

Regional Workshop Regulatory Framework for Satellite Broadband Internet Services

Matthew Evans
Director, Regulatory Affairs
River Advisers

Agenda

01

Global Satellite
Broadband
Regulation and
Licensing

02

International
Frameworks &
Trends:
Broadband
Terminals and
Services Provision

03

Regional Case
Study: Sub-Saharan
Africa

04

Conclusions:
Moving Forward

Introduction to Global Satellite Broadband Regulation and Licensing

- Regulator approaches and requirements vary widely across regions/ countries
- Different authorisations apply to
 - different parties in the satellite broadband value chain (satellite operator, service provider, end user...)
 - network elements involved (satellite, terminal, gateways, etc.)
- Authorisations attract different obligations: fees, service quality/ reliability, consumer protection, universal service, cybersecurity, lawful interception, fair pricing...
- Some international and regional initiatives
 - ❑ E.g. ECC DEC (15)04 (Europe/ CEPT)
 - ❑ E.g. EU Communications Code (EECC)
 - ❑ E.g. ATU Rec 005-0, ATU Papers, EACO etc.
 - ❑ E.g. ITU Resolutions, etc.
- However, national administrations have ultimate authority over licensing of satellite services and related aspects in their territories...
- Satellite operators with direct-to-user (retail) models may require 200+ licences for fully global service



Introduction to Global Satellite Broadband Regulation and Licensing

Regulated aspects:

Different types of national authorisation applied globally

Space Stations
(NGSO/GSO)



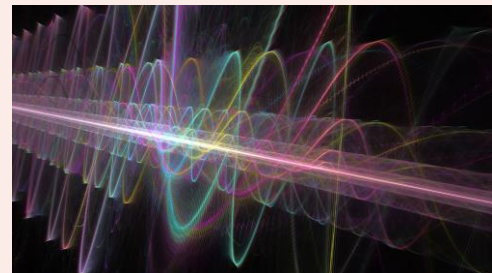
- Satellite Filing per ITU procedures (RR)
- National licence or registration for use/operation of foreign satellite downlink capacity in-country (landing rights)

Telecoms Service



- Licence or registration for distribution or resale of satellite broadband internet connectivity services
- ❖ Electronic communications services (ECS/ ECN)
- ❖ Public telecommunications, ISP Licence, Class I/II (A/B)..
- ❖ VSAT services, satellite Broadband license, ..

Spectrum use



- Licence to use specific radio frequencies in the territory for related communications infrastructure and services:
- Frequency transmissions from broadband earth stations/ terminals operated by licensed telecoms providers/ satellite operators

Terminals/User
Equipment/Gateways



- Hardware Type Approval/ Standardisation
 - National procedure, or mutual recognition (FCC, ETSI,..)
 - Labelling (CE,...)
- Import/ Export
- Gateway sites

Space
Segment

Ground
Segment

International Frameworks and Trends: Satellite Broadband Services (ECS/ECN)



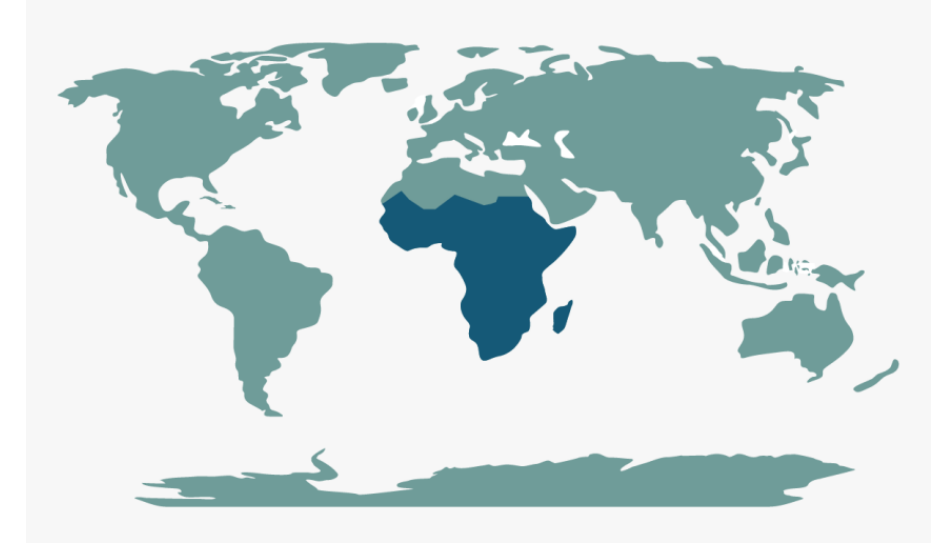
- Technology-Neutral vs. Satellite-Specific Licensing Model applied in many jurisdictions for services
- Key Distinction when Licensing:
 - ECN: Infrastructure operators
 - ECS: Service providers relying on existing infrastructure
- Examples
 - Europe: General Authorisation, with or without notification/ registration
 - South Africa, Australia, New Zealand, Canada, others: Individual (class) licenses with ECN/ECS distinction
 - Asia-Pacific (Malaysia, Thailand, ...): Mostly ECN/ECS licensing model, with varying terminology (e.g. service/ facilities-based operator, telecoms business license, ...)
- Fees: typically % revenue (annual) and modest admin fee (one-time)
- Variant to neutrality under ECS/ECN : Saudi Arabia Example (2022 NTN Regulations, CST):
 - Transitioned from six individual satellite-service licences to a unified **“Non-Terrestrial-Networks” (NTN)** framework
 - Groups satellite services under NTN instead of ECS/ECN, with flexibility to consider novel NTN services not foreseen
 - Distinction between network (Operation Services) and services (Telecommunications Services) NTN licences

International Frameworks and Trends: Satellite Broadband Terminals (VSAT/ESIM)



- Rapid expansion of LEO broadband constellations and related services/ applications/ user terminals has created significant challenges for regulators globally
- Rising demands on scarce spectrum and congestion in existing (FSS) allocated bands: Regulators tasked with ensuring efficient usage and interference-free environment while also enabling competition, innovation and different solutions
- Regulatory challenges addressed under stream-lined terminal licensing models (VSAT/ESIM):
 - 1) Transition from Individual (Terminal-by-Terminal) to ***Blanket (or Class/ Network) Spectrum licensing***
 - 2) ***Exemption for Visiting/ Temporary Terminals (ESIM)*** in the territory (e.g. ships, planes)
 - Operating in the territory according to common technical/ operational conditions and frequency bands
- More flexible and cost-effective approaches, *moving away from traditional command and control approaches, to more flexible and agile mechanisms* to meet modern spectrum management challenges
- Blanket/Class/ Network terminal licensing (Ka/ Ku/FSS) widely adopted in key regions and developed markets: e.g. Australasia, Middle East, Europe/ CEPT, Americas, Asia...
 - Divergence still exists primarily on *the spectrum/ licensing fees* (\$/MHz, terminal types, etc.)

Regional Case Study: Sub-Saharan Africa

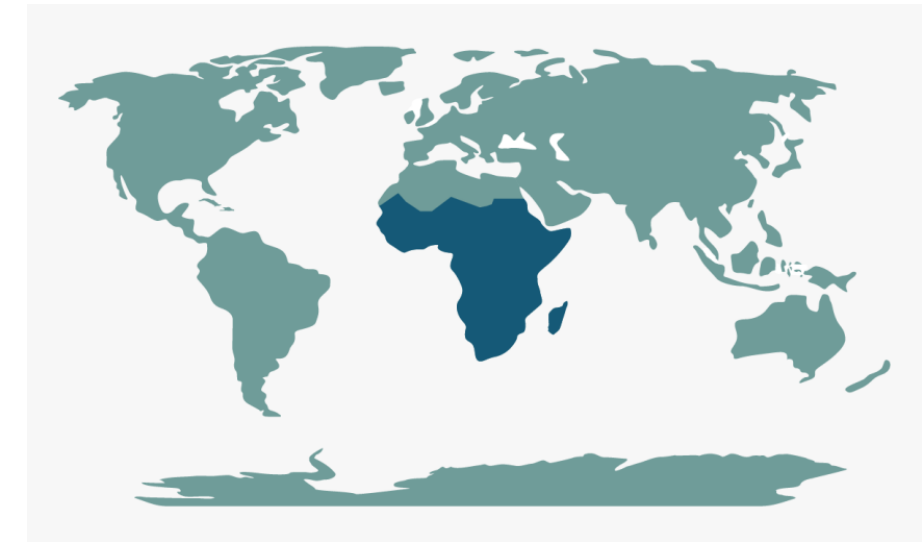


- Individual terminal-by-terminal licensing prevalent for Broadband/ VSAT
- Consumers and enterprise bear the burden, administrative costs and spectrum fees
- End users often purchase equipment from foreign providers and apply for regulatory approval to use/import
- Regulators note existing landscape is resulting in undesirable outcomes
 - High costs/barriers to satellite service adoption
 - Low penetration rates limit regional benefits
 - Lack of local satellite providers and diversity in the market
- Slow but significant progress in recent years towards
 - Lighter-touch licensing regimes for users and equipment...
 - Transfer of burden and localization of provider in the country responsible for network/ service

03

Regional Case Study: Sub-Saharan Africa

Examples of Regional and National Activities



Regional

African Telecommunications Union (ATU-R), Recommendation 005-0 (July 2021);

East African Communications Organisation (EACO):

Harmonised Approaches To Domestic Licensing And Mutual License Recognition Of Earth Stations In Motion (July 2019)

....

National

Zambia (ZICTA): Proposed Satellite Regulatory Framework (August 2024)

South Africa (ICASA): Proposed new Licensing Framework for Satellite Services (August 2024)

Nigeria (NCC): New Commercial Satellite Guidelines, amending Commercial Satellite Regulations (July 2023)

Rwanda (RURA): Draft Regulation Governing The Provision Of Satellite Services In Rwanda (January 2023)

....

03

Regional Case Study: Sub-Saharan Africa

Example Fees (Spectrum/ Terminals)

Rwanda:

Annual fee per MHz used (all terminals), dist. KU/KA:

KU-BAND/ 12-18 GHz:

1 MHz = 40 000 Rwf (~28 USD)

KA-BAND/ 26.5-40 GHz:

1MHz = 15 000 Rwf (~11 USD)

(Application fee: ~70 USD)

Nigeria:

Annual fee per groups of terminals (same for KU/KA, regardless of MHz)

0 to 50 terminals/ \$ 500 USD

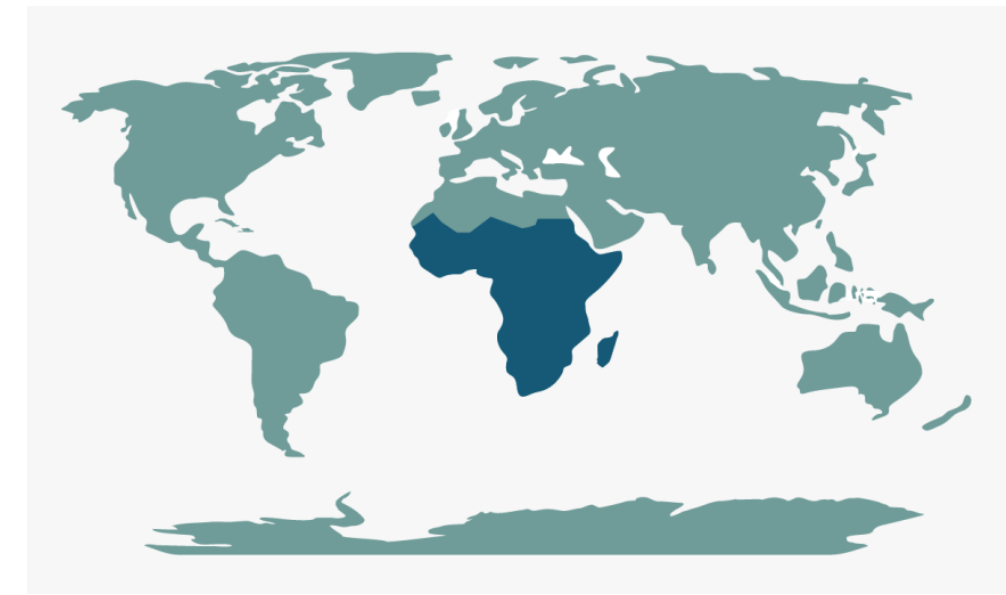
51 to 500 terminals/ \$ 1,000 USD

501 to 10,000 terminals/ \$ 2,000 USD

10,001 to 100,000 terminals/ \$ 10,000 USD

Over 100,000 terminals/ \$20,000 USD

(New Application fee: ~6 USD)



04

Conclusions: Moving Forward

Harmonisation Gaining Momentum Globally

- Efforts are emerging to overcome regulatory disparities and bottlenecks
- Particularly in developing and underserved regions, where satellite broadband is gaining profile through ramp up in mega-constellations

Key Challenges Remain

- Outdated, unbalanced and restrictive licensing still hinder governments and citizens from digital modernisation and socioeconomic benefits
- Regulatory transparency needed for investment (costs, procedure, obligations)

Recommendations

- Continued regional harmonisation and cooperation is essential to unlock the full potential of satellite broadband and share thought-leadership
- Proven models in developed regions, based on general authorisation, free circulation & blanket licensing
- Flexible mechanisms and tools to consider: Sandboxes and trial licensing frameworks
- Engagement with industry is key to deliver sound regulation: public consultations, etc.



**RIVER
ADVISERS**

riveradvisers.com

Thank you

Matthew Evans
Director Regulatory Affairs
E: mevans@riveradvisers.com

For more information visit:
WWW.RIVERADVISERS.COM