

Maximizing Collaboration & Situational Awareness



- ✓ Interconnect, share, and monitor any or all theater radios
- ✓ Implement “Voice-Net” between key personnel

Background

Current collaboration rests on the Air Forces’ ability to share air pictures among C2ISR elements; this is often hindered by terrain. Low level air operations in support of ground troops cannot be viewed at the Air Operations Center (AOC). Knowing an operation is underway, the often-heard questions is “What’s happening?” When lives are on the line there is an “urgency to know.” Other means of collaboration involve Internet Relay Chat (IRC) which has become an overwhelming avalanche of data that inundates the operator with a mix of mundane and critical data, and everything in-between. These instant messages often get mixed, merged, and missed. Finally, voice collaboration is seen as “old school” but that is based on simple point-to-point comms or monitoring SATCOM radio reports that tend to yield no meaningful data to address the “what’s happening” question.

Challenges

CHAT: The current C2 collaboration tool-of-choice is Internet Relay (IR) Chat. While this secure instant messaging capability has value, it is overwhelming individual crew members “chat saturation” is often the norm.

The risk? Missing a critical textual input in the heat-of-battle.

SITUATIONAL AWARENESS: During the conduct of a specific operation or “push” the AOC is often blind to the scenarios as it unfolds; they often rely on voice reports of underway operations. Due to terrain, they may gain an incomplete air picture that only hints at where critical assets are located.

The issue? Monitoring the theater SATCOM radio nets provide a similar sketchy understanding of the operations. This often causes

an information disconnect between the tactical-level execution elements – Control and Reporting Center (CRC), Airborne Warning And Control System (AWACS), Air Support Operations Center (ASOC), Tactical Air Control Party (TACP) – using line-of-site communications and the operations leadership at the AOC.

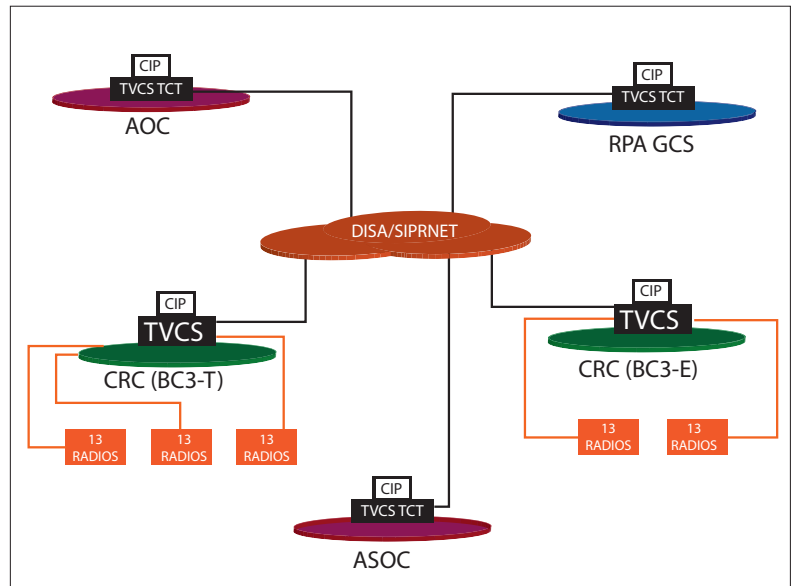
Solution

Cornet Technology offers a Voice Communication Backbone solution that takes advantage of the communications capability already embedded in Air Force C2 systems.

This backbone solution relies on networking TVCS TDMoP and TVCS VoIP systems at selected C2 nodes in-theater and supporting external agencies such as Remotely Piloted Aircraft (RPA). The CRC's TVCS provides local mission crew access to all available forward deployed tactical radios in-theater, access to secure telephones, and internal voice intercom. The backbone concept widens the aperture of this same architecture and expands it beyond that of a single site. It provides access to networked communications assets when and where required – anywhere in a given theater – and beyond.

This figure depicts a very high level Global Communications Backbone network architecture.

Riding on or tunneling through a theater's SIPRNET interconnection (via TACLANE), each element's TVCS is linked into the network. During steady-state ops each element may use the TVCS as a local communications "soft switch" providing internal crew collaboration and connectivity with airborne and ground based assets as required. As the ops tempo increases in scale and complexity, sharing and collaboration kick in using static pre-planned collaboration nets. In support of high tempo focused ops, on-the-fly associations and asset sharing are implemented as dictated by the mission.



Benefits

By networking the CRC's TVCS with a TVCS TCT at the AOC, ASOC, and the RPA SOC site the following is gained:

Rad-Net: Ability for any networked node to manage the sharing of radio assets with any other networked node; radio host unit controls sharing based on known availability and precedence of need.

Tel-Net: Ability for any networked node to use a secure telephone embedded at any other networked site.

Voice-Net: Ability to establish intercom conference networks to support real-time voice collaboration.

Mix-Net: The ability for geographically separated crew members to utilize a secure telephone to access an RF or SATCOM radio in-theatre.

About Cornet Technology, Inc.

CTI is a technology development company providing tactical level communications across the Battlespace. Working in tandem with a state-of-the-art C2 system, combat mission crew-members view the Battlespace and interact with US/coalition aircraft via their C2 and communications interface providing surveillance of assigned airspace, conducting combat identification of air objects, and directing and coordinating combat air assets using CTI's communications interface. CTI's Tactical Voice Communications Switch (TVCS) is a key component in the AFCENT's ground-based C2 node conducting combat air operations in the Arabian Gulf area and Afghanistan – the Battlespace Command and Control Center (BC3).

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