EyeOnTechnology

C.G. Masi has been covering developments in high technology for a quarter century. With degrees in astrophysics and business, and experience as a scientist, engineer and journalist, he provides a unique view of trends affecting our technologically based society.

Personal Robots to Monitor Elderly Vital Signs

By cgmasi on June 16, 2009 3:59 PM | No Comments | No TrackBacks

Nearly every technophile on Earth has seen *Star Wars* medical droids subbing for human physicians, surgeons, and other medical professionals. Unlike most technological marvels portrayed by Hollywood as existing sometime in the far future, such robots aren't that far from reality. A case in point is GeckoSystems Intl. Corp.'s CareBot robotic elder-care system, which graduated to nurses' aid status with the addition of a miniaturized, solid state onboard blood pressure and pulse rate monitor.

Carebot interacting with house-bound individual.

"We believe that the incorporation of an onboard blood pressure/pulse rate monitoring system for our CareBots will further enhance their cost effective, utilitarian capabilities. Our CareBot's ability to automatically follow and verbally remind a designated care receiver at predetermined dates and times that their blood pressure/pulse rate needs to be checked by this onboard, integrated monitoring system will enable a higher level of safety, security and cost savings for those at home and in nursing homes, assisted care facilities, hospitals, etc.," observed Martin Spencer, President/CEO of GeckoSystems.

The company says CareBot is a multitasking personal robot incorporating advanced, proprietary AI engines. Given the CareBot's network connectivity and Internet accessibility, alerts of vital signs and other various healthcare events outside of normal range can be quickly sent by telephone, instant or text messaging, and/or email.

GeckoSystems uses sensor fusion extensively for actionable situation awareness in their complete multitasking personal robot, the CareBot. Their mobile robot's hardware and software architecture is designed to be expandable and upgradeable

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such that many years of cost effective usage can be readily achieved.

The primary market for this product is the family for use in eldercare, care for the chronically ill, and childcare. The primary distribution channel for this new home appliance is the thousands of independent personal computer retailers in the U.S.

Spencer suggests thinking of it as a new type of labor saving, time management automatic home appliance. The unit decreases the difficulty and stress for the caregiver who needs to watch over family members most, if not much, of the time day in and day out due to concerns about their well being, safety, and security. Not infrequently, the primary caregiver has a 24 hour, 7 days a week responsibility. There is concern that medication will be missed or the care receiver have an accident requiring immediate assistance. And the care receiver may be very resistant to a "stranger" coming in to her home and "running things" in the care giver's absence.

Spencer points out that the CareBot is a new kind of companion that always stays close to the care receiver, enabling family and friends to care for them from afar. It tells them jokes, retells family anecdotes, reminds them to take medication, reminds them that family is coming over soon (or not at all), recites Bible verses, plays favorite songs and/or other music. It alerts them when unexpected visitors, or intruders are present. It notifies designated caregivers when a potentially harmful event has occurred, such as a fall, fire in the home, or simply been not found by the CareBot for too long. It responds to calls for help and notifies those that the caregiver determined should be immediately notified when any predetermined adverse event occurs.

The family can customize the personality of the CareBot, modulating the voice's cadence to be fast or slow. The intonation can be breathy, or abrupt. The voice's volume can range from very loud to very soft. The response phrases from the CareBot for recognized words and phrases can be colloquial and/or unique to the family's own heritage. The personality can range from brassy to timid depending on how the caregiver, and others appropriate, chooses it to be.

Addition of medical-condition monitoring technology is a landmark for the robotic care system, upgrading its functionality from strictly social interaction as a companion (no mean feat itself!) to managed-care activity that may be beyond the capabilities of an untrained human caregiver.

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