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**\*\*\*FOR IMMEDIATE RELEASE\*\*\***

## **WHEELCHAIR COLLISION AVOIDANCE IS WINNING ENTRY IN CANESTAVISION CONTEST**

**Breakthrough 3-D Sensor Technology has Broad Applications in Automotive Safety, Security,  
Robotics, Facial Recognition, Assisted Living for the Handicapped, and Many Other Markets**

SAN JOSE, CALIFORNIA - November 8, 2005 - Canesta Inc., the pioneer and leader in electronic perception technology, today announced the winners of the CanestaVision™ design competition. The top prize winner developed an application for wheelchair collision avoidance; the second place winning submission was an "eye-in-hand" range sensor for robotic grasping.

The competition was conducted throughout the past year and invited contestants to develop useful applications for electronic perception technology, a recent development enabled by low-cost, tiny 3-D sensor chips that can be used to make everyday devices "see" and react to the world around them. Contestants submitted abstracts and proposals for applications and, ultimately, using Canesta hardware and software development kits, built prototypes of their applications.

"We are very pleased that this competition prompted some very clever and creative uses of our technology," said Jim Spare, vice president of marketing for Canesta, sponsor of the contest. "The range of ideas demonstrates the potential on a broad array of markets when technology like ours enables machines to 'see.'"

Spare explained that, initially, Canesta is focusing on applying electronic perception technology to the large markets of automotive safety and various security applications. However, over the longer term, many other markets will be impacted. Contest entrants were in several major categories: robotics, assisted living for the handicapped, security and facial recognition applications, and industrial applications.

### **Winners' Details**

The \$10,000 winning entry was entitled "Obstacle Avoidance Wheelchair System", submitted by (in alphabetical order) Jen Boger, Pantelis Elina, Daniel Gunn, Jesse Hoey, Alex Mihailidis, and James Tung. This team comes from University of Toronto Intelligent Assistive Technology and Systems Laboratory, Graduate Department of Rehabilitation Sciences, and Department of Computer Science; and the University of British Columbia Laboratory for Computational Intelligence.

The team described their project as follows: "This entry is a collision avoidance system for powered wheelchairs used by people with cognitive disabilities. Such systems increase mobility and feelings of independence, thereby enabling reversal of some symptoms of depression and cognitive impairment and improvement of quality of life. Canesta electronic perception technology allows the

wheelchair to 'see' obstacles, avoid collisions, and suggest alternatives to users. The Canesta sensors are ideal, as they combine accuracy with efficiency in the distance range necessary for collision avoidance." (The full paper on this application is available at <http://www.canesta.com/contest>)

The \$5,000 winning entry was entitled, "'Eye-in-Hand' Range Sensor for Robotic Grasping," submitted by Matei Ciocarlie, Columbia University, Department of Computer Science.

This entry was described as: ". . . a method to augment the sensing capabilities of a robotic arm using a Canesta [electronic perception technology] sensor. This project describes a synergistic integration of a robotic arm, a fast and compact range sensor, and a grasping simulator that work in concert to a) create a model of the robot's workspace and accurately detect small objects scattered across the workspace; b) track moving object across the robot's workspace and c) create detailed three-dimensional models of target objects that can be used for high-level tasks. The system is designed to be self-contained, robust, and work in unstructured environments." (The full paper on this application is available at <http://www.canesta.com/contest>)

### About Canesta

Canesta is the inventor of a revolutionary, low-cost electronic perception technology that enables machines and ordinary electronic devices to perceive and react to objects or individuals in real time.

When sight-enabled with Canesta's unique CanestaVision™ electronic perception chips and software, consumer, automotive, industrial, military, and medical products can gain functionality and ease of use not possible in an era when such devices were blind.

Canesta believes future applications of electronic perception technology are virtually as broad as the imagination. They may include intelligent automobile airbag systems that can sense the size and position of an occupant to control deployment and avoid injury, a low-false-alarm security system that could detect the difference between an intruder and normal activity, such as a pet moving or child visiting the bathroom at night, or robotic tools that can successfully operate in a dynamic, rather than static environment.

Canesta was founded in April 1999, and is located in San Jose, CA. The company has filed in excess of forty patents, 15 of which have been granted so far. Investment to date exceeds \$44 million, from Carlyle Venture Partners, JP Morgan Partners, Korea Global IT Fund (KGIF), Venrock Associates and others.

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Additional background information is available at [www.roeder-johnson.com](http://www.roeder-johnson.com).

See also: *"Canesta Announces \$15,000 Purse, \$75,000 in Free Hardware in Electronic Perception Design Contest"*, November 5, 2004, <http://www.roeder-johnson.com/RJDocs/CAcontest1104.html>