Appendix 3.3.3



Postal Quality of Service Monitoring Guidelines

I. Acronyms & Abbreviations

#	Acronym/Abbreviation	Definition
1	QOS	Quality of Service
2	QSM	Quality Service Monitor
3	TAS	Test Administration System
4	RFID	Radio Frequency Identification
5	CRS	Central RFID Server
6	AMQM	Automatic Mail Quality Measurement
7	TAG	Abbreviation for Transponder
8	IPC	International Post Corporation
9	CRASA	Communications Regulators Association of Southern Africa
10	NRAs	National Regulatory Authorities
11	GMS	Global Monitoring System
12	DCs	Developing Countries
13	ICs	Industrialised Countries
14	SAPOA	Southern African Postal Operators Association

II. Definitions

#	Term	Definition
1	End-2-End	Refers to the journey made by a test letter from start to finish
2	Transponder	A small radio transmitter/receiver that can be sent in a normal letter. When the transponder is activated by a radio field from an antenna in the RIDCS system, the transponder will send data stored in its memory
3	Panellists	Person/s responsible for posting and receiving

		the test mail items and recording the necessary information

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1. Introduction

1.1 Background

Monitoring Quality of Service (QoS) is a fundamental regulatory function regardless of the sector involved mainly due to the importance of service quality within the context of Consumer Protection.

The measurement of QoS in the Postal Sector can be undertaken using a variety of methods depending on a number of factors including the availability of resources and the desired use of the results. In some cases, the measurements can be undertaken solely by the service providers specifically for the purpose of self-diagnosing operational bottlenecks. In other cases, QoS can be measured by both the operators and regulators for the purpose of ensuring compliance with set QoS Targets and Standards. Whatever the case, there is no doubt that QoS has become a topical issue in the Postal Sector that can not only be attributed to increased competition and the associated consumer choice, but also the evolving demands of consumers especially in the advent of e-commerce.

While a number of methods, both manual and automated, are currently being deployed by some CRASA Member National Regulatory Authorities (NRAs) to measure Postal QoS, the Postal Committee has seen tremendous value in adopting a common approach which can be replicated by individual members based on their national conditions.

It is against this background that the CRASA Postal Committee, during its meeting that was held in Lilongwe Malawi on 29th August 2016, resolved that a Postal Quality of Service Working Group be formed to develop Guidelines on the Measurement and Monitoring of Postal QoS for regulatory purposes.

1.2 Objectives of the Guidelines

The guidelines are in no way prescriptive or binding on the Member States. They are offered as a reference source to guide CRASA NRAs in exercising their Regulatory mandates insofar as the monitoring of Postal QoS is concerned.

In this regard, the specific objectives of the Guidelines include the following;

a) To promote a common understanding and approach to the process and practice of Postal QoS measurement and monitoring among CRASA Members;

b) To identify and analyse specific QoS measurement and monitoring techniques that can be deployed by CRASA Members with similar domestic conditions;

c) To enhance the ability of CRASA Members to enforce their respective Postal QoS Regulations using objective measurement mechanisms that produce irrefutable results;

d) To provide CRASA Members with an effective mechanism for promoting compliance with national quality of service standards by the applicable postal and courier service providers

e) To outline for the benefit of CRASA Members, the best practices in measuring and monitoring the quality of service in a multi-operator environment using simple, effective means over a pre-defined period.

f) To promote the overall improvement of Postal QoS performance by SADC Members and within the SADC Region.

1.3 Applicability

While the listing below is not exhaustive, these guidelines are intended to apply the following identified stakeholders;

- Policymakers
- Postal Regulators
- Postal Operators
- Wider postal sector stakeholders involved or interested in postal QoS

1.4 Structure of the Guidelines

The guidelines are structured as follows:

- **Part 1** covers the Introduction, Background, Applicability and Structure of the Guidelines;
- **Part 2** provides the International and Regional context within which the Guidelines have been developed;
- **Part 3** draws attention to the relevant sections of the SADC Protocol on Transport, Communications and Meteorology which provides the overarching mandate for the development and implementation of the Guidelines;
- **Part 4** provides an overview of the concept, principles and practice of Postal QoS monitoring and measurement;
- **Part 5** outlines some recommended regulatory approaches for the consideration and implementation of CRASA Members.

2. Context

2.1 International Context

At a global level, the Universal Postal Union (UPU) has continued implementation of many programmes aimed at improving quality of service. In addition to maintaining the Quality of Service Fund (QSF) and specialised Working Groups that specifically deal with the measurement of quality of service, not only for letters but parcels as well, the UPU's activities include continuous testing for measuring the quality of service of 700 international links, the creation of barcodes for tracking and tracing items, the setting of

end-to-end delivery standards, and the introduction of the J+5 standard (delivery on the fifth working day after the day of posting) for 80% of international mail.

The UPU has also continued to improve the Global Monitoring System (GMS) which is a state-of-the-art measurement system managed by the International Bureau in order to provide each participant with operational results that are accurate and of high quality. This information is also increasingly being used to determine UPU terminal dues remuneration according to a performance bonus system established within the UPU.

Given that the most important links for most developing countries (DCs) in terms of Terminal Dues Revenue are those with industrialised countries (ICs), the growing emphasis on the "pay for performance" concept by ICs places a greater urgency on DCs to improve their quality of service or risk losing Terminal Dues Revenue.

2.2 Regional Context

Despite the close geographic proximity between SADC Member States, recent QoS tests carried out by the UPU on city-to-city Intra-SADC links have revealed considerable challenges in meeting the Global J+5 /80% Target. While a range of regional QoS projects have, and continue to be pursued, mainly under the auspices of the Southern African Postal Operators Association (SAPOA), the improvement of QoS in SADC is largely dependent on improvements at individual member state level. This however, requires robust, QoS monitoring mechanisms that are able to clearly establish the baselines and closely monitor progress with diagnostic capabilities.

3. SADC Protocol on Transport & Communications

In accordance with Article 11.5 (1 and 2) of the SADC Protocol on Transport and Communications, Member States are requested to adopt harmonised operating regulations, procedures and quality standards to promote interoperability in the Region based on the norms laid down by the UPU.

Furthermore, such standards are supposed to promote, among other things, the fixing of common service targets for postal items while seeking a common understanding on the measures to be taken to meet the service targets. Agreement on monitoring systems that are to be set up to measure compliance with set targets, and regular review of procedures to verify progress towards achieving ultimate targets is also a requirement under the Protocol.

4. Overview of Postal QoS Measurement and Monitoring

The purpose of this Section is to ensure that Postal Regulatory Staff (within CRASA Member NRAs) and all other identified stakeholders involved in the Measurement and Monitoring of Postal QoS have a common understanding of the subject in terms of:

4.1 Guiding Principles

The monitoring of QoS for regulatory purposes must be underpinned by the following principles;

A. Transparency

All aspects of the QoS framework including the Standards, Targets and Measurement mechanisms, must be established and maintained with the furthest possible transparency in order for inspire confidence from the participating stakeholders

B. Objectivity

The QoS Measurement must be based, to the furthest extent, on objective, scientific and impartial methods that produce irrefutable proof of compliance and non-compliance and the magnitude thereof.

C. End-to-end

To the furthest extent possible, all QoS measurement programmes must measure city- city, end-to-end links, in both directions.

D. Diagnostic Capability

Where possible, QoS measurement mechanism must incorporate diagnostic elements that are specifically designed to identify bottlenecks in the mail pipeline and the magnitude thereof.

E. Leveraging of Operator-owned and Operated Systems

Where possible, NRAs may utilise within their QoS Monitoring mechanisms, QoS data that is generated by the service provider's own operational systems such as Track and Trace and Proof of Delivery (POD) systems

4.2 Setting and Understanding QoS Standards and Targets

Setting of QoS Standards and Targets must be the starting point for all QoS monitoring frameworks that are developed and implemented by NRAs. The setting of Standards and Targets must take into consideration, the following principles;

A. All terminologies must be clearly articulated and understood by all parties including the following;
    a. Day of Posting
    b. Transmission time
    c. Delivery
    d. Standard
    e. Target
B. Priority is to be given to routes/links with the most significant mail volumes,
C. The measurement method must take into account public holidays, weekends and where necessary, the time of posting,
D. Domestic QoS Standards and Targets must be set bearing in mind the Global J+5/80% which must be exceeded by the majority of the domestic links that account for the bulk of the mail volumes.

Example 1.1: Domestic QoS Standards, Targets and Measurement Methods

No.	Measurement Method	Delivery Standard	Target %
1	***RETAIL/ORDINARY mail***		
	Percentage of mail delivered locally within 24 hours after posting(before 17hrs)	D + 1	95
	Percentage of mail delivered along line of rail within two days after posting	D + 2	95
	Percentage of mail delivered to provincial centres within three days after posting	D + 3	95
	Percentage of mail delivered to the rest of the country within four days after posting	D + 4	90
2	***COURIER***		
	Percentage of mail posted before 10:00hrs for delivery within the same town delivered on the same day	D + 0	98
	Percentage of mail posted for delivery along the line of rail delivered with 24 hours	D + 1	98
	Percentage of all mail posted for delivery to provincial centres delivered within 48hrs.	D + 2	98
	Percentage of all mail posted for delivery to other parts of the country delivered within 72 hours	D + 3	98

4.3 Measuring QoS using Manual Methods

4.3.1 Description

This involves measuring QoS by physically introducing test mail into the subject's mail stream and determining the transmission time without the aid of electronic or mechanical tools.

The actual determination of the transmission time may involve physically inspecting the postmarks on the test mail item in and noting the dates imprinted by the despatching and receiving processing centres.

4.3.2 Rationale

Generally employed where a low-cost measurement mechanism is required.

4.3.3 Tools

- Test mail items - these must bear the characteristics of real mail items in order to be introduced into the main stream without drawing special attention.
- Envelopes
- Postage Stamps or Franking Machine

4.3.4 Actual Process:

a) Determine the scope of the QoS monitoring exercise including the identification of all the end-to-end routes or links to be measured, the period to be covered and the sample size,
b) Identify panellists on the sending and receiving end of each link, who will be responsible for posting and receiving the test mail items and recording the necessary information,
c) Develop detailed panellist instructions outlining their responsibilities and guidance on how to execute these responsibilities,
d) Prepare test mail items in advance and where appropriate, the envelopes may be franked and classified as bulk mail,
e) Serially number the test mail items in order to promote traceability and accountability
f) Record the date of posting of the test letters and also record the date of receipt of returning test letters

4.3.5 Analysis & Reporting of Results

- Compilation and analysis of results must be aligned to the applicable domestic QoS Standards in each Member State,
- The Results should communicate the percentage of the mail items that were successfully inducted into the mailstream and were delivered on time (meeting or exceeding the set Standards and Targets) as opposed to those that fell below,
- The life-cycle of a test mail item must be defined in order to determine how long after the induction date, such an item should be considered as lost and undeliverable,
- The duration of the QoS Measurement Exercise i.e.; one month, a quarter a year, more than a year etc., will determine the frequency of reporting (i.e. weekly, monthly, quarterly, annually)
- At the end of the measurement period, a consolidated report should be prepared to summarize the overall performance of the subjects during the entire period

4.4 Measuring QoS Using Automated Methods

4.4.1 Description

This involves measuring QoS by physically introducing test mail into the subject's mail stream and determining the transmission time with the aid of electronic or mechanical tools.

4.4.2 Rationale

Where a fast, efficient mechanism for monitoring QoS is required with reduced human intervention especially in terms of compilation and analysis of test results.

Most automated systems also have diagnostic capabilities which are useful in detecting operational bottlenecks.

4.4.3 Tools

While the actual quantities of each element will be determined by the desired scale of the operation and also the available budget, the typical set-up will include the following;

- PC (s)
- label printer (s)
- Transponder reader (s)
- Start and end Units or scanners
- Actual RFID Transponders
- Fitted Diagnostic Gates

4.4.4 Actual Process:

- The actual process of testing is similar to the manual method in that human intervention is still required to prepare the test mail items and physically introduce them into the mailstream through posting.
- Panellists on either end are still required to send and receive the test mails.
- The fundamental difference with the manual method lies in the compilation, analysis and reporting of data which is done using the RFID readers and supporting IT equipment.

4.4.5 Analysis & Reporting of Results

- Automated systems typically generate reports to the specifications of the user with minimal human intervention.
- The reporting formats tend to be user-friendly and fact-based, relying on the automatically captured and analysed data complied over a user-defined period.

5. Recommended Regulatory Approaches to Postal QoS Measurement

5.1 Measuring and Monitoring QoS for Purposes of Enforcement

5.1.1 Legal provisions for enforcing QoS Standards and Targets

In order for QoS Standards to be enforceable, Legal Provisions are required to firstly empower the Regulator to set the standards, and secondly to oblige service providers to adhere to them.

As a bare minimum, Member States should have the mandate to set and publish quality of service standards in relation to the Universal Service paying particular attention to routing times and to the regularity and reliability of such services.

Ideally this mandate should emanate from the Principal Act and thereafter be operationalised using the applicable instruments including the following;

- Regulations
- Guidelines
- National Standards (Issued in collaboration with the Standards Bureau)
- Through Licence conditions

The applicable penalties for breaching the set standards must also be clearly articulated in accordance with the instruments used.

5.1.2 Importance of Statistically Representative QoS Models and Tests

- Enforceability of QoS Standards requires accurate, reliable and statistically representative results.
- Care must be taken to ensure that an appropriate statistical model is agreed with the targeted operators to minimise the likelihood of results being disputed,
- The statistical model must among other elements, include the sample size and the applicable compliance thresholds within that sample size.
- This also implies the need to have reliable volume statistics beforehand, from the operators in question.

5.2 Measuring and Monitoring QoS for Non-enforcement Purposes

Measuring QoS for non-enforcement purposes mainly arises where Member States do not yet have the required legal provisions for enforcing QoS Standards.

Under such conditions, it may still be useful to carry out QoS Measurements with the following characteristics:

- The actual tests need not be statistically representative;
- The results are merely indicative of a general improvement or deterioration of performance on the link being tested;
- The monitoring can also be simply for diagnostic purposes to assist the operators and the regulator in identifying operational bottlenecks and challenges before enforcement commences;
- Such monitoring can also make use of the operators POD and Track and Trace Data as an alternative to developing test mail items and introducing them into the mail stream.

6. Conclusion

These guidelines provide a comprehensive reference source on the theory, general principles and practical elements of monitoring and measuring Quality of Service in the Postal Sector for the benefit of CRASA Member NRAs. More importantly, the Guidelines promote a common understanding and approach to Quality of Service among CRASA Members, in line with the ideals of the SADC Region while providing sufficient room for national conditions at Member State level to be taken into account.

It is expected that these Guidelines will greatly enhance the ability of CRASA Member NRAs to further exercise their mandates in the postal sector and in turn contribute towards the overall improvement in Quality of Service within the SADC Region.

7. References

- SADC Protocol on Transport Communications and Meteorology
- UPU GMS General Parameters - 2009