

A successful collaboration:
Vestechpro – Centre de recherche
et d'innovation en habillement
and Carré Technologies inc.

Smart Clothes Make for Seamless Health Monitoring

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As a hockey player does his daily training on ice, sensors collect his vital signs and transmit this data remotely to his doctor, who evaluates his state of health in real time. This scene is not the product of the ravings of a science fiction author. Carré Technologies has developed the prototype of a revolutionary smart garment that will soon be available on the market.

Forget those unwieldy performance tests that entail covering an athlete with wires from head to foot. The Montreal business's easy-to-use tank top makes it possible to remotely monitor vital signs without hampering the subject's movements. Health sensors integrated into the clothing record electrocardiogram and thoracic and abdominal breathing data. In turn, these digitized data are uploaded to an iPod via a small Bluetooth transmitter concealed in a pocket, to be automatically processed by a software program. This truly seamless unit is as smart-functioning as it smart-looking, for the tank top resembles that of a well-known brand like Nike or Under Armour.

Carré Technologies hasn't yet officially launched the product but even now, organizations and consumers are clamouring for it. The Canadian Space Agency and the Quebec Major Junior Hockey League are among that number. "The reaction has been the same



in Montreal as in Paris! Everyone wants to know where they can lay their hands on this clothing. We've had trouble keeping up with demand," delights Yvan Ouellet, vice-president for business development.

The challenge was to design a mobile garment that accurately captures signals regardless of the movements being performed. "It's easy to accurately capture the data of a patient on his back in a hospital bed. It gets more complicated when you try to put the tank top under the gear of a 220-lb. football player!" the businessman offers by way of illustration.

The idea had been simmering for some time at Carré Technologies, prior to the emergence of mobile computing. Then, the arrival of **Vestechpro – Centre de recherche et d'innovation en habillement** (Apparel research and innovation centre) a year ago made it possible to design upwards of a hundred comfortable, antibacterial machine-washable prototypes. "As engineers, we had the capacity to create the software. The garment was what made things complicated!" acknowledges Mr. Ouellet. "Vestechpro are experts in the field. They are true artists! They spared us many headaches. It was a real pleasure working with them!"

The pleasure was mutual, says Christine Harding, Vestechpro's research and development director. "They were very open to new ideas. They're a young team – creative and dynamic. There is sure to be other inventions to follow."

As a result of this successful collaboration, a line of garments will be available as of early 2013. □

