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The Inter-Connection

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Keeping you in touch with

Connecting the Future Battlefield

The Changing Face of Interconnection Systems

Military Communications Systems for the Digitised Battlespace are changing at an ever increasing rate and this has thrown down real challenges to the interconnection industry. On the modern battlefield meaningful accurate information is paramount to success. This is driving industry to supply communication systems with high data rate capabilities that are secure and rugged.

The electronic technology is available from commercial industry but it needs to be ruggedised to survive use in the harsh environment of today's war zones. Key to survivability is the interconnection systems which besides surviving in the military arena must be capable of rapid redeployment and adaptable to changing configurations. Amphenol as the prime interconnect supplier to this market is ready to meet the challenge with innovative designs backed by a history second to none in the industry.

Technology is being driven by the Bowman Programme which is laying down the foundations for the future. It covers all aspects of the modern battlespace from Man Communications, Internal Vehicle Systems and Data Highways through to Local and Wide Area Networks linking battle groups spread over the total battlefield. The need for high performance secure interconnection systems has never been greater. Amphenol addresses all three aspects of the market with interconnection systems to meet and exceed the users requirements with futurability designed in to the product set.

Looking firstly at Man Communications here the modern soldier is equipped with a vast array of equipment radios, CPS, portable computers, thermal printers, weapon sights and the list goes on ever increasing. So the question arises how do you connect all this equipment without adding extra weight and without adding uncomfortable cabling external to the clothing. Programmes like FIST need to solve these questions. Amphenol working closely with agencies like DCTA (Defence Clothing and Textile Agency) are developing a cable and connector system that is part of

the soldiers webbing. The use of flat cable construction has enabled it to be integrated into the webbing with the connector points being moulded in situ. The benefits are that the system is lightweight, sealed from the environment and reduces the amount of bulky external cabling. It is capable of carrying data (fibre and copper), power and RF. to all equipment located on the modern day soldier.

In considering Internal Vehicle Systems, programmes like Bowman make use of distributed data highways both for data and power which greatly reduces the volumes of cable inside the vehicles. These are connected to equipment through access units with the main data highways being fibre to cope with high data rates. Amphenol has developed a range of fibre connectors to meet these requirements which are covered in other articles in more detail. The use of hermaphroditic coupling mechanisms enable the system to be increased or reduced as cable assemblies can be daisy chained together. Use of orientable backshells and overmould technology enables final configuration to be completed in the vehicle and improves performance against the requirement for biological and chemical wash down.

Moving external to the vehicle connecting battle groups into Local and Wide Area Networks presents different problems. Firstly the system needs to operate at High Data Rates, be secure and use made of tactical fibre optic assemblies. Amphenol has developed a range of tactical fibre optic cables which meet the requirements of Def Stan 00 61 Part 5. For the connector this needs to be Hermaphroditic with the capability to daisy chain, rugged to meet the needs of rapid deployment in the severe

environment of the front line and cleanable. Amphenol has for many years manufactured the CTO tactical lens connector and has taken this product and improved the design by reducing the mass by 50% and diameter by 33% to improve access through the vehicle interface panels. The new CTOS connector utilises latest lens and ceramic technology and is approved to Stanag 4290. It has improved performance, an easy wipe clean interface and is fully environmentally sealed. The system has the capability of being upgraded to accommodate single mode technology for future enhancement to cope with even faster data rates.

Finally in the design of all the above systems due consideration has been given to Repairability and ILS, low cost assemblies internally within the vehicle for repair by replacement, impact splice technology as a permanent front line cable repair with no heat or power required. In this way Amphenol is able to support the changing face of interconnection for today's and the future battlefield.

Amphenol have the capability to design the interconnection system, make the connectors, make the cable, make the system, and support through life. Let us programme manage your interconnect requirements for today's battlefield.

