

The Reality of VoLTE - Voice and Data over LTE

Voice over LTE (VoLTE) will give organizations the ability to use voice and data, simultaneously, over a standard 4G LTE cellular connection, providing higher quality voice calls connecting back into an office phone system and concurrently supporting business data applications

The hot new maxim for the carriers: VoLTE - Voice over Long Term Evolution (LTE)

Unlike many buzzwords, VoLTE will bring a new dawn to the business community providing:

- better quality voice calls
- the ability to use voice and data applications at the same time
- cost effective use, which translates into better service all round

Simply put, when VoLTE is fully implemented it will be the way to concurrently route business voice and data traffic over the 4G LTE networks carriers use to transmit data.

Why is VoLTE needed?

This technology is necessary because 4G LTE is a data-only networking technology. Previous cellular networks, such as 2G and 3G, were designed mainly to carry voice calls with data services being separated from those voice calls.

LTE is the next logical step and moves the emphasis towards data only, where the network has the ability to encapsulate all communications within data IP packets. Therefore, in its purest form, LTE will not support the traditional voice-call technology associated with old cell phones.

VoLTE opens up a whole new way of looking at LTE, meaning that at long last it can be viewed as true "broadband through the air" which then opens up a wealth of new applications and usage scenarios that LTE can support.

I have a 4G LTE phone. How have I been making voice calls if LTE doesn't support voice yet?

The not so secret secret is that every "4G" phone on the market today, regardless of service provider, also contains technology to support voice calls on 3G and older cellular networks. So although you may be using the new 4G network for wireless data, all of your calls are traveling on the older cellular networks right now, just as they always have.

So am I using VoLTE now?

VoLTE will enable high quality high definition (HD) voice calling which will provide a significant improvement over traditional calls made via cellular networks. There is, however, a big catch. To make an HD voice call on a cell phone or other device, you need to use a device that supports VoLTE, in an area with 4G LTE service, and the recipient's device must also meet the same requirements.

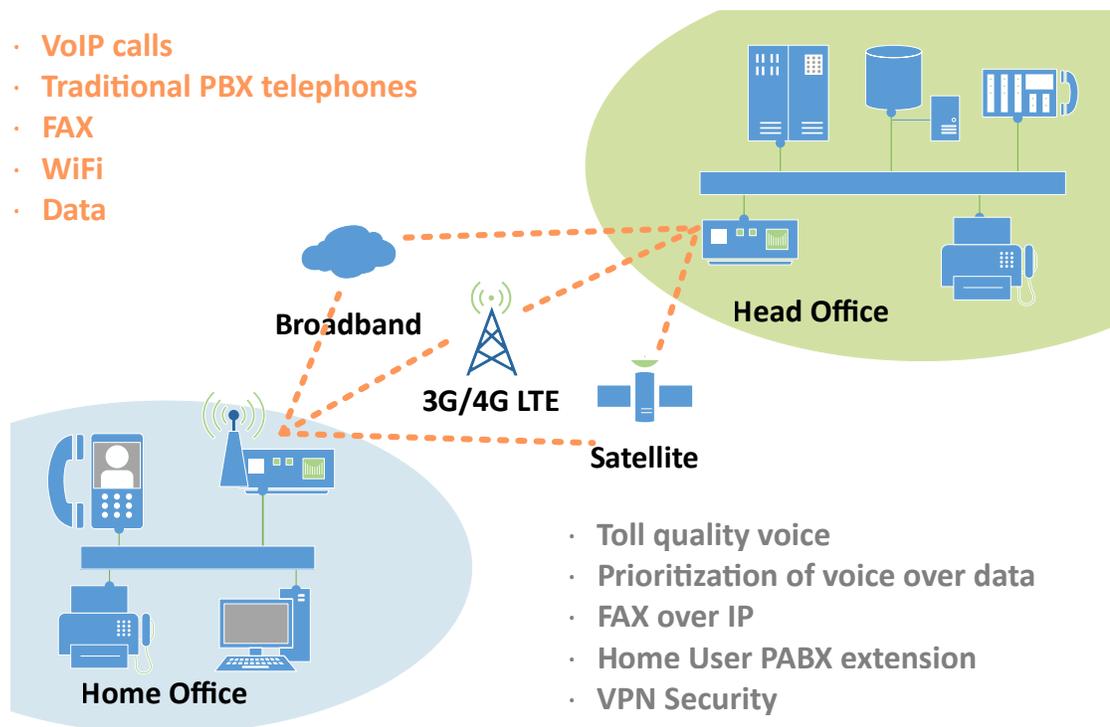
How will communications in the "Real World" improve with VoLTE?

Since the data network allows for more efficient use of bandwidth, operators can now support solutions that include HD voice, data applications, video chat to VoLTE-equipped devices and networks.

Most international carriers have deployed VoLTE nationally, but not all of their towers are equipped to support it. This means that most cellular carriers have only rolled out VoLTE service to major conurbations. Internationally all the top carriers, including AT&T, Sprint, Verizon Wireless, Vodafone, TIM, Telefonica, Telstra and Singtel have committed to widely deploying VoLTE but there are no rollout timescales for complete coverage.

Therefore, although the promise of VoLTE could be seen as a panacea for all current business communication problems a more pragmatic approach is required to derive the maximum benefit from both 4G LTE where available, and 3G or other exiting communications' media where necessary.

VoLTE Systems have produced a business solution to address this issue



VoLTE Systems has developed, over a number of years, technology that delivers both VoLTE and VoLTE like services over 3G and 4G LTE networks.

The VoLTE VoicePAC provides a resilient platform specifically designed to seamlessly handle and integrate voice services - one of your primary business communication tools; VoicePAC is an integrated solution for Voice, FAX, VoIP and Data Traffic that, most importantly ensures priority and toll quality service for voice calls.

VoLTE Systems VoicePAC will also offer customers the choice to deploy multi-play solutions that deliver combined voice/data/FAX over any communications medium including LTE. This will bring for the first time the ability to provide a truly wireless remote business connection bringing services such as remote PBX extensions, VoIP, FAX and IP Data Services supported alongside standard PC/Phone apps such as Skype and Facetime which can currently be used to provide voice and video communications over a data link.

The high performance VoLTE VoicePAC connects to the head office voice and data networks connecting the PABX or VoIP soft PBX system and office data network to the remote user. It efficiently routes calls and data from the head office network to the remote worker via the 3G or 4G LTE networks and vice versa. Where 3G or 4G LTE is unavailable or unreliable the VoLTE VoicePAC also allows seamless integration into satellite or broadband networks. The system will also allow reliable FAX transmission over this network link cutting the need and cost of dedicated telephone lines.

VoLTE VoicePAC technical summary

Interoperability is a key element of the VoLTE VoicePAC family, which means that the devices can be integrated with existing TDM based PBX, soft switches, IP based telephony and IP data networks. Data and voice can be handled together with user definable prioritisation ensuring that the toll quality of voice communications can be maintained no matter what the load.

Optimization is probably one of the most important features for 3G/4G LTE and Satellite networks, the VoLTE VoicePAC family can compress standard G.711 SIP traffic as well as traditional analogue or digital voice over a cellular or satellite connection reducing the bandwidth used by a factor up to 16:1 and reducing the number of packets transmitted by a factor of 30:1 or more.

To further support VoIP based applications over either cellular or satellite links there are extra features that will counteract line distortion coupled with jitter that can be introduced by the network which usually causes severe degradation to voice quality. The VoLTE VoicePAC solution incorporates sophisticated echo cancellation, extendable jitter buffers and advanced techniques to cover for lost or delayed packets that will result in toll quality voice no matter the connection. These techniques are proven to work reliably over the long delays inherent to multi-hop satellite links and cellular networks, this even extends to the support of fax transmissions which are not normally supported by Satellite 3G/4G LTE connections.

This solution allows a remote worker to connect their PC and phone to the office using WiFi or more traditional connections via a standard broadband connection or where this is not available via a cellular or satellite network connection. The remote worker then becomes integrated into the companies PABX or VoIP system allowing high quality calls both internally and externally. The VoLTE VoicePAC is especially cost effective for companies with a large remote workforce.

For more information on how VoLTE Systems can help your organization achieve true convergence please contact us at:



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