Wearable devices track people via wireless network

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Mobile technology is opening new channels for remotely monitoring family members and others who need to be tracked.

Several companies, including medical device manufacturer Boston Scientific, have struck deals with major wireless carriers to support a new generation of products that incorporate sensors, accelerometers, GPS and technologies that use cell towers to help triangulate positions and locate people.

Research firm ABI Research estimates the market for GPS personal tracking devices will grow 40 percent or more annually and exceed $1 billion by 2017.

Families use them to track parents with Alzheimer's or toddlers. And doctors and military medics have adopted the technology to remotely track the health conditions - electrocardiogram readings, body temperature, heart rate, and stress or dehydration levels - of recently released patients or soldiers on dangerous assignments.

Wireless carriers, looking for ways to make money beyond transmitting data along their networks for smartphones and tablets, are fueling the boom. "We think this is the single-biggest growth opportunity - that every device is connected," said Glenn Lurie, head of AT&T's emerging devices team.

But for consumers, the tracking services aren't cheap, requiring an

upfront cost for devices and a subscription plan, ranging from $10 to $40 a month.

Limited emergency medical alert systems have been around for years, relying on the telephone landline. But the new devices are vastly superior in locating people, assessing motion and sending comprehensive data in real time to doctors, parents and other caregivers, companies say.

"GPS alone would only work when you're outside and you have a good view of the sky," said Daniel Graff-Radford, vice president of sales for Omnilink, a tracking-device maker. "You need sensors. You need cell towers and the software to locate cell towers and satellites."

Some examples:

-Comfort Zone is a Web-based service for remotely monitoring a person with Alzheimer's. The alert device, which is made by Omnilink and sold by the Alzheimer's Association, is about the size of a breath mint and can be installed in a car or worn around the neck. Aetrex, a shoemaker, also inserts the device into special shoes.

-AmberWatch GPS uses the same technology but is marketed by the AmberWatch Foundation. School-age children can clip it to a backpack. "If someone leaves a (preset) zone, the loved one gets a text on their phone," said Graff-Radford of Omnilink.

-BioHarness sensors by Zephyr Technology are worn as a patch or strap by U.S. Special Forces troops, pro athletes and hospital patients. Information about their health condition is sent to cloud servers, and doctors download it to their computer or phone. "It has to be wearable and fashionable," said Brian Russell, CEO of Zephyr. "Even 70-year-olds don't want to look silly."

-Exmobaby, a line of infant pajamas with sensors that send vital signs (heart rate, temp) and information about the baby's "emotional state" to parents' mobile devices, will be on sale later this year, said David Bychkov, CEO of Exmovere, which makes the product.

-Boston Scientific is updating its 6-year-old Latitude implanted heart monitor, which was once dependent on landlines, so that doctors can receive information on their mobile devices throughout the day. "People are abandoning landlines," said Kenneth Stein, chief medical officer of Boston Scientific's Cardiac Rhythm Management program. "It's also to make it portable for patients who are moving around."