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## GemaTech's IP Trader Voice Application : Security

GemaTech's **Trader Voice *Anywhere*<sup>™</sup>** application is hosted on GemaTech's own proprietary GTE II hardware platform providing Trader Voice services to the Investment banking / InterDealer Broker financial trading community.

The core of the GTE II incorporates a secure encryption process for all voice interconnects over Ethernet IP protocols. Unlike existing providers of Trader Voice services, GemaTech's **Trader Voice *Anywhere*<sup>™</sup>** solution can create fast, secure, high quality, always open, end-to-end voice connections over a client's existing internet connection, either using existing digital / analogue Dealer Board turrets, analogue telephones or IP phones.

Security is paramount and GemaTech's **Trader Voice *Anywhere*<sup>™</sup>** application uses end to end industry standard AES256 encryption methodologies to provide bullet proof security whether voice packets are routed over Carrier grade VoIP, Corporate Wide Area Networks (WAN) or even the public Internet.

In order to provide a global IP Trader Voice infrastructure, GemaTech's **Trader Voice *Anywhere*<sup>™</sup>** solution can be connected to established traditional Carrier backbones e.g. Verizon, AT&T or BT North America in the U.S. and COLT throughout Europe and APAC countries. This type of Carrier Grade infrastructure provides fast and reliable enterprise grade VoIP as well as catering for many geographically dispersed customers without affecting quality of voice. GemaTech's **Trader Voice *Anywhere*<sup>™</sup>** fully managed service is delivered via the provision of a rack mounted 1U GemaTech hardware unit on each "sell" site and also at the "buy" site if connectivity is required directly into the buy site's own Dealer Board and turrets. Voice is transported as encrypted IP over the Carrier Network, Corporate or public network and through GemaTech's data centres.

Voice application services are run on an embedded Linux 64bit Server within the GTE II hardware protected from external interference.

Each and every voice path is individually encrypted. Once a Trader lifts a turret handset a series of events takes place. First, the call authenticates to GemaTech's IP Trader Voice GTE II appliance. Authentication (an MD5 hash) occurs to validate the call is genuine and allowed. Once this happens, AES encryption algorithms are agreed upon between the "caller" and "recipient" and are then applied. Once fully encrypted from end to end, an SIP/TLS session is established and the recipient's phone is signalled or rings. Once answered audio data is subsequently encrypted using SRTP providing an additional level of security. This entire process takes place in milliseconds. The far end of the call is literally alerting before the user at the near end can get the handset to his ear.

It should be noted that there is no Graphical User Interface, Web Server, SMTP relay or any other commonly exploited package installed as part of this application. In addition GemaTech supply a port and services based firewall and provide no root account. Highly complex passwords also make the GemaTech's **Trader Voice *Anywhere*<sup>™</sup>** application very secure. GemaTech's Network Operations Center (NOC) continually monitors, tests and, when necessary, deploys all applicable security related updates. All connection attempts, successful or otherwise, are logged and analyzed in real-time. If an attempted breach is detected, alerts are sent immediately to the appropriate staff (GemaTech & End-User) for action as required.