

The Law and Regulation of Dual Use Technology in the Evolving South African Outer Space Legal Regime

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Abstract

The peaceful use of outer space is a sacrosanct axis on which the South African outer space legislative prescripts revolve. This is a result of the genesis and history of the development of space activity in the country. The new dispensation had to be underpinned by a rule of law and observance of international norms enshrined in treaties, conventions and international agreements that the Republic became Party to. International space law espouses peaceful use of outer space and prohibits the placement of weapons of mass destruction in outer space, including the Moon and celestial bodies. In order to comply with these international obligations arising out of the various conventions and treaties that the Republic is Party to, South Africa enacted two legislative prescripts that addressed both the peaceful use of outer space and the prohibition of development and placement of weapons of mass destruction, i.e to address the issue of dual use technologies. However, both do not sufficiently address the regulation of dual use technology within the outer space legislative regime. Space technology, by its very nature, has dual capabilities, *i.e.* it can be used for both civilian and military applications. It is hoped that the current review of these Acts and subsequent amendments or promulgation of new outer space national legislation will address the lacunae. The dti has embarked on process to review both Acts in light of contemporary challenges facing the space industry and the experiential imperatives after almost two decades of administering the Acts. The central issue is whether it is necessary, cost-effective and efficient manner to retain the regulation of dual use technologies in both Acts to be simultaneously administered and overseen by two Councils residing in the Ministry. The review process must provide a legal justification for retaining the duality and /or recommend a streamlined regulatory framework that facilitates the achievement of the objectives for re-evaluating the Acts, *viz.* to spur the growth of the space industry with less cumbersome administrative processes.

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I Introduction

The present review of the space regulatory prescripts has brought to the fore various issues that need to be addressed in the effort to fashion a new and responsive legislative framework governing space activities in South Africa. The rationale for the review process is to evaluate whether the present space legislation addresses and cater for the needs and aspirations articulated in the South African national space program. There have been major developments in the space arena since the Act was promulgated twenty years ago. Chief amongst these is the increasing involvement of non-governmental entities in and the rapid commercialisation of space activity.

The South African space policy and national space strategy demands a robust space program that contribute significantly to socio-economic objectives of the country. Government agencies and private enterprise must play a role in this paradigm. Hence, the legislative and regulatory prescripts must facilitate and not hamper the rapid deployment of space applications and space science. The policy and legal framework related to dual use technologies requires dexterous treatment in this process. Both the Space Affairs Act of 1993 the Non-Proliferation of Weapons of Mass Destruction Act of 1993 declares the adherence to requirements of space treaties as paramount.

Both these Acts refers to the necessity of controlling dual use technology. Both created administrative organs, the South African Council for Affairs (SACSA) charged with the regulation of space activities, and the Non-Proliferation Council which regulates activities relating to nuclear delivery systems. Both Councils resides in the Department of Trade and Industry (**the dti**) overseen by the same Minister.

II. Current Regulatory Framework

Space technology is by its very nature, dual use capable, *i.e.* it can be used for both civilian and military space program. South African space activity generally developed as a military program geared towards maintaining the hegemony of apartheid rule in Southern Africa. The early space program was geared towards propelling the apartheid military regime to achieve strategic superiority on the African continent. The advent of democratic rule demanded a radical departure from the aggressive military posturing to a cordial and friendly engagement in the region. Hence, the dismantling of the nascent space program which included launch vehicles and satellite systems¹. The new democratic political dispensation was, as a matter of necessity, underpinned by a rule of law. Observance of international norms enshrined in space treaties, conventions and international agreements that the Republic

¹ See, *e.g.* Erika Gibson, *The Haunted Heart of Nuclear Secrets*, City Press, 5 August 2014 a review up article on a book just published by Nic von Wielligh, *Die Bom*, apparently a tell-all account of South Africa's nuclear race.

became Party to become an urgent imperative for acceptance in the international community. Thus, peaceful use of outer space became a sacrosanct axis upon which the South African outer space legal prescripts evolved. This is a result of the genesis and history of the development of space activity in the country.

Both the Space Affairs Act of 1993 the Non-Proliferation of Weapons of Mass Destruction Act of 1993 declares the adherence to requirements of international treaties as central to the treatment of dual use technologies in national legislative frameworks. Both these Acts refers to the necessity of controlling dual use technology. The manner in which these technologies need to be regulated in a pragmatic is an issue under consideration. There is a school of thought that advocates for complete exclusion of dual use technologies in the space acts on the one hand, and a view that it is not programmatic to exclude such given the nature of space technology.

South Africa is a Party to a number of treaties, conventions and international agreements that deal with both the peaceful uses of outer space² and weapons of mass destruction, including their delivery systems.³ While there is no direct prohibition of military involvement in outer space, international space law espouses peaceful use of outer space and prohibits the placement of weapons of mass destruction in outer space, including the Moon and celestial bodies.⁴ These treaties, conventions and international agreements impose obligations on members to observe standards and regulate the development and use of weapons of mass destruction, space technologies, as well their delivery systems. In order to comply with these international obligations arising out of the various conventions, treaties and international agreements,, South Africa enacted two legislative prescripts that addressed both the peaceful use of outer space and the prohibition of development and placement of weapons of mass

² South Africa is Party to Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 610 UNTS 8843 (“**The 1967 Outer Space Treaty**”), Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, 672 UNTS 9574 (“**The Rescue Agreement**”); Convention on International Liability for Damage Caused by Space Objects, 962 UNTS 13810 (“**The Liability Convention**”), and Convention on Registration of Objects Launched into Outer Space, 1023 UNTS 23002 (“**The Registration Convention**”).

³ Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (“**Chemical Weapons Convention**” ”**CWC**”) Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and their Destruction; the Missile Technology Control Regime (“**MCTR**”); International Code of Conduct Against Ballistic Missile Proliferation (“**The Hague Code of Conduct, HCOC**”); The Wassenaar Arrangement for Conventional Arms and Dual-Use Goods and Technologies (“**WA**”).

⁴ *See, e.g.*, Article IV, Outer Space Treaty, *ibid.*

destruction, *viz*, the Space Affairs Act of 1993 (“the Act”) and the Non-Proliferation of Weapons of Mass Destruction Act of 1993 (“the NPC Act”). These Acts declare the need to comply with international obligations and adhere to requirements of treaties and international agreements that the Republic is Party to. The Acts also refer to and deal with dual use technology. Both created administrative organs, the South African Council for Affairs (SACSA) charged with the regulation of space activities, and the Non-Proliferation Council which regulates activities relating to nuclear delivery systems. Both Councils resides in the Department of Trade and Industry (the dti) overseen by the same Minister

II.1 Dual Use Technology in the Space Affairs Act

The Act refers to dual use in two sections. Section 1 provides a definition of dual purpose technologies as “*space technologies which can contribute to the proliferation of weapons of mass destruction*”. Weapons of mass destruction are not defined in the Act, but reference is made to the definition contained in the NPC Act⁵. Space technologies are defined as “*technologies specifically developed with a view to, or which are related to, or utilized in, space activities*”.

Secondly, section 2 empowers the Minister to determine the general space policy in the Republic. Subsection (1) provides that “the Minister may... determine the general policy to be followed with a view to:

- (a) Meeting all the international commitments and responsibilities of the Republic in respect of the peaceful utilization of outer space, in order to be recognized as a responsible and trustworthy user of outer space; and
- (b) Controlling and restricting the development, transfer, acquisition and disposal of dual-purpose technologies, in terms of international conventions, treaties and agreements entered into or ratified by the Government of the Republic”.

Subsection (2) enjoins the Minister, when determining the general space policy or contemplating any changes thereto, to consult with SACSA and obtain the concurrence of “each Minister charged with the administration of any law which in the opinion of the Minister relates to space affairs.”⁶ Subsection (3) empowers

⁵ The NPC Act defines weapons of mass destruction as “any weapon designed to kill, harm, or infect people...through the effects of a nuclear explosion or the toxic properties of a chemical agent or the infections or toxic properties of a biological warfare agent, and *includes delivery systems exclusively designed, adapted or intended to deliver such weapons*” (*emphasis added*).

⁶ The only other law that relates to space affairs is the South African National Space Agency Act of 2008 (SANS Act) which establishes the national space agency, the South African Space Agency (SANS) and provides for its competence. SANS is a government agency under the authority of the Department of Science and Technology (DST). SACSA is a regulatory body established under the Act.

the Minister, by proper notice, to “substitute, withdraw, or amend the policy determined in terms of subsection (1).”

II.I.I National Space Policy

The South African National Space Policy (NSP) was determined pursuant to Section 2 of the Act during 2008, a decade after the promulgation of the Act with the main objective being “*to guide the development and implementation of space science and technology to address South Africa’s development challenges*”.⁷ It “provides over-arching guidance for the *development of appropriate space capabilities and the utilisation of space system applications to contribute to economic growth, reduction of poverty and the creation of knowledge*”.

The NSP pronounce principles that must guide the conduct of national space activities. The principles are, *inter alia*, use outer space for peaceful purposes and the benefit of mankind and develop and maintain an appropriate and a set of robust space capabilities, services and products to support national priorities through co-ordination and co-operative governance. There are also objectives articulated in the NSP as well. These include, but not limited to avoid duplication of efforts by improving co-ordination throughout the space arena, facilitate the provisioning of appropriate space capabilities to support South Africa’s domestic and foreign policy objectives and foster a robust science and technology base in research.

II.I.II The National Space Strategy

The National Space Strategy (“NSS”) developed to provide a framework for the implementation of a national space program in order to leverage the benefits of space science *for socio-economic growth and sustainable development*.⁸ The three goals of the space science and technology programme are articulated as the capturing of a global market share for small to medium-sized space systems, to improve decision-making through the integration of space-based and ground-based systems, and to develop applications for the provision of geospatial, telecommunications, timing and positioning products and services.

The National Space Program (NSPM) has been developed by SANSA. The NSP outlines short, medium and long-term implementation roadmap for the South African space program as informed by the National Space Strategy. The NSPM defines specific projects to enable the DST, through SANSA as its implementing agency, to have actionable objectives in implementing the National Space Strategy. It contains defined action plans, timelines and stakeholder interfaces.

⁷ South Africa’s National Space Policy, Department of Trade and Industry, March 2009 (The NSP was created to guide the South African public and private sector actors in the space arena.).

⁸ National Space Strategy, Department of Science and Technology, 2011, www.gov.za/dst, accessed 03 June 2014.

There is no direct reference to dual purpose technologies in these guiding policy and strategic documents.

II.I.III Licensing Dual use Technology

SACSA has a general regulatory function to license space activities in the Republic. Section 11 provides for licensing of launch activities, the operation of a launch facility, any space activity that entails obligations to the State in terms of international conventions, treaties or agreements ratified by the Government which may affect national interests, and any space or space-related activities prescribed by the Minister.

In the licensing process, SACSA must impose conditions suitable for that license with regard to safety standards, the national interests, and international obligations and responsibilities of the Republic. It can be inferred that the consideration of dual use of space technology will be considered during the licensing process.

While the Act does not specifically provide for the manner of dealing with dual purpose technologies, it provides for wide discretion for the Minister to promulgate regulations to achieve the objective outlined in Section 2 relating to dual purpose technologies. Presently, there are neither policies nor regulations developed to *“control and restrict the development, transfer, acquisition and disposal of dual-purpose technologies”* under the Act. However, the Act provides for measures that can be taken to ensure that dual purpose technologies are dealt with under the Act. Section 22 stipulates that the Minister may make regulations relating to:

- (a) the safety measures and minimum safety standards of any space activity,
- (b) the application of provisions of international conventions, treaties and agreements relating to space entered into or ratified by the Government;
- (c) the disclosure, marketing and transfer of technologies, capacities and products of the space industry outside the Republic;
- (d) the designation, disposal of and alienation or degrading of any technological asset, capability, facility or industry deemed by Minister as being of a strategic or indispensable nature to the Republic; and
- (e) in general, any matter which shall or may be prescribed by or may be prescribed by or under this Act and which is aimed at achieving the objects of this Act

II.II Dual use Technology in the NPC Act

The NPC Act provides that the Minister may determine the general policy to be followed with a view to, *inter alia*:

- (a) instituting measures and taking initiatives to prevent the proliferation and development of weapons of mass destruction;

- (b) the retention of the right of the Republic to the development, maintenance and promotion of defensive capabilities and capabilities in respect of industry, research, medicine and other peaceful purposes.⁹

The NPC Act refers to “ dual purpose capabilities” as

those capabilities relating to technology, expertise, services, material, equipment and facilities which can contribute to the proliferation of weapons of mass destruction, *but which can also be used for other purposes, including conventional military, commercial or educational use.*¹⁰ (*emphasis added*)

Technology is defined as “

any specific information, data or technical assistance required for the design, development, manufacture, deployment, maintenance or use of any weapons of mass destruction or the execution of any activity related thereto.

Other terms related to dual use technologies include “delivery systems”¹¹, “facility”¹² and “goods”¹³.

II.II.I The Non Proliferation Council (NPC)

The Non Proliferation Council to assist the Minister to administer the NP Act¹⁴. Section 5 provides for the objects of the NPC to control, register, and inspect controlled goods and verify the import, export and re-export, transit and end-use of controlled goods¹⁵. Controlled goods are those goods defined as such under the Act. The NPC is empowered to control and manage all activities relating to non-proliferation, including issuing permits relating to controlled goods. The NPC advises the Minister which goods should be

⁹ Section 2

¹⁰ Section 1.

¹¹ Delivery system means “any rocket, ballistic missile system, space launch vehicle, sounding rocketcapable of delivering a payload of at least 500kgs over a distance of not less than 300 kilometres’.

¹² Facility means “any place, premises, structure, installation or vehicle designed, adapted or equipped for the performance of any process or activity related to controlled goods”.

¹³ Goods “include any technology, data, technical assistance, services, software, processes, activities, facilities, materials, items, equipment, components, assemblies or systems, whether produced in the Republic or imported into the Republic”.

¹⁴ Section 4 provides for The South African Council for Non-Proliferation of Weapons of Mass Destruction (NPC)

¹⁵ Controlled goods means goods declared as such under section 13(1).

declared controlled goods and subsequently verify that users adhere to regulations relating to controlled goods. The Minister is empowered to prohibit the import or export of controlled goods.¹⁶

Any person who possesses controlled goods must register with the NPC. The NPC may request certain declarations to be provided. Section 13 provides for issuance of permits. A permit contains conditions relating to end-use requirements and the verification of such end-use requirements. Other conditions may relate to countries to which controlled goods may be exported to or from which controlled goods may be imported.

The NPC is authorized to seize controlled goods where no permit was issued or conditions of such a permit are contravened. It is an offence under the Act to possess controlled goods without a permit or to contravene the conditions of a permit.¹⁷

II.II.II Space Technology as Controlled Goods

South Africa is a Party to a number of technology control regimes such as Missile Technology Control Regime (MTCR), the Nuclear Suppliers Group and the Wassenaar Agreement. Furthermore, South Africa is a member of The Hague Code of Conduct on Ballistic Missiles (HCOC), which requires annual reporting and a pre-launch notification system. The responsibility for preparing South Africa's annual report to the HCOC currently rests with SACSA. The technology control regimes have a similar aim which is to control the transfer of sensitive materials, equipment and technology, including relevant dual-use items and technology. The MTCR guidelines and control lists constitute an international export control standard and Partners encourage countries that are not members of the MTCR to apply MTCR guidelines and control lists.

The NPC Act imposes the duty to ensure that dual use space technologies comply with these control regimes¹⁸. The NPC has over the years made recommendations for declaring identified technologies as controlled goods. The latest declarations are contained in a Ministerial Notice entitled **Declaration of Certain Missile Technology and Related Items as Controlled Goods and Control Measures Applicable to Such**.¹⁹ The 2010 Notice follows similar Notices issued in 2002 and 2007 respectively making similar declarations based on the Guidelines and Technical Annex of the Missile Technology Control Regime (MTCR), as may be amended from time to time. The MTCR aims to control exports of missiles and other unmanned systems capable of delivering weapons of mass destruction. The latter includes

¹⁶ Section 13(2)(a).

¹⁷ Section 26.

¹⁸ Section 27 provides for the incorporation of international treaties, Conventions and international agreements into the domestic law by proclamation. On the date of the issuance of such proclamation, the provisions of such an international convention, agreement shall have the force of law and apply in the Republic.

¹⁹ Government Gazette 328977, 3rd February 2010.

ballistic missiles, *which are essentially the same technologies as those used in any space launch programme*. The 2010 Notice declares, *inter alia*, that, pursuant to Section 13 of the NPC Act, the goods listed in the Missile Technology Control Regime Equipment and Technology Annex dated 5 November 2008 are declared controlled goods, services with regard to certain goods are controlled goods and components parts are controlled goods.

Category I goods include **complete rocket systems** capable of delivering at least 500KG payload to a range of at least 300KM (ballistic missile systems, space launch vehicle and sounding rockets). Rocket systems with a longer range are listed as Category III goods. **Production facilities** specially designed or modified for “use” in complete rocket systems as well as complete subsystems, individual rocket stages, re-entry vehicles and solid propellant rocket motors are also included in the Category 1 list of controlled goods.

Category II goods include launch support apparatus and devices, vehicles designed or modified for the transport, handling, control, activation and launching of complete rocket systems. Other goods in this category include vibration test equipment, wind tunnels and environmental chambers.

The NPC, as well as relevant line-function departments, attend themeetings of these regimes and promulgate national legal requirements for the control of sensitive material, equipment and technologies based on these guidelines. Hence, the Ministerial Notices basically reflect the agreements reached on the control of sensitive technologies in the MCTR (and other control regimes) when declaring items as controlled goods. In addition, direct use nuclear items are controlled under the Nuclear Energy Act, which falls under the responsibility of the Department of Energy. In the latter regard, a consultative process has been developed, whereby applications for the transfer of direct use nuclear items is submitted to the NPC for consideration and recommendation to the Minister of Energy, who finally approves transfer permits in accordance with the Nuclear Energy Act and relevant regulations.

III. Overlap between Non-Proliferation, Conventional Arms and Nuclear Controls

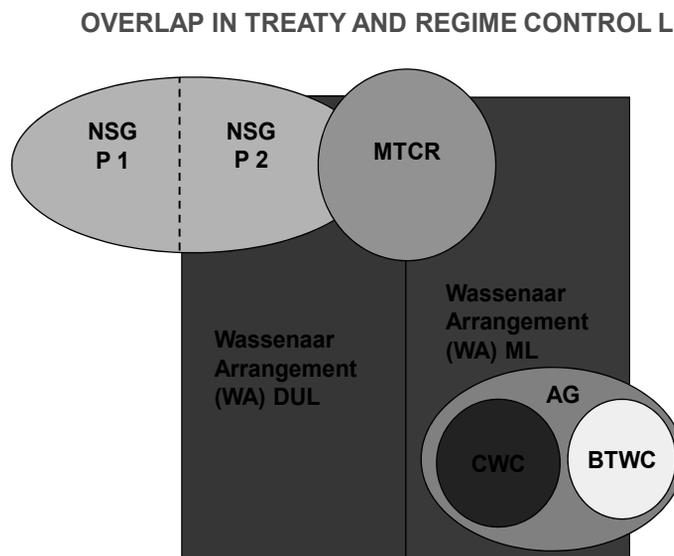
The MTCR and the NSG are geared towards curbing the proliferation of weapons of mass destruction and their delivery systems. The Wassenaar Arrangement, on the other hand, is a control regime on conventional arms related goods. In some cases there is an overlap between the items controlled under the conventional arms control system and those under the non-proliferation regulatory regime.

III.I Conventional Arms Control

The Wassenaar Arrangement Military Dual-Use goods ((WA)DUL) and the Wassenaar Arrangement Military goods ((WA)ML) were incorporated into

domestic law as proclaimed in Government Notice No. 321.²⁰ Several overlaps with control lists of other Treaties and agreements are illustrated in Figure 1. Export decisions are based on criteria such as, *inter alia*, political, regional stability, and human rights consideration. The import and export requirements for (WA)DUL goods are tailored according sensitivity.²¹

FIG. I Control Lists



The National Conventional Arms Control Committee is responsible for conventional arms control in South Africa under the National Conventional Arms Control Act, 2008²² and control list²³. The South African Council for the Non-Proliferation of Weapons of Mass Destruction controls WMD and their delivery systems related goods under the Non-Proliferation of Weapons of Mass Destruction Act, 1993 (Act No. 87 of 1993) its notices and regulations. *The criteria for export are based on WMD proliferation risk or possible diversion to such activities.*²⁴

²⁰ www.gov.za/doc/dt.

²¹ Danie van Beek, NPC documents, dti, 2013, on file with author.

²² Act No. 73 of 2008 and its Regulation

²³ Regulation R326 of 20 April 2012 and Notice No. 321 of 20 April 2008.

²⁴ *Ibid.* Government Regulation R 17 and Government Notice 18 of 3 February 2010 implement the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (CWC). The

IV. Review of Current Regulatory Model

An analysis of the legal framework dealing with dual-purpose technology illustrates the need for improved regulatory coordination within the dti. The dti is presently engaged in a review of the current Act. It has already been established that the current legislative and regulatory model is not sufficient to address contemporary challenges and new developments in the space arena. The need and rationale for having two regulatory bodies having similar mandate in respect to a single issue must be examined to determine whether such a system is the most efficient and effective use of administrative resources. There are compelling arguments to exclude the regulation of dual-purpose technologies in the outer space affairs legislative mandate. Paradoxically, the space regulatory function over dual-purpose technologies cannot be simply ignored: space technologies are inherently dual use technologies.

Yet, an exclusion must not result in the space regulatory framework shirking its responsibilities to ensure that the objectives of the Act are complied with, especially the need to ensure that all licensed space activities are in compliance with the stated peaceful use of outer space principles and the requirements of international space treaties and agreements.

In order for SACSA to play any meaningful role and successfully execute its mandate, it seems logical that it needs to develop the necessary expertise so as to safeguard the right of South Africa to participate in space activities and to effectively promote such activities within the confines of the international and national regulatory framework. SACSA has an important technical contribution to make in relation to regulation of dual purpose technologies and in assisting the NPC in fulfilling its mandate.

Notice include the three CWC chemical schedules as well as the riot control agents agreed to in the Convention and an additional riot control chemical that was subsequently identified. Government Notice 19 of 3 February 2010 implements the spirit of the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (BTWC). As no agreement could be reached on a control list in the convention, it is general practice among non AG members to make use of the AG biological agent list and adapt it for each country's conditions. Climatic differences make each country to have unique requirements and needs. The Australia Group (AG) implements the CWC schedule of chemical as well as a short list of chemicals and equipment that were not agreed to in the preparation of the CWC. These chemicals are included in Government Notice 18 of 3 February 2010. As South Africa is not a member of the Australia Group the AG control list is adapted for South African needs. The additional chemicals are only controlled for exports and no equipment is included in South African control lists. The AG is also the only multilateral regime that reached an agreement on a list of biological agents.

IV. I Duplication of Regulatory Functions

The regulation of dual use technology resides in a Ministry that has oversight over both NPC and SACSA. The legal requirement for cooperative governance is not only implied in the location of the two bodies, but is legislated in the two Statutes that govern the functioning of both regulatory institutions.

Presently, the scope of the various control regimes reveals overlaps between the controlled items. This has resulted in dual-representation by the various experts at the different control bodies such as NCACC and the NPC. The NCACC base its decision on for export decisions on criteria such as political considerations, regional stability, human rights while the NPC consider the possible contribution to WMD or its delivery system or any possible diversion to such program when considering a request for a permit. The different evaluation criteria justifies dual regulatory model.

IV. II Compliance with International Obligations

The objectives of SACSA and NPC are delineated between the “use of outer space” and the “WMD-related non-proliferation” regimes and treaties. This delineation should be the guiding principle on the treatment of dual-purpose technologies in the outer space affairs legislation. It is imperative to ensure a coherent policy and coordinated approach to improve South Africa’s contribution internationally.

The necessity to ensure compliance with international standards and requirements on dual use technologies should not impose undue burden on SACSA to participate in and have technical capacity to grapple with the workings at the MCTR, the Wassenaar Arrangement and associated international fora. Officials serving on the various NPC committees don’t participate in the meetings of the MTCR, Wassenaar, etc., however, they contribute to the formulation of South Africa’s positions and provide expert advice on controlled items.

IV. III Impact on Commercial Space Programs

SACSA’s function in relation to dual use technology is a derivative of the general function to license space activities. A comparative analysis of national space legislations reveals that there is no other administration that has the regulation of dual use technology as part of its function in space regulatory regime. For example, the US treats dual purpose technologies in its ITAR regulatory system, while its space legislation is confined to regulating space activities as such.

Additional control requirements have a negative impact on the development of commercial space programs and impede free trade in space goods and services. This is illustrated by impediments imposed by the US ITAR system. South Africa should be wary and avoid imposing additional regulatory burdens on its nascent space industry. Many end use exclusions in the present

control lists such as the MTCR and NSG are designed to avoid unnecessary burden on commercial space programs

IV.IV Technology Retention

There are various pieces of legislation that seek to improve the competitiveness of South Africa research and development initiatives, including protection of intellectual property rights. The stakeholders in the space industry have expressed a need for a streamlined space legislation that has cross reference to other related legislation, as opposed to incorporating every issue in one space act.

V. Conclusion

The concerns raised in SACSA regarding the retention of dual use technology in the anticipated new space legislation is premised on the need for the international community to regard South Africa as a responsible and trustworthy user of outer space. While that is a noble policy thrust, the practical reality of ensuring an effective regulatory system militates against duplicative efforts when dealing with dual use technology. The dti has presently embarked on process to review both Acts in light of contemporary challenges facing the space industry and the experiential imperatives after almost two decades of administering the Acts.

The central issue is whether it is necessary, cost-effective and efficient to retain the dual regulation of dual use technologies in these Acts which are administered and overseen by two Councils residing in the same Ministry. In other words, is it necessary to retain the need to regulate dual use technology in the Act?

The review process must provide a legal justification for retaining the duality and /or recommend a streamlined regulatory framework that facilitates the achievement of the objectives for re-evaluating the Acts, *viz*, to spur the growth of the space industry with less cumbersome administrative processes. Presently, it may be prudent to ensure official representation of SACSA on the NPC. Such an arrangement will not only cut costs, but will ensure a more streamlined cooperative regulatory framework for effective control of dual use technology. Based on the cross reference model, the new outer space legislation could include the regulation of dual-use technologies with cross reference to the NPC Act. The manner of such coordination between the two bodies should be discussed and agreed by the two bodies and specified as such in the new space legislation.

The present analysis illustrates that while it is really strictly necessary to include dual-purpose technology in a space legislation, the very nature of space technologies imposes an examination of the use of the proposed technology when an application for a license to engage in space activities is presented before SACSA. The issue becomes the extent of the enquiry that

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SACSA must engage in examining the proposed space technology to be used in the licensed activity.

The relevant policy makers must be engaged to streamline the regulatory implications for inclusion of dual-purpose technologies in the new outer space affairs act. A recommendation to retain or exclude must be submitted for Ministerial consideration since a decision to exclude fall within the purview of Section 2(3) where the Minister must, notice “substitute, withdraw or amend” the policy or the legislative provisions in accordance with constitutional imperatives.