



# COBRA Uncoils

Brazil's COBRA programme is well advanced in developing its solution for a networked individual combat system from 2013

**Col. Jao Denison Maia Correia, Programme Manager Combatente Brasileiro (COBRA) explained that the programme was borne out of a need to impose modernity on the Brazilian Army.**

"Since 2007, the Brazilian Army have studied soldier modernisation, looking at several national programmes like FELIN, Land Warrior and Infanterist der Zukunft. The project was implemented in order to avoid a capability gap appearing between the Brazilian army and other armies. COBRA is a programme designed to expand capacity in the areas of protection, lethal capability, survivability, communication, mobility and observation. Everything needs to provide greater efficiency."

There are over 200,000 personnel in the Brazilian Army, largely made up of conscripts although roughly 40 percent are now professional soldiers. The basic unit of employment in the Army is the Brigade. There are currently 26 brigades a one aviation brigade with Col. Correia cited the light infantry and Special Operation brigades as being very important to the project.

Brazil is the fifth largest country in the world, having 4600 miles of Atlantic coast and 9800 miles of international borders – bordering every country in South America apart from Chile and Ecuador – making it the third largest land border in the world. The country consists of five very different land regions north, mid west, north east, south east and south. Each one has different aspects of culture, economy climate and population density, linked to specific consideration of military operations. The northern region includes the Amazon basin, hot and humid, largely covered by thick forest and the world's fourth largest fresh water source. With less than eight inhabitants per square mile, it also occupies 61 percent of Brazil's territory.

Based on this information the Brazilian army decided to produce two versions of the project the Amazon COBRA and Regular COBRA. There are currently five jungle infantry brigades.

In generating requirements for COBRA, the focus has been on asymmetric conflict. Col. Correia said, "In order

to start planning for the project it was important to first analyse three questions – How to organise forces? How to equip them? How to fight?" The answers coalesced into five key areas: situational awareness of the soldier in terms of time space and intelligence which is separate from the second category of command and control which is defined as interoperability and interconnectivity in the tactical environment. Other categories include modularity, capability enhancement to existing capabilities and the application of technology to solve the problems being faced.

COBRA is an individual combat system but must be still network connected and linked to central command, improving the soldier's efficiency in communication, positioning and navigation, firepower, protection and survivability. Work on these categories is divided into two broad areas: electronic systems and monitoring and secondly new materials in terms of protection and lethal capacity.

Col. Correia said, "The COBRA project must have as its main objective the integration of technology to improve the capabilities of the fighter and his survival. The guarantee of achieving this goal is by increasing their capacity of observation and technology. Seeing the enemy first is a great advantage. Everybody knows how crucial it is."

In 2008, the Army initiated COBRA's study and research phase. This preceded but overlapped with a roughly 12 month concept phase which ended in the second half of 2009. Throughout 2009 and into the first part of 2010, Brazil bought a number of equipment from a variety of sources, notably via a visit to France in the second half of 2009 in which FELIN related systems were provided. Col. Correia said, "During a visit to the DGA (Délégation Générale pour l'Armement), we bought some equipment and distributed this equipment to some troops like the airmobile brigade, light infantry brigade and special operations brigade."

Also in 2009, Brazil took their initial buys of equipment and began using them individually and in combination in an extended test and evaluation phase which will continue



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► to at least until 2013. COBRA is also being integrated into other programmes. In 2009, Brazil began work on developing new armoured vehicles. From 2011 COBRA will begin integration with this vehicle. It is at this point that COBRA will move from being a project and start becoming part of a system.

Col. Correia said, "We are planning a wheeled armoured vehicle and this project is in development by the science and technology department of the Brazilian Army. In 2013 we can evaluate and define the [COBRA] project."

Within its genesis, COBRA's future capability will be built around six modules, defined as collections of specific equipment, used to increase skills. Col. Correia described them as, "Each module provides that necessary to be used by soldiers in action. A module consists of different equipments according to the mission and capability. The modules create capacities or increase existing ones."

In developing the protection module the COBRA programme is making particular use of indigenous capability with clothing and protection. Col. Correia cites new candidate materials developed in the country, including the Nylon 66 textile which provides UV protection; the polymer Nitya yarn for high durability and the Emanate textile used to decrease muscle fatigue by reducing the build-up on lactic acid in the muscles.

Everything the soldier carries load carriage and belongs to the survivability module as part of the logistics systems.

A new 5.56mm weapon will also be acquired and its on board sighting systems will also contribute to the observation abilities of the system such as the target acquisition device. Observation capabilities will also be added to by Brazil's new wheeled armoured vehicles.

In terms of communications capabilities for COBRA, Col. Correia cites recently high level plans for the Brazilian Army General Staff issue this summer. "The most relevant strategy adopted by the Brazilian Army recently is the Strong Arm strategy. Its objective is to create an arc of protection on all Brazil's borders in the Amazon region in order to get better conditions for operations. The new strategy absorbed the responsibility to integrate complex systems under a complex network."

The Brazilian Army recently operationally tested a system that could cover COBRA's modular communication needs. This network mesh was implemented in relief operations in Haiti with the main network base station at Buttellier linking to six sub-sites and then linking voice and data to hand held communications and

computing devices. Col. Correia said, "We didn't use satellite communications here but it provided very good communications during operations."

#### Transformation

Land Transformation is a new project launched by the General Staff in April with the keys to its transformation goals being doctrine, training, military, education, management, human resources, science and technology. This is the strategy being put in place to achieve the Army of the Future or Exército Do Futuro. Technology for this and other projects is being aided by the creation of

a new Technology Park with a significant focus being the use of nano-technology to help soldiers in their missions. One example is nano-technology and this technology in uniforms where the technology could be used for anti-bacterial applications, thermal regulation, UV protection as well as new materials for bullet proof vest, helmets, textiles and weapons. ■

*Col. Correia was speaking at WBR's Soldier Technology 2010.*



*Brazilian Special Force, shown here on exercise with their Colombian counterparts earlier this year in Panama, are closely involved in COBRA's development © DoD*