



SAFE UTILITIES

THE CONNECTED UTILITY



CREATING SAFE UTILITIES

Today, modern utilities are facing ever-increasing demands for reliable, secure service delivery. And the utility business model is fundamentally more complex today than it was even five years ago. Technologies — such as electric vehicles, roof-top solar panels, and smart meters — are becoming more and more prevalent and increasing power consumption. As a result, energy storage is playing an increasingly critical role in balancing load demands. In addition, grid modernization is required to improve the nation's electrical grid infrastructure to make it more flexible, reliable, resilient, secure and sustainable. On top of this is the ongoing mandate to ensure continuation of service and quick restoration after an outage in order to produce a high level of customer satisfaction. All of this must come together to ensure utilities are able to generate, transmit and deliver energy to customers in an environment built on a foundation of safety and efficiency for employees, visitors, properties, assets and the community.

At Motorola Solutions, we've created the first and only end-to-end technology ecosystem that unifies voice, video, data and analytics on one single platform — providing you with the foundation of safety for your operations that you need to stay focused on the job. Assuring managers and employees that when situations arise there is technology in place to resolve issues as quickly as possible to prevent them from escalating beyond control.

We've reimagined how the technologies used to help keep your facility safe, can do even more — minimize downtime, improve efficiency and productivity and generate better outcomes throughout all phases of the utility process. Because safety, efficiency and productivity are deeply interconnected. With the right technologies, you can be faster, smarter, more focused and more resilient — better at everything you do.

Our technology ecosystem allows data and intelligence to advance outwards, giving you eyes and ears where you've never had them before. Information can move where and when it's needed — from cameras, to radios, to smart devices and device sensors, alarms and productivity tools, to security and operations centers both on-site

and in remote locations — and provides meaningful and actionable workflows. Technologies integrate seamlessly across diverse areas and functions to provide efficiency and visibility across zones.

Our Safe Utilities technologies come together to keep your facility safe and operations efficient — delivering the certainty of safety you need to deliver on your promise of keeping services up and running.



EXAMPLE USE CASE: COPPER THEFT

Our Safe Utilities integrated ecosystem allows you to address everyday concerns as well as emerging situations through the four pillars — Detect, Analyze, Communicate and Respond. We will explore how these pillars work together to address your utility's challenges through the example of copper theft.



DETECT

Overseeing the widespread and diverse types of critical infrastructure assets throughout your facilities can be a challenge. From controlling multiple points of entry, monitoring worker safety and securing and monitoring key areas and equipment, detection plays a critical role in improving situational awareness and decreasing response times to potential issues and operational problems.

Integrated video security uses artificial intelligence to create high visibility across your facilities and connected sites all in one view. Access control provides entry management, immediate lockdown capabilities and push notifications to devices. Emergency alerts ensure all personnel — across multiple teams and locations — are automatically informed of critical information simultaneously.

All of this comes together to provide you with better insights — so you always know what is happening at your site.



Avigilon Control Center

DETECTION SOLUTIONS

Video Security

Deter threats and enhance visibility across your facilities with specialized wide-view cameras for every location — such as fisheye cameras for secure areas, multi-sensor for corridors, pan-tilt-zoom for parking lots and wide-open areas.

Watch List Creation and Alerting

Detect and alert potential breaches with a secure, controlled watch list of known license plates created and maintained by authorized users within your security team. Expand the power of this capability to detect specific people of interest with the optional inclusion of facial recognition technology.

Access Control

Manage access to different buildings or restricted areas within your facilities using a role-based system with instant detection of individuals at access points and camera-based verifications.

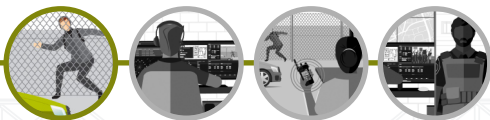
IoT Alerts

Incorporate third-party sensors and IoT devices on your assets and people into the unified workflow to receive direct notifications and alarms on your integrated radios and software in order to quickly coordinate an appropriate response.

Radio Alert

Enable immediate alerts during critical situations to enable an immediate response. Data transmission is shared with a dispatcher with a quick push of a preprogrammed emergency button, making it easy to send emergency notifications.

COPPER THEFT - DETECT



Intrusion Detected At Remote Substation

An intruder is detected getting out of a vehicle and jumping the fence of a remote substation. Security is directly notified and live video is transmitted over Private LTE to the control center.

SOLUTION BRIEF | SAFE UTILITIES

*Camera footage is for illustrative purposes only

ANALYZE

You're responsible for monitoring large facilities and widely-dispersed sites filled with workers, secure areas, vast spaces, critical materials and equipment. Identifying unwanted individuals, tracking persons of interest, recognizing hazardous situations and identifying falls and downed workers in this environment is a demanding task.

Appearance Search capabilities quickly and seamlessly explore video footage to identify persons or vehicles of interest across your facilities or parking lot. Unusual Motion and Activity detection highlights out-of-the-ordinary behaviour that may need to be addressed. The Focus of Attention interface quickly brings your attention to areas of video security interest, increasing efficiency and improving response time when evaluating a situation.

Ultimately, these solutions and insights are crucial to cutting through the noise, proactively locating points of interest and recognizing which events are important — so you can have eyes on the scene to evaluate and make an informed decision to take action.



Appearance Search

ANALYTIC SOLUTIONS

Avigilon Appearance Search™

Find who you are looking for faster with video search that can be initiated by selecting specific physical descriptions such as hair or clothing color, gender and age category or vehicle type and color.

Identity Search

Intelligently integrate ID badges with the power of video to map personnel movement throughout your entire premises via scanned door badge activity linked with video feeds.

Unusual Motion and Activity Detection

Turn unknowns into insights and reveal anomalies that may pose security or safety risks with artificial intelligence that “learns” typical activities in the facility to automatically detect and flag unusual motion or activity that may otherwise be missed.

Focus of Attention

Easily identify where action is required with potentially critical video activities identified by color-coded hexagons so you can focus on what's important.

COPPER THEFT - ANALYZE



Appearance Tracked

Situational awareness maintained as intruder's appearance is automatically tracked across multiple cameras on and around the substation. Tracking continues even if they appear at another facility.

*Camera footage is for illustrative purposes only



COMMUNICATE

Regardless of your role, clear and timely communication is key to keeping your teams connected and informed.

Radio communications instantly and reliably connects security, response teams, field workers, management and local first responders when needed. Broadband push-to-talk and multimedia capabilities extend your reach by enabling voice and data information to be shared across devices to those in other locations or remote. Dispatch software and mass notification capabilities make it easy to notify and share information across workgroups at a moment's notice.

Connectivity — across devices, networks and locations — is an important part of ensuring you and your entire team are aware and informed at all times.



Dispatch Software

COMMUNICATION SOLUTIONS

Radio Communications

Communicate securely across all sites and in the toughest environments with rugged two-way radios that deliver superior voice clarity, rugged design, long battery life and outstanding range — ensuring personnel can hear and be heard regardless of their surroundings. Sensors embedded in your radio device can also monitor for inactivity to warn when there may be a potential problem or man-down situation. Quickly identify the location of an individual or vehicle with an integrated GPS receiver that transmits the location to map-based location software. Additionally, transmit multimedia and data rich intelligence on your two-way radios using broadband enabled, purpose built, radio devices.

WAVE PTX: Broadband Push-to-Talk

Share voice and data without boundaries, enabling smart phones with push-to-talk capabilities enhanced with the ability to push details via text, photo, video or file attachment to smartphones, tablets, laptops and even land-lines.

Dispatch Software

Simplify and standardize your dispatch process and workflow with streamlined dashboard views and instant communications across different devices, networks and locations scaled to your facility's specific needs.

Mass Notifications

Notify and mobilize critical personnel at a moment's notice with automated alerts sent by text, email or voice message from laptops or smartphones, ensuring easy information sharing across groups.

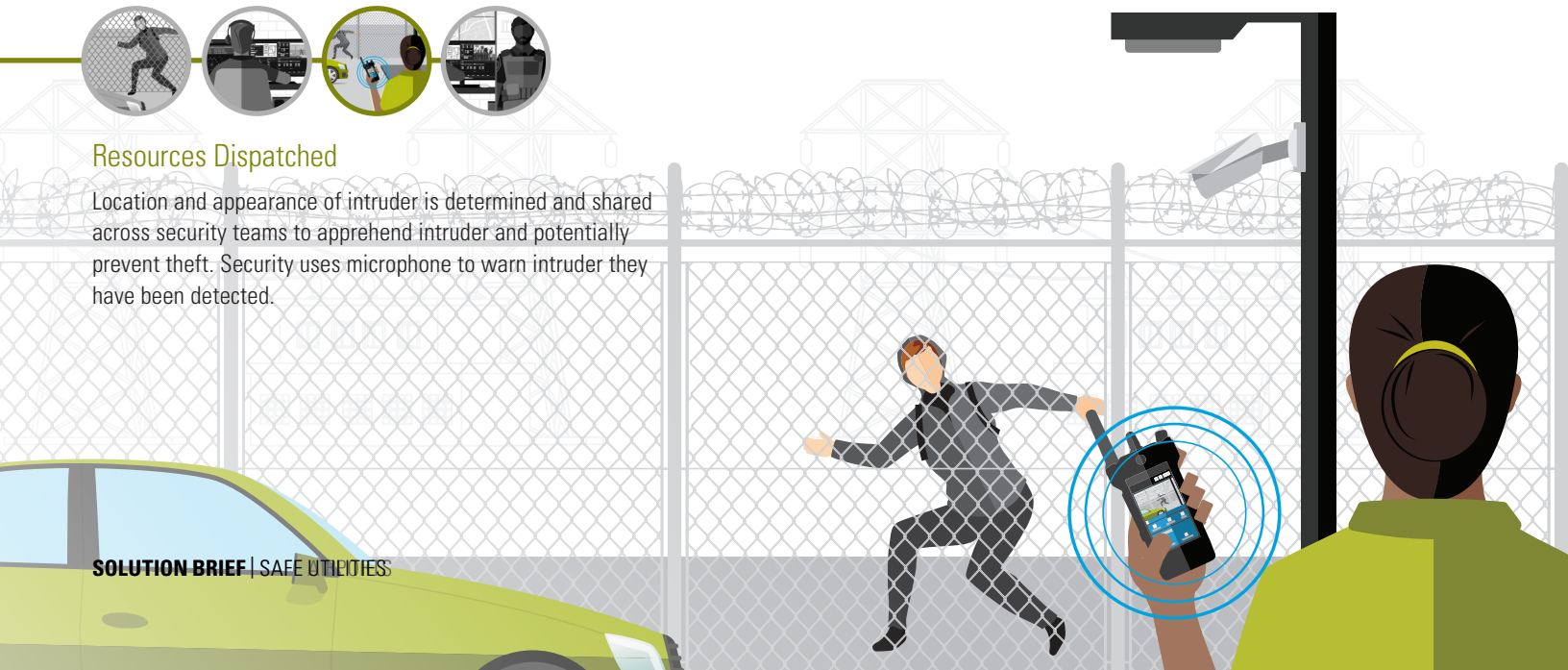
COPPER THEFT - COMMUNICATE



Resources Dispatched

Location and appearance of intruder is determined and shared across security teams to apprehend intruder and potentially prevent theft. Security uses microphone to warn intruder they have been detected.

*Camera footage is for illustrative purposes only



RESPOND

Whether it's an everyday incident or an emergency situation, your response teams and facility personnel need to communicate with each other to coordinate a response in the most efficient way possible. Being ready and aware is critical to ensuring your team can quickly respond to incidents or problems before they escalate — maintaining productivity and ensuring the health and safety of workers.

Dynamic interoperability makes it easy to directly share data with response team personnel in real-time, enhancing situational awareness. Incident management streamlines the logging of incident reports and makes it easy to share multimedia with other personnel when needed and inform future decision-making for safety, security and operational procedures.

Because enabling rapid response and documenting past incidents can be the key to preventing incidents from becoming tragedies.



CommandCentral Aware

RESPOND SOLUTIONS

CommandCentral Aware Enterprise

Provide critical incident insights and eyes-on-the-scene with real-time video, resource location information, streamlined incident intelligence and direct communication connections between your facility and local law enforcement.

Ally Incident and Records Management

Streamline end-to-end incident and records management with customizable record fields and multimedia attachments, all accessible from web-enabled devices.

Body-Worn Cameras

Protect your team with an integrated video solution that captures high quality video evidence through a powerful mix of capabilities including live streaming and automated recording.

Critical Connect

Easily enable and disable dynamic, seamless and secure temporary communication links between networks with interoperability between response teams and on-site staff, and even with local first responders.

Perimeter Protection Talk Down

Use audio talk down to deter an intruder by broadcasting voice audio to cameras with connected speakers.

COPPER THEFT - RESPOND



First Response Dispatched

Local police directly informed with video for immediate response. Incident is logged with pre-populated fields and relevant data to facilitate post investigation and prosecution.





SERVICES

Effectively managing a complex ecosystem can be complicated. You need the right service, support and management to ensure your day-to-day needs are taken care of — ensuring smooth operations. At Motorola Solutions, our unique service offerings provide technical support, hardware repair and replacement and software updates to ensure your two-way radio, infrastructure, cameras and software are always working at peak performance.

7+ HOURS

The average duration of a power outage in the US¹

Technical Support

Effectively troubleshoot and promptly resolve technical and non-technical issues with dedicated experts.

Repair and Replacement

Protect system components from normal wear and tear and keep them in operation with state-of-the-art diagnostics equipment, repair tools and replacement parts.

Software Updates

Ensure continuous security, extended performance and enhanced functionality of two-way radios, infrastructure and cameras with certified and pre-tested software updates.



TAKING UTILITIES SAFETY TO THE NEXT LEVEL

It's time to reimagine what safety technology can do for your utilities facility — driving efficiencies, bolstering performance and helping you deliver on your promise of delivering uninterrupted service.

The Motorola Solutions Safe Utilities integrated technology ecosystem unifies mission-critical technologies to improve safety and security across your sites while also helping you and your team be smarter and more efficient. By bringing together the integrated and innovative technology you need to detect, analyze, communicate and respond, we're helping to maintain efficiency and effectiveness across the board.

By enabling modern incident and operational management, you can be sure your teams are working safer, smarter and more productively. And that when incidents happen, your teams are assured there is technology in place to resolve them as quickly as possible so they can stay focused on the job at hand.

Sources:
1 Cummins

Learn more at:
motorolasolutions.com



VOICE AND DATA NETWORKING CONVERGENCE

The utility industry is being forced to change its business model by data-driven consumers, smarter technologies and an increase in natural disasters. A multitude of connectivity choices are available to utilities today, but only one standard can meet all the needs of utilities wishing to deploy a holistic, interoperable, broadband network across their territory for a multitude of applications: Private LTE.

For simple data messaging, existing P25 Voice and Data networks can receive and transmit short data bursts using the EDG4200 Smart Gateway Modem. With private LTE, your organization can experience a higher return on investment of your existing private network.

Private LTE is also the ideal workhorse of the invisible infrastructure underlying utility applications of all types, not only for protection of critical infrastructure, but also for Smart Grid systems and other Smart Community applications. The modernized electric utility and smart cities of tomorrow cannot be fully realized without secure, reliable wireless broadband connectivity. LTE offers the data speeds, technical flexibility, signal prioritization, and security necessary for the multitude of endpoints and smarter utility applications. The enormous utility data generated today and, in the future, makes LTE the most economical network to offer flexibility, scalability and resiliency. Private LTE is the most robust wireless solution with security built in and available today for mission critical infrastructure.

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