E-SPACE
12950 Saratoga Avenue
Saratoga, CA 95070
contact@e-space.com
www.e-space.com

January 17, 2025

Utilities Regulation and Competition Authority
Frederick House
Frederick Street
P.O. Box N - 4860
Nassau, Bahamas

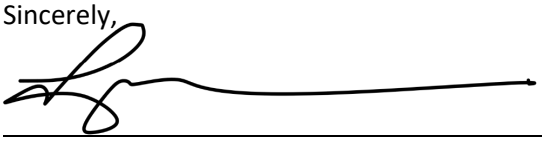
RE: E-Space's Comments to URCA's Consultation on the Regulatory Framework for Satellite-Based Electronic Communications Services

Introduction

espace Inc. ("E-Space") is developing a global, non-geostationary, low Earth orbit satellite system to provide novel, next-generation, IoT services that will enable and improve many applications such as precision agriculture, smart forestry, logistics/asset tracking, energy management, and fishing among others across the globe. E-Space is excited to bring this to The Bahamas to enhance the economics and growth of digital activities in the region.

E-Space greatly appreciates the opportunity to provide the following comments to URCA's Consultation on the Regulatory Framework for Satellite-Based Electronic Communications Services and looks forward to working with URCA to deliver its next-generation, IoT services to The Bahamas.

Sincerely,



Amy Mehlman
VP, Global Affairs and Stakeholder Relations
espace Inc.

Responses to Questions

1. Do you have any other comments on the demand and the importance of satellite communication services for The Bahamas?

E-Space agrees with URCA that there is a unique opportunity for this Consultation to provide a wealth of new and affordable satellite communications solutions. Recent technology and service developments in the satellite market have both increased demand for satellite services in a variety of use cases and has enabled these services to meet the growing needs and requirements of the citizens and entities (commercial and government) of The Bahamas. For instance, E-Space will deliver novel and emerging satellite IoT and M2M communications, applications of the mobile satellite service (MSS), that will bring and bolster the economic and technical capabilities of the regions where deployed in ways never before contemplated—e.g., special applications for tourism logistics, remote locations security, mobility indicators, disaster relief, critical infrastructure maintenance, among many other IoT/M2M cases that could incentivize the development of a domestic market for specific services and applications. E-Space greatly appreciates URCA's interest in how to best serve The Bahamas by introducing more satellite operators in the MSS markets of IoT and M2M. Therefore, E-Space believes URCA's next steps in updating its ECS Framework should include satisfying the spectrum requirements of MSS networks and systems for efficient and successful deployment of emerging IoT and M2M services.

2. Do you agree with the regulatory and policy objectives to consider in this review and the resulting five key objectives guiding URCA's review?

Although the regulatory and policy objectives outlined in Section 3 of the Consultation will generate the appropriate conditions for the development of the satellite market in The Bahamas, E-Space is concerned with the possibility of key Objective 2 overprotecting the cellular market to the detriment of introducing emerging satellite services to The Bahamas. Objective 2 states: "The licensing regime should accommodate a wide range of emerging use cases related to satellite technology . . . while incorporating safeguards to ensure sustainable competition in the cellular mobile market." *See* Consultation, Objective 2, p. 12. These cellular mobile protections stem from URCA's "most recent assessment . . . that 'a third mobile entrant would not be commercially viable or further the policy objective of promoting sustainable competition in the cellular mobile market at this time'." *See* Consultation, Section 3(v), p. 12 (stating the five objectives of direct relevance for satellite-based electronic services). However, most satellite services do not seek to compete with the cellular mobile service (Mobile or IMT) and can rather be a complementary service that provides other kinds of connectivity. More specifically, MSS operators deploy a variety of applications, and not all MSS systems are competition to Mobile such that they be considered a third Mobile entrant by default. IoT and M2M applications not only address a different market and user target than Mobile, but also these applications are narrowband in nature such that the conditions for coexistence in the same spectrum bands as Mobile is easier to achieve than in other MSS applications. Indeed, URCA correctly "notes that M2M applications are generally designed to operate with a degree of interference tolerance, making them less susceptible to performance issues in shared spectrum environments" and "anticipates that M2M services can be subject to more flexible interference management requirements, supporting efficient spectrum use without compromising service quality." *See* Consultation, Section 5.2.1, p. 26. Hence, a MSS operator seeking authorization to utilize spectrum allocated to Mobile should not by default be prohibited from the licensing of such spectrum, but instead

the specific type of MSS application should be considered in proceeding with the license request under the concern addressed by the safeguards in Objective 2.

3. Do you agree with URCA's preliminary assessment of the current licence regime meeting Objective 1?

E-Space agrees with URCA's preliminary assessment of the current license regime meeting key Objective 1. Notwithstanding, URCA can better improve its licensing regime with the introduction of blanket licensing. Due to the advancement of satellite technologies and applications, the satellite industry requires license and permit processes in which a single license covers the deployment and operation of multiple satellite terminals or earth stations—e.g., in movement, such as ESIM, or in large quantities, such as in IoT or M2M applications. Blanket licenses authorize groups or classes of terminals or earth stations, and the associated fees are based on the number of groups or classes, not the quantity of terminals or earth stations to be deployed. Consequently, blanket licensing eliminates the need for individual licensing of each terminal or earth station, simplifies the regulatory process and related fees, and facilitates faster deployment of satellite communications.

4. Do you agree with URCA's preliminary assessment of the current licence regime meeting Objective 2?

Although URCA's preliminary assessment of the current license regime meets key Objective 2, E-Space maintains concern for the overprotection of the cellular market to the detriment of introducing emerging "satellite communications services [that] allow the provisioning of electronic communication services on a geographically universal basis throughout The Bahamas . . . [and] are consumer enhancing and will benefit the Bahamian economy and society." *See* Consultation, p.19. Accordingly, please see E-Space's response to Question 2 above.

5. Do you agree with URCA's preliminary assessment of the current licence regime meeting Objective 3?

Although URCA's preliminary assessment of the current license regime meets key Objective 3, E-Space's concern with key Objective 2—i.e., overprotection of the cellular market to the detriment of introducing satellite services—could also prohibit satellite operators not intending to compete with Mobile from providing applications/services useful in reaching Objective 3 and other URCA's key objectives as identified herein.

6. Do you agree with UCRA's proposed way forward on licencing regime to accommodate satellite based services in The Bahamas?

E-Space agrees with URCA but maintains concerns. The current licensing regime does not present any significant issues that would conflict with the key objectives of this Consultation and that the current licensing regime is accommodating for a variety of satellite operators and service providers. Additionally, "allowing for ad-hoc adaptations to accommodate ongoing technological advancements and business developments in the satellite communications industry," enables URCA to remain flexible in licensing

proceedings in order to meet the needs of a variety of satellite service providers. *See* Consultation, Section 4.4, p. 20. URCA can further improve its licensing regime with the introduction of blanket licensing as presented in E-Space's response to Question 3 above. However, the benefits stemming from the current licensing regime and the proposed additions are threatened by the scope of restrictions imposed by URCA to protect the cellular market. Please see E-Space's response to Question 2 above. Therefore, E-Space believes URCA's proposed way forward for the licensing regime should include the consideration of blanket licensing and reconsideration on the scope of restrictions for protecting the cellular market as discussed in E-Space's response to Question 2 above.

7. 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? Do you have any other comments on the precise bands that should be opened in priority to satellite-based communication services in The Bahamas?

E-Space agrees with URCA's assessment of the expected spectrum demand in the frequency bands from satellite-based communication services in The Bahamas [redacted]

8. Do you agree with URCA's preliminary views on interference risks for satellite-based communication services in The Bahamas?

E-Space agrees with the general risk assessment as outlined in the Consultation. In particular, as it relates to MSS applications such as M2M and IoT, we agree that flexible interference management requirements are appropriate.

9. Do you agree with URCA's proposed safeguards to prevent any future interference issues?

E-Space agrees with URCA on the proposed mitigation techniques provided on page 27 of the Consultation. However, the mitigation methods for co-existence could vary given each system's design such that a one-size-fits-all approach to regulatory enforcement of the mitigation methods should remain flexible.

10. Do you have any comments on the principles et revised structure proposed by URCA for satellite-based electronic communications services in The Bahamas?

E-Space agrees with URCA's four identified principles to guide the design of spectrum fees as outlined in Section 6.2 of the Consultation and its proposed amendments to the spectrum fee structure for satellite-based electronic services. Moreover, E-Space urges URCA maintain its current no spectrum fee approach

for M2M/IoT services because this approach not only makes the most practical sense but also already meets all four of the guiding principles to design spectrum fees. *See* Consultation, Section 6.1, p. 29 (stating current fee approach to M2M/IoT terminals); Consultation, Section 6.2, p.p. 29-30 (outlining the four guiding principles to design spectrum fees).

Firstly, due to the nature of M2M/IoT technologies and terminals, the current no spectrum fees approach promotes entry and expansion of these emerging MSS applications into the Bahamian market. E-Space agrees with URCA's first guiding principle that "[s]pectrum fees should be set low enough 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." *See* Consultation, Section 6.2.1, p. 31. The sheer quantity, relatively small size, and low power of M2M/IoT terminals coupled with the low bandwidth use cases means these terminals need to be both low-cost to produce as well as low-cost for end users to obtain and utilize. However, a spectrum fee, especially a per terminal spectrum fee, on M2M/IoT services may prohibit entry and expansion of these emerging technologies into the Bahamian market because the spectrum fee would make the terminals arbitrarily more expensive for the end users, and even then, the increased cost of the service may never outweigh the spectrum fee, especially on a per terminal basis.

Secondly, the current fee approach to M2M/IoT terminals reflects The Bahamas current spectrum scarcity in the MSS bands whether explicitly allocated in the ITU's international table of allocations or by ITU footnotes to the international table of allocations. URCA correctly "notes that M2M applications are generally designed to operate with a degree of interference tolerance, making them less susceptible to performance issues in shared spectrum environments" and "anticipates that M2M services can be subject to more flexible interference management requirements, supporting efficient spectrum use without compromising service quality." *See* Consultation, Section 5.2.1, p. 26. Hence, E-Space encourages the continuation of the current no spectrum fee approach for M2M/IoT services as URCA monitors the low scarcity value for satellite spectrum. *See* Consultation, Section 6.2.2, p. 31.

Thirdly, the current no spectrum fee approach for M2M/IoT services provides the most regulatory clarity. URCA highlighted the unique challenges faced by satellite service providers estimating application spectrum fees due to the nature of their services. *See* Consultation, Section 6.2.3, p.31 (providing an ESIM tracking example). M2M/IoT services are provided via numerous terminals in a variety of locations that can easily be moved and taken on or offline, so tracking the location and quantity of M2M/IoT terminals would be cumbersome to say the least, especially to do so for a spectrum fee. The current M2M/IoT approach makes the most sense and enhances regulatory clarity while ensuring optimal use of radio spectrum.

Lastly, the current fee approach to M2M/IoT terminals maintains fairness across different users. E-Space agrees with URCA's fourth fee guiding principle: "Ensuring non-discriminatory access to spectrum means that similar users should be treated with similar conditions, though this does not necessarily require applying a single rate to each applicant." *See* Consultation, Section 6.2.4, p. 32. Considering the nature of M2M/IoT terminals (many low power terminals providing low bandwidth services capable of coexisting with other services) coupled with the need to keep the service costs low, a no spectrum fee approach to these services ensures fair access to spectrum with consumer enhancing benefits.

Likewise, URCA's proposed amendments to the spectrum fee structure for satellite based electronic services meets all four of the guiding principles to design spectrum fees. E-Space particularly sees the

proposed annual fee exemption for pre-commercial testing as a positive incentive to attract further investment and innovation in The Bahamas ICT sector.

Therefore, E-Space (a) commends URCA for already taking key steps to meet the spectrum pricing principles to support regulatory and policy objectives, (b) urges URCA maintain the current no fee approach for M2M/IoT, and (c) encourages URCA proceed with introducing a temporary spectrum fee relief for testing services prior to the launch of commercial services.