

Broadband Summit

VoLTE: Myth or Reality

Wim Brouwer

CTO – Alcatel-Lucent FirstNet Team

May 6, 2014

Types of LTE Voice Services

- Cellular Voice
 - Voice over LTE (VoLTE)
 - Push-To-Talk (PTT)
- Mission Critical Voice (MCV)/Mission Critical PTT (MC-PTT)

VoLTE Deployment Status

Operational: 8 Operators

Azerbaijan (Azercell)
Germany (O2 Germany)
Hong Kong (CSL Soft)
South Korea (KT, LG U+,
SK Telecom)
US (Evolve Broadband,
MetroPCS)

Preparing Rollout: 22 Operators

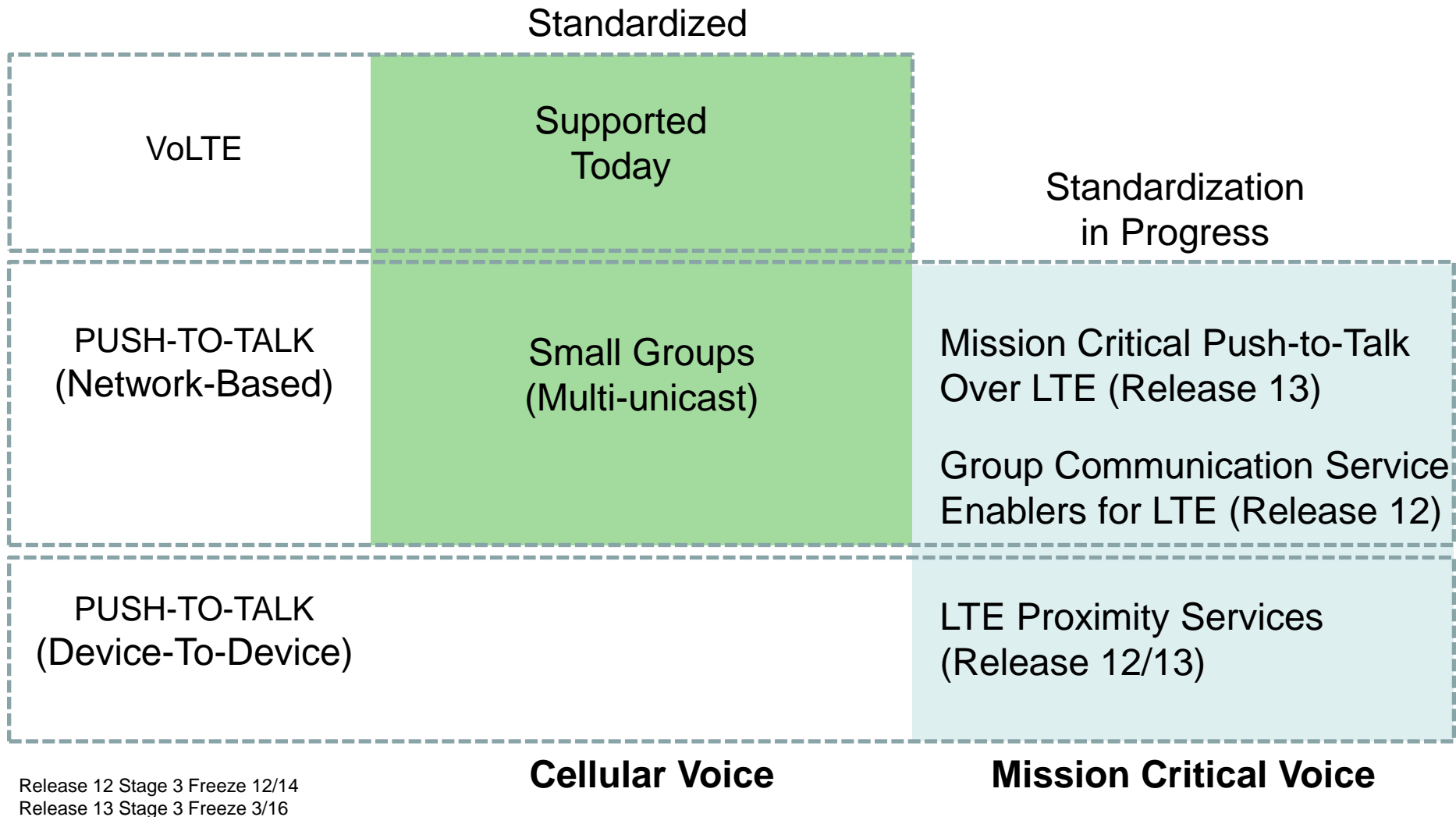
Canada (Sasktel, Telus)
China (China Mobile)
Germany (DT)
Hong Kong (PCCW)
Japan (Softbank)
Lebanon (Alfa)
Netherlands (Tele2)
Russia (Yota)
Saudi Arabia (Mobily)
Singapore (StarHub)
Slovenia (Telekom Slovenije)
Sweden (Tele2, Teliasonera)
UAE (Etisalat)
UK (EE)
USA (AT&T, C-Spire, TMobile,
US Cellular, Sprint,
Verizon)

Trials/Planning: 11 Operators

Australia (Optus)
Austria (TMobile)
Germany (E Plus)
India (Bharti Airtel,
Reliance Jio)
Japan (NTT DoCoMo)
Netherlands (Vodafone)
Slovakia (TMobile)
Spain (Telefonica)
Turkey (Avea)
USA (Vtel)

Source: Tele Analysis, January 20, 2014

LTE Voice Services For Public Safety



Benefits Of FirstNet Voice Service Support

Cellular Voice

LOWER NET END-USER SERVICE COSTS

LOWER LAND MOBILE RADIO SYSTEM LOAD

BETTER SERVICE

Benefits Of FirstNet Voice Service Support

Mission Critical Voice

IMPROVED VOICE QUALITY OVER P25

Environments Tested



- 1 No noise
- 2 Nightclub noise
- 3 No noise, mask, mic at vox port
- 4 No noise, mask, mic in mask
- 5 PASS alarm, mask, mic at vox port
- 6 PASS alarm, mask, mic in mask
- 7 Chainsaw, mask, mic at vox port

AMR7.4 intelligibility higher than P25 in all environments except “no noise” (lower)

AMR12.2 intelligibility higher than P25 in all environments except “no noise” (same)

NTIA Report 13-493

Intelligibility of the Adaptive Multi-Rate Speech Coder in Emergency-Response Environments

David J. Atkinson
Stephen D. Voran
Andrew A. Catellier



U.S. DEPARTMENT OF COMMERCE

December 2012
Revised March 2013

<http://www.its.bldrdoc.gov/publications/2693.aspx>

Benefits Of FirstNet Voice Service Support

Mission Critical Voice

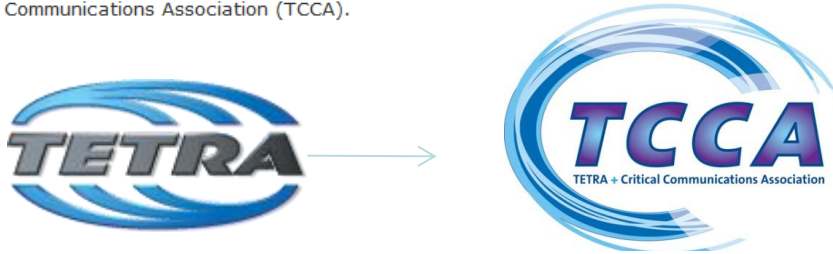
GLOBAL ECOSYSTEM

News

Monday, 6th February, 2012

Name change for TETRA Association heralds broader role in critical communications

The TETRA Association is changing. A wider scope, and an immediate focus on mobile broadband for professional users, is reflected in the new name: the TETRA + Critical Communications Association (TCCA).



THE Mobile Broadband Standard



About 3GPP Specification Groups Specifications 3GPP Calendar Technologies News & Events

Home » News & Events » 3GPP News »

3GPP News

Public Safety

Updated: July 2013

Delivering Public Safety Communications with LTE

Today there are two separate technology families for providing terrestrial wide-area wireless communications: commercial cellular networks and dedicated public safety systems.

To provide the best service to both communities there is now industry support for greater use of common technology. Work underway in Release 12 of 3GPP LTE standards will enhance LTE to meet public safety application requirements.



URGENT MATTERS

Insights from Glenn Bischoff and Donny Jackson, as well as industry experts, concerning the most important news, trends and issues.

Global ecosystem for public-safety LTE begins to look realistic

by Donny Jackson in Urgent Matters

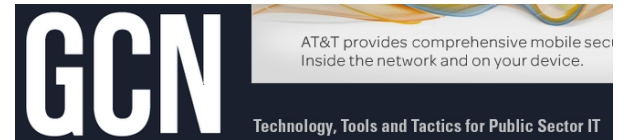
Jun. 11, 2013
RSS

URGENT COMMUNICATIONS

UK seeks to replace TETRA with LTE as early as 2016

Donny Jackson | Urgent Communications

Jun. 6, 2013



GCN
Technology, Tools and Tactics for Public Sector IT

AT&T provides comprehensive mobile security inside the network and on your device.

BIG DATA CLOUD CYBERSECURITY DATA CENTERS EMERGING TECH MOBILE RESOURCES



Why LTE is the next generation in wireless

Apr 08, 2013

Benefits Of FirstNet Voice Service Support

Mission Critical Voice

North American
Land Mobile Radio
Market

~\$4.5B
PER YEAR

Average US Tier 1
Provider Spend on LTE *

~\$4.7B
PER YEAR

* Based on iGR US 5-year Predictions for LTE

Q & A



Follow APCO at...



facebook.com/apcointernational



[@apcointl](https://twitter.com/apcointl)