

Quality of Service KPI's

Voice KPIs

– *Call Blocked Rate:*

The percentage of unsuccessful call setup attempts to the total number of call attempts in a specified period.

Threshold value = 2 %

– *Call Dropped Rate:*

The percentage of dropped or interrupted calls without the subscriber's permission after successful call establishment to the total number of successfully established attempts.

Threshold value = 2 %

– *Bad Speech Voice Quality Rate:*

The percentage of bad speech voice calls (less than 2.8) scored on MOS score which is a measure for end-to-end (mouth to ear) speech quality of a voice service call to the total number of completed calls. Threshold value = 10 %

– *CSFB Call Setup Failure Rate*

The ratio between unsuccessful CSFB Call setup attempts to all successful CSFB Call setup attempts for the calling UE.

Threshold value = 4 %

– *Call Access Time:*

Represents the period of time elapsed from the sending of a complete destination address (target number) to the setting up of a call to the receiving terminal.

– *CSFB Delay:*

Represents the period of time to overlay 3G/2G environment instead of handling calls in 4G (LTE). Depending on the CSFB strategy.

– *Telephony Return Delay*

Measures the time that a UE uses to re-join the LTE (4G) network after call end

Data KPIs

– *Session Blocked Rate:*

The Percentage ratio of number of data sessions setup that failed to attach on the network data domain to the total number of sessions.

– *Average Session Setup Time:*

The time taken in seconds to access network data domain averaged over all sessions.

– *Average http download throughput:*

The average rate of successful data downloaded over a communication channel. The throughput is measured in bits per second (bit/s or bps).

– ***Average http Upload throughput:***

The average rate of successful uploaded data over a communication channel. The throughput is measured in bits per second (bit/s or bps).

– ***YouTube Session Failure:***

Stream session failure rate in percentage equal $\frac{\text{Total number of Streams}}{\text{Total number of failed Streams}}$.

– ***Freezing Time:***

Average freezing during stream in milliseconds. The relative amount of freezing in the stream, that is, the ratio between the total time of freezings and the video sequence duration.

– ***Video Quality:***

Average of visual quality from an average of visual quality per video stream. The predicted MOS value lies in the range of 1 to 5, where 1 stands for bad, and 5 for excellent stream quality.

– ***Time to 1st Picture:***

Average Time to first picture appear in seconds for the sessions.

– ***Image Resolution:***

The total percentage of Image resolutions using in the clips.

– ***Browsing Session Failure:***

The percentage of failed browsing sessions.

– ***Browsing Session Time:***

Presents the average time needed for browsing (download) a webpage.