



cablebahamas

technology ● unleashed

aliv

**JOINT GROUP RESPONSE TO PUBLIC
CONSULTATION ECS 75/2024: REGULATORY
FRAMEWORK FOR SATELLITE BASED
ELECTRONIC COMMUNICATIONS SERVICES IN
THE BAHAMAS**

Submitted to

The Utilities Regulation & Competition Authority

Due Date: January 17, 2025

Extension date: January 24, 2025

TABLE OF CONTENTS

- 1) INTRODUCTION
- 2) GENERAL COMMENTS OF THE CONSULTATION DOCUMENT
 - (i) **Scope of the consultation document**
 - (ii) **The Government’s ECS Policy (2024-2027)**
 - (iii) **Regulatory framework for LEO satellite services in The Bahamas**
 - (iv) **The Government’s priority policy objectives on Expansion of Emerging Technologies Throughout The Bahamas and on Disaster and Emergency Management**
- 3) IMPACT ON THE BUSINESS OF CBL
- 4) SOCIO-ECONOMIC IMPLICATIONS OF PORTABLE USER TERMINALS IN THE PROVISION OF FIXED BROADBAND SERVICES VIA NGSO SATELLITES
- 5) ANSWERS TO QUESTIONS POSED BY URCA IN THE CONSULTATION DOCUMENT
- 6) CONCLUSION and RESERVATION of RIGHTS

Attachments:

[Annex 1](#) – Kenya's telecom regulator to hike satellite ISP licensing fees by over 800% - January 8, 2025

[Annex 2](#) - Benchmarking Report _ Mauritius

[Annex 3](#) – Detailed Analysis of the Spectrum Fees for Satellite Fixed Broadband provided on LEO Satellite Constellations and its Potential impact on CBL Fixed Broadband Pricing

1. INTRODUCTION

Cable Bahamas Ltd. (CBL) and Be Aliv Limited (Aliv), together the CBL Group, embrace the opportunity afforded by the Utilities Regulation & Competition Authority Act, 2009, as amended (The URCA Act) and the Communications Act, 2009 as amended (Comms Act), facilitated by the Utilities Regulation & Competition Authority (URCA) to provide a response on ECS 75/2024: “Regulatory Framework for Satellite-based electronic communications services in The Bahamas” issued by URCA on the 9th December 2024.

Whilst the CBL Group has been eager to finally put forth its input on what it deems to be the premature licensing of LEO retail satellite services as an emerging technology, the Group bemoans the fact that the “horse has fled the stable” and that URCA is after the fact attempting to establish a regulatory framework after licensing Starlink in February 2023 for retail broadband services throughout the Bahamian archipelago (and not limited to underserved areas) with a series of missteps which saw said licensing shrouded in mystery and a lack of transparency. And moreover, the language of URCA’s Public Consultation (PC) document implies that URCA is holding this PC because it wishes to licence more LEO satellite service operators who have been agitating for licences, as soon as possible.

The CBL Group submits that URCA has a fundamental duty to ensure a fair and competitive market environment that provides a safeguard to local operators, particularly in the face of increasing competition from satellite-based electronic communication services. While satellites offer valuable solutions for global connectivity, they can also pose challenges to local operators who are bound by national regulations, service obligations (including universal service obligations) and infrastructure investments. The regulator must balance the promotion of technological innovation and broader service availability with the need to safeguard the interest of local providers ensuring that they are not unfairly disadvantaged by the potential disruptive impact of satellite services that do not face the same regulatory or cost burdens. This balance is crucial for meeting the objectives of the Comms Act, maintaining a level playing field, encouraging investment in local infrastructure and promoting long term sustainability within the domestic telecom sector. As a further example of the considerable complexities involved in preparing a regulatory framework for and licensing of LEO satellites for retail services, particularly as the technology has evolved far more rapidly than could ever be foreseen and as a result there are no templates or precedents to provide guidance, an article on : “Kenya’s Telecom Regulator to hike Satellite Licensing fees by over 800%” is attached as **Annex 1** for the information and assistance of URCA.

As a part of the LEO satellites’ presence in an environmentally friendly environment, URCA must also be mindful and address the very real issue of debris management and accountability from and by LEO satellites including the possibility of harm to the pristine

environment and inhabitants of the Bahamian archipelago both with regard to accidents and the normal degradation of technology over time.

A case in point was the disintegration of Space X on the 16th January 2025 over areas of the archipelago including the Exumas and Long Island. This is a responsibility which should be initiated by URCA with regard to licensing this technology, not only to the sector but to the Bahamian people. The issue is not unique to The Bahamas and many countries deploying satellite technology are acknowledging the need to provide for this issue in policy, legislation and licensing models.

Furthermore, URCA issued this critically important PC on December 9th with a return date of January 17th, a period which brackets the traditional Christmas season holidays and vacations with a suggestion that the PC must be done on an urgent basis. The CBL Group urges URCA to pause and to give due consideration as required under the Comms Act to the submissions in this Response and others and to not rush through this process without heed to the very evident deficiencies of this PC document.

Given the observations of the CBL Group in the General Comments and to the Answers to the consultation questions as well as the approach taken by the Mauritius regulator to LEOs and Starlink in the Benchmarking paper see **Annex 2** herein (such benchmarking may or may not be material given the presence of Starlink in our midst as a Licensee of URCA, however time constraints in preparing this response only allowed for this level of research) and the comments made heretofore in this Introduction the CBL Group is constrained to call for either a withdrawal of the PC document and a reissue of a more comprehensive PC document , or at the least a second round of this PC pursuant to URCA's response to the points made in the first Responses.

Certainly, The CBL Group does not expect URCA to publish a Statement of Results and a Final Determination based on the flaws and deficiencies contained in its PC document for a regulatory framework to establish satellite based electronic communications services which will govern these services for years to come. In fairness to the entire sector, URCA must acknowledge the significance of this framework and the absolute need to address the concerns raised which may result in a reissuance of this PC and or a second round.

2. GENERAL COMMENTS OF THE CONSULTATION DOCUMENT

(i) Scope of the consultation document

The scope of the consultation document is too narrow and should be widened to fit the importance of the matter. According to Section 5 (c) of the Communications Act, “regulatory and other measures shall be efficient and proportionate to their purpose and

introduced in a manner that is transparent, fair, and non-discriminatory”. The observations made by URCA in the Introduction (second paragraph) of the Consultation Document, fundamentally affect market structure for the electronic communication services in The Bahamas. The issue is not merely about advances in satellite technology, but it is about market disruption engendered by the entry of global players with monopoly of a disruptive technology into small market. It is therefore our considered opinion that the Consultation Document should have included questions about the entire market structure. As URCA rightly observed in section 3 “Regulatory and policy objectives relevant to satellite-based electronic communications services in The Bahamas” the ECS policy of government is to consider issues of commercial viability and promoting sustainable competition. This matter should have been considered in the consultation document not just for the cellular market but across all areas including the fixed voice/data market and cable TV which are impacted by the entry of satellite-based operators into the consumer and B2B segments of the Bahamian ECS market.

(ii) The Government’s ECS Policy (2024-2027)

In accordance with the Communication Act 2009, Section 6 (1), the Minister published a revised sector policy in the gazette on 21st October 2024 and according to 6 (2) of the Act, “The sector policy shall have effect from the date that it is published in accordance with subsection (1)”. Our review of the new policy, in comparison to the policy it replaced, revealed that it is substantially different in clarity of priorities, content, format and depth of handling new policy issues. The CBL Group therefore is of the view that URCA should have used it to inform the Consultation Document instead of relying on the old policy.

The key differences in the two policies:

- i The 2020-2023 policy was developed 5 years ago before the LEO satellite constellations were deployed. The Government ECS policy 2024-2027 calls on URCA to develop a regulatory framework for LEO satellite services in The Bahamas. The framework must give specific regard to the potential this technology can have on the provision of cellular mobile services. This is a major policy directive that was ignored when all satellite services were lumped together in the Consultation Document.
- ii In the Policy of 2024-2027, the government gave clear policy priorities on Expansion of Emerging Technologies Throughout The Bahamas such as **"5G, fibre-to-the-premises (FTTP) and low earth orbit (LEO) satellite"**. Some of these technologies could not have been addressed in the previous policy as they were still in the development stage.
- iii The 2024-2027 policy gives very clear and detailed guidance to URCA on the management of spectrum whereas the older policy did not. The Government

considers it necessary in the new policy to remind URCA to " continue to review and assess spectrum management activities to ensure that radio spectrum is used efficiently by licensees, at prices which reflect as closely as practicable the value of this potentially scarce resource, and recover the costs incurred in the regulation and management of spectrum in a fair and non-discriminatory manner.

(iii) Regulatory framework for LEO satellite services in The Bahamas.

In its wisdom, the Government’s ECS Policy (2024-2027), requires URCA to “to develop a regulatory framework for LEO satellite services in The Bahamas. The framework must give specific regard to the potential this technology can have on provision of cellular mobile services and any rights that licensees have to provide cellular mobile services in The Bahamas”¹ However, the proposed **Regulatory framework for satellite-based electronic communications services in The Bahamas** that is the subject of the present consultation, is addressing the entire satellite-based electronic communications services including Geostationary Earth Orbit (GEO), and, Medium Earth Orbit (MEO), yet the issues for regulation in each of these are substantially different. The satellite communications sector itself has been disrupted by the LEO constellation players as witnessed by the wave of consolidation of incumbents through mergers and acquisitions in the space industry, examples being the merger between SES² and Intelsat² and that of Eutelsat (GEO operator) and OneWeb (LEO operator) on the one hand. Among the new entrants in the LEO space SpaceX is ahead but others such as Amazon Kuiper are announcing plans to launch LEO constellations and provide similar services to the same global market with timelines in years (not decades). The satellite operators also have the potential to cross-subsidize across products, customer segments and economies.

(iv) The Government’s priority policy objectives on Expansion of Emerging Technologies Throughout The Bahamas and on Disaster and Emergency Management

The Consultation document seeks to make a justification for licencing of foreign LEO operators in order “to encourage market entry and support the growth of satellite services, particularly for emerging technologies such as machine-to-machine communications and for expanding service coverage in less densely populated areas” [Consultation document section 6.2.1 Promoting Market Entry and Expansion].

¹ See Clause No 43 on page 15 of the ECS Policy (2024 -2027)

² <https://www.bloomberg.com/news/articles/2024-09-05/hybrid-bond-revival-picks-up-as-ses-sells-debt-for-intelsat-deal>

THE GOVERNMENT’S POLICY OBJECTIVES FOR THE SECTOR	13
PRIORITY POLICY OBJECTIVES	14
<i>Expansion of Emerging Technologies Throughout The Bahamas</i>	14
<i>Universal Service, Access and Obligations</i>	15
<i>Universal Service Fund</i>	18
<i>Enhanced Broadband Connectivity (5G Technology and beyond)</i>	19
<i>Additional Cellular Mobile Competition</i>	21
<i>Content Regulation and Public Service Broadcasting (PSB)</i>	22
<i>Disaster and Emergency Management</i>	24
<i>Spectrum Management</i>	26
<i>ICT Access by Persons with Disabilities</i>	28
<i>Quality of Service (QoS)</i>	30
<i>Regional and International Participation</i>	31

The CBL Group wish to point out however, that the Government’s ECS Policy 2024-2027 has laid out specific and detailed priority policy objectives on encouraging existing licensees to invest in “expansion of Emerging Technologies throughout The Bahamas” such as 5G, fibre-to-the-premises (FTTP) and low earth orbit (LEO) satellites”; has committed to provide “appropriate fiscal incentives to licensees to continue to invest in emerging technologies throughout The Bahamas” and has requested URCA to develop the regulatory framework to further this specific objective. It is our considered opinion that the licensing of foreign LEO satellite operators *before* the aforesaid framework is in place, does not align with the spirit of the Government as it disempowers the existing licences (who we believe are the target beneficiaries of the incentives) from negotiating win-win partnerships with the LEO operators.

On Disaster and Emergency Management, the ECS Policy 2024-2027 requires URCA to among other actions, continue to advance and/or issue regulatory and other measures to mitigate the losses consequential to national emergencies and disasters and in particular:

- to complete the Regulations for the National Alert Warning System in the Electronic Communications Sector in The Bahamas (ECS/01/2023)
- to ensure that all disaster management regulatory and other measures consider and be aligned with the recommendations of the International Telecommunication Union, Tampere Convention, United Nations Office for the Coordination of Humanitarian Affairs and any other bilateral agreements between The Bahamas and other countries and international organizations.

According to the ITU G5 Benchmark Report of 2023³, URCA was yet to put in place a National Emergency (Telecommunication) Plan and was yet to sign the Tampere convention for communications in emergency situations.

Has your country signed or ratified the Tampere convention for communications in emergency situations?	No
Does a National Emergency (Telecommunications) Plan exist?	No

Given the above, it may be legally challenging for URCA to force the LEO operators to provide the necessary disaster-resilience network solutions envisaged in URCA's Objective 3 in the Consultation Document.

3. IMPACT ON THE BUSINESS OF CBL

CBL is operating in a soon-circulating market for ECS with individuals using the Internet at 94% as a percentage of the population and with mobile Cellular subscriptions (per 100 people) at 99. Moreover, the category of Operating Licence issued to Starlink allows them to offer fixed broadband services anywhere in The Bahamas. In many respects, the licence issued to Starlink gives them as much leverage, if not more than CBL, but without the corresponding obligations. Whereas CBL's licence is 15 years, the licence for Starlink is perpetual. The scope of both licences allows the holder to provide any "Carriage Services" and to establish, maintain and operate one or more networks, within, into, from and through The Bahamas. Giving the right to LEO satellite operators to provide any carriage service to end-users in The Bahamas, including fixed broadband internet without any investment in network infrastructure on the ground in the Bahamas puts them at a significant business advantage, but robs the country of revenues (import taxes, equipment type approvals etc) and jobs that would be generated through the supply value chain when implementing network roll out. The two restrictions imposed on the holder of a class operating licence i.e. (i) no access to public land and (ii) "shall not offer an Electronic Communications Service to End-Users for which a corresponding Access or Interconnection service to an Other Operator, including but not limited to call termination, is required" are inconsequential in the case of Starlink which already have their network built in the space above The Bahamas since the NGSO satellite-based broadband internet network, by its nature, does not depend on the traditional local network interconnection envisaged in the licence.

^{3 3} <https://app.gen5.digital/benchmark/country-cards/Bahamas>

If the proposed framework is implemented in haste and Starlink encroaches on CBL's existing customers, CBL may be forced to stop investing in network capacity expansion and quality improvement and may be forced into an unsustainable pricing war which would reduce CBL's ability to stay in the market. This would have far reaching consequences on the local industry and this may lead to loss of jobs. CBL's contribution to the Treasury through taxes and licence fees will be reduced. CBL may eventually be forced to exit the market and/or file for bankruptcy.

4. SOCIO-ECONOMIC IMPLICATIONS OF PORTABLE USER TERMINALS IN THE PROVISION OF FIXED BROADBAND SERVICES VIA NGSO SATELLITES

The consultative document considers five key market segments for the delivery of satellite services. These are namely the traditional Fixed Satellite Service, backhaul for terrestrial networks, ESIM, M2M and the Mobile Satellite Service.

While NGSO satellites can be harnessed in the provision of broadband internet using ESIM for maritime and aeronautical use cases, they can also be utilized for fixed broadband required in offices, homes, etc.

The regulation of ESIMs has received what can be considered as sufficient global regulatory attention in the last eight years given the contemporary developments and approvals for the use of both GSO and NGSO satellites in the delivery of ESIM broadband service.

It is significant to note that three consecutive ITU WRCs (WRC-15, WRC-19, and WRC-23) were necessary to reach a clear international consensus with regards to the technical and regulatory provisions for the operation of ESIMs. Consequently, several countries have developed or reviewed their satellite regulatory guidelines to align with these provisions as well as to harness optimal socio-economic benefits from the ESIM technology.

On the other hand, there have been several recorded concerns on the use of NGSO satellite for fixed broadband. These concerns are mostly on the threat and economic sabotage associated with unauthorized uplink transmission. It is important to note that The Bahamas is a terrestrially challenged country in terms of telecommunication service provision. Globally, many other terrestrially challenged countries are still reluctant to permit fixed broadband consumer services over NGSO satellite despite the pressing need to satisfy unserved areas. In Mauritius, an island country remarkably similar to The Bahamas, NGSO fixed broadband has not yet been permitted.

Furthermore, in many countries of Africa, Middle East and Asia Pacific, there has been a strong resistance to the introduction of this service for the following reasons:

- i. the inherent challenges in ensuring proper registration of user terminals given the operations of illegal markets for these terminals.
- ii. the unhealthy competition posed to terrestrial operators which could affect the stability of the ICT sector.
- iii. the lack of revenue assurance for the government given the use of illegal or unauthorized terminals; and
- iv. the exploitation or use of the technology by criminals, drug barons and other undesirable actors due to perceived lack of tracking and identification of location of terminals.

These concerns also apply to The Bahamas.

It is important to consider the outcome of Agenda Item 1.5 of the forthcoming ITU's WRC-27 before the introduction of this service in The Bahamas. This agenda item is dedicated to devising strategies and assisting countries in limiting unauthorized uplink transmission of earth stations. Given the approval of Resolution 14 (WRC-23) associated with satisfying Agenda Item 1.5 WRC-27, global studies have commenced on development of regulatory measures and feasibility to limit the unauthorized operations of NGSO Earth Stations in the Fixed-Satellite Service and Mobile-Satellite Service and auxiliary issues related to the service area of NGSO satellite systems.

The WRC-27 will take a decision on the outcome of the various studies with a view to assist Administrations in contending with the consequences and challenges of unauthorized uplink transmission. Agreement to be reached in WRC 27 could lead to the modification of the following important regulatory texts of the Radio Regulations which usually informs the development or review satellite regulatory guidelines of ITU Member States.

1. Article 18: Administrative provisions on licensing
2. Resolution 23 (Rev. WRC-23): Measures to limit unauthorized uplink transmissions from earth stations, resolves that the operation of transmitting earth stations within the territory of an administration shall be carried out only if authorized by that administration.
3. Resolution 25 (Rev.WRC-23): Operation of global satellite systems for personal communications, resolves that administrations licensing global satellite systems and stations intended to provide public personal communications by means of fixed, mobile or transportable terminals shall ensure, when licensing these systems and stations, that they can be operated only from the territory or territories of administrations having authorized such service and stations in compliance with Articles 17 and 18, in particular No. 18.1.

It is recommended that caution be applied and further extended consultations be held towards the possible introduction of the NGSO fixed broadband in The Bahamas given

the rapidly evolving technological landscape, the socio-economic implications of adopting space driven technologies and the need for healthy competition among satellite and terrestrial service providers towards achieving a stable and progressive ICT sector.

The Cable Bahamas Group will be willing to partner with NGSO operators possibly for the following:

- the use of IMT spectrum to further deepen the penetration of fixed broadband on the basis that a clearly defined win-win market segmentation is put in place in The Bahamas.
- NGSO operator managed backhaul configuration through the constellation to provide coverage in the remote areas of the Bahamas where the deployment of fixed terrestrial links is not technical and/or financially feasible.

However, these use cases will require more time to evaluate and structure a responsive guideline.

In concluding its general comments, the CBL Group reinforces that this framework mandates URCA to consider the potential impact of satellite services state security, the competitive landscape and ensuring that these new entrants do not undermine the viability of existing terrestrial operators who have made significant investments in telecommunication infrastructure. This also includes considering spectrum sharing between terrestrial and satellite services in designated bands and for the possible harmful interference with terrestrial networks. To have simply stated in the consultation document that there is no possible threat of harmful interference without any technical justification and therefore has not guaranteed the protection of the terrestrial networks. . The regulator must establish a fair and transparent licensing processes with satellite operators, and define a clear regulatory requirements around pricing, service quality, and coverage obligations. Additionally, the regulator should address issues of market entry, such as the need for satellite operators to adhere to local content and data protection laws, while also ensuring that the contribution to universal service obligations are applicable. It is also essential to consider the financial impact on local operators and provide mechanisms for compensatory measures and support for operators who may face disproportionate challenges. Lastly, the framework should encourage collaboration between satellite and traditional operators, promoting interoperability and fostering innovation that benefits the broader market without jeopardizing the interests of incumbent. Service providers. The CBL group submits that this consultation as URCA has failed to take some of these critical considerations into account and consequently relies on its position as expressed in the Introduction and General Comments herein.

1. ANSWERS TO QUESTIONS POSED BY URCA IN THE CONSULTATION DOCUMENT

ITEM #	URCA QUESTION IN THE CONSULTATION DOCUMENT	OUR ANSWERS AND COMMENTS
1	<p>Do you have any other comments on the demand and the importance of satellite communication services for The Bahamas?</p>	<p>Satellite communication services are necessary to fill the existing coverage gaps of the terrestrial services which exist in the remote and un-inhabited regions. The populated islands of The Bahamas are already well covered with fixed and mobile broadband. CBL's mobile broadband network covers the coastal waters surrounding these Islands for the fishing and leisure industry. The shipping and aeronautical market is catered for by the ESIMs to which sufficient global regulatory attention has been paid for the last 8 years. There is however need to provide emergency services to people who visit the uninhabited Islands. Modalities for collaboration and /or partnership between LEO operators and terrestrial operators need to be worked out.</p> <p>The strong interest of NGSO satellite operators to enter the Bahamian market should not be the sole basis for awarding them a licence. It should also be about how much investment they are bringing into the country compared to what they will be taking out. They have already invested their money elsewhere and are looking to grow their customer numbers and sales revenues without investing in the country. They are taking off the cream customers who have the ability to pay. The ability to provide emergency communication services could be secondary.</p> <p>URCA on page 11 states of the PC "This suggests that terrestrial operators should be encouraged to collaborate with satellite providers to create robust and disaster resilient network solutions" however there is no indication that URCA intends to</p>

		<i>establish a framework to facilitate this, and no such project is in URCA's Draft Annual Plan 2025.</i>
2	<i>Do you agree with the regulatory and policy objectives to consider in this review and the resulting five key objectives guiding URCA's review?</i>	<p><i>Objectives 1 to 5 are derived from an old ECS Policy document instead of the current government ECS Policy which was gazetted on 21st October 2024.</i></p> <p><i>Below are our specific comments on the Objectives:</i></p> <p>Objective 2: <i>If it true as URCA self -declared in the ITU G5 Benchmark Report of 2023 that it has not yet to signed the Tampere convention and has not put in place a National Emergency (Telecommunications) Plan, it may be legally challenging for URCA to force the LEO operators to provide the necessary disaster-resilience network solutions envisaged under this Objective .</i></p> <p><i>It is a requirement of the government's ECS Policy (2024-2027) that any LEO satellite ECS framework developed must give specific regard to the potential this technology can have on provision of cellular mobile services. This matter is not addressed in this PC.</i></p> <p>Objective 4: <i>The safeguards to prevent interference of LEO satellite communication system with other users of spectrum are not well articulated in the consultation document. Globally, and we also pointed out in our general comments document, it is important to consider the outcome of Agenda Item 1.5 of WRC 27 to take place in 2027 before the introduction of this service in The Bahamas.</i></p>

3	Do you agree with URCA's preliminary assessment of the current licence regime meeting Objective 1.	<p>URCA' Objectives 1, 2 and 3 are derived from an older government policy instead of the current one of 2024-2027. As the two policies are significantly different, URCA needs to review its objectives 1, 2 and 3 to align them to the new policy</p> <p>The framework is silent about the gateway earth stations for LEO networks yet this is an important issue for the country to mitigate network bypass and ensure that local traffic is not transited through foreign gateways hence robbing the terrestrial operators of potential revenue.</p>
4	Do you agree with URCA's preliminary assessment of the current licence regime meeting Objective 2?	
5	Do you agree with URCA's preliminary assessment of the current licence regime meeting Objective 3?	
6	Do you agree with UCRA's proposed way forward on licensing regime to accommodate satellite-based services in The Bahamas?	<p>The CBL Group does not agree. There is a need, as set out in the Government's ECS Policy 2024-2027, to develop a separate licensing framework for LEO satellite services. The framework proposed in the Consultation document lumps together all satellite communication networks, yet LEO has unique elements that affect the market segments of terrestrial operators. Fixed broadband services over LEO satellite networks are not complementary to but will substitute terrestrial fixed broadband services.</p> <p>The Government ECS policy 2024-2027 calls on URCA to develop a regulatory framework for LEO satellite services in The Bahamas. The satellite framework must give specific regard to the potential LEO technology can have on provision of cellular mobile services and fixed broadband services.</p> <p>The CBL Group strongly disagrees with URCA's statement on page 19 of the PC that it is able to use ad hoc adaptations to accommodate developments in satellite</p>

		<p><i>communication industry. There are many material issues we have pointed out which cannot be addressed by ad-hoc adaptations to accommodate business developments. As guided by the Government ECS Policy 2024-2027, URCA needed to develop a licensing framework specific to LEO satellites in part because of LEO services potential business impact of the ECS market in the Bahamas across many product segments such as fixed broadband, mobile broadband, TV, and voice.</i></p>
7	<ul style="list-style-type: none"> • <i>Do you agree with URCA's preliminary views on the expected spectrum demand in low frequency and high-frequency bands from satellite-based communication services in The Bahamas?</i> • <i>Do you have any other comments on the precise bands that should be opened in priority to satellite-based communication services in The Bahamas?</i> 	<ul style="list-style-type: none"> • <i>The CBL Group agrees with the need to consider reclassifying spectrum bands for LEO as Premium Bands and wish to observe that the Communications Act and the National Spectrum Plan 2020-2023, read together, show that the criteria set out in those documents has already been met and therefore the reclassification should be concluded before this satellite framework is adopted</i> • <i>Any opening of frequency bands giving priority to satellite-based communication services in The Bahamas should await the reclassification in our bullet above.</i>
8	<p><i>Do you agree with URCA's preliminary views on interference risks for satellite-based communication services in The Bahamas?</i></p> <p><i>available.</i></p>	<p><i>The CBL Group strongly disagrees with the statement that "URCA does not anticipate significant interference risks between satellite and these other services".</i></p> <p><i>It should be mentioned that most of the interferences present today are caused by human errors – either due to mis-pointed antennas or misconfigured equipment. The end-user terminals for LEO will moreover be in the hands of ordinary non-technical people who may not be aware of the implications of any errors they make. Control of</i></p>

		<i>interference requires physical surveillance which is challenging in the case of LEO user terminals whose size and appearance is similar to other roof-mounted devices</i>
9	<i>Do you agree with URCA's proposed safeguards to prevent any future interference issues?</i>	<p><i>We strongly disagree with the statement that “that LEO operators should rely more specifically on DSA and adaptive beamforming, rather than geographical separation or exclusion zones” on two fronts: (i) It narrows down the discussion from the discussion of mitigation measures for co-existence of satellite-based communication services with other wireless services to the very special case of the technology DSA for LEO satellites (ii) Discussion of mitigation of potential interference by ESIMs communicating with LEO in the bands identified in Table 3 of the Consultation Document should reference the resolutions of WRC-23 such as Resolution 121 and in particular Annex 2 of that resolution which has the ITU Provisions for earth stations in motion on aircraft and vessels to protect terrestrial services in the frequency band 12.75-13.25 GHz.</i></p> <p><i>The enforcement capacity of the mitigation measures in Table 5 is a matter of greater concern especially for ESIMs. To cite one area of concern: The Bahamas as a coastal country should be protected by the provisions of Annex to Resolution 121 of WRC-23 which states in part that: The minimum distance from the low-water mark as officially recognized by the coastal State beyond which an M ESIM can operate without the prior agreement of any administration is 158 km in the frequency band 12.75-13.25 GHz. Any transmissions from an M ESIM within the minimum distance shall be subject to the prior agreement of the coastal State concerned. What agreement on the minimum distance has URCA made with the ESIM operator and how in practice will the minimum distance provision be enforced ?</i></p>

<p>10</p>	<p><i>Do you have any comments on the principles et revised structure proposed by URCA for satellite-based electronic communications services in The Bahamas?</i></p>	<p><i>Our Comments:</i></p> <ul style="list-style-type: none"> a) <i>It would be good to reference the relevant section of National Spectrum Plan (2020-2023) which we believe is currently in force and also to show how the spectrum bands in Table 3 of the Consultation Document have been classified (i.e. either Premium or Standard). If they have been classified as Premium, then we would recommend that 5.4.1 of the National Spectrum Plan be applied determining the spectrum fees for those bands.</i> b) <i>Based on the illustration you gave in your letter dated 15th January, in response to ours of 14th January, we wish to observe that the fee of \$0.7 per MHz which you propose for satellite ECS across the board would be unjustifiably low in comparison to access spectrum for cellular mobile which is charged a whopping US\$ 13, 000 per MHz (which makes access spectrum for cellular mobile 13 , 000 time more expensive that satellite spectrum) . Please see Annex 3 for a full comment and analysis of same.</i> c) <i>It would be good to benchmark the revised fee structure proposal against that of another similar country or develop and elucidate evidence-based methodology for determining the fees.</i> <p><i>The CBL Group notes URCA’s proposal to amend the spectrum fee structure but wishes to point out there is not enough depth of treatment of this matter in section 6.3. We wish to recall that URCA published a comprehensive methodology including a formulae for calculation of the fees in the National Spectrum Plan (2020 – 2023), which is not made reference in this PC despite being highly relevant.</i></p>
<p>11</p>	<p><i>Do you have any comments on the proposed requirements for satellite service providers conducting the administration and management of their business from premises outside of The Bahamas?</i></p>	<p><i>There have been several recorded concerns on the use of NGSO satellite for fixed broadband. These concerns are mostly on the threat and economic sabotage associated with unauthorized uplink transmission. Globally, many other terrestrially challenged countries are still reluctant to permit fixed broadband consumer services over NGSO satellite despite the pressing need to satisfy unserved areas.</i></p>

<p>12</p>	<p><i>Do you have any comments on other topics related to the provision of satellite-based communication services in The Bahamas which should be considered by URCA? Please provide a detailed explanation of your views, including supporting evidence where available.</i></p>	<p><i>A salient topic that was not treated in the consultation document is the issue of possible unauthorized uplink transmission which could impact negatively on state security and revenue assurance from NGSO user terminals as well as being a potential source of harmful interference to terrestrial services.</i></p> <p><i>Given that an Agenda item 1.6 of ITU’s WRC 27 is dedicated to this topic, CBL considers it necessary for adequate measures to be put in place towards contending with the possibility of unauthorized uplink transmissions with NGSOs in Bahamas.</i></p>
-----------	--	---

Respectfully submitted,

On behalf of CBL and its subsidiaries and Aliv

RESERVATION OF RIGHTS

CBL and its subsidiaries and Aliv expressly reserves all rights including the right to comment further on any and all matters herein and categorically states that CBL and its subsidiaries and Aliv's decision not to respond to any matter raised herein in whole or in part, or any position taken by CBL and its subsidiaries and Aliv herein does not constitute a waiver of CBL and its subsidiaries and Aliv's rights in any way.

Annex 1

Governance & Policy

Kenya's telecom regulator to hike satellite ISP licensing fees by over 800%

January 8, 2025



- Kenya's Communications Authority (CA) has introduced a proposal to significantly increase the 15-year licensing fees for satellite Internet providers (ISPs) from \$12,302 to \$115,331.
- The new rules also include an annual levy of 0.4% of gross turnover, further raising the operational costs for providers like Starlink.
- These changes are critical for Kenya's digital landscape as demand for high-speed Internet is surging, especially in underserved and rural areas where satellite ISPs play a crucial role.
- However, the proposed fees risk dampening this progress, as smaller ISPs, such as ViaSat and NTVsat serving under 1,000 users combined, may struggle to absorb the financial burden, potentially slowing the rollout of much-needed connectivity in remote regions.

While the CA's proposal aims to ensure fairness and regulate the growing satellite ISP market, the higher fees could inadvertently limit competition and innovation.

Small and medium-sized ISPs, essential to expanding Internet access in remote areas, face the risk of being priced out of the market. This could leave underserved communities with fewer options and perpetuate the digital divide.

Despite these challenges, the proposal [includes](#) progressive elements, such as allowing satellite ISPs to engage in terrestrial cable operations, telemetry, and even space research. This expanded scope could attract more investment into Kenya's tech ecosystem, enabling companies like Starlink to establish ground stations and improve service quality.

Starlink, owned by Elon Musk's SpaceX, has quickly established itself in Kenya's market since its June 2023 launch. By offering affordable and high-speed satellite Internet, [Starlink](#) grew its subscriber base to over 8,500 users in just over a year. The service has been instrumental in bridging digital gaps, providing connectivity in areas beyond the reach of traditional telecom infrastructure.

ANNEX 2

BENCHMARKING REPORT – MAURITIUS

1. Introduction and Background

As evidenced in Table one below Mauritius and The Bahamas have very many things in common hence our choice of benchmarking on the former's ECS framework.

Table 1 COMPARISON OF MAURITIUS AND THE BAHAMAS

Item No.	Item	The Bahamas	Mauritius
1	Geography	An oceanic island nation with no land borders with any other country	An oceanic island nation with no land borders with any other country
2	Surfaces Area (sq km)	13,900	2,000
3	Population (millions)	0.4	1.3
4	Population density (people per sq km of land area)	39.6	634.1
5	GDP (\$Billion, 2023)	14.3	14.64
6	GDP per capita (US\$)	35,897	11,613
7	GNP per capita (International Dollars)	27,500	23,970
8	Foreign Direct Investment, net inflows, (% of GDP)	2.2%	0.1%
9	Urban population (% of total population)	84%	41%
10	Individuals using the Internet (% of population)	94%	76%
11	Mobile Cellular subscriptions (per 100 people)	99%	161%
12	Fixed Broadband Subscriptions (per 100 people)	23	26.91
13	Access to electricity (% of population)	100%	100%

The ECS regulatory situation in Mauritius is very different from that of The Bahamas in the sense that the Mauritian are very protective of the terrestrial operators and the status quo with satellite regulatory framework has not changed much from ten years ago to date. The Communications Act was developed in 2001 and has not been amended to date. Though it has been amended several times, the amendment made has not substantially

affected the telecommunication licencing framework. The latest version of the Act can be accessed here: [latest version](#). The Information and Communication Technologies (Licensing and Fees) Regulations have also remained stable since they were developed in 2003. The [latest version these regulations](#), gazetted in 9 August 2022 are very similar in substance to their predecessor. In fact, the amendment made in 2022 concerned only one telecom licence, and was targeted and the amendment was largely a correction of some typos in the principal regulation.

2. Telecommunications Licence Categories

Network Infrastructure Provider Licence (A)
Networking Services Provider Licence (National) (B.01)
Networking Services Provider Licence (International) (B.02)
Global Mobile Personal Communication System Licence (C. 01)
Public Switch (Fixed) Telephone Network (PSTN) Licence (C.02)
Public Land Mobile Network (PLMN) Licence (C.03)
International Long Distance (ILD) Network Licence (C.04)
Public Mobile Radio Trunking System Licence (C.05)
Audiotex Service Licence (C.06)
Data Service Licence (C.07)
Internet Service Provider Licence (C.08)
Internet Telephony Service Licence (C.09)
Facsimile Services Licence (C.10)
Radio Paging Service Licence (C. 11)
Payphone Service Licence (C.12)
Unified Messaging Service Licence (C. 13)
Alarm Monitoring Service Licence (C.14)
Value Added Services Licence (D)
Dealer's Licence (E)

3. "Radiocom" Licence Categories

The Radiocom Licence is the equivalent of the Spectrum Licence in The Bahamas. In relation to satellite communications, only one category of radiocom licence is available for issue as of January 2024. It is the "Earth station (in a fixed satellite service)" radiocom licence. It is only available to holders of the International Long Distance (ILD) Network Licence (C.04).

Aeronautical Base Station (ERP equal to or more than 5W but less than 100W)

- Earth station (in a fixed satellite service)
- Port Station licence – RA08
- Private Mobile Radio Station/Apparatus – RA12/RA13/RA43
- Radio Amateur Licence (Class A) – RA23
- Radio Amateur Licence (Class B) – RA24
- Radio Amateur Visitor’s Licence – RA25
- Ship Station (Full licence) – RA10 / Ship Station (VHF only) – RA11
- VHF Maritime Base Station -RA09

4. Satellite communications Telecom Licence Fees

(Source: https://www.icta.mu/documents/2021/09/licensing_fees.pdf)

Application Processing Fee for a commercial satellite earth station is Two Thousand Rupees (Rp 2000) which is equivalent to US\$ 43.

GMPCS

To establish and operate Global Mobile Personal Communication System (GMPCS) by satellite for the public, whereby the network is satellite based, and the satellite coverage extends over the territory of Mauritius.

- Initial fee: 6,000,000 Rupees which is equivalent to US\$ 130,435.
- Annual Fee 6,000,000 Rupees which is equivalent to US\$ 130,435.

C.01	GMPCS: To establish and operate Global Mobile Personal Communication System (GMPCS) by satellite for the public, whereby the network is satellite based and the satellite coverage extends over the territory of Mauritius.	6,000,000	6,000,000
-------------	---	-----------	-----------

Earth Station (in a fixed satellite service)

The use spectrum or radio apparatus or device by the licensed telecommunication network operators or telecommunication service providers (or by private users for their private network),

- Initial Fee 50,000 Rupees which is equivalent to US\$ 1,087.
- Annual Fee 50,000 Rupees which is equivalent to US\$ 1,087.

Portable Satellite communication terminal

- Initial Fee 50,000 Rupees which is equivalent to US\$ 1,087.
- Annual Fee 50,000 Rupees which is equivalent to US\$ 1,087.

Inmarsat Mobile Earth Station (Types A, B, C, M and Mini-M).

- Initial Fee 50,000 Rupees which is equivalent to US\$ 1,087.
- Annual Fee 50,000 Rupees which is equivalent to US\$ 1,087.

RA14	Inmarsat Mobile Earth Station (Types A, B, C, M and Mini-M).	1,000	Nil
RA15	Radiolocation/Radiodetermination station.	50,000	50,000
RA16	Earth Station (in a fixed satellite service).	50,000	50,000
RA16A	Portable Satellite communication terminal.	50,000	50,000
RA17	Telemetry, Command and Ranging (TCR) Satellite Earth Station.	50,000	50,000
RA18	Disaster recovery station.	50,000	Nil

5. Spectrum Licence Fees for satellite communications services

(Source: https://www.icta.mu/documents/2021/09/licensing_fees.pdf)

The spectrum licence fees for all categories of satellite stations are laid out in the Information and Communication Technologies (Licensing and Fees) Regulations 2003.

RA14	Inmarsat Mobile Earth Station (Types A, B, C, M and Mini-M).	1,000	Nil
RA15	Radiolocation/Radiodetermination station.	50,000	50,000
RA16	Earth Station (in a fixed satellite service).	50,000	50,000
RA16A	Portable Satellite communication terminal.	50,000	50,000
RA17	Telemetry, Command and Ranging (TCR) Satellite Earth Station.	50,000	50,000
RA18	Disaster recovery station.	50,000	Nil

RA44	VSAT/USAT (C, Ku, Ka band operation)	50,000	50,000
-------------	--------------------------------------	--------	--------

6. The Public Debate over NGSO Fixed Broadband (Starlink)

In a local online newspaper article published on 21/08/2023 , [Starlink Internet via Satellite: ICTA fears Lack of Control Over Internet Traffic](#) it was reported that the Mauritius’ regulatory body, ICTA, had “declined permission for internet access through Starlink satellites, citing “national security.””

In another Arriel published by an Africa region focused online newspaper, [The Impact of Starlink in Mauritius: A Comprehensive Analysis - Mauritius](#), it was stated thus:

“Another concern is the impact that Starlink could have on traditional internet service providers in Mauritius. While Starlink offers a more affordable and reliable alternative to traditional internet service, it could also put some providers out of business, which could have a negative impact on the local economy.”

The general public in Mauritius has been speculating on the entry of Starlin in Mauritius [especially] since [2022] when “SpaceX announced that it will be able to cover the area with ~300 Mbps speed anywhere in the Republic (Mauritius, Rodrigues, Agaléga, Chagos Archipelago and so on) by 2022” However, as of end of year 2024, “Starlink is still not available in Mauritius. Will Starlink be available in Mauritius in 2025 or shall we wait more? Please provide an update on regulatory?” [SpaceX Starlink - Mauritius forum - Expat.com](#)

There is no publicly available information from the government and/or ICT regulator on if, and when, Starlink will be legally allowed to operate in Mauritius. According to online news portals such as africa.businessinsider.com, Mauritius is not on the list of African countries “where Starlink is operational in 2024 “ [List of African countries where Starlink is operational in 2024 | Business Insider Africa](#)

Insiders in the terrestrial ECS operators acknowledge that acknowledge that new satellite operators would kill their business. The terrestrial operators are strategically probably looking at providing NGSO satellite services (in partnership with NGSO operators) but there is no licencing framework yet.

7. Activities of other NGSO satellite operators

It is worth noting that Amazon Kuiper MUS Ltd has applied for a telemetry command and ranging satellite earth station licence in Mauritius [Notice 56 of 2024 – ICTA Website](#)

Other entities that have applied for the same type of licence are:

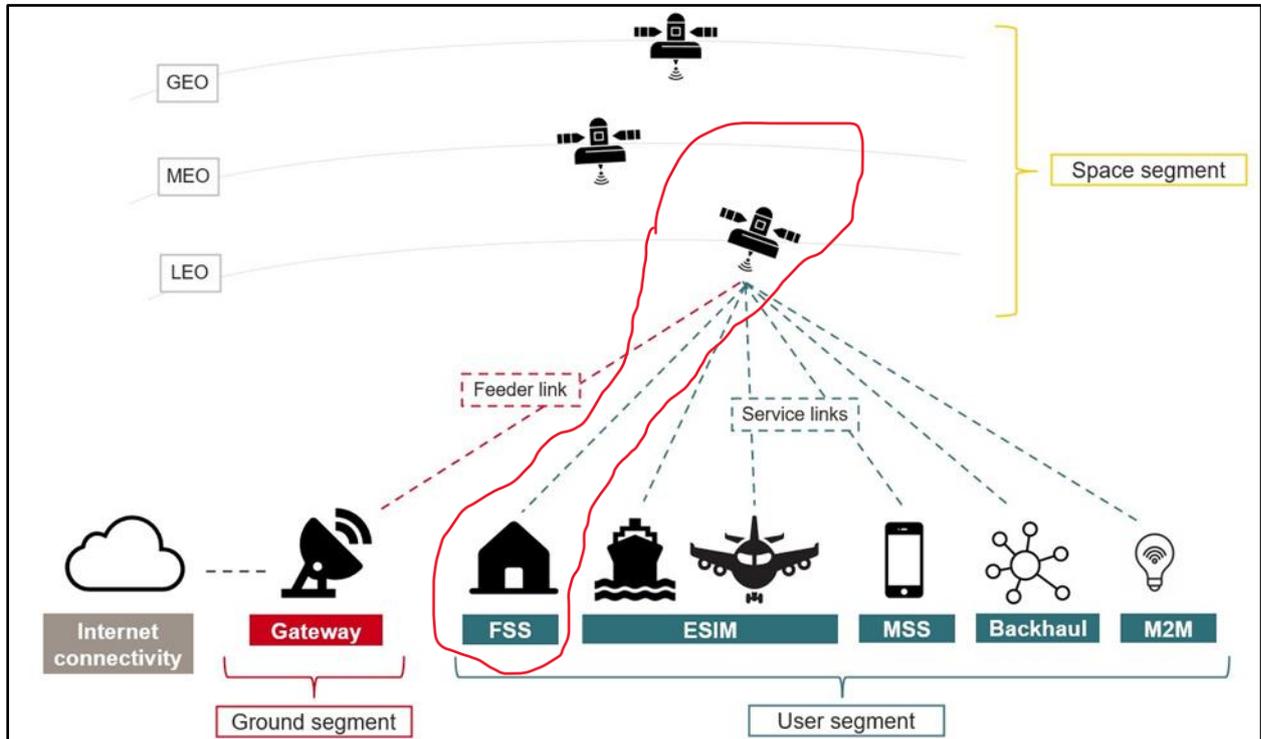
- Leaf Space (MU) Ltd
- Mauritius Telecom Ltd (the incumbent Telco)
- ATCOMM Broadband Services Ltd
- ISTRAC (ISRO)
- Atlas Communication International Company Ltd

8. Conclusion

Heavy investment network operators in terrestrial network infrastructure for ECS requires long term regulatory stability and certainty especially for a small economy and market such as Mauritius which is very similar to that of The Bahamas.

Annex 3

DETAILED ANALYSIS OF THE SPECTRUM FEES FOR SATELLITE FIXED BROADBAND PROVIDED ON LEO SATELLITE CONSTELLATIONS AND ITS POTENTIAL IMPACT ON CBL FIXED BROADBAND PRICING



Let's assume that LEO satellite Operator "X" has been allocated 1,000 MHz of uplink (UL) spectrum and 1,500 MHz of downlink (DL) spectrum over the Bahamas and is required to pay a spectrum licence fee of US\$ 1,750 per year for that spectrum as per example in URCA's response letter to our query. What can X do with that spectrum.

With 1,500 MHz DL bandwidth, using "entry level" satellite modems, with a bandwidth efficiency of 2 bps/Hz [[Bandwidth efficiency of sat modems](#)], the DL throughput the network over the Bahamas would be 1,500 MHz x 2 bps/Hz = 3,000 mbps = 375 Mbps

$$(1) \quad \text{DL throughput} = 375 \text{ Mbps}$$

As advertised, the Starlink DL speed of 100 mbps, [[Experienced Starlink DL speed in the Bahamas](#)], the 375 Mbps can support 4 Starlink user-terminals all with committed information rate (CIR) of 100Mbps i.e. "dedicated", "zero contention". However, most ISPs including Starlink sell internet SLAs with contention ratios of 20:1 [[typical broadband contention ratios](#)]. With that contention ratio X can accommodate thirty (30) user terminals comfortably.

Typical broadband consumers would mostly use the internet to download content and will rarely use it to upload large files. For this reason, ISPs provide much larger DL

“pipes” than UL pipes, i.e. “asymmetrical” capacity. Overall a ratio of about 10:1 is observed [[Typical UL/DL ratios for Internet traffic](#)].

To optimize spectrum and save money, X would probably allocate 2,000 MHz to the DL and 500 MHz to the DL. This would ramp up the DL throughput 500 Mbps

$$(2) \text{ DL throughput} = 375 \text{ Mbps} \times (2000/1500) = 500 \text{ Mbps}$$

Using a contention ratio of 10:1, X would be able to accommodate fifty (50) user terminals with the spectrum cost unchanged. The spectrum cost per terminal per month would then be US\$ 3.

Let us assume their variable costs (which are outside of the Bahamas and therefore do not contribute to their turnover in The Bahamas), are US\$ 20 per user. X can outcompete CBL by charging way below what CBL charges for fixed broadband and still be able to make a profit per end-user. Chances are X would not pay in taxes to the Bahamas treasury since their services are difficult to track.

Broadband Facts

SANDHILL CONNECTIONS
CBL BROADBAND UP TO 100/10 MBPS
Fixed Broadband Consumer Disclosure

Monthly Price **\$99.95**

This monthly price is not an introductory rate.
This monthly price does not require a contract.

Additional Charges & Terms

Provider Monthly Fees

- Cable Modem Rental Fee \$7.55

One-time Fees at the Time of Purchase

- Residential Installation Fee \$49.95
- Tax \$0.64 (On Cable Modem only)

Government Taxes Varies by Location

Discounts & Bundles

For available billing discounts and pricing options for broadband service bundles with other services like video, phone, and wireless service, and use of your own equipment like modems and routers visit [Discounts & Bundles](#).

Speeds Provided with Plan

Typical Download Speed	36.05 Mbps
Typical Upload Speed	9.4 Mbps
Typical Latency	15.72 ms

Data Included with Monthly Price **Unlimited**

Network Management [Network Management Policy](#)
Privacy [Privacy Policy](#)

Customer Support
Contact us: Email (843) 479-4063

Learn more about the terms used on this label by visiting the [Federal Communications Commission's Consumer Resource Center](#)

F002392020020241010CBLT4R0

[Download CSV](#)

Conclusion: Under the current spectrum fee structure, X would be charged a spectrum fee of US\$ 500 per year per user terminal [Table 11C of the URCA 2024 Fee Schedule]. With the proposed fee structure X would be charged the equivalent of US\$ 35 per year per terminal. Is this magnitude of reduction justifiable?