

### LifeRing C4I Communications Flexibility Under Hostile Conditions

Military and Disaster Response organizations have a demanding operational need for assured communications in time of conflict. Satellite failure, jamming, severe weather and terrain can all affect stable communications. Knowing that assured communications is a critical need, AGIS has spent more than a decade and millions of dollars to develop methods to assure that the LifeRing users are able to use the optimum communications between each other and to rapidly and automatically shift communications if communications are lost.

1. LifeRing uses the following methods to assure continuity of communications:

a. LifeRing Web Clients can access a remote Web Server (i.e. AWS GovCloud, etc.) or an on-premises Web Server. Among the many advantages of the Web Client is the ability to update and upgrade the C4I software centrally at the Web Server rather than individually (possibly 10,000's of clients). The Web Server and LifeRing App Server can exchange data.

b. The LifeRing App on PC, Android and iPhone Clients can communicate with a remote App Cloud Server or an on-premises App Server. The big advantages of using the App Server are: 1. Map zooms and offsets can be handled by the Client, 2. It enables the Clients to communicate with it using low bandwidth communications (i.e. radios) and 3. it can communicate with other U.S. and NATO tactical data links. Thus, through the App Server, the Web Server is also able to communicate with other U.S. and NATO tactical data links.

c. LifeRing provides for up and down the Chain of Command communications when using App Servers at the different echelon levels. For example, Platoons need to pass information up the Command Chain to higher echelon level units like Brigades and, conversely, Brigades need to send data down the Chain of Command to Platoons. To resolve this flow of communications issue, LifeRing Servers are provided with Server to Server (STS) communications software which enables the Servers at each Command level to communicate with each other.

2. LifeRing can use different Types of communications: a. Military radios, P25 and other radios, MESH, cellular LTE and 5G and Satellite. These communication speeds can range between 2.4 Kbps to 5G 10 Gbps and b. Different communications protocols that are used by different types of radios, i.e. Link-16 vs EPLRS vs JTRS.

3. LifeRing Servers resolve the issues associated with the different communications Types, speeds and protocols: LifeRing translates the received information into our Multi Domain Data Link (MDDL) format and then converts MDDL into the appropriate protocol and format for transmission to the interfacing system. When the LifeRing Server connects to each of the different communications devices it determines the speed of each. As an example, when information is received from a system using 5G at Gigabits per second, it is processed by the Server to determine the optimum information for transmission to an Iridium handheld capable of only receiving data at 2,400 bits per second. This includes an adaptive range filtering so that the map symbols closest to the Iridium user are transmitted to the user.

4. For U.S. and allied militaries, the LifeRing Server provides interfaces, data translation and forwarding between Link-16, OTH Gold, JVMF, CoT and NATO NFFI, ADEM and NVG providing to all a true Common Operational Picture (COP) thus enabling all interfacing systems to have a **Multi-National** Common Operating Picture (COP).

5. When communications to the primary Server are lost, LifeRing Clients automatically shift primary Server communications to a designated alternative communications Server.

### LifeRing Provides Communications under Hostile Conditions!

You can try using an unclassified version of our Web Client by going to <https://liferingmilitary.com> or <https://liferingfirstresponder.com> or for a copy of the unclassified APP go to [www.agisinc.com/download](http://www.agisinc.com/download). All other inquiries, please contact Jason A'Hearn [jahearn@agisinc.com](mailto:jahearn@agisinc.com) or Cap Beyer at [beyerm@agisinc.com](mailto:beyerm@agisinc.com) or by phone at 561-744-3213.