# Company develops conductive yarn for soldier uniforms

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(PhysOrg.com) -- Modern military uniforms for servicemen from some countries such as those that serve Great Britain have evolved to the point that batteries and cables are needed for electronic devices that are carried; the problem with that of course is that cables are unwieldy and batteries are bulky, not to mention heavy. Both tend to get in the way of mobility, which is rather crucial for a soldier in battlefield conditions. To get rid of the cables, a company called Intelligent Textiles has come up with a type of yarn that can conduct electricity, which can be woven directly into the fabric of the uniform. And because they allow the uniform itself to become one large conductive unit, the need for multiple batteries can be eliminated as well.

The result, the company says in a recent demo of its products for Britain's Centre for Defence Enterprise (CDE), is a line of "e-textiles." Besides the obvious problems with cables and batteries, a spokesman for the company said, there are issues with cables breaking. When that happens, equipment becomes useless. E-textiles on the other hand, because they have conductive material throughout the garment, don't suffer from that problem because power can be routed through multiple channels. Thus if a portion of the material is cut or torn, power can still get to all of the pieces of equipment. And, for that same reason, the number of batteries can be cut down to just one, which means only one charge is necessary to run all of the equipment, and that battery can then be placed on the body where it will produce the least amount of stress.

The company says it has found a way to weave the conductive yarn into

virtually all parts of the uniform: vest, shirt, backpack, helmet, even gloves or the interactive parts of weapons. Different pieces of the uniform can then be connected via plug-and-play connections when the soldier dresses for battle, though the company admits the connectors being used in the demo may have to be changed to prevent corrosion or rust. They say they are currently also working on a keyboard that can also be integrated into a uniform to allow for interaction with a small computer that will also be carried as part of the uniform.

Field trials are scheduled for next month and uniforms made with e-textiles are expected to begin being worn by actual soldiers over the next two years.

Up next will likely be separate channels woven into the uniform to carry data signals, allowing different pieces of equipment to communicate, making the uniform a central part of a system of components.

**More information:** via BBC



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