their home states.

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<sup>12</sup> When satellite telecommunication began, long distance communications were carried by cable or short-wave radio connections. TAT-1, the first Trans-Atlantic Telephone cable was laid in 1955-56. It provided only thirty-six telephone circuits. TAT-2, laid in 1959, carried forty-eight circuits and TAT-3, laid in 1963, carried 138 circuits.

<sup>13</sup> See International Cooperation in the Peaceful Uses of Outer Space, G.A. Res. 1721 (XVI), pt. D (Dec. 20, 1961).

<sup>14</sup> Interim Intelsat was an association of joint venturers. See Agreement Establishing Interim Arrangements for a Global Commercial Communications Satellite System, and Relative Special Agreement, Aug. 20, 1964, 15 U.S.T. 1705, 514 U.N.T.S. 25. For a definitive account of INTELSAT, see Agreement Relating to the International Telecommunications Satellite Organisation (INTELSAT), Aug. 20, 1971, 23 U.S.T. 3813, 1220 U.N.T.S. 21; Operating Agreement Relating to the International Telecommunications Satellite Organisation (INTELSAT), Aug. 20, 1971, 23 U.S.T. 4091, 1220 U.N.T.S. 149. On both, see FRANCIS LYALL, LAW AND SPACE TELECOMMUNICATIONS 74-208 (Dartmouth 1989).

INTELSAT prospered, as in due course did EUTELSAT and INMARSAT within their respective competences.<sup>15</sup> These international organisations were the gateways to the satellite networks that provided international communication services. Within the United States, however, private enterprise sought and obtained permission to establish a United States domestic satellite system. PANAMSAT was licensed in 1984 and quite soon was permitted to provide international as well as domestic communication services.<sup>16</sup>

The success of INTELSAT was considerable. Remarkably soon its revenues were such that they met the costs of new generations of satellites and its signatories were not required to contribute to these developments. The smaller INMARSAT started as the provider of marine communications, but in due course, successfully extended its market to terrestrial mobile services, and its need for contributions from its members also lessened. But, change was on its way. The concept of privatisation was finding fertile ground in a number of countries—and not only in communications. Some signatories were wholly or partially privatised in their national *fora* and, therefore, were sympathetic to such a move. Some signatories saw their investment shares in the organisations as locked up capital that could usefully be realised and deployed for other uses. Last, the international organisations and INTELSAT in particular were accused of being unduly slow to innovate both technically and in respect of the services they offered.

The two global organisations, INTELSAT and INMARSAT, came under pressure particularly from within the United States, and in due course, legislation in the shape of the Orbit Act of 2000 was adopted. Under that legislation, privatisation of INTELSAT and INMARSAT was encouraged, with the downside that failing privatisation they would meet

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<sup>15</sup> LYALL, *supra* note 14; FRANCIS LYALL AND PAUL B. LARSEN, *SPACE LAW: A TREATISE* 319-87 (Ashgate 2009). For reasons of space, the main discussion hereafter is confined to INTELSAT.

<sup>16</sup> Between the United States and Mexico.

difficulties in providing service to and from the continental United States.<sup>17</sup> By then, however, the argument had been persuasive, with INMARSAT taking appropriate steps prior to the passing of the Act. Now (2012) the activities of both organisations are carried out by commercial enterprises. Within Europe EUTELSAT followed suit.<sup>18</sup>

In the current structures of all three enterprises, a residual international organisation persists with the duty of seeing that the privatised entities comply with a number of obligations as to non-discriminatory public access and so on.<sup>19</sup> In the case of INTELSAT, that may not persist, which is a matter of concern.<sup>20</sup> There are three aspects. First, the new agreement of 2001 that adapted the previous INTELSAT to take account of its privatisation (2001 Agreement) has a twelve-year life span. Whether it will be continued is unclear at the time of writing. Second, INTELSAT provides international and national services for a number of the less developed countries of the world. Pre-privatisation INTELSAT provided telecommunication facilities for each service that it carried at a uniform world price. In effect, that meant that the poorer states whose traffic was light were subsidised by those generating a heavier traffic. Under the 2001 Agreement, less-developed countries were eligible to apply for ‘life-time connectivity’ obligations, guaranteeing their access to the system on their prior terms. Of thirty-five applicants, twelve were successful, but the status was to persist only for twelve years. In short, 2013 may see either the demise of the privileged pricing constraint, or potentially, its modification. Third, the 2001 Agreement dropped the concept of ‘*juste retour*’ which had ensured that, at least among the technically competent, member states and signatories shared in the contracts for the INTELSAT system

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<sup>17</sup> Open-market Reorganization for the Betterment of International Telecommunications Act (ORBIT Act), 47 U.S.C. §§ 701-769 (2000) (sections 761-767 particularly concern privatisation), *amended by* 47 U.S.C. § 763 (2006) (the ORBIT Technical Corrections Act of 2003 allows Inmarsat more time for an initial public offering).

<sup>18</sup> LYALL & LARSEN, *supra* note 15. EUTELSAT has grown into a European and Asian provider of direct broadcasting. See Eutelsat Communications, [www.eutelsat.com](http://www.eutelsat.com) (last visited Aug. 28, 2012).

<sup>19</sup> LYALL & LARSEN, *supra* note 15, at 337-43 (INTELSAT), 350-55 (INMARSAT), 360-84 (EUTELSAT).

<sup>20</sup> For the Agreement Relating to the International Telecommunications Satellite Organisation, which replaced the original Agreement, see International Telecommunication Satellite Organisation, [www.itso.int](http://www.itso.int) (last visited Aug. 28, 2012).

in proportion to their investment. The annual FCC reports to the United States Congress now deal with INTELSAT simply as a United States business.

There remains the question of the profit that the privatised institution makes for its owners. It is not irrelevant that when INTELSAT privatised on a leveraged buyout following an initial public offering, which was delayed for financial reasons, it was originally bought by a consortium of private equity funds, managers, *inter alia*, of a number of pension funds.<sup>21</sup> Subsequently INTELSAT has proved to be “normal” in its commercial activities, dispensing with previous directors holding particular briefs for the interests of specific global geographical areas. It has made (unsuccessful) approaches to buying EUTELSAT in 2005 and purchased PANAMSAT in 2006 making it the globally dominant commercial provider of satellite telecommunications facilities. Its owners require a good return on their investment.

Put shortly, the question must be whether and, if so, how far the privatisation of INTELSAT reflects the “common benefit” aspects of space law. Telecommunications is a sphere where the public interest in a service is such that it should be considered as a “public service” and not a “service to the public” in which the generation of profit for its owners is paramount.<sup>22</sup> That said, many other private telecommunications networks exist, leasing transponder capacity on appropriate satellites. These provide service to commercial companies of many kinds.<sup>23</sup>

### B. *DIRECT SATELLITE BROADCASTING*<sup>24</sup>

The other application of space that is important within the category of communications is direct broadcasting by satellite. In the 1960s, terrestrial cables could not carry TV images: satellites could. At first, satellites provided links that fed into the

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<sup>21</sup> Intelsat, Ltd, Transferor, and Zeus Holdings, Ltd, Transferee, Consolidated Application for Consent to Transfer of Control of Holders, 19 F.C.C.R. 24820 (2004). Ownership has subsequently altered.

<sup>22</sup> Ram S. Jakhu, *Safeguarding the Concept of Public Service and the Global Public Interest in Telecommunications*, 5 SING. J. INT'L & COMP. L. 71 (2001).

<sup>23</sup> Walking around my own local neighborhood I see dedicated antennae used by automobile dealers, hotel chains, supermarkets, and of course, broadcasting agencies.

<sup>24</sup> LYALL & LARSEN, *supra* note 15, at 256-69.



terrestrial broadcasting systems, but very soon it became possible for individual household receivers to pick up satellite signals. What we now call “direct broadcasting” became possible, and entrepreneurs piled into the new market. Households proved very willing to pay for the diverse programming that became available at a cost.

Direct broadcasting into another state’s territories without its consent or control over content was considered a potential threat by some states.<sup>25</sup> In breach of the tradition that draft resolutions of the UN Committee on the Peaceful Uses of Outer Space (COPUOS) were proposed only when approved by consensus, those states who felt threatened by the direct broadcast into their territories without consent therefore secured the adoption by a majority in COPUOS and subsequently in the UN General Assembly in 1982 of the Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting, which included “prior consent”.<sup>26</sup> Because in both the Committee and in the General Assembly a significant minority (including most states then licensing direct broadcasting satellite systems) did not support this move, the 1982 Principles are generally considered as ineffective. Without such a constraint, direct television broadcasting has prospered. One of the initial international organisations, EUTELSAT, now largely concentrates on such activities, and many other commercial enterprises have entered the field. Where it exists, control of content seems to have been achieved by commercial pressure. Concerns arising from privatisation of the activity can arise, but are tackled by national law, for example through anti-monopoly legislation and the licensing of operators.<sup>27</sup> In short, the privatisation of direct broadcasting has been a good step.

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<sup>25</sup> This matter was a subset of a general push within UNESCO for control over incoming and outgoing media. LYALL & LARSEN, *supra* note 15, at 256-69.

<sup>26</sup> Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting, G.A. Res. 37/92 (Dec. 10, 1982) (107 for, thirteen abstentions and thirteen against).

<sup>27</sup> In January 2012, Ofcom, the Office of Communications (the UK equivalent of the United States Federal Communications Commission) revoked the license of Press TV (based in Teheran) to transmit to the UK using the Sky TV facilities.

## V. REMOTE SENSING<sup>28</sup>

The story of remote sensing is rather different from that of communications. Its technology and techniques were originally developed for the scientific investigation of the Earth, though there was, of course, also a military interest. Its utility has continued to grow as its systems have been improved.<sup>29</sup> In 2012 remote sensing is used for so many divergent purposes that they are not readily classifiable. They range from archaeology to environmental monitoring, from geological exploration to weather forecasting, and from mapping to surveillance of various kinds including that of helping cope with disasters.<sup>30</sup>

Privatisation in remote sensing has several roots. First, once sensing data obtained by government satellites was made available to scientists, the processed data of their research was readily marketable to entrepreneurs who were anxious to profit through applying the results of analysed data. Second, in due course, the enterprises that had contracted with government to do its bidding saw an opportunity to launch their own systems and directly market their products. Again, to save on their bills as well as to make money, some governments were willing to transfer much of their remote sensing activities to suitably qualified private entities. Further, governmental and intergovernmental organisations themselves have profited by the onward sale to private entities of the data acquired by their sensing programmes. Thus, the European Space Agency and EUMETSAT differentiate in their pricing formulae between the scientific and the commercial user.<sup>31</sup>

Of course when remote sensing became generally available, many states were cautious and sought to control it. Thanks to argument within UN COPUOS, the UN

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<sup>28</sup> LYALL & LARSEN, *supra* note 15, at 411-42.

<sup>29</sup> LOTTA VIKARI, *THE ENVIRONMENTAL ELEMENT IN SPACE LAW: ASSESSING THE PRESENT AND CHARTING THE FUTURE* (Martinus Nijhoff 2008).

<sup>30</sup> See United Nations Platform for Space-based Information for Disaster Management and Emergency Response, G.A. Res. 61/110, U.N. Doc. A/61/110 (Dec. 14, 2006) (also known as UN-SPIDER); UN-SPIDER Knowledge Portal, <http://www.un-spider.org/> (last visited Aug. 28, 2012).

<sup>31</sup> ESA divides its users into two categories; Category 1 is (roughly) scientific and technical users, and Category 2 is operational and commercial. EUMETSAT is more restrictive. See LYALL & LARSEN, *supra* note 15, at 427.

Principles on remote sensing took twelve years to appear.<sup>32</sup> States lacking the capacity to indulge in such activities either did not want their territories to be sensed or demanded their “prior consent” to being sensed, arguing that information about their territories was an aspect of their sovereignty. These arguments were not persuasive. They gained some success as to access to sensed data and technology transfer, although that was subjected to undefined restrictions such as “mutual agreement” and “reasonable cost terms.” Now, however, thanks to privatisation, states are able to negotiate favourable terms for such remote sensing of their territories as they may wish. Though themselves lacking space competence, they have been able to purchase space services and have been able, on occasion, to include technology transfer and training as part of their contracts, allowing them in the future to engage in their own projects. In short, remote sensing and its products have become easily available to those willing to pay for it. Here, privatisation clearly has been for the benefit of all. Market forces have worked usefully.

## VI. GLOBAL POSITIONING<sup>33</sup>

Some space facilities are useful but are not suitable for privatisation either because they are too expensive for commercial enterprises to provide, because collection of revenue from users is too difficult, or because of their military aspect. Global positioning is one of these.

There are currently four global positioning systems: the Global Positioning System (GPS) provided by the United States; GLONASS a product of Russia and its collaborators; Beidou (Compass) of China; and, in the reasonably near future, Galileo, being established by the European Union. Each is either a state-created and maintained system, or in the case of Galileo, the product of an intergovernmental agency. Apart from military applications, these systems cater to many uses ranging from fleet-tracking by marine or terrestrial carrier

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<sup>32</sup> Principles Relating to the Remote Sensing of the Earth from Outer Space, G.A. Res. 41/65 (Dec. 3, 1986).

<sup>33</sup> LYALL & LARSEN, *supra* note 15, at 389-410.

companies to air and sea traffic management, from missile control and criminal surveillance<sup>34</sup> to terrain mapping, from auto and other mobile navigation to guiding hill-walkers, and even to the date/time stamping of contracts (particularly for currency trading). These applications, in the main, are beneficial uses of space and they will continue. It does not seem likely, however, that private companies will wish to create their own satellite segment. Certainly some companies already profit through the invention and sale of technologies that use GPS signals, but it remains to be seen whether (or how) actual signal use could be priced, charged, and recovered for profit.

## VII. CONCLUSION

In sum and looking back through the examples I have selected, I find I am ambivalent as to the extent to which the various privatisations of space activities have met world expectation and the aspirations of the space treaties. True, the infusion of private (as opposed to public) funds into some space activities has usefully lessened the burden on ordinary taxpayers. True, private enterprise has pushed invention and technological innovation. The pursuit of profit, however, may obscure the ideal of the dissemination of benefit throughout the world without discrimination. I am not convinced that the lawyers who advise and the entrepreneurs who invest in space activities are sufficiently aware or compliant with that ideal. Particularly when the major purpose of investment is profit, other desiderata may be blurred.

In conclusion, I would therefore cite one instance, the history of the use of the geostationary orbit. Not all arcs of that orbit are equally useful, that usefulness depending precisely on the field of view which the orbit commands. Some geostationary orbital slots are therefore more valuable than others, and having the right to locate a satellite and to

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<sup>34</sup> I understand that in the United States the use of GPS tracking devices for criminal investigation requires a warrant. *United States v. Jones*, Doc. No. 10–1259 (2012), *available at* <http://www.supremecourt.gov/opinions/11pdf/10-1259.pdf>. This is based on a construction of the Fourth Amendment to the United States Constitution. Other countries may take a different view.

operate a satellite from a particular orbital position is important.<sup>35</sup> Others should not be able to use that position. International arrangements that are designed to secure the interests involved exist. The Radio Regulations of the International Telecommunication Union set up the relevant registration procedures that are operated by the ITU's Radiocommunication Sector (Sector).<sup>36</sup> The language of the Regulations, however, has produced argument. Proposed systems are notified by their licensing states to the Sector and have to be "brought into use" within specified periods thereafter if the systems are to receive protection against systems later intimated. But what does "bringing into use" mean? One interpretation, which can only be considered as clinging by its fingertips to the edges of linguistic rationality, would consider that it was enough to put a satellite into a particular orbital position and switch it on for a few hours. That, it was argued, met the requirements. Thereafter, the use of that location would be protected by the ITU mechanisms, and the satellite could be moved elsewhere, perhaps to "bring into use" service at several other notified orbital locations. The fact that each particular slot could thereafter be left unused was ignored. Fortunately at the World Radiocommunication Conference in February 2012, some clarity has been arrived at, with the "use" required being now set to ninety days.<sup>37</sup>

So, why point to this? Quite simply the previous situation was open to abuse. Using the "switch on" theory, enterprises could notify and gain protection for a number of orbital slots, somehow as if it were storing them against future use (or trade), but without the slots actually being used. Rules, which originally appeared sensible, were abused and that, it has to be said, simply for the profit of private enterprises. It was not a rational, economic, and

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<sup>35</sup> Article 44, paragraph 2 of the ITU Constitution declares the geostationary orbit to be a limited natural resource to be used rationally, efficiently, and economically. Constitution and Convention of the International Telecommunication Union, art. 44, para. 2, Dec 2, 1992, 28 U.S.T. 745, 1825 U.N.T.S. 3.

<sup>36</sup> For the ITU generally, see RITA LAURIA-WHITE & HAROLD M. WHITE, JR., *THE LAW AND REGULATION OF INTERNATIONAL SPACE COMMUNICATION* (Artech House 1988); FRANCIS LYALL, *INTERNATIONAL COMMUNICATIONS: THE INTERNATIONAL TELECOMMUNICATION UNION AND THE UNIVERSAL POSTAL UNION* (Ashgate 2011); LYALL & LARSEN, *supra* note 15, at 199-244.

<sup>37</sup> INT'L TELECOMM. UNION, *FINAL ACTS WRC-12: WORLD RADIOCOMMUNICATION CONFERENCE (GENEVA, 2012)* (Int'l Telecomm. Union 2012) (see the addition of 11.44B to Article 11 Notification and Recording of Frequency Assignment). I still think this period is too short. Six months would be better. See LYALL, *supra* note 36, at 208.

efficient use of a geostationary slot to leave it effectively unoccupied and warehoused in case of future need by means of a spurious and strained interpretation of a regulatory phrase.

In short, the privatisation of some space activities is to be welcomed. But, we should beware of the buccaneers and should seek to diminish their sophistries and their opportunities to fall short of beneficence.