

# ITU Workshop on Telecommunication Service Quality

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## QoS Monitoring of Mobile Networks (Regulator point of View)

**Yvonne UMUTONI**

**Chairperson of Quality of Service Development Group (QSDG)**

**[yvonne.umutoni@rura.rw](mailto:yvonne.umutoni@rura.rw)**



# SUMMARY

- This presentation focuses on the quality of service monitoring and enforcement for mobile networks from the Regulatory point of view.
- It covers the following:
  - QoS regulations
  - QoS Enforcement
  - QoS Audit in help of Benchmarking QoS Tools
  - QoS Parameters of some mobile services such as voice, data...

# QoS REGULATIONS

- QoS regulation is part of customer protection;
- But customer protection is broader than QoS regulation.
- According to the ITU-T Rec E.800: QoS is defined as the *“Collective effect of service performance, which determines the degree of satisfaction of a user of the service”*.

# QoS ENFORCEMENT

To enforce, Regulator needs legal and regulatory tools:

i. ICT Law: Approved and published in Official Gazette

ii. QoS Regulations:

- with objectives to:
  - ✓ Enforce service quality delivery by Mobile Operators
  - ✓ Maintain service quality in the presence or absence of competition, while recognizing environmental and operating conditions;
  - ✓ Make QoS information available to Customers;
  - ✓ Enable fair competition and Assist the development of related telecommunications markets.
- Give guidance about:
  - Methodologies for measurements, reporting, recording
  - KPIs definitions, formulas and thresholds (when applicable).



# QoS ENFORCEMENT (CONT...)

- iii. QoS Audit for mobile networks done by Regulator Engineers on quarterly basis, or when complaints occur.
- iv. QoS Reports shared with Operators before publication.
- v. Benchmark Reports published on Website in the Annual Report.

# QoS AUDIT

## a. Purpose of QoS Auditing:

- Verify QoS of Mobile Networks experienced by customers;
- Compare results against KPIs thresholds;
- Produce benchmarking reports.

## b. Drive Test Methodology adopted:

- specify locations,
- prepare maps for measurement locations,
- calculate samples to be collected,
- calculate number of hours / days for every location,
- for data calculate number of hotspots and locate them,
- Measurement tools setup,
- prepare scripts / test cases to be used, etc.



# AUDITED KPIs

Tested Service	KPI	Comments
Coverage and Quality	Signal Strength ( RxLev, RSCP, RSRP)	Network Availability
	Signal Quality (Ec/No, RSRQ)	Network Accessibility
Dual Mode (2G/3G) Voice and CS Fall Back LTE	Call Setup Time	Network Accessibility
	Call Setup Success Rate	Service Accessibility
	Call Drop Rate	Service Retainability
	Voice Quality MOS	Service Integrity
Data 4G / 3G	Application Throughput	Service Integrity
	Latency	Service Integrity



**THANK YOU FOR YOUR  
ATTENTION**





