SOLUTION USE CASE

# EMBASSY & DIPLOMATIC MISSIONS HIGH FREQUENCY SOLUTION

## SUMMARY

In disaster-effected locations such as satellite denied environments, country instability or terrorist atrocities; diplomatic missions rely on robust and critical communications infrastructure to assist in relief effort co-ordination. A High Frequency (HF) network is an entirely independent communications solution that can provide reliable and robust connections to external support services.

## EMBASSY REQUIREMENTS

Diplomatic missions can be located in some of the most remote and hostile locations globally. Their security and protection is paramount, yet often their personnel find themselves in situations where their information and personal security are compromised. These personnel require robust, reliable and secure communications.

Host nation infrastructure, costly satellite and GSM networks, short range, Very High (VHF) and Ultra High Frequencies (UHF) and Line of Sight (LoS) communications introduce undue risks. Having only these modes of communications creates a higher risk of interception, network congestion or simply being out of range.

With the majority of radio providers, a "one-size fits all" system, these typically require costly and regular software updates and hardware maintenance resulting in unplanned, planned or service delays due to system downtimes. These interruptions cost money, time and most importantly compromise communications and jeopardise personnel security.

## CODAN COMMUNICATIONS SYSTEM SOLUTION

By utilising a High Frequency (HF) radio network, it removes the dependency on host nation infrastructure and as previously mentioned possible compromise of critical information. The HF network supports secure voice and data communications between diplomatic missions in the local region and with longer distance, inter-continental missions enabling daily work and reporting and the coordination of extraction of mission critical staff.

Unlike conventional cellular, satellite and Line of Sight (VHF & UHF) technology, all of which rely on costly land based infrastructure, a HF radio requires no fixed and / or shared infrastructure, and as such, it is often the only reliable means of communications. HF communications simply require a transceiver and antenna system at each location; no other fixed infrastructure is required. The unique nature of HF radio is such that it can be deployed in any location globally, and the advancements in HF technology, including 2nd and 3rd Generation Automatic Link Establishment (ALE), enabling secure voice and data networks to be established efficiently. Other advancements include integration into an Internet Protocol (IP) network, be that Intranet or Internet, allowing greater flexibility to the network users.

Codan Communications Software Defined Radios (SDR) ease of use interface makes operating the radio as simple as using a cell phone, allowing a user to make voice calls, sending data messages and situational awareness information intuitively. Utilising Codan's unique Digital Voice technology, their HF radio provides clear and reliable voice communications, with cellular network comparable clarity.

Dependant on communications distance requirements, Codan can support and supply a variety of amplified power systems and antenna requirements. Codan's success and experience within HF communications have enabled a portfolio of pre-defined mission configurations to be defined dependant on range and requirement:

- Primary Diplomatic Mission – typical mission Headquarters. 1kW System with directional log periodic antenna (LPA)

- Short to Medium Range Mission – (<1,000km) – 125W System with 9.5m whip and antenna tuner.

- Medium to Long Range Mission – (1,000km – 2,000km) – 500W System with 9.5m whip and antenna tuner.

- Long Range Mission – (2,000km – 3,000km) – 1kW System with directional LPA

- Very Long Range Mission – (>3,000km) – 1kW System with directional LPA

## ADDITIONAL CODAN COMMUNICATIONS NETWORK ENHANCEMENTS

The Codan Communications interoperability solution (RIOS) provides seamless interoperability between a range of communications devices including other vendor radios, cell phones and computers, enabling a fully integrated secure communications network.

Codan Communications SprintChat® and SprintNet® utilise the benefits of the 3rd Generation ALE waveform to provide fast and secure HF data communications, including Peer-2-Peer email, file transfer and chat messaging. Short Messaging Service (SMS) and Internet email are supported via the SprintNet® gateway. The flexibility and interoperability benefits of the Codan Sprint solution provides a powerful extension to your HF network.

All Over-The-Air (OTA) traffic can be encrypted using AES-256 encryption, giving peace of mind that the security and integrity of your traffic is being maintained, while Codan proprietary techniques ensure protection from possible unwanted attempts to disrupt your network ALE links by hostile third parties utilising a user programmable 56 bit Link Protection Key.
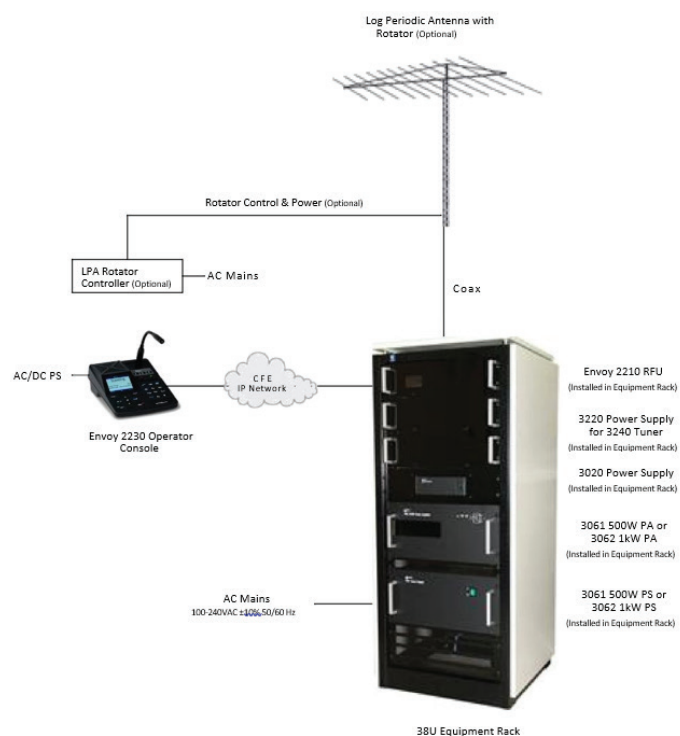
Codan Communications Virtual Control Point (VCP) application enables operation of your Codan HF software defined transceiver with the convenience of a PC or tablet style device, using either a wired or Wi-Fi connection, VCP seamlessly integrates your device and Codan transceiver allowing full radio functionality at remote locations or local to the radio. VCP allows simultaneous control across multiple devices or control of multiple transceivers from one device.

Codan Communications XTEND® Smartphone Application allows a user to operate their Codan software defined transceiver via smartphone or tablet. The XTEND® application enables the user to operate the connected radio in all commonly used voice modes, and also allows for text based messaging. Remote GPS position data and real time situational awareness from other HF station on the network can also be quickly and easily displayed on the smartphone via the Google Maps application.
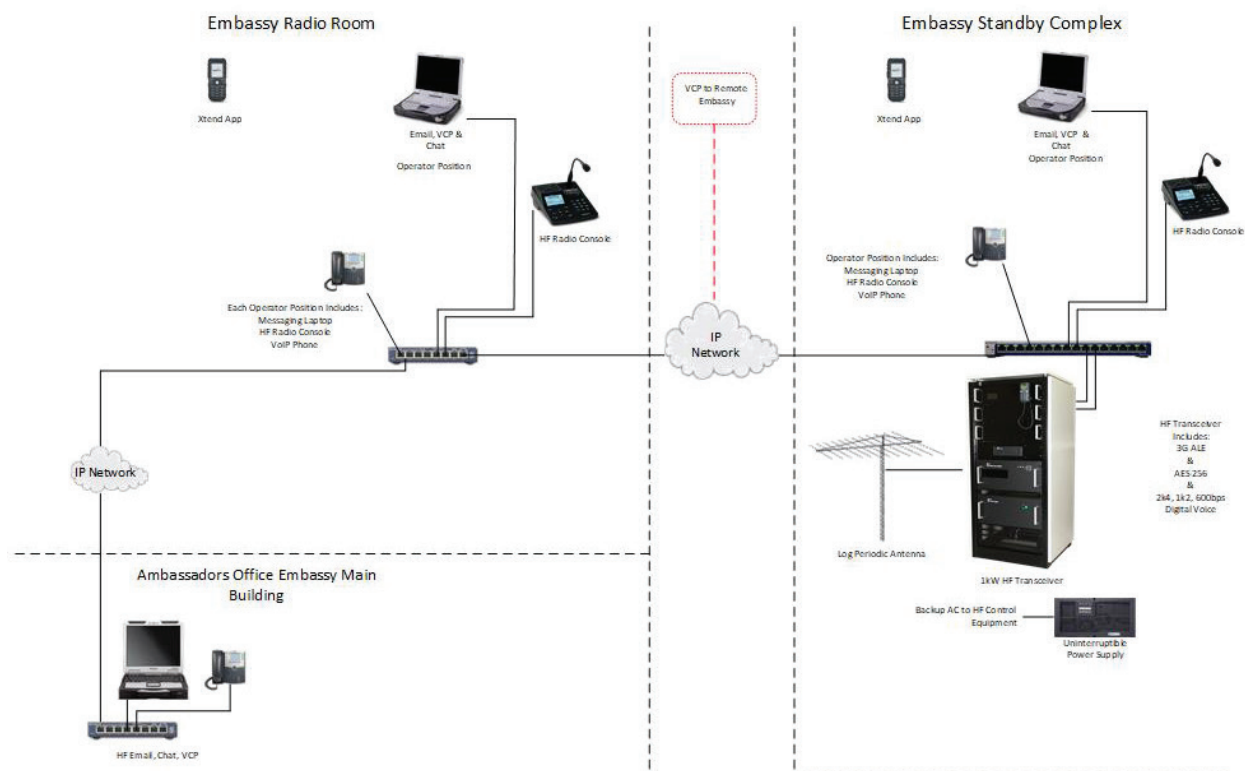
Codan Communications experience and expert knowledge in the provision of communication solutions ensures that our customer needs are satisfied.

Our Embassy and Diplomatic solution addresses the requirements for independent, reliable and robust communications enabling secure voice and data traffic in some of the harshest and hostile environments globally.

# 1. Primary Diplomatic Mission

Log Periodic Antenna with
Rotator (Optional)

Rotator Control & Power (Optional)

LPA Rotator
Controller (Optional) — AC Mains

Coax

AC/DC PS

C F E
IP Network

Envoy 2230 Operator
Console

Envoy 2210 RFU
(Installed in Equipment Rack)

3220 Power Supply
for 3240 Tuner
(Installed in Equipment Rack)

3020 Power Supply
(Installed in Equipment Rack)

3061 500W PA or
3062 1kW PA
(Installed in Equipment Rack)

AC Mains
100-240VAC ±10%,50/60 Hz

3061 500W PS or
3062 1kW PS
(Installed in Equipment Rack)

38U Equipment Rack

# 2. Embassy Remote 1kW Configuration

Embassy Radio Room

Xtend App

Email, VCP &
Chat
Operator Position

HF Radio Console

Each Operator Position Includes:
Messaging Laptop
HF Radio Console
VoIP Phone

IP Network

Ambassadors Office Embassy Main
Building

HF Email, Chat, VCP

VCP to Remote
Embassy

IP
Network

Embassy Standby Complex

Xtend App

Email, VCP &
Chat
Operator Position

HF Radio Console

Operator Position Includes:
Messaging Laptop
HF Radio Console
VoIP Phone

HF Transceiver
Includes:
3G ALE
&
AES-256
&
2k4, 1k2, 600bps
Digital Voice

Log Periodic Antenna

1kW HF Transceiver

Backup AC to HF Control
Equipment

Uninterruptible
Power Supply

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# USE CASE SCENARIO EXAMPLE

The United States uses High Frequency (HF) radio for emergency purposes, in a set up known as the Emergency and Evacuation Network (E&E). The network includes all US embassies, consulate generals, consulates along with some domestic government offices and military bases. A dedicated group of frequencies (all in the Upper Side Band or USB) are grouped within a 2nd Generation Automatic Link Establishment (2G ALE) network.

On the evening of 11th September 2012, a terrorist attack on the American Diplomatic compound in Benghazi, Libya, resulted in deaths of the US Ambassador and the Foreign Service Information Officer. In the early hours of the following morning, September 12th, the terrorist group launched a further attack on the CIA complex approximately 1km away, killing two contractors and wounding ten others.

Within 45 minutes of the initial attack, the Secretary of Defence and the Joint Staff were notified, and within 2 hours, the surviving US personnel were evacuated from the mission to a safe location to await extraction. Utilising the US Global HF (E&E) network and 2G ALE facilitated the passage of secure information to and from Benghazi, Tripoli and Washington DC, including situational reports, casualty reports and extraction coordination plans, and the deployment of a quick reaction force from Tripoli to supress the attack and support the extraction of the surviving mission staff. Within four hours, US troops from Spain and Germany were airborne en-route to Libya to assist in the incident, and within 7 hours, those non-essential mission staff were evacuated on a US Air Force aircraft out of Libya.

The swift coordination response supported by the Global, Sovereign Diplomatic High Frequency Communications Network proved vital in the evacuation of diplomatic mission staff.

# ABOUT CODAN COMMUNICATIONS

Codan Communications is a leading international designer and manufacturer of premium communications solutions. We deliver our capability worldwide for the military, defence, humanitarian, peacekeeping, commercial, security and public safety markets.

Our mission is to provide communications solutions that enable our customers to **be heard** – to ultimately save lives, create security and support peacekeeping worldwide. With over 60 years in the business, Codan Communications has garnered a reputation for quality, reliability and customer satisfaction, producing innovative and industry-leading technology solutions.

We know that every deployment of a communications solution is different, having deployed our solutions in more than 150 countries. And when lives are on the line, it's critical that each deployment is right and that every stakeholder is heard. That's why it's important to truly understand your situation, your infrastructure, your environment and your stakeholders.

At Codan Communications, that's what we're best at. Not fitting your situation into our products, but really understanding what's at stake. So whenever you work with Codan, you know that right from the start you'll **be heard**.

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