Glenair: a world of interconnect solutions

Soldier Mod talks to Andrew Murdoch, Business Development Manager, tactical interconnect products at Glenair

Q: So, STAR-PAN™, could you explain what this is and what it provides the user?

A: Great question, I'm conscious there are varying levels of knowledge and exposure to our product so I will give a brief overview of what STAR-PAN™ is and how it is helping soldiers on the battlefield.

STAR-PAN™ is a soldier-worn system encompassing both power and data HUBs and cables, enabling the user to connect their existing equipment to simultaneously utilise power more efficiently, while accessing the data of this equipment. The emergence of smartphones, tablets and other computer systems on the frontline tactical space has allowed far greater use of digital information. Battle Management Systems (BMS) have created the ability to display this information in a simple and effective way; this is where STAR-PAN™ comes into play, taking multiple sources of data (Radio, GPS Coordinates, LASER Range Finder information and Full Motion Video [FMV]) and directing it to the EUD, often via a single connector. The STAR-PAN™ series of HUBs are all based off a USB 2.0 high-speed protocol. This allows STAR-PAN™ to handle data rates of up to 480Mbps and carry that data distances in excess of 3 meters from source without the need for repeaters; making it a very flexible protocol. STAR-PAN™ is designed to connect different devices soldiers need to carry, the issue is, these devices were designed in isolation and not built around a synchronised soldier system, using different protocols including USB 2.0, RS232, Ethernet, USB3.0 and USBC. STAR-PAN™ solves this issue by converting all to USB 2.0 mechanically on the specially designed cable. In addition to data distribution, STAR-PAN™ also manages power for the soldier. Customised cables and connectors are used to access existing, in field batteries (combat radio batteries) as well as conformable and newer ones to distribute the power already available to the soldier and redirect the available power to other devices. The 'so what' of this? STAR-PAN™ can reduce the weight carried by the soldier and help to dramatically increase the use of accessible data, thus increasing Situational Awareness (SA).

Q: Glenair has been busy over the past 12 months and always seems to bring out new products. What have you been working on?

A: You are correct. The Glenair STAR-PAN™ team has

One of many new additions to the STAR-PAN line. The Connectorized STAR-PAN II PN 808-194

been working hard over the past 12 months to bring the latest and greatest capabilities to the warfighter and highlighted through our extensive 2020 catalogue. The thickness of it to its predecessor is testament to the increased amount of product, choices, options and capabilities we have added. As mentioned earlier, STAR-PAN™ is a system of HUBs and cables, not just a "one size fits all" solution. The roles and responsibilities of the modern warfighter are varied and have numerous configurations. Giving options is one of the attributes that separates Glenair from the pack.

Another key point is Glenair is 100% Vertically Integrated. Every component is manufactured by Glenair in Glendale, CA, USA. Scalability is a key component

of any successful system. To achieve this, we have introduced differing capacity HUBs starting with a STAR-PAN™ I port and moving up to STAR-PAN™ II, IV, and VI port HUBs. To ensure that STAR-PAN™ can indeed be scalable our peripheral cables fit every one of these HUBs without the need for change. This is achieved using Glenair's Mighty Mouse connector, the 807 series, which set the way for the NATO standardised connector for power on a dismounted soldier, STANAG 4695 and the recent succession as the connector for the UK Generic Soldier Architecture (GSA) As well as additions to the STAR-PAN™ fleet of HUBs and Cables including the PRC163 and PRC161 radios Glenair has added something we are calling the Mission Manager.

Q: The Mission Manager? What is this?
A: Glenair is always looking to solve problems and fill gaps in military capabilities. On the soldier system journey, Glenair has often come across recurring issues and complaints from the end-users. Typically, soldiers love the use of smartphones and tablets and are embracing them on the battlefield. However, there are issues with utilising these commercial off-the-shelf technologies, primarily not having ownership over their design and end function. For example, a smartphone is designed to be used by the general public for such things as calls, messaging, photo taking and social media. They are not designed to see locations of friendly and enemy positions or controlling a fast jet during a close air support mission. The pace at which smartphones are developing and becoming obsolete is rapid. Thus, there is a re-inventing of the wheel every time a new smartphone enters into the soldier system with the latest and greatest phone not always seamlessly working. Glenair's solution to this is the Mission Manager. The Mission Manager is essentially a small-scale computer running a bespoke Linux Operating System acting as the host in the soldier system architecture. This allows the user to have several fundamental capability advances including being able to use any smartphone device on the market, be it Android, iOS or Windows-based. The Mission Manager also allows the user to connect to multiple ethernet devices and merge peripheral networks.

An example of this is the user could distribute FMV being received on one peripheral device and retransmit

it across another device, such as a radio, enabling other team members to view the FMV. Wouldn't it be great if you could do all this wirelessly? Well the MM also allows this. As a modular device, MM can be added to a system when required, further cementing the flexibility and scalability that acts as the bedrock to the STAR-PAN™ approach.

Being able to connect all these devices and redirect data and power technically is one thing. The other part of the jigsaw is enabling this technical capability to be used by the end-user easily. To solve this problem, Glenair has developed an application called STAR-PAN™ Android Remote (SPAR) for Android OS and a Windows variant called WASP. These applications automatically recognise when connected to a HUB, Mission Manager and visually display all the details of peripherals. The main app can be integrated into Battle Management Software and viewed as a plugin like Android Team Awareness Kit (ATAK). STAR-PAN™ is currently being fielded by NATO countries operationally. ∎

SPAR application for STAR-PAN. Making it easy for the warfighter to access capabilities

For further information on Glenair, STAR-PAN™ or the Mission Manager please contact:

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STAR-PAN™ Catalogue:
www.glenair.com/catalogs/star-pan.pdf

Glenair's approach to solving problems – The Mission Manager