IP Network Availability and Quality of Service

A question regularly posed by anyone looking to procure IP / Internet / Cloud based voice services is: "How do you guarantee IP network availability and Quality of Service (QoS)"?

The simple answer is that you can't. However utilising the latest developments in IP service delivery you can get very close to providing high availability equal to, or better than, the Quality of Service available from conventional land lines.

Over the last 20 years Carriers have been building high capacity, high availability, low latency dedicated infrastructure networks to backbone Internet services with Local Loop Unbundle (LLU) vendors providing the majority of 'last mile' ISP services to business and retail customers.

GemaTech has partnered with Tier 1 Carrier Colt Technology Services Ltd (Colt) to provide an 'on net' presence providing the levels of service we expect for Enterprise grade voice delivery over an IP network.

Colt, and their OLO partners, are able to deliver a truly global, on net, service to the majority of financial centres across the globe via peering agreements with local incumbent Carriers.

This allows GemaTech's **Trader Voice *Anywhere*™** to be delivered via a comprehensive Carrier Grade voice IP network incorporation stringent / high performance SLA's and redundant routing via two different approaches to service delivery.

The first is to provide Premium, Carrier grade, end-to-end, on-net service delivery ensuring core voice services are stable, reliable and maintain a constant low latency, typically 30mS or less round trip within Europe (GemaTech have observed London London latency typically 8 -12mS round trip), 45mS or less round trip within North America and 90mS or less transatlantic round trip between London and New York. Global round trip delivery from UK or North America to Asia, Australia and South Africa comes in at less than 300mS*.

It should be noted that perceived audio delay occurs at around 140mS. GemaTech 'Jitter' buffering within the IP network maintains a constant voice stream by adapting to variances in time delivery of voice packets over the IP network and can sustain latency up to 600mS before switching to alternative routes.

The second approach allows decision makers to trial lower cost, higher latency, local ISP infrastructure in emerging markets enabling them to evaluate risk and viability of remote services. Consequently, emerging market Trading establishments can be evaluated for viability without having to invest in expensive 'off-net' infrastructure from the outset. Once the risks have been reviewed, decision makers can decide whether to invest in more expensive low latency, Carrier grade infrastructure.

With the understanding of how modern data networks perform, GemaTech has taken a view on how best to harness the technology and deliver Enterprise grade IP voice services.

GemaTech's **Trader Voice *Anywhere*™** IP network monitors the quality of all active network voice paths using Mean Opinion Score (MOS) metrics and can instantaneously switch to alternative routes or redundant Internet Service Providers if degradation in service is detected whilst alerting Voice Architects, in-house support services, and GemaTech's own Network Operations Centre (NOC) in real time on a 24/7/365 basis.

In summary, in answering the question How do you maintain IP network availability and Quality of Service (QoS), **Trader Voice *Anywhere*™** provides the flexibility of Carrier grade IP services for highest reliability, lowest latency, highest MOS score for core trading services or local ISP provision for testing emerging markets or Trader value before investing in premium infrastructure.

*Ref: http://www.verizonenterprise.com/about/network/latency/