

What happens when you use textiles to make electronics for soldier systems?

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Question: "what happens when you use textiles to make electronics for soldier systems?"

When worn on the body of the dismounted soldier, conventional cables suffer the problems of being bulky, heavy, and stiff. Indeed they must be made deliberately stiff in order to ameliorate the risk of fatigue fracture. This hinders the ability and agility of the soldier.

Electrically-conductive textiles (or e-textiles) are instead designed to be very low-profile and much more flexible, therefore requiring reduced insulation thickness and armouring, which in turn reduces their weight and reduces the burden for the soldier.

E-textiles exhibit a much larger surface-area than conventional cables, but their sympathetic qualities allow them to 'disappear' into soldier

garments. Indeed, their greater surface-area confers the additional benefits of improved damage-tolerance, multiple routing of network paths and superior thermal performance.

Intelligent Textiles Limited has developed proprietary technologies that allow intricate circuits and networks to be manufactured as woven fabric. A single fabric component of this nature can replace an entire cable harness, with multiple end-points and connectors.

The fabric components retain their textile qualities but are comparable in electrical performance to conventional cables. They exhibit competitive electrical resistance, data-throughput (USB2.0, at 480 Mbit/s) and shielding (DefStan 461E).

Answer: "They finally become wearable"