

## **ICASA South Africa Satellite Licensing consultation**

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## Object of the document

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Kinéis welcomes the ICASA initiative towards a more transparent and flexible regulatory framework for satellite services in South Africa.

This contribution aims at sharing Kinéis and CLS Southern Africa views on licensing of Argos-Kinéis services in the country.

- These services target mainly B2B applications using low data connectivity for sensors and require an appropriate licensing regime to foster a successful take-up for this niche market. Indeed,
- Argos-Kinéis service does not provide Internet broadband access or voice over satellite but is providing complementary connectivity for IoT-type devices where terrestrial coverage is lacking, ensuring continuity of data collection for various industries (environment, mining, utilities, etc.).
- The introduction of a simple procedure for landing rights in South Africa is welcomed.
- Regarding the licensing of terminals, Kinéis wishes to highlight the importance of a fair fee structure for Earth stations between applications offered:
  - Kinéis terminals are restricted to low data communications while other satellite earth stations from other satellite operators allow for Internet and voice services.
  - **This key difference must be reflected in the applicable fee structure to avoid unfair licensing treatment between stakeholders aiming at completely different markets (see answer to Question 6)**
- Furthermore, Kinéis has chosen to deploy a ground station in South Africa to support its new NGSO satellite constellation under deployment:
  - 15 of the 25 satellites have been successfully launched so far
  - 10 satellites are ready for launch by the end of Q1.2025.
- This ground segment infrastructure will also improve the satellite latency in the sub-Saharan region. Hence the new licensing provisions for satellite gateways are welcomed (see answer to Question 4).

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## 1. Applicable Legislation and Regulations

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**Question 1: These are the policy principles from the ATU that ICASA seeks to align with. Kindly provide comment(s) on the proposed policy principles and any further recommendations listed in the above section?**

Kinéis supports the ICASA and ATU policy principles laid down in the consultation document, in particular blanket licensing for Earth stations and regulatory certainty on the licensing schemes for satellite services. ICASA has introduced regulatory vehicles that will support a complete authorization scheme for satellite operators: from their infrastructure to their end-user's radio equipment.

Kinéis wishes also to add the importance of considering new entrants that deploy NGSO constellation dedicated to low data connectivity such as Kinéis. Those services exclude Internet access or voices for mass markets and targets B2B and Industrial sectors as end-users. In this niche market, solutions and customers are often developed and deployed on a global scale. Hence, facilitating the take-up of local adoption of a worldwide solution should be further facilitated by ICASA:

- Kinéis supports the principle d) that allows the development of the market without adding burdensome procedures for each Earth stations.  
*"d) Domestic user terminals to be licensed without the need for individual terminal-by-terminal authorisation (e.g., on a blanket licensing basis)."*

- Regarding the principle g), ICASA must also consider that all end-user Earth stations are not equal in terms of frequency usage, bandwidth and market addressed. The associated fees must not assimilate in the same category the following satellite terminals:
  - o Those providing Internet and Voice access: they occupy the spectrum heavily and are subjected to higher subscription fees collected by the satellite operator (hundreds of \$/month).
  - o Those providing only low data connectivity from IoT dedicated satellite operators: the spectrum is used sporadically in time (burst transmission of 1 second) and in frequency (1.6 to 10kHz channels). The monthly fees are capped at a few euros.

*“g) Reasonable spectrum fees, taking also into account the increasing amount of bandwidth used by satellite systems operating in higher frequency bands.”*

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## 2. Scope of the Inquiry with respect to Radio frequency bands and services

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**Question 2: Do you agree with the exclusions of radio navigation satellite services, amateur satellite services, earth exploration, space research satellite services and radio astronomy services indicated above and others if applicable? If not, please explain your reasoning and propose an alternative to this proposal.**

To foster ground station development in its territory, ICASA should include all satellite frequencies in its satellite licensing regulations and update following each World Radiocommunication Conference bringing revisions of the Radio Regulations.

Kinéis is operating various frequency bands and will benefit from an appropriate regulatory authorization regime to provide its service offering in South Africa:

- Kinéis is the operator of the Argos Program, in place since the 80's for environmental applications such as wildlife monitoring (air, terrestrial and maritime animals). The 401-403 MHz band is operated for data collection platforms under the Earth Exploration Satellite Services in the Radio Regulations and harmonized by the Recommendation ITU-R SA.2045.
- Kinéis also operates the MSS UHF in the 400 MHz band for generic IoT applications.
- Finally, Kinéis operates ground stations worldwide that rely on its UHF 400 MHz band for Telecommands and 2200-2290 MHz for Space Operations EESS feeder links in accordance with ITU Radio Regulations.

In view of this, Kinéis encourages ICASA to include any satellite frequency bands that are included in the Radio Regulations to support satellite services introduction in the country whether for end-user or gateway links, in particular:

- 401-403 MHz for Argos Data Collection Platforms,
- 2200-2290 MHz for Space Operations and for EESS feeder links.

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### 3. Types of licences/authorisations for Satellite Communications

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**Question 3: Do you agree with the proposed approach of having a separate licence/authorisation (where applicable) for each segment of the Satellite Communication value chain? Please elaborate.**

Kinéis welcomes the three regimes proposed.

Kinéis supports the ICASA proposal for a satellite operator to hold directly the landing rights and the Satellite Gateway Earth stations licenses. Regarding the User-Terminal Licenses, Kinéis welcomes the blanket license approach developed in ICASA proposal. The satellite service market presents various stakeholders in the value chain for which any additional administrative burden should be avoided. A satellite operator (whether national or foreign) should be able, once licensed, to provide either directly or indirectly the services to any integrators, value-added resellers or end-users, especially when the end-user is an industry stakeholder that has a global presence and wishes to deploy its satellite-based solutions in all its locations without additional administrative burdens such as device per device authorisations. See additional comments on the answer to the following questions 4 to 6.

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### 4. Satellite Gateway Earth Stations

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**Question 4: Please provide your comments on the proposals in the preceding paragraph and the duration of the Gateway Earth Station licences.**

Kinéis will apply to enter into the Approved list of authorised Space Stations (ALOSS) both to support the Kinéis ground station in South Africa for its space segment and also to offer services to the user segment.

Kinéis supports ICASA when considering the Gateway Earth Station Licence under the Private Electronic Communication Network (PECN) licence regime as this part of the satellite network is a core element of the satellite operator infrastructure and does not provide service directly to the end-users.

These new provisions will support the investment of the private sector in South Africa as it will simplify the administrative requirements for operation in the country.

**Kinéis advises ICASA to increase the term of the license to 10 years as the deployment of a ground segment incurs an investment that will need this order of magnitude to generate returns.**

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### 5. National and International Coordination

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**Question 5: Please comment on the above-mentioned alternative proposals to levy the spectrum fees for Gateway Earth Stations and indicate your preferred option. The Authority understands that there are other spectrum fee calculation methodologies used elsewhere in the world. Please give details of the methodologies which you believe would be most suitable for South Africa.**

ICASA should introduce the concept of non-paired spectrum for gateway purposes. In the case of Kinéis, the gateway operates in an unpaired manner.

- Earth to Space:

- 60kHz for Telecommands
- 840 kHz for Reference beacons (i.e. end-user link monitoring)
- Space to Earth
  - 5 MHz for Telemetry
  - 100 kHz for Reference beacons (i.e. end-user link monitoring)

This asymmetric frequency usage could be found with other satellite operators. Hence, Kinéis wishes that the Spectrum Fee table is amended to reflect this possible asymmetry as follows:

Item	Radio Frequency band	Amount in Rands per MHz	
		Simplex	Duplex
A	F<1 GHz	1000	2000
B	1GHz<= F <=3.3 GHz	250	500
C	3.3GHz<= F <=7.075 GHz	100	200
D	7.075GHz<= F <=17.3 GHz	75	150
E	17.3GHz<= F <=51.4 GHz	50	100
F	F <=51.4 GHz	25	50

Kinéis and CLS SA new proposal in blue

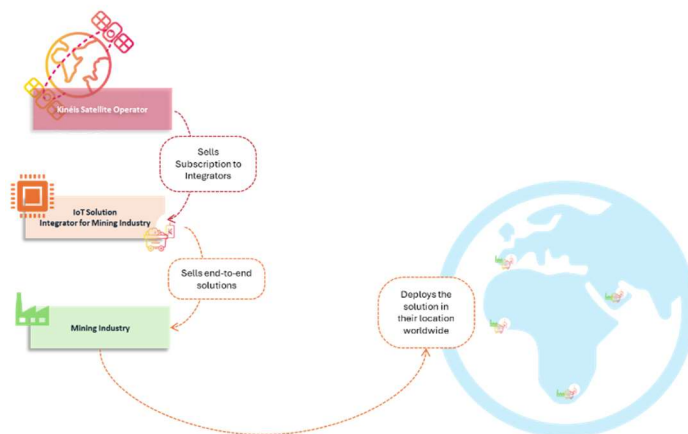
## 6. Satellite User Terminals

**Question 6: Kindly comment on the section above and on the proposal for blanket licensing with a fee for a set number of terminals under a new proposed licence regime to be referred to as “Satellite User Station Network Licence”. If possible, please provide a breakdown of the number of terminals with the corresponding spectrum fee values in South African Rands.**

Kinéis wishes to highlight the risk of unfairness from the uniform treatment of all satellite services irrespective of the market addressed. Indeed, new business models have emerged that are different from existing satellite offerings that are supported by local distributors to address connectivity needs for voice and Internet access from small businesses and consumers. It is understandable that market control requires such local distributors to be licensed appropriately as those satellite offerings provide competition and alternative solution for voice and broadband coverage in areas not connected by terrestrial networks. Voice and Internet Satellite offering is a pivotal part of the regulator toolbox to improve digital penetration in the country.

Space IoT services is a niche market, more business to business oriented, that enables global monitoring/alerting/locating use cases that need satellite coverage everywhere. **The distribution model is dealt with on a global scale and is not big enough to require and to support local distributors in 194 Member States.** The IoT satellite operators usually contract with integrators that are onboarding their satellite connectivity onto their IoT solution which is then provided to the end-user. On-the-shelf or use-case specific products are then made available by integrators to fit the targeted use cases of end-users. Here after is the example of the Mining and Exploration Industry:

- **Description:** Kinéis offers connectivity for remote mining and exploration operations as the IoT devices monitor equipment performance transmitting one message daily via Kinéis satellite network



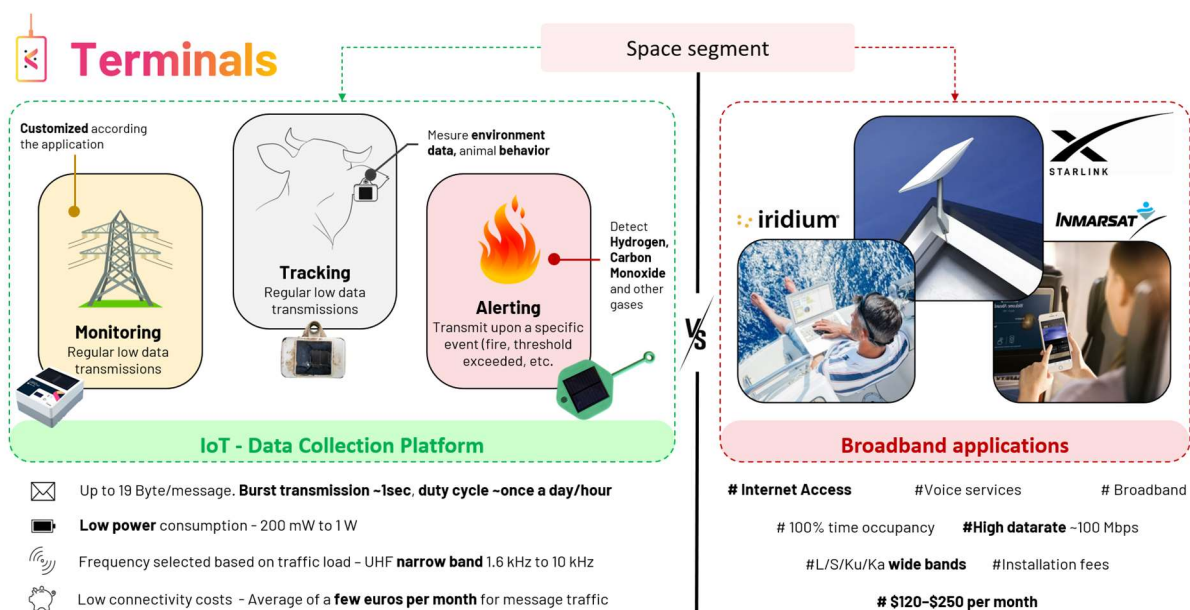
- **Connectivity distribution**
  - o Kinéis sells data plan in bulk (ex: 1 message per day for thousands of devices) to an integrator chosen by the Mining Industry.
  - o The integrator develops and sells to the Mining industry an end-to-end solution.
  - o Deployment of the terminal in the remote locations of the Mining Industry in all its locations (ex: four countries, including South Africa).
- **Licensing Scenario based on the current proposal:**
  - o Kinéis hold the landing right authorization in South Africa.

### ○ Satellite User Terminals Network Licence

- As it stands, Kinéis is unable to hold this license as it is not established in South Africa.
- It will make no sense for the mining industry to hold a "Satellite User Terminals Network Licence" for their own specific needs and will bring administrative burden to their operations.
- The Integrator is only responsible for the radio equipment type approval as part of its end-to-end solutions in South Africa.
- CLS Southern Africa, as Kinéis representative in the country, would be able to seek this license to cover its own customer needs and terminals from the mining industry in this example.

**Recommendation regarding local establishment in South Africa.** Kinéis proposes to either holds the Satellite User Terminals Network Licence or to designate a legal representative that is established in South Africa to hold the Satellite User Terminals Network Licence that will cover any terminals deployed in the country (either contracted by the legal representative in its portfolio and any Kinéis direct and indirect customers requiring deploying a Kinéis enabled solution in South Africa or roaming terminals)

Kinéis also wishes to invite ICASA to consider the fact that Kinéis does not offer voice or Internet access to its customers, but instead targets a niche market that requires flexibility in licensing scheme to avoid additional cost of entry barriers to the IoT market that already presents a complex value chain. **The fee structure for Earth stations blanket licenses must reflect the key differences between two categories of satellite Earth stations summarized in the following figure:**





(\$100's/month) than a Kineis enabled device (below 20Bytes/message, burst transmission of 1s., below 10\$/month).

To summarize Kinéis calls for a specific provisions to be added in the current proposal to address IoT dedicated services, especially in narrow frequency band:

- 1. The possibility for the foreign satellite operator to hold directly the terminal licenses or designate a South Africa legal representative that will hold the license covering all Kinéis-enabled devices in South Africa.**

Kinéis has partnered with CLS Southern Africa based in South Africa, Hence either entity will be able to seek the Satellite User Terminals license that will cover all Kinéis-enabled devices in South Africa. No other distribution channel is foreseen today as Kinéis believes that any required additional intermediates will impede its development in the country as it will artificially add cost to the service to be provided or complexify future business relationship without bringing value to the end-users that is often operating globally.

- 2. A New Fee tier applicable to IoT-restricted services is in dire need.** It must not limit the number of terminals to be deployed and should not add undue cost. It is proposed to be exempted from fees similarly to the short-range devices regulations as it brings similar benefits to the end-users and those devices operate similarly. The following revisions are proposed:

Services	Number of terminals	Fee per category of user terminal in South Africa (Rands)
Technology neutral	$0 \leq n \leq 100$	A
Technology Neutral	$100 \leq n \leq 1000$	B
Technology Neutral	$1000 \leq n \leq 10000$	C
Technology Neutral	$n > 10000$	D
Restricted to non-voice, non-Broadband Internet access	Not limited	E*

Kinéis and CLS SA new proposal *in blue*

With E exempted from fees like any short-range devices. It is justified by the niche market addressed that is yet to be developed in South Africa contrary to the voice and broadband market that is already in high demand in region not covered by terrestrial competitive offers.

**Question 7: Kindly comment on the appropriateness of using regulation 37 of the ICASA radio regulations ("Recognition of licences issued by other countries") to recognize ESIM licences issued by other countries.**

n/a

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