

UNLOCKING NIGERIA'S DIGITAL FUTURE: THE NCC'S PROPOSED SPECTRUM STRATEGY AND ITS IMPLICATIONS FOR SPACE SERVICE OPERATORS AND BROADBAND EXPANSION

Unlocking Nigeria's Digital Future: The NCC's Proposed Spectrum Strategy and Its Implications for Space Service Operators and Broadband Expansion

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https://www.vanguardngr.com/2025/10/over-140-million-nigerians-now-have-internet-access-ncc/#google_vignette

Introduction

Aminu Maida, the Executive Vice Chairman (EVC) and Chief Executive Officer (CEO) of the Nigerian Communications Commission (NCC or the Commission) recently stated at a public event that the Commission will soon unveil a five-year National

Spectrum Roadmap, titled the “Spectrum Management and Allocation Blueprint (2025–2030)”. The roadmap is expected to serve as a strategic framework for the allocation, management, and optimisation of Nigeria’s finite radio-frequency spectrum resources, ensuring their effective use to support national digital transformation and connectivity goals.¹ According to him, this initiative is intended to strengthen broadband quality, expand internet connectivity nationwide, accelerate 4G densification, support 5G rollout beyond major urban centres, and position Nigeria to meet its broadband penetration targets under the National Broadband Plan 2020–2025 (the NBP).² The EVC/CEO described spectrum as the “invisible highway” that carries data between telecom infrastructure and users’ devices, likening it to a multilane road network whose lanes must be used efficiently to avoid congestion.

However, it is worth noting that the NBP had originally set a target for the development of the National Spectrum Roadmap by the last quarter of 2020.³ According to the NBP, the roadmap was intended to address emerging opportunities and challenges in radio spectrum management over a three to five-year horizon.⁴ It was expected to identify future technological trends and evolving standards, assess their implications for spectrum policy and planning, establish mechanisms for monitoring implementation, and ensure the periodic review and publication of the spectrum plan and the national

¹ Frank Eleanya, ‘Nigeria’s NCC to roll out 5-year spectrum roadmap in November for faster internet’ (21 October 2025) <https://techcabal.com/2025/10/21/nigerias-ncc-set-to-launch-5-year-spectrum-plan-next-month/?utm_source=chatgpt.com> accessed 26 October 2025.

² Royal Ibeh, ‘Telecom regulator targets 5-year spectrum blueprint aims to fix legacy inefficiencies, unlock idle capacity’ (21 October 2025) <<https://businessday.ng/technology/article/telecom-regulator->

[targets-5-year-spectrum-blueprint-aims-to-fix-legacy-inefficiencies-unlock-idle-capacity/?utm_source=chatgpt.com](https://businessday.ng/technology/article/telecom-regulator-targets-5-year-spectrum-blueprint-aims-to-fix-legacy-inefficiencies-unlock-idle-capacity/?utm_source=chatgpt.com)> accessed 27 October 2025.

³ Federal Ministry of Communications and Digital Economy (FMoCDE), ‘Nigerian National Broadband Plan 2020 – 2025’ (March 2020) <https://ncc.gov.ng/sites/default/files/2024-11/Documents/Nigerian_National_Broadband_Plan_2020-2025.pdf> accessed 27 October 2025, p. 55.

⁴ *ibid.*

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frequency allocation table ideally on an annual basis.⁵ The overarching goal of this initiative is to ensure that sufficient spectrum resources are available to meet the growing demand for ubiquitous wireless broadband while providing long-term strategic guidance to operators on technology deployment and capital investment planning.⁶

Nonetheless, the significance of this roadmap lies in its forward-looking and structured approach: rather than *ad hoc* assignments of frequency bands, the Commission intends to project Nigeria's spectrum needs over a five-year horizon, align with global standards (via the International Telecommunication Union) and strengthen regulatory processes so that spectrum is actively used rather than left idle. Through this roadmap, issues such as fragmented frequency holdings, under-utilised allocations, and dormant spectrum assets will be addressed. As Maida noted: "We've seen cases where spectrum was assigned but not used optimally. We are correcting that through spectrum trading, encouraging operators to lease or sell unused spectrum to those who can deploy it more efficiently."⁷

This regulatory reform agenda represents a significant milestone in Nigeria's pursuit of a robust and inclusive digital economy. The National Spectrum Roadmap, with its forward-looking perspective, is designed to anticipate and adapt to emerging technological trends and evolving global standards. In doing so, it creates new opportunities for space service operators to play a pivotal role in expanding broadband coverage and bridging connectivity gaps. The roadmap will enable the development of hybrid service models such as satellite backhaul for rural towers, satellite-assisted 5G deployment in underserved and unserved regions, and the integration

of direct-to-handset Non-Geostationary Orbit (NGSO) services. These innovations not only strengthen network resilience and reach but also facilitate the efficient use of spectrum across multiple access technologies.

For operators and investors, the roadmap will provide regulatory clarity and predictability, two factors essential for long-term capital planning. By promoting efficient and transparent spectrum allocation, the policy reduces uncertainty and strengthens investor confidence, thereby improving the business case for network expansion and infrastructure investment. Equally, the roadmap's consumer-oriented focus ensures that the broader benefits of digital connectivity; availability, affordability, and reliability are progressively realised. By aligning spectrum policy with national broadband goals, the initiative is expected to extend quality connectivity to rural and semi-urban communities, narrow the digital divide, and accelerate socio-economic inclusion across Nigeria.

Implications for Space Service Operators

While much of the discussion on spectrum management often centres on terrestrial mobile broadband (4G and 5G), it is important to recognise that the National Spectrum Roadmap will equally have significant implications for both existing and prospective space service operators. This includes space segment operators such as satellite owners and service providers, and ground segment operators responsible for Earth station infrastructure and related services seeking to enter or expand within the Nigerian market. Over the past five years, Nigeria has recorded a notable increase in the number of authorised space service operators. This trend reflects

⁵ *ibid.*

⁶ *ibid.*

⁷ Ibeh (n 2).

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growing investor confidence in the sector and underscores the perceived viability of satellite broadband and other satellite-dependent specialised services. It also signals a positive market trajectory aligned with Nigeria's broader digital inclusion agenda.

The National Spectrum Roadmap, as articulated by the EVC/CEO of the Commission, will undoubtedly have a significant impact on aspects of the operations of space service operators. Below are some of these aspects:

1. The 'Use It or Lose It' Imperative

The *use it or lose it* spectrum policy, which promotes the efficient and productive utilisation of spectrum resources, is being reinforced and institutionalised under the Commission's new strategic approach. Within the framework of the National Spectrum Roadmap, this policy evolves from a deterrent against non-use into a market-enabling mechanism designed to enhance overall spectrum efficiency. It seeks to address long-standing legacy challenges in spectrum governance, particularly the problem of underutilised or fragmented frequency holdings that hinder optimal network deployment and innovation. As the EVC/CEO of the Commission has observed, previous assignments were at times granted to operators without the requisite technical or financial capacity to deploy, resulting in "dormant assets" and missed opportunities. The new framework therefore places stronger emphasis on accountability, capacity, and measurable deployment outcomes, ensuring that spectrum serves its intended purpose as a critical enabler of national connectivity, innovation, and economic growth.

For space service operators seeking entry into the Nigerian market, the *use it or lose it* policy underscores that regulatory approval must be matched by tangible and actionable deployment plans rather than speculative spectrum holdings. Satellite operators that secure frequencies but fail to establish corresponding ground infrastructure or deliver active services risk regulatory intervention by the Commission. Similarly, for ground segment operators, the acquisition of spectrum rights alone will no longer suffice. Demonstrable progress in network deployment, service activation, and fulfilment of coverage obligations will form key indicators of compliance. This approach encourages responsible market participation, discourages speculative hoarding, and ensures that spectrum resources are allocated to operators with the capacity and intent to utilise them productively.

The underlying rationale is both economic and developmental. In a country striving to achieve universal connectivity, especially in unserved and underserved areas, leaving a finite public resource such as spectrum idle represents a lost opportunity for national progress.

2. Spectrum Sharing and Co-existence

The forthcoming spectrum roadmap places strong emphasis on unlocking idle spectrum assets and promoting spectrum trading as part of Nigeria's broader digital connectivity strategy. For space service operators, particularly those that depend on satellite links for backhaul, broadcasting, or rural connectivity, this policy direction presents both opportunities and responsibilities. By

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enabling spectrum leasing and secondary trading, operators may now acquire or share spectrum rights from terrestrial licensees who are underutilising their spectrum assignments. This creates a regulated pathway for accessing bands suitable for satellite feeder links and ground-segment connectivity, without relying exclusively on new spectrum auctions. The recent spectrum-lease agreement between T2 Mobile Limited and MTN Nigeria, approved by the NCC,⁸ is an early indication of the Commission's willingness to facilitate such secondary market transactions. Approval by the Commission of this spectrum sharing arrangement reflects a pragmatic regulatory approach aimed at preserving service continuity, promoting efficient spectrum utilisation, and safeguarding market stability. By enabling spectrum sharing or leasing under transparent conditions, the NCC is demonstrating its readiness to adopt flexible spectrum management tools that support innovation, investment, and resilience in Nigeria's communications sector. For satellite operators, this reduces spectrum access risk and indicates a more flexible, market-driven approach to spectrum management.

However, the growing participation of space service providers also introduces new complexities, especially in managing coexistence and interference. Many modern satellite systems, particularly Very High Throughput Satellites (VHTS) and Low Earth Orbit (LEO) constellations, operate in frequency bands that are shared with

terrestrial mobile systems such as 4G and 5G. This overlap has significant implications for both terrestrial and satellite operators.

For terrestrial operators, especially mobile network operators expanding 5G coverage, coexistence with Earth stations within shared bands requires careful coordination. The NCC's roadmap must therefore set out clear technical parameters guard bands, coordination procedures, and power emission limits to prevent harmful interference. These rules are essential to safeguard satellite-dependent infrastructure and services, including strategic national assets such as NigComSat-1R, a geostationary, quad-band satellite operating across C-, Ku-, Ka-, and L-bands while ensuring that terrestrial network densification can proceed without disruption.

For satellite operators, the roadmap introduces a more structured process for obtaining landing permits and Earth station licenses. Applicants will need to demonstrate that their systems are engineered to minimise interference with licensed terrestrial users, particularly in urban areas where significant investments have already been made based on prior NCC allocations. Furthermore, the policy principle of "Use It or Lose It", while originally directed at terrestrial spectrum holders, equally applies to satellite spectrum assignments and indeed all spectrum assignees. This ensures that orbital slots and associated frequencies are not merely warehoused but are actively deployed to

⁸ MTN, 'MTN Nigeria's Update on Spectrum Lease Agreements' (17 September 2025) <https://doclib.ngxgroup.com/Financial_NewsDocs/44971_MTN_NIGERIA_COMMUNICATIONS_PLC-UPDATE_ON_SPECTRUM_LEASE_AGREEMENTS_CORP

[ORATE ACTIONS SEPTEMBER 2025.pdf](#) > accessed 27 October 2025.

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deliver services, thereby promoting efficient use of Nigeria's finite spectrum resources.

3. Market Viability and Growth Trajectory

Nigeria's telecommunications sector has in recent years, seen a marked increase in authorisations for space service operators, indicating that the market is maturing and increasingly commercially viable. Although the EVC/CEO's statement in relation to the forthcoming spectrum roadmap appear to be focused mainly on terrestrial mobile broadband, its implications reach far beyond that domain, extending to satellite and hybrid communication networks. For new entrants, the message is clear: Nigeria is not only expressing market demand but also demonstrating regulatory readiness. The combination of spectrum policy reform, secondary market development, use-it-or-lose-it enforcement, and alignment with International Telecommunication Union (ITU) frameworks collectively reduces investment risk. This creates a timely opportunity for operators to plan strategic ground-and-space-segment partnerships, align with the roadmap's implementation timelines, and embed regulatory compliance from the outset.

The accelerating growth of the space service sector, spanning both traditional Geostationary Orbit (GSO) systems and the rapidly expanding LEO providers, is being propelled by several interrelated factors. First, bridging the digital access gap remains a central driver. Satellite communication currently offers the most efficient and reliable means of delivering broadband to Nigeria's underserved and hard-to-reach communities.

This directly supports the NBP's objective of bridging the digital divide, and the roadmap's focus on rural connectivity validates the commercial and social relevance of satellite-based solutions.

Second, 5G backhaul and enterprise connectivity present new and expanding use cases for satellite operators. As 4G densification and 5G rollout advance in major urban centers such as Lagos, Abuja, and Port Harcourt, satellite backhaul provides essential links for remote base stations and ensures network resilience for critical sectors, including financial services, oil and gas, and government institutions.

Third, regulatory clarity underpins investor confidence. Ongoing reform of the General Authorisation Framework, Licensing Regulations, secondary market for spectrum and Commercial Satellite Regulations being undertaken by the Commission and its sustained commitment to ITU coordination will establish a transparent framework for licensing, landing permit rights, and interference management. This regulatory consistency enhances Nigeria's attractiveness to global space service operators seeking predictable and well-structured market entry conditions.

Taken together, these developments indicate that Nigeria is entering a new phase of integrated connectivity, where terrestrial and space networks will increasingly complement each other. The spectrum roadmap, by setting the direction for efficient use and shared access to frequencies, positions the country as one of Africa's most forward-looking

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jurisdictions for satellite-enabled broadband and digital infrastructure investment.

4. Ground segment operators and interoperability

The roadmap presents a significant opportunity for ground segment operators and service delivery partners, whose participation is essential to the successful rollout of satellite-dependent broadband services in Nigeria. Satellite-based connectivity relies on a network of local partners responsible for critical functions such as:

a) Earth Station Installation:

Licensing, deployment, and operation of gateways and hub stations that connect the satellite network to terrestrial infrastructure.

b) VSAT and ESIM Deployment:

Installation and maintenance of Very Small Aperture Terminals (VSATs) and Earth Stations in Motion (ESIMs) used on aircraft, maritime vessels, and land-based vehicles.

c) Service Provision: Distribution and resale of satellite capacity to enterprises, institutions, and end-users.

To fully realise these opportunities, regulatory measures that streamline the licensing process for ground segment infrastructure, particularly for modern, spectrally efficient terminal equipment will be vital. Simplified and predictable procedures will encourage participation by local firms, foster technology transfer, and ensure that a substantial share of

the economic value created by the expanding satellite market remains within Nigeria.

Ground segment operators including those managing earth stations, gateways, and other satellite-linked infrastructure, must ensure that their systems comply with international technical standards and operate strictly within the frequency bands authorised by the NCC and the ITU. The roadmap's alignment with ITU frameworks is indicative of a clear preference for globally harmonised, interoperable equipment. This approach not only reduces costs and logistical complexities for operators but also enhances cross-border compatibility and regulatory certainty.

In practical terms, satellite service providers and their local partners should anticipate that the NCC is more likely than not to favour ITU-compliant, multi-band, and spectrum-efficient equipment. Such alignment promotes optimal use of spectrum resources while supporting Nigeria's broader goal of building a resilient, future-ready satellite broadband ecosystem.

Conclusion

In conclusion, the forthcoming National Spectrum Roadmap represents a critical policy instrument in Nigeria's broader effort to build an inclusive, future-ready, and innovation-driven digital economy. By setting out a structured vision for the assignment, management, and optimisation of spectrum resources, the roadmap will provide the strategic predictability needed to sustain long-term investment and technological advancement. Its emphasis on efficiency, transparency, and interoperability underscores a regulatory philosophy that balances innovation with public interest ensuring that

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spectrum, as a finite national asset, delivers maximum socio-economic value.

However, to fully realise these ambitions, the process of developing and implementing the National Spectrum Roadmap should itself be inclusive, consultative, and aligned with international best practices. Given its far-reaching implications for broadband expansion, national connectivity, and emerging space-based communications, the roadmap should be subject to public consultation involving all relevant stakeholders, telecommunications operators, ISPs and community networks, space service operators, broadcasters, technology vendors, academia, civil society, and consumer groups. Such engagement would not only strengthen the legitimacy and robustness of the final policy document but also ensure that it reflects the diverse technical, economic, and social realities of Nigeria's digital ecosystem.

Moreover, the roadmap should be crafted to harmonise with global spectrum management principles as set out by ITU and leading regulatory frameworks across comparable jurisdictions. This alignment is essential for promoting cross-border coordination, minimising interference risks, and facilitating Nigeria's integration into the global digital infrastructure value chain. For space service operators, in particular, international consistency will be key to enabling interoperability between satellite and terrestrial systems, reducing regulatory friction, and enhancing Nigeria's competitiveness as a destination for orbital and ground-segment investment.

Policy coherence will also require the roadmap to include clear implementation timelines, periodic review mechanisms, and data-driven monitoring frameworks to assess utilisation efficiency and market outcomes. Transparency in spectrum assignment, re-farming, and trading processes should be

institutionalised to prevent concentration, promote competition, and enable a dynamic secondary market. Importantly, capacity-building programmes should be prioritised to empower local engineers, policymakers, and industry actors to manage and exploit new spectrum opportunities effectively.

As Nigeria prepares for the next phase of broadband expansion, anchored on 5G rollout, satellite broadband integration, and rural connectivity, the National Spectrum Roadmap must serve as both a technical blueprint and a policy compass. When developed through a transparent and participatory process, and aligned with global standards, it will not only attract investment but also ensure that every segment of society benefits from affordable, available, reliable, and resilient digital connectivity. In doing so, the roadmap can transform spectrum policy from a regulatory obligation into a strategic enabler of Nigeria's digital future, bridging divides, unlocking innovation, and positioning the country as a continental leader in next-generation communications.

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