

## Growth in mobile networks will bring in a new era in critical communications

In this white paper, we show how improved coverage is creating new opportunities for push-to-talk over cellular technology. We predict it is just a matter of time before the first blue light service makes the switch to PTTToC and others follow.

Around 95 per cent of the world's population now has access to a mobile broadband network, according to the International Telecommunication Union. Between 2015 and 2022, 4G network coverage doubled to reach 88 per cent of the population. For most developing countries, mobile broadband – using 3G and above – is the main means of connecting to the internet, said the ITO, an agency of the United Nations.

The UN has called for nations to “**build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation**”. Progress towards the sustainable development goal will help deliver peace and prosperity for people and the planet. And it will bring in a new era for critical communications.

Take a closer look at population covered by mobile network coverage, using facts and figures from the UN:

Sub-Saharan Africa: 49% (4G), 33% (3G), 7% (2G)	Northern Africa and Western Asia: 77% (4G), 20% (3G), 2% (2G)
Oceania: 61% (4G), 18% (3G), 11% (2G)	Australia and New Zealand: 99% (4G)
Latin America and the Caribbean: 87% (4G), 6% (3G), 1% (2G)	Eastern and South-Eastern Asia: 97%(4G), 2% (3G)
Central and Southern Asia: 95% (4G), 1% (3G), 2% (2G)	Europe and Northern America: 98% (4G), 1% (3G)

Now consider the challenges facing the rollout of mobile networks across the world.

*“In many countries older-generation networks are being switched off in favour of networks that are more efficient and allow the development of a digital ecosystem compatible with 5G. This is particularly the case for 3G, which is often shut down so that the freed-up spectrum can be re-used for 5G, while keeping 2G for older legacy devices. This is the case for most European operators, who are planning to have their 3G networks switched off by December 2025, and for the Asia-Pacific region.*

*“However, in other regions of the world the path is less clear, mainly because 2G and 3G networks retain a significant presence. This is the case notably in lower-income countries, where both technologies are an important means of communication. In those countries, the main obstacles to 5G deployment include high infrastructure costs, device affordability, and regulatory and adoption barriers.”*

International Telecommunication Union

Despite difficulties in closing the coverage gap for the five per cent of the global population who remain off the grid, most people can access mobile networks, whether 2G, 3G, 4G or 5G, wherever they are in the world.

The infrastructure is in place, which creates opportunities for industrialisation and innovation. In the critical communications market, the growth in mobile network coverage has exposed the limitations of legacy radios and opened up new opportunities for push-to-talk over cellular (PTTToC) technology to support sustainable development.

## Look at these countries for example:

**Argentina.** The Latin American nation of 45 million people has three major mobile carriers: Claro, Movistar and Personal. An estimated 87 per cent of the population uses the internet and there are 130 mobile cellular subscriptions per 100 people. Argentina has vast natural resources in energy and agriculture, significant opportunities in manufacturing and high-tech industries and an economy worth \$490 billion.

**South Africa.** The rainbow nation of 59 million people has four major mobile carriers: Cell C, MTN Group, Telkom and Vodacom. An estimated 70 per cent of the population uses the internet and there are 169 mobile cellular subscriptions per 100 people.

South Africa's economy continues to recover from the pandemic and was worth \$419 billion in 2021. It has taken important steps to-wards addressing structural hurdles to growth, including reforms to the power generation sector.






















**United Kingdom.** The nation of 67 million people has five major mobile carriers: 3, EE, O2, Virgin Mobile and Vodafone. An estimated 95 per cent of the population uses the internet and there are 119 mobile cellular subscriptions per 100 people. The UK is a high-income, diversified non-EU economy and the fifth largest importer and exporter globally with annual GDP of \$3 trillion in 2021. (Sources: The World Factbook and World Bank).

Individual countries are at different stages of development but even in territories where 2G and 3G retain a significant presence, organisations can use PTTToC for always-on instant communications with remote workers.

So how will these changes impact the critical communications market?

## Two way radio vs PTTToC

The evolution of mobile network availability means that legacy radios are now facing their own 'Kodak moment' as expanded feature sets, user experience and lower cost of ownership force the transition from analogue to digital technologies like Mobile Tornado.

Capability	Two way radio (LMR)	Mobile Tornado Push-to-talk over cellular
Instant Communication		
Low Cost	X	
Central Dispatch		
One-to-Many Communication		
Presence List	X	
Status Updates	X	
Wifi Compatible	X	
Built in Security	X	
Voice Communication		
Multiple Operating GSM Systems	X	
Easy Deployment	X	
99% Coverage	X	
National / International Coverage	X	
Low / No Maintenance	X	
Location Services	X	
Workforce Management	X	
Lone Worker Features	X	
Number of Coverage Towers	N/A	+/- 6 000

The expansion of mobile networks means that users in countries – developed and developing – no longer need to pay for the expensive base stations, private servers and devices associated with legacy radios to manage their remote workers in industries like security, transportation, energy and retail.

Confidence is growing in PTTToC. Mobile Tornado's PTTToC platform has now been deployed in more than 30 countries worldwide with mobile network operators, government agencies and enterprises in Europe, the Middle East, Africa and the Americas.

Mobile Tornado has system availability of **99.999%**. Its platform adapts bit rates according to local topology to underpin robust and reliable communications in challenging environments.

With PTTToC, users can simply download an app to their Apple or Android smartphone, register to start the service and begin communicating instantly, at a fraction of the cost, with individuals, groups and dispatchers virtually anywhere the world. Alternatively, PTTToC is available via a range of ruggedised devices for the most demanding environments.

It is just a matter of time before the first blue light service makes the switch to PTTToC and others follow.

To keep up to date with the latest developments in this fast-moving sector, follow Mobile Tornado at LinkedIn.

## ANNOUNCEMENT: PTT Lite brings essential features for price-sensitive users

Mobile Tornado is launching a new service for price-sensitive users who demand always-on communications for mission critical requirements.

PTT Lite gives government agencies and private enterprises access to Mobile Tornado's marketing leading push-to-talk over cellular (PTTToC) services with a set of stripped down, essential features.

Users get private calls, group calls, caller ID and presence of users in contacts list.

Mobile Tornado's PTTToC technology provides best-in-class, seamless switching between 2G, 3G, 4G LTE and 5G mobile networks. Test results indicate a delay of less than 300 milliseconds, un-noticeable to the human ear.

Luke Wilkinson of Mobile Tornado PLC said:

*"Mobile Tornado is an agile and flexible technology provider which is able to continue expanding its offering to the critical communications market. The launch of PTT Lite with the essential features from our world-leading push-to-talk over cellular platform at low cost creates exciting new growth opportunities for our company."*



To find out more or to arrange a demo,  
contact **[sales@mobiletornado.com](mailto:sales@mobiletornado.com)**  
or go to **[www.mobiletornado.com](http://www.mobiletornado.com)**