

PSTA MCPTX Technical Subcommittee Report

Background

MCPTX solutions and standards continue to evolve quickly in the 3GPP¹ process and have become foundational for public safety. The recent timeline of standards release is below:

Release 13

- Mission Critical Push to Talk (MCPTT) completed in March 2016

Release 14

- Mission Critical Push to Talk Improvements completed September 2017
- Mission Critical Data completed September 2017
- Mission Critical Video completed September 2017

Release 15 and beyond

- Mission Critical Push to Talk Improvements Completed June 2018
- Mission Critical Data Completed June 2018
- Mission Critical Video completed June 2018
- Future Railways Modern Communications System (FRMCS) study ongoing in SA6, normative work completed June 2018
- Interconnection between systems study completed, normative work completion June 2018
- Interworking with legacy systems study completed, normative work completed June 2018
- Maritime communications study ongoing in SA1
- Future Railways Modern Communications System Phase 2 (FRMCS2) study and normative work ongoing in SA1
- MBMS APIs for MC Services study ongoing in SA6

Goals

The goal of the MCPTX subcommittee is to ensure that public safety receives competitive and innovative solutions built on international open standards that drive innovation for all first responders. This subcommittee is working to lock in specific open standards for public safety that can be leveraged in procurements as well as implementations. The goal is to be specific about timelines to promote transparency in solutions that can be leveraged as well as timelines for plugtests and other open standards independent verifications.

¹ 3GPP uses a three-stage methodology for work deliverables in its releases.

- Stage 1. An overall service description from the user's standpoint.
- Stage 2. An overall description of the organization of the network functions to map service requirements into network capabilities.
- Stage 3. The definition of switching and signaling capabilities needed to support the services defined in Stage 1

Each Release works its way through Stages 1,2, and 3 and Stages can lapse across releases as well.

Recommendations

We will recommend specific cutoff timelines for Mission Critical Services and 3GPP Releases for public safety implementations and procurements

Release 13, Mission Critical Push to Talk - Completed March 2016 (protocol specifications closed in June 2017). *Expected lock in timing for public safety by March 2020.*

Elements

User Authentication and Service Authorization Configuration

Affiliation and De-affiliation	Required
Group Calls (On Network and Off Network)	<u>(on network)</u>
Pre-Arranged or “Chat” models	Required
Late Entry Calls	Required
Broadcast Group Calls	Required
Emergency Group Calls (On network)	Required
Imminent Peril Calls	Required
Emergency Alerts	Required
Floor Control in on-network mode	Required
Private Calls-On Network and Off Network	Required
Automatic or Manual Private Call Commencement Modes	
Emergency Private Calls	
MCPTT Security	Required
Encryption (Media and Control Signaling)	Required
Simultaneous Sessions for Call	Required
Location Configuration, Reporting and Triggering	Required
Dynamic Group Management (Group Regrouping)	Target 9-2020
Floor Control in off-network mode	Target 9-2020
Pre-established MCPTT Sessions	Target 9-2020
Resource Management (Unicast, Multicast, Modification, Shared Priority)	Target 9-2020
Multicast/Unicast Bearer control, Multimedia Broadcast/Multicast Service Bearers	Target 9-2020
Use of UE to Network Relays	Target 9-2020

Release 14, Mission Critical Services - Completed 2017 (protocol specifications closed in June 2018). *Expected lock in timing for public safety – December 2020.*

Elements

Mission Critical Services Common Functionalities

User Authentication and Service Authorization	Required
Service Configuration	Required
Affiliation and De-affiliation	Required
Extended Location Features	Target 3-2021
Dynamic Group Management	Required
Identity Management	Required
MC Security Framework	Required
Encryption (Media and Control Signaling)	Required

Mission Critical Push to Talk Enhancements

First to Answer Call Setup (with and without Floor Control)	Required
Floor Control for audio cut-in enabled group	Required
Updating the selected Mission Critical Service User Profile for Mission Critical Service	Target 3-2021
Ambient Listening Call	Required
MCPTT Private Call-Back Request	Required
Remote Change of Selected Group	Required

Mission Critical Video **Common Functions Plus**

Group Call (including Emergency Group Calls, Imminent Peril Group Calls, Emergency Alerts)	Required
Private Call (Off Network)	Target 3-2021
Transmission Control	Required

Mission Critical Data **Common Functions Plus**

Short Data Service (SDS)	Required
File Distribution (FD) (On-Network)	Required

Transmission and Reception Control	Required
Handling of Disposition Notifications	Required

Release 15, Mission Critical Services (protocol specifications to be closed in June 2019).

Elements

Mission Critical Services Common Functionalities Enhancements

Enhanced MCPTT Group Call Setup Procedure with Multi-Media Broadcast/ Multi-Cast Service (MBMS) Bearer	Target 3-2021
Enhanced Location Management, Information and triggers	TBD
Interconnection between 3GPP defined Mission Critical Systems	Target 3-2021
Interworking with legacy systems	Target 3-2021

Mission Critical Push to Talk Enhancements

Remotely initiated Mission Critical PTT Call	Target 9-2020
Enhanced Handling of Mission Critical PTT Emergency Alerts	Target 9-2020
Enhanced Broadcast Group Call	Target 9-2020
Updating pre-selected Mission Critical Service User profile	Target 3-2021
Temporary Group Call-User Regroup	Target 3-2021
Functional Alias Identity for User & Equipment	Target 9-2020
Multiple Simultaneous Users	Target 3-2021

Mission Critical Video Additions

Video Push	Target 3-2021	Video Pull	Target 3-2021
Private Call (On-Network)			Target 3-2021
Broadcast Group Call			Target 3-2021
Ambient Viewing Call			Target 3-2021
Capability information Sharing			TBD
Simultaneous Sessions			TBD

Use of Multi-Media Broadcast/ Multicast Service Transmission Emergency and Imminent Peril	Target 3-2021
Private Communications	Target 3-2021
Primary and Partner Mission Critical System Interactions for Mission Critical	
Video Communications	Target 3-2022
Remote Video Parameters Control Capabilities	Target 3-2022

Action Items

Publish features of Release 13 with March 2020 deadline. Seek feedback on Release 14 timing and other future feature timing.