

GeckoSystems to Enhance SafePath™ Wheelchairs With Voice Control

CONYERS, Ga., June 11, 2012 -- GeckoSystems Intl. Corp. (Pink Sheets: GOSY | <http://www.geckosystems.com/>) announced today that GeckoChat™ verbal interaction software will be integrated with their SafePath wheelchair navigation solution for use by quadriplegics and others who have control of speech but are unable to reliably manipulate a joystick control.

GeckoChat was created in 2003 for GeckoSystems' elder care and personal assistance robot the CareBot. It was designed to provide medication and scheduling reminders and record compliance for the care receiver. GeckoSystems is a leader in the emerging mobile robotics industry, dedicated to providing "Mobile Robot Solutions for Safety, Security and Service™".

Unlike other systems now in development (Most notable is MIT's intelligent wheelchair project: <http://rvsn.csail.mit.edu/wheelchair/>) the SafePath voice-controlled wheelchair would give the user complete control with no need for pre-mapping by a caregiver, as it is a completely autonomous AI navigation system using GeckoNav™.

Disabled users with both GeckoChat and the SafePath mobile robot solution will be able to enter a totally unknown indoor space and safely explore it by voice command. A SafePath solution, GeckoNav™, will be used to avoid obstacles and achieve endpoints. The user, for future reference, may mark endpoints and waypoints by the system so that multiple verbal commands may be replaced by one single verbal command.

GeckoSystems SafePath technologies are a constellation of AI solutions: GeckoSuper™, GeckoNav, GeckoImager™, GeckoSteer™ and GeckoMotorController™ software. Like all GeckoSystems' software, GeckoChat is an extensible AI paradigm. It uses speech recognition/synthesis protocols available in thirteen languages so SafePath enabled voice-controlled chairs can be used worldwide.

GeckoNav is an innovative automatic, self-navigation system created by GeckoSystems that merges AI and robotic technologies with traditional steering and locomotion systems. GeckoNav goes beyond the simple, reactive collision avoidance systems now being used in automobiles and other wheelchair applications. The autopilot seek feature of GeckoNav lets the user specify a destination via joystick or any available method and achieve it despite unforeseen static and/or moving obstacles. The GeckoNav AI engine takes over collision avoidance, speed adjustment for safety, and compensates for variations in terrain such as slippery or uneven surfaces in concert with the GeckoMotorController software.

There are approximately 2.2 million people in the United States alone that use a wheelchair for everyday activities. Approximately 15% of those people now use power wheelchairs, but this number is artificially low because many people who would benefit from the use of a power wheelchair are unable to have one. Medicare applications for wheelchairs specifically ask "Does this patient have the physical and mental abilities to operate a power wheelchair safely in the home? GeckoSystems believes that the availability of SafePath Enabled wheelchairs along with joysticks or alternative control devices (such as GeckoChat, sip and puff, and neural controls) could easily double or triple the size of the power wheelchair market.

GeckoSystems' SafePath mobile robot solutions are not just an R&D concept. It is a ready to market solution built primarily from off-the-shelf hardware using GeckoSystems proprietary software. Once GeckoSystems has created and tested a software calibration tool for GeckoImager™ the company plans to market an aftermarket upgrade kit for power wheelchairs already in service. GeckoSystems welcomes licensing inquiries for both indoor and outdoor applications.

<http://www.geckosystems.com/markets/licensing.php>

The Need:

In 2000 a comprehensive study of the need for better navigation studies was commissioned by the U.S. Veteran's administration:

Adequacy of power wheelchair control interfaces for persons with severe disabilities: A clinical survey - Linda Fehr, MS; W. Edwin Langbein, PhD; Steven B. Skaar, PhD
<http://www.rehab.research.va.gov/jour/00/37/3/fehr.htm>

The abstract quoted:

The extreme difficulty with which persons with severe disabilities have been taught to maneuver a power wheelchair has been described in case studies, and anecdotal evidence suggests the existence of a patient population for whom mobility is severely limited if not impossible given currently available power wheelchair control interfaces. Since our review of the literature provided little evidence either in support or refutation of the adequacy of existing power wheelchair control interfaces, we surveyed 200 practicing clinicians, asking them to provide information about their patients and to give their impressions of the potential usefulness of a new power wheelchair navigation technology.

Significant survey results were:

- Clinicians indicated that 9 to 10 percent of patients who receive power wheelchair training find it extremely difficult or impossible to use the wheelchair for activities of daily living.
- When asked specifically about steering and maneuvering tasks, the percentage of patients reported to find these difficult or impossible jumped to 40%.
- Eighty-five percent of responding clinicians reported seeing some number of patients each year who cannot use a power wheelchair because they lack the requisite motor skills, strength, or visual acuity. Of these clinicians, 32% (27% of all respondents) reported seeing at least as many patients who cannot use a power wheelchair as who can.
- Nearly half of patients unable to control a power wheelchair by conventional methods would benefit from an automated navigation system, according to the clinicians who treat them.
- We believe these results indicate a need, not for more innovation in steering interfaces, but for entirely new technologies for supervised autonomous navigation.

Market Evaluation for Colchester Catalyst on the use of Robotic Wheelchairs

In 2011 Colchester Catalyst, a UK non-profit that provides wheelchairs to those in need commissioned a market evaluation on the use of robotic wheelchairs.

GeckoSystems was the only company found to have a marketable robotic wheelchair solution.

<http://www.essex.ac.uk/csee/research/publications/technicalreports/2010/CES-514.pdf>

The Technology:

The software used to dramatically improve wheelchair safety is adapted from the suite of hardware and software solutions GeckoSystems has developed for their elder care and personal assistance robot, the CareBot. An overview of high-level Artificial Intelligence software used in CareBot and SafePath applications is available at: http://www.geckosystems.com/high_level/

GeckoSystems International Partnerships:

November 25, 2011 - GeckoSystems announced plans for a wheelchair joint venture in the People's Republic of China:
Wheelchair JV Press Release

The company is still actively engaged in discussions with representatives of both the Chinese government and the company. GeckoChat integration into SafePath enabled wheelchairs is one of the enhancements requested by the Chinese Joint Venture.

November 2, 2011 - ZMP of Japan announced its intent to join with GeckoSystems in an R&D partnership.

MOU from ZMP

Information About ZMP

February 12, 2012 - GeckoSystems sends their GeckoMotorController software source code to ZMP engineers for evaluation.
Information on GeckoMotorController

March 10, 2012 - A BaseBot™ prototype sent to ZMP for evaluation and for use as a research tool for future migrations of SafePath technology to ZMP applications.
Information about the BaseBot

ZMP is now testing the BaseBot and becoming familiar with navigation within an Artificial Intelligence (AI) environment. ZMP is a world leader in embedded robotics systems. GeckoSystems believes that the addition of an AI layer to their robotic systems will open many new markets for ZMP's robot technologies.

About GeckoSystems:

GeckoSystems has been developing innovative robotic technology for fifteen years. It is CEO Martin Spencer's dream to make people's lives better through robotic technology.

GeckoSystems, Star Wars™ Technology

The company has successfully completed an Alpha trial of its CareBot personal assistance robot for the elderly. It was tested in a home care setting and received enthusiastic support from both caregivers and care receivers. The company believes that the CareBot will increase the safety and well being of its elderly charges while decreasing stress on the caregiver and the family. Gecko Systems is preparing for Beta testing of the CareBot prior to full-scale production and marketing. CareBot has recently incorporated Microsoft Kinect motion sensors that will result in a significant cost reduction.

Kinect Enabled Personal Robot Video

Above, the CareBot demonstrates static and dynamic obstacle avoidance as it backs in and out of a narrow and cluttered alley. There is no joystick control or programmed path; movements are smoother than those achieved using a joystick control. GeckoNav creates three low levels of obstacle avoidance: reactive, proactive, and contemplative. Subsumptive AI behavior within GeckoNav enables the CareBot to reach its target destination after engaging in obstacle avoidance.

More information on the CareBot personal assistance robot.

GeckoSystems stock is quoted in the U.S. over-the-counter (OTC) markets, on the Pink OTC Current Information tier, under the ticker symbol GOSY.

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Safe Harbor:

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