

Postal and Telecommunications (Quality Services)
Regulations, 2016

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 in consultation with the Postal and Telecommunications Regulatory Authority of Zimbabwe:—

Title

1. These regulations may be cited as the Postal and Telecommunications (Quality of Services) Regulations, 2016.

Interpretation

2. 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 networks;

“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 the physical address on the article or as otherwise advised by the addressee or sender;
- “*force majeure*” means an unforeseen event or “act of God” that may be a result of the forces of nature as opposed to one within the control of an operator for example, natural disaster, heavy storms and flooding;
- “faulty cell” means a cell that fails to meet the Quality Service target value or a cell that triggers any of the severity alarms characteristic;
- “grace period” means the time-frame given to an operator to fix the warning cells detected in its network, being 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 characteristic 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 consumer’s 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 one 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 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 a 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 a 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;

Application

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

Objectives of Quality of Service

4. The regulations are intended to—
- (a) create conditions for consumer satisfaction by setting Quality of Services standards and outlining the Quality of Service obligation for licensees;
 - (b) enable the Authority to monitor the Quality of Service provided by licensees from time to time;
 - (c) to enable the Authority to compare the measurement results with the standard set in these regulations and enforce compliance;
 - (d) protect and promote the interests of consumers;

- (e) maintain and promote effective competition in the postal and telecommunications sector;
- (f) improve the operation and performance of public networks.

Licensee obligations

5. The licensee shall—

- (a) meet or exceed the minimum Quality of Service standard thresholds as set forth in these regulations;
- (b) provide consumers with information to enable them to make informed decisions;
- (c) submit network performance information in the manner and format as may be required by the Authority;
- (d) retain the Quality of Service raw data for a minimum of six (6) months after the end of the reporting period.

Quality of Service Parameters

6. (1) The Quality of Service parameters for the following services are prescribed under these regulations—

- (a) Cellular Telecommunication Services;
- (b) Public Fixed Voice Telephone Services;
- (c) Data and Internet Services;
- (d) Interconnection Services;
- (e) Postal and Courier Services;
- (f) Consumer care parameters.

(2) 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;

(3) 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.

(4) 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.

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(5) 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.

(6) 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.

(7) The licensee providing postal, courier, cellular telecommunication, public fixed telephony, data or Internet service shall comply with the consumer care parameters provided in the Sixth Schedule to these regulations for consumer perception consistent with the framework.

(8) 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

7. (1) The Authority shall process and generate individual and/or comparative Quality of Service performance reports for the postal, courier, public fixed telephone 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.

Compliance

8. (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 the regulations.

Enforcement measures.

9. 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—

- (a) 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; or
- (b) issue directives including but not limited to directing licensees to compensate consumers for poor quality of services; or
- (c) 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.

Considerations for assessing Quality of Service

10. In assessing the Quality of Service performance of a licensee, the Authority shall take the following factors into consideration—

- (a) any service deficiencies that arise partly or wholly from the services of another licensee; and
- (b) any extreme service deficiencies that arise partly or wholly from the services of other service providers not regulated by the Authority which deficiencies are beyond the licensee's control; and
- (c) any changes in environmental or operating conditions that could not have been reasonably foreseen by the licensee; and
- (d) lone cells with no adjacent neighbouring cells to handover calls to; and
- (e) any other extreme service deficiencies caused by *force majeure*.

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FIRST SCHEDULE (SECTION 6)

QUALITY OF SERVICE STANDARDS FOR CELLULAR
TELECOMMUNICATION SERVICE

PARAMETER	DEFINITION	TARGET	
VOICE			
Service Availability	Availability of a network element 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])	Year 1	≥ 90%
		Year 2	≥ 95%
		Year 3	≥ 99.9%
Service Availability [%] = $\frac{\text{Service scheduled time} - \text{service down time}}{\text{Service scheduled time}} \times 100\%$			
Call Setup Success Rate (CSSR)	The percentage of calls successfully set-up to a valid number, properly dialed and during which the 'party busy' tone, 'ringing' tone or 'answer' signal is recognised at the network termination point.	≥ 95%	
Call Setup Success Rate [%] = $\frac{\text{Number of successfully setup calls}}{\text{Total number of call attempts}} \times 100\%$			
Call Success Rate (CSR)	This refers to the number of calls established over the total number of mobile call attempts to a valid number.	≥ 90%	
Call Success Rate [%] = $\frac{\text{Number of established calls}}{\text{Total number of call attempts}} \times 100\%$			

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 of called party to the total number of call attempts in a specific time period.	$\geq 80\%$
Call Completion Rate [%] = $\frac{\text{Number of normally ended calls} \times 100\%}{\text{Total number of call attempts}}$		
Call Drop Rate (CDR)	Call Drop Rate is the percentage of dropped calls to the total number of call attempts. 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).	$\leq 2\%$
Call Drop Rate [%] = $\frac{\text{Number of dropped calls} \times 100\%}{\text{Total number of call attempts}}$		
Traffic Channel Congestion (TCH)	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	$\leq 2\%$
TCH Congestion [%] = $\frac{\text{Number of failed calls due to no TCH availability} \times 100\%}{\text{Total number of call attempts}}$		
Handover Success Rate	This is the percentage of the number of successfully completed handovers to the total number of initiated handovers	$\geq 90\%$
Handover Success Rate [%] = $\frac{\text{Successfully handovers} \times 100\%}{\text{Handover requests}}$		

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Stand-alone Dedicated Control Channel (SDCCH) congestion rate	Determines the percentage of failed SDCCH seizures due to the channel being pre-occupied.	$\leq 1\%$
SDCCH Congestion = $\frac{\text{Number of failed calls due to SDCCH assignment failure}}{\text{Total number of call attempts}} \times 100\%$		
Audio Call Voice Quality	Quality of spoken speech as perceived by end user	≥ 3
Speech Audio Quality		Mean Opinion Score (MOS)
Excellent		5
Good		4
Fair		3
Poor		2
Bad		1
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
SMS and MMS		
SMS Delivery Success Rate (on-net)	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 to an available number.	$\geq 98\%$
SMS Delivery Success Rate [%] = $\frac{\text{Number of SMS delivered to end user}}{\text{Total number of SMS sent}} \times 100\%$		

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 a specified period of 5 minutes after being transmitted	$\geq 95\%$
MMS Delivery Success Rate [%] = $\frac{\text{Number of MMS delivered to end user} \times 100\%}{\text{Total number of MMS Sent}}$		
Minimum time for storage of SMS or MMS Call Data Records before deletion by the operator	This is the minimum time that an SMS/MMS Call Data Record can be stored before an operator can delete the Call Data Record	≥ 5 years
Minimum time for storage of SMS or MMS if recipient is unreachable	This is the minimum time for an SMS or 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	$\geq 95\%$
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)	See Minimum Downlink Speeds in the table below
Uplink Throughput (Speed)	The speed with which data can be transmitted from a local mobile device to a remote computer/ device (Bits per second often represented as Kbps, Mbps)	See Minimum uplink Speeds in the table below
Data Access Time (DAT)	This is a measure of the time lapse in activating PDP context for Data Service	≤ 10 ms

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<i>Data Access Time (DAT) [s] = Time (PDPContextAcceptMarker) – Time (PDP Context RequestMarker)</i>		
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)]	$\geq 90\%$
Latency	Latency is the total time it takes for a data packet to travel from one node to another node in the data/ internet communication network [Nodes to be within the operator's network]	$\leq 100\text{ms}$

Year is counted from the date of promulgation of these regulations.

Minimum Best effort Downlink and Uplink Speeds for Mobile Cellular Data and Internet Services

Generation	Standard	Downlink Speed	Uplink Speed
2G	GSM	9.6kbps	9.6kbps
2G	GSM-GPRS	Minimum of 56 kbps	Minimum of 12 Kbps
2G	GSM-EDGE	Minimum of 120 kbps	Minimum of 20 Kbps
3G	UMTS-WCDMA	Minimum of 256 kbps	Minimum of 120 Kbps
3G	UMTS-HSPA	Minimum of 1Mbps	Minimum of 512 Kbps
3G	UMTS-HSPA+	Minimum of 5Mbps	Minimum of 1Mbps

SECOND SCHEDULE (SECTION 6)

QUALITY OF SERVICE STANDARD 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	$\geq 98\%$ [on net National Calls]
		$\geq 90\%$ [off net National Calls]
Calls 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 [on net National Calls]
		≤ 5 seconds [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.	$\geq 99.999\%$

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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.	$\geq 80\%$ 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.	$\geq 80\%$ of faults to be cleared within 24 hours of reporting
		$\geq 90\%$ 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 devices	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	$\leq 0.25\%$ per annum [less than 24 hours per annum]

THIRD SCHEDULE (Section 6)
QUALITY OF SERVICE STANDARDS FOR FIXED DATA AND INTER-
NET SERVICES

PARAMETER	DEFINITION	TARGET	
Network Availability	Availability of the Network in a state to perform a required function at a given time or at any instant of time within a given time interval	Core Network	$\geq 99.999\%$
		Access/Backbone Network	$\geq 95\%$

Downlink Throughput (Speed)	The speed with which data can be transmitted from a remote device to a local device. Downlink rates are measured in bits per second (bps) often represented as Kbps, Mbps or Tbps.	$\geq 95\%$ of speed agreed with End 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. Uplink rates are measured in bits per second (bps) often represented as Kbps, Mbps or Tbps.	$\geq 95\%$ of speed agreed with End 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).
Data Access Time (DAT)	This is a measure of the time lapse in activating a PDP context for Data Service	≤ 5 ms
Data Access Time (DAT) [s] = Time (PDPContextAcceptMarker) – Time (PDPContextRequestMarker)		
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)]	$\geq 90\%$

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Latency	Latency is the total time it takes for a data packet to travel from one node to another in data/ internet communication network [Nodes to be within the operator's network]	$\leq 100\text{ms}$
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FOURTH SCHEDULE (Section 6)

QUALITY OF SERVICE STANDARDS FOR INTERCONNECTION

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 Down Time	The total time for which an Interconnection Route (Transmission channel or link) is down or is not available	≤ 4 hours [per instance]
Interconnection Route Repair Time	The total time it takes to repair an Interconnection Route (transmission channel or link)	≤ 4 hours
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 given period	1 Instance per annum
Utilisation of Interconnection Transmission Capacity	The percentage interconnection transmission capacity being used to the total installed capacity	80% [Trigger point for upgrading link]
		95% [Operator required to officially notify the Authority with clear plans to resolve the problem within 90 days]

FIFTH SCHEDULE (Section 6)
QUALITY OF SERVICE STANDARDS FOR POSTAL AND COURIER
SERVICES

TYPE OF POSTAL SERVICE	
(a) LETTERS AND POSTAL ARTICLES (LOCAL MAIL) 1. Posted for Delivery within same Urban Delivery Area and Posted by 5:00 p.m.	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 SERVICES (i) Bags on application (Rural and Urban) (ii) Boxes (subject to availability) • Urban Areas • Rural Areas	1 week 2 days 2 days
(iii) Replacement of Private Box where Key is lost • Urban Areas • Rural Areas	3 days 5 days
(d) COUNTER SERVICES Waiting Time e.g. to buy a stamp	10 minutes
<ul style="list-style-type: none"> • <u>Key:</u> J -Day of Posting J + 1 -Delivery within 2 days J + 2 -Delivery within 3 days 	

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	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 (Section 6)

CONSUMER CARE PARAMETERS (ALL SERVICES)

PARAMETER	TARGET
Total time taken to resolve failed attempts to load recharge payments.	≤ 1 hour (Licensees shall report to the Authority any faults that take longer than 24 hours to resolve)
Total time taken to resolve failed attempts to check/ determine account balance.	≤ 1 hour
Request for blocking of reported lost/stolen SIM card for which subscriber ownership has been confirmed.	≤ 30 minutes
Request for PUK code	≤ 30 minutes
Unsolicited messages	<p>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.</p> <p>The licensee should make reasonable effort to identify and block or filter bulk, unsolicited and offensive messages from other sources.</p>

PARAMETER TARGET	
Time for recharge/bill payments to reflect on the account.	≤ 5 minutes when recharging from Mobile Terminal ≤ 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 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. Promotions shall not be misleading or lead to breach of any part of these regulations

SERVICE ACTIVATION	
Service Activation Time – [New subscriber] [After submission of all documentations as required by SIM registration regulations]	≤ 12 hours
Service Activation Time—[Replacement or Reconnection]	≤ 1 hour
Service Down Time	≤ 1 hour
Roaming	≤ 2 hours
FAULTS RESOLUTION	
Consumer Complaints per 100 Subscribers	≤ 5
Satisfaction Index	$\geq 98\%$
Faults cleared within 24 hours of reporting	$\geq 80\%$
Faults cleared within 48 hours of reporting	$\geq 90\%$
Faults cleared within 72 hours of reporting	100%

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CHARGING ACCURACY (CA) or BILLING INTEGRITY	
Percentage of incorrect billing (Voice/SMS/ NNS)	$\leq 0.5\%$
Percentage of incorrect account balance	$\leq 0.5\%$
Percentage of failure to access account balance	$\leq 1\%$
Percentage of Recharge Card credit failure	$\leq 0.5\%$
Percentage of Recharge Cards with incorrect Credit amount	$\leq 0.01\%$