

# Breakthrough connectivity technology in usability and wearability

Fischer Connectors' expert in military connectivity solutions: Wim Vanheertum, Product Management Director



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**H**ow is Fischer Connectors addressing the urgent need for easy-to-use connectivity solutions that can be seamlessly integrated into portable and wearable applications? The answer is in this interview with Product Management Director Wim Vanheertum, just before the official launch, in June at Eurosatory, of the breakthrough connectivity technology which lies at the heart of the new Fischer Freedom™ Series.

**Q: Mr Vanheertum, why is it so important to provide manufacturers of soldier's equipment with "smart" connectivity solutions?**

**A:** Never before has the modern soldier been expected to carry so much advanced electrical equipment into battle as today: cameras, weapons sight, night-vision goggles, radio system with microphones embedded in helmets, sensors, light, GPS, as well as switches, hubs and batteries hidden beneath their armour to charge rugged tablets and nanodrones, etc.

The importance of connectors and their cabling to the functioning of these electrical devices is critical. Should a single connector malfunction, the equipment and

electronic system breaks down. It is vital, therefore, to provide design engineers with high-end, high-performance, highly engineered connectivity solutions in order to meet their urgent needs for easy and smart integration. In that sense, the connectivity industry is instrumental to driving innovation for the entire defense & security industry, and particularly in the Dismounted Soldier Systems program.

**Q: Which specific trend is Fischer Connectors currently addressing here?**

**A:** Our job at Fischer Connectors is to facilitate the latest interconnect and communications technology, as well as to lighten the load for soldiers on patrol. The "Dismounted Soldier Systems" and "Future Soldier" programs have been working for years to make the soldier "connected". Sharing information in real time about the area he is operating in will make him more effective and bring faster and safer mission execution.

The numerous electronic devices body-worn by soldiers all need to be interconnected – and all of them are currently independently powered. The need that Fischer Connectors is now fulfilling is to build an "intelligent vest" based on a shared data and power bus with wiring on the inside, one central battery for all, and connectors that work as a hub interface at strategically chosen locations. This keeps the number of cables on the outside of the vest to a minimum, and enables standardization and further miniaturization of the entire electronic ecosystem, with more functionality in smaller devices.

At Eurosatory this June, we will officially launch a brand-new product line: the Fischer Freedom™ Series, whose first product, the Fischer LP360™, offers real breakthrough technology in this domain: the low-profile and concentric-circle connector with 360° mating "freedom" and easy cleaning maximizes the usability, efficiency and performance of soldiers' equipment in a revolutionary way.

**Q: How "revolutionary"?**

**A:** It is revolutionary because, firstly, it offers breakthrough

technology in mating (360 degrees, no key code), in locking (ball-locking mechanism with sealing and variable pre-defined force), and in materials (specially designed contacts are IP68 sealed with a membrane). These technological innovations enable this solution – and this is the second revolutionary benefit – to play a major role in lifting one of the most basic roadblocks for Future Soldier Programs: cable management. The LP360™ eliminates the key code, meaning it can be plugged and routed in any direction, ensuring that the cable on the vest can always go straight to the device. No more twists and turns means shorter cables in the kitted equipment, eliminates tangles, reduces clutter and increases usability, making equipment lighter and faster to set up.

Usability is indeed a key benefit here and it is threefold – “easy mating”, “easy cleaning” and “easy integration” are fundamental to the Fischer Freedom™ Series:

1. Mating the LP360™ becomes as intuitive as buttoning up a vest; it's easy – without compromising on the high-performance reliability required in military harsh environments.
2. The connector is fully cleanable (both plug and receptacle), and is easy to use and maintain with a faster set up and improved durability.
3. Thanks to its lightweight, compact and above all low-profile design – which is also MOLLE compatible – the new connector is easy to integrate into clothing with devices and subsystems; via the panel-mounted plug interface, cables can even be removed completely, and the connector can be directly integrated into the housing of the device, for example a camera or a sensor.

**Q: “Easy to integrate” for design engineers: that’s what you call integrability?**

**A:** Yes, integrability is the capability and versatility that our direct customers, the design engineers, need in order to easily and seamlessly integrate connectors – with or without

**A breakthrough plug & play connectivity solution for extreme environments: the LP360™ connector’s main technical specifications in brief:**

- 7 signal & power circular concentric contacts up to 24AWG compatible with USB 2.0 and up to 3x5A
- No key code for easy 360° mating
- Membrane-sealed contacts, making the connector fully cleanable, on both receptacle and plug sides
- Low profile and compact for easy and seamless integration
- Sealed IP68 to -20m/24h
- Ball locking – easy and quick to mate and unmate
- Robust stainless steel & brass design for longevity (min.10,000 mating cycles, 5,000 rotations), resistant to shock, vibration, torque and extreme temperatures
- Tested in line with MIL and IEC standards

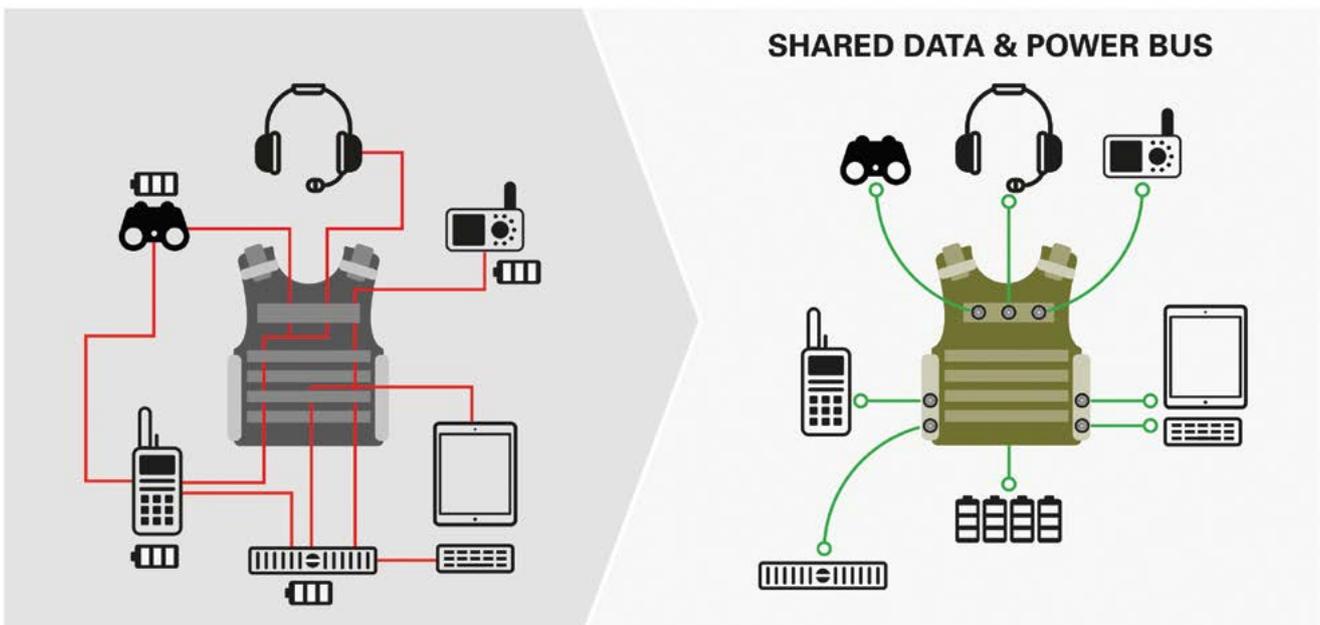


FISCHER **FREEDOM™** SERIES



*The development of the Fischer LP360™ connector, the first product in the brand new Fischer Freedom™ Series, has introduced a new approach to connectivity, and innovative engineering and technology in mating (360° mating is possible because the LP360™ has no key code), in locking (sealed ball-locking mechanism with variable pre-defined force), and in materials (membrane-sealed contacts).*

cables, as outlined above – into the multifunctional devices that are part of the modern soldier’s armour and tactical vest. The integrability of our new solution contributes to making the modern soldier’s wearable devices smaller, faster and smarter – to making, ultimately, high-performance and smart clothing a reality. ■



*No more cable issues. The soldier’s tactical vest becomes the hub which provides power and data to a large variety of portable devices. The low-profile, rugged and versatile LP360™ optimizes cable management and enables multiple devices to be connected to a shared data and power bus. Is there anything more efficient?*