



Communications for all in East Africa

**A GUIDELINE FOR METERING
AND BILLING FOR VOICE AND
DATA SERVICES**

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ACRONYM

3GPP: 3rd Generation Partnership Project

ARIB: Association of Radio Industries and Businesses

ATIS: Alliance for Telecommunications Industry Solutions

EAC: East African Community

EACO: East Africa Communications Organisation

NRA: National Regulatory Authorities

KBs: Kilobytes

MBs: Megabytes

GBs: Gigabytes

TBs: Terabytes

1.0 BACKGROUND

Over the last 10 years, the global telecommunications marketplace has grown in leaps and bounds both from the supply and consumer (demand) sides. From the supply side, technology is dynamic in nature, thus service innovation growing since first-generation technology of the early 90s.

On the consumer side, the global telecommunications marketplace has grown into distinct segments that include business/commercial users, highly technically savvy early adopters as well as digitally illiterate late adopters in the retail space.

With this growth in services and product profiles, consumers have increasingly been left with limited visibility and the ability to decipher the accuracy of bills and charges for the different services. It should be noted that these consumers rely on the good faith of service providers to truthfully meter and apply correct pricing rules for consumption of the different telecommunication services.

While East Africa Communications Organisation (EACO) member states are obliged to devise ways and means to achieve fast, reliable, secure, affordable, and efficient communication services, National Regulatory Authorities (NRAs) have mainly left the metering and billing assurance function to the telecommunication service providers.

While EACO does not seek to duplicate the roles of global standards-setting agencies and forums like 3GPP (<https://www.3gpp.org/>), The Association of Radio Industries and Businesses (ARIB), The Alliance for Telecommunications Industry Solutions (ATIS) and others, it is prudent to establish minimum performance principles to allay emerging consumer concerns against wrongful metering and billing in the provision of telecommunication services based on existent practices and recommendations/standards of these agencies.

2.0 PURPOSE

The purpose of this guideline is to provide voice and data service metering and billing principles with the aim of enhancing the integrity of metering and billing schemes of telecommunication service providers. The principles in this guideline aim to among others,

- i. Establish a clear and consistent regulatory tariff-filling framework,
- ii. Establish consistent standards for the measurement of units of use for metered services,
- iii. Establish allowable error factors and thresholds in the measuring and billing of voice and data services,
- iv. Treatment of rounding effects in metering and billing,
- v. Good faith in metering and billing for telecom services,
- vi. Transparency and disclosure obligations for metering and billing,
- vii. Consumer protection and redress mechanisms for metering and billing-related complaints,

- viii. Establishment of a compliance monitoring framework for metering and billing integrity,
- ix. Establishing a regulatory penalty regime for non-compliance.

3.0 SCOPE

In line with its objective to harmonize telecommunications sector policy and regulatory frameworks in the EAC member states, these principles shall apply to telecommunication service providers specifically for metered voice and data services.

The units of metering may be duration (Minutes, or Seconds), volume (number of bytes, Kilobytes (KBs), Megabytes (MBs), Gigabytes (GBs), Terabytes (TBs) and number of characters in a message.

4.0 THE APPLICABLE PRINCIPLES

4.1. Tariff Filing and Regulatory Notification Obligations

Member State NRAs should establish minimum tariff filing obligations for all telecommunication service providers that are consistent with their national Regulations on Pricing and Accounting for voice and data services. This is aimed at supporting tariff appraisal for competitiveness and long-term market effects. The obligations should take into account the following:

- i. Product, service, and tariff description,
- ii. Type of customers to be affected as identified by physical, income/expenditure patterns, location, billing scheme, or any other features,
- iii. Product purchase channels e.g. Mobile Money, Service Provider apps,
- iv. Purchase limit (e.g. number of times a product may be bought in a given duration)
- v. Launch date and planned duration,
- vi. Validity of the product or service in days, weeks or months,
- vii. Pre-launch risk assessment including detailed assessment of technical, commercial, consumer and strategic threats as well as mitigation plans,
- viii. Projected demand shifts on account of the new tariff,
- ix. Description of systems involved, system capacity and latest upgrade details where applicable,
- x. The relevant charging/billing triggering event,
- xi. The unit of measure used for charging or billing,
- xii. Charging intervals,
- xiii. Rounding off treatment applied,
- xiv. Prioritisation of charging
- xv. Refund and or Rebate rules,
- xvi. Applicable tax rates.

4.2. Truthfulness in marketing communication

The NRA should ensure that the service provider is obliged to exercise utmost good faith in availing the key product and promotional information to target customers. At

the very least, a service provider will be obliged to keep an Up-To-Date key facts sheet (terms and conditions) available on its website.

4.3. *Product performance updates*

The NRA should ensure that following the launch of a product, telecom service providers file with the respective NRA on a monthly and or quarterly basis key product performance updates or indicators including:

- i. Incidents of metering and billing-related complaints,
- ii. Product uptime,
- iii. Product failure incidents and redress efforts.

4.4. *Units of measurement and allowable errors in metering and billing*

While EACO aims to achieve 100% accuracy in metering and billing events of telecom service providers in the respective NRA jurisdictions, billing errors and could be capped at no more than 0.0001%.

Over and above the billing accuracy targets, the following metrics could guide the allowable errors in the measurement of units of use.

Variable	Allowable error
Call duration	+/-100 milliseconds
Data volume	+/-102 bytes
SMS	+/-10 characters or 14 bytes

a) *Rounding effects*

NRA's shall from time to time provide guidance on the allowable treatment of rounding for various products and services as they emerge. Presently, the following rounding treatments could be considered.

	Product category	Unit of measure	Rounding treatment	Example
1	Call holding and set up	N/A	Call holding and setup shall not count toward the billable time of a call	A missed call should never be billed
2	Voice services	Minute	Minute-based products shall be rounded upwards to the next minute	a. Anything less than 60seconds shall be billed as 1Min (as 60 secs) b. Anything greater than 60 seconds shall be billed as 2 mins
3	Voice services	Seconds	Second-based products shall be rounded upwards to the next 1000 milliseconds	500 milli secs. shall be billed as 1 sec (1000 milli secs.)

4	Volume Based Data services	Kilobyte (kb)	Kb-based products shall be rounded upwards to the next 1024 bytes	<ul style="list-style-type: none"> a. 800 bytes of data shall be billed at 1kb b. 1500 bytes shall be billed as 2kb
		Megabyte (mb)	The metering of Mb-based products shall be rounded upwards in increments of 1024 kilobytes	<ul style="list-style-type: none"> a. 800 kilobytes of data shall be billed as 1Mb b. 1500 kilobytes shall be billed as 2 Mb
5	USSD sessions	Duration of use	<p>The metering of USSD sessions shall be based on the duration of use (in seconds) and not number of hops.</p> <p>The measure shall be rounded upwards to the nearest second</p>	<ul style="list-style-type: none"> a. 800milli seconds shall be billed as 1 second. b. 1500 milli seconds shall be billed as 2 seconds
6	SMS	Number of characters	<p>The metering of SMS shall be based on a number of 160 characters or 140 bytes.</p> <p>The measure shall be rounded upwards to the nearest 160 characters or the nearest 140 bytes.</p>	<ul style="list-style-type: none"> a. 120 characters shall be billed as a 160-character message (1 message) b. 200-character message shall be billed as 2 messages

b) Compliance monitoring framework

NRA's could;

- 1) establish a monitoring and audit framework to ascertain the degree of compliance with the various metering and billing guidelines.
- 2) from time to time collect relevant product datasets on a monthly, quarterly or any other frequency that it might deem appropriate. Performance data may also be collected on an ad hoc need-to-have basis to facilitate decision making.

c) Non-performance redress and penalty framework

Upon the identification of material noncompliance incidents, NRAs in EACO may apply the following,

- i. Oversee an appropriate customer refund scheme,

- ii. Suspend the product/service until corrective action is set with respect to billing and metering of the service,
- iii. Apply appropriate penalties in line with their Acts and attendant Regulations.

However, the choice of penalties or regulatory action may be based on the frequency of occurrence of the breach or the magnitude of financial loss or gain on account of the breach.