

Re-thinking the ITU

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Abstract

The International Telecommunication Union begun in 1865, took its modern form in 1947 at the Atlantic City Conference. The Extraordinary Plenipotentiary Conference held at Geneva in 1992 (revised in minor ways in 1994 and 1998) made major revisions to its structure, dividing its substantive responsibilities among three new Sectors, and thus better fitting it to discharge its responsibilities. Further reform is under way. While elements of the possible further reform make sense, a more fundamental re-think would require change in the status and powers of the Union, allowing it to guard the world public interest rather than only provide a forum within which states, and the privatised telecommunications interests that now stand behind them, divide assets and compromise arrangements on a solipsistic basis.

Preliminary note

The ITU has published a consolidated text of the Final Acts of the Geneva, Kyoto and Minneapolis Plenipotentiary Conferences, including the ITU Constitution, and Convention together with relevant Resolutions and Recommendations in force in 1999.¹ Technically an unofficial compilation, it (and the Index) are extraordinarily helpful.

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1. Introduction

It is seven years since at the Colloquium of the International Institute of Space Law held in Graz, Austria in 1993, I presented a paper entitled 'The International Telecommunication Union Reconstructed'.² That paper dealt in some detail with the alterations made to the Union by the Geneva Plenipotentiary Conference of Geneva in 1992.³ which had superseded the Constitution as adopted by the Nice Plenipotentiary Conference in 1989 even before the Final Acts of that Conference had come into force. The Nice Conference itself had revised the ITU Constitution as adopted at Nairobi in 1982.⁴ However, it had also recognised that a more fundamental restructuring was called for. The technical, political and economic developments in telecommunications could not satisfactorily be dealt with by mechanisms some of which could clearly be traced back to the origins of the ITU in the Nineteenth Century. The privatisation of telecommunications entities, and the deregulation of the industry under the impact Thatcherism and Reaganomics were starting to have an effect. Both speed and an ability to cope with constant change had to be incorporated into the venerable organisation. At Nice therefore a High Level Committee was charged with the task of redesigning the Union. Its Report⁵ led to the Geneva documents of 1992.

The 1992 Geneva Additional Plenipotentiary Conference split the constituent documents of the Union, adopting in the ITU Constitution provisions less likely to be amended by successive plenipotentiary conferences and in the ITU Convention,

provisions more likely to change.^{6 7} To meet the need for swifter action the Union put into effect a basic four year cycle for its Plenipotentiary conferences, with its other meetings being intercalated within that time frame, on either a single or a dual basis. In effect a two or four year period was imposed on the working of the Sectors, the main innovation in the Geneva arrangements. The Sectors, the Telecommunication Development Sector, the Telecommunication Standardisation Sector and the Radiocommunication Sector, are reviewed in my earlier Graz paper, and it will suffice here to say that their names adequately indicate their function for our purposes.

The 1992 ITU arrangements were further revised, before they came into force, by the Kyoto Plenipotentiary Conference of 1994,⁸ and have been further revised by the 1998 Plenipotentiary Conference, held in Minneapolis USA.⁹ That Conference also agreed upon the further spasm of reform., justifying this by reference to the changes in the telecommunications environment since the previous Plenipotentiary Conference.¹⁰ The trend to deregulation had accelerated, privatisation was spreading, and the dogmas of competition were having their effect. In the light of this, the 1999 Council established a Working Group on ITU Reform (WGR) and Reform Advisory Groups have been established for the three Sectors. In addition the Secretary General established a Reform Advisory Panel which reported in March 2000.

So reform of the ITU is under way. However, the elements that seem to be being considered, while having separately something to be said in their extenuation, may not justify the full extent of what is being considered. Some think that a further bout of reform is being undertaken before the full effect of the 1992 reconstruction has been seen and appreciated. Others argue that in 1992 and following, what happened was a 'top down' reform, and that the current process is more 'bottom up', and thereby responsive to 'the customers'. Certainly much of the impetus for current suggestions seems to come from commercial and operational entities albeit it is channelled through states. It is possible that views of these 'consumers' of the ITU product

will be found to have substance, if they can be brought into synthesis and thence into implementation. Meeting the requirements of the new century and the commercialisation of telecommunications would certainly seem necessary.¹¹

That said, my fear is that other plausible ways in which the ITU could be improved in the general world interest will be ignored.

2. The New Arrangements, 1994 to 2000 and reform

In the period that the new arrangements have run, much progress has been made. As noted the 1998 Minneapolis Plenipotentiary Conference adopted a strategic plan for the Union,¹² and the various Sectors have been proceeding in accordance with it. However, the strict four year cycle has proved somewhat arduous and unduly restrictive in the case of radiocommunication. Accordingly that element has been modified in that now arts. 13.2 and 13.3 of the Convention require the holding of World Radiocommunication Conferences and Assemblies 'normally' every two to three years, with a further discretion as to what happens in particular instances.¹³ This is a matter of practicality, and it is good that the ITU should not be dogmatic in its timetables, but responsive to the factual needs of real life. For the other Sectors, and indeed within Radiocommunication, the new timetable has been easier.

That matter apart, I deal first with the Sectors before going to more general matters of membership and finance, and then on to wider concerns.

Development

Since 1994 the Development Sector has been established, and has had success. Internal ITU figures show that the budget of the Sector amounts to approximately 17.5% of the total ITU regular budget.¹⁴ The current Operational Plan of the Sector is derived from the Valetta Action Plan adopted by the 1998 World Telecommunication Development Conference which replaced the Buenos Aires Plan of 1992. Many, including myself, have

had reservations as to the inclusion of Development as a major purpose of the Union, but now that it has been established, it can not be doubted that the Sector is fulfilling a useful function. While a fundamental re-thinking of the Union might still consider the transfer of the Sector's function to another body, and thus concentrate the remit of the ITU itself on technical questions (which is what it used to be), I cannot think that such consideration is at present likely. The new entity may perhaps be best considered as a useful peninsula on the ITU island.

Radiocommunication

The Sector

Since the new arrangements of 1992 were implemented, the Radiocommunication Sector has been carrying out its functions. For space purposes it is the most important ITU element both in developing the use of the radio spectrum, and in providing the mechanism for the registration of frequencies and orbits.¹⁵ However, those whose interest is space should not forget the variety of work that is done on terrestrial radio.¹⁶ Further, in relation both to space and to terrestrial services, we should remember how much work is done through the various Working Groups and Study Groups within the Sector. There are a very large number of these, and their work is not generally known. When I was given access to something as simple as the schedule of meetings for groups within the Radiocommunication Sector, I was amazed at their number and at the spread of topics under consideration.

Within the ITU cycle the Radiocommunication Sector has held two major radio conferences,¹⁷ that of Geneva in 1997,¹⁸ and that of Istanbul in 2000.¹⁹ Both of these made partial revisions to the Radio Regulations, dealing with procedural matters and with changes to the Table of Frequency Allocations. This is not the place to discuss such revisions in detail, although one or two particular elements will be taken up below. Suffice it here to say that some simplification of procedures has been accomplished through the deletion of some unnecessary requirements.

Other matters have been clarified. The Istanbul Conference *inter alia* dealt with further protection for radio-astronomy, with spectrum allocations for the Third-generation International Mobile Telecommunications, with sharing of spectrum between geostationary and non-geostationary services, adopted as new broadcasting satellite plan for Europe, Africa and Asia-Pacific, and with additional spectrum for global positioning services.²⁰ I understand that there was much quiet negotiation based on proposals by various Member states prior to formal sessions.²¹

The Radio Regulations Board

The part-time Radio Regulations Board was created by the 1992/4 changes to the ITU Constitution, the Board retaining various of the functions of the former International Frequency Registration Board (the IFRB) that were not put into the general duties of the Sector Bureau. Membership, formerly nine, has been increased to twelve, with the possibility of going above that number.²² As noted in my earlier discussion of the change,²³ while qualification for election includes 'practical experience in the assignment and utilisation of frequencies', and geographic, economic and demographic conditions in a particular area of the world, the requirement of IFRB members of technical qualification does not appear. It duly adopted the Rules of Procedure for the work of the Sector in appropriate areas, including the operation of frequency registration.

Whether the RRB need exist remains a matter of argument. It meets regularly and considers many matters. I believe it was involved in the discussions as to the EUTELSAT / Loral and in the EUTELSAT / Luxembourg arguments, but these were finally compromised without the RRB being required to adopt a final view. All that said, there is the element (which was perhaps truer of the IFRB, but still has some validity), that the presence of such a body within the Radiocommunication Sector, to which argument as to the working of the radio-frequency system can be taken, contributes to the maintenance of the trust on which the ITU depends for its very existence.

It can provide some sort of forum, short of a court of appeal for states both small and large, without going to the stage of formal dispute settlement.²⁴

Paper satellites

Despite the alteration of notification requirements to include contractual information as to launch and satellite construction, the introduction of cost recovery, and stress placed by various Resolutions on the requirement on states to apply 'due diligence' in seeing that notifications of new satellite systems are well-founded, the 'paper satellite problem' persists.²⁵ At the date of writing (Sept. 2000) some 1350 notifications are being processed.²⁶ It can take over a year for proposers to find out what other operators they may have to negotiate with. This major problem is not the fault of the Sector, though more staff would help. It is the fault of notifying states, and of some required calculations and procedures being lengthy but, with modern technology, unnecessary. A solution would be to give the Sector power summarily to dismiss dubious notifications.

Standardisation

In the current reform process much attention has been given to the Standardisation Sector. International standards are essential and it is desirable that the extent of their application should be as wide as possible. Ideally the function of the ITU as a global standardisation authority is obvious.²⁷ However, the mechanisms and procedures of the Sector are criticised, mainly on grounds of speed of operation. Telecommunications providers want the ability to interconnect systems as easily as possible. Manufacturers want to know how best to design their product to meet such requirements. The example of VHS and Betamax video recorders stands as a warning, when, thanks to the non-existence of generally accepted standardisation, the processes of raw commerce determined the outcome of the matter. Modern manufacturers are unwilling to invest the necessary vast sums when there is a determinate risk that the product will not achieve at least a satisfactory market

penetration for a suitable time. But, given the speed of development of current telecommunications technologies, there is a point at which something less than a global standard will be acceptable. And there are in excess of five hundred entities which are willing to set standards in areas that form the materia of the ITU Standardisation Sector.²⁸ In all international standard setting, whether through the ITU or otherwise, political and economic interests play a major and obvious role.²⁹ It is necessary that the ITU should avoid being sidelined by those interests, and therefore some reform is thought to be needed.

There are proposals for reform of the Telecommunications Standardisation Sector under consideration at the World Telecommunications Standardisation Conference being held in Montreal, 27 September to 6 October 2000. One may involve the creation of a New Standardisation Entity (NSE), much smaller than the present Standardisation Sector, which would have an annual General Meeting of its members which would be equivalent to the present Sector members, where the dues of members would be based on their annual revenues, and voting weighted to dues would be operative. A ten to twenty member Board elected by the Annual Meeting would deal with broad policies, identifying priorities etc. Interest Groups would deal with standardisation matters producing voluntary technical standards. The voluntary nature of the product would be likely to produce swifter action on standardisation, while allowing for variation. Membership of Interest Groups would be open to members of the NSE, and also to Associate Members who would join particular interest groups. A Management Group would be constituted from the leaders of the Interest Groups. There would be a Managing Director and support staff.³⁰ This seems interesting, but doubtless other proposals will arise, and there is an argument that the Standardisation Sector as presently constituted is developing its procedures and expertise in ways that meet many of the criticisms made of it by its 'customers'. That said, the importance of carrying the manufacturers and telecommunication operators in the swiftly

changing environment created by deregulation and competition, must be kept in mind.

Membership - Sectors

In the past I suggested that it was inefficient that major international telecommunications organisation such as INTELSAT, INMARSAT and INTERSPUTNIK with their global responsibilities, and even the territorial and more limited organisations such as EUTELSAT, ARABSAT and PALAPA could not be full participant members of the ITU.³¹ In the light of the privatisation of most of these bodies, the argument falls. Already they are members of the appropriate Sectors, and will doubtless through such association continue to contribute to the work of the ITU, as well as to look after their own interests.

In fact Article 19.1 of the 1992 Convention required the Secretary General of the ITU and the Directors of the new Bureaux to encourage the enhanced participation of telecommunications entities in the activities of the Union and its working groups. Resolution PLEN/7 of the Geneva Conference instructed the Council and Secretariat to proceed as immediately as practicable to widen and deepen the participation of non-Member entities in the work of the Union. That was welcome in 1993. What has to be further commended has been the revisions of art. 19 by the Kyoto, and particularly by the Minneapolis Plenipotentiary Conference which have first, significantly simplified the process by which entities other than states can become Sector Members, *inter alia* allowing Member states in effect to delegate their power to admit to Sector membership to the Secretary General,³² and second, have invented a new category of Associate Membership of a Sector for the purpose of participating in a particular Study Group of Working Party, admission being a matter for the Sector concerned.³³

ITU Finances

The ITU retains a form of finance that was developed long before the United Nations or indeed the League of Nations were invented. Now by art. 28 2 *bis* to 3.4) Member states select which of a series of classes of

contribution they will contribute to the general work of the Union.³⁴ Failure so to select results in the previous choice being retained (art. 28 3.5)). The available classes of contribution are set out in art. 33.1 of the ITU Convention and range from 40 contributory units to 1/16 of a unit which, as I have said before is a ratio of 640:1.³⁵ The 1999 Session of the ITU Council was informed of the section made for the four year period including 2000-2003.³⁶ These indicated a decline on the Kyoto selection of 25 1/4 units, from 350 3/4 to 325 1/2 - 7.20%. The highest chosen contributory class is 30 units. and one hundred and thirty four of the one hundred and eighty nine Member States contribute less than one unit.³⁷ The practical ratio is 480:1.

Of course there has been pressure to reform the ITU financial structure through the adoption of the Gross National Product related formula (with cap) that operates in the UN itself and in all other UN Agencies except the Universal Postal Union (An organisation as old as the ITU). Developing countries tend to prefer the UN method as it is more favourable to them, and affords no discretion to contributors, and therefore is difficult for the major countries to avoid without patently going into arrears of contribution. Yet there is much to recommend the 'contributory unit' concept in the ITU and UPU as they are, after all, organisations with limited financial requirements for their major function, namely the encouragement and facilitation of cooperative international action. I believe that moves towards any such change should be resisted. The effect of the ITU system is that no single state can cripple the Union by leaving it. Even the highest contributor provides just less than 10% of the general budget. On the other hand, the 134:1 datum makes an argument for weighting the voting in the Union. It is therefore intriguing that there are suggestions, mentioned above, for the inclusion of weighted voting in the reform of the Standardisation Sector.

Cost recovery³⁸

The recovery of cost for some ITU services was mooted at the World Administrative Radio Conference held in Geneva in 1997 in

connection with the 'paper satellite' problem. It was then too sensitive a matter. It arose again more generally at the Minneapolis Plenipotentiary Conference of 1998, and was to some extent adopted.³⁹ Its major implementation for space law purposes comes in relation to filings for satellite systems with the Radiocommunication Sector.⁴⁰ The introduction of such charges is being monitored. Suffice it to say that certain states, notably the US, have sought to limit the charges so imposed, and to ensure that they relate precisely to actual cost. Any revenue generation beyond cost incurred is opposed. However, read on.⁴¹

Deregulation , competition and open markets

Lastly in this section, and somewhat divergent from what has gone before, though correlative with it, note should be taken that the ITU is in the process of entering a 'Cooperation Agreement' with the World Trade Organisation (WTO). The High Level Committee, whose Report was responsible for the 1992/4 revisions recommended that the two organisations, having complementary role, should negotiate an agreement on the basis of which they could work cooperatively.⁴² The Strategic Plan of the Union for 1995-9 including embarking on negotiations with the WTO,⁴³ but matters took time. A text of the proposed Agreement was approved on a provisional basis by the 1999 ITU Council.⁴⁴ It will be considered for final approval by the next plenipotentiary conference of the Union. Given the importance of the WTO, and the extension of its agreements into the telecommunications sphere,⁴⁵ this is an important development indicative of the fact that the ITU is not 'closed off' or indifferent to relevant other organisations as it goes about its appointed tasks.

3. A Fundamental Re-think

Were the current reform process to wander wider and consider broader improvements of the ITU, certain matters come to mind.

A World Authority

It continues to be regrettable that decisions on the licensing of satellites, both as to frequency usage and as to orbital matters, which can have world effects are still taken by the individual licensing authorities of the states Members of the ITU. Certainly, these decisions do come within the regulatory corset of the Radio Regulations as to the radio frequencies to be used, and within the requirements of those Regulations as to coordination with other systems. That can help. But, the point remains that decisions taken by national licensing authorities are taken with a view to the national interest. No body within the international arena takes licensing decisions with a view to the welfare of the world as a whole. As I have said elsewhere, no-one is charged with the safeguarding of, and the taking of licensing decisions in the general world public interest. In the past one might have looked for some amelioration to INTELSAT and INMARSAT as bodies dedicated to the provision of services in the world public interest, but the privatisation of these organisations renders them subject to commercial pressures. Indeed although both have (or will have) devices within their new forms that are supposed to protect safety of life at sea in the case of INMARSAT,⁴⁶ or the 'core principles' presently enshrined in art. III of the INTELSAT Agreement of 1971, it should be remembered that their function as commercial companies will in the future be to make profit for their owners, and in the light of modern commerce concern may therefore properly be felt as to the adequacy of those supervisory devices.⁴⁷

The solution would be to give the ITU, perhaps in the shape of a modified Radio Regulations Board, the authority to license *ex origo* or by review of the decisions of national authorities, the licensing of frequency and orbital assignments that have a global or

regional implication within the concept of the ITU five regions. Assignments for Low Earth Orbit systems, and many geostationary systems would therefore be considered as to their appropriateness within the global public interest. Surely that is an elementary requirement.

Of course the major space competent nations will not wish to divest themselves of their powers, and indeed their expertise gained through the history of their decisions heretofore is useful. But, as against that natural nationalism one can place certain facts. Consider the TONGASAT saga.⁴⁸ In the light of the supine reaction of the ITU, although the number of notified orbital slots was reduced, there is precedent for any ITU Member State to file. In our modern globalisation of commerce, including telecommunications, can it be long before entrepreneurs less principled than those behind TONGASAT, persuade an ITU Member State to act as a front for an 'enterprise' sheltering behind a too-liberal concept of the 'veil of incorporation'? When assignments of frequency and orbit have global implications, the requirement of an ITU license additional to the national licence would be useful, conceivably salutary, and certainly a desirable addition to the present fragmented procedures.

A Resource Utilisation Charge

It was indicated above that cost recovery for some space related ITU services has been introduced.⁴⁹ However, the terms under which the ITU presently operates cost recovery are very restricted, relating as far as possible cost imposed to charge incurred through the provision of the service. But could the financial situation of the ITU not be somewhat improved by loosening these restraints? After all we are told that the commercialisation of telecommunications means that we are moving into a new, and more modern age. So, is the ITU not to some extent to be seen to carry out its business, like any other business, by establishing prices for services within its portfolio, not all of which must necessarily reflect the exact cost of their provision? As it is many ITU services are not cost-effective in a business sense, since these are, of course,

carried by the general payments that manifest themselves as the selected contributory units of the member states and sectoral members. Not all the one hundred and thirty four members contributing each less than one unit can be said to be pulling their weight financially in relation to the services they receive.

But there is a flaw in that argument. Pursuing it too far would be to depart from the basic ethos of the Organisation, and detract from its global responsibilities and mission. Putting the ITU solely on a commercial basis would be to break it up, and thereby to lose all the advantages of a single organisation devoted to telecommunications matters.

However, the antagonism to 'cost recovery' may be a first line of defence against a similar notion, that of a fee for use of the basic 'free' telecommunication resource - the radio spectrum. I recall being astonished when first reading of the idea that the radio spectrum forms a resource, the use of which could and perhaps should be charged for.⁵⁰ That seemed as odd as charging people for the air they breathed.⁵¹ However, matters have moved on. In April 2000 the UK government raised some 22.5 bn UK Pounds (UKP) by auctioning licenses, and therefore radio spectrum for the next generation of mobile phones. Subsequently Germany secured some 30 bn UKP, and The Netherlands 3 bn UKP. The US is shortly to conduct a similar auction. The tradition of governments making money through such auctions is well established.⁵² There is also the model of the new Sea-bed Authority, established under Part XI of the UN Convention on the Law of the Sea, 1982, as amended.⁵³ In terms of that Convention those who profit from the exploitation of the Deep Sea-Bed, the Area, pay a fee to the Authority for the benefit of all.⁵⁴

Therefore, why should those whose business it is to make profit through telecommunications satellite services not pay an annual fee for the use of the frequencies and associated orbits which, art. 44.2 of the ITU Convention itself tells us are 'limited natural resources'. The 'freedom' of space referred to in Art. 1 para 2 of the Outer Space Treaty,⁵⁵ does not have a necessary implication of financial freedom: the 'benefit of all' of its preceding paragraph implies a distribution

which could be augmented by the use of such an annual fee for ITU, or other UN purposes.

4. Conclusion

It may be that the present reform process has been begun prematurely, but as a matter of fact it is under way. In it the requirements of the new 'customers' of the services that the ITU provides are being to some extent met. We have moved from the Organisation seeking to serve the needs and interests of states to a landscape in which privatised, commercial entities roam. They may prove to be saurians, but we should remember that the Age of the Dinosaurs lasted longer than that of the human (so far). It is useful therefore that the ITU should seek to accommodate itself to the needs of its new clientele, as well as maintaining the interests of its previously dominant phylum, even if some recent species of such seem to be inadequate to meet the demands of the environment.

NOTES

¹ *Collection of the basic texts of the International Telecommunication Union adopted by the Plenipotentiary Conference*, Edition 1999 (Geneva: ITU, 1999)

² F. Lyall, 'The International Telecommunication Union Reconstructed', (1993) 36 *Proc. IISL* 78-88.

³ Final Acts of the Additional Plenipotentiary Conference, Geneva, 1992. Constitution and Convention of the International Telecommunication Union (Geneva, ITU, 1993); US Treaty Doc. 104-34; 1996 UKTS 24, Cm. 3145. See also US Senate, Committee on Foreign Relations, Exec. Rpt. 105-3, Report to accompany Treaty Doc. 104-34, 105th Cong., 1st Sess., October 20, 1997, which T. Doc. contains the Geneva text as amended in Kyoto in 1994. The Exec. Rpt recommends ratification of the Geneva text with the Kyoto amendments. I note as a matter of interest that

the Rpt. acknowledges that the US had, by failing timeously to ratify the Geneva text, had for a period lost its voting rights in the Union.

⁴ International Telecommunication Convention, with Final Protocol, Additional Protocols I to VII and Optional Additional Protocol, Nairobi, 6 November 1982; US Treaty Doc. 99-6; Aus. TS 1984/35; Can. TS 1984/40; 1985 UKTS No. 33, Cmnd. 9557.

⁵ 'Tomorrow's ITU: The Challenges of Change': the Report of the High Level Committee to review the structure and functioning of the International Telecommunication Union (ITU), (Geneva: ITU, 1991).

⁶ A preliminary step towards dividing the ITU constitutional documents was taken in the Nairobi Convention of 1982 and the formal separation into Constitution and Convention was first adopted at Nice in 1989, although, as noted, these did not come into force. See the Final Acts of the Nice Plenipotentiary Conference (Geneva: ITU, 1990). The Nice Final Acts have never been published in any state's official series as they were superseded so swiftly and never came into force.

⁸ Final Acts of the Plenipotentiary Conference of the International Telecommunication Union, Kyoto, 1992 (Geneva: ITU, 1992). In fact the US Treaty Doc. 104-34 cited above n. 3 incorporates the Kyoto amendments in the Geneva text of 1992. See also Preliminary Note at start of paper, and n. 1.

⁹ Final Acts of the Plenipotentiary Conference of the International Telecommunication Union, Minneapolis, 1998 (Geneva: ITU, 1999). In the light of the Strategic Plan the 1999 Council established a Working Group on ITU Reform (WGR), and Reform Advisory Groups (RAG) have been established for the three ITU Sectors.

¹⁰ 'Strategic plan for the Union, 1999-2003', Res. 71, Minneapolis 1998. See Minneapolis Final Acts (preceding note) or *Collection* (n. 1).

11 In what follows I have found very helpful, A. Noll, 'The Space Law related Role, Activities and Contributions of the International Telecommunication Union (I.T.U.) in the Last Decade of the 20th Century', *International Organisations and Space Law, Proceedings of the Third European Centre for Space Law Colloquium, Perugia, Italy, May 1999*, ESA SP-442, (Noordwijk, The Netherlands: ESA, 1999) 109-124; his 'ITU Constitutional and Conventional Amendments' May 2000, *MultiMedia und Recht*, 270-76 and his Comment on my own paper 'Expanding Global Communications Services' Discussion Paper, *Proceedings of the Workshop on Space Law in the Twenty-first Century, UNISPACE III, Technical Forum, A/CONF.184/7*, 64-80, with Comments by A Noll at 80-7.

12 See n. 10, above.

13 Reference point, n. 17 below.

14 Operational Plan of the ITU Development Sector 1999, Doc TDAG-1/2-E, 22 March 1999, presented to the First Meeting of the Telecommunication Development Advisory Group (TDAG), April 1999, para. 1.3.

15 The 'Report on the Activities of the Union' submitted to the 1999 Council (1999 Council Doc. C99/35), indicates at para. 169 that at the end of 1968 the Master Register contained 324, 083 assignments to 1,406 satellite networks and 4,262 earth stations.

16 The 'Report on the Activities of the Union' submitted to the 1999 Council (1999 Council Doc. C99/35), indicates at para. 168 that at the end of 1968 the Master Register contained 1,263,677 assignments to terrestrial stations.

17 As noted elsewhere, the Sector has been liberated from the precise rigour of a two/four year cycle. See above at n. 13.

18 Final Acts of the World Radiocommunication Conference (WRC-97) (ITU: Geneva, 1997).

19 Final Acts of the World Radiocommunication Conference (WRC-2000) (ITU: Geneva, 2000).

20 See *ibid.*, especially amendments to Radio Regulations art. S5 for spectrum matters, art. S22 for the GSO/LEO spectrum sharing, for the Plan, Annexes 1 and 2 to Res[GT PLEN-1/4]-1/

21 A good idea of the nature and volume of preparation of major delegations for a World Radiocommunication Conference can be got from: The FCC's Advisory Committee for the 2000 World Radiocommunication Conference offers Additional Proposal on WRC-2000 Issues, Public Notice, 14 FCC Rcd 18269, released 14 July 1999, Release No. DA 99-1364. Note 1 of this Public Notice also cites earlier Public Notices on the matter as: in 1998, DA 98-842, 1044, 1125, 1560; and in 1999, DA 99-398 and 595. The range of material is considerable.

22 Art. 14 of the Geneva/Kyoto Constitution set the number at nine. Oddly, the Minneapolis Plenipotentiary Conference by Plenary Resolution 83 increased the number to twelve, having already elected twelve members. According to the 'Collection of basic texts' (above n. 1) art. 14*bis* of the Constitution now sets the membership as 'not more than twelve members, or of a number corresponding to 6% of the total number of member States, whichever is the greater.' So it will be 12 until ITU membership exceeds 200. There are now (Sept. 2000) 189 member states.

23 F. Lyall, 'The International Frequency Registration Board' 1992 33 *Proc. IISL*, 394-9.

24 Art. 56 of the Constitution deals with Settlement of Disputes. The modes are relevant bilateral or multilateral agreements, arbitration, or the Optional Protocol on the Compulsory Settlement of Disputes which is now part of the Minneapolis Final Acts but has a long incarnation in previous ITU history. The last has never been invoked, and I believe neither of the other possibilities has been used in telecommunications matters.

25 See F. Lyall, 'Paralysis by Phantom: Problems of the ITU Filing Procedures' (1996) 39 *Proc. IISL* 187-93; 'Telecommunications and the Outer Space Treaty' 1997 40 *Proc. IISL* 385-92; 'Developments in International Telecommunications' 1998 41 *Proc. IISL* 170-82.

26 See *Space News*, 18 Sept. 2000, vol. 11, No. 35, at 3.

27 The importance of standardisation was recognised in the 1992 reforms: see the High Level Committee Report, (above, n. 5) V(b)1 and 2. When the Sector was established in the 1992 reforms, Art. 14.3 of the then Convention specifically instructed the new Standardisation Study Groups to keep in mind 'the need for the Union to maintain its pre-eminent position in the field of world-wide Standardisation for telecommunications.' This was to be accomplished through the bringing together the different standardisation elements from the previous ITU structure, in order to repair and revivify ITU action in this area. The major complaint of the 'customers' seems to be that the ITU procedures take too long. See following text.

28 See G. Wallenstein, *Setting Global Telecommunication Standards*, (Boston and London: Artech House, 1990). Cf. the European Telecommunications Standards Institute, set up in 1988 as a joint project by the European Community and the European Postal and Telecommunication Conference (CEPT) to publish telecommunications standards for Europe. Not all standard setting institutions are intergovernmental or international.

29 J.G. Savage, *The Politics of International Telecommunications Regulation*, (Boulder, Co. and London: Westview Press, 1989), 167-223.

30 'Draft Resolution on ITU Reform' UK, World Standardisation Assembly (WTSA-2000) Doc. 55.

31 See F. Lyall, *Law and Space Telecommunications* (Aldershot; Dartmouth:

Gower, Brookfield VT, 1989) 179-80, 395-6, 415-6; cf. more recently n. 2, above.

32 Convention art. 19.1, 3-4quater, 7-10.

33 Convention art. 19.12.

34 This is apart from any voluntary contribution to particular programmes. Sector members also choose the financial contributions they make..

35 The 1/16 and 1/8 classes are available only to states least developed according to UN figures (Convention art. 33.1.1*bis*).

36 'Choice of Contributory Class', Document C99/50. By 6 May 1999, the closing date, 59 member states and 57 Sector Members had indicated their selection of contributory class: 129 member States and 407 Sector Members had not, and therefore retained their Kyoto classes.

37 The choices listed in 'Choice of Contributory Class', Document C99/50, are interesting. Available are classes of 40, 35, 30, 28, 25, 23, 20, 18, 15, 13, 10, 8, 5, 4, 3, 2, 1 1/2,, 1, 1/2, 1/4, 1/8 and 1/16 units. Staying within whole numbers: the 30 unit class is chosen by Germany, the USA, France, Japan, 20 units by Italy, 18 units by Canada, 15 units by Australia, Great Britain, Switzerland, 10 by Saudi Arabia, China, 8 units by Spain, The Netherlands, Sweden, 5 units by Belgium, Korea (South), Denmark, Finland, India, Norway, Russia (down from 15) 3 units by Brazil, Kuwait, South Africa, 2 units by Ireland, Nigeria, New Zealand, Pakistan, Portugal, 1 1/2 units by Thailand, and 1 unit by Algeria, Argentina, Azerbaijan, Austria, Cameroon, Chile, Colombia Arab Emirates, Greece, Hungary, Indonesia, Iran, Israel, Libya, Lithuania, Malaysia, Morocco, Mexico, Philippines, Poland, Czech Republic, Senegal, Singapore, Turkey and Venezuela. All other members contribute less than 1 unit.

38 Reference point n. 49, below.

39 See 'Strategic Plan for the Union, 1999-2003', Annex 1 to Res. 71 of the Minneapolis Conference, secs. 26.3, 32.2 and 4, and 'Cost recovery for some ITU products and services', Minneapolis Res. 91, both available in the *Collection of basic texts*, above, n.1

40 'Implementation of processing charges for satellite network filings and administrative procedures', Res. 88 of the Minneapolis Conference: see *Collection of basic texts*, above n. 1. See also 'Implementation of Cost Recovery for Satellite Network Filings', Council Decision 482. Document C99/94.

41 See below at n. 49.

42 See 'Tomorrow's ITU'. above n. 5.

43 Strategic Plan for the work of the Union, 1995-99' Resolution 1 of the Kyoto Plenipotentiary Conference. See n. 9.

44 Report by the Secretary-General, 'Cooperation Agreement between the ITU and the World Trade Organisation', 1999 ITU Council Doc. C99/36.

45 Cf. World Trade Organisation: Agreement on Telecommunications Services (Fourth Protocol to General Agreement on Trade in Services), Geneva, 15 February 1997, 1997 36 ILM 354.

46 D. Sagar, 'The Privatisation of INMARSAT' 1998 41 *Proc. IISL* 194-205, and his 'The Privatisation of INMARSAT: Special Problems' in *International Organisations and Space Law: Proceedings of the Third European Centre for Space Law Colloquium, Perugia, Italy, May 1999*, ESA SP-442, (Noordwijk, The Netherlands: ESA, 1999) 127-46.

47 F. Lyall, 'On the Privatisation of INTELSAT', 2000 *J. Sp. Law* (forthcoming).

48 D. Riddick, 'Why does Tonga own Outer Space?', 19 *Air and Space Law*, 15-29; J.C. Thompson, 'Space for Rent: The International Telecommunication Union, Space Law and

Orbit/Spectrum Leasing' (1996) 62 *J. Air Law and Comm.* 279-311.

49 Above, 'Cost Recovery', at n. 38.

50 See H.J. Levin, *The Invisible Resource: Use and Regulation of the Radio Spectrum*, (Baltimore MD: Johns Hopkins Press, 1971).

51 Cf. Fritz Leiber, 'A Pail of Air' 1951 (Dec.) *Galaxy*.

52 Cf. G.L. Rosston and J.S. Steinberg, 'Using Market-based Spectrum Policy to promote the Public Interest' 1997 50 *Fed. Comm. LJ* 87-116; Note: The Law and Economics of Property Rights to Radio Spectrum' 1998 41 *J Law & Econ.* 737-61: Spectrum Auctions: Hearing, US Senate, Committee on Commerce, Science and Transportation, 1995, 104th Cong., 1st Sess.

53 UN Convention on the Law of the Sea, 1982; A/CONF.62/121; (1982) 21 ILM 1261 Part XI, as amended by UN GA Res. 48/263 Agreement to Implement Part IX of the Law of the Sea Convention, (1994) 33 ILM 1309.

54 I am aware that the US has not yet ratified this Convention. I am not sure whether the UK has.

55 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies, 1967, 610 UNTS 205; (1968) UKTS 10, Cmnd. 3519; 18 UST 2410, TIAS 6347; 1967 6 ILM 386; 61 AJIL 644.