



# MISSION CRITICAL PUSH-TO-TALK WHENEVER AND WHEREVER NEEDED

**WAVE PTX FOR PUBLIC SAFETY**





## KEEPING THEM CONNECTED, INFORMED AND SAFE

Whether an undercover officer in need of assistance, a utility worker injured at a remote job site, or an EMT dealing with a critical patient, radio communication may not always be available when help is needed. WAVE PTX for Public Safety is the carrier-independent broadband PTT service that delivers the MCPTT-compliant emergency calling, remote monitoring, location-based talkgroups, interoperable communication, and other features necessary to enhance safety, situational awareness, and operational efficiency for critical users.

### WAVE PTX for Public Safety users have access to the following:

#### **WAVE PTX Mobile Application**

Turn your smartphone or tablet into a PTT handset, getting the power of push-to-talk with the ability to share location, images, videos, and data files with individuals or groups at the touch of a button.

#### **WAVE PTX Dispatch Application**

From any Internet-enabled location, dispatchers can effectively manage operations in the field with easy access to key features such as talkgroup scanning, multimedia communication, and location mapping and tracking.

#### **SafeGuard Package**

Enhance user safety, improve situational awareness, and increase operational efficiency by adding optional MCPTT features such as emergency calling, remote user check, and ambient listening to WAVE PTX mobile or dispatch applications.

#### **SafeGuard Multi-Role**

These optional features, compliant with the MCPTT standard, allow the WAVE PTX mobile and dispatch applications to easily adapt and stay in sync with users' changing roles and responsibilities.

#### **Streaming Video**

An optional feature for the WAVE PTX mobile or dispatch applications, users can stream live video at the push of a button to individuals, groups, or dispatchers to enhance the understanding of the situation with a real-time view of events as they happen.



## ACCELERATE THE FLOW OF INFORMATION WITHIN YOUR AGENCY

It is a data-driven world and speeding the flow of information to the people that need it will decrease response times and increase efficiency. The WAVE PTX mobile app provides responders with the instant PTT communications and other advanced features on their smartphone or tablet needed to get crucial information and intelligence to the right people, wherever they may be, whatever network they are on.

### ADVANCED PTT CALLING

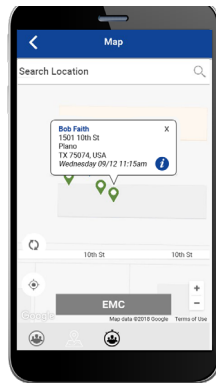
With the WAVE PTX mobile application, users can make or receive calls from pre-defined groups, ad hoc groups, or individual users. Authorized users can also utilize broadcast calling to deliver important information quickly to a very large group, with broadcast calls taking precedence over any on-going PTT communication.

### LOCATION AND MAPPING

Users can access a map display to check their current location, share their location, or send an arbitrary location. Authorized users can use the map to display the location of talkgroup members for which they are a supervisor and tap a member's map icon to initiate a PTT call. In addition, geofencing allows authorized users to define a geographic area to track the location activity of talkgroup members, receiving a notification whenever they enter or leave the fenced area.

### TALKGROUP SCANNING WITH PRIORITY

Talkgroup scanning allows users to select up to eight talkgroups to monitor, scanning the configured list of groups for active calls. A configurable number of scanned talkgroups can be designated priority groups, with calls on higher priority groups preempting calls on lower priority groups.

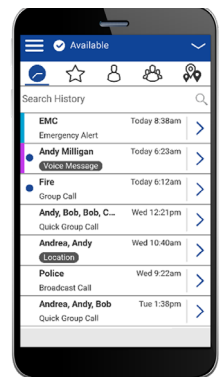


### FASTER, MORE EFFICIENT RESPONSES

An unexpected rainstorm strands hikers, campers and other visitors to a state park, and creates communication chaos for the head ranger. WAVE PTX and location mapping shows the location of each group member on map, and geofencing makes it possible for the ranger to establish a geographic boundary to track when members enter or leave that area. As a result, the ranger can easily identify the closest group member for the fastest response and track their location and direction to ensure that the stranded visitors quickly get the help they need.

### INTEGRATED SECURE MESSAGING

Integrated Secure Messaging makes it possible for users to push as well as receive messages with multimedia content, including texts, images, videos, recorded audio, and documents, as well as location data. The multimedia exchange can be with an individual user as well as groups, and users have the ability to forward messages and view past messages in the history folder.





## DISPATCH FROM ANY INTERNET-ENABLED LOCATION

WAVE PTX for Public Safety offers a browser-based dispatch application that provides online access to all the communication tools needed to manage resources and coordinate an effective operation. Available from any Internet-connected PC, dispatch allows organizations to use push-to-talk communications to effectively manage their day-to-day operations, with easy access to key features such as PTT calling, talkgroup scanning, call recording, and GPS location information.

### PTT CALLING

With the WAVE PTX dispatch application, dispatchers have the ability to make or receive calls from pre-defined groups, ad hoc groups, or individual users. Dispatchers can also use broadcast calling to deliver important information quickly to a very large group, with broadcast calls taking precedence over any on-going PTT communication.

### CALL RECORDING

Call Recording allows the dispatcher to record important PTT calls in which they are a participant either manually or automatically, with the recordings stored for playback or export.

### TALKGROUP SCANNING WITH PRIORITY

Talkgroup scanning allows dispatchers to monitor up to 20 talkgroups, scanning the configured list of groups for active calls. A configurable number of scanned talkgroups can be designated priority groups, with calls on higher priority groups preempting calls on lower priority groups.

### LOCATION AND MAPPING

Dispatchers can use a map-based display to quickly identify the location of one or more users, with automatic and on-demand location updates, in-map communication, and location history and replay.

Location history allows dispatchers to track the path a user has traversed on the map for a specific duration. Dispatchers can select the user and the duration for which the path should be tracked. The path traversed will be shown on the map with Start and End icons for each of the selected users, with a unique color associated with the icon for each user.

In addition to location history, geofencing allows dispatchers to define a geographic area to track the location activity of all talkgroup members, receiving a notification whenever they enter or leave that area. The geofence is circular in shape and, once it has been defined and enabled, is displayed on the map with each talkgroup member's location. When any talkgroup member crosses the fence boundary, the dispatcher receives a notification.

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## ENHANCE SAFETY AND IMPROVE SITUATIONAL AWARENESS

WAVE PTX for Public Safety also offers the SafeGuard Package, a set of optional features that follow the 3GPP Mission Critical Push to Talk standard to significantly enhance safety for field personnel and improve overall situational awareness.

### EMERGENCY CALLING AND ALERTING

A worker whose safety is threatened can press a hard or soft dedicated button to initiate an emergency call, with the highest priority, to reach the right resource for assistance. Authorized users and dispatchers can also originate emergency calls on behalf of specific users, participating in the call in case of a life-threatening situation.

### REMOTE USER CHECK

Authorized users and dispatchers can use remote user check to get information on a user's device, including battery level, signal strength and location. From the remote user check window, dispatchers and authorized users can also initiate ambient or discreet listening, disable the PTT application on the device, or commence an emergency declaration for the user.

### AMBIENT AND DISCREET LISTENING

Ambient Listening makes it possible for dispatchers and supervisors to remotely open the microphone of a user's device. Ambient Listening is typically used to determine if a user is in distress and needs assistance, but can also be used to listen to conversations between undercover operatives and suspects. Discreet Listening allows dispatchers and supervisors to be added as third-parties in listen-only mode to all PTT communication of a targeted user, making it a useful training tool.

### WELFARE CHECK ON AN OVERDUE WORKER

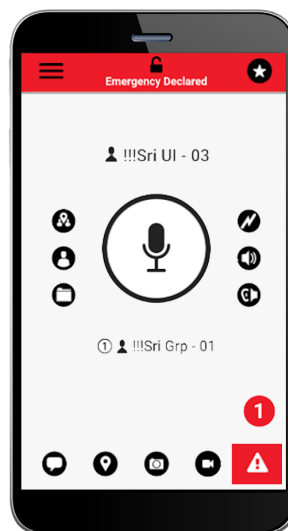
A worker repairing a pipe at a remote part of the jail is overdue and not responding to PTT calls. The supervisor uses Ambient Listening to open the microphone on the worker's broadband PTT device and, based on the moans coming from the area, determines they have been injured and need help. The result is improved situational awareness for dispatchers and supervisors when a broadband PTT user is unable to communicate.

### ENABLE/DISABLE

Enable/Disable allows dispatchers and supervisors to remotely disable or enable the broadband PTT application for a specific device. Normally used on lost or stolen devices, Enable/Disable prevents unauthorized individuals from accessing the WAVE PTX mobile application.

### DYNAMIC LOCATION-BASED TALKGROUPS

The dynamic, location-based talkgroups feature allows a dispatcher to set up a temporary talkgroup with its membership based on whether a user has entered or left a geofenced area. Dynamic, location-based talkgroups reduce communication chatter by focusing PTT communication on specific talkgroup members. Dispatchers can also designate certain users to be statically assigned to the talkgroup so their membership in the group is not dependent on their location.



# KEEPING UP WITH RAPIDLY CHANGING EVENTS



A new set of MCPTT features have also been introduced to make it possible for the WAVE PTX broadband PTT service to more easily adapt to the changing roles and responsibilities of its users. The optional SafeGuard Multi-Role features simplify the work needed to add large numbers of users or update their contacts, talkgroups and features, allow users to select their role and its associated contacts, talkgroups and permissions when logging in, and makes it possible for dispatchers to simultaneously monitor the audio from multiple talkgroups.

## SIMULTANEOUS AUDIO SESSIONS

With simultaneous audio sessions, dispatchers can monitor voice activity on up to 20 talkgroups, keeping them up to date on team communications and improving situational awareness. Additionally, dispatchers have up to five dynamic sessions to allow for incoming and outgoing private, broadcast, quick group, ambient listening, discreet listening and any calls that are not part of the monitoring window.

A call in progress indication, along with talker identification, is shown for each simultaneous audio session. Dispatchers also have the ability to mute, un-mute, and control the volume for each monitored talkgroup independently to prioritize calls.

## TALKGROUP AFFILIATION

Talkgroup affiliation allows users and dispatchers to target a specific talkgroup for all PTT communications so that they never miss a call.

## AFFILIATION MONITORING

With Affiliation Monitoring, a dispatcher can request the affiliated member list for a talkgroup, or the affiliated talkgroup list for a contact. When a dispatcher does affiliation monitoring for a talkgroup, a Scanned and Selected icon shows on the profile of the member to identify the scanned and selected member of the talkgroup. A Member in Emergency icon shows if the selected member of the talkgroup is in an emergency state. Dispatchers also receive notifications every time a group member affiliates or disaffiliates, so they have an accurate view of which talkgroup to use to reach the right users.

## REMOTE TALKGROUP SELECT

Remote talkgroup select makes it possible for dispatchers to remotely change a user's talkgroup affiliation. Upon changing the selected talkgroup of a user, the user starts receiving audio from that group whenever there is an active communication. If the user is in an active PTT call when their group affiliation is changed, that PTT call ends and the user is moved to the new talkgroup affiliation.

## USER PROFILES

User Profiles function as templates to assign talkgroups, contacts, scan list, supervisory permissions, and subscriber-level features to a large number of users. The result is less time and effort needed to do bulk configuration/modification of existing users and easier configuration and onboarding for new users to an existing agency.

## USER ROLE-BASED LOGIN

Multiple roles can be created and assigned to each user, with each role assigning the services/features required to fulfill duties specific to that assignment. At login, users can select the appropriate role from the list available or, once logged in, change roles from settings menu.

## OPERATIONAL STATUS MESSAGING

Operational Status Messaging (OSM) allows users with PTT Radio Mode to push status alerts, such as on-duty, enroute, busy, at-incident, off-duty, to dispatchers. Dispatchers receive the message originator's name and presence, status code and short description. The dispatcher also receives the timestamp when the message was originated, additional message details (if appropriate), and the user's location when the message was originated.

## KEEPING IN SYNC WITH CHANGING ROLES

At different times, a law enforcement officer must function as patrol officer, tactical team member, or shift supervisor, with each role requiring separate contacts, talkgroups and permissions. WAVE PTX and User Role-based Login allows the officer to select the role that is appropriate for that moment. As a result, the officer has the right contacts, services and features necessary to fulfill their changing responsibilities.

# REAL-TIME VIEW OF INCIDENTS AS THEY HAPPEN

An optional service based on the 3GPP MCVideo standard, Streaming Video makes it possible for users to push live video to individuals, groups, or dispatchers to enhance their understanding of the situation with a real-time view of incidents and events as they happen.

Streaming Video allows a WAVE PTX mobile app user to push video, with audio, from their device's integrated camera(s) (front or back). The recipients can be any WAVE PTX contact or talkgroup assigned to the user that is also capable of receiving video calls.

The user broadcasting the video will see the live image being sent in the WAVE PTX mobile application. The video broadcaster can also participate in a PTT audio call while streaming the video.

Users receiving the live video stream will see the video and hear the audio in the WAVE PTX mobile application. While receiving a video stream, recipients can continue to get PTT audio calls, switching between the video session and PTT call as needed. Recipients can also leave an ongoing video call and rejoin later, assuming the video call is still in progress.

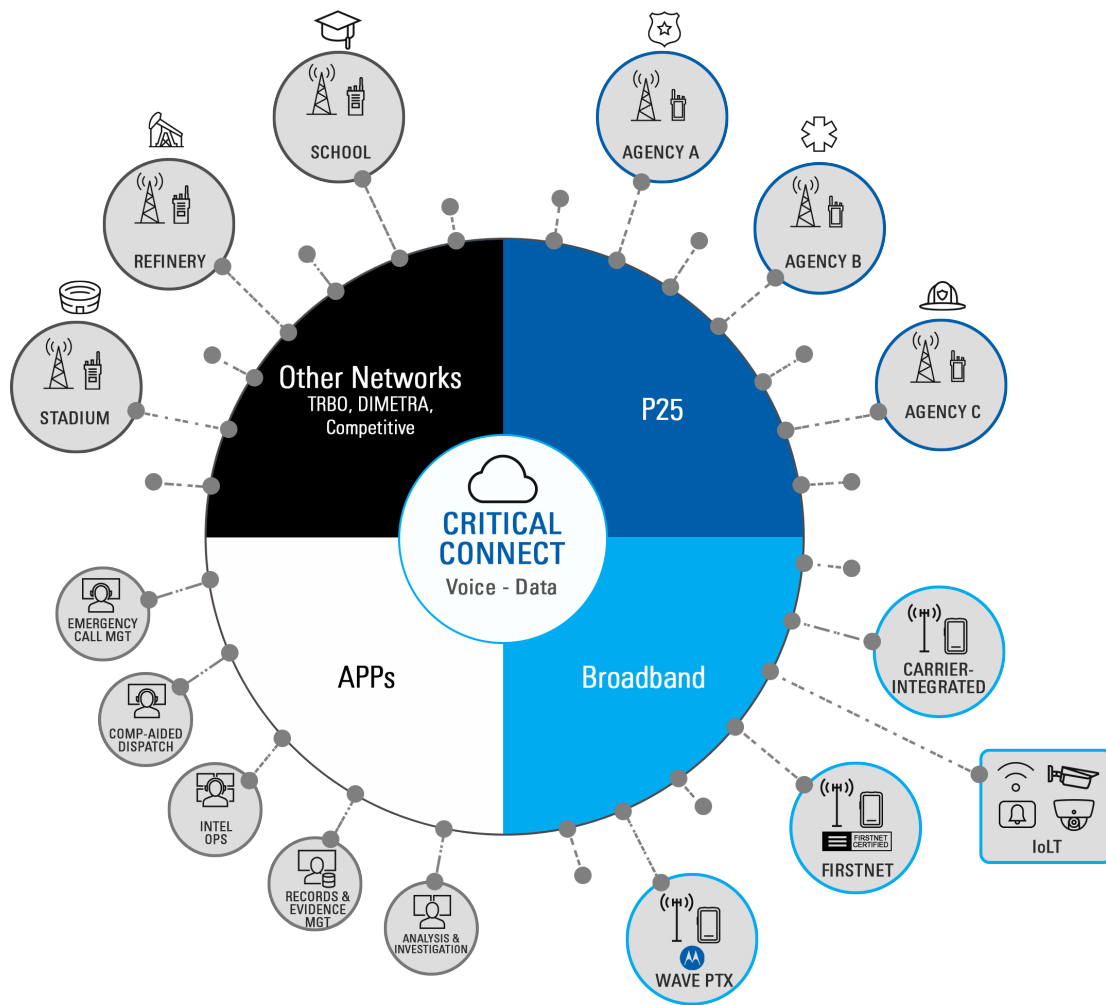
The Streaming Video feature also allows a dispatcher using the WAVE PTX dispatch application to pull live video from a user. The live video stream can either start once the targeted user has accepted the request, or it can automatically start upon receipt of the request, unless prohibited by the user.

Whether broadcast by a user or pulled by a dispatcher, WAVE PTX Streaming Video increases clarity and improves situational awareness, resulting in faster, more accurate communication in the moments that matter.



## IMPROVED INFORMATION FROM THE FRONTLINE

EMTs (Emergency Medical Technicians) need to provide physicians with real time video information on critical patients while in route to a trauma center. EMTs and trauma personnel use WAVE PTX and streaming video for real time video communication. By combining the speed and efficiency of PTT with the power and flexibility of video communications, EMTs are able to get patients the care they need quickly.



## INTEROPERABILITY MADE EASY

Effective responses in complex emergencies hinges on effective multi-agency communication. Personnel arriving on scene want to help resolve the situation and assist where they are needed most and that level of coordination requires the immediacy of seamless push-to-talk communications.

Legacy interoperability solutions provide collaboration, but only with substantial effort. Arranging multi-agency communications requires days or even weeks of provisioning between neighboring systems and separate interfaces for each connection. The static nature of this interoperability means that personnel from an unexpected partner agency cannot be dynamically integrated into crisis communications.

Critical Connect, our cloud-based interoperability service, makes it possible for agencies to dynamically connect with other agencies, as well as personnel outside of LMR coverage, to provide seamless PTT communication whenever and wherever needed. With the ability to set up connections in two clicks, as opposed to two days or two weeks, agencies can quickly adjust their interoperable communications as the unexpected occurs.

Critical Connect's Standard tier provides seamless voice communication between ASTRO 25 and ASTRO 25, MOTOTRBO, RoIP and broadband PTT networks, with capabilities that include group calling, emergency calling, sharing user & group IDs, manual roaming, and AES 256 encryption. The

Plus tier includes all of the Standard features as well as private calling, supergrouping, and dynamic grouping/re-grouping. The Premium tier includes ASTRO 25 automatic roaming and end-to-end LMR encryption in addition to all of the previous Standard and Plus features.

Critical Connect also offers packages that provide additional talkpaths for simultaneous voice communication, enables messaging between APX, APX NEXT and WAVE PTX for public safety users, and supports location sharing between APX, APX NEXT and WAVE PTX for public safety users. The Critical Connect packages are available for any feature tier, Standard, Plus, or Premium.

The combination of WAVE PTX for Public Safety and Critical Connect provides an expansive unified communications platform, linking various LMR systems and broadband networks, to share voice, data, and video between networks, agencies, and applications.

### KEEP IN CONTACT WHEN OUT OF COVERAGE

A Fire Chief is traveling out of town when a major storm causes flooding back home. Critical Connect allows Chief to use their smartphone and WAVE PTX to communicate directly with Battalion Chiefs and other frontline commanders using ASTRO® 25. As a result, the Chief is able to keep everyone coordinated — managing unit assignments for resident evacuations and rescues.



## SUMMARY

To be most effective, your agency needs a unified communications solution that brings together broadband PTT, land mobile radio and Wi-Fi interoperability to seamlessly connect all agencies serving the public good.

WAVE PTX for Public Safety provides PTT communication that is unbounded by coverage, area, network technology or device type. Together with Critical Connect, they provide the combination of network technologies, devices and interoperability necessary to seamlessly connect all agencies serving the public good.

It's an Always Connected world, and WAVE PTX for Public Safety is the right solution to ensure that first responders, secondary responders, and others have access to the right information, people, and applications whenever and wherever needed.

## A PROVEN SOLUTION

Motorola Solutions has been at the forefront of PTT technology for more than 90 years with proven solutions used by hundreds of thousands of public safety and commercial customers daily. We are proud to be in a position to provide the combination of network technologies, devices and interoperability necessary to enhance the service you provide to your community.

We build broadband PTT that is unbounded by coverage, area, network technology or device type, helping you more effectively communicate whenever and wherever. Applications across our Unified Communications portfolio enhance collaboration and increase productivity with the push of a button, helping everyone stay connected, safe and informed.

Backed by the industry's first and only mission-critical ecosystem, our portfolio is transforming the broadband experience. Combined with command center software, video intelligence and analytics and world-class services, our ecosystem is the technology lifeline your mission depends on. Our mission is to never stop advancing it.

*For more information, contact:*



*info@erswireless.com*  
*800-475-3320*



Motorola Solutions Inc., 500 West Monroe St, Chicago, IL 60661 U.S.A. [motorolasolutions.com](https://www.motorolasolutions.com)

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