

**Policy and regulatory aspects surrounding
the QoS and QoE for multimedia services in
Jordan**

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Agenda

- Demand Evolution background
- Legal Framework
 - Telecom Law
 - License
 - QoS Framework
- MMS QoS - Jordan Case

***Demand Evolution background**

Causes behind the demand growth for multimedia services:

- **Usage habits and recent growth for smart phone penetration.**
- **The recent Social media application uptake.**
- **Smart TV OTT Content streaming over LTE TDD Network.**

*Legal Frame work, Telecom Law

- 6. C “To specify the minimum level of service quality which must be committed by licensees to meet the needs of Beneficiaries. This shall be done in consultation with licensees and shall be without the imposition of any specific technological solutions on them.”
- 6. D “To protect the interests of Beneficiaries and monitor the actions of persons and licensed parties to ensure that the conditions of Licenses are observed, including specified service standards, service quality, and prices; and to take the necessary legal actions in front of those who violate these conditions.”
- 159 “The Commission shall verify the Licensees' compliance with the License conditions and the provisions of the Law, and may take any actions it deems appropriate for this purpose, including conducting a **physical onsite inspection** of network locations and Telecommunications equipment.”

*Legal Frame work, License

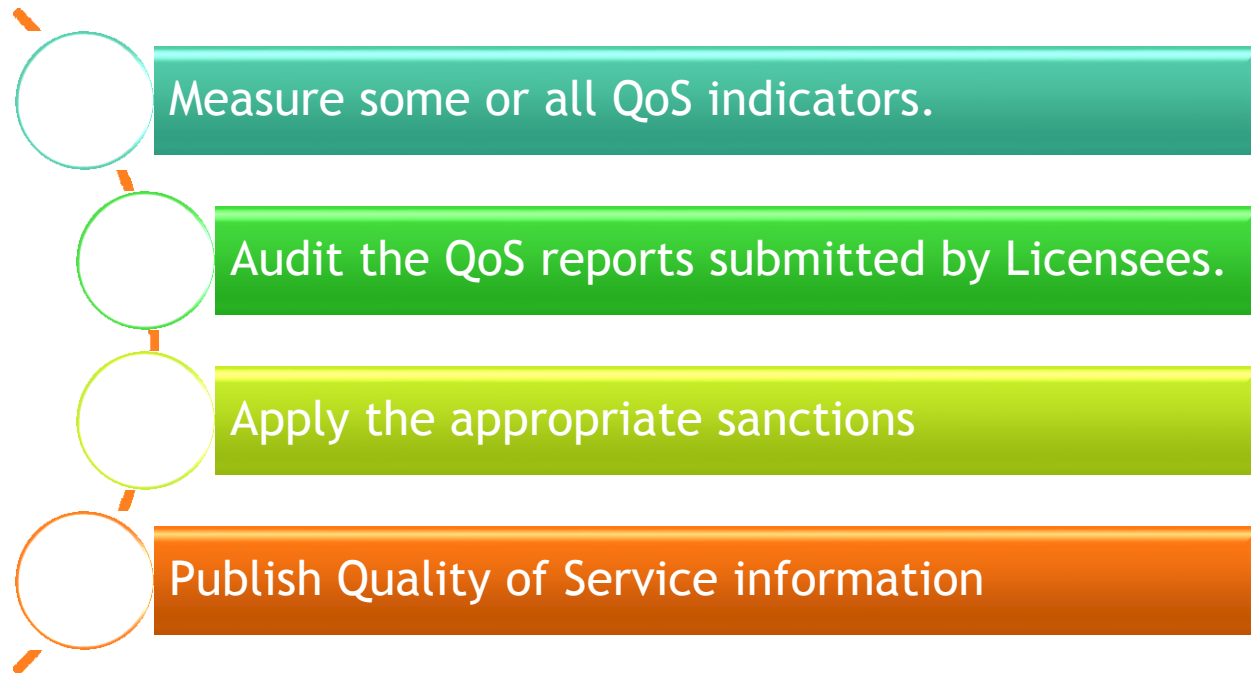
- 3.3.4 “The Licensee shall meet quality of service obligations set out in this License Agreement as well as in any applicable Regulations.”
- 11.4 “A detailed report on the Licensee’s compliance with any applicable universal service, **coverage and quality of service obligations.**”

The license agreement dedicated a QoS Schedule E articles that deals with service KPI and measurements,

- 2.1 “The Licensee shall conduct its Licensed Activities according to **performance parameters and quality of service objectives** that meet or exceed generally recognized **international industry standards.**”
- 2.2 “The Licensee may be required by the TRC to measure and submit quarterly reports of its service quality. TRC reserves the right to conduct audits of the Licensee quality of service measurements and/or its own measurements at its own discretion.”

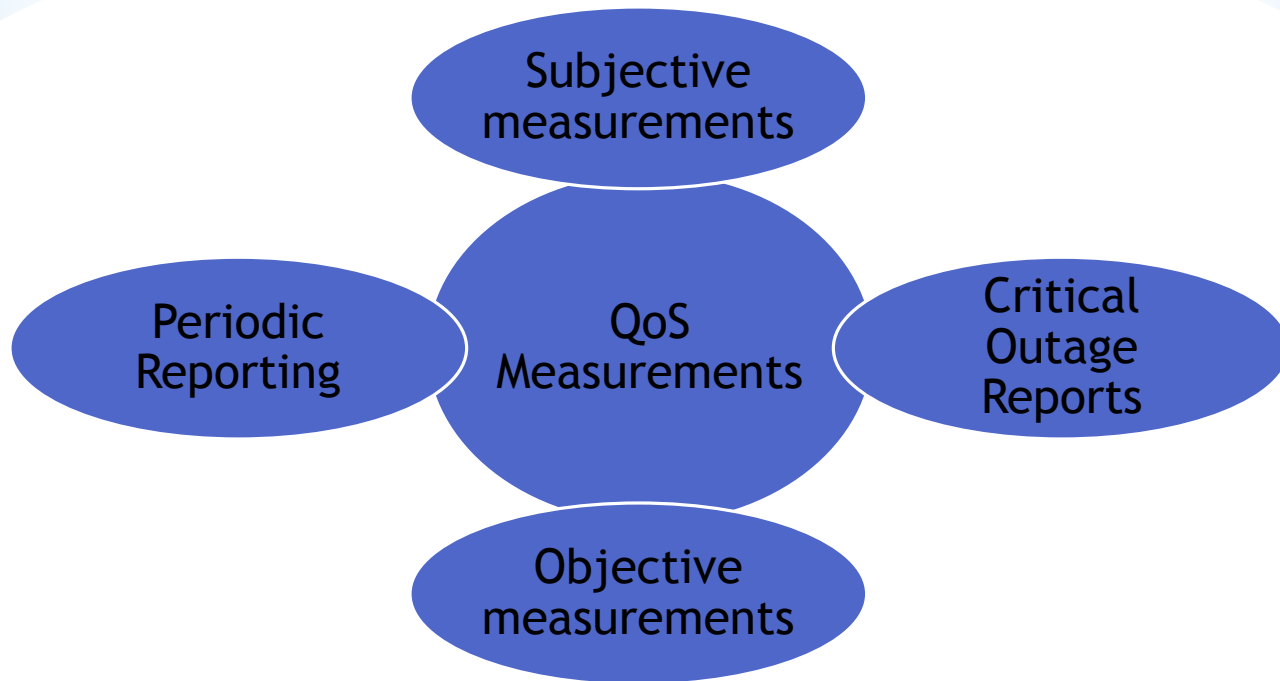
*Legal Frame work, QoS Framework

The QoS Framework construction intended to create the general enforcement and encouragement environment for the Quality of Service and Experience in General regardless of technology usage.



*Legal Frame work, QoS Framework

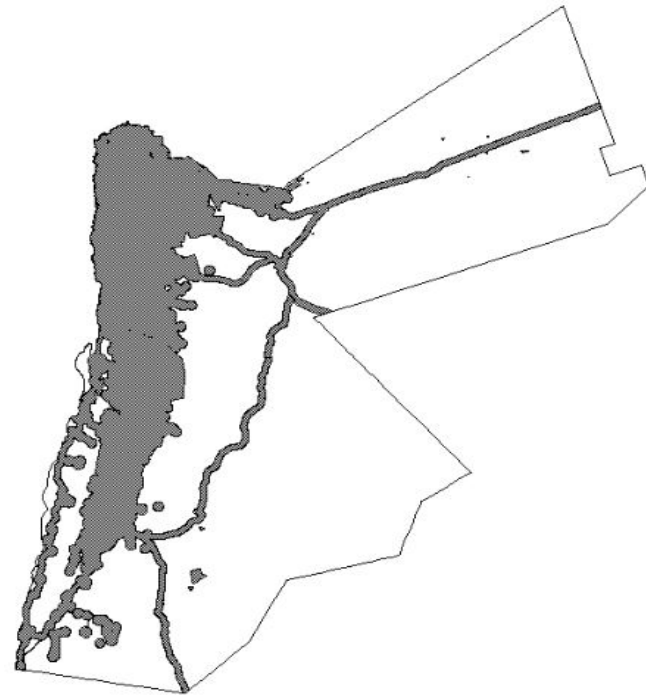
QoS Measurements Sources



*Legal Frame work, QoS Framework

As an example, Current technical GSM KPIs of which QoS Framework states the following Minimum:

- Coverage ratio: Min. 99%
(Based on Network Access)
Coverage ratio = (Sum of the areas with coverage / total area specified in TRC reference map) x 100 %
 - Demographic based



*Legal Frame work, QoS Framework

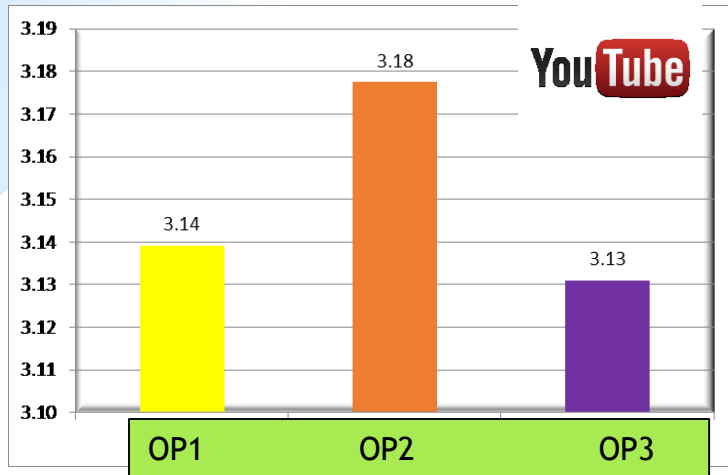
- Min. Outdoor Coverage

The coverage area is defined by the area where there is outdoor signal level (at street level) more than -100 dBm from the control channels to give access to the network.

- Call Drop Rate: Max Rate 2% ---- Reasonable
- Call Setup Success Rate: 94% ---- Low , need to be 96%
- Network availability : 97% (Down, Up)
- SMS Completion rate: 96%

MMS QoS Jordan Case - Streaming Test

Amman- YouTube (Start Time in S)



- **Video Session Freezing rate (VSF):** %0 to 2%
 - o Represent play outs without interruptions.
- **Start Time (S)** Time to the First Picture (TTFP): 2 s to 5s
 - o Time in seconds needed to have the first frame of video appear & play
- **Video Quality (VMOS):** usually between 3.2 and 4.2
 - o Represent a video mean opinion score based on standardized scale.

Best Mobile Award 2016

