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| DRAFT NEW RESOLUTION [ATU-NGSO] - ENHANCING GLOBAL CONNECTIVITY THROUGH NON-GEOSTATIONARY ORBIT SATELLITE NETWORKS NON-RADIO ASPECTS: A UNIFIED APPROACH TO INTEROPERABILITY, PERFORMANCE, SECURITY, AND INCLUSIVITY |
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| **Abstract:** | This contribution contains a draft new resolution on non-geo stationary orbit satellites services. Developing countries experience access gaps resulting in an underserved and unserved proportion of their populace. There is growing and high reliance on satellite related services to bridge these gaps and ensure connectivity for all in such countries, especially for areas where conventional terrestrial networks cannot be deployed to. This reliance on satellite services has brought about fully operational commercial public networks in developing countries. |
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Introduction

The ever-evolving nature of telecommunications networks have made it possible to a deploy wide range of services using satellites. Consequently, there is a need to carry out studies to develop Recommendations on the different aspects of satellite services for a more effective and interconnected network service delivery.

Proposal

This new resolution seeks to usher in a new set of studies on these operational satellite networks as it relates to Quality of Service, Interoperability, security and environmental concerns.

ADD ATU/35A34/1

DRAFT NEW RESOLUTION [ATU-NGSO] (New Delhi, 2024)

ENHANCING GLOBAL CONNECTIVITY THROUGH NON-GEOSTATIONARY ORBIT SATELLITE NETWORKS NON-RADIO ASPECTS: A UNIFIED APPROACH TO INTEROPERABILITY, PERFORMANCE, SECURITY, AND INCLUSIVITY

(New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

*a)* Resolution 2 (Rev. Geneva, 2022) on ITU-T study group responsibilities and mandates;

*b)* Resolution 18 (Rev. Geneva, 2022) on Principles and procedures for the allocation of work to, and strengthening coordination and cooperation among, the ITU Radiocommunication, ITU Telecommunication Standardization and ITU Telecommunication Development Sectors;

*c)* Resolution 50 (Rev. Geneva, 2022) on Cybersecurity;

*d)* UNGA Resolution 78/52 on Transparency and confidence-building measures in outer space activities;

*e)* UNGA Resolution 78/72 on International cooperation in the peaceful uses of outer space;

*f)* UNGA Resolution 76/3 on the "Space2030" Agenda: space as a driver of sustainable development;

*g)* Resolution 139 (Rev. Bucharest, 2022) of the Plenipotentiary Conference on the use of telecommunications/information and communication technologies to bridge the digital divide and build an inclusive information society;

*h)* Resolution 186 (Rev. Bucharest, 2022) – Strengthening the role of ITU with regard to transparency and confidence-building measures in outer space activities; Resolution 191 (Rev. Bucharest, 2022) of the Plenipotentiary Conference on Strategy for the coordination of efforts among the three Sectors of the Union;

*i)* Resolution 218 (Rev. Bucharest, 2022) of the Plenipotentiary Conference on ITU's role in the implementation of the "Space2030" Agenda: space as a driver of sustainable development, and its follow-up and review process;

considering

*a)* the vital role of NGSO LEO satellite networks in achieving global connectivity, especially for regions lacking traditional internet infrastructure;

*b)* the imperative for NGSO LEO satellite services to integrate seamlessly with terrestrial networks, ensuring consistent and high-quality telecommunications services worldwide;

*c)* the growing reliance on NGSO LEO satellite networks to support a wide range of services, from broadband internet access to emergency communications, underscoring the need for robust performance, security, and privacy standards;

*d)* the importance of interoperability of end user equipment to different NGSO LEO satellite networks;

*e)* the importance and need for a coordinated and collaborative approach to addressing the wide range of issues related to satellite communication and services,

considering further

*a)* the economic implications of NGSO LEO satellite deployment on global telecommunications markets, emphasizing the need for policies that encourage innovation while ensuring fair competition;

*b)* the environmental implications of de-orbiting and decommissioned satellites;

*c)* that services deployed using satellites transmit data in a cross-border nature;

*d)* the potential of NGSO LEO satellite networks to significantly reduce the digital divide makes it crucial to address and study policy, regulatory, and economic challenges in a coordinated manner,

recognizing

*a)* the wide range of issues associated with satellite communications and services that cuts across all the sectors of the ITU;

*b)* the collaborative efforts of ITU-R, ITU-D, and ITU-T in studying the multifaceted impact of NGSO LEO satellite services, including the work of ITU-T Study Groups 3 and 13, ITU‑R Study Group 4, and ITU-D Study Group 1;

*c)* the necessity for global cooperation in developing technical standards and regulatory frameworks that facilitate the harmonious operation of NGSO LEO satellite and terrestrial networks;

*d)* the importance of ensuring that NGSO LEO satellite services are accessible to all, including people with disabilities, promoting inclusivity and equitable access to ICTs;

*e)* the importance of seamless interoperability between wide range of technologies providing network services;

*f)* the environmental and orbital challenges affecting latency in satellite services;

*g)* the importance of establishing better power management mechanisms to extend the lifespan of satellites due to their power limitations;

*h)* the emergence of new satellite dependent services necessitating interoperability between different satellite vendors,

resolves

1 to prioritize the development of international standards and policies that address the technical, operational, and regulatory challenges associated with NGSO LEO satellite networks;

2 to advocate for the inclusion of accessibility aspects in NGSO LEO satellite services, ensuring that these technologies are usable by persons with disabilities;

3 to support capacity-building initiatives that enhance understanding and deployment of NGSO LEO satellite technologies among ITU Member States and Sector Members,

instructs ITU-T Study Groups 3

1 to examine and offer guidance on harmonizing global regulatory and economic frameworks for NGSO LEO satellite services, facilitating equitable access and sustainable growth;

2 to conduct studies on the economic value of services deployed using satellites,

instructs ITU-T Study Groups 5

1 to develop ITU-T Recommendations for best practices for sustainable NGSO operations, focusing on environmental impact reduction and promoting circular economy principles;

2 to develop ITU-T Recommendations and establish studies on the environmental impacts of defragmented and end of life satellite;

3 to develop ITU-T Recommendations geared towards studies on the emissions and radiation impact of satellite devices and services;

instructs ITU-T Study Group 11

1 to update and develop ITU-T Recommendations focused on the interoperability between NGSO LEO satellite networks and terrestrial networks, aiming for seamless global connectivity;

2 to update and develop ITU-T Recommendations focused on the interoperability of end user equipment to different NGSO LEO satellite networks, aiming to provide consumers with flexibility when changing service providers;

3 to update and develop ITU-T Recommendations ensuring seamless interoperability between different satellite vendors especially those in the same constellation;

4 to update and develop ITU-T Recommendations on signaling architecture and requirements for Satellite terrestrial networks;

5 to develop protocols for the adoption of more satellite related services,

instructs ITU-T Study Group 12

1 to study and develop ITU-T Recommendations providing guidance to regulators and operators in defining strategies and testing methodologies to monitor and measure the QoS and QoE for Satellite networks and services;

2 to define and set the key performance indicators (KPIs) and key quality indicators (KQI) for NGSO services;

3 to develop practical QoE metrics for ensuring effective service delivery;

instructs ITU-T Study Group 13

1 to study and develop ITU-T Recommendations for data transmission within satellite services bearing in mind data transmission challenges such as data sovereignty;

2 to update and develop ITU-T Recommendations on specific emerging satellite services;

3 to develop ITU-T Recommendations for innovative service scenarios and power management within satellite networks;

instructs ITU-T Study Groups 15

to conduct studies and develop recommendations to support Free Space Optics (FSO) utilization for inter-satellite links;

instructs ITU-T Study Groups 17

1 to propose standards that enhance the performance, security, and privacy of NGSO LEO satellite services, addressing specific vulnerabilities and ensuring user trust;

2 to develop ITU-T Recommendations specifically tailored for NGSO LEO satellite networks, ensuring a unified approach to security;

3 to carry out studies related towards ITU-T Recommendations ensuring strong authentication mechanisms and access control policies to safeguard network access and prevent unauthorized use;

4 to develop ITU-T Recommendations for ensuring integration of cybersecurity considerations into the design and development phase of satellite networks to ensure security is built-in from the ground up;

5 to develop and promote standardized incident response protocols for satellite operators to ensure a coordinated and effective response to cyber incidents to detect, prevent, and mitigate security breaches;

6 to develop security and privacy standards for NGSO systems, addressing cybersecurity threats and ensuring user data protection,

instructs the Director of the Telecommunication Standardization Bureau

1 to coordinate the efforts of relevant Study Groups, ensuring a holistic approach to the challenges posed by NGSO LEO satellite networks and fostering international collaboration;

2 to coordinate and bring to the attention of the other ITU sectors all satellite related studies with impacts to them,

invites the Director of the Telecommunication Standardization Bureau in collaboration with the Director of the Telecommunication Development Bureau

to collaborate with ITU-D in carrying out awareness and advocacy campaigns for satellite services uptake in member states,

invites the Director of the Telecommunication Standardization Bureau in collaboration with the Director of the Radiocommunication Bureau

1 to collaborate with ITU-R in carrying out awareness and advocacy campaigns for satellite services uptake in Member States;

2 to collaborate with ITU-R on studies related to satellite networks and services,

invites ITU Member States and Sector Members

1 to engage actively in developing, and implementing standards and policies related to NGSO LEO satellite networks and services towards a more connected and inclusive world;

2 to develop NGSO LEO Satellite Networks Guidelines/frameworks on the best/Common practices for cybersecurity, including guidelines on encryption, authentication, and secure software development;

3 to develop and promote guidelines for protecting children online, ensuring that satellite networks provide safe and secure access to the internet for younger users;

4 to collaborate with the Director of the Telecommunication Standardization Bureau in carrying out awareness and advocacy campaigns on utilizing available satellite services within their jurisdictions;

5 to pursue agendas that subsidize satellite services for uptake of satellite networks;

6 to contribute actively to activities within this resolution,

further invites the Director of the Telecommunications Standardization Bureau

to bring this Resolution to the attention of the Director of the Development Bureau and the Director of the Radiocommunication Bureau.