



RIFS Acquires New C4I Suite

Romania acquires new individual radios for soldiers as part of an overarching communications plan

Command, Control Communications Computers and Intelligence (C4I) has been widely acknowledged as the force multiplier for the dismounted soldier; reducing the incidence of fratricide and achieving economy of force. The Romanian Infantry Fighting System (RIFS) programme is no exception with Romania now fielding a mounted and dismounted communication suite over three battalions.

In establishing requirements, Romania naturally looks to NATO standards to ensure compatibility with the forces of other Alliance members. Major Tomoiaga, Senior Scientist at Military Equipments and Technologies Research Agency (METRA), R&D Programme Manager for RIFS commented, "The basic requirement was to be interoperable. We design our C4I systems and communication systems for the soldier based on the NATO C3 System Architecture [NAF v.2] and Deployable Communications Information Systems. That is where we are looking for the C4I architecture for the dismounted soldier system. The basic requirement is to have voice, navigation and Situational Awareness messaging and video.

"Only three to four years ago we had three or four types of radios with no data capability, no C4I system for soldiers nor battle management systems for vehicles. Right now we are jumping to the other extreme, but luckily for us it is a long term requirement."

As a structure, the lowest levels are the squad and platoon nets, with the connection between the platoon network and the squad network being made by the commander who operates two radios and who ensures the link is maintained with radios installed aboard Infantry

Fighting Vehicles, used to carry additional radios to further support the squad and deployed section.

Romania began to field this equipment from 2007, initially fielding the equipment with two battalions and it is now being fielded with a further two battalions and a dismounted command post. Within the network, platoon and battalion command posts are mounted in vehicles.

The package of radios was sourced from Harris RF Communications and comprises the RF-7800S at the dismounted level with the section commander also accessing the RF-7800M. In the vehicles, RF-5800Vs, RF-5800Hs and RF-7800Ms are installed.

Maj. Tomoiaga said, "For the squad we have voice communication and position reporting and through the commander, who has a C4I unit connected to the radio. He can provide to the platoon commander the position of all his squad members and this is connected to the battle management system which is connected into the vehicle, so in the vehicle the commander can see the position of all the members of his squad and assure the connection with the platoon level at the company level."

For the data network, the requirement is for speech using VoIP, text, navigation and position with forward error correction. The SA is included in the text messages. Maj. Tomoiaga said, "The speech requirement is voice over IP because if we have a radio that has separate channels, we lose the speech."

Further discussing communication requirements, Maj. Tomoiaga added, "We made some calculations on how big the data and bandwidth should be to fulfil all our requirements and video is the biggest bandwidth eater.

The problem is that the current radios have very small data bandwidth. To have a wider bandwidth, we can use a solution like WiFi or Bluetooth but by increasing frequency and bandwidth, we have to decrease the range of communications, which at this time is unacceptable. We need to make tradeoffs. Every two seconds the soldier will send his position to the commander of the squad, and every ten seconds the whole squad will send their positions up to the platoon commander. When the soldier is mounted in the vehicle, he can transmit video and images and we have full duplex voice and full video communications."

The new radios are being installed only on new build vehicles but could be rolled out across the Army although changes would have to be made for higher level C4I applications.

Maj. Tomoiaga said, "As for future plans we are trying to extend this implementation for the whole army. We are trying to integrate this low level system into a C4I system at the brigade level. With this integration, we will have a lot of data coming in from the lower levels so we will need a data management and filtering solution. Right now we are seeking a solution but it is very hard to do this automatically. We are looking at what sort of information we need to send upwards and if it is needed. Increasing data bandwidth and range isn't a solution we expect to see very soon." ■