

Analysis of E2E delay performance for video conference and mapping to EPS QoS Classes is performed in order to evaluate LTE QoS for different bearers within EPS, each being associated with a QoS. We can see from Figure 5.3(a) that the delay is improved by applying prioritization. For instance, Gold bearer with ARP 1 and Silver bearer with ARP 3 seem to be able to reduce average delays dramatically whereas Bronze is having worst delay performance. Delays for these two bearers are not acceptable from QoS point of view. This means that in order to maintain the quality for an interactive conversational video such as video conferencing, the delay should be equal or less than 150 ms (milliseconds).

When we focus on the performance of E2E delay for NGBR bearer, an increase in delay for NGBR is forcing low priority traffic (UE_1_3) being delayed. E2E delay for NGBR bearer (i.e., UE_1_3, Bronze) along with Allocation Retention Priority (ARP) 7 is definitely too high for real-time application such as video conferencing compared with other two bearers (Gold and Silver). The E2E delay contributed to NGBR traffic (Bronze) is expected but packets for the Bronze traffic flows (Bronze) still reach to their destinations. In terms of NGBR bearer performance (UE_1_4), we excluded its plot from these graphs due to the fact that its traffic is unable to reach to the designated destinations as their timer expired and eventually get discarded.

In conclusion, the simulation results show that the different levels of potential E2E delay performance can be achieved by employing prioritization associated with LTE QoS.

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