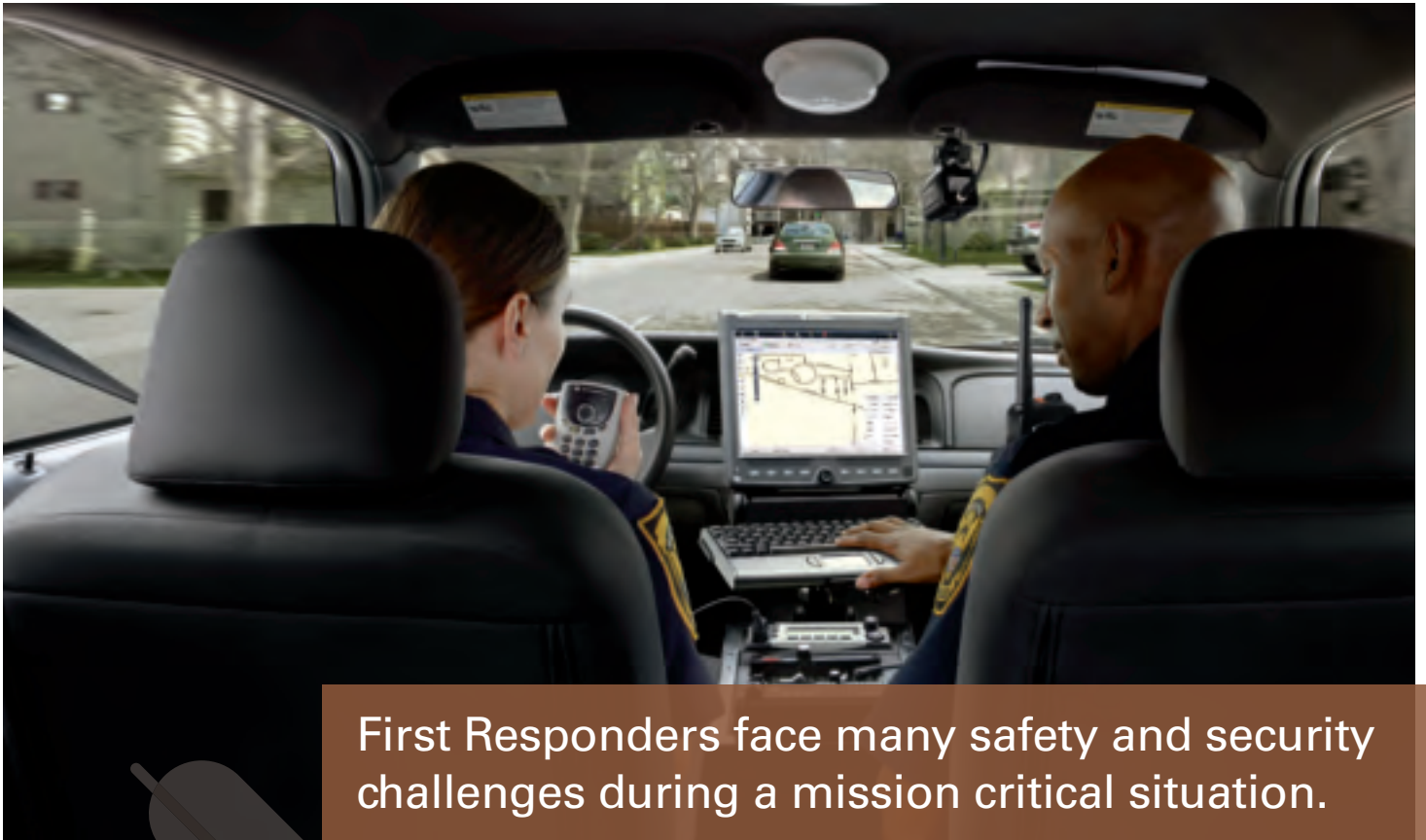
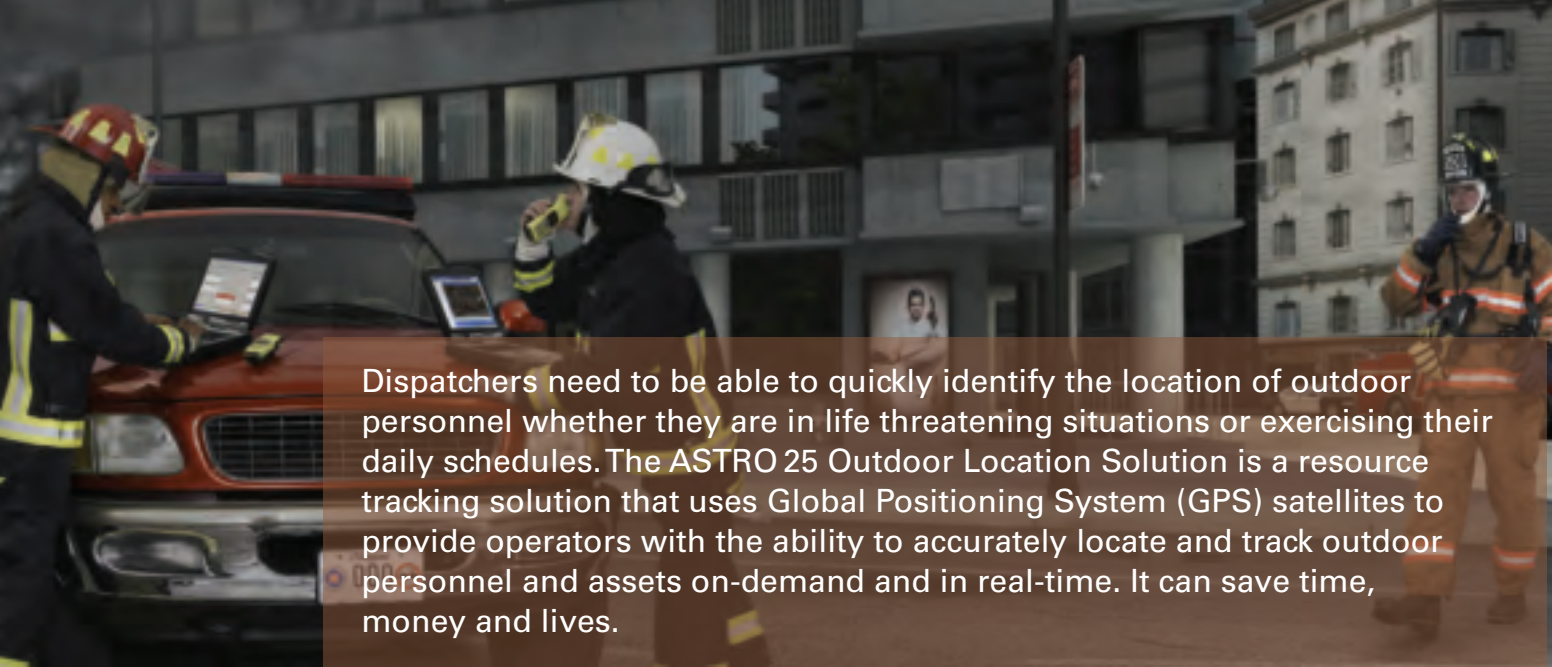


ASTRO[®]25 Location Tracking Solutions



First Responders face many safety and security challenges during a mission critical situation.

Location solutions are essential to helping ensure safety, security and appropriate resource allocation.

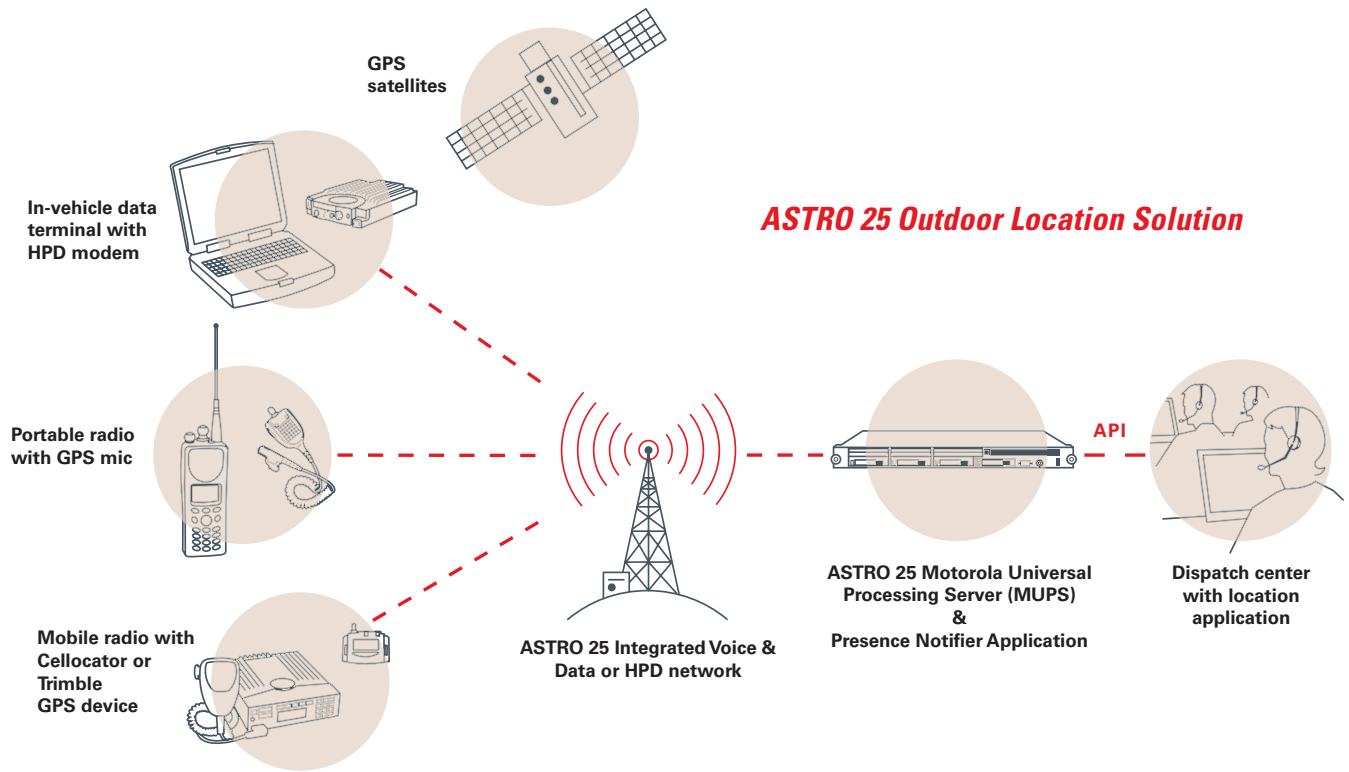


Dispatchers need to be able to quickly identify the location of outdoor personnel whether they are in life threatening situations or exercising their daily schedules. The ASTRO 25 Outdoor Location Solution is a resource tracking solution that uses Global Positioning System (GPS) satellites to provide operators with the ability to accurately locate and track outdoor personnel and assets on-demand and in real-time. It can save time, money and lives.

- **Emergency situations** – A simple press of the emergency button sends location information back to the Command center, which enables dispatch operators to readily locate the user and provide the appropriate back-up. This can enhance outdoor personnel safety and improves the allocation of resources by enabling rapid response to emergency situations.
- **Day-to-day operations** – To manage information per your agencies needs, flexibility is built in to the system. The location of an officer in the field can be automatically sent based on a periodic or distance rate which enables dispatch operators to track a users position without manual intervention. When the officer goes off duty the dispatcher can stop automatic reporting to save on bandwidth usage. The reporting rate can easily be changed from the dispatch center.

The ASTRO 25 Outdoor Location Solution is a suite of products that can track the location of people and assets via Motorola-provided GPS devices connected to an ASTRO 25 radio. The location information can be transmitted to those who need the information over an ASTRO 25 Integrated Voice and Data (IV&D) or HPD network. This solution provides the utmost in flexibility for vehicular and portable radios.

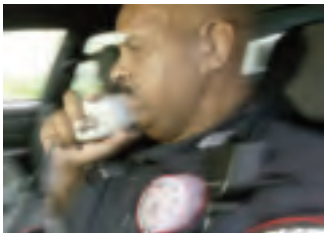
- **Location monitoring over a wide area** – The location of the asset being tracked is determined from the GPS satellite constellation and the data is sent over the ASTRO 25 networks according to user defined, configurable parameters such as distance based reporting, periodic reporting, and emergency reporting.
- **GPS device** – For personnel location tracking, the GPS remote speaker microphone is convenient to wear and connects to ASTRO 25 portable radios. For vehicular location solutions, Motorola provides a selection of GPS devices that mount easily within the vehicle.
- **Dispatch Mapping** – The GPS coordinates can be sent over the air to the Motorola Universal Processing Server (MUPS). This location information can be sent to a mapping application via the Application Programming Interface (API).
- **In-vehicle Sensing** – Discrete digital sensor inputs are available to monitor telemetry events in the vehicle. Digital sensor outputs are available for remote operation of sensors in the vehicle. A dead reckoning unit is available for determining location when the vehicle is not continuously in direct line of sight of the satellites—this is useful in urban canyon situations or densely forested areas.
- **In-vehicle Mapping** – In-vehicle mapping is available which determines the location of a vehicle and its immediate surroundings. The location coordinates can be integrated into a mapping application by using the software Developer Kit (SDK). The SDK provides the ability for a third party application developer to interface seamlessly with the ASTRO 25 Outdoor Location Solution.
- **Voice transmissions first priority** – To maintain the mission criticality of the ASTRO 25 Integrated Voice & Data network the voice transmissions remain priority—GPS data transmissions will not interfere with voice transmissions.



ASTRO 25 Outdoor Location Solution

Outdoor location solution provides flexibility in network and user configurations.

ASTRO 25 Network	ASTRO 25 IV&D & HPD networks utilize GPS technology to send and receive location information.
Portable Radios	ASTRO 25 two-way portable radios are integrated voice and data devices which can send GPS location information over an ASTRO 25 IV&D network. The GPS Remote Speaker Microphone (RSM) houses the GPS intelligence.
Mobile Radios	The ASTRO 25 mobile radios operate as a voice & data communications device sending GPS in-vehicle location information over an ASTRO 25 IV&D network. GPS location information can be provided from either a Cellocator™ device or a Trimble™ device. The Cellocator™ Olympic device provides both GPS location and telemetry data to monitor inputs within the vehicle. The Trimble Placer™ Gold has multiple devices which include multiple channels, and a dead reckoning position while outside of the GPS coverage.
In-vehicle Mobile Data Device	The ASTRO 25 location mobile data terminal location proxy allows the GPS coordinates to be sent over an HPD 1000 modem to a dispatch center through either an ASTRO 25 HPD network or using a Multi-Net™ mobility proxy through any wireless data network. In addition, the SDK allows a mapping application to access the GPS coordinates on the HPD modem and display the location on an in-vehicle mapping tool.
Presence Notifier Application	Provides the presence and absence information to any compatible data application located in the dispatch center. It interfaces with data applications and subscriber radios using User Datagram Protocol / Internet Protocol (UDP/IP).
Motorola Universal Processing Server (MUPS)	The MUPS is a gateway for the location, telemetry, and presence information from the ASTRO 25 radios. It transfers data to any back-office applications. Additionally, it routes requests and commands from the back-office application to the devices.
ASTRO 25 Location Application Programming Interface (API)	Contains all the necessary interface documentation that a third party application developer needs to receive location, telemetry, and presence data from the Motorola Universal Processing Server. The API pushes data messages in near real time to a third-party application, plus it supports remote commands through a set of messages which can be sent to field units.



MOTOA⁴

MOTOA4 Mission Critical Portfolio

The ASTRO 25 network is part of the MOTOA4 Mission Critical Portfolio offering seamless connectivity between first responders. Motorola puts real-time information in the hands of public safety and government personnel to provide better information that enables better decisions for better outcomes. It's Technology That's Second Nature™.

For more information on the ASTRO 25 network's outdoor location solutions or the entire MOTOA4 mission critical portfolio, please visit our website or contact



motorola.com/secondnature



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