

Communiqué on the Determination and Measurement of the Criteria Regarding Quality of Service Obligations of GSM Mobile Operators

CHAPTER ONE

Purpose, Scope and Legal Basis

Purpose

Article 1 — The purpose of this Communiqué is to define the technical criteria as regards Quality of Service obligations of operators providing cellular mobile telephony (GSM) services, and the rules and procedures applicable to the determination and measurement of such criteria.

Scope

Article 2 — This Communiqué comprises the criteria for operators offering mobile telephony services to conduct their activities in conformity with international quality of service standards and national regulations, and to lay down the rules and procedures to govern site measurements.

Legal basis

Article 3 — This Communiqué is issued on the basis of Articles 20, 23 and 24 of the Regulation on Quality of Service within the Telecommunications Authority, which entered into force and published in the Official Gazette Issue No. 25744 on March 3, 2005.

Definitions

Article 4 — For definitions not included in this Communiqué, definitions in the Telegram and Telephone Law No. 406, the Wireless Law No. 2813 and the applicable legislation shall be referred to. For the purposes of this Law,

'the Authority' means the Telecommunication Authority.

'the Regulation' means the Regulation on Quality of Service within the Telecommunications Authority, which entered into force and published in the Official Gazette Issue No. 25744 on March 3, 2005.

'Cell' means the smallest geographical area covered and served by a GSM base station (BTS).

'Determination' means operators' obtainment of data and results for the determination of their quality of service obligations by the compilation and analysis of data concerning quality of service criteria by means of computers and software through their own GSM network.

'Measurement' means attainment of results relating to a given operator's quality of service obligations through airborne signals of that operator by means of on-site measurement and analysis systems used for local network information concerning any region, site or cell.

'Criteria' means Quality of Service parameters used in the obtainment and evaluation of data over GSM network within the framework of this Communiqué, which are specified as attached hereto.

'Call Drop' means termination of a call for a reason beyond the control of the subscriber after the call is successfully started.

'Call Drop Rate' means the proportion of the number of call drops to the total attempts to call.

'the Busiest Hour' means the hour during which the traffic is the busiest, found as a result of the measurements.

'Sampling Time interval' means the range of time to be used in counting valid attempts and failures, and is applied as the time between the beginning and end of an hour.

CHAPTER TWO

General definitions and rules

Criteria and Rules to be Observed

Article 5 — Technical criteria regarding the quality of service and determinations and measurements for such criteria, performed by GSM operators and thirds parties, as long as they obtain an authorization from the Authority, shall be communicated to the Authority, as determined over settlements with a population of 10.000 (ten thousand) and more according to the latest official census results of the Turkish Statistics Institution. Settlements consisting of more than one

district and those with a metropolitan status shall be taken as a single settlement. The term "settlement" used in the Communiqué shall be interpreted as defined in this Article.

Article 6 — The fact that the Authority requests quality of service data on settlements of 10.000 (ten thousand) and above does not lead to an exception in favor of the operator in terms of its obligations regarding telecommunications services it offers in settlements with a population less than 10.000 (ten thousand) and in covered areas outside the settlement areas.

Article 7 — The operator shall make its periodical declarations as to quality of service, as frequently as required in the Regulation, beginning from the eighteenth month of its authorization.

Article 8 — Determinations regarding the criteria and site measurements shall be obtained by the operator exclusively from its own GSM network and the traffic in it. No determinations and measurements may be performed on national and/ or international roaming or emergency call signal or access provided by the other operator.

Article 9 — All criteria shall be obtained from the network end point and on real communications traffic. Except measurements, no determinations may be made by way of experimental calls and setting up connection.

Article 10 — Minor details ensuring the obtainment of determination results shall be properly kept by the operator for three years following the relevant period, up to the cell base, and given to the Authority whenever required.

Article 11 — For issues not addressed in this communiqué, which regard quality of service criteria, determination and measurements, general international standard and procedures, ITU-T E. 800 series recommendations and ETSI TS 102 250-2 V.1.1.1 (2003-10) standard shall apply.

Article 12 — The Authority may conduct verifications of the determination and assessment results submitted by the operator, either directly or by the agency of independent specialized institutions, if it finds it necessary.

Article 13 — Results of site measurements performed by GSM operators and third parties, as long as they obtain an authorization from the Authority, in accordance with this Communiqué shall be submitted to the Authority. Minimum data required to be included in this Report are given in Annex-1 to this Communiqué. Furthermore, other operation and data details, in electronic media, shall be accompanied.

CHAPTER THREE

Determination and Measurement

Determination

Article 14 — For obtaining the data included in Article 20 of the Quality of Service Regulation, the criteria defined, and for which measurement methods are provided, in ITU-T E. 800 Series and ETSI TS 102 250-2 V.1.1.1 (2003-10) standards shall be used.

Article 15 — For determinations, all valid attempts and the "Sampling Time Interval" of failures in them during 7 days a week and 24 hours a day so as to include the entire traffic within a settlement, and probability rates to be found shall be used.

Article 16 — Sampling Time Interval shall be applied as 1 hour.

Article 17 — The Sampling Time Interval in which the highest adversity occurs between 0-24 of each day shall be taken as the "Daily Probability Value" of that settlement for the relevant criteria.

Article 18 — The probability value found by proportioning the total unsuccessful attempts to the total valid attempts, as used in the Daily Probability Values regarding any indication during a given declaration period in a settlement, shall be taken as the "Periodical Average Probability Value" of the settlement.

Article 9 — Probability value found by proportioning total unsuccessful attempts to the total valid attempts, as used in the calculation of Periodical Average Probability Values of all settlements across the country, shall be taken as the "Nationwide Average Probability Rate" for the relevant criteria.

Article 20 — The Quality of Service Information Form presented in Annex-2 of the Regulation for the entire country shall be completed in accordance with the definitions and procedures laid down herein and be accompanied with supplementary data and explanations to confirm the validity and reliability of the results.

Article 21 — Data concerning determinations on settlement basis shall be communicated to the Authority at periods of 3 (three) months, with the table presented in Annex-2 to this Communiqué being filled for monthly periods.

Site measurements

Article 22 — Reception, measurement and analysis of measurement results of operators' electromagnetic signals in any settlement, any region of a settlement or a region consisting of more than one settlement or outside settled areas, by means of stationary or moving testing systems, upon the Authority's request or a complaint, shall be conducted in accordance with the procedure prescribed herein.

Article 23 — Devices and/ or sets of devices, which are capable of measurements at ITU-T and ETSI standards and of recording geographical position of the measurement point and time together with measurement data, shall be used.

Article 24 — In measurements made where devices and antennas are mounted on the vehicle, whether the measurement correspond to the internal or external values shall be specified.

Article 25 — For measurements taken while moving, the vehicle speed shall be 50 km/h, unless otherwise is necessary due to traffic rules and road conditions.

Article 26 — If any difference is found between the measurements declared by the operator and those conducted by the Authority, then the measurement results of the Authority shall prevail.

Article 27 — While call indexes are created for moving measurements, the waiting time on the channel after connection with the line shall be 60 sec. and the time between two call attempts shall be 15 sec.

Confirmation measurements for determinations

Article 28 — In order to ensure correct reflection of characteristics of measurement areas on results, consideration shall be taken to the traffic distribution of the service within the settlement, scanning of the area where at least 90 % of the settlement population lives, including areas with the highest and lowest traffic density, and the Sampling time Intervals where Daily Probability Value regarding service is the highest.

Confirmation measurements for coverage

Article 29 — The obligation to coverage imposed on operators by Article 6 of the Concession Agreement shall be deemed to have been fulfilled in areas where signal provided over the own network is -104 dBm (3 dBµV) and higher outside the building and vehicle.

Article 30 — For declarations of coverage analyses made in computer media for the obligation to coverage or site measurements for confirmation of them, the values provided herein shall be used.

Entry into Force

Article 31 — This Communiqué shall enter into force on the date of its publication.

Enforcement

Article 32 — Provisions of this Communiqué shall be enforced by the President of the Telecommunication Board.

Annex-1

Table 1 : Sample Table to be Completed for Site Measurements

Place and Cell Where Measurement is Made	Beginning Time (Hour ...)	End Time (Hour ...)	Total Number of Calls (... Units)	Number of Unsuccessful Calls (... Units)	Call Drop Rate (% ...)	Call Blocking Rate (% ...)	Call set-up Time (...Sec.)

Date of Measurement :

Measurement taken by _____ :

Name :

Surname :

Title :

Approved by _____ :

Name :

Surname :

Title :

Company/ Organization Name :

Annex-2

Table 2 : Table to be Completed for Determinations on Settlement Basis

Place of Determination	Period of Determination	Number of base stations used in determinations	Total number of calls (... Units)	Number of unsuccessful calls (... units)	Call Drop Rate (%...)	Number of blocked calls (... Units)	Call Blocking Rate (%...)

Table prepared on:

Determination made by _____ :

Name :
Surname :
Title :

Approved by _____ :

Name :
Surname :
Title :
Company/ Organization Name :