

***iNTRlink* Redefines Resource Sharing for Emergency Preparedness and Incident Management**

Secured, Controllable Interoperability
by and between stakeholders
and critical community members.
Provided by American Wireless Inc.
incorporating the system resources of
Mutualink.



iNTRlink OVERVIEW

Introduction:

iNTRlink is the unique configuration of Mutualink products and other applications into system solutions provided by American Wireless Inc. American Wireless Inc is an authorized distributor of the Mutualink product line.

iNTRlink Purpose:

iNTRlink is a secure IP based interoperable multimedia communications sharing platform that connects disparate two-way radio, telephone, mobile phones, public address and intercom systems and video systems for real time collaboration and enhanced situational awareness. iNTRlink is designed to provide pervasive, affordable and scalable interoperable emergency preparedness and response communications and information sharing within, between and among communities and all levels of government. iNTRlink is also designed to meet the objectives of an “all risks, all hazards” emergency response communications environment as detailed and envisioned under the NRF, NIMS, NECP and NIPP. Under the US National Emergency Policy, a scalable emergency preparedness and response capability is envisioned that enables both public agencies and key private community assets to collaborate and coordinate in times of emergency. iNTRlink is aligned with these goals.

Through the iNTRlink / Mutualink solution, real time collaboration and information capabilities are achieved that result in enhanced situational awareness and coordinated response and force multipliers. These unique solutions oriented products are configured to enable the secure sharing of real time video feeds across responding security agencies coupled with the ability to communicate between and among forces on the ground, incident command and targeted entities, providing timely and rich information that enables better decision making, force response and positioning, and tactical action. Critical community assets, including hospitals, schools, utilities, malls, stadiums and industrial storage and plant locations can be seamlessly linked to first responders.

Peer-to-Peer Architecture and Invitation Driven Model

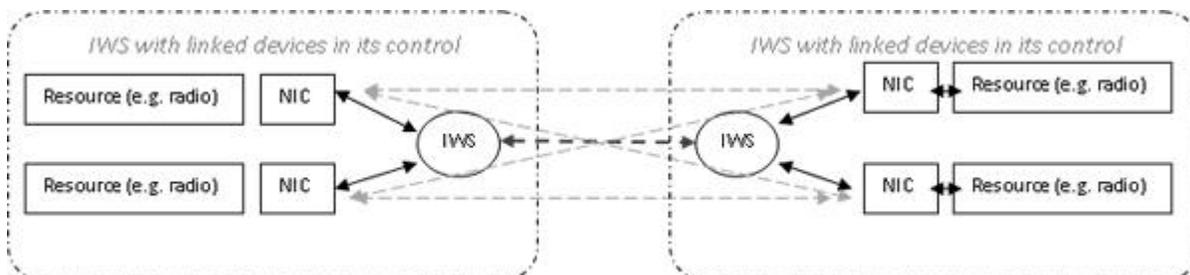
The iNTRlink / Mutualink configuration is a scalable, multi-peer based architecture that employs a unique, invitation and incident based ad-hoc interoperability capability. This architecture and functional approach offers several important benefits for public safety and other critical infrastructure and key resources. First, the system has no single point of control or failure, because there is no centralized server or switch required. Rather, the intelligence is maintained at the edge of the network. Secondly, under the multi-peer based architecture, an ad-hoc invitation model is enabled whereby each participant retains complete control over their communication resources and can choose on an incident level basis to participate or not participate.

Architecture Overview



System Components

The fundamental components of the system consist of (1) Interoperable Workstations (IWS), (2) Network interface Controllers (NICs), (3) a Network Interface Device (NID) and (4) a Network Management Service (NMS).



IWS Intelligent Workstation is a dedicated computer workstation operating a secure Linux variant known as CentOS. The IWS is a dispatch station that controls various communications resources that are connected to the IWS endpoint via the NICs. The IWS employs a computer screen and computer peripheral devices, including a mouse, speakers and microphone, through which a user can communicate with other IWS in the interoperable network as well as endpoint communication devices such as two-way radios. The IWS enables a user to initiate an interoperable communication session and invite other participants into the session, and allows a user to accept or reject an incident session invitation.



Model ACM4432

Using drag and drop functionality, an IWS user can bring communication devices into the interoperable communications session enabling those device users to talk with the IWS dispatch user as well as other IWS dispatch users and other communications devices that are participating in the communications session.

NICs Network Interface Controllers are devices that enable various communication devices, such as radios, telephones and video feeds, to be connected into the interoperable network and enable communications and data to be transmitted between the device and its parent IWS and other interoperable network IWS and devices. NICs are IP gateway devices that interface with, decode and encode, communications inputs and outputs into an IP based protocol.



iNTRlink's NICs include the following:

RNIC (Radio NIC) - AWC4421

The RNIC interfaces with diverse types of land mobile radio devices.

VNIC (Video NIC) - AWC4411

The VNIC interfaces with diverse types of multimedia video formats.

TNIC (Telephone NIC) - AWC4451

The TNIC interfaces with digital and analog telephone systems.

INIC – (Intercom NIC) - AWC4441

The INIC interfaces with public announcement and intercom.

NMS Network Management Services are overlay services which are administered via secure administration software embedded in each IWS and NIC.

NMS software provides the following (3) functions:

- (1) Updating network directory information to distributed end-devices,
- (2) Managing software updates,
- (3) Managing network quality and monitoring services.

NID The Network Interface Device is a dedicated and configured router which handles IP Multicast. A NID is installed at the user's premises and interfaces with one or more IWS within the same network space and/or NICs. Network participants are linked together via private network connections. Mutualink employs AES 256 encryption for secure communications.

User Interface

The system employs a graphical user interface control design at the IWS level. The interface is designed to be intuitive and very easy to use. Through drag and drop functionality, IWS dispatch users can quickly add, eliminate and initiate incident based multi-media interoperable communications sessions.

A sample of the interface is shown below

<p>Incident Window – an incident defined communications and control window to manage, invite and remove participating communication assets.</p>
<p>New Incident Button – establishes a new incident window from which to invite participants in the network</p>
<p>Network Participants List – a “working group” of all other IWS dispatch resources in the network community. For example, invite police from the next community.</p>
<p>Your Communication Assets List – a list of all communication resources under the IWS dispatcher’s control. Drag and drop an asset into an incident such as a radio or video resource.</p>
<p>Auto Logging of Events - all events are logged during the session and viewable.</p>
<p>Incident Text Messaging – provides secure text messaging between dispatch stations.</p>



File Share – enables any standard data file type to be sent and shared with others, such as floor plans, photos, and documents.

Video Sharing Display – enables real time video feeds to be instantly shared and be seen by others.

Smartphone Commander™

Mutualink's new mobile Smartphone Commander™ is a smartphone powered interoperable gateway controller providing anywhere, anytime remote functionality on Mutualink's secure multi-media emergency communications resource sharing platform. The Smartphone Commander™ enables on-scene incident commanders to create incident based interoperable sessions, invite participants and contribute and remove communication assets on the fly, including two-way radio, video, telephony and data. Mutualink's Smartphone Commander™ initially operates on Google's Android™ platform, furthering Mutualink's market leading design philosophy of maintaining a standards-based architecture that easily integrates into Mutualink's peer-to-peer based interoperability environment providing significant cost advantages for individual agencies.

Mutualink's unique multimedia interoperable emergency communications platform enables real-time interoperable communications sharing across disparate communications assets and agencies, including two radios, mobile and landline phones, video and data, on a dynamic "invitation" and incident basis.

Through its' unique architecture and operational model, each agency retains control of its communications assets, resolving thorny autonomy and control issues that often prevent or limit multiple agencies from working together.

Participants on Mutualink's interoperable communication resource sharing network maintain radio, video and other communication resource control by accepting or rejecting invitations, contributing or removing their communication assets and exiting incidents at their discretion. Ad-hoc interoperable communications are instantly established and may be modified in real time based on the need, stage and condition of incidents. Mutualink's distributed ad-hoc multi-peer based architecture eliminates single agency or "trusted third party" control, fostering community wide participation.



Associated Services & Training

User Training AWI and Mutualink provide valuable key training and preparedness exercises with its systems. Use level training is provided at the time of installation by AWI. This process takes approximately 1 hour with personnel, which is significantly less than most interoperable technologies, most others requiring extensive technical and user training due to complexity of use.

ICS Certification All non-public safety users such as school administrators, security guards or others using the iNTRlink system should be required to obtain ICS-700 and ICS-100 FEMA certification in order to ensure the understanding of incident command and control. AWI provides training assistance to non-public safety users to help them obtain their requisite knowledge and certifications.

Check-in Exercises Users participate in routine check-in exercises. These exercises, though only taking a minute or two, establish a state of readiness with the other users. Check-in exercises, initiated by Mutualink through its FEMA certified trainers, are among various groups of users using varying communications asset configurations. These include dispatch to dispatch, dispatch to dispatch with radios, multi-dispatch with radio check-ins.

Network Management IWS(s) and NIC(s) in the field are monitored in real time, and in the event of an outage, the customer is notified by Mutualink through its network communications personnel. This management function may also be taken over by the end user if they so desire.

Security Mutualink provides state of the art security. All communications are encrypted using NIST AES 256 ciphers. The operating system is a secure Linux variant and the system utilizes dedicated equipment, providing protection from intrusion and malicious attacks

Next Steps & Contact Information

American Wireless, Inc. is pleased to meet with interested parties and conduct a demonstration of the iNTRlink solution.

Please feel free to contact the representatives listed below to discuss this proposal and arrange for a meeting:

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Ruggedized—Deployable IWS—ACM4452R



Secure, Peer to Peer, Multi-Media Resource Sharing
Platform for Incident management, Emergency
Preparedness and Improved Situation Awareness

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