



National Telecommunications Regulatory Commission

St. Vincent and the Grenadines

**Comments on ECTEL's Proposed QoS KPIs**

Please see below comments on ECTEL's proposed target levels regards to their proposed QoS KPIs. Please note that the recommendations made are as a result of research done of different jurisdictions on quality of service regulations and a recommendation document previously drafted by the Commission.

The comments with regards to ECTEL's KPIs and proposed target level have been included in a new column named comments which is added to ECTEL's recommended table. Following the proposed ECTEL KPIs for each service area I have included a table in which I recommend new KPIs for consideration as well as any necessary definitions for the KPIs recommended.

With regards to new service categories for quality of service, I recommend subscriber TV, billing parameters, customer help lines, customer complaints and general complaints. Subscriber TV has been recommended because at the many Community discussions held by the NTRC in 2014 our subscriber TV service was the main service area that the public had issues with and as such a recommendation has been made for quality parameters for subscriber TV. The other recommendations have been made based on research done as indicated in the opening paragraph.

Finally as seen in the new recommendations made I have included a column which indicates the period over which the target should be made. I recommend that this is also included in ECTEL's table of KPIs and targets.

**Public Fixed Telecommunications**

PUBLIC FIXED TELECOMMUNICATIONS		
PROPOSED QoS KPI	Proposed Target Level	Comments
Supply Time for Connection	90% within 7 working days	Seven (7) working days I think is too long. My reviews of different jurisdictions indicated that 5 working days should be sufficient. What is the time frame for the next 10%
Fault Repair Time	95% within 72 hours	From reviewed I have done a range is recommended: 80% in 24 hrs 95% in 48 hours 100% in 72 hours
Service Availability	>99.00%	Ok

Call completion success rate	>95%	Ok
Fault Rate per Access Line	≤ 3% per 100 lines per month	Ok
Billing complaints	≤ 1% complaints per 1000 bills over billing cycle	1% of 1000 is 10 bills for every 1000 bills printed. This means that for 22000 subscribers then 220 billing complaints is acceptable. I recommend a maximum of 1 complaint per 1000 bills printed.
Response Time for Operator Service	90% within 20 seconds	I also recommend a range here: 80% within 10 seconds 90 % within 20 seconds
Reconnection of service after payment of overdue amounts within period(Business Hours)	85% within 3hours	Ok
Advance Notice of planned disruption	95%	The target level is not clear. It also does not give a time frame with regards to when the notice should be submitted. My recommendation is that 95% of the disruptions should be planned with a 36hour advance notice time period.

With regards to fixed public telecommunications, I also recommend including the following KPIs and targets:

Parameter	Target	Average over a period of
POI Congestion	< 1%	One quarter
Grade of service	< 1%	One quarter
Net Neutrality	All traffic on the internet should be treated equally and that internet service providers cannot tilt a level playing field by blocking, slowing or giving preferential treatment to certain services.	

- Grade of Service: Grade of Service (GoS) is defined as “the probability of call failure over the junctions between switches due to non availability of junctions”.
- PoI congestion; PoI congestion is defined as “The ratio of calls failed over the PoI (between two operators/ licensees) due to unavailability of free circuits to the total call requests for seizure of PoI circuit”.

### Public Mobile Telecommunications

PUBLIC MOBILE TELECOMMUNICATIONS		
Proposed QoS KPI	Proposed Target Level	Comments
Supply Time for Connection	95% within 2 working days	Ok
Call Completion Success Rate	98%	Why is the call completion success rating higher than that for fixed line calling. Shouldn't they be the same.
Service Availability	>99.00%	Ok
Call completion success rate	>95%	Duplicated QoS
Billing complaints	≤ 1% complaints per 1000 bills over billing cycle	1% of 1000 is 10 bills for every 1000 bills printed. This means that for 50000 subscribers then 500 billing complaints is acceptable. I recommend a maximum of 1 complaint per 1000 bills printed.
Response Time for Operator Service	90% within 20 seconds	I recommend a range here: 80% within 10 seconds 90 % within 20 seconds
Reconnection of service after payment of overdue amounts within period	95%	For fixed line the target level is 85% within 3 hours. However for mobile 95% is proposed. Why is there a difference? Also shouldn't there be a time period similar to the fixed like target.
Advance Notice of planned disruption	95%	The target level is not clear. It also does not give a time frame with regards to when the notice should be submitted. My recommendation is that 95% of the disruptions should be

		planned with a 36hour advance notice time period.
Drop Call Rate	< 2%	ok
Call Set Up Time (Post dialing delay to ring tone)	National calls @ busy hour 5 seconds; International calls @ busy hour 10 seconds	ok

With regards to fixed mobile telecommunications, I also recommend including the following KPIs and targets:

Parameter	Target	Average over a period of
Blocked call rate	SDCCH congestion < 1 % TCH congestion <2 %	One quarter
Call drop ratio	< 3%	One quarter
Service Coverage	In door >=-75 dBm In-Vehicle >=-85 dBm Out door – in city >= -95 dBm	One quarter
POI Congestion	< 0.5%	One quarter
Prepaid Credits Complaints	< 1 complaint over 1000 pre-paid credit top-ups.	One quarter
Advanced Notice of Rate change	Notice to be publicized in two weekly newspapers, over a two week period using a quarter page Ad	
SMS Promotion	ALL persons receiving SMS promotion must have expressly given an indication that they are interested in receiving promotions from a specific entity	

- Call Drop Ratio: Call Drop Ratio is defined as “the ratio of calls lost after establishment to all established calls”. This includes calls dropped due to failure of handover, radio loss and network congestion.
- Point of Interconnection (PoI) congestion: PoI congestion is defined as “the ratio of calls failed over the PoI (between two operators/ licensees) due to unavailability of free circuits to the total call requests for seizure of PoI circuit”.

Note: It is to be noted that all the measurements of performance parameters should be carried out during the "Time Consistent Busy Hour (TCBH)". TCBH is defined as "the one hour period starting at the same time each day for which the average traffic of resource group is greatest over the days under consideration". ITU recommends analysis of 90 days to establish TCBH. <http://www.nta.gov.np/en/2012-06-04-05-30-21/cellular-mobile>

- SMS Promotion: Consumers who receive SMS marketing promotions must consent to receiving the promotions from the specific advertiser. Therefore the network provider must have a list of numbers from the specific advertiser to whom marketing promotions can be sent and not just send promotions to random numbers. Exceptions to this requirement would be calls or texts from the consumers provider such as text related to billing, top-ups etc., informational notices and healthcare-related calls.

#### Fixed Broadband Service

FIXED BROADBAND SERVICE		
Proposed QoS KPI	Proposed Target Level	Comments
Service Availability	>99.00%	ok
Supply Time for Connection	90% within 7 working days	Seven (7) working days I think is too long. My reviews of different jurisdictions indicated that 5 working days should be sufficient. What is the time frame for the next 10%
Fault Repair Time	95% within 24 hours	What is the time frame for the next 5%. My Recommendation is 72 Hours.
Fault Rate per Access Line	≤ 3% per 100 lines per month	Ok
Ratio of Packet Loss (Upload and Download)	≤ 5% Packet loss	ok
Average Throughput for Packet data	>90% of the subscribed speed	Ok
Latency	< 150ms for Audio; <250 ms for Data < 75 ms for Data (interactive)	A ping test gave a latency of 20ms for international websites. A latency of 75 ms therefore could be very high. I recommend that a review of the required latency target level be done.
Drop Rate	1%	Ok
Jitter	< 50 ms	A review of the jitter may also be needed as my review of jitter indicates that <30ms may be a better target

Billing complaints	≤ 1% complaints per 1000 bills over billing cycle	1% of 1000 is 10 bills for every 1000 bills printed. This means that for 50000 subscribers then 500 billing complaints is acceptable. I recommend a maximum of 1 complaint per 1000 bills printed.
Reconnection of service after payment of overdue amounts within period(Business Hours)	85% within 3hours	ok
Advance Notice of planned disruption	95%	The target level is not clear. It also does not give a time frame with regards to when the notice should be submitted. My recommendation is that 95% of the disruptions should be planned with a 36hour advance notice time period.

With regards to fixed broadband service, I also recommend including the following KPIs and targets:

Parameter	Target	Average over a period of
Time to Connect	< 1 min	One quarter
Number of attempts for successful connection	3 Maximum	One quarter
Mean time to restore	< 3 days	One quarter
Net Neutrality	All traffic on the internet should be treated equally and that internet service providers cannot tilt a level playing field by blocking, slowing or giving preferential treatment to certain services.	

WIRELESS BROADBAND SERVICE		COMMENTS
Proposed QoS KPI	Proposed Target Level	
Service Availability	>99.00%	ok
Supply Time for Connection	95% within 3 working and 100% within 7 working days	Why the difference in recommendation for wireless broadband and fixed broadband?
Fault Repair Time	95% within 24 hours	What is the time frame for the next 5%. My Recommendation is 72 Hours.
Ratio of Packet Loss (Upload and Download)	≤ 5% Packet loss	ok
Average Throughput for Packet data	>90% of the subscribed speed	ok
Latency	< 150ms for Audio; <250 ms for Data < 75 ms for Data (interactive)	A ping test gave a latency of 20ms for international websites. A latency of 75 ms therefore could be very high. I recommend that a review of the required latency target level be done.
Drop Rate	1%	ok
Jitter	< 50 ms	A review of the jitter may also be needed as my review of jitter indicates that <30ms may be a better target

With regards to Wireless broadband service. I also recommend the inclusion of a minimum average signal strength of 175dBm which has shown to be acceptable from my field work.

Parameters	Target	Average over a period of
Signal Strength	-75 dBm	One quarter
Net Neutrality	All traffic on the internet should be treated equally and that internet service providers cannot tilt a level playing field by blocking, slowing or giving preferential treatment to certain services.	

## Subscriber TV Service

### Quality of Service parameters recommended for Subscriber TV

Network Parameters	Benchmarks	Average over a period of
Installation time of service after application	< 5 working days	One quarter
Signal to Noise Ratio (DVB-C)	26 dB for min 64 QAM 32 dB for min 256 QAM	One quarter
Operating Margin (Noise Margin) – DVB-C	Higher than 4 dB	One quarter
Maximum and Minimum Carrier Levels (DVB-C)	47 dB micro volts min for 64 QAM 67 dB micro volts max for 64 QAM  54 dB micro volts min for 256 QAM 74 dB micro volts max for 256 QAM	One quarter
MER (DVB-C)	30 dB (64 QAM) min 34 dB (256 QAM) min	One quarter
Complaints by subscribers of “No Signal”	90% redress in 48 hours 100% redress in 72 hours	One quarter
All installation and service related complaints (except those related to billing)	90 % in 48 hours 100% in 72 hours	One quarter
Notice to consumers of preventive maintenance of not more than 24 hours	A minimum of 36 hours notice to consumers	One quarter
Change in regulated subscription package(s)	Not less than 6 months’ notice to regulator and consumers from date of enrollment of subscriber to package	One quarter
Removal of channels from regulated subscription package(s)	Not less than 15 days prior notice to regulator and consumers (published in local newspapers and on TV screen)	One quarter



Noise Margin – the margin between the signal to noise ratio (SNR) leading to quasi error free (QEF) operation after Reed Solomon Decoder (BER < 2 x 10<sup>-4</sup> before Reed Solomon Decoding) and the SNR of the system

Higher than 4 dB is as per IS 13420 (Part I):2002, IEC 60728-1(2001), para 5.11.1.2 page 54.

MER as clarified in ETSI: Technical Report: Measurement guidelines for DVB Systems

Maximum and minimum carrier levels are as IS 13420 (Part 1):2002 IEC 607278-1 “Cabled distribution system for sound and television signals – Part 1 measurement and system performance

In the service areas recommended by ECTEL it is noted that billing issues are included for each service. I however recommend that billing parameters, along with customer help lines, customer complaints and general complaints have quality categories of their own. The tables below give my recommendations in this regard.

### Billing Parameters

Quality of Service parameters suggested for Billing Complaints

Parameters	Benchmarks	Average over a period of
Billing Complaints per 1000 bills issued	< 1	One quarter
% of billing complaints cleared within a month	>99%	One quarter
Period of all refund / payments due to customers from the date of resolution of complaints as in the above	< 4 weeks	One quarter

### Customer Help Lines

Quality of Service parameters suggested for Customer Help Lines

Parameters	Benchmarks	Average over a period of
Line Shifting or relocation*	< 5 working days	One quarter

Service disconnection**	>99%	One quarter
Period of all refund / payments due to customers from the date of resolution of complaints as in the above	< 4 weeks	One quarter
Response time to the customer for assistance	(i) % of calls answered by operator (voice to voice): Within 10 seconds 80% Within 20 seconds 95%	One quarter

\*Subject to technical feasibility & upon clearance of all payable dues.

\*\*Time taken to disconnect service technically but it does not take into account the time for the adjustment of relevant dues/fee.

### Customer Complaints

Quality of service parameters suggested for customer complaints.

The percentages can be determined using the number of complaints being submitted to the Commission in a given category as a percentage of the number of subscribers to the network.

Parameters	%	Average over a period of
Satisfied with the provision of the service	>95	One quarter
Satisfied with the billing performance	>90	One quarter
Satisfied with help services	>90	One quarter
Satisfied with network performance, reliability and availability	>95	One quarter
Satisfied with maintainability	>95	One quarter
Overall customer satisfaction*	>95	One quarter
Customer satisfaction with offered supplementary services	>95	One quarter

- Calculated based on the average of the satisfaction rates in the rows above

### General Complaints

General complaints over 3 month period – The number of general service related (not billing) complaints per 1000 subscribers over 1 quarter

Fault and Repair Parameters	Benchmarks	Average over a period of
No of fault incidences per month	<3	1 month
Fault incidences repaired in		
24 hours	90%	1 day
48 hours	95%	2 days
72 hours	99%	3 days
More than 72 hours	100%	More than 3 days

Please see attached the document drafted by NTRC St. Vincent and the Grenadines which houses the amendments and inclusions recommended above for the Quality of Service Regulations. This document was drafted prior to the receipt of the draft consultation on the Quality of service Regulations. It is being sent as an attachment to this document for ECTEL's review.

With regards to the questions posed by ECTEL in the draft consultation, please see my responses below;

### QUESTIONS TO BE ADDRESSED

1. Do you have information from providers as to the level of service being offered to consumers?

*The Commission current has dispute reports are required by the dispute resolution regulations. However there is no information on the overall level of service.*

2. Based on the information available from providers if any, are the standards outlined above currently being, met, surpassed or do providers fall below the current standards?

*The standards are currently being met based information available from the providers*

3. If they surpass the current standard, by how much do they surpass those standards?
4. If they fall below such standards how far below the international standards do they fall?
5. How easy was it to gain information from the providers?

*Base on the Dispute regulations in place the information are easy to gain from the providers as the regulations allows for providers to submit monthly reports on Telecommunications complaints being made by consumers.*

6. Have you had any customer complaints in relation to the Quality of Service?

**Yes**

7. How are customer complaints about the Quality of Service handled?

**The process in summary requires a written complaint to be filled out on a special form (Form 1) and submitted to the service provider. The service provider is required to acknowledge receipt within 3 days to the customer in writing. The service provider then has 30 days to try and resolve the issue. If after the 30 days both parties cannot come to a resolution then either party can bring the matter to the NTRC for resolution. This will require the use of Form 2. All forms are available at all licence service providers in SVG.**

**When complaints reach the NTRC it uses its best efforts and relationships with the service providers to try and resolve the issue at hand. If this is not successful it then moves to operate under the formal channels available under the dispute regulations. The applicant filing the complaint can outline what is their preferred**

**method for the NTRC to deal with the issue. These options include mediation, arbitration, tribunal (the Commissioners can form themselves as a tribunal). However the Commission will make the final decision on which alternative dispute resolution process to use.**

8. Do you agree that the NTRC is best placed to amend and update these Codes of Practice?

***NTRC is the best place to amend and update these codes of Practice, Since 2008 the NTRC has been managing the process regarding customer complaints via the dispute regulations. Therefore, the Commission will be able determine if the regulations need to be amended or updated to ensure a proper frameworks is in place to guide companies on the level of quality of service expected with all of their services.***

9. Are there any other issues, which you may wish to raise in relation to the QoS Regulations?

**Not at this time**

10. Are there other service categories for which you would like QoS KPIs to be developed? For example subscriber television, etc?

**I recommend subscriber TV, billing parameters, customer help lines, customer complaints and general complaints.**

