



Sovereign  
Systems

# DELIVERING MISSION ASSURANCE



mMESH™

Private Wireless Mesh  
Connectivity for  
Challenging Environment

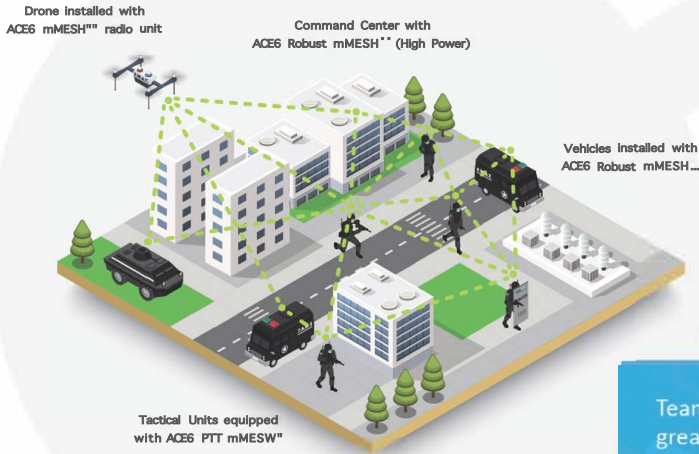
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Help teams gain mastery of any situation. Send and receive high quality audiovisual data among vehicles and personnel, reliably and efficiently. mMESH™ uses advanced COFDM wireless technology to establish a robust IP-based communication network that is hub-less, dynamically self-organizing and minimises points of failure.

Find out how this technology can give you the edge in mission critical scenarios.

# SPECIAL FORCES & TACTICAL UNITS

- Team-share live videos & real-time data
- Heighten your team's situational awareness
- Improve risk navigation abilities



Police Tactical Communication System  
Application Scenario

Team-based anti-terror units or special forces benefit greatly from Bodyworn mMESH™ or PTT mMESH™ products paired with body or helmet cameras. Along with police vehicles equipped with Robust mMESH™ units, a private mMESH™ network allows all operational units to communicate via voice, video or text.

Eliminate blindspots and boost situational awareness with a highly resilient communication network which automatically selects the most efficient data transmission route between nodes. User feedback has shown that the mMESH™ solution improves risk management and allows commanding officers to make faster and more effective decisions on the field.

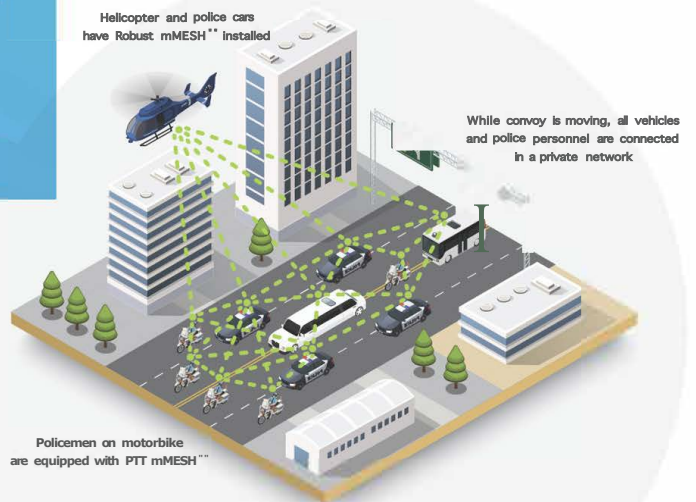






From VIP security entourages to law enforcement and military convoys, there can be no room for error when high value personnel and assets are involved. Maintain control in fluid situations by relying on the private mMESH™ network that disseminates audio and video data instantly and securely among multiple convoy units.

mMESH™ is reliable even in remote areas with no cellular networks, and minimises vulnerabilities associated with interference and jamming attacks. With no transmission downtime, commanders are able to make quicker, more effective decisions based on real-time updates from all points in the convoy.



VIP Convoy Scenario

# CONVOY MANAGEMENT

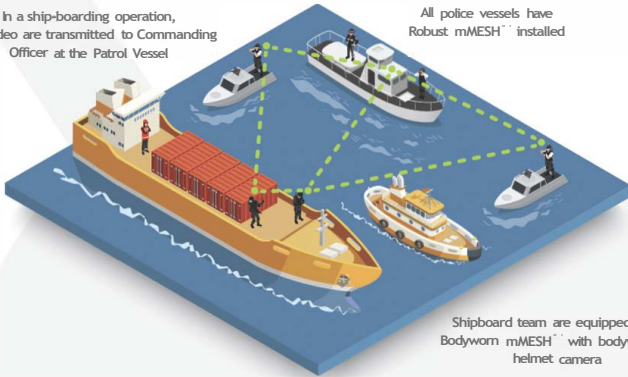
- Command and coordinate with greater effectiveness
- Acquire instant situational updates from any point



# BORDER SECURITY

- Full visibility and control along land, sea and air perimeters
- Reduce response time to threats

In a ship-boarding operation, live video are transmitted to Commanding Officer at the Patrol Vessel

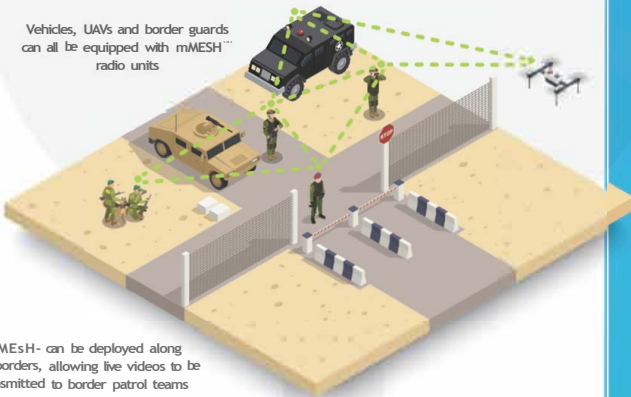


All police vessels have Robust mMESH™ installed

Shipboard team are equipped with Bodyworn mMESH™ with bodyworn or helmet camera

## Marine and Land Border Security Scenario

Vehicles, UAVs and border guards can all be equipped with mMESH™ radio units



mMESh- can be deployed along land borders, allowing live videos to be transmitted to border patrol teams

Border surveillance is a round-the-clock operation that cannot afford to be compromised by downtime or gaps in coverage. Combine visibility from land, air and sea points with a mMESH™ network that ensures no detail goes unnoticed.

Enhance marine surveillance with mMESH™ products installed aboard ships, RHIBs, helicopters and UAV/USVs, as well as PTT mMESH™ on ship-boarding crew. Real-time videos from bodyworn cameras instantly provide flotilla commanders with the information they need to respond.

Full situational awareness along land perimeters can be ensured with a mMESH™ network that relays camera information to a central monitoring station, supplemented by Robust mMESH™ on patrol vehicles and PTT mMESH™ on patrol personnel.







When disaster strikes, crippled telecommunications infrastructure should not be allowed to hinder relief efforts. First-responders can count on mMESH™ systems to be deployed within minutes, allowing teams to stay connected with a fully IP, self-sustaining, private network.

On-ground personnel and mMESH™-equipped vehicles are able to share live audiovisual streams from bodyworn cameras to command posts, delivering full visibility of complex situations. The footage can also be transmitted real-time to off-site command centres via satellite communications.



# DISASTER FIRST RESPONDERS

- Emergency response that takes minutes, not days

# SEARCH & RESCUE

Search and Rescue teams can be equipped with PTT mMESH™



UAVs and helicopters employed in the search efforts can also be installed with mMESH™ radios. This can increase the coverage area of the search zone

- Reliable performance in a variety of terrain
- Interoperability with other networks allows seamless coordination with different agencies

When seconds count, mMESH™ provides a clearer, broader picture of the mission field for improved speed and accuracy of response. From air to ground, a swarm of drones and unmanned vehicles equipped with 2W mMESH™ radios can provide a continuous feed of high capacity audiovisuals to the command centre, while enjoying optimised performance due to weight savings. Combined with real-time data feed from mMESH™-equipped on-ground personnel, this allows commanders to better coordinate teams that are spread out widely over challenging terrain and harsh weather conditions.

With seamless mMESH™ interoperability with existing networks, rescue teams will no longer be hindered by the inability to coordinate with other agencies that use different telecommunications carriers or devices. This allows rescue operations to proceed with full situational awareness, saving time, lives and assets.







First responders are critically dependent on vital data in order to accurately, safely and quickly assess disaster situations, and act accordingly. For fire fighting and rescue efforts in urban built-up spaces with thick walls and varying floor levels, mMESH™ provides a distinctive edge over traditional communication methods.

Fire fighters, drones and fire engines equipped with mMESH™ products make up a robust network of high capacity data transfer, keeping all units aligned with real-time audio and visuals. mMESH™ nodes can be left at key points to relay data, removing the need for highly-skilled manpower to manually establish communication links.



A mMESH™ network can provide the Fire Commander with up-to-date information on the fire-fighting operation and location of all fire fighting assets

# FIRE FIGHTING

- Instant, reliable & rich data delivery for safer situational assessment



# EMERGENCY TELECOM NETWORK

- Rapid-deploy, self-organising communications network for critical conditions



An ad-hoc network can be quickly established with mMESH™ radios and quick deploy satcom terminals, allowing telcos to be quickly re-establish communication after a disaster

Major cities worldwide have built their critical communications infrastructure on cabled networks, which are exceptionally vulnerable in the face of natural disasters or terrorist attacks. During an emergency when existing telecommunication infrastructure are destroyed or rendered non-functional, telcos can quickly re-establish basic connectivity using mMESH™ radios complemented by satcom terminals.

mMESH™ nodes can be operated on batteries, vehicle power, diesel power generators or solar power, allowing them to function in the harshest conditions. They deliver broadened coverage of disaster zones by extending multi-node connectivity when placed on higher ground, or on a tethered drone. Linking a single mMESH™ node to a satcom system will allow the entire mMESH™ network to connect with the national telecommunication infrastructure, delivering an ad-hoc communication network to the disaster zone.

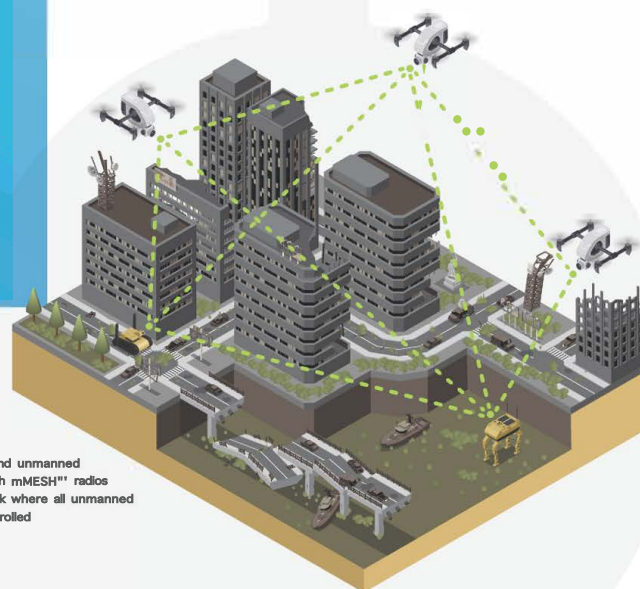






Boost air surveillance with wider coverage, for longer. With up to 50km operating radius in rural areas, drone-mounted 2W mMESH™ radios offer dual-functionality as drone control and video transmission platforms, as opposed to legacy technology that requires two radios. The resultant weight savings translate to longer operating and flight times. mMESH™ also allows the control of multiple drones with a single network, enabling swarm flying.

mMESH™ complements satellite communication systems by acting as a repeater, allowing drone videos and body-worn camera footage to be transmitted to a central control centre, providing unparalleled visibility over both air and ground territories.



Regardless of sea, air, or land unmanned drones, all can be equipped with mMESH™ radios and this will create a private network where all unmanned drones can be controlled

# UNMANNED PLATFORMS & ROBOTICS

- Reap weight savings for maximised flight time
- Enable swarm flying with a single network



# Robust. Rapid-Deploy. Self-Organising.

- High capacity, high speed, multi-node data transfer
- Self-forming, self-healing & self-contained
- No single point of failure
- No complex programming required
- Seamless interoperability with existing infrastructure
- High-capacity multi-domain IP connectivity in challenging environments that offers seamless interoperability with existing infrastructure
- MANET (Mobile AdHoc Networking) solution which has successfully been deployed in the most adverse environments

## mMESH™ Key Technical Features

- MIMO (up to 100Mbps)
- AES 128/ AES 256
- STDMA
- Roaming Network
- Multiple Waveform
- Up to 64 Nodes in One Network



**Sovereign  
Systems**

Sovereign Systems Pte Ltd  
Suntec Tower Three, #42-01  
8 Temasek Boulevard  
Singapore 038988

[connect@sovsys.co](mailto:connect@sovsys.co)

[www.sovsys.co](http://www.sovsys.co)