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Draft Postal and Telecommunications (Quality of Service) Regulations, 2015

PART I

PRELIMINARY PROVISIONS

IT is hereby notified that the Minister of Information Communication Technology, Postal and Courier Services has in terms of section 99 of the Postal and Telecommunications Act [*Chapter 12:05*], made the following regulations after consultations with the Authority:⎯

# These regulations may be cited as the Postal and Telecommunications (Quality of Service) Regulations, 2015 (No…..)

# These regulations shall come into operation on the date of gazetting.

# Interpretation

In these regulations-

“Act” - means The Postal and Telecommunications Act [Chapter 12:05]

“Authority” - means The Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) established in terms of the Act

“Average” or “Mean” - means the result of dividing the sum of the numerical values in a set by the number of values in the set;

 “Cell” – a radio frequency coverage area of a single site in Radio Access Network (RAN) which is part of cellular network;

“Commercial Courier Label” - means a piece of paper or bar-code or any attachment, affixed onto a Commercial Courier article, from which determination can be made of, the Licensee’s name and logo, the name or type of the courier service, the weight of the article, the charge for the service, time of acceptance of the article, the addresses of both the Sender and the addressee and a unique identification number for tracking and tracing purposes.

“Consumer” - means a person who purchases, receives or makes use of a regulated service provided by a Licensee and does not resell or deliver the service to another person;

“Coverage Area” - is based on Signal Strength and refers to the network’s ability in achieving an acceptable level of voice quality.

‘Day’ - A period of 24 hours beginning at 12:00 midnight to 12:00 midnight the following day.

“End User” - means a person who uses a commercial product or service.

“Door-to-Door delivery’ - means a method of delivering postal and courier articles to the addressee at a physical address indicated on the article or as otherwise advised by the addressee or Sender.

“Force Majeure” - means an unforeseen event that is a result of the forces of nature, as opposed to one caused by human beings for example: natural disasters, heavy storms and flooding

“Faulty cell” - means a cell that fails to meet the Quality of Service target value or a cell that triggers any of the Severity alarms

“Grace Period” - means the time-frame given to an operator to fix the Warning cells detected in its network. Two months maximum for cells that triggered High severity alarms.

“Key Performance Indicator(s)” - means a set of standards or metrics that help the Authority to determine how Licensees are meeting set targets or expectations; All Key Performance Indicators shall be based on Busy Hour (BH) calling times;

“Licensee” – has the meaning assigned to it in the Postal and Telecommunications Act [Chapter 12:05]

“Mean opinion score (MOS)”- means a numerical value of the quality of human speech on a predefined scale that the end user assign to their opinion of the performance of the telecommunication transmission system used either for conversation or for listening to spoken material.

“Measurement” - means a numerical value that is obtained by using a Measurement Method;

“Measurement Methodology” - means a technique of measuring a parameter.

“Network Availability” - means the time the network will be in a state to perform a required function at a given instant of time or at any instant of time within a given time interval;

“Parameter” - means a measurable characterization of the quality of an aspect of a service;

“ “Pick-up Service”- means the activity where a Licensee, his Agents, Strategic Alliances, or Contractors provide collection services of the consumers` courier items, from the consumer’s premises or sites designated or indicated by the consumer for such collection.

“Quality of Service (QoS) - Means the totality of characteristics of a telecommunications service that bear on its ability to satisfy stated and implied needs of the user of the service.

“Record of Delivery” - means any written document, delivery note, consignment note,

Commercial courier label or equivalent showing delivery or attempted delivery details;

“Reporting Area” - means a geographic area for which Measurements are taken and recorded, determined in accordance with the QoS Guidelines;

“Reporting Period” - means the period of time over which measurements are taken and recorded when a Licensee performs Quality of Service measurements, reporting and record keeping tasks once for each Reporting Area, Parameter and Service, determined in accordance to these Guidelines or as determined by the Authority from time to time;

 “Service Activation Time” - means the time it takes the operator to activate new consumers, those who have been disconnected and roaming consumers;

“Service level agreement (SLA)” - A service level agreement is a formal document listing a set of performance characteristics and target values (or range) to be delivered for a service or portfolio of services by the Licensee. A service level agreement may include statements about performance, tariffing and billing, service delivery compensations and escalation procedures in cases of disagreement;

“Service Restoration Time” - means the time it takes an Licensee to restore the service after a failure

“Target” - means a value that is reached by a given Parameter where the relevant Service identified in these Guidelines is satisfactory;

“Track and Trace’ - means a system of establishing or ascertaining of the exact position or location of Courier articles during the transmission period. It relies on a unique Identification number that is allocated to the article at the time of acceptance, conveyance or delivery

“Voice Quality” - means the network’s ability in achieving an acceptable level of voice quality.

“Warning cell” - means a faulty cell that fails to meet the Quality of Service target value or a cell that triggers any of the Severity alarms for more than fifteen days in a given month.

# Acronyms

3GPP: Third Generation Partnership Project (3GPP is responsible for the development of UMTS and other mobile standards)

CA: Charging Accuracy

CCR: Call Completion Rate

CDR: Call Drop Rate

CSSR: Call Setup Success Rate

E2E: End-to-End

ETSI: European Telecommunication Standards Institute

GSM: Global System for Mobile communication

KPI: Key Performance Indicator

ITU-T – International Telecommunications Union Telecommunication Standardization Sector

MOS: Mean Opinion Score

MMS: Multimedia Messaging Service

OMC-R: Operation and Maintenance Centre- Radio;

PDP: Packet Data Protocol;

PS: Packet Switched;

PUK: PIN Unlock Key

QoS: Quality of Service;

SDCCH: Standalone Dedicated Control Channel

TCH: Traffic Channel

SMS: Short Message Service.

SMSC: Short Message Service Centre;

SLA: Service Level Agreement

UMTS: Universal Mobile Telecommunications System

VQ: Voice Quality

# Application

These regulations shall apply to postal, courier and public telecommunication Licensees.

PART II

 OBJECTIVES AND LICENSEE OBLIGATIONS

# Objective of Quality of Service

The regulations are intended to-

1. Create conditions for consumer satisfaction by setting Quality of Service standards and outlining the Quality of Service obligations for Licensees;
2. Enable the Authority to monitor the Quality of Service provided by Licensees from time to time;
3. To enable the Authority to compare the measurement results with the standards set in these regulations and enforce compliance;
4. Protect and promote the interests of consumers;
5. Maintain and promote effective competition in the postal and telecommunications sector;
6. Improve the operation and performance of public networks;

# Licensee Obligations

The Licensee shall -

1. Meet or exceed the minimum Quality of Service standard thresholds as set forth in these regulations;
2. Provide consumers with information to enable them to make informed decisions;
3. Submit network performance information in the manner and format as may be required by the authority;
4. Retain the Quality of Service raw data for a minimum of six (6) months after the end of the reporting period.

PART III

# QUALITY OF SERVICE PARAMETERS, AND PUBLICATION OF REPORTS

1. Quality of Service Parameters

The Quality of Service parameters for the following services are prescribed under these Regulations-

1. Cellular Telecommunication services
2. Public Fixed Voice Telephony Services
3. Data and Internet Services
4. Interconnection Services
5. Postal and Courier Services
6. Consumer care parameters

## Quality of Service Standards for Cellular Telecommunication Services

The Licensee providing cellular telecommunication services and mobile broadband shall be required to meet or exceed targets on Quality of Service parameters as specified in the First Schedule to these regulations.

## Quality of Service Standards for Public Fixed Telephony Services

The Licensee providing public fixed telephony services shall be required to meet or exceed targets on Quality of Service parameters as specified in the Second Schedule to these regulations.

## Quality of Service Standards for Fixed Data and Internet Services

The Licensee providing Data and Internet services shall be required to meet or exceed targets on Quality of Service parameters as specified in the Third Schedule to these regulations.

## Standards for Interconnection Services

The Licensee providing cellular telecommunication, public fixed telephony, data and Internet services shall be required to meet or exceed interconnection targets as specified in the Fourth Schedule to these regulations.

## Quality of Service Standards for Postal and Courier Services

The Licensee providing postal and or courier services shall be required to meet or exceed targets on Quality of Service parameters as specified in the Fifth Schedule to these regulations.

##  Consumer Care Parameters

1. The Licensee providing postal, courier, cellular telecommunication, public fixed telephony, data or internet services shall comply with the Consumer Care Parameters provided in the Sixth Schedule to these Regulations for consumer perception consistent with the framework.
2. Consumer perception shall be measured through consumer surveys conducted by the Authority to assess level of compliance by Licensees with the parameters set out in these regulations.

# Publication of Quality of Service Reports

1. The Authority shall process and generate individual and/ or comparative Quality of Service performance reports for the postal, courier, Public Fixed Telephony and Cellular Telecommunication Licensees.
2. The Authority shall periodically publish the Quality of Service performance reports referred to in the paragraph above, including the consumer survey reports to promote consumer interests and competition in the sector.

PART IV

# Compliance and Enforcement Measures

# Compliance

* 1. The Licensee shall comply with or exceed the Quality of Service key Performance Indicators set out in these Regulations
	2. The Licensee shall resolve any consumer complaint within the resolution-time stated in these Regulations

# Enforcement Measures

1.
2.

Where the Licensee contravenes or fails to comply with any of the key performance indicators set out in these regulations or fails to resolve any consumer complaint within the resolution-time stated in these Regulations, the Authority shall take one or more of the following enforcement measures:

1. Require the Licensee to submit to the Authority and publish information about the causes of non-compliance to set standards of the relevant services including its remedial plan within the prescribed grace period.

1. Issue directives including but not limited to directing Licensees to compensate consumers for poor Quality of Service or
2. Impose a fine as provided for in the Postal and Telecommunications (Penalties) Regulations, 2008 as amended from time to time or as determined by a court of competent jurisdiction or Tribunal.

# 12. Considerations for assessing Quality of Service

In assessing the Quality of Service performance of a Licensee, the Authority shall take the following factors into consideration-

1. Any service deficiencies that arise partly or wholly from the services of another Licensee;
2. Any extreme service deficiencies that arise partly or wholly from the services of other Licensees not regulated by the Authority which deficiencies are beyond the Licensee’s control; and
3. Any changes in environmental or operating conditions that could not have been reasonably foreseen by the Licensee;
4. Any other extreme service deficiencies caused by *force majeure*

# FIRST SCHEDULE

# Quality of Service Standards for Cellular Telecommunication Services

|  |  |  |
| --- | --- | --- |
| PARAMETER | DEFINITION | TARGET  |
| VOICE |
| Availability | Availability of an item to be in a state to perform a required function at a given instant of time or at any instant of time within a given time interval, assuming that the external resources, if required, are provided.([ITU-T E.802]) | ≥ 99.99 % |
| Service Availability [%] = $\frac{Service Scheduled Time-Service Down Time}{Service Scheduled Time} x 100 \%$ |
| Service Activation Time | < 5s |
| Service Down Time | <1 hour  |
| Interconnection Gateway Route Down Time | <1 hour |
| Interconnection Gateway Route Repair Time | < 1 Hour |
| Utilisation of Interconnect Gateway | < 80 % |
| Call Success Rate(CSR) | This refers to the number of calls established over the total number of mobile call attempts to a valid number. | ≥ 95% |
| Call Success Rate [%] = $\frac{Number of Established Calls}{Total Number of Call Attempts} x 100 \%$ |
| Call Setup Success Rate (CSSR) | The percentage of calls successfully set-up to a valid number, properly dialled and during which the ‘party busy’ tone, ‘ringing’ tone or ‘answer’ signal is recognised at the network termination point. | ≥ 95 % |
| Call Setup Success Rate [%] = $\frac{Number of Successfully Setup Calls}{Total Number of Call Attempts} x 100 \%$ |
| Call Completion Rate (CCR) | Call Completion Rate (CCR) is the percentage of calls that have been successfully setup, maintained and terminated normally by the calling or called party to the total number of call attempts in a specific time period. | ≥ 80% |
| Call Completion Rate [%] = $\frac{Number of Nornally Ended Calls}{Total Number of Call Attempts} x 100 \%$ |
| Call Drop Rate(CDR) | Call Drop Rate is the number of dropped calls divided by the total number of call attempts expressed as percentage.A dropped call is a call that is prematurely terminated before being released normally by either the caller or called party (i.e., the call is dropped before the exchange of Released Message. | <2% |
| Call Drop Rate [%} = $\frac{Total Number of dropped Calls}{Total Number of Call Attempts} x 100 \%$ |
| Traffic Channel (TCH) Congestion OR Call Congestion | This parameter represents the percentage of total calls failed due to unavailability of network traffic channels to the number of call attempts. This is the probability of failure of accessing a traffic channel during call setup. | <2% |
| TCH Congestion [%] =$\frac{Number of Failed Calls due to no TCH availability }{Total Number of Call Attempts}$ $x 100 \%$ |
| Handover Success Rate | This is the percentage of the number of successfully completed handovers to the total number of initiated handovers.  | ≥ 90% |
| Handover Success Rate [%] = $\frac{Successful Handovers}{Handover Requests} x 100 \%$ |
| Stand-alone Dedicated Control Channel (SDCCH) congestion rate | Determines the percentage of failed SDCCH seizures due to the channel being pre-occupied. | <1 % |
| SDCCH Drop Rate [%] = $\frac{Number of failed Calls due to SDCCH Assignment failure}{Total Number of Call Attempts} x 100 \%$ |
|  Audio Call Voice Quality  | Quality of spoken speech as perceived buy end user. | ≥ 3  |
|

|  |  |
| --- | --- |
| Speech Audio Quality  | Mean Opinion Score (MOS) |
|  Excellent | 5 |
|  Good | 4 |
|  Fair | 3 |
|  Poor | 2 |
|  Bad | 1 |

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| Call Set Up Time  | The period starting when the address information required for setting up a call is received by the network and finishing when the busy tone, ringing tone or answer signal is received by the calling party. | ≤ 10 seconds |
| Post Dialling Delay  | This is time interval between the clearance signal from the end users, and the networks return to ready-to-serve state. | ≤ 5 seconds |
| SMS and MMS |
| On-net SMS Delivery Success Rate  | Percentages of SMS received by the recipients to the total number of SMS sent and received by the SMSC within specified period of 2 minutes after being transmitted. | ≥ 99.98 % |
| SMS Delivery Success Rate [%] = $\frac{Number of SMS Delivered to End User}{Total Number of SMS Sent} x 100 \%$ |
| SMS Delivery Failure Rate | This is the percentage of SMS undelivered to available recipients to the total number of SMS Sent and received by the SMSC within specified period of 2 minutes. | ≤ 0.02 % |
| SMS delivery failure Rate [%] = $\frac{Number of SMS undelivered to End User}{Total Number of SMS send} x 100 \%$ |
| End-to-End SMS Delivery Time | This is the time from Sending an SMS to the time the SMS is received by the recipient | < 120 seconds |
| MMS Delivery Success Rate | Percentages of MMS received by the recipients to the total number of MMS Sent within specified period of 5 minutes after being transmitted. | ≥ 99% |
| MMS Delivery Success Rate [%] = $\frac{Number of MMS Delivered to End User}{Total Number of MMS Send} x 100 \%$ |
| MMS Delivery Failure Rate | This is the percentage of MMS undelivered to available recipients to the total number of MMS Sent within specified period of 5 minutes. | ≤ 1 % |
| MMS delivery failure Rate [%] = $\frac{Number of MMS undelivered to End User}{Total Number of MMS send} x 100 \%$ |
| Minimum time for storage of SMS/MMS Call Data Records before deletion by the operator  | This is the minimum time that an SMS/MMS Call Data Records can be store before an operator can delete the Call Data Record*[Data retention shall be in line with other statutes]* | 5 years |
| Minimum time for storage of SMS/MMS if recipient is unreachable | This is the minimum time for an SMS/MMS sent to a mobile station that cannot be reached. |  48 hours |
| MOBILE DATA AND INTERNET |
| Data Service Availability | The ratio of successful logging on and attached to the network to the total attempts. | > 98% |
| Downlink Throughput (Speed)  | The speed with which data can be transmitted from a remote device to a local mobile device. (Bits per second often represented as Kbps, Mbps ) | Must meet the Minimum evolution of Mobile Technology speed specified in the 3GPP Standards |
| Uplink Throughput (Speed) | The speed with which data can be transmitted local mobile device to a remote computer/device. (Bits per second often represented as Kbps, Mbps ) | Must meet the Minimum evolution of Mobile Technology speed specified in the 3GPP Standards |
| PDP Context Activation Success Rate | Describes the ratio of all successful PDP context activation to PDP context activation attempts for UMTS PS core network and is used to evaluate service accessibility [ETSI TS 132 410 V10.0.0 (2011-04)] | > 98% |
| Latency  | Latency is the total time it takes for a data packet to travel from one node to another in data communication  | < 100ms |

# SECOND SCHEDULE:

# Quality of Service Standards for Public Fixed Telephony Service

|  |  |  |
| --- | --- | --- |
| PARAMETER | DEFINITION | TARGET |
| Call Completion Rate(CCR) | Call Completion Rate is the percentage of calls that have been successfully setup, maintained and terminated normally by the calling or called party to the total number of call attempts in a specific time period. | ≥ 98% for on net National Calls |
| ≥ 90% for off net National Calls |
| Call Set Up Time  | The period starting when the address information required for setting up a call is received by the network and finishing when the busy tone, ringing tone or answer signal is received by the calling party. | ≤ 3 seconds for on net National Calls |
| ≤ 5 seconds for off net National Calls |
| Network Availability | Availability of the Network in a state to perform a required function at a given instant of time or at any instant of time within a given time interval. | ≥ 99.999 % |
| Service Activation Time | The duration from the instant a valid service order (application) is received by a Licensee to the instant a working service is made available to the User.  | 80 % of Service Orders to be completed within 7 calendar days |
| 100% of Service Orders to be completed within 14 calendar days |
| Faulty Repair Time | The duration from the instant a fault has been notified or reported by the consumer to the Licensee to the instant when the service has been restored to the normal working order. | 80 % of faults to be cleared within 24 Hours or reporting  |
| 90 % of faults to be cleared within 48 Hours of reporting  |
| 100 % of faults to be cleared within 72 Hours of reporting |
| Mean Time to Repair(MTTR) | Mean Time To Repair (MTTR) is the average time required to repair a failed network element or network devises | MTTR: ≤ 5 Hours |
| Total Network Service Down Time | The total time for which a service is down or not available due to exchange equipment failures. | <0.25% per annum (less than 24 hours per annum) |

# THIRD SCHEDULE:

# Quality of Service Standards for FIXED Data and Internet Services

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| --- | --- | --- |
| PARAMETER | DEFINITION | TARGET |
| Network Availability | Availability of the Network in a state to perform a required function at a given instant of time or at any instant of time within a given time interval. | ≥ 99.999 % |
| Downlink Throughput (Speed)  | The speed with which data can be transmitted from a remote device to a local device. Down link rates are measured in bits per second (bps) often represented as Kbps, Mbps or Tbps  | ≥ 95 % of Speed agreed with User as per the Service Level Agreement |
| Uplink Throughput (Speed) | The speed with which data can be transmitted from a local device to a remote device. Down link rates are measured in bits per second (bps) often represented as Kbps, Mbps or Tbps | ≥ 95 % of speed agreed with User as per the Service Level Agreement |
| Contention Ratio | Contention ratio means the number of users sharing the same bandwidth at any one time. | Must be specified in the Service Level Agreement (SLA). |

# FOURTH SCHEDULE

# Quality of Service Standards for Interconnection

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| --- | --- | --- |
| PARAMETER | DEFINITION | TARGET |
| Interconnection Gateway Down Time  | The total time for which an Interconnection Gateway (Switch) is down or is not available  | <1 hour (per instance) |
| Interconnection Route Fault Down Time | The total time for which an Interconnection Route (transmission channel or link) is down or is not available | < 1 Hour(per instance) |
| Interconnection Gateway/Route Faulty Instances | The total number of times for which an Interconnection Gateway or Interconnection route is down or is not available per a given period. | < 1 Instance per annum |
| Utilisation of Interconnection Transmission Capacity | The percentage interconnection transmission capacity being used to the total installed capacity | < 80 % |

# FIFTH SCHEDULE

# Quality of Service Standards for Postal and Courier Services

|  |  |
| --- | --- |
| TYPE OF POSTAL SERVICE |  |
| 1. LETTERS AND POSTAL ARTICLES (LOCAL MAIL)

 1. Posted for Delivery within same Urban  Delivery Area and Posted by 5:00 pm | J +1( 90% ) |
|   2. Posted for Delivery in other Urban Areas | J+1 |
|  3. Posted in Urban Areas for Delivery in  Rural Areas | J+2 |
|   4. Posted in Rural Areas (at a postal facility  for delivery in Rural Areas) | J+3 |
| (b) INTERNATIONAL AIR MAIL | To be cleared from the International Offices of Exchange within 48 hours of receipt (Harare Central Sorting Office and Bulawayo Main) |
| (c) PRIVATE BOX/BAG SERVICES1. Bags on application (Rural and Urban)

(ii) Boxes (subject to availability)* Urban Areas
* Rural Areas
 | 1 week2 days2 days |
| 1. Replacement of Private Box where

 Key is lost* Urban Areas
* Rural Areas
 | 3 days5 days |
| (d) COUNTER SERVICES:Waiting Time e.g. to by a stamp | 10 minutes |
| \*Key: J - Day of Posting J + 1 - Delivery within 2 Days J + 2 - Delivery within 3 Days |

|  |  |  |
| --- | --- | --- |
|  | Compulsory | Optional |
|  Track and Trace |  |  |
|  Door-to-Door Delivery |  |  |
|  Pick-up services |  |  |
|  Record of Delivery |  |  |
|  Service during Public Holidays and Weekends  |  |  |
|  Five-day week service (Mon-Fri) |  |  |
|  Display of hours of Business |  |  |
|  Display of current Tariffs |  |  |
|  Commercial Courier Label |  |  |

# SIXTH SCHEDULE

# Consumer Care Parameters (All Services)

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| --- | --- |
| PARAMETER | TARGET |
| Failed attempts to load recharge payments. |  ≤ 1 Hour(Licensees shall report to the Authority any faults that take longer than 24 Hours to resolve) |
| Failed attempts to check/determine the Account balance. | ≤ 1 Hour |
| Request for blocking of reported lost/stolen SIM card for which subscriber ownership has been confirmed | ≤ 30 minutes during working hours |
| Request for PUK code | Should be met within 1Hour |
| Inability to Send or receive SMS (local or international) | ≤ 1 Hour |
| Unsolicited messages | The Licensee must provide an option for the subscriber to “opt out” from receiving such messages in case of messages originating from the Licensee or its third party business partners.The Licensee should make reasonable effort to identify and block or filter bulk, unsolicited and offensive messages from other sources. |
| Time for recharge/bill payments to reflect on the account. | ≤ 5 Minutes recharge from Mobile≤ 5minutes recharge from Bank Automated Teller Machine≤ 1 Hour over the counter≤ 10 Minutes after receipt of payment confirmation, for internet-based transaction |
| Advertisement Commitment | There shall be no disparity between advertised rates and those received by the consumer |
| Complaints call Identification Number | Each complaint call must be given a unique reference number that Identifies its nature/category, for follow-up and statistical analysis. |
| Promotions and games | Rules of participation must be clear and widely published, also promotions shall not be misleading or lead to breach of any part of these Guidelines |
| SERVICE ACTIVATION |
| New consumer | 2 hours |
| Roaming | 2 hours |
| Reconnection | 4 hours |
|  |  |
| FAULTS RESOLUTION |
| Consumer Complaints per 100 Subscribers | ≤ 5 |
| Satisfaction Index | 98 % |
| Faults cleared within 24 Hours of Reporting | ≥ 90 % |
| Faults cleared within 48 Hours of reporting | ≥ 95 % |
| Faults cleared within 72 Hours of reporting | ≥ 100 % |
| CHARGING ACCURACY (CA) or BILLING INTEGRITY |
| Percentage of incorrect billing (Voice/SMS/MMS) | ≤ 0.5 % |
| Percentage of incorrect credit balance | ≤ 0.5 % |
| Percentage of failure to access credit balance | ≤ 1 % |
| Percentage of Recharge Card credit failure | ≤ 0.5 % |
| Percentage of Recharge Card incorrect Credit | ≤ 0.01 % |