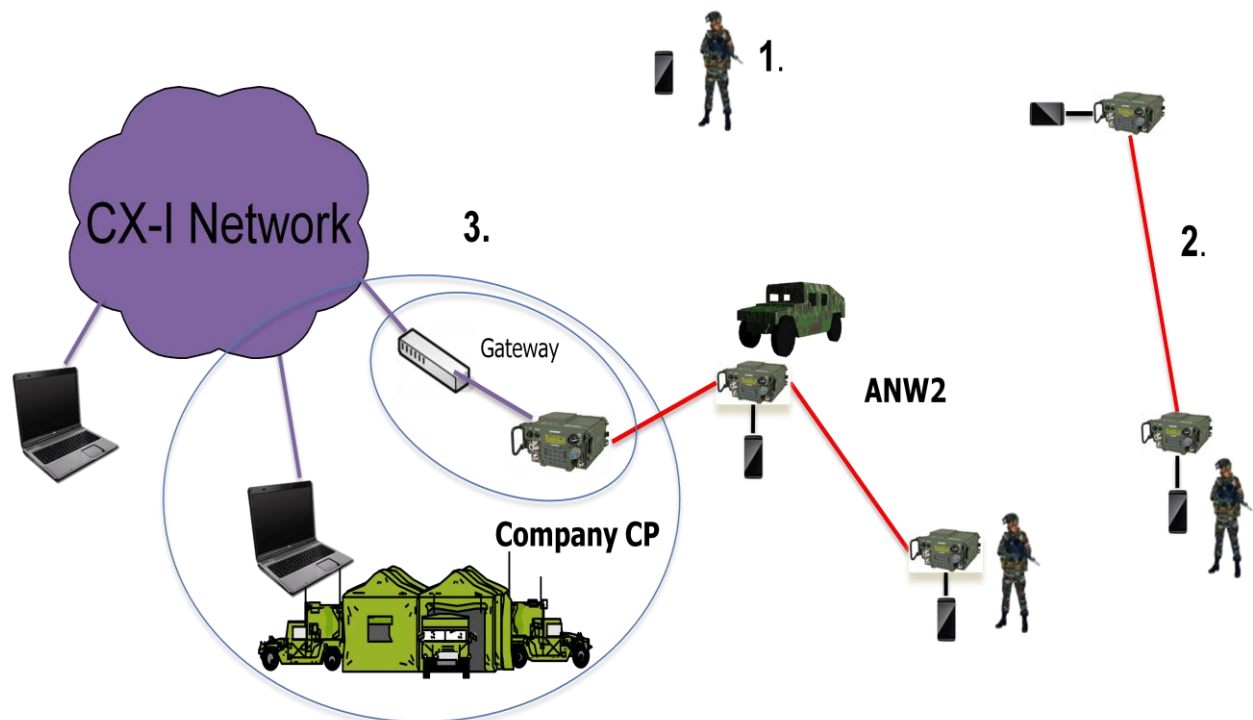




CAAT Point Paper: WIRELESS TO THE EDGE

WIRELESS TO THE EDGE

Since November 2001, the war in Afghanistan (AFG) has progressed from defeating major formations of Taliban and Al Qaeda forces to a counterinsurgency (COIN) campaign. The focus now is protecting the population, disrupting the insurgents, providing humanitarian assistance, creating conditions of stable governance, development of host nation skills, infrastructure, and a growing economy. Individuals and units entering a COIN environment are challenged by insurgent tactics, local conditions and situational awareness, interaction with locals (language barriers) and other friendly forces. An innovative pilot program utilizing smart phones was recently observed being utilized by soldiers in RC South's Zarahy District of Kandahar during a recent CAAT embed. The program is funded by the Defense Advanced Research Program Agency (DARPA) and labeled as Transformative Apps or Trans. Apps. This pilot utilizes networked smart phone or pad computing devices that make up for gaps in personal knowledge, situational awareness, and provide increased operational effectiveness and eventually speed our ability to transition.

**Current Field Testing:**

Soldiers are now testing and evaluating smart phones and smart pads from DARPA's Trans Apps program in these harsh, sandy, and mountainous environmental conditions that they currently operate in. The equipment is commercial off the shelf hardware which is pre-loaded with applications that are applicable to support the COIN mission. Soldiers appreciate that the devices weigh less than a loaded magazine in conjunction with a battery life of 3-4 hours (the length of typical foot patrols). Soldiers continue to work with deployed software developers on tailored applications such as the "Key Individual Photo Log", "Battlefield Enabler Smart Cards", "Weapons and IED Identification Smart Cards", and a "COMSEC Time of Day Sync Tool" (allowing more rapid COMSEC change over). Soldiers noted that the most utilized app. was the built in map with GPS features. This app has been very useful during call for fire events, where accurate transmission of current friendly and enemy locations are critical IOT reduce friendly and CIVCAS accidents. They have also uncovered new uses for the media functionality of these smart devices, which assisted in local community engagements where pre-recorded GIRoA government messages were shown to elders using the larger screens of the pads.

Size and Weight:

The compactness and weight seems to be a major benefit of the smart phone. Today's soldier is overloaded with heavy, redundant, and bulky equipment. On average, a typical soldier's kit weighs about 63 pounds before strapping on a rucksack to carry on patrol. In addition, he or she must carry a multitude of signal equipment IOT access C2 nets which include, a Blue Force Tracker to track friendly and enemy forces, a portable GPS receiver to determine location, a ROVER system to receive UAV video feeds, and extra batteries to run each piece of equipment. The advantage of a smart phone or smart pad that could possibly replace several heavy independent components is obvious.

User Interface:

An attractive aspect of smart phone technology is the ease and simplicity in which soldiers could adapt it for use in their current combat austere environment. They come to the operational environment already well trained in the basic handling of the smart phones and related equipment. Currently, soldiers can collect audio or visual information through these devices and work call for fire bracketing equations or 9 line MEDEVAC request twice as fast as they can with traditional equipment. The full potential of the program will be when it is fully matured and authorized to communicate with fellow squad members or commanders. With this ease of operation, simplicity and flexibility soldiers can find out who or what resides inside a building, or get real-time translation of messages therefore playing them over loudspeakers at the local mosque with a few taps or swipes.

Training Indigenous Forces:

The potential is limitless for the application of smart phones in AFG and future Security Force Assistance activities which includes having the ability to assist the training of indigenous ANA and ANP in certain capabilities such as mechanic and medical classes in their native languages. Translation software and apps, quick reference material, and hip pocket video training could speed the building of AFG security forces, as well as support any other training requirement.

Critical Deficiency:

The largest deficiency observed in field experimentation with smart phones was the network security policies that restrict access and local connectivity. The current DARPA program needs to be expanded and incorporated with other 3G tactical network pilot programs such as the LG3 (Last Tactical Mile) system that wirelessly sends and receives biometric data and contextual information to war-fighters off the FOB/COP to handheld device (HHD). The lack of direct network access and internal secure communications leads to the perception in some soldiers that the smart phones are not really as "smart" as their phones back at home. Solving this issue will require opening the network and relevant data to each user according to his or her need and clearance level. Biometric security protocols such as other app programs like "Confident ID" could provide the solution to this problem.

Conclusion:

There are numerous battlefield enablers across the operational environment which are delivering enormous benefits and immediate results. But, each technology insertion requires proper training and implementation strategies in order for them to truly effect operations. There needs to be a more holistic technology and enabler integration strategy and transition plan developed at the strategic level. If this innovative technology and capability is accelerated and properly synchronized with other 3G wireless initiatives, Trans Apps can accelerate situational awareness, operational effectiveness, tactical IO messaging, and ANSF capacity development having an immediate impact on the battlefield.