



Final Report on Public Consultation on the Quality of Service (QoS) Regulations

Liberia Telecommunications Authority (LTA)

March 4, 2024

Table of Contents

Introduction/Backgrounds	2
Consultation Process.....	2
Rationales for the Promulgation of Quality of Service (QoS) Regulations	2
Analysis of Input Received from Consultation on the Draft QoS Regulations.....	4
Appendix I: List of Organizations Consulted.....	24
Appendix II: Timetable for the Adoption of the Regulations.....	25

Introduction/Backgrounds

The Liberia Telecommunications Authority (LTA), established by an Act of National Legislature in 2007, has the statutory responsibility to regulate and ensure a vibrant telecommunications sector with the objectives of spurring economic growth and providing innovative and affordable telecommunications services to the Liberian consumers. To achieve these objectives, the Telecommunications Act, 2007 provides in Part III Section 11(1) q that the LTA makes regulations and rules for such matters as are contemplated by or necessary for giving full effect to the provisions of the Act and for the due administration thereof by the LTA.

In crafting its regulatory intervention mechanism – be it regulation, rule, or order – the LTA is mandated in Part III Section 11 (4) of the Telecom Act, 2007 to ensure that, prior to issuing any order or any other exercise of its authority that is likely to have any substantial impact on network operators, service providers, any other market participant or the general public, it conducts a process of public consultation appropriate to the circumstances and takes account of the results of the public consultation in the final exercise of its authority.

In compliance with the above statutory mandate, the LTA held public consultations on its draft QoS Regulations throughout the fifteen (15) counties of the Republic of Liberia, thereby providing the opportunities for consumers, service providers, governmental authorities, and other interested parties to form part of the process and provide inputs to the regulations.

This report is intended to document and present the consultative process followed and the outcome thereof.

Consultation Process

The LTA's Guideline for Consultation Process to Develop Regulations sets the procedures to follow in conducting a public consultation on regulations, orders or rules. In compliance with the guideline a consultation document (the draft QoS Regulations and a notice for consultation) was published on the Executive Mansion Website on March 26, 2021. Following the publication on the Executive Mansion Website, soft copies were also sent to all service providers and other stakeholders via email and subsequently when the draft was updated. Hard copies were also delivered to key stakeholders from the government and private sector.

In November 2021, a two-day technical meeting (November 17 – 18, 2021) was held with the MNOs, Libtelco, C-Squared, and the ISPs to review the first draft of the regulations. Inputs from this meeting were used to update the regulations before embarking on a nationwide consultation process.

Stakeholders' meetings for the purpose of obtaining inputs from the House and Senate Standing Committees on Telecommunications were respectively held in March, 2022.

Rationales for the Promulgation of QoS Regulations

For a considerable time now, consumers and businesses across the country continue to complain about deplorable quality of telecommunications services they are experiencing. LTA's field reports have also consistently pointed out regular networks failures, often resulting into drop calls, unsuccessful call connections, low internet speed, poor quality voice calls, etc. These quality-of-service related issues do not only directly affect consumers, but also create losses for businesses and stall innovative services which also negatively affect economic growth and social inclusion.

To address these quality-of-service related issues and ensure operators' networks are enhanced to effectively provide improved services, the LTA has drafted the QoS Regulations. These regulations have established criteria and standards to hold all service providers accountable in providing services to consumers.

Once these regulations are implemented, consumers will maximize the value for their money and businesses will expand and provide more innovative services across the country. This will also help to narrow the digital gap and enhance social inclusion.

Analysis of Inputs Received from Consultation

Date: November 17 - 18, 2021

Section/Existing Text	Requested Change	Review Committee's Proposal	BoC's Decision	Revised Text	Party Making Comment
<p>6.3 (c) Mobile Station Probe Test.</p>	<p>The need to explain how mobile station probe test will be used to assess quality of service. Operators believe that this is not needed to assess quality of service.</p> <p>Service providers want it out of the regulations if the LTA cannot state clearly how this test will be conducted.</p>	<p>Review Committee agrees to Remove the mobile station probe test because it does not stand alone as a methodology for monitoring.</p> <p><i>(ITU Studies Standards.)</i></p>	<p>BoC accepts and approves</p>	<p>6.3 (c) Was Removed</p>	<p>Orange</p>
<p>11.0 The Quality of Service Reports shall be published by the Service Providers on their websites and/or through any other appropriate and acceptable medium of communication with the contents and formats prescribed in Section 12 of these Regulations, or as may otherwise be directed by the LTA.</p>	<p>Service providers want the LTA to be the one publishing QoS report on its website because they do not feel comfortable publishing damaging or negative content about themselves on their website.</p>	<p>Review Committee agrees and has revised the text based on regional best practice.</p> <p><i>(ITU Studies Standards.)Ghana, Nigeria</i></p>	<p>BoC accepts and approves</p>	<p>The Quality of Service Reports shall be published by the LTA on its website and/or through any other appropriate and acceptable medium of communication with the contents and formats prescribed in Section 12 of these Regulations,</p>	<p>C-Squared</p>

				or as may otherwise be determined by the LTA.	
14.3 Any data with relevance to QoS, other than the ones mentioned in these Regulations, may also be used by the LTA in its auditing and investigation exercises	Service providers suggest that this is too vague and open. LTA should provide further clarity.	Review Committee agrees and has revised the text to include “audit”.	BoC accepts and approves based on part III section 1 (t) of the 2007 Telecom Act.	Any data relevant to QoS audit, other than the ones mentioned in these Regulations, may also be used by the LTA in its auditing and investigation exercises	Orange
Appendix. Schedule I Schedule I	Service providers are concerned as to how the LTA arrives at these KPIs. Service providers want LTA to share the ITU standards with them.	Review Committee used international best practice based on ITU and sub-regional standards. <i>(Ghana, Botswana, Kenya Etc.)</i>	BoC accepts and approves		Orange
Schedule I Not more than 70% of capacity	Service providers also suggest that the “ not more than 70% of capacity ” set as target be changed to “ not more than 80% of capacity ”.	Review Committee Agrees to the “ not more than 80% capacity ”; agrees to revise the text. Based on regional best practices.	BoC accepts and approves	Not more than 80% of capacity	Lone star Cell, Orange, Spectrum and Electro shack

<p>Schedule I Not more than 70% of capacity</p>	<p>Libtelco suggests that “not more than 70% of capacity” be held unto so as to compare it to the real data available as per standard considering our environment (Liberia).</p>	<p>Review Committee agrees to the “not more than 80% capacity”; agrees to revise the text based on regional best practices.</p>	<p>BoC accepts and approves</p>	<p>Not more than 80% Of capacity</p>	<p>Libtelco</p>
<p>Schedule I Row 2 Repairing Time.</p> <p>Schedule I Row 2 Repairing Time.</p>	<p>Service providers request the following maximum Repairing Time / Restoring Time for Interconnection Route, 24 hours and 2 hours to the “No more than one hour” by the LTA</p> <p>Service providers are concerned about penalty or fine that is to be imposed by LTA failure to uphold the 2 hours benchmark for Repairing / Restoring Time of interconnection Route</p>	<p>Review Committee accepts and agrees to the “not more than 2 hours” suggested time for restoring interconnection route.</p> <p>Review Committee has come up with fines and other punitive measures to serve as deterrence.</p>	<p>BoC accepts and approves</p> <p>BoC accepts and approves</p>	<p>“not more than 2 hours”</p> <p>Fines are stipulated in Schedule VIII attached to the regulations.</p>	<p>Lone star Cell – 2 hours, Electro shack – 24 hours Libtelco – 2 hours Lone star cell</p>
<p>Schedule I Row 3 Network Effectiveness Ratio (NER).</p>	<p>Service providers want the LTA to take into consideration the differences between national and international communications as respect to</p>	<p>Review Committee considers and maintains based on regional best practices. <i>(Ghana, Botswana, Kenya Etc.)</i></p>	<p>BoC accepts and approves</p>	<p>Text remains the same.</p>	<p>Lone Star Cell</p>

	<p>the “not less than 95%” Network Effectiveness Ratio, Reason being as for international calls, there might be an international default that is not under their control.</p> <p>Service providers also want the LTA to cross check the Reference: ITU-T E.425 Rec. as the formula is not correct.</p>	<p>Review Committee checked and found that the formula is correct.</p>	<p>BoC accepts and approves</p>	<p>Text remains the same.</p>	<p>Lone Star Cell</p>
<p>Schedule II Row 1 Service Coverage >-75dBm for outdoor >-85dBm for in-vehicles >-95dBm for indoor city</p> <p>Schedule II Row 1 Service Coverage The transmitter output power as received by a reference antenna at a distance from</p>	<p>Service providers feel that the target is not realistic; want the LTA to set Target coverage area. (Urban, city, rural, etc. as signal strength may vary depending on the structure in the area.</p> <p>Service provider also noted that the definition for Service coverage is not correct.</p>	<p>Review Committee considers and maintains based on regional best practices</p> <p>Review Committee checked and found that the definition is correct.</p> <p><i>(Ghana, Botswana, Kenya Etc.)</i></p>	<p>BoC accepts and approves</p>	<p>Text remains the same.</p>	<p>Lone Star Cell</p>

the transmitting antenna					
Schedule II Row 2 Call Connection Success Rate (%) > 95% <i>(90% of cells should record measurement values > 95% for real traffic)</i>	Service providers want the LTA to be specific about the area as per the call connection success rate in meeting the LTA's targets as signal strength is usually not strong at the periphery of their cell site.	Review Committee agrees and understands that the signal strength at the periphery might be weak. However, service providers should ensure that 95% of call connections are successful within its network coverage.	BoC accepts and approves	Text remains the same.	Orange
Schedule II Row 3 Call Drop Rate (%) <1% <i>(90 % of cells should record measurement values < 1% for real traffic)</i>	Service Providers suggest that Call Drop rates be 5% or > 3%. They also suggest the reduction of 90% to 60% as per cells.	Review Committee considers, however, agrees to maintain the current Targets until Operators can do their Drive test and present to the LTA to justify their suggested perimeter. Review Committee believes service providers can reach the 90% target. Hence, agrees to maintain the 90% target based on	BoC accepts and approves	Text remains the same.	Orange

		Regional and international best practices <i>(Ghana, Botswana, Kenya Etc.)</i>			
Schedule II Row 4 Call Setup Time < 5 seconds at 95 th percentile of all cases	Service Providers propose 12 seconds instead of 5 seconds for Call Setup Time by the LTA.	Review Committee considers and revised based on regional and international best practices. <i>(Ghana, Botswana, Kenya Etc.)</i>	BoC accepts and approves	< 10 seconds at 95 th percentile of all cases	Orange
Schedule II Row 5 Voice Quality > 3.5 for 95% of all cases	Service Providers propose the > 3.5 set by the LTA is too high. They suggest as follow: > 2 or > 2.5 for 2G Network and 2.5 for 3G Network.	Review Committee considers and maintains based on regional and international best practices <i>(Reference-ITU-T.P.863)</i>	BoC accepts and approves	Text remains the same.	Orange
Schedule III Row 1 Message Delivery Success Rate (%) ≥98%	Service Providers propose the ≥ 98% set by the LTA is too high. They suggest ≥95%	Review Committee considers and maintains based on Regional and international best practices <i>(Ghana, Botswana, Kenya Etc.)</i>	BoC accepts and approves	Text remains the same.	Orange
Schedule III Row 2 Message Delivery Success Time. All SMS less Than 5 seconds	Service Providers propose, < 12 seconds as message delivery success Time instead of the < 5 seconds as message delivery success Time set by the LTA.	Review Committee believes the <12 seconds is a long time, therefore has proposed <10 seconds instead. <i>(ITU Studies Standards.)Ghana, Botswana</i>	BoC accepts and approves	All SMS less than 10 seconds	Orange

<p>Schedule IV < 5 calendar days</p>	<p>Service providers suggest that the < 5 calendar days set by the LTA as Service Provision Time should be Changed to 2 weeks. They also requested the LTA to revisit the installation time, taking into consideration; Fiber to Home Fibers to businesses are varied. They also suggested giving the LTA some KPIs to this effect.</p>	<p>Review Committee has broken the services into wire and wireless services and has proposed ≤14 calendar days for wire services and ≤5 calendar days for wireless</p>	<p>BoC accepts and approves BoC accepts and approves</p>	<p>≤ 14 calendar days for wire services ≤5 calendar days for wireless services</p>	<p>Orange</p>
<p>Schedule V The Service Provider shall submit a monthly report based on daily and/or peak hour conditions</p> <p>Schedule V Row 2 Definition The time it takes for a standard webpage to start Loading the time period needed to access the service successfully from starting the dial-up connection to the point of time when the content is sent/ Received. (Ref: ITU-T E.804)</p>	<p>Service providers suggest a quarterly reporting system not monthly reporting for quality-of-service benchmarks.</p> <p>They also noted that the system is no longer dial-up and that it is now based on technology. They suggest that it be removed.</p>	<p>Review Committee noticed that the monthly reporting was an error and has been corrected to quarterly reporting.</p> <p>Review Committee agrees to remove the Dial-up from the definition.</p>	<p>BoC accepts and approves</p>	<p>The Service Provider shall submit a quarterly report based on daily and/or peak hour conditions</p> <p>The time it takes for a standard webpage to start Loading, the time period needed to access the service Successfully. (Ref: ITU-T E.804)</p>	<p>Orange</p>

<p>Schedule V HTTP (Web Browsing) Service</p> <p>Schedule V HTTP Drop Rate (%) Row 2 < 1%</p> <p>Schedule V HTTP Mean Bit Rate Row 3 ≥ 1Mb/s</p>	<p>Service providers propose to the LTA to be specific about segmenting HTTP to technology as per 2G, 3G, etc. at < 5 seconds at 95th Percentile each.</p> <p>Service providers also want HTTP Drop Rate 5% and not <1%</p> <p>Service providers also want the LTA to set the HTTP set up time benchmark as per web page and define the web page in terms of performance at ≥1mb/s and do as per technology; 2 G, 3G. Etc.</p>	<p>LTA runs a technology-neutral licensing regime. Based on the above, Review Committee disagrees to segment based on technology. Hence review Committee maintains based on Regional and international best practices.</p> <p>Review Committee disagrees and maintains based on international best practices.</p> <p><i>(Ghana, Botswana, Kenya Etc.)</i></p>	<p>BoC accepts and approves</p>	<p>Text remains the same.</p> <p>Text remains the same.</p>	<p>Orange</p>

<p>Schedule V Latency ≤80ms (for Broadband wireless service) < 100ms (another mobile cellular service)</p>	<p>Service providers propose to the LTA that the data packet transmitted time should be ≤ 128ms to 133ms and not ≤ 80ms set by the LTA.</p>	<p>Review Committee accepts and makes adjustments in broadband wireless from ≤80ms to ≤85ms, while < 100ms for (another mobile cellular service) remains based on international best practices.</p> <p><i>(Ghana, Botswana, Kenya Etc.)</i></p>	<p>BoC accepts and approves</p>	<p>≤85ms (for Broadband wireless service) < 100ms (another mobile cellular service)</p>	<p>Libtelco</p>
<p>Schedule V FTP download / upload set – up time < 5 seconds at 95th Percentile each.</p>	<p>Service providers also propose that the data packet transmitted time be segmented by technology (2G, 3G) inclusive of VSAT at 800ms and Fiber at 200ms.</p> <p>Service providers propose to the LTA to be specific about segmenting FTP to technology as per 2G, 3G, etc. at < 5 seconds at 95th Percentile each.</p>	<p>Review Committee disagrees and maintains based on international best practices.</p> <p>Review Committee disagrees and maintains. Target will not be based on technology, because Liberia has a technology-neutral licensing regime, and the LTA seeks to attain a minimum</p>	<p>BoC accepts and approves</p>	<p>Text remains the same.</p>	<p>Libtelco</p>

		latency in service categories.			
Schedule V FTP Drop Rate <1%	Service providers also want FTP Drop Rate 5% and not <1%	Review Committee disagrees and maintains based on international best practices. <i>(Ghana, Botswana, Kenya Etc.)</i>	BoC accepts and approves	Text remains the same.	Libtelco
Schedule v FTP Download / Upload Mean Data Rate < Five (5) seconds at 95 th percentile	Service providers also want the LTA to set the FTP set up time benchmark as per web page and define the web page in terms of performance at ≥ 1 mb/s and do as per technology; 2 G, 3G. Etc.	Review Committee disagrees and maintains based on international best practices. <i>(Ghana, Botswana, Kenya Etc.)</i>	BoC accepts and approves	Text remains the same.	Libtelco
Schedule V Web Streaming Service	Service providers propose to the LTA to revisit the entire Table or give broader clarity.	Review Committee agrees to have the web streaming service removed because it is difficult to be regulated.	BoC accepts and approves	Table was removed.	Orange

<p>Schedule v Over the Top (OTT) Voice Service</p>	<p>Service providers suggest that the LTA make Clarity on this section as to Who will be checked on. Operators or Application providers</p>	<p>Review Committee reviews and agrees to have the Over the Top, (OTT) Voice Service removed for now due to its regulatory complexity.</p>	<p>BoC accepts and approves</p>	<p>Table was removed.</p>	<p>Lone star Cell</p>
<p>Schedule VI Digital Financial Services (mobile money)</p>	<p>Service providers suggest that the LTA looks into this, as this regulation is also regulated by the Central Bank of Liberia. This is a narrow Scope. Let the LTA specify the area to be regulated.</p>	<p>Review Committee reviews and agrees to have the digital financial service (DFS) removed for now until it can understand what aspect needs regulatory intervention by the LTA.</p>	<p>BoC accepts and approves</p>	<p>Table was removed.</p>	<p>Lone star Cell</p>
<p>SCHEDULE VI Row 3 Installation of internet equipment (modem and related accessories) on-premises after payment. ≤ 5 days</p>	<p>Service providers think that the Time set by the LTA for installation of internet equipment (modem and related accessories) within ≤ 5 days is too much, as this is relative.</p>	<p>Review Committee disagrees and maintains the 5 days as it will give ample time for installation of wireless related services.</p>	<p>BoC accepts and approves</p>	<p>Text remains the same</p>	<p>Orange</p>

<p>SCHEDULE VI Row 4 Interactive Voice Response (IVR)</p>	<p>Service providers suggest that the Interactive voice response (IVR) be changed to Call Center.</p>	<p>Review Committee disagrees to change the IVR to Call Center because, it is the time the customer has to wait for the announcement of option to choose from.</p>	<p>BoC accepts and approves</p>	<p>Text remains the same</p>	<p>Libtelco</p>
<p>SCHEDULE VI Row 5 Call Centre Operator Response < Thirty (30)sec</p>	<p>Service providers think that the Call Center Operator Response Time set by the LTA, by < 30 sec. is not realistic. It should be reviewed.</p>	<p>Review Committee disagrees and maintains based on international best practices. <i>(Ghana, Botswana, Kenya Etc.)</i></p>	<p>BoC accepts and approves BoC accepts and approves</p>	<p>Text remains the same Text remains the same</p>	<p>C- squared</p>
<p>SCHEDULE VI Customer satisfaction on the overall quality of service</p> <p>SCHEDULE VI Customer satisfaction on the overall quality of service >95%</p>	<p>Service providers think that there should not be a customer-based survey done to generate Customer Satisfaction on the Overall Quality of Service. They see it as unfair to the operators. They also think this not be part of the regulation but rather monitoring Check.</p> <p>The service provider also suggests that the target for Customer Satisfaction on Overall Quality of Service. Should be >90% and not >95% as set by LTA.</p>	<p>Review Committee disagrees and maintains, based on the fact that the LTA needs to understand consumers' quality of experience from time to time. It is also a monitoring mechanism.</p> <p>Review Committee disagrees and maintains based on international best practices.</p>	<p>BoC accepts and approves BoC accepts and approves</p>	<p>Text remains the same Text remains the same</p>	<p>Orange</p> <p>Libtelco</p>

	Service Providers also suggest that there should be no penalty by the LTA based on consumer survey feedback.	Consumer survey reports will not be used to penalize operators but will be published and utilized by the LTA in making other regulatory decisions. <i>(Ghana, Botswana, Kenya Etc.)</i>			
SCHEDULE VI Customer service Point delay < 15 minutes	Service providers suggest that the Customer Service Point Delay should be; < 25minutes or < 30 minutes and not < 15 minutes as set by the LTA.	Review Committee disagrees and maintains based on international best practices. <i>(Ghana, Botswana, Kenya Etc.)</i>	BoC accepts and approves	Text remains the same	Orange
SCHEDULE VI Complaint Resolution Time ≤ 5 days	Service providers suggest that the Complaint Resolution Time Should be 5 days and not ≤ 5 days as set by the LTA.	Review Committee disagrees and maintains based on international best practices. <i>(Ghana, Botswana, Kenya Etc.)</i>	BoC accepts and approves	Text remains the same	Orange

Monrovia QoS Consultation Matrix

Date: September 16, 2022

Section/Existing Text	Requested Change	Review Committee's Proposal	BoC's Decision	Revised Text	Party Making Comment
6.4 KPI measurements and monitoring may be carried out at all network segments including BTS, Cell, BSC, and MSC, etc.	➤ Deployment of more BTS in the rural area to maintain the flow of communication.	Review Committee reviewed, and maintain base on regional best practice. <i>(ITU Studies Standards.)</i>	BoC accepts and approves	Text remains the same	Orange

<p>10.0 All Service Providers shall establish point of sales (POS) in all 15 county capital cities and all major towns and cities with a population of 6,000 and above.</p>	<ul style="list-style-type: none"> ➤ Service providers are concerned as to how did the LTA arrive at the 6000 and above threshold. 	<p>Review Committee based the 6000 On LISGIS' 2008 population and census report.</p>	<p>BoC accepts and approves</p>	<p>All Service Providers shall establish a point of sales (POS) in all 15 county capital cities and all major towns and cities with a population of 6,000 and above based on the Liberia Institute of Geo-information Services (LISGIS) 2008 population and census report.</p>	<p>Orange</p>
<p>11.0 All Service Providers shall ensure the resolution of any consumer complaint within the resolution-time stated in these Regulations or as may be approved by the LTA from time to time.</p>	<ul style="list-style-type: none"> ➤ LTA should consider that there are bad roads network in the country so it should revisit the 5-day set to render service. ➤ LTA should also consider in its plan to provide an enabling environment for quality of service. 	<p>Review Committee reviewed and maintained based on regional best practice.</p> <p><i>(ITU Studies Standards.)</i></p>	<p>BoC accepts and approves</p>	<p>Text remains the same.</p>	<p>Africa network</p>
<p>11.2 Where a Telecommunications Service Provider fails to resolve a consumer's</p>	<p>Due to unforeseen problems like road construction and other governmental issues that may lead to damage to its</p>	<p>Review Committee reviewed and maintained based on regional best practice.</p>	<p>BoC accepts and approves</p>	<p>Text remains the same</p>	<p>Orange</p>

complaint in accordance with Section 11.1 of these Regulations, said Telecommunications Service Provider shall compensate the consumer, and in addition, shall pay the fines stipulated in row 6 of Table 7 Schedule 8 annexed to these regulations.	infrastructure, leading to bad quality of service provisions, LTA should consider the time to restore services.	<i>(ITU Studies Standards)</i>			
SCHEDULE II Row 3 (call drop rate) <1% <i>(90 % of cells should record measurement values < 1% for real traffic)</i>	<ul style="list-style-type: none"> ➤ Service providers recommend that the target set should be split into categories as per area: <ol style="list-style-type: none"> 1. Mountain area. 2. Plane area. 3. And bad weather. 	Review Committee reviewed and maintained based on regional best practice. <i>(ITU Studies Standards (Ghana, Botswana, Kenya Etc.)</i>	BoC accepts and approves	Text remains the same	Orange
SCHEDULE II Row 4 (call set up time) <5 seconds at 95 th percentile of all cases	<ul style="list-style-type: none"> ➤ The target set is too short. <5seconds at 95th percentile of all cases ➤ Also differentiate targets as per location in term of call set time. (local and rural) 	Review Committee reviewed and considered. Review Committee reviewed and maintained based on regional best practice. <i>(ITU Studies Standards (Ghana, Botswana, Kenya Etc.)</i>	BoC accepts and approves	<10 seconds at 95 th percentile of all cases	Lone star Cell, Orange

<p>SCHEDULE I Row 2 (Time To Repair (TTR) Interconnect on Route) Not more than One Hour</p>	<p>➤ The target set is too short. Not more than One Hour</p>	<p>Committee reviewed and considered. <i>(ITU Studies Standards (Ghana, Botswana, Kenya Etc.)</i></p>	<p>BoC accepts and approves</p>	<p>Not more than two Hours</p>	<p>Lone star Cell</p>
<p>SCHEDULE V Row 1. HTTP set-uptime < Five (5) seconds at 95th percentile</p>	<p>➤ This cannot be controlled here in Liberia, so the service provider cannot control it.</p>	<p>Review Committee reviewed and maintained based on regional best practice. <i>(ITU Studies Standards (Ghana, Botswana, Kenya Etc.)</i></p>	<p>BoC accepts and approves</p>	<p>Text remains the same</p>	<p>orange</p>
<p>SCHEDULE VI Call Center operator Response < Thirty (30)Seconds</p>	<p>➤ Service providers think that the target set is not realistic, recommended: 25-30 mins instead of the < Thirty (30)Seconds set by the LTA. ➤ The service provider also thinks the target should be set to Liberia's standard.</p>	<p>Review Committee reviewed and maintained based on regional best practice. <i>(ITU Studies Standards (Ghana, Botswana, Kenya</i></p>	<p>BoC accepts and approves</p>	<p>Text remains the same</p>	<p>LTC mobile</p>

Quality of Service (QoS) Regulations					
Analysis of Orange's Latest Inputs					
No	Section	Existing Text	Orange's Proposal	Review Committee's Recommendation	LTA's Decision
1	Schedulle II (Row 4)	Voice call drop rate at <1% for 90% of measures	Target should be set at <3% for 90% of measures	Based on the current challenges in term of infrastructure and topographical challenges in Liberia, the Reviewed Committee proposes that the <3% for 90% of measures is realistic, hences agrees to accept the change. It is also part of best practices	BoC agrees with the reviewed Committee to accept the change
2	Schedulle II (Row 6)	> 3.5 for 95% of all cases	Proposes voice MOS be set at 2.1 or 3 for 95% of all cases. Measeures with POLQA (P.863)m edutuib 3 ib FB mode	Review Committee accepts to break voice MOS per technology. Hence agrees to set voice at not less than 3.5 for 2G and 3G, and 3.8 for 4G	BoC agrees with the reviewed Committee to accept the change
3	Schedule V (Row 4)	Data Transfer Rate: $\geq 1\text{Mb/s}$	The average data transfer data rate measured throughout the entire connect time to the service (DL) - 90% of measurement > 1 Mbps for areas covered in 4G - 90% of measurement > 512Mbps for areas covered in 3G.	Review Committee disagrees with this proposal based on international best practices. Proposes that data transfer rate of equal to or grater than 1Mb/s be maitained.	BoC agrees with the reviewed Committee to maintain the existing text of the Regulation

4	Schedule V (Row 6)	FTP (download upload) Setup Time: < Five (5) seconds at 95th percentile	If setting objectives for FTP was maintained despite being outdated, KPIs and threshold should be same as HTTP. Setup time should be < 10 seconds at 95th percentile	The Review Committee proposes that the FTP protocol remains because it is still being used in Liberia. The Committee however agrees to applied the same peremeter as HTTP. The Committee also disagrees with the 10 seconds and advises that the 5% be maintained.	BoC agrees with the reviewed Committee to maintain the existing text of the Regulation
5	Section 10.0 and 10.3	Establishment of Point of Sales	Article 10 which was not in the draft document should be suppressed	The Review Committee disagrees and maintain that the establishment of POS in county cities is important to serve consumers' interest.	BoC agrees with the reviewed Committee to maintain the existing text of the Regulation
6	Section 6.3	Measurement and Monitoring	Customer Survey should not be used as a tool to monitor compliance which could lead to operators' section	The Committee disagrees and maintain that consumer survey is an international best practice to monitor compliance that does not necessarily means punishment.	BoC agrees with the reviewed Committee to maintain the existing text of the Regulation
7	Section 11	Consumers' Complaint Resolution	Related to customer complaint is not aligned with the 2007 Act Section 57	Article 57 of the LTA's 2007 Act is not related to this provision., there's already an established consumers' complaint procedures. This provision intends to ensure consumers' interests are protected. The Review Committee believes that this provision is ensuring the operators resolve consumers' complaint within the required resolution time.	BoC agrees with the reviewed Committee to maintain the existing text of the Regulation

8	Section 18	Enforcement Measurement	Enforcement measures should be proportionate to the depth of the problem	What constitute breaches of these regulations and sanctions proportionate to those breaches have been established in Table VIII.	BoC agrees with the reviewed Committee to maintain the existing text of the Regulation
9	Table VIII	Sanctions	Table VIII should be revised	Review Committee believes that table is specific to each subject matters and it is proportionate. Besides, sanction is for deterrence and imposes no financial risks to operators once they adhere to these regulations.	BoC agrees with the reviewed Committee to maintain the existing text of the Regulation.
10	Section 13.1	Content and Format of Publication	LTA should Provide report template	The LTA will provide reporting template	BoC agrees with the reviewed Committee.
11	Section 13.1	Content and Format of Publication	Section 13.1 should be amended as follow: After point F and G to read as: The quarterly report will only include KPIs that can be measured through OSS.	The Committee believes that the proposed method of using only "OSS" is inadequate. The Committee believes that any acceptable method(s) deploy by operators to report on KPIs is encouraged as long as it captures all the reportable KPIs.	BoC agrees with the reviewed Committee to maintain the existing text of the Regulation
12	Section 14.1	Approving Explanatory Remarks	Following missing items should be added to Section 14. 1: D. Service deficiencies or interruption due network and site maintenance, E. Service deficiencies arising from external causes: power outages, fiber interruption, road work and extreme weather conditions	It was stated in this section that the information required for approving explanatory remarks is not limited to the list provided. Notwithstanding, the committee agrees to act these considerations.	BoC agrees with the reviewed Committee to accept the change

13	Section 19	Amendment to the Regulations	It should be specified that Operators should be consulted	The 2007 Telecommunications Act mandates the LTA to consult relevant parties in developing and amending regulations. Whether specifies on not, it is an established process in this regard.	BoC agrees with the reviewed Committee to maintain the existing text of the Regulation
14	Section 20	Entry into Force of the Regulations	It should be specified that the regulations should be applicable to operators 9 months after its publication as operators need preparation time.	An Order will be used to bring the regulations into effect. A window period will be established to ensure that operators have a reasonable time to prepare.	BoC agrees with the reviewed Committee to maintain the existing text of the Regulation
15	Tables I - V	Quality of Service Parameters to be Measured	Table I, II, III, IV, and V are still referring to test stations as measurement tool. Please refer to LTA's Report.	The LTA will use a variety of monitoring equipment and protocols to verify and monitor service quality. The use of two mobile phones to verify service price, for example, is a text station.	BoC agrees with the reviewed Committee to maintain the existing text of the Regulation

APPENDIX I

List of Individuals and Organizations Consulted

1. Lonestar MTN Communications Corporation
 2. Orange Liberia
 3. Liberia Telecommunication Corporation (Libtelco)
 4. C-Squared
 5. House Standing Committee on Telecommunications
 6. Senate Standing Committee on Telecommunications
 7. Ministry of Post and Telecommunications
 8. Representatives of the Liberia Marketing Association across the 15 counties
 9. Liberia Internet Society
 10. National Telecommunications Consumers (NATELCO)
 11. Local Governments in all of the 15 Counties
 12. Representatives of the Educational Sector across the 15 counties
 13. The Press Media of Liberia
 14. Representatives of the Motorcyclist Union across the 15 counties
 15. Girls in ICT
 16. Individuals from diverse backgrounds across the 15 counties
 17. Powernet
 18. Nas Inter Global
 19. K3/Telecel
 20. Electroshack
 21. Africa Mobile Network
 22. Cable Consortium of Liberia
 23. Spectrum Communications
 24. Signal Technology
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APPENDIX II**TIMELINE FOR ADOPTION AND IMPLEMENTATION OF QoS REGULATIONS**

Liberia Telecommunications Authority Tentative Implementation Timeline for the QoS Regulations					
No.	Activity	Start Date	End Date	Responsible Party	Status
1	Submission of consultative report and final QoS Regulations to Service Providers	March 4, 2024	March 6, 2024	LTA	Ongoing
2	Adoption and Signing of QoS Regulations and Issuance of Press release on the Consultation Process	March 11, 2024	March 11, 2024	LTA	Pending
3	Publication of Regulations on LTA's website and	March 12, 2024	March 15, 2024	LTA	Pending
	Provision of baseline measurements of all parameters contained in the QoS Regulations	March 13, 2024	April 30, 2024	Service Providers	Pending
4	Monitoring and Enforcement of Regulations begins	May 11, 2024		LTA	Pending

DONE BY THE LIBERIA TELECOMMUNICATIONS AUTHORITY
IN MONROVIA, LIBERIA ON THIS 4th DAY OF MARCH 2024

Signed: _____
Hon. Edwina Crump Zackpah
Chairperson, Board of Commissioners
Liberia Telecommunications Authority (LTA)
