

Dynamic Buffer Smoothing for Speech Quality improvement in VoIP

Abstract

VoIP becomes a very common technique for delivering voice over Internet. It not only costs less but also supports additional services. Due to the lack of QoS support of Internet, the voice quality of VoIP may not be guaranteed. To deal with the packet delay and jitter, we propose two dynamic buffer smoothing techniques, Late-rate method and Max-jitter method, to reduce the damage from delay and jitter. Buffer smoothing can decrease packet loss and yield better quality of speech. However, it also increase the end-to-end delay. Dynamic buffer smoothing is therefore chosen to reduce the average end-to-end delay. In this work, we also propose a resynchronization scheme based on speech silence to adjust the playback length to be normal. Simulations show that the buffer smoothing and the resynchronization techniques really improve the quality of speech significantly.