



ASTRO® 25 MISSION CRITICAL DATA

YOUR LIFELINE FOR SUCCESSFUL MISSIONS



ALWAYS AVAILABLE

Your mission critical operations depend on reliable voice PTT communications all the time, everywhere you operate. Why not demand the same reliability from your data service. You can depend on ASTRO 25 data the same as you already trust your ASTRO 25 PTT service for:

- Resiliency Against Service Disruptions
- Coverage Everywhere You Need It
- Security



SUPER STORM SANDY WHEN WILL IT OCCUR AGAIN?

DURING SUPERSTORM SANDY THERE WERE:

25 % OF CELL SITES IN
THE 10-STATE REGION
OUT OF SERVICE

18 DAYS BEFORE
CARRIERS RESTORED
FULL SERVICE

0 PUBLIC SAFETY SYSTEMS
ADVERSELY AFFECTED

INTEROPERABLE

Because ASTRO 25 is APCO P25 compliant, you get all the benefits that come from standards including voice PTT interoperability across disparate P25 systems. But ASTRO 25 goes further, allowing P25 data traffic to pass between P25 systems and sharing critical data such as location, identity, text and more with broadband users so that everyone, regardless of the device they carry, can stay informed.



FUTURE READY

With the speed of change today, any technology investment has to consider the future. ASTRO 25 is built on a flexible, software-defined platform making it easy to evolve with your operations. Intelligent middleware simplifies the sharing of data with other technologies including LTE broadband. We are already seeing the melding of voice and data services to create new capabilities such as body worn cameras integrated with P25 remote speaker microphones. The future is only limited by the imagination with the large set of APIs available with ASTRO 25.

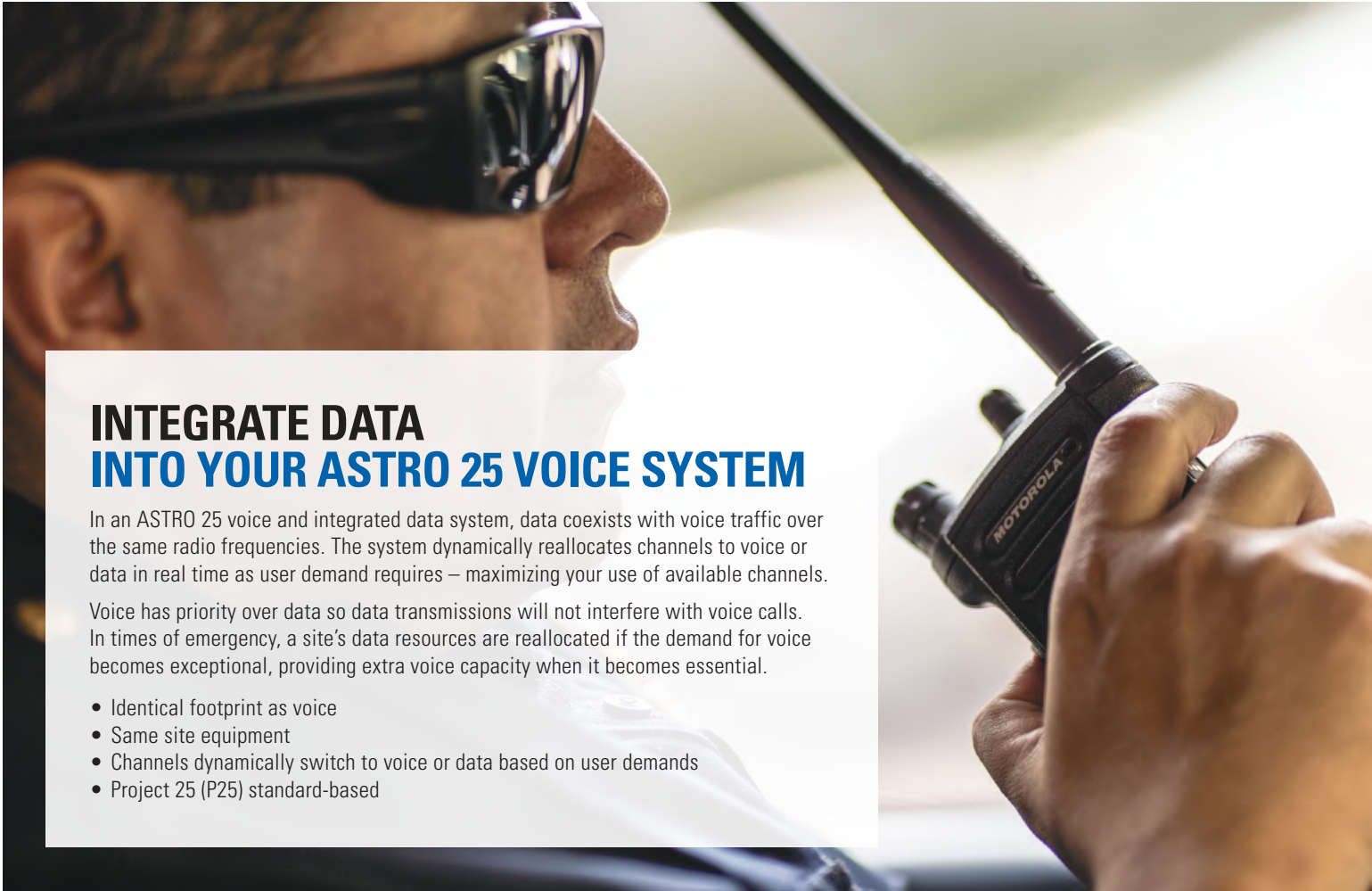


IS YOUR DATA MISSION CRITICAL?

Today's public safety agencies need more than just voice communications to get the job done. Vehicles are equipped with computers, and personnel away from the vehicle use handheld devices to do look-ups, report writing, video sharing and job specific intranet programs. This information exchange is often happening over commercial carrier networks which can be the right choice for routine, daily activities. In times of disaster, or even when there is a large event such as a marathon or a ball game, they can get overloaded or even fail.

THE BEST OF BOTH WORLDS ASTRO 25 MISSION CRITICAL DATA WITH BROADBAND DATA

Data comes in many sizes. Some of the most urgent data is perfectly sized for P25 radio systems while large file transfers can be best served by broadband. Short data messages such as location, text, presence, identity and status can be critical in tactical operations. Placing this data on a trusted ASTRO 25 system and APX radios with the same reliability and coverage as your PTT voice service gives you the confidence that this critical information will arrive at its intended destination.

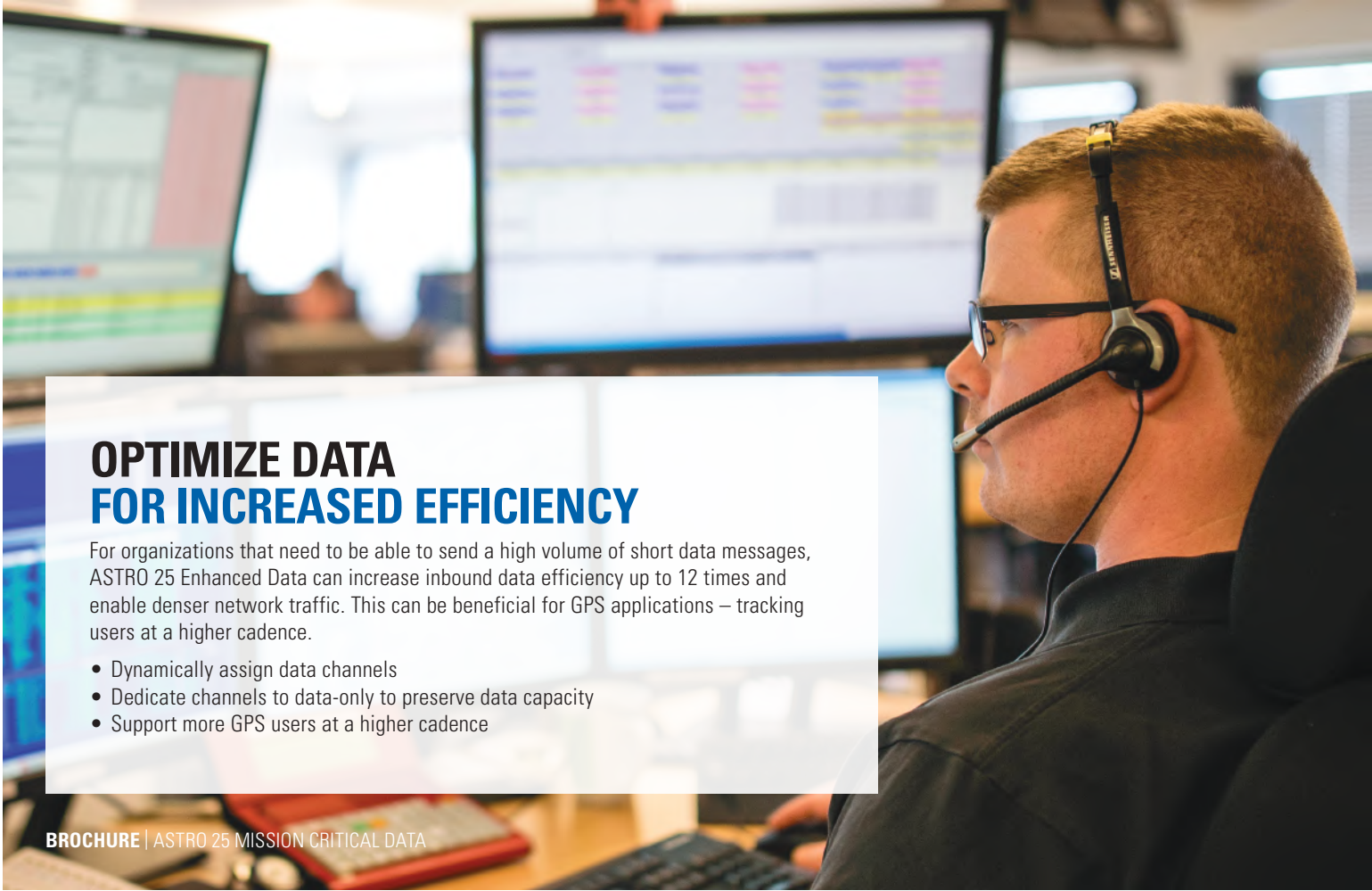


INTEGRATE DATA **INTO YOUR ASTRO 25 VOICE SYSTEM**

In an ASTRO 25 voice and integrated data system, data coexists with voice traffic over the same radio frequencies. The system dynamically reallocates channels to voice or data in real time as user demand requires – maximizing your use of available channels.

Voice has priority over data so data transmissions will not interfere with voice calls. In times of emergency, a site's data resources are reallocated if the demand for voice becomes exceptional, providing extra voice capacity when it becomes essential.

- Identical footprint as voice
- Same site equipment
- Channels dynamically switch to voice or data based on user demands
- Project 25 (P25) standard-based



OPTIMIZE DATA **FOR INCREASED EFFICIENCY**

For organizations that need to be able to send a high volume of short data messages, ASTRO 25 Enhanced Data can increase inbound data efficiency up to 12 times and enable denser network traffic. This can be beneficial for GPS applications – tracking users at a higher cadence.

- Dynamically assign data channels
- Dedicate channels to data-only to preserve data capacity
- Support more GPS users at a higher cadence

ASTRO 25 DATA APPLICATIONS

AVAILABLE TODAY FROM MOTOROLA SOLUTIONS



LOCATION SERVICES

ASTRO 25 OUTDOOR GPS LOCATION

Track the location of your vehicles and personnel through either a dedicated GPS receiver or the integrated GPS in your APX radio.

LOCATION ON RECEIVE

Get location updates from an APX radio on a TDMA channel, while a radio user is receiving voice audio or in hangtime during an active call.

LOCATION ON PTT

Get location updates from your radios every time they push the PTT button without adding any additional traffic load on either the data or voice channels – even receive updates during emergency calls.



FLEET MANAGEMENT

OVER THE AIR SOFTWARE UPDATE

Update your entire fleet of radios in less than a week with no service disruption.

PROGRAMMING OVER P25 (POP25)

Reprogram radios over the air, eliminating the need to bring the radios into a service shop, saving time and money.

ASTRO 25 OVER THE AIR REKEYING (OTAR)

Quickly change and manage the distribution of encryption keys over the air, increasing security and simplifying logistics of key management.



MESSAGING AND ALERTING

ASTRO 25 ADVANCED MESSAGING SOLUTIONS

Send and receive pre-programmed or free-form text messages to individuals or groups directly from two-way radios.

TALKGROUP TEXT MESSAGING

Broadcast detailed information via text to everyone in a talkgroup simultaneously.

MACH ALERT FIRE STATION AUTOMATION AND ALERTING

Alert multiple fire stations simultaneously and control elements in the firehouse such as closing doors and turning off stoves to improve response time, efficiency and safety.



MONITORING AND CONTROL

APX PERSONNEL ACCOUNTABILITY

Streamline on-scene roll calls, alert your team to changing incident situation and improve personnel safety.

SCADA & INDUSTRIAL IOT

From site security to fluid flows and electric grids, monitor and control remote sites and equipment with a variety of applications tailored to industry specific needs.

EASILY TRACK PEOPLE AND RESOURCE LOCATIONS FOR EFFICIENT RESPONSE AND IMPROVED SAFETY

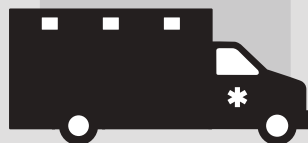
Knowing where your first responders and resources are located can dramatically improve your operations and the safety of your personnel.

OPERATIONAL EFFICIENCY

Knowing the location of your personnel means you can efficiently dispatch the closest available resource and reduce travel time. Radios with stored geofences can automatically change a radio channel when a user crosses into another jurisdiction or other specified geographic area.

PERSONNEL SAFETY

When a responder calls for help, knowing the most current location is critical to coordinating a response. Location information sent with voice calls means your dispatchers get an updated location on the press of the PTT or emergency button.



ADDING LOCATION IS SIMPLE

Motorola Solutions APX mobile and portable radios are available with integrated GPS, making it easy to add location to your operations. Now, you can not only track the location of your vehicles using the mobile radio, but track personnel away from the vehicle through the GPS equipped portable radio. There is no need for a second GPS device or reliance on a commercial carrier system to identify the location of your first responders.

Adding GPS to your radios is about improving safety and enhancing command operations.

COMMAND CENTER MAPPING

GPS information can be easily plotted on most mapping applications, giving command centers and field commanders a visual of personnel and resource locations with real-time updates for improved decision making.

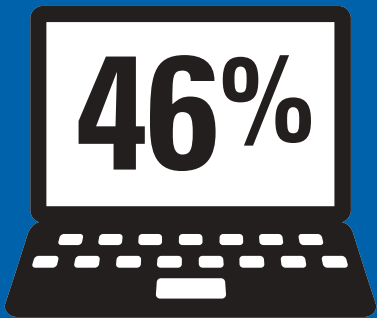
When more tightly integrated with ASTRO 25, some mapping applications can program the radio to take action based on location, such as send an alert or automatically change the radio channel.



SILENT, ON-DEMAND COMMUNICATIONS

Silent, reliable and an efficient use of system resources, text-based messaging is an ideal form of alternative communication when sensitive information is being shared.

- Send and receive private or group text messages between dispatch, radios, PCs and smartphones.
- Text critical details that can be easily referenced, such as an apartment number, street address or suspect name and description.
- In conjunction with PremierOne Records, query databases including two factor CJIS Federal databases to look up drivers licenses, case numbers and other critical information.
- Receive Be-on-the-Lookout (BOLO) alerts on the portable radio.



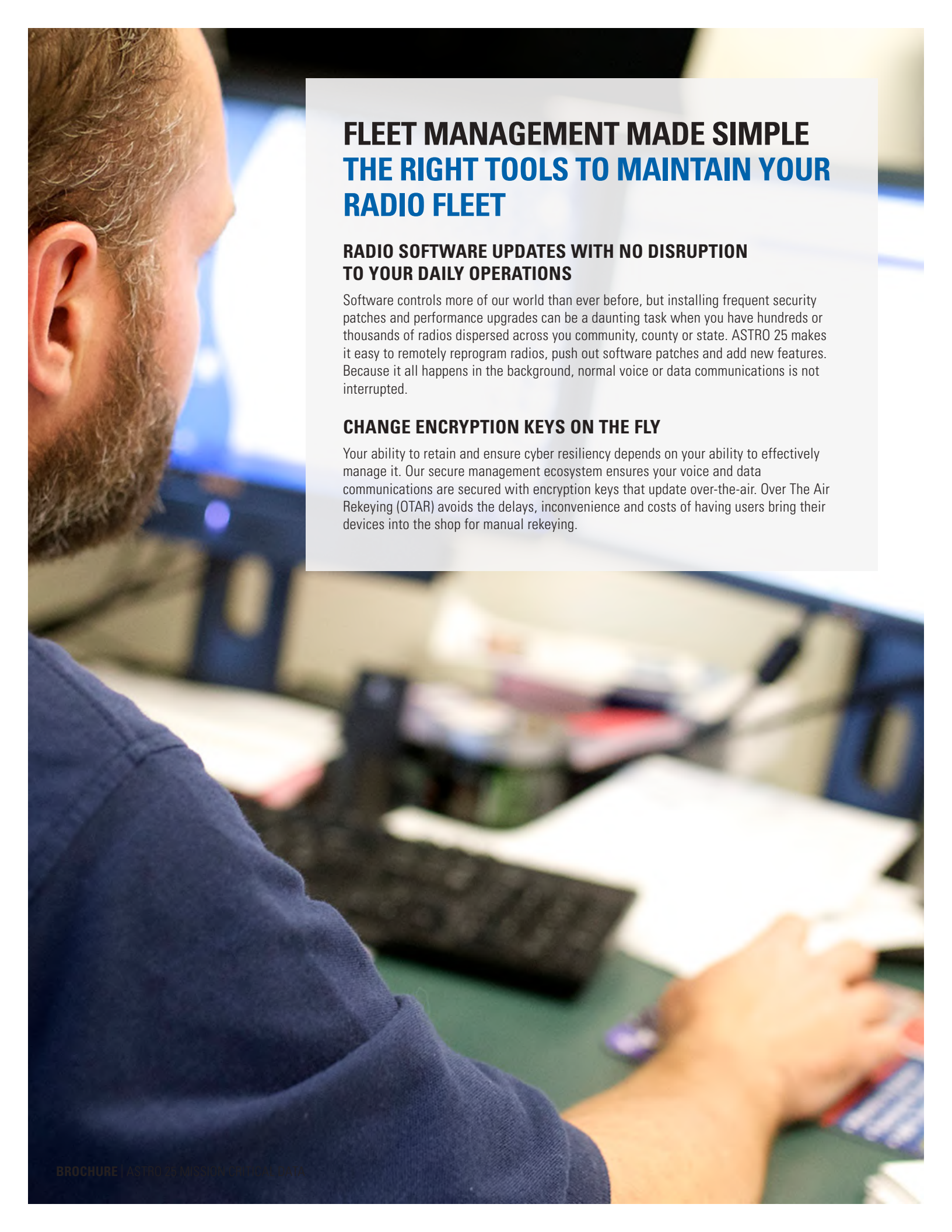
NEED ACCESS TO LOCAL AND NATIONAL DATABASES IN THE FIELD²



QUERY
REMOTE DATABASES FROM
YOUR APX RADIO



BROADCAST
BOLOS, AMBER ALERTS
AND OTHER HIGH PRIORITY
INFORMATION TO GROUPS

A man with a beard is seen from the side, looking at a computer monitor in a control room. The background is slightly blurred, showing other equipment and screens. The text is overlaid on a semi-transparent white box.

FLEET MANAGEMENT MADE SIMPLE **THE RIGHT TOOLS TO MAINTAIN YOUR** **RADIO FLEET**

RADIO SOFTWARE UPDATES WITH NO DISRUPTION TO YOUR DAILY OPERATIONS

Software controls more of our world than ever before, but installing frequent security patches and performance upgrades can be a daunting task when you have hundreds or thousands of radios dispersed across your community, county or state. ASTRO 25 makes it easy to remotely reprogram radios, push out software patches and add new features. Because it all happens in the background, normal voice or data communications is not interrupted.

CHANGE ENCRYPTION KEYS ON THE FLY

Your ability to retain and ensure cyber resiliency depends on your ability to effectively manage it. Our secure management ecosystem ensures your voice and data communications are secured with encryption keys that update over-the-air. Over The Air Rekeying (OTAR) avoids the delays, inconvenience and costs of having users bring their devices into the shop for manual rekeying.

ALERTING

With ASTRO 25, you can quickly notify responders of a changing situation at an incident or system wide.

- Broadcast high-priority text information over a talkgroup to alert personnel of a weather hazard, AMBER Alert or other situation.
- Put easily, re-referenced details right on the portable radio with Be-on-the-Lookouts (BOLO).
- Quickly roll fire and EMS trucks when 9-1-1 calls come in.

REMOTE MONITOR AND CONTROL

Reliable and dedicated ASTRO 25 networks that have traditionally been used for voice can also be extended to communicate data across your organization for process automation and monitoring. This eliminates the need for recurring commercial network charges and minimizes expensive hard wiring, giving you a cost effective approach to maximize productivity. Data on your two-way radio system maintains the same high reliability of your voice communication and is applicable for a variety of other applications as well. Keep your teams out of harm's way, reduce downtime and optimize operational efficiencies while maximizing the safety, productivity, and profitability of your organization.



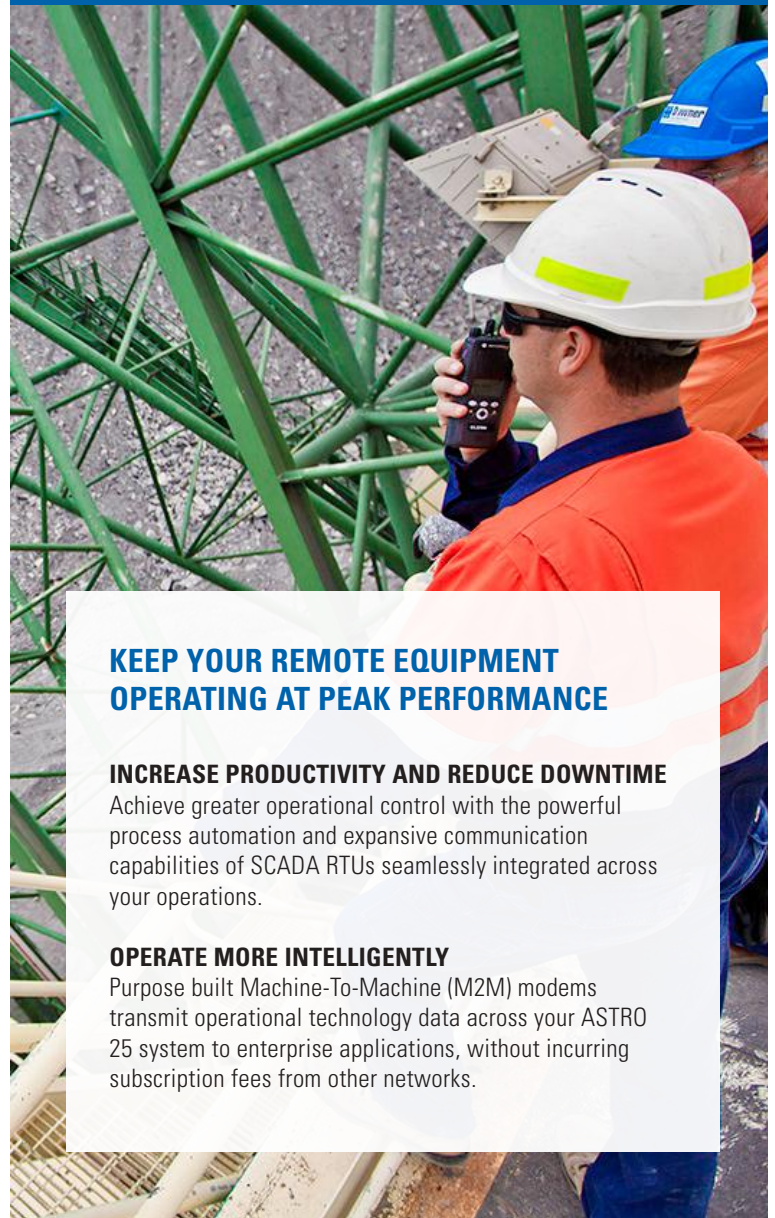
SAVE YOUR COMMUNITY AND KEEP YOUR PERSONNEL SAFE

REDUCE INCIDENT RESPONSE TIMES

Visually and audibly alert firefighters in the station to incident details. Remotely turn off stoves, lock up and monitor security when the station is empty.

ENSURE EVERYONE GOES HOME

While on scene, account for all personnel and monitor their equipment to ensure everyone gets out safely.



KEEP YOUR REMOTE EQUIPMENT OPERATING AT PEAK PERFORMANCE

INCREASE PRODUCTIVITY AND REDUCE DOWNTIME

Achieve greater operational control with the powerful process automation and expansive communication capabilities of SCADA RTUs seamlessly integrated across your operations.

OPERATE MORE INTELLIGENTLY

Purpose built Machine-To-Machine (M2M) modems transmit operational technology data across your ASTRO 25 system to enterprise applications, without incurring subscription fees from other networks.

ECOSYSTEM OF APPLICATIONS AND PARTNERS

Motorola Solutions is constantly working with third party developers to create new applications that can leverage data from the ASTRO 25 radio system to enhance performance and improve response, keeping first responders safe and the communities they serve safer.

THIRD PARTY DEVELOPER PROGRAM

We've made it easy for software developers to create new applications through Application Program Interfaces (API) and our application developer program. As an IP-based system, ASTRO 25, can host a variety of custom developed applications by independent software companies and system integrators.



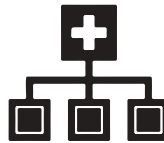
Radio Control APIs

Remotely control portable radios and mobiles in the field.



Console APIs

Access ASTRO 25 console interface for dispatch and voice logging applications.



Network APIs

Receive, process and correlate events and alarms from ASTRO 25 network elements.



Data APIs

Send and receive short data messages to two-way radios over the ASTRO 25 IP data channel.

**PERSONNEL CAN
NOW CARRY ONE
DEVICE FOR BOTH
VOICE AND DATA
TO ENHANCE
THEIR ABILITY TO
GET THE JOB DONE**





SOURCES:

1. www.usfa.fema.gov/downloads/pdf/publications/ff_fat13.pdf
2. "Public Safety 2019" document, based on our 2014 survey of public safety personnel in North America.

Consult with your Motorola Solutions team and learn how easy it is to add data to your current ASTRO 25 system and start experiencing the value of placing data on your mission critical network or visit motorolasolutions.com/ASTRO25



Motorola Solutions, Inc. 500 West Monroe Street, Chicago, IL 60661 U.S.A. motorolasolutions.com

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