Satellite Licensing Best Practices

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GSOA

Global Association Representing the Entire Satellite Industry

GSOA provides a platform for collaboration between member companies involved in the satellite ecosystem globally and a unified voice for the sector

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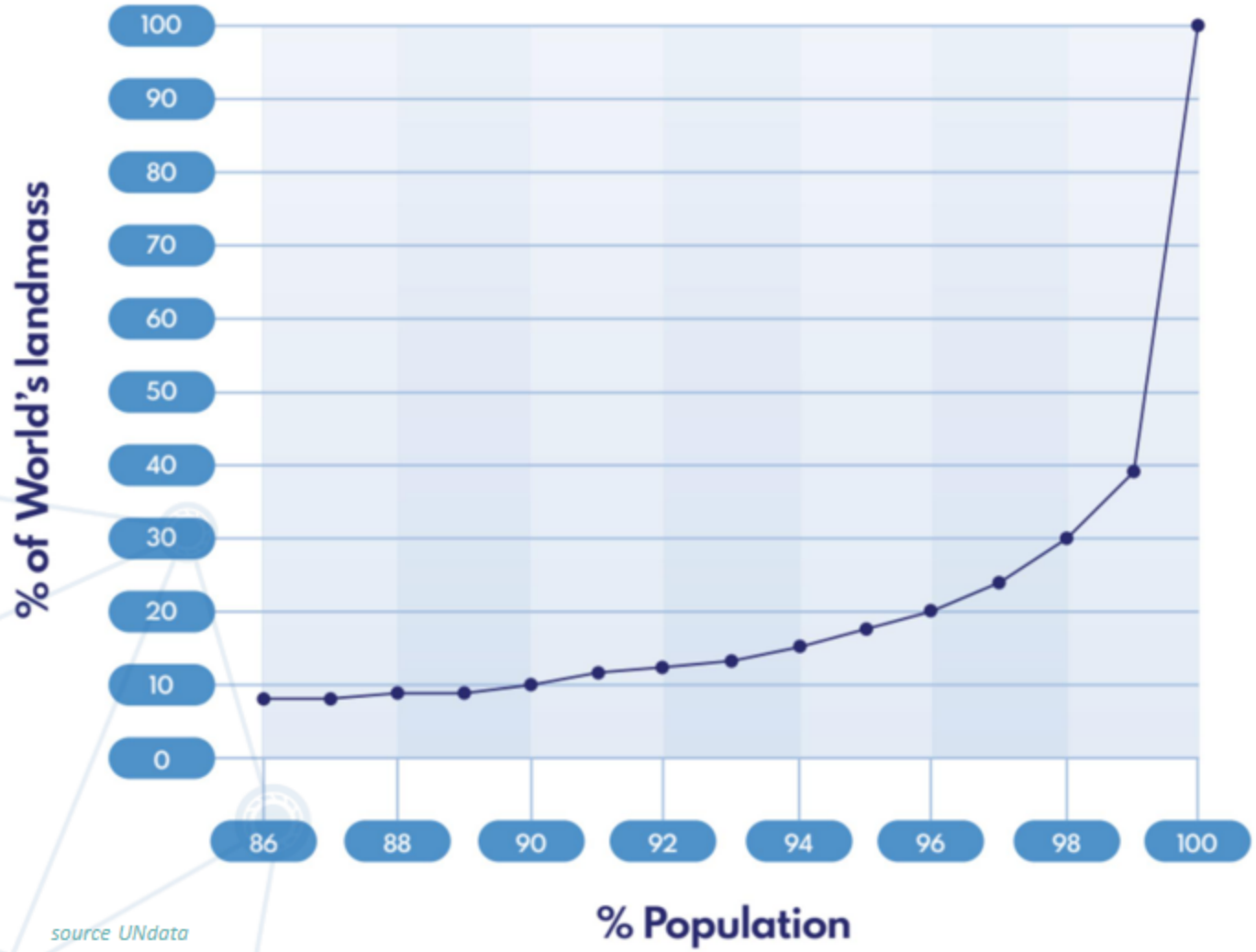
Economics of Digital Divide and Diminishing Returns

World's population distribution



source UNdata

Terrestrial solutions currently cover 96% of the population using infrastructure deployed across 20% of the landmass.

Extending this coverage to 99% would necessitate doubling the terrestrial infrastructure footprint to 39%.

Achieving 100% requires a multiple increase in current investment.

Policy Objectives

1

Regulatory Effectiveness

Existing satellite regulations have been highly effective in bringing connectivity benefits to all, regulatory modernization should focus on refining to adapt to technology advances rather than replacing established frameworks to maintain stability and predictability.

2

Public Interest Alignment

Regulations must ensure that satellite services can contribute to public interest outcomes such as universal connectivity, emergency and disaster relief, aligning commercial incentives with societal needs

3

Fairness and Non-Discrimination

Technology neutrality requires regulating based on the technical merit of each technologies, recognizing that satellite and terrestrial networks have different physical properties, propagation characteristics, and operational constraints. No technology should be unfairly penalized or advantaged by inappropriate regulatory comparisons.

4

Stakeholder Engagement

Effective policy development requires ongoing dialogue with industry stakeholders, technical experts, and consumer groups to identify gaps in current regulations and propose evidence-based improvements.

Aligning national regulations with international best practices and multilateral instruments helps reduce compliance burdens for operators and facilitates cross-border service delivery, enhancing global connectivity.

Satellite Investment and Revenue Models

Recognizing the unique economics of satellite systems

The borderless nature of satellite coverage contrasts with the localized infrastructure of terrestrial networks, requiring regulatory frameworks that address global service delivery mechanisms.

Upfront Capital Requirements

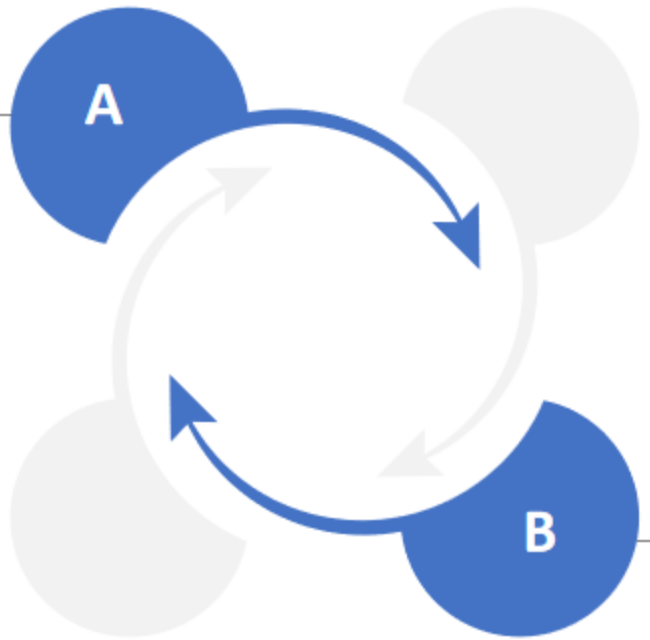
Satellite systems require massive upfront capital to deploy borderless coverage from day one, unlike terrestrial operators who build incrementally, necessitating a different approach to cost recovery

Borderless Coverage

The borderless nature of satellite coverage means that revenue is generated across multiple markets simultaneously, making country-by-country fee structures fundamentally misaligned with the industry's return on investment

Multi-Market ROI

Forcing isolated terrestrial fees onto space assets artificially penalizes the technology, breaking the multi-market return on investment model that allows satellite operators to serve remote and unserved populations sustainably.



Fewer Commercial Opportunities

Satellite operators have significantly fewer commercial opportunities per country compared to terrestrial operators, who can monetize high-density urban areas extensively, justifying a differentiated tax and fee regime.

Tailored Regulation

Regulation must be tailored to the market opportunities of each technology, ensuring that satellite operators are not disproportionately burdened by fees designed for localized, high-density terrestrial business models.

Simplifying authorization for satellite services

Single-Window Licensing

Implementing a single-window licensing system with predictable timelines and online filing reduces administrative complexity and accelerates the deployment of satellite services and terminals.

No Local Entity Requirement

Eliminating the requirement to establish a local corporate entity, accepting a local point of contact instead, lowers entry barriers for international satellite operators and encourages market participation.

Predictable Timelines

Establishing clear and predictable timelines for license approval provides certainty for investors and operators, facilitating planning and reducing the risk associated with regulatory delays.

Online Application Systems

Digitalizing the licensing process through online filing systems improves efficiency, transparency, and accessibility, allowing operators to submit applications and track status remotely and easily.

Blanket Terminal Licensing

Single Authorization

Blanket licensing allows large numbers of user terminals to be deployed under a single authorization, simplifying compliance for operators and reducing the administrative burden on regulators.

Rapid Deployment

Blanket licensing enables rapid scaling of satellite services, crucial for meeting sudden demand or expanding coverage in emergency situations. without navigating complex individual licensing procedures, boosting adoption rates.

Regulatory Efficiency

Regulators benefit from reduced workload and improved spectrum management efficiency, as they can monitor aggregate usage rather than processing thousands of individual license applications.

Cost-Based Regulatory Fees

Ensuring fees are fit for purpose and non-punitive

1 Cost-Recovery Principle

Regulatory fees should be based on the actual cost of regulation and administration, avoiding arbitrary charges that could impose competitive hurdles on satellite technologies compared to terrestrial alternatives.

2 Fit-for-Purpose Fees

Fees should be designed to reflect the specific regulatory burden associated with satellite services, recognizing that some administrative tasks may be less resource-intensive than those for dense terrestrial networks.

3 Avoiding Competitive Hurdles

Imposing unnecessary or excessive fees on space-based technologies can distort the market and hinder the deployment of satellite services, particularly in rural and underserved areas where margins are thin.

4 Spectrum Fee Structure

Spectrum fees for satellite should not penalize the wide bandwidths required for high-throughput services, instead adopting structures that encourage efficient use of spectrum without discouraging investment in capacity.

5 Import Duty Reductions

Reducing or eliminating import duties on satellite terminals and gateway equipment can lower the cost of deployment, making satellite services more affordable and accessible to end-users in developing regions.

Auctions are not adequate for satellite spectrum

1

Socio-Economic Aspect

Administrative assignment reflects the socio-economic aspect of satellite services, prioritizing connectivity for unconnected populations over revenue generation from spectrum auctions.

2

International Coordination

Satellite spectrum requires international coordination and is often shared rather than exclusively assigned, making auctions impractical and potentially disruptive to global harmony and interference management.

3

Unique Characteristics

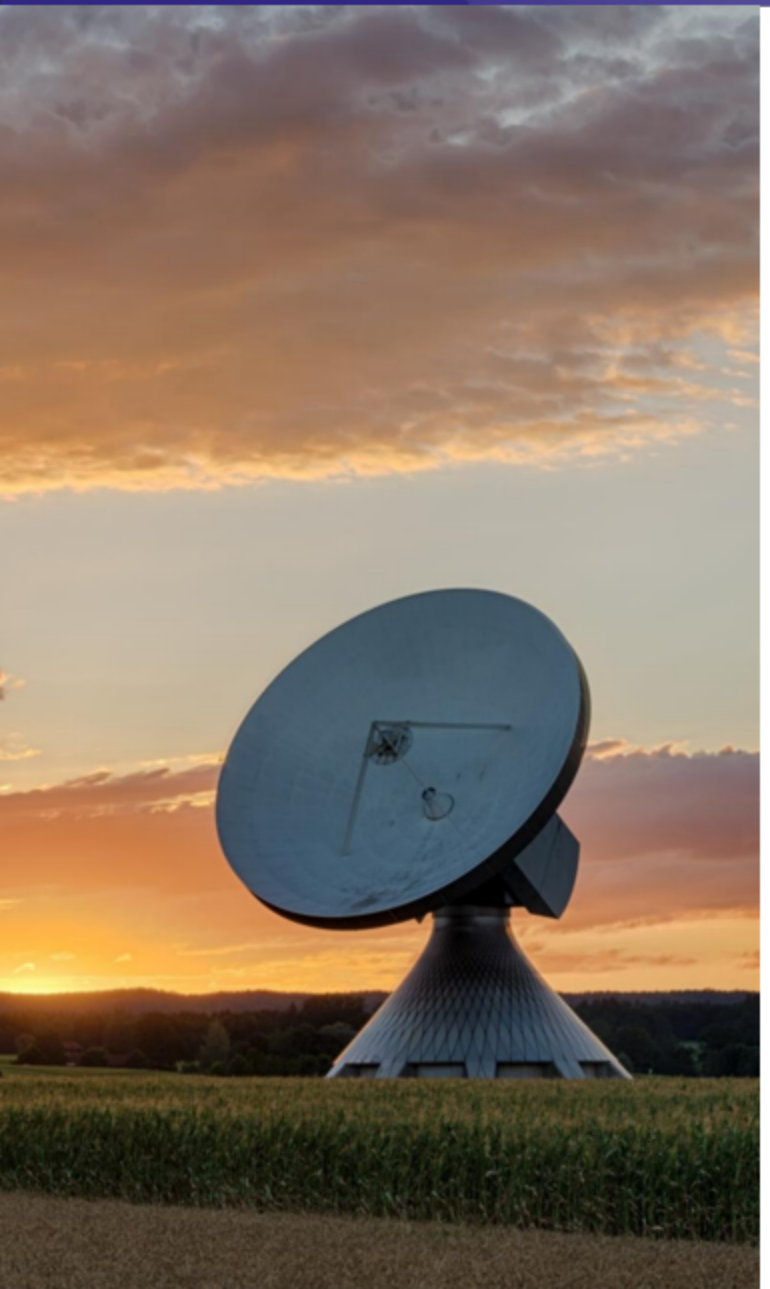
The unique characteristics of satellite spectrum, including its global reach and shared nature, necessitate a regulatory approach that focuses on efficient use and coordination rather than market-based allocation.

4

Avoiding Barriers

Administrative assignment avoids creating financial barriers to entry that auctions might impose, ensuring that satellite operators can invest in infrastructure rather than paying high upfront spectrum fees.

Security and Lawful Interception



Standards-Based Security

Security, encryption, authentication, and lawful interception following international standards like 3GPP and ETSI, not dependent on the physical location of gateways, allowing for flexible and secure implementations.

Cross-Border Precedents

Aviation and maritime safety services have successfully operated cross-border using standardized security protocols for decades, providing a proven model for how satellite services can manage security without local infrastructure mandates.

Cost Efficiency

Avoiding mandatory in-country gateways reduces capital expenditure for operators, which can be passed on to consumers in the form of lower prices, while still maintaining robust security and lawful interception capabilities.

Regional and Virtual Gateways

Regional hubs, virtual gateways, and foreign gateways can meet security objectives at lower cost and with greater efficiency than mandatory in-country gateways, which may be technically unnecessary and economically burdensome.

Sources and references

PUBLISHED MULTILATERAL& REGIONAL RESOURCES

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2, ATU-UAT-Rcadre001-0: Harmonized Reference Framework for the Licensing of satellite services in Africa. African Telecommunications union model licensing framework.

3. CEPT/ECC —Multiple deliverable son satellite communications services and equipment licensing. Available from the ECC - Deliverables·

4. CITEL PCC.I —Technical Notebook on satellite Regulatory Framework sand Best practices. Inter-American Telecommunication commission(OAS),adopted as pcc.ITechnical Notebook(ccp.I-TIC/doc.5771/25).

GSOA POSITION PAPERS

A. satellite Licensing Best practices —Industry best-practice guide covering licensing, gateways, terminals, spectrum, homolog ation, lawful intercept, and universal service.

B. promoting synergy: satellite Answers Among communications services — positioning satellite asa complementary layer ofa converging ecosystem under technology-neutral, fit-for-purpose regulation.

C. satellite solutions for universal service: Bridging the Digital Divide — Industry paper on satellite's role in universal service and digital inclusion.

D. Rethinking LocalGateways:A satellite Industry perspective –industry paper examining the need for local gateway sto address LI or national security needs.

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