Leading the way in VoIP Wan Optimization for Air Traffic Control
# Expertise in the optimization of VoIP for ATC environments

- VoIP, SIP with ED-137B extensions, Channelized T1/E1, Analog Voice FXO/FXS/E&M supported out of the box

- Highly optimized and efficient satellite communications

- Inovative voice and data prioritization and optimization

- Ideal solution for multi-vendor switch installations

- Industry-leading, patented audio quality

- Highly secure WAN links

- Reduction in operating costs

- Simple to install, use and maintain

VoLTE Systems is established as a leader in the compression of Analogue, Digital and VoIP radio and telephone calls over low bandwidth communications and has installed many VoIP optimization systems for customers around the world.

The latest generation of equipment – the **VoLTE VoIPSMART** range brings this expertise to the Air Traffic Control (ATC) market, supporting both traditional T1/E1 voice channels and the new VoIP based ED-137B standards from EUROCAE, to allow more calls to be concurrently maintained over T1/E1 and IP WAN connections with no loss in quality.

VoLTE Systems has helped customers migrate from traditional systems to new IP based technology while still supporting the legacy environment. The main driver today is that telecoms providers are migrating from analogue/digital to IP, with analogue services likely to disappear altogether over the next decade. Many customers are deciding to start the transition now, addressing each element, including the network itself, radios and other IP components, in a phased approach that will make the transition more manageable.

The move to IP brings its own unique challenges and, although IP connectivity between radio sites and control rooms and towers can be significantly less expensive than using analogue or digital phone lines, the amount of bandwidth required can be higher and the quality of voice calls can be less predictable. The **VoLTE VoIPSMART** family of products addresses these issues and, by highly optimizing the voice data, typically allows 10 times more calls over the same

VoLTE VoIPSMART WAN Optimizer Compresses SIP and Channelized TDM Traffic
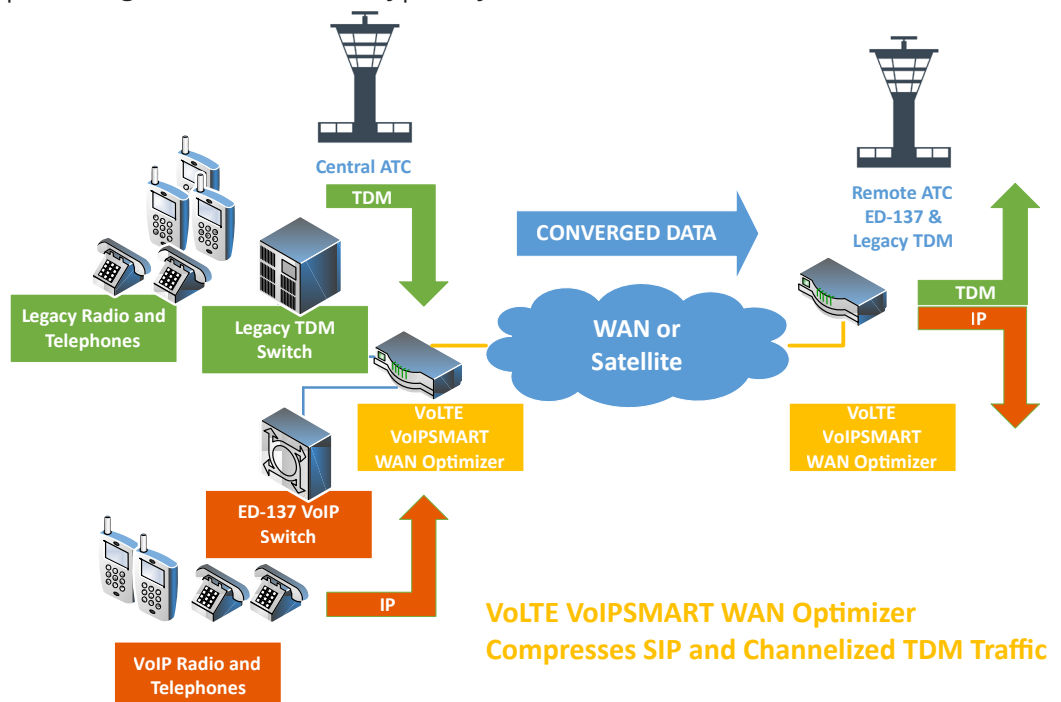
bandwidth while coping with the delays and latency often seen in satellite communications.

Interoperability is a key element of the **VoLTE VoIPSMART** family, which means that these devices can be integrated with new VoIP switches as well as existing TDM switches.

Optimization is probably one of the most important features for ATC systems which are connected over a WAN or Satellite network, the **VoLTE VoIPSMART** family can compress standard G.711 SIP traffic as well as traditional analogue or digital voice over a standard WAN or satellite connection reducing the bandwidth used by a factor up to 10:1 and reducing the number of packets transmitted by a factor of 30:1 or more. Voice can be managed with user definable prioritisation, ensuring that toll quality voice communications can be maintained even in high load conditions. To further support VoIP based applications over satellite links, additional features counteract line distortion coupled with jitter which is the usual cause of degradation and break down in voice quality

VoLTE Systems is also working with Air Navigation Service Providers (ANSPs) and Airport Operators on the issues that will be affecting the roll-out of Virtual Towers. This will require the transmission of audio and video in locations where bandwidth is often at a premium and geographically distant. VoLTE Systems' experience of both satellite bandwidth optimization and 4G LTE transmission will deliver reliable, cost effective connectivity in these scenarios.

As well as providing the equipment itself, VoLTE offers customers expert assistance at the early stages of migration to IP, and advice on the network requirements needed to support the installed radios, with respect to latency and bandwidth.

VoIPSMART Product Family Specifications:

Interfaces (Gateway)*
6 x LAN 10/100 Base-T
10 x T1/E1
28 x analogue voice
10 x high speed serial
Hot swappable cards
Redundant AC/DC power

VoIP
Voice signalling: SIP, H323, ED-137(B)
Codecs: NxACELP, G.711 PCM (µ/A-Law)

Security
IPSec 3DES, AES

Administration
SIM installation:
Standard SIM card holders
Local Management: CLI, Secure Web and SNMP
Remote Management: CLI, SNMP

Environmental
Temperature:
Operating -4°F to +149°F
(-20°C to +65°C)
Humidity:
0-95% non-condensing

* Maximum port configurations and loading are dependant on application
Specifications subject to change

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Features
- Supports VoIP, SIP with ED-137 extensions, Channelized T1/E1, Analogue Voice FXO/FXS/E&M
- Interoperates with ATC Legacy Switches or IP VoIP soft switch equipment
- Provides Gateway function between Legacy equipment and VoIP networks
- Local and remote management
- Supports registration of local SIP extensions
- Compression of 10:1 and prioritization of voice over data on the WAN to maintain toll quality voice
- Highly resilient design with distrubuted processing and redundancy
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Perfect for
- ATC projects where there is legacy and new equipment
- Reducing operational bandwidth costs as required whilst maintaing voice quality and reliability
- Installations where multiple vendors have been used. (VoLTE VoIPSMART is switch vendor independent)
- Locations where remote communications can only practically be achieved using satellite communications