

Overview of the Implementation Status of the Five United Nations Treaties on Outer Space in African Countries

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Abstract. This paper presents an overview of the five major UN Treaties on Outer Space. Each of these Treaties are briefly discussed and assessed with particular emphasis on aspects relevant to Africa. Very few African countries have ratified these Treaties, as well as enacted domestic space legislation. The paper concludes with an assessment of Africa's involvement in multilateral space fora such as OOSA and UNCOPUOS. It also offers recommendations to improve African countries' ratification and compliance with these Treaties.

Sommaire. Cet article est une introduction aux cinq traités majeurs de l'ONU, en matière d'espace extra-atmosphérique. Chacun des traités est brièvement discuté et évalué en insistant sur les aspects importants pour l'Afrique. Très peu d'États africains ont ratifié ces traités, ainsi que mis sur pied une législation en matière d'espace. L'article se termine par une évaluation de l'engagement de l'Afrique dans des forums multilatéraux voués à l'espace tels que l' OOSA et l' UNCOPUOS. Des recommandations sont également suggérées pour l'amélioration de la ratification et le respect par les États africains de ces traités.

Introduction

This paper presents an overview of the five major UN Treaties on Outer Space. Each of these Treaties are briefly discussed and assessed with particular emphasis on aspects relevant to Africa. Very few African countries have ratified these Treaties, as well as enacted domestic space legislation. The paper concludes with an assessment of Africa's involvement in multilateral space fora such as OOSA and UNCOPUOS. It also offers recommendations to improve African countries' ratification and compliance with these Treaties.

International Space Law: Context and Text

Three distinct phases of international space legislation can be distinguished.¹ The period between 1956 and 1979 saw the conception of major legal principles, Treaty making and structures pertaining to International Space Law. One of these structures, the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS) was established in 1958 and the major UN Treaties on Outer Space were initiated and ratified. These legal instruments were predominantly defined by the Cold War's realist military focus when access to space was limited to a few states.

From early on, the UN General Assembly (UNGA) took a particular interest in space affairs. It adopted resolutions on space issues, which ultimately culminated in the five UN Treaties on outer space. Apart from these major multilateral Treaties, the UNGA also adopted various other special conventions relating to space-based activities, including the 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, the 1977 Convention on the Prohibition of Military and Any Other Hostile Use of Environmental Modification Techniques, and the Convention and Regulation of the International Telecommunications Union.²

Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty) (1967)

The Outer Space Treaty (OST) lays down specific Space Law principles such as the prohibition of the use and installation of nuclear weapons, any kind of weapons of mass destruction and military bases, as well as the prohibition of exploration of any kind on the Moon and other Celestial Bodies, in accordance with International Law. The OST also stresses the promotion of international cooperation in the exploration and use of space, the Moon and other Celestial Bodies. Furthermore, the OST establishes the principles of non-appropriation and the fact that no state can claim sovereignty of or occupy outer space, the Moon or any other Celestial Body.

Moreover, the OST prescribes the role of non-governmental activities in outer space, the Moon and other Celestial Bodies, namely that their activities continue under the supervision of the appropriate state party to the Treaty. The responsibility for compliance of the activities of an inter-governmental organisation is borne by the relevant organisation and states party to the Treaty participating in such an organisation.

Finally, the OST deals with liability, the position of astronauts, as well as states' responsibility to inform the UN Secretary General and the international scientific community of the nature, conduct, locations and results of its activities.³

Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (Rescue Agreement) (1968)

The Rescue Agreement establishes the legal framework for emergency assistance to astronauts, which includes immediate notification of the launching authority as well as the UN Secretary General. Notification must also be given about any space object which has returned to Earth. It also makes provision for search and rescue operations and the prompt return as well as the recovery of space objects. The launching

authority which may be a state is responsible for all costs incurred.⁴

Convention on International Liability for Damage Caused by Space Objects (Liability Convention) (1972)

The Liability Convention imposes an international and an *absolute* liability on a launching state, or states, as well as on those states members of an inter-governmental organisation for any damage caused by their space object. 'Launching state' is defined in Article I as 'a state which launches or procures the launching of a space object or from whose territory or facility a space object is launched' irrespective of the success, or not, of the launch. Furthermore, Article I defines damage as 'the loss of life, personal injury or any other impairment or health; or loss of damage to property of States or of persons, natural or juridical, or property of international intergovernmental organizations.' This also applies to any damage caused by a space object on the surface of the earth or to aircraft flight. In case no diplomatic solution is found for a claim of compensation, the parties concerned have to establish a Claims Commission comprising three members.⁵

Convention on the Registration of Objects Launched into Outer Space (Registration Convention) (1975)

The Registration Convention obliges states to register all space objects in a Register, which had been maintained by the UN Secretary General since 1962. States are required to furnish the following information, namely the name of the launching state(s), an appropriate designator of the space object or its registration number, date and territory or location of launch, basic orbital parameters such as nodal period, inclination, apogee and perigee, and the general function of the object.⁶

Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (Moon Agreement) (1979)

With the adoption of the Moon Agreement, International Law was extended to govern activities on the Moon and other Celestial Bodies. One of the main thrusts of the Moon Agreement is the principle of the exclusive use of the Moon and Celestial Bodies for peaceful purposes, as well as its continued de-militarisation. However, military personnel may be used, but, as outlined in The Outer Space Treaty (OST), only for peaceful purposes. It designates the Moon as a global commons for all humankind, which are not subject to national appropriation and occupation. No private ownership is allowed, but all state parties have the right to exploration and use of the Moon.

The Moon Agreement obliges states parties to the agreement to establish an international regime to govern the exploitation of the natural resources of the Moon once such exploration becomes feasible. As outlined in Article 11, the main purpose of this regime is:

- The orderly and safe development of the natural resources of the Moon;
- The rational management of those resources;
- The expansion of opportunities in the use of those resources;
- An equitable sharing by all states parties in the benefits derived from those resources, whereby the interests and needs of the developing countries, as well as the efforts of those countries which have contributed either directly or

indirectly to the exploration of the Moon, shall be given special consideration.⁷

The process of decolonisation in Africa commenced during this period, and these newly independent states asserted their sovereignty and membership of the UN by ratifying various international agreements, including the UN Treaties on outer space. In summary, space law-making during this initial phase of space exploration is characterised by 'hard' law. It places heavy obligations on states, but maintains the peaceful uses of outer space for humankind.

The second phase of space law-making commenced in 1980, and continued to approximately 1992. This period saw more states and non-state enterprises obtaining space capabilities and, as interests became deeply entrenched, it increasingly became difficult to reach consensus on legal aspects of outer space. In the absence of consensus, states signed bilateral agreements and legislated domestic space laws. Of particular importance during this phase is its departure from the previous phase's law-making. Whereas the first phase was characterised by legally-binding international agreements and conventions, this phase saw the adoption of several non-binding UN General Assembly resolutions such as the Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting (1982), the Principles Relating to Remote-Sensing of the Earth from Outer Space (1986) and the Principles Relevant to the Use of Nuclear Power Sources in Outer Space (1992). The choice of non-binding resolutions was deliberate to soften the legal obligations imposed on space- and non-space-faring nations.

The third phase which commenced by 1993, *i.e.* the end of the Cold War, is characterised by the rapid onset of technological globalisation and the unprecedented commercialisation of space.⁸ Since 1992, a redefinition of the significant principles of International Space Law followed in the form of UN General Assembly (UNGA) resolutions. Apart from the five outer space Treaties, the UNGA has adopted, apart from the 1963 Declaration of Legal Principles Governing the Activities of States in the Exploration and Uses of Outer Space, an additional set of legal principles, which provide for the application of International Law, the promotion of international cooperation and understanding in space activities, the dissemination and exchange of information through transnational direct television broadcasting via satellites and remote satellite observations of earth, and general standards regulating the safe use of nuclear power sources necessary for the exploration and use of outer space. These additional declarations and legal principles are the 1996 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, the 2004 Application of the Legal Concept of the 'Launching State' and its ongoing work on State practice vis-à-vis the registration of space objects.⁹

A Preliminary Assessment of the Five UN Treaties: Implications for African Countries

The Predicament of African States

The notion of an African Renaissance had become a political cliché and has not, even at this early stage, resulted

in sustainable stability, peace and development that had been hoped for. Collectively, Africa is already behind the targets set for achieving the UN's Millennium Development Goals (MDGs). With this in mind, African states cannot be expected to engage themselves in outer space affairs. Nevertheless, one of the most significant international normative developments since the end of the Cold War is the focus on *human* security as opposed to *state* security. As consecutive COPUOS meetings and the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) in 1999 have reiterated, the application of some types of space technology can enhance human security by, for example, reduce the risk of natural disasters, forecast crop yields, monitor environmental degradation and prevent the spread of infectious diseases.¹⁰ States through their governments play a crucial role in the establishment and maintenance of sustainable human security. On a continent ravaged by natural and human-induced disasters, the application of these technologies can greatly enhance human security. However, in some African states, state structures are the very institutions that cause human insecurity.

Interactions between states and between states and commercial non-state space enterprises are intensely political and rivalry over natural, political and economic resources, access to it, the ability to sell or distribute it, as well as the ability to generate it is increasingly distinguishing powerful and weak states from each other. Governments often take responsibility for the political and budgetary aspects of a state's space programme, the maintenance of space facilities, and its International Space Law obligations. A government's space policy and national legislation gives, or not, assurances to the space industry and foreign investors in these domestic industries. Primarily, governments want to decide who gets what, where, when and how in their state and prefer to control key space technology assets, whereas commercial enterprises such as multinational corporations need profits, clients and markets. Whereas the period between 1956 to 1990 was a Cold War quest for dominance in space, the post Cold War era is a quest for the commercial dominance of space industry. By 2003, revenues in excess of US\$ 91 billion were generated by the global satellite industry, and the consumption of satellite-based telecommunication and sensing services amounted to more than US\$1 trillion.¹¹

Access to outer space and the application of space technology is politically and economically significant. Access to and the development of technology has historically been a key determinant of a country's wealth, power, influence, status and prestige. Technological determinism, and its corollary social determinism, technologically advanced countries are politically more stable, economically more prosperous, and more educated. Globally, technology structures societies and global interactions by creating hierarchies of power between the haves and have-nots, suppliers and users, and between states and market-driven multinational corporations.¹²

A continent of vast geographical, ethnic and political diversity, Africa continues to evoke the stark contrasting images of, inter alia, Chinua Achebe's *Things fall apart*, Joseph Conrad's *Heart of darkness* and Antjie Krog's *Country of my skull*. It also continues to provide poignant manifestations of the negative impact of weak governance, non-accountable leadership and inter- and intra-state and non-state political conflicts. At present, as Table 1 indicates, seven UN missions (i.e. MINURSO, MONUC, UNMEE, UNMIL, UNOCI, ONUB and UNMIS) are deployed in Africa.

The regime on outer space is UN-based, statist in its orientation and, for the first time since the Cold War, increasingly driven by powerful commercial rather than military interests. States with innovative space industries are under pressure to enhance their national space interests. Africa's lack of competitiveness in this area results in lesser, or no, pressure on its governments to maintain and forward a stronger position in COPUOS. Furthermore, African states are predominantly suffering from the absence of an innovative scientific culture, institutional failure, or state collapse, which generally results in poor policy formulation, implementation, output and poor service delivery to its population. This vicious political cycle often reinforces itself and results in socio-economic and political instability.

In the absence of optimally functioning state institutions, African states are in no position to ratify any international Treaty, nor implementing obligations resulting from this ratifying a particular Treaty. In cases where African states have ratified these and other Treaties, it often lacks the institutional and scientific capacity, and political will to comply with its Treaty obligations.

Table 1: UN Peacekeeping Operations in Africa¹

Mission	Established	Troops	Budget (US \$)
MINURSO (Western Sahara)	April 1991	27	44,460,000
MONUC (DRC)	November 1999	16,622	1,138,533,000
UNMEE (Ethiopia & Eritrea)	July 2000	2,062	182,237,800
UNMIL (Liberia)	September 2003	14,334	745,572,300
UNOCI (Côte d'Ivoire)	April 2004	7,849	438,366,800
ONUB (Burundi)	June 2004	1,656	82,386,000
UNMIS (Sudan)	March 2005	8,732	1,126,295,900

¹ UN Department of Peacekeeping, January 2007. Available at www.un.org. Accessed on 24 January 2007.

Low Levels of African Participation in COPUOS

Subsequent to the launching of Sputnik-1, the UN General Assembly established an ad hoc Committee on the Peaceful Uses of Outer Space (COPUOS), which, in 1959, was redesignated as a permanent Committee on the Peaceful Uses of Outer Space. COPUOS' mandate includes reviewing the scope of international cooperation in peaceful uses of outer space, devising programmes to be conducted under the UN's auspices, encouraging ongoing research, disseminating information on outer space matters, and studying legal challenges arising from the exploration of outer space.¹⁴ COPUOS performs its mandate through two standing Subcommittees, namely the Scientific and Technical Subcommittee and the Legal Subcommittee. Only 15 of COPUOS' current 67 Member States are African, namely Algeria, Benin, Burkina Faso, Cameroon, Chad, Egypt, Kenya, Libya, Morocco, Niger, Nigeria, Senegal, Sierra Leone, South Africa and Sudan.¹⁵ Despite its membership of COPUOS, Chad and Sudan, for example, have not ratified any of the UN Treaties on outer space.¹⁶

African states' level of participation and activism in COPUOS is very low. In February 2007, for example, only 8 African states, namely Algeria, Burkina Faso, Egypt, Libya, Morocco, Nigeria, South Africa and Sudan attended the meeting of the Scientific and Technical Subcommittee. At COPUOS, African states have neither put forward a unified African position on matters of mutual concern, nor have all states individually responded to requests for information, or complied with requirements set by COPUOS, and the UN Treaties on outer space. Consequently, African states' bargaining power in this forum is very little, its response reactive and it is forced to comply (despite consensus as COPUOS's decision-making mechanism) with issues put forward by larger states. In principal, compliance with, and enforcement of law requires politically powerful and stable state institutions, or power is law.

Implementation Status

Whereas the previous section concluded law is law only if it is supported by power (*i.e.* state institutions), this section maintains that law is power. The five UN Treaties on outer space are instruments of International Space Law whose power lies in the rights and obligations it bestows on states in

the pursuit of their national interests. For example, all states (despite empirical differences) have equal and free access to space. This is the positive power of International Space Law, whereas its negative power lies in the restrictions, obligations, prohibitions and regulations it places on states' behaviour in outer space, the Moon and other Celestial Bodies, as well as their Earth-bound space-related activities. In ratifying these outer space Treaties, states have acquired power in terms of their rights and obligations.

Table 2 refers to the implementation status of the UN Treaties on outer space. Only Australia, Austria, Belgium, Chile, Kazakhstan, Mexico, The Netherlands, Pakistan, Peru and Uruguay have ratified all five Treaties.¹⁷ Australia, Austria, Belgium and The Netherlands' ratifications are typical of middle power states, namely maintaining the moral high ground by complying with International Law. Chile, Mexico, Peru and Uruguay's ratifications may be explained against the background of the 1976 Bogota Declaration by eight equatorial countries claiming sovereign rights to segments of the geostationary orbit above their territory. Pakistan's behaviour can be ascribed to its historical rivalry with India, a space-faring developing country. Lastly, Kazakhstan is emerging as a major state in the launching industry and in signing these Treaties bestows significant bargaining power on itself *vis-à-vis* non-ratifying states wishing to launch from Kazakh launch facilities.

Less than half of the Member States of the UN General Assembly have ratified The Outer Space Treaty (OST), the Rescue Agreement and the Liability Convention. Much less have ratified the Registration Convention and almost none the Moon Agreement. The exploration of lunar and other Celestial Bodies' resources requires the high technological innovation and capabilities. Few states' ratification of the Moon Agreement is most likely due to the fact that the regime regulating activities on the Moon will only be established *when* exploration becomes feasible. However, until the regime is established there is a moratorium on *exploitation* but not on *exploration and use*, which permits the collection of samples and their removal from the Moon for scientific purposes.¹⁸

In Africa, only Niger, Nigeria and Seychelles have ratified all

Table 2: Status of the UN Treaties on Outer Space¹

Treaty	Ratification, acceptance, approval, accession or succession		Signature Only	
	International (African States included)	African States Only	International (African States included)	African States Only
Outer Space Treaty	98	21	27	12
Rescue Agreement	88	16	25	7
Liability Convention	84	14	24	10
Registration Convention	49	3	4	1
Moon Agreement	13	1	4	0

¹ Office for Outer Space. *Ibid.*

Table 3: Implementation status of UN treaties relating to activities in outer space in African countries (as at 1 January 2007)¹ (R = ratification, acceptance, approval, accession or succession S = signature only)

State	1967 Outer Space Treaty	1968 Rescue Agreement	1972 Liability Convention	1975 Registration Convention	1979 Moon Agreement
Algeria	R		R		
Benin	R		R		
Botswana	S	R	R		
Burkina Faso	R				
Burundi	S		S	S	
Cameroon	S	R			
Central African Republic	S		S		
Congo (Brazzaville)	S				
Democratic Republic of the Congo	S	S	S		
Egypt	R	R	S		
Equatorial Guinea	R				
Ethiopia	S				
Gabon		R	R		
Gambia	S	R	S		
Ghana	S	S	S		
Guinea-Bissau	R	R			
Kenya	R		R		
Lesotho	S	S			
Libya	R				
Madagascar	R	R			
Mali	R		R		
Mauritius	R	R			
Morocco	R	R	R		R
Niger	R	R	R	R	
Nigeria	R	R	R	R	
Rwanda	S	S	S		
Senegal		S	R		
Seychelles	R	R	R	R	
Sierra Leone	R	S	S		
Somalia	S	S			
South Africa	R	R	S		
Swaziland		R			
Togo	R		R		
Tunisia	R	R	R		
Uganda	R				
Tanzania			S		

¹ Office for Outer Space Affairs. Op cit.

but the Moon Agreement, which has been ratified by Morocco (as the only African state), Australia, Austria, Belgium, Chile, Kazakhstan, Mexico, The Netherlands, Pakistan, Peru and Uruguay, Lebanon, and the Philippines.

Table 3 above summarises African states' implementation of the five UN Treaties on outer space. Angola, Cape Verde, Chad, Comoros, Côte d'Ivoire, Djibouti, Eritrea, Guinea, Liberia, Malawi, Mauritania, Mozambique, Namibia, Sao

Table 4: Implementation Status of Other UN Space-related Agreements in African Countries (as at 1 January 2007)¹		
Other UN Space-related Agreements	Ratification	Signature
1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water	35	6
1974 Convention Relating to the Distribution of Programme-Carrying Signals Transmitted by Satellite	5	2
1971 Agreement Relating to the International Telecommunications Satellite Organisation (ITSO)	44	1
1976 Agreement of the Arab Corporation for Space Communication (ARABSAT)	8	0
1976 Convention on the International Mobile Satellite Organisation	16	0
1992 International Telecommunication Constitution and Convention	47	0

¹ Office for Outer Space. Op cit.

Tome and Principe, Sudan and Zimbabwe have not ratified or signed any of these Treaties. This may be explained by the fact that these states were involved in wars, civil wars and liberation struggles during the initial stages of space exploration and space law referred to earlier. Moreover, none of these states have subsequently demonstrated any space ambitions but have ratified some of the other eleven UN space-related Treaties.

No African state has ratified all Treaties, and generally very few states have ratified these outer space Treaties. By far the most widely supported and ratified outer space Treaty in Africa is The Outer Space Treaty (OST). Twenty one of Africa's 53 states have ratified the OST compared to 16 states' (30%) ratification of the Rescue Agreement and 14 states' (26%) ratification of the Liability Convention. Only three African states have ratified the Registration Convention.

The five UN Treaties on outer space address mainly space-faring nations. The *Zeitgeist* subsequent to the launch of Sputnik captured states' imaginations and, irrespective of their space abilities, wanted to be part of it, at least by ratifying some of these Treaties.

Whereas The Outer Space Treaty (OST) signed at the onset of the Cold War is more symbolic and normative in spirit, the subsequent four Treaties were more practical in addressing problems arising from states' space activities. As Table 4 indicates, African states have ratified far more of these practical agreements than the outer space Treaties.²¹

Table 4 indicates the geo-political and geo-economic aspects of Africa's space affairs, which refers to the political and economic implications of a state's geographical location and access to resources. A large number of African states have ratified the 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water. Subsequent to this, African countries reiterated this commitment by adopting the Pelindaba Treaty, which declared Africa a nuclear weapons free zone.

Second, African states' Arab roots were instrumental in Algeria, Djibouti, Egypt, Libya, Morocco, Somalia, Sudan and Tunisia's ratification of the 1976 (and amended in 1990) Agreement of the Arab Cooperation for Space Communications (ARABSAT).

Third, Kenya, Africa's largest blue water navy, is the only African state to have ratified the 1971 Convention on the International Maritime Satellite Organisation (INTELSAT).

Fourth, forty-seven African states have ratified, accepted, approved, acceded or succeeded to the 1992 International Telecommunication Constitution and Convention.

Space Law-making

Since 1958, COPUOS and its specialised committees has been primarily responsible for space law-making. Despite its focus and consistency in the law-making process, COPUOS' membership is open and voluntary, but exclusive and includes only a small number of UN members. COPUOS' law-making process rests on consensus. As a legislative mechanism, consensus implies that no formal vote is taken but that the negotiating process is governed by the search for consensus. This has the effect that certain issues cannot be resolved due to the absence of consensus on that particular matter. This is particularly detrimental for African countries.

African states' lack of national space law-making is another area of concern. There is a positive correlation between a state's participation in COPUOS, its ratification and compliance of the five UN Treaties, and national space policy and legislation. Morocco, Tunisia (which has been legislating on this since 1963), South Africa, Nigeria and Algeria are testimony to this. These states have a clear a space policy, have enacted relevant domestic legislation and have, on average, ratified the most UN Treaties on outer space. In addition to this, these states are active participants in COPUOS' activities.²³

The Need for Legal Clarification and Innovation

Fifty years after the launch of Sputnik, International Space Law is one of the most recent and dynamic branches of International Law. In 2007, The Outer Space Treaty (OST) had been ratified forty years ago. This and subsequent Treaties have not been able to address all aspects of the legal problems posed by advances in space-based technologies and activities. Various legal issues still need to be addressed, including the principle of registration, the applicability of the Rescue Agreement to space tourists, space assets, the drafting of a model law for national space legislation, and the reconsideration of the Moon Agreement.²⁴ Moreover, unresolved matters such as, for example, the delimitation of outer space and air space, the definition of space objects, issues of jurisdiction, control and ownership of space objects, and issues pertaining to space transportation persist. The commercialisation of space has added additional legal questions such as the environmental impact of space-based activities (such as space debris), states' sovereignty and the geostationary orbit, intellectual property rights, insurance and some pertaining to trade in space technology, which have not been addressed satisfactorily.²⁵

Registration Convention

By September 2007, only Algeria, Argentina, Australia, Brazil, Canada, China, Chile, Czech Republic, France, Germany, Greece, India, Israel, Italy, Japan, Kazakhstan, Luxembourg, Malaysia, Mexico, Nigeria, Pakistan, South Korea, Russia, Spain, Sweden, Turkey, Ukraine, United Arab Emirates, the United Kingdom, the United States, the European Space Agency (ESA) and the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) have complied with the Registration Convention by registering their space objects in the UN Register of Objects maintained by the UN Office for Outer Space Affairs (OOSA) in Vienna. The registration of states and non-state entities' space objects has important implications for COPUOS' handling of space debris, loss of life and liability for damage caused by a space object. Furthermore, as the geostationary orbit is a finite resource, it is important to determine how much and where these space objects are. The Registration Convention is one of the lesser ratified UN Treaties internationally and in Africa specifically. At its April 2007 meeting, COPUOS' Legal Subcommittee adopted resolutions in this regard, which includes incentives for enhancing adherence to the Convention, as well as drafting a model registration form to assist countries and inter-governmental organisations.

Jurisdiction but The Securitisation and Militarisation of Outer Space

The five UN Treaties are explicit about the peaceful use of outer space and its non-weaponisation. However, large space-faring nations' compliance in this matter is dubious. In January 2007, the UNGA adopted a resolution on international cooperation on the peaceful uses of outer space (A/RES/61/111), which expressed the General Assembly's 'serious concern about the possibility of an arms race in outer space.'²⁷ Whenever some of COPUOS' members raise the issue, large space-faring nations make a concerted effort to keep military matters off COPUOS' agenda by stressing that the UN Security Council has jurisdiction to the deal with these matters.

Sufficient empirical evidence exists which suggests the onset of a new space arms race, which bodes ill for Africa which has already struggled through the Cold War. Since its invasions in Afghanistan in 2001 and Iraq in 2003, the US's heavy reliance on space technology for military purposes has increased. Not only is China emerging as a major and ambitious space power, but Russian is re-emerging as one and, in August 2006, the President of the United States authorised a new overarching national space policy governing the US' space activities.²⁸ Developing states such as Brazil and India also seem to be in the race. Between 2001 and 2006, India has spent approximately US\$ 3 billion, or US\$ 600 million p.a. on its space budget.²⁹ In the post Cold War era, China, Japan, India, Europe, Israel, Russia and the US continue to develop major space programmes. In these and other states, the commercialisation and privatisation of the space industry establishes new actors and new complex interdependencies between governments and market forces.

The US met the EU's independent civilian satellite constellation system, Galileo, with strong criticism as the US perceives it to be a challenge to its Global Positioning System (GPS) developed by the US Department of Defence.³⁰

However, as the process of globalisation increases the strategic context of space and space science change. Space-faring states' position and interests were entrenched and the rules of the game were adapted to enhance their interests. One example is the 1967 Outer Space Treaty (OST) that legitimates the free and equal use of outer space for activities in accordance with International Law, the UN Charter.³¹ However, the OST does not distinguish between the peaceful military use of space and the peace-threatening military use of space. Against the background of the European Space Agency, Japan, India and Russia's declared intention to commence lunar projects and possibly lunar resource extraction, the legal regime which determines the exploitation of lunar resources remains unclear and is worrisome as no major space power has ratified the Moon Agreement.³²

The Role of Africa's Space Powers

Similar to other states, African states' objectives to acquire space capabilities include, *inter alia*, poverty alleviation, sustainable socio-economic development, resource management, disaster management, regional stability, international technological competitiveness, international cooperation, and enhanced international status and prestige.

Algeria, Nigeria, South Africa and Egypt are the only African states that have launched satellites. ALSAT-1 was launched by the Algerian Centre National des Techniques Spatiales of Arzew on 28 November 2002 from Plesetsk Cosmodrome in Russia.

The Nigerian government, for example, regards its space policy and programme as an essential tool for its socio-economic development for the enhancement of the quality of life of its people, and Nigeria's national security. Nigeria's National Space Council is responsible for the development of the nation's policy guidelines on space activities and its members include the President, Vice-President, The National Security Adviser, Ministers of Defence, Internal Affairs, National Planning, Communication, Science & Technology,

and a private sector representative and scientists.³³ The Federal Government of Nigeria established the National Space Research and Development Agency (NASRDA) in 1999, and, in 2001, approved the National Space Policy and Programme. Subsequently to this, NigeriaSat-1, Nigeria's first micro-satellite was launched on 27 September 2003. Since then the Nigerian government has approved the implementation of a Nigerian Satellite Communication Satellite, NigcomSat-1.³⁴ Apart from other space activities, Nigeria is a partner in the Disaster Monitoring Consortium Constellation (DMC), which includes the UK, Turkey, Algeria, China, Vietnam and Thailand and has four satellites in orbit.³⁵

Egypt became the fourth African state to launch a satellite. EgyptSat-1, Egypt's National Authority for Remote-Sensing and Space Sciences (NARSS) first remote-sensing satellite, was launched on 17 April 2007 by Roscosmos at Baikonur.³⁶

South Africa's first government-owned satellite, SumbandilaSat, is due to be launched.

Given their capabilities, African space powers can act as norm entrepreneurs in getting African countries to ratify the UN Treaties on outer space. By reiterating the normative of these outer space Treaties, these African space powers can assist African states to inculcate a culture of compliance and compliance-seeking, which is seriously lacking on the continent as is, *inter alia*, evident in Africa's tolerance of the genocide in Sudan's Darfur region and Robert Mugabe's totalitarian regime in Zimbabwe. These UN Treaties on outer space are a codification of universally accepted norms, which imply prescriptions, proscriptions and obligations. These Treaties limit states' conduct, ensure order and predictability which reduces the risk of conflict and facilitate international cooperation. Africa's space powers have the obligation to comply, promote compliance and seek compliance – even enforce compliance when necessary – with these Treaties. In failing to do so, these African space powers will support deviant state behaviour and backtrack on the objectives of, for example, the African Union.

African countries have renewed their commitment to the development of science and technology on the continent. It has identified science and technology as one of the sectoral priorities of NEPAD. It has the following science and technology objectives: the promotion of cross-border cooperation, to develop and collect information to support production and export, and to generate technological expertise. The document stresses the importance of regional cooperation and the development of networks among member states. Furthermore, Article 13 of the Constitutive Act of the African Union authorises the Executive Committee of the AU to formulate policies promoting cooperation in science and technology. The Treaties establishing African regional organisations such as SADC, the EAC and COMESA also contain provisions on scientific and technological cooperation among member states.³⁷

Conclusion and Recommendations

The status and application of the five United Nations Treaties on outer space in Africa is a matter of serious concern. African states' non-ratification, irrespective of their space activities, has the detrimental effect of excluding

the continent on these matters. Adopted and ratified at a time of great optimism in international politics in the wake of the Second World War, the UN Treaties on outer space reflect a certain idealism which is almost incompatible with the stark realism of states' space capabilities, and political and commercial interests. Legal clarification and innovation is urgently required. African states face the possibility of continued (commercial) marginalisation in space affairs if they continue as passively and reactively as before. The following recommendations are made to African countries:

1. Legal clarification and revision of existing International Space Law and the five UN Treaties on outer space.
2. Declaring the five UN Treaties on outer space as customary International Law. This will ensure its universal acceptance.
3. Enforced ratification of space Treaties by all states, irrespective of their space capabilities and interests, as well as including this in the African Peer Review Mechanism (APRM) as an indicator of good governance.
4. Abandon all five outer space Treaties and seek new consensus.
5. Establish an Africa Space Law Agency or Organ within the African Union to coordinate, monitor, and seek compliance.
6. Improve national space legislation.
7. Active participation in COPUOS and presenting a unified African position on matters of particular relevance to the continent.
8. African states should actively cooperate in establishing a viable and innovative space industry on the continent through public and private partnerships.
9. COPUOS itself needs to be restructured, and its decision-making mechanism of consensus-seeking should be reviewed.
10. Of greatest importance, are African leaders' obligations to establish sustainable peace, security and good governance in their countries.

Endnotes

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- ²¹ Table 4 excludes EU and USSR-based agreements such as the 1971 Agreement on the Establishment of the INTERSPUTNIK International System and Organisation of Space Communications, the 1975 Convention for the Establishment of a European Space Agency (ESA), the 1976 Agreement on Cooperation in the Exploration and Use of Outer Space for Peaceful Purposes (INTERCOSMOS), the 1982 Convention Establishing the European Telecommunications Satellite Organisation (EUTELSAT) and the 1983 Convention for the Establishment of a European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT).
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