

BE HEARD IN THE FIELD



HUMANITARIAN SOLUTIONS

Communications Loss in Disaster

Natural disasters often damage the critical communications infrastructure needed to help coordinate a relief effort for those affected by the devastation. A High Frequency (HF) network is the only infrastructure independent communications solution that can provide support to natural disaster relief efforts.

PROBLEM

Natural disasters are frequent and devastating. They leave communities isolated and damage the critical infrastructure needed to provide aid to those affected. Communications towers are often damaged as a result of a disaster, with the physical damage to their infrastructure rendering them unable to provide the critical communications so desperately needed. Without communications, aid providers can't coordinate their efforts and contact remote and isolated communities affected by the disaster.

HOW WE SOLVE THE PROBLEM

Unlike conventional, VHF/UHF, cellular and satellite telephony, which all rely upon land-based infrastructure, a HF radio network requires no fixed infrastructure. As such it is often the only reliable means of communication when disaster strikes.

Communications over HF simply requires a HF radio and antenna at each location. No other fixed infrastructure is required, using the ionosphere to send radio signals thousands of kilometres if required. The unique nature of HF radio is such that it can be deployed in any location, establishing a communications link with any other HF radio on the network, no matter where in the world they are

located. The link can be purely radio signal or with recent advancement, the radio signal can link into an IP network for greater penetration to HF users on the network.

The software defined radio's easy-to-use interface makes using it as simple as using a cell phone, allowing a user to make calls and send messages intuitively. Teamed with Codan's unique Digital Voice technology, the HF radios provide clear and reliable voice communications, with voice clarity comparable to a cellular network.

The HF radio's deployable nature enables a base of operations to be established at any location, with preconfigured radios deployed outward to remote locations — all talking back to base and with each other to coordinate a relief effort. In the case of disasters, aid workers are able to travel to harshly affected locations and relay aid requirements back to base to support the local community.

A unique feature of Codan HF radios is the advanced features for email and image upload. Photos of the area can be taken and uploaded to an email client on a laptop connected to a Codan HF radio. Using the HF radio link, the images can be sent back to base to provide complete situational awareness of the devastation and the help needed.

In addition, should aid workers have their own emergency during the recovery, the Codan HF handset has a one-touch emergency button. When activated, this will transmit GPS coordinates to enable base operations to pinpoint the location of their personnel, giving them the ability to track agents' movements and dispatch assistance to their exact location.

To ensure the availability of the HF radio network, vehicle deployments source power directly from the vehicle battery and remain operational even when the vehicle is switched off. Radios installed in base operations can be connected to a power supply with solar power backup to ensure the continuous operation of the radio during disaster recovery.

When configured in a system with Codan's robust antenna and mast solutions for base and mobile operations, Codan HF radios provide the most easy to use and reliable solution for providing aid anywhere in the world.

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HF Advantages Over Satellite

With advancements in satellite availability, HF was becoming a least preferred option for communications in remote locations. The launch of Codan second generation Digital Voice and software defined radio platform has elevated HF beyond the capabilities, availability and clarity of satellite phone communications.

PROBLEM

The competing adjacent technology for HF radios is satellite phones. While, like HF, satellite provides an option for communications in remote areas, their differentiator has historically been one of voice quality over traditional analogue HF radio.

HOW WE SOLVE THE PROBLEM

With the introduction of the latest generation digital voice technology the capability gap between satellite and HF has closed up significantly. Digital voice over HF has no crackle or hiss just high clarity audio, meaning that inexperienced operators can clearly hear what is being said and it can be digitally encrypted to ensure the highest level of operational security. Vocoding rates, hence voice quality, are equivalent to satellite communications, at 2400 bps the difference is indiscernible. For the first time HF can be directly compared with satellite communications for voice quality and security.

In addition to the audio clarity that HF provides, all voice traffic can be fully AES 256 encrypted and therefore an operator can freely discuss any operational matter without fear of breaching communications security (COMSEC).

Another attractive aspect of HF is that it offers OH&S safety compliance using GPS location services for deployed personnel operating in remote areas, this is a clear benefit over satellite services.

Importantly, HF has no ongoing costs and all data usage is free. Complex situations often can't be communicated by voice alone; HF provides the option to send images over the HF link to provide additional situational awareness. Unlike satellite, the data usage for images is not an additional cost and is not restricted by data usage limits.

Another point for consideration is one of network ownership. With a HF network the owner has full sight of every aspect and is not dependent upon third party infrastructure as with satellite communication. This level of control is key when mission critical communications are involved.

The control offered within a HF network also enables real time broadcast capability allowing the radios to be configured to a pre-set frequency. This results in calls being made without delay on analogue voice networks and only a small delay equivalent to a ring tone on digital networks. This level of configuration enables ease of use for all radio operators in the field.

With remote communications the key requirement for satellite phones, their availability is volatile compared to HF. Satellites are renowned for their “dead” spots and service “drop outs”, furthermore there is no network of base stations and mobile HF radios to rely on. Thus, in an emergency, if there is no satellite coverage, there’s no communicating. HF radios with digital voice on the other hand have been proven to provide a communications link in even the most challenging environments and conditions. The combination of HF and VHF on a communications network increases coverage strength by providing VHF PTT communications for short range transmission and HF over long distances.

On a cost for service and setup comparison, HF has an initial higher outlay, however once setup, HF radio has no ongoing costs, compared to satellite phones which require an ongoing monthly subscription fee. Furthermore, HF networks can be connected to emergency providers to provide one-touch emergency response to the users location, without any additional cost.

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HUMANITARIAN SOLUTIONS

No Communications Coverage

Humanitarian agencies need to trust their personnel are safe and secure at all times. A long range digital radio solution provides reliable voice and data communications for workers in the field, ensuring they can call for assistance and have their location known from even the most remote locations.

PROBLEM

Humanitarian agencies work in the most remote and hostile locations in the world. Their security and protection is paramount, yet often their personnel find themselves in situations where their safety is compromised and they need to call for assistance. Relying on a cellular network or short range communications, such as VHF/UHF, introduces undue risk that their calls won't get through due to network congestion or being out of range. Without communications, personnel are left alone in a threatening environment, with their base of operations unaware of their location and situation.

HOW WE SOLVE THE PROBLEM

By equipping humanitarian aid vehicles with a High Frequency (HF) radio, personnel working in the field have access to reliable communications, from any location — no matter how remote or challenging. The HF radio uses long range digital radio communications to connect workers with their base of operations and with other vehicles in the area.

A Codan Envoy HF radio is specifically designed for the most challenging environments, enabling communications back to base over 10,000 km in optimal conditions, meaning no matter where personnel are operating, they have the security of being able to call for assistance and to ensure base operations is aware of their situation.

To provide the optimal HF coverage, the Envoy is designed to deliver the best RF performance of any HF radio, ensuring the communications signal is stronger and more reliable. Teamed with Codan's unique Digital Voice technology, Envoy provides clear and reliable voice communications with voice clarity comparable to a cellular network.

In addition, an Envoy transmits GPS coordinates to enable base operations to pinpoint the location of their personnel, track their movements and also dispatch assistance to their exact location. The one-touch emergency button on the Envoy handset also ensures that when safety concerns arise, personnel can alert their base of operations of an emergency. It can also be customised to instantaneously send an alert with GPS coordinates to a pre-designated contact.

During times of emergency, or when personnel are safely performing their work, the easy operation of an Envoy radio ensures users can easily and quickly make a voice call or send text messages, as simple as using a cell phone. The icon based handset and console, designed for tough environments are intuitive to use with easy navigation and quick dial buttons. The interface can be customised to any language, allowing for optimal use of the radio and communications across languages.

To ensure the availability of the radio, vehicle deployments source power directly from the vehicle battery and remain operational even when the vehicle is switched off. Radios installed in base operations can be connected to a power supply with solar power backup to ensure the continuous operation of the radio.

Configured in a system with Codan's robust antenna and mast solutions for base and mobile operations, the Codan Envoy provides the most easy to use and reliable solution for communications from anywhere in the world.