AGIS
Advanced Ground Information Systems, Inc.

**An Interoperable Disaster Response System
in the Palm of Your Hand**

LifeRing

Introduction to AGIS / LifeRing

After 9/11, we all learned that many lives were lost as a result of a breakdown in communications between the various different agencies that responded to this tragedy.

Hundreds of first responder agencies working within a few blocks of each other…all using different radios, channels, frequencies, encryptions and procedures…unable to communicate with each other.

We realized that:

Smartphones had the capability to provide a common communication tool necessary to effectively enable all these responders to share voice and data communication with one another.

Software could provide an interface and tool set for setting up groups and efficiently sharing information

IP communications would enable digital Push to Talk (PTT) preserving radio functionality.

For such a system to be viable for a large Market, it had to operate on a combination of First Responder radios, Cellular, Military, Iridium Satellite, MANET and other communications.

That we could design the system to be work with Low Speed and High Speed Communications and to utilize a Server to forward data between Smartphone and PC devices.

In 2004, we developed LIfeRing software to provide a Common Operational Picture to each user. Our first contracts ended up being with a Police force and a major DOD contractor who wanted to investigate its use for C4I.

What is LifeRing?

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A scalable C4I Common Operational Picture (COP) system.
Used by the U.S. Joint Chiefs of Staff J6 C4AD, DIA, Australia,
other Militaries and DHS.

LifeRing:

- Low Cost, Integrated, Familiar and Simple to use.
- Securely operates with PCs, Android, and iPhones.
- Uses Cell / Radios / SATCOM in any combination, and is encrypted.
- Exchanges location data, Emergency notifications, Messaging, Chat, PTT, Full Motion Video, Geo-fences, Whiteboarding, Orders Medical and Logistics information.
- Translates and Forwards data received from one C4I System to other C4I systems so that they all have a Common Operational Picture (COP).
- Provides a Military / First Responder Interface

LifeRing Operates on Windows PCs
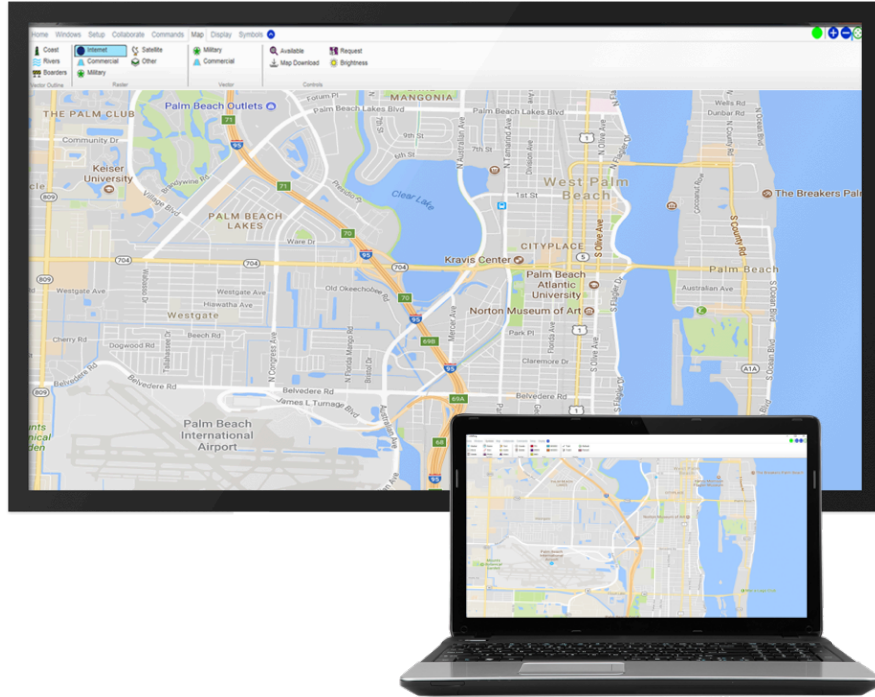
Inutitive Interface

Modeled after Microsoft's suite of programs to provide a familiar look and feel - making operations, set up and training faster and more efficient.

Full Functionality

Multi-layered software with a full suite of command, communication, tracking and mapping tools, PTT and Video

Command Ready

Turn a single laptop or desktop along with a large screen display into a small Command Center with Common Operation Picture Capabilities.

Uses Military and First Responder Radios, cellular, and Handheld Satellite communications in various combinations.

Proves the ability to establish Groups that enable communications between PCs.

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LifeRing Operates on Smartphones

Android and iOS Smartphones and Tablets are a perfect partner for PC based Command and Control Systems as they are/have:

- Lightweight
- Large Display Screen
- Multitasking Operating System
- Rugged
- Low Replacement Cost
- Voice & Data (Cellular, WiFi, Bluetooth)
- Integrated High Resolution Display
- Internal GPS and Audio Alerts
- Cameras, Compass, Accelerometer, and Gyro

LifeRing software provides encryption communications enabling these devices to act as handheld C4I Communications systems with 90% of the functionality of the LifeRing PC including built-In PTT and Video transmission and reception. Works with Android and iOS Smartphones and Tablets.

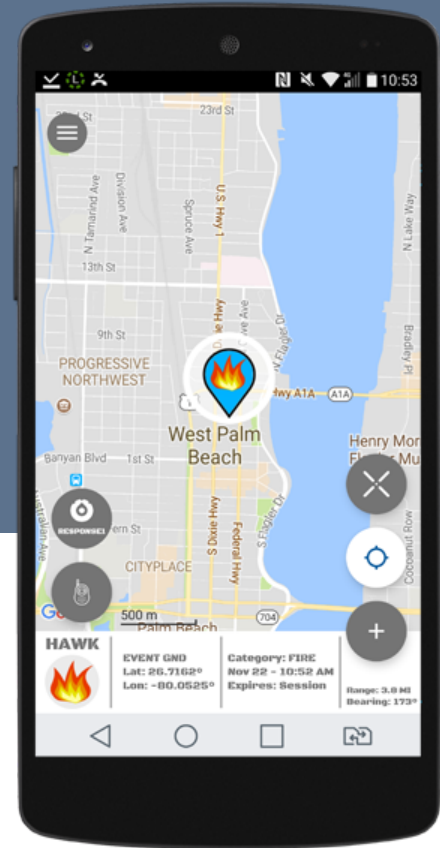## SMARTPHONES USERS TODAY

Already have their own device

Already have their own Voice & Data service plans (Cellular, WiFi, Bluetooth)
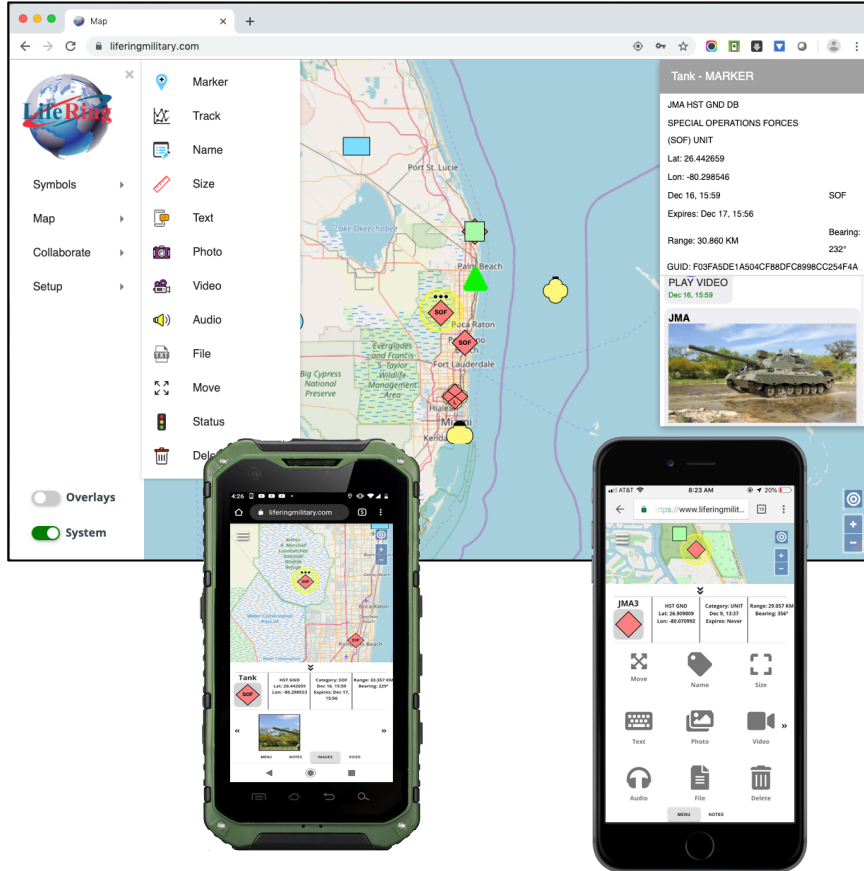
Are trained and knowledgeable on their own device

Typically have their own device with them at all times

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LifeRing Operates on Web Browsers

Cross-Client Compatible
Fully compatible with our existing PC, Android and iOS Clients including PTT between all.

Private and Secure
Requires no downloads or installation. When you turn off your device no tactical data is left on the device.

SDP Compatible
Compatible with Verizon's Software Defined Perimeter (SDP) which provides an on-demand, air-gapped, network designed to defeat network-based attacks.

Disaster Response

In a major disaster, emergency responders come from multiple agencies and some from other states. The operator/dispatcher role is now handled by an EOC made up of designated representatives from various agencies.

The problem is that each responder agency has disparate communication tools on different networks, channels, frequencies, encryption keys, etc… and they are unfamiliar with the each others procedures, capabilities, etc…

Disaster Response

LifeRing software is a single app that loads on any PC, Android or iOS device and enables real-time, situational-awareness between all smartphone, tablet and PC users to create a scalable C-4-I Common Operational Picture - or COP - system of the mapped area and the precise location of all responders. LifeRing resolves the type of communications (LTE cellular, First Responder P25 radios, and even handheld satellite and military radios). Furthermore, LifeRing establishes a common AES 256 bit encryption key between all users so that all can PTT between each other, chat, message, whiteboard, etc… enabling a Disaster-wide private secure communications.

When the National Guard is involved, LifeRing provides an interface between military radios and First Responder P25 radios.

Made in the US by US Citizens

Disaster Response

LifeRing enables an on-the-go ad hoc network to be set up for all responders to join and immediately and become part of a single responder group sharing and providing at the scene disaster response data to others in their group or between groups.

Disaster Response

Now all responders on the network share the same C.O.P. mapped display across cellular, P25 radios, military, radio, satellite communications data between each other and with the Command Center. LifeRing enables the Command Center to Message, Chat, PTT and create "No Enter – No Exit" alerts of geofenced areas and issue immediate response orders to all on the LifeRing network.
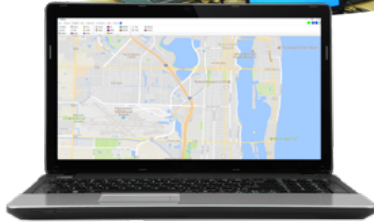
Disaster Response

The PC version of LifeRing offers a robust suite of command and control tools with optional integration to medical and logistics information systems and has the ability to see the whole Common Operational Picture of all the RESPONDERS along with their movements including entered markers, tracks, chats, messages, and whiteboards.
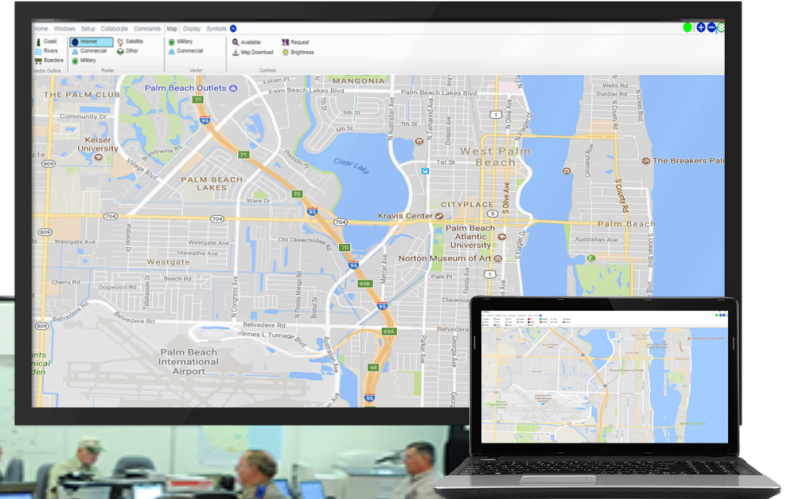
Notifications

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Notify allows the PC to send messages to large groups of users. The recipients of the message can be chosen by the either all current active users or by selecting a boundary that includes all users inside of it. Box Bounds and Poly Bounds permit you to define an area on your screen and to send a message to all users that are geographically located inside that area.

Three types of messages can be sent:

1. You can select to send the message to all active LifeRing Users. The data entered in the Text box is sent, using normal LifeRing Messages. If a LifeRing user has intermittent comms, the message is temporally held until the user reconnects to the server.

2. You can select to send a GCM Plain Text Message. The information is then sent, via GCM, to every handset that has ever connected to this LifeRing server. The message is sent using GCM Android and iOS notification technology and will be received if the recipient's Smartphone is active or when they turn their Smartphone on.

3. You can select to send a GCM LifeRing Wakeup Message to users not currently running LifeRing. It is received by Android and iOS Smartphones and is labeled "Priority Message." If they tap on the Notification, LifeRing is automatically activated on their Smartphone.
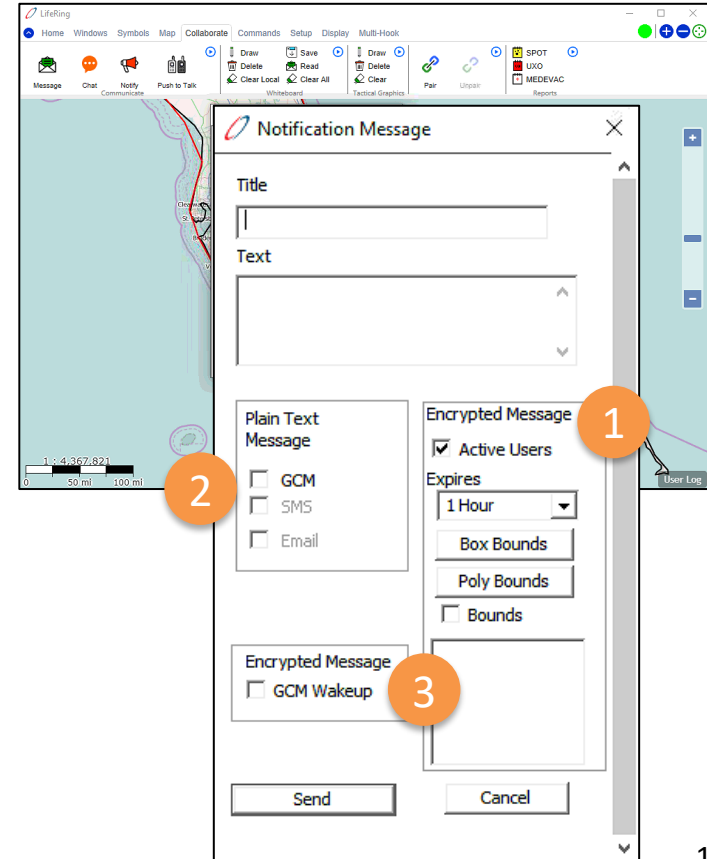
External Databases

We now have the ability to access data from databases outside of LifeRing to create an even more dynamic COP. Marker symbols and data can be imported quickly populate the map with known landmarks like Hospitals or Police Stations. We can also import Overlay files to show things like fire hydrants or electrical boxes.
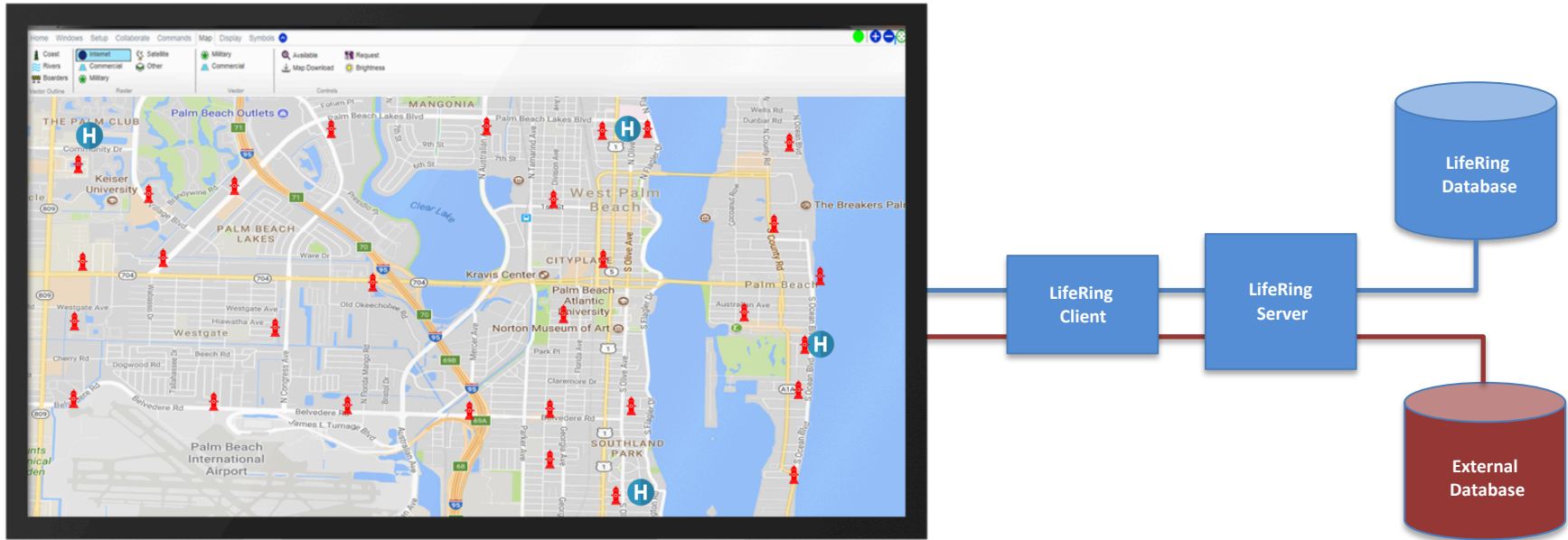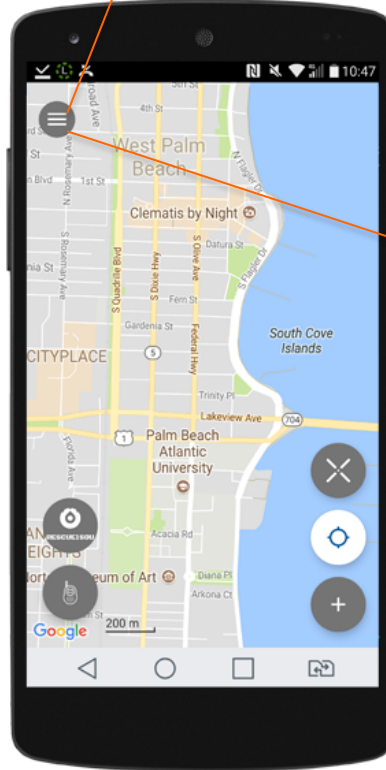
Disaster Response

The one- touch selection oriented display includes the main menu, PTT group button, PTT talk button, map-point selection button, center on map button and add marker button.
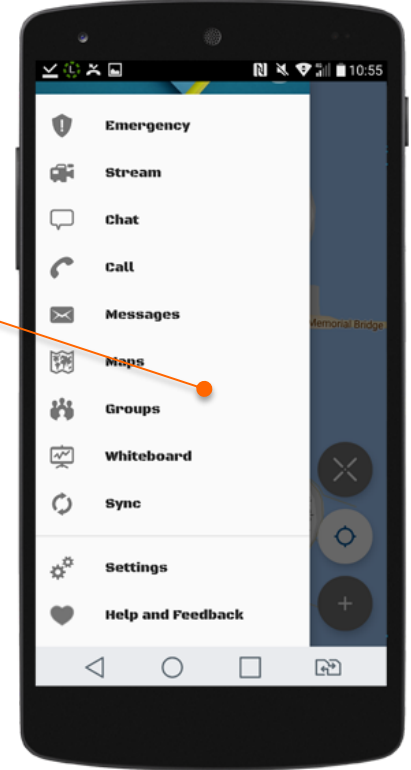
Main Menu Button

Map Point Button

Center on Self Button

Add Marker Button

PTT Group Button

PTT Talk Button

Emergency

Stream

Chat

Call

Messages

Maps

Groups

Whiteboard

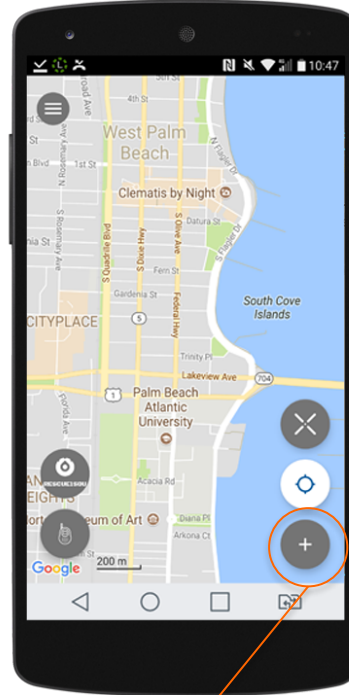Sync

Settings

Help and Feedback

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Disaster Response

A responder can add a marker to the map to alert other responders to a new incident or threat.
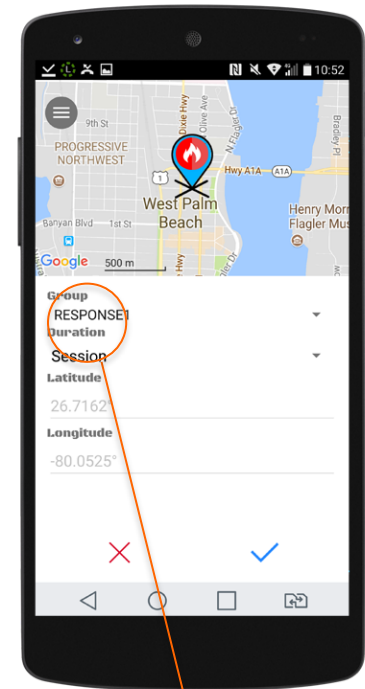
For instance, a traffic accident is blocking responders vehicles from getting to the scene.
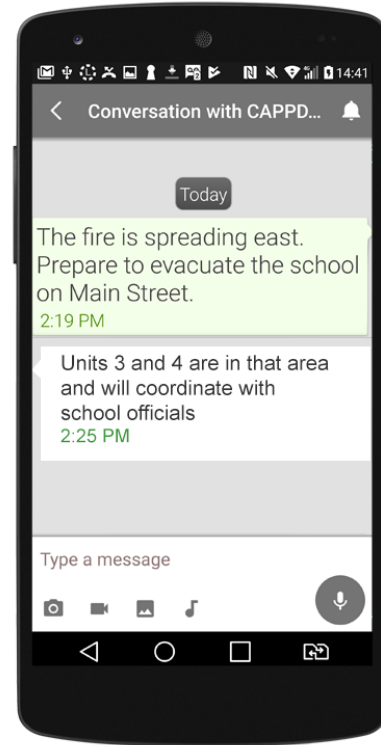
Tap the Add Marker Button

Choose the Symbol

Select the group and duration for it to be displayed

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Disaster Response

LifeRing provides in-app messaging between responders either one-to-one or a broadcast message to the entire group.
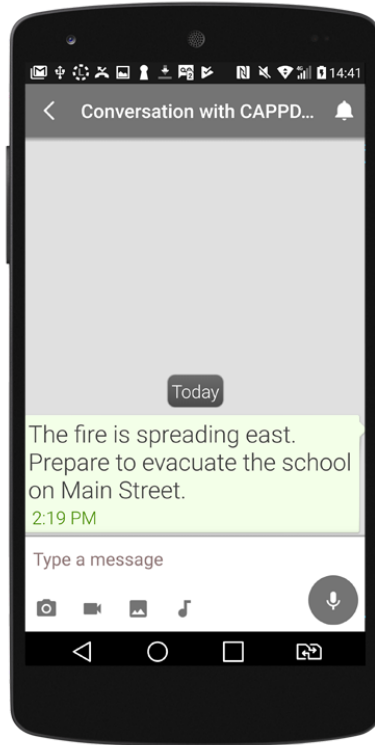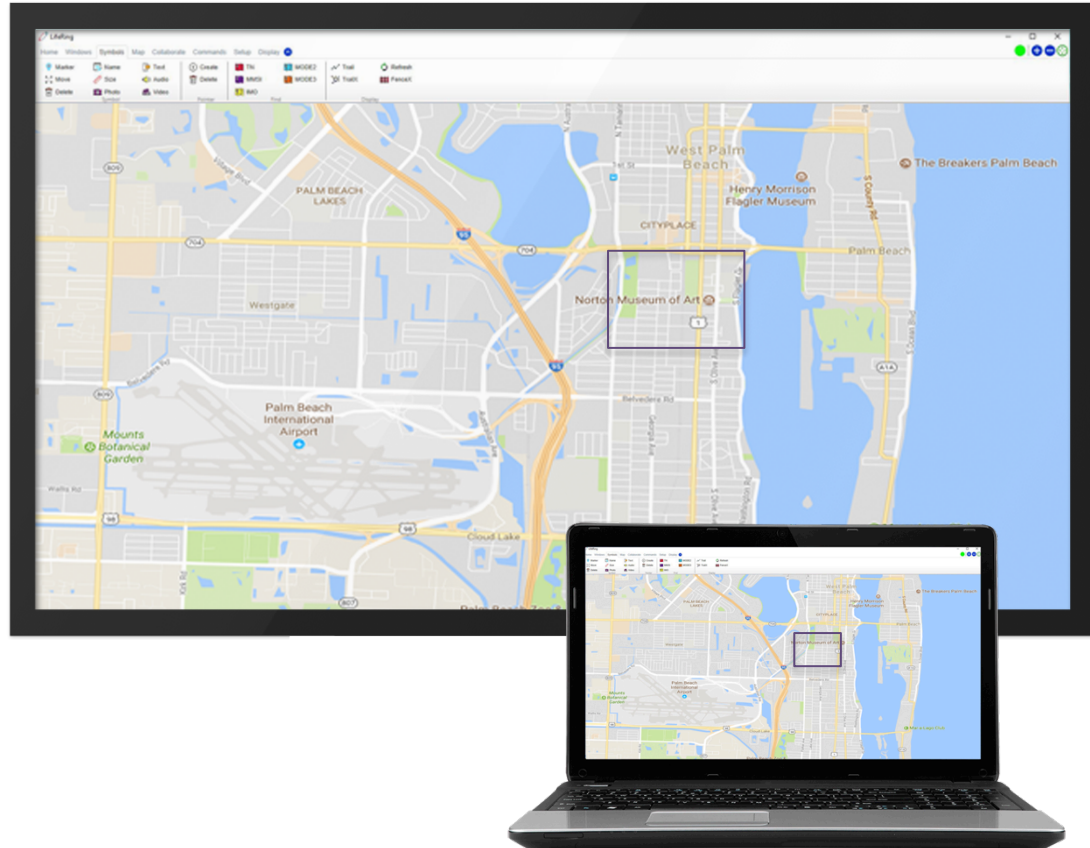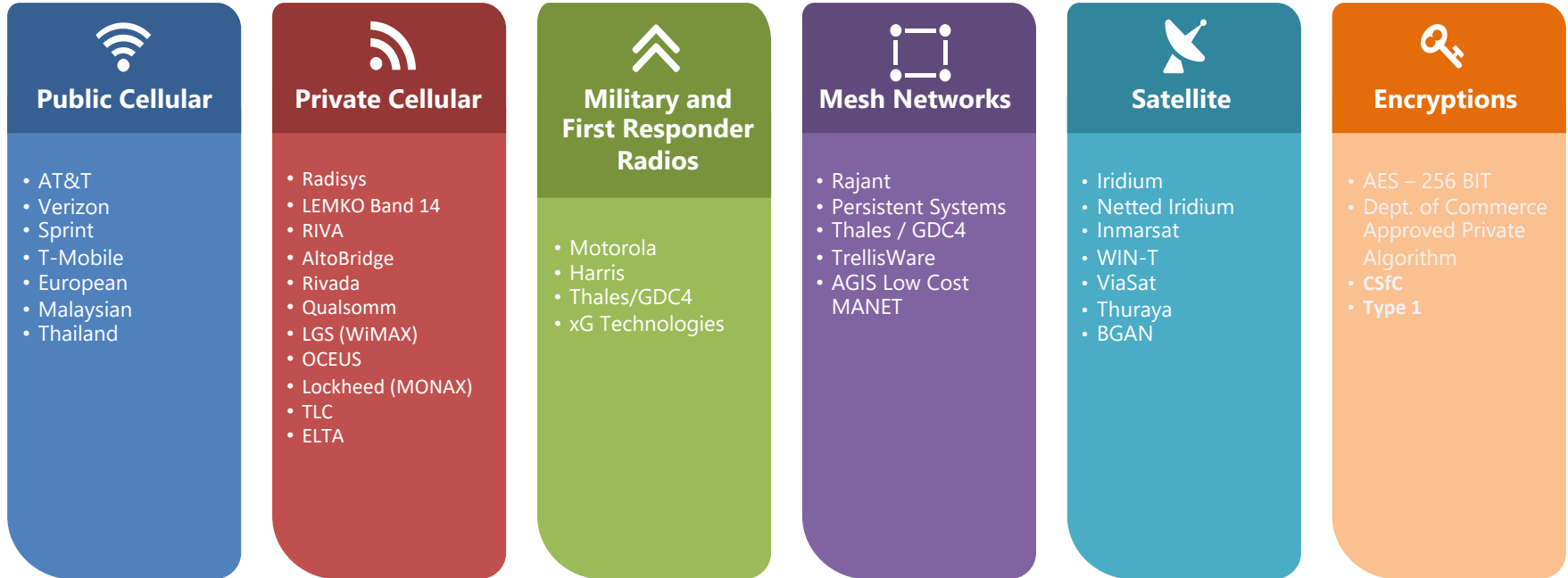
Disaster Response

The Command Center PC can add a GEO Fence around an area to indicate the fire spreading or a toxic cloud. All users on the network would see the danger zone.

If a user did enter the area, it will signal an alert to both them and the command center.

LifeRing Communication and Encryption Types

Public Cellular

- AT&T
- Verizon
- Sprint
- T-Mobile
- European
- Malaysian
- Thailand

Private Cellular

- Radisys
- LEMKO Band 14
- RIVA
- AltoBridge
- Rivada
- Qualsomm
- LGS (WiMAX)
- OCEUS
- Lockheed (MONAX)
- TLC
- ELTA

Military and First Responder Radios

- Motorola
- Harris
- Thales/GDC4
- xG Technologies

Mesh Networks

- Rajant
- Persistent Systems
- Thales / GDC4
- TrellisWare
- AGIS Low Cost MANET

Satellite

- Iridium
- Netted Iridium
- Inmarsat
- WIN-T
- ViaSat
- Thuraya
- BGAN

Encryptions

- AES – 256 BIT
- Dept. of Commerce Approved Private Algorithm
- **CSfC**
- **Type 1**

LifeRing has successfully used all the above communication types in various combinations

Some of LifeRing's Features

- Runs on PC's, Tablets, Android and iPhone Devices
- Integrated Push-To-Talk
- Integrated Full Motion Video
- Real time Common Operational Picture (COP)
- Emergency Notifications
- Built-in Help Guide
- Request Immediate Position Report
- Transmit and Receive Commands
- Works with or without Internet
- Ability to operate with or without a Server
- Server to Server Communications
- Server Failover
- Data Recorded and Time Stamped for Analysis
- Digital Geo-Fence Crossing Alert
- Geo-Positioned Photos

- Medical and Logistics Data
- Integrated Worldwide Street Maps
- Maps Automatically Downloaded or Pre-Stored
- Share Photographs with Text
- Tap Map to enter Geo-Positioned Marker
- Pre-Stored Tactical Mission Data
- Join Various Groups
- Send/Receive Messages and Chat
- Whiteboards
- Communications denied environment. Data entered automatically synchronized when communications are established
- With largely common user interface though-out
- Mission Replay Data
- Nautical charts for USA waters

Brief Examples of LifeRing Used Successfully

Company/Organization	Description of Usage	Locations Used	Purpose
ADI Tech. DOE (Dept. Of Energy)	First Responders	Washington, DC	Disaster Response
OCEUS	USS Fort Worth	ASIA	Operations
Defense Intelligence Agency (DIA)	Training	Quantico, VA	Training
US Navy NAVAIR	Ground, Air, Ship, Sub Data Display	SAIL Facility, Pax River	Test Facility Use
US Navy - Sub to OCEUS	Install LifeRing on 3 USN Ships	Norfolk, VA	Pirate Interdiction
JCS J6 C4AD	Multiple Bold Quest and Net Work Integrations, Evaluations, and other deployments	Suffolk, VA	Jolted Tactics
JCS (Joint Chief of Staff)	CWIDs (Coalition Warrior Interface Demonstrations)	Various Locations	Demonstration of State of Art
Special Forces	TNT Exercises	Various US Locations	Demonstration of State of Art
Honolulu Police Dept. and Others	President Obama's (APEC) Asian Pacific Economic Council meeting with Asian Heads of State	Hawaiian Islands	US Joint Agencies protection of President and other Heads of State
ARMY and Motorola	ARMY National Integration Evaluation (NIE) 12.1	FBTX and WSMR	Demonstration
US Navy NCIS	President Obama's Inauguration	Washington, DC	Protection of the President
Tactronics for Special Forces Operation	Surveillance and tracking combined with Harris Radios	Middle East	RESTRICTED
AAR Brown	Gustav and Ike Hurricane Response	Huntsville, AL	Disaster Response

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Contact Us

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To see LifeRing in action, check out our demo videos at *www.agisinc.com/videos*

Made in the USA by US Citizens