

GSOA response to Consultation on the proposed New Licensing Framework for Satellite Services (“Inquiry”)

GSOA, and its members, would like to thank the Independent Communications Authority of South Africa (ICASA) for the opportunity to comment on the proposed licensing framework for Satellite Services in South Africa. GSOA welcomes ICASA's initiative to develop a transparent and streamlined regulatory and licensing satellite framework on the use of gateways, end user terminals and international satellite operators. Having this opportunity, GSOA would like to comment on the published *Communications Authority of South Africa Act, 2000 (Act No. 13 of 2000) (“the Inquiry”): Consultation on the proposed New Licensing Framework for Satellite Services (“Inquiry”)* available from: [51044gen2678.pdf](#)

In addition, GSOA requires an opportunity to make oral representations to ICASA to supplement our written submission.

General:

The Consultation Paper states that the 2020 edition of the ITU Radio Regulations will be used. The 2024 edition of the Radio Regulations has been available since August 2024. Consequently, GSOA proposes that ICASA use the 2024 edition of the ITU Radio Regulation in the Inquiry.

Definitions	GSOA Comments & Suggestions
<p>The Consultation Paper defines “Space Segment” as: “Space Segment” – means the ground facilities providing the tracking, telemetry, and telecommand (TTC) functions and logistics support for the satellites.”</p>	<p>The ITU Handbook on Satellite Communication defines Space Segment as: “The space segment of a communication-satellite system consists of the satellites and the ground facilities providing the tracking, telemetry and telecommand (TTC) functions and logistics support for the satellites”. Other definitions are: The satellites and the satellite uplink and downlink.</p> <p>GSOA proposes that ICASA correct the definition of space segment.</p>
Inquiry questions	GSOA Comments & Suggestions
<p><u>Question 1</u> These are the policy principles from the ATU that ICASA seeks to align with. Kindly provide comment(s) on the proposed policy principles and any further recommendations listed in the above section?</p>	<p>GSOA welcomes all the initiatives listed in Section 4 (a-g) and believes that having a clear and transparent framework is key for successful use of satellite technology and provision of services in South Africa.</p> <p>A new framework must ensure regulatory certainty, be transparent and support durable ICT investments into South African network and services.</p>



	<p>Satellite providers should be able to license gateways (GW) and deploy user terminals across South Africa under a blanket license regime, without the need to coordinate each individual terminal; and regulatory fees should be adjusted to make satellite services competitive for the greater benefit of citizens.</p> <p>In addition to the above policy principles, GSOA recommends:</p> <ul style="list-style-type: none"> a) Simplifying ICASA equipment type approval process, which often takes significant amount of time, in some case going beyond 15 working days as provided in the Type Approval Guidelines¹. b) Issuing Individual Electronic Communications Service and Network licenses (IECS/IECN) licenses more openly, or abolishing the licensing requirements all together, replacing licensing with a notification process under a general authorization. As an example, the abolishment of licensing requirements in the EU has significantly fostered competition and boosted telecommunications services, increased transparency, as well as improved legal and regulatory certainty. Many countries in Europe and outside have successfully followed this approach. c) Removing 30% local ownership requirement to apply or hold IECS/IECN license. This requirement significantly restricts ability of satellite service providers to offer satellite services to end customers in South Africa. We suggest removing this requirement at least for satellite service providers. Satellite services have much higher international touch where satellite providers can offer services globally with very limited local infrastructure and presence, as opposed to terrestrial providers.
<p><u>Question 2</u> Do you agree with the exclusions of radio navigation satellite</p>	<p>GSOA noted the Section 5 “Scope of the Inquiry with respect to Radio frequency bands and services” deals with radio frequency bands used</p>

¹Section 2.2. of the Electronic Communications Act (36/2005): Guidelines relating Type Approval Framework



<p>services, amateur satellite services, earth exploration, space research satellite services and radio astronomy services indicated above and others if applicable? If not, please explain your reasoning and propose an alternative to this proposal.</p>	<p>by the services in consideration under this Framework Inquiry.</p> <p>C-Band (3400-4200 MHz, 4500-4800 MHz, 5091-5250 MHz, 5850-7075 MHz and 7250-8400 MHz) have been omitted. Critical satellite services are provided in these frequency bands, so they must be included in the scope of the Inquiry.</p> <p>GSOA agrees that the radio navigation satellite services, amateur satellite services, earth exploration, space research satellite services and radio astronomy services can be excluded from this framework.</p> <p>GSOA welcomes the allocation of frequencies for satellite exclusive use in South Africa, as this will significantly enable deployment of user terminals across the country without the need to coordinate the use of frequencies with terrestrial service providers.</p> <p>GSOA has also the following observations on the Table of Section 5, under GSO and NGSO FSS:</p> <ul style="list-style-type: none"> a) Ku band Rx frequencies should be expanded to 10.7 – 12.75 GHz, and Tx frequencies should be expanded to 13.75-14.5 GHz. These frequency ranges – according to the ITU and ICASA Frequency Allocation Table designations – are allocated to satellite operations on a co-primary basis. b) Adding C band frequencies to the table: Rx: 3.4-4.2 GHz and Tx: 5.85 - 6.725, even if C band frequencies must be coordinated with terrestrial services, we suggest adding those to the table as C band is actively used by the satellite industry. c) Adding Q/V band frequencies to the table: Rx: 37.5-42.5 GHz and Tx: 42.5-43.5/47.2-50.2/50.4-52.4 GHz. <p>With respect to MSS 2 GHz in the Table of Section 5, GSOA notes that ICASA lists 2000-2020 MHz paired with 2180-2200 MHz. This is a MSS band plan used in Region 2 but not in Region 1. GSOA recommends that ICASA follows the ITU Region 1 band plan for MSS in the 2 GHz band which is 1980-2010 MHz (Earth-</p>
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	<p>to-Space) and 2170-2200 MHz (space-to-Earth) as outlined in South Africa's National Radio Frequency Plan 2021. This band is also specified as band n256 in 3GPP Release 17 for non-terrestrial networks (NTN).</p>
<p><u>Question 3</u> Do you agree with the proposed approach of having a separate licence/authorisation (where applicable) for each segment of the Satellite Communication value chain? Please elaborate.</p>	<p>GSOA welcomes a distinction between:</p> <ul style="list-style-type: none"> a) Gateway earth station licensing, where Gateway (GW) designates a large antenna station using high power and would need a licensing process to coordinate spectrum with terrestrial services. b) User terminal licensing, which should be treated separately from GW licensing; and if in satellite exclusive frequency bands, it should be subject to blanket licensing. c) Space segment registration should be separate from the above and only require a simple registration regime with ICASA. <p>It should be noted that some user terminals may not be eligible for blanket licensing. We recommend ICASA to differentiate between GW, user terminal subject to blanket licensing and user terminal subject to individual licensing when coordination with terrestrial services is likely to be needed (e.g. in C-band).</p> <p>Finally, GSOA recommends ICASA to impose a strict timeframe when a license can be issued. We suggest 2 weeks for ICASA to assess whether all the necessary information has been provided and if yes, issue a license within 6 weeks from the day a license application has been fully submitted to ICASA. If international coordination is required, then the licensing process could extend for up to 4 months. This timeframe should apply for both GW and user (blanket) terminal licenses.</p> <p>For the space segment registration, GSOA recommends adding the registered satellites into a "List of Authorized Space Stations" within a week after applicant has provided all information as required in Annex A.</p>



	<p>Having a clear timeframe within which licenses can be issued significantly improves regulatory certainty.</p>
<p><u>Question 4</u> Please provide your comments on the proposals in the preceding paragraph and the duration of the Gateway Earth Station licences.</p>	<p>On Gateway Earth Station (GW), GSOA agrees with ICASA that:</p> <ul style="list-style-type: none"> a) GW license should not confer any right of ownership of the frequency spectrum. b) GW licensees should be treated under the Private Electronic Communication Network (PECN) license regime unless a GW licensee also provides connectivity to end users. The difference should be made between operators of GWs and providers who offer satellite services to end users relying on licensed GWs. If a GW licensee doesn't have contractual relations with end-users, it should indeed be treated under the PECN regime, even if the GW that it operates is used by another provider to provide end-user services. c) GW license can be issued for 5 years. <p>However, we recommend:</p> <ul style="list-style-type: none"> a) Provide more information on what the Private Electronic Communication Network (PECN) licence regime is. b) Have licenses renewed for unlimited number of times. Building and installing GW equipment is expensive, it takes years of planning and if installed, GWs serve satellites with predefined frequencies. If investors are not sure they can continue using the authorized frequencies, this will unlikely make them choose South Africa as a country for GW deployment. Making sure licenses are renewed for the continued use of GWs will make South Africa the right place for international investment and deployment of satellite solutions.
<p><u>Question 5</u> Please comment on the above-mentioned alternative proposals to levy the spectrum fees for Gateway Earth Stations and indicate your preferred option. The Authority understands that there</p>	<p>Section 8 - National and International Co-ordination. "it may be necessary for the Authority to undertake a frequency coordination process with applicable jurisdictions. Co-ordination as a minimum, is expected to take four (4) months." ICASA is requested to clarify the criteria on which</p>



<p>are other spectrum fee calculation methodologies used elsewhere in the world. Please give details of the methodologies which you believe would be most suitable for South Africa.</p>	<p>this timeline is based. GSOA submits that this timeline is too long and should be shortened.</p> <p>Section 8.1 - Radio Frequency Spectrum Licence Fees for Gateway Earth Station. ICASA is kindly requested to provide clarification on the “Value of security factor”. Who will determine this factor? When will this be determined? Under what circumstances will which factor be applied?</p> <p>GSOA also seeks more explanation from ICASA as to how the amount in Rands per MHz for spectrum fees was determined.</p> <p>GSOA agrees that when differentiating between “traditional” Gateway Earth Stations (GWs) and GWs for high-throughput satellite systems (HTS). HTS GWs should be subject to regulatory fees that are less, due to the very high bandwidth utilized by those GWs.</p> <p>Based on international best practices, higher frequency ranges should also be subject to less regulatory fees. GSOA thus welcomes that higher frequencies are subject to lower fees.</p> <p>Overall, GSOA finds the levy for GW licensing reasonable. GSOA suggests making sure that the referenced table applies per year for the use of spectrum at GW facilities, irrespective of the number of earth station antennas installed at facilities. Also, we ask to confirm that any license fee for processing applications, issuing licenses, or renewing licenses is kept to a cost-basis minimum.</p>
<p><u>Question 6</u> Kindly comment on the section above and on the proposal for blanket licensing with a fee for a set number of terminals under a new proposed licence regime to be referred to as “Satellite User Station Network Licence”. If possible, please provide a breakdown of the number of terminals with the corresponding spectrum fee values in South African Rands.</p>	<p><u>Blanket licensing for user terminals</u></p> <p>GSOA welcomes ICASA's approach to implement blanket licensing and technology neutral approach to user terminals. This will significantly reduce regulatory burden to satellite service providers and simplify access to spectrum.</p> <p>We recommend ICASA to publish a list of criteria when user terminals can be subject to a blanket license, such as frequency ranges or max EIRP. Most European countries in the CEPT have clearly defined criteria that allow the use of user terminals, either under a blanket license, or under a general authorization. We suggest</p>



	<p>ICASA to follow decisions of the European Communications Committee (ECC) that extend to both GSO and NGSO constellations in the Ku and Ka bands exempting user terminals for fixed and ESIM applications from licensing:</p> <ol style="list-style-type: none"> 1. Fixed GSO terminals in 10.70-12.75 GHz or 19.70-20.20 GHz space-to-Earth and 14.00-14.25 GHz or 29.50-30.00 GHz Earth-to-space.² 2. VSAT GSO terminals in 14.25-14.50 GHz and 10.70-11.70 GHz³ 3. Fixed NGSO terminals in 10.70-12.75 GHz and 14.00-14.50 GHz⁴ 4. ESIM NGSO terminals in 10.7-12.75 GHz and 14.0-14.5 GHz⁵ 5. Land based GSO ESIMs in 10.7-12.75 GHz and 14.0-14.5 GHz⁶ 6. AES GSO in 14-14.5 GHz, 10.7-11.7 GHz, and 12.5-12.75 GHz⁷ 7. AES GSO and NGSO systems in 12.75-13.25 GHz and 10.7-12.75 GHz⁸ 8. ESOMPs GSO in 17.3-20.2 GHz and 27.5-30.0 GHz⁹ 9. Land, Maritime and AES ESOMPs NGSO in 17.3-20.2 GHz, 27.5-29.1 GHz, and 29.5-30.0 GHz¹⁰ 10. ESVs GSO in 14-14.5 GHz, 10.7-11.7 GHz, and 12.5-12.75 GHz¹¹
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² ECC/DEC/(06)03 <https://docdb.cept.org/document/396>

³ ECC/DEC/(03)04 <https://docdb.cept.org/document/371>

⁴ ECC/DEC/(17)04 <https://docdb.cept.org/document/987>

⁵ ECC/DEC/(18)05 <https://docdb.cept.org/document/3609>

⁶ ECC/DEC/(18)04 <https://docdb.cept.org/document/3362>

⁷ ECC/DEC/(05)11 <https://docdb.cept.org/document/392>

⁸ ECC/DEC/(19)04 <https://docdb.cept.org/document/13856>

⁹ ECC/DEC/(13)01 <https://docdb.cept.org/document/439>

¹⁰ ECC/DEC/(15)04 <https://docdb.cept.org/document/447>

¹¹ ECC/DEC/(05)10 <https://docdb.cept.org/document/391>



	<p>11. GSO ESVs in 5925-6425 MHz and 3700-4200 MHz¹²</p> <p>GSOA particularly welcomes ICASA's approach to exempt ESIMs installed on foreign aircraft from licensing. This approach correlates with best international practices. We also suggest exempting ESIMs from licensing when installed on foreign registered vessels, as referred to in the above ECC decisions: this is a common practice in most European countries.</p> <p><u>Regulatory fees</u></p> <p>There are two main ways for regulators to charge regulatory fees:</p> <ol style="list-style-type: none"> 1. Based on spectrum 2. Based on the number of terminals deployed <p>1. Fees based on spectrum</p> <p>International best practice suggests that the first is the most preferable among regulators. Like the approach taken by ICASA for the licensing of GWs, most regulators charge based on spectrum.</p> <p>Countries that allow blanket licensing of user terminals have small spectrum fee per MHz, differentiating between frequency ranges, where higher the frequency range is, lower the regulatory fee per MHz is.</p> <p>Below are two examples for reference:</p> <p>Canada applies regulatory fee for spectrum based on frequency range and MHz for mobile blanket earth stations¹³:</p> <ul style="list-style-type: none"> • If frequency is below or equal to 3.0 GHz: CAD \$1,500/MHz applies per year • If above 3.0 GHz: CAD \$5/MHz per year applies <p>Canadian licensing allows combining fixed and ESIM terminals using both GSO and NGSO</p>
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¹² ECC/DEC/(05)09 <https://docdb.cept.org/document/390>

¹³ Notice No. SMSE-002-23 — Fee Order for Earth Stations: <https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/notice-no-smse-002-23-fee-order-earth-stations>



	<p>constellations under one license. This allows operators to get different terminals licensed together under one instrument.</p> <p>Australia differentiates between frequency ranges and geographic area.¹⁴ Spectrum fees are decreased depending on frequency range and location. Remote areas are subject to very low regulatory fees.</p> <p>2. Fees based on the number of terminals</p> <p>This approach is taken for example by Italy, with the following annual fees per number of terminals¹⁵:</p> <ul style="list-style-type: none"> • up to 10 stations: 2,220 EUR; • up to 100 stations: 5,550 EUR; • over 100 stations: 11,100 EUR. <p>This calculation can be beneficial to operators who want to access the market with only few terminals.</p> <p>However, charging per the number of terminals can be challenging for IoT satellite providers who would usually deploy thousands of terminals with very low bandwidth, having to pay high fees for the high number of terminals.</p> <p>As a conclusion, GSOA suggests ICASA to charge fees per spectrum. Applying different fees depending on frequency ranges, decreasing the amount of fees based on frequency ranges.</p> <p>Canada serves as a good example on how spectrum fees can be charged:</p> <ul style="list-style-type: none"> - Based on frequency range, higher is the frequency, lower is the rate. - Fees are applied per MHz irrespective of the type of terminal – whether fixed or ESIM – and type of constellation (GSO or NGSO) used.
<p><u>Question 7</u> Kindly comment on the appropriateness of using regulation 37 of the ICASA radio</p>	<p>GSOA welcomes ICASA's approach to exempt foreign ESIMs from licensing, and we suggest exempting not only foreign ESIMs on aircraft but also on vessels from licensing.</p>

¹⁴ Table 23 of the Apparatus licence fee schedule <https://www.acma.gov.au/sites/default/files/2024-10/Apparatus%20licence%20fee%20schedule%20%28October%202024%29.pdf>

¹⁵ Annex 12 Art 1 of LEGISLATIVE DECREE 1 August 2003, no. 259 <https://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2003-08-01;259>



<p>regulations (“Recognition of licences issued by other countries”) to recognize ESIM licences issued by other countries.</p>	<p>If ESIM terminal is licensed in a country of aircraft or vessel registration, separate license should not be required, and no regulatory fee should apply, as seeking licenses in every jurisdiction would impose drastic market access barriers and significantly restrict the use of ESIMs.</p> <p>Service provider should inform ICASA of its intention to use ESIMs either on aircraft or vessels and in which frequencies. If frequencies are assigned to satellite services, and no threat of frequency interference exists, ICASA should issue a non-objection letter. No license should be required.</p> <p>This approach is followed by a majority of countries globally including many countries in Africa.</p>
<p>Question 8 Please provide your comments and details of the best practices in other jurisdictions to fulfill the intentions of the Authority as indicated in the above section. Furthermore, considering the provision set out in the Astronomy Geographic Advantage (AGA) Act of 2007, and the requirements of the Radio Quiet Zone, what measures and techniques do you propose to be employed in mitigating the possible interference that may be caused by the satellites within the Astronomy radio frequency bands in South Africa?</p>	<p>GSOA believes that an “Open Skies” regime, where satellite operators are permitted to make satellite capacity available without seeking landing rights, provides the ideal conditions for an open and non-discriminatory access to the market, offering maximized opportunities for growth of the satellite sector in South Africa.</p> <p>GSOA agrees with ICASA’s comment that “Open Skies” policy is adopted by most countries of the world to permit open and direct access to satellite resources, subject to coordination through the ITU. The policy allows free competition and as a result better satellite services to customers at lower price.</p> <p>GSOA welcomes ICASA’s initiative not to impose burdensome landing rights requirements, instead only requiring registration of space stations into a “List of Authorized Space Stations”. In Annex A, ICASA provides a set of information about applicant and satellite network that must be submitted for the registration. GSOA believes that once applicant has provided all information as required in Annex A satellite registration should be done. Still, GSOA would appreciate lighter requirements in Annex A concerning the coordination requirement. To better accommodate new space companies, referring to</p>



an initiated coordination process could be considered a sufficient requirement.

Registering into the “List of Authorized Space Stations” should not be subject to regulatory fees, whether onetime or recurring. If while processing application, ICASA incurs any expenses, those can be sustained by applicants, but those expenses must be limited to administrative costs due to processing applications.

GSOA welcomes ICASA's approach that establishing a gateway earth station in South Africa should not be mandatory to sell capacity or to provide services. However, we do not believe that satellite operator who sells satellite capacity to local licensed providers be required to detail what measures will be put in place to ensure compliance with the Regulation of Interception of Communications and Provision of Communication-related Information Act, 2002 (“RICA”). We certainly respect the national security obligations, and we understand ICASA's desire to ensure lawful interception is permitted; but we consider the requirement to intercept data should be placed solely on entities who provide end to end connectivity to end customers in South Africa. If a satellite operator wishes to provide end to end connectivity to customers in South Africa and apply for the necessary telecommunications and spectrum licenses, only then it should be subject to the RICA requirements. Therefore, this should not be requested in the process of registration to be added into the “List of Authorized Space Stations”.

Also, in the Inquiry, ICASA refers to Brazilian experience in imposing landing rights. GSOA wants to comment and argue that Brazil is not the best approach to follow.

In Brazil, satellite landing rights not only authorize the sale of satellite capacity but also allow the use of spectrum for satellite communications on the ground by authorized telecom operators. When evaluating an application for landing rights, Anatel studies potential spectrum interference issues and request coordination whenever necessary. Once



	<p>landing rights are granted, it includes the spectrum that can be used by satellite operators, so no separate spectrum licenses are required. Satellite terminals are only subject to station licensing that requires operators to register terminal at ANATEL for the authority to ensure technical parameters used are authorized by satellite landing rights. In other words, satellite landing rights and spectrum licensing are combined in the landing rights process.</p> <p>As opposed to Brazil, ICASA has a licensing process for spectrum authorization that is very different and separate from landing rights. Therefore, Anatel's approach cannot serve as an example when implementing landing rights. GSOA suggests looking into other examples of countries that have recently implemented landing rights.</p> <p>Nigeria has implemented landing rights in 2018. The regulatory framework requires satellite operators to register their satellites. There is no regulatory fee and no requirement to have a local office or any presence in the country. Satellite operators only need to submit a form about their satellite to be registered with the Nigerian Communications Commission.</p> <p>Finally, regarding the protection of the Radio Quiet Zone in South Africa, GSOA's understanding is that there are national provisions already in place for the protection of the SKAO telescopes that are centred at the coordinates 30° 42' 43.2" S by 21° 26' 34.8" E with a protection area with a radius of 100 km. GSOA is happy to exchange on any other potential national mitigation techniques to be applied to protect this Radio Quiet Zone in the specific bands potentially sensitive to out of band emission from satellites.</p>
<p>Question 9 Please provide proposals on the role the Satellite operators can play in ensuring that broadband connectivity reaches the areas of the country in terms of community networks with Satellite connectivity as a backhaul. Kindly provide a regulatory solution that can be applied by</p>	<p>Satellites connect remote areas unreachable by terrestrial services. This makes satellite services a perfect solution for reaching out to remote areas in a vast country as South Africa.</p> <p>Satellite services can be provided as follows:</p> <ul style="list-style-type: none"> a) Broadband satellite connectivity where internet access (end-to-end) services are offered directly to end customers.



<p>Satellite operators to address the shortcomings of terrestrial networks in providing to unserved and underserved areas of the country. This may include collaboration with government programs to reach out to those unserved and underserved areas of the country.</p>	<ul style="list-style-type: none"> b) Satellite cells backhaul services where satellites are used to connect MNOs' terrestrial networks with remote areas. In this scenario, satellite terminals are deployed next to MNO antenna mast in a remote area connecting it through a satellite with MNO's network. This is a very cost-effective way to address the shortcomings of terrestrial networks in connecting remote areas of the country. We strongly suggest ICASA to work with MNOs to expand connectivity to remote areas using satellite technology. c) Satellite IoT services. Satellites connectivity provided to construction or agricultural enterprises, providing low band connectivity to remote areas. d) Satellite operators can deploy multi-purpose satellite terminals that provide not just broadband but also essential services like emergency communications, and public Wi-Fi access. These hubs can also support telemedicine, e-learning, and digital literacy programs, ensuring a broad spectrum of services for rural areas.
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GSOA is the global non-profit association of the entire satellite ecosystem that brings members together and serves as the premier platform for worldwide collaboration. As the world's only CEO-driven satellite association, GSOA takes the lead in addressing global challenges, seizing opportunities, and providing a unified voice for the satellite industry. GSOA is widely recognized as the representative body for satellite operators by international, regional, and national entities, including regulators, policymakers, standard-setting organizations like 3GPP, and international organizations such as the International Telecommunications Union (ITU) and the World Economic Forum (WEF).

