

Robotic Parking Returns to U.S.

Parking attendants may someday become an "endangered species." For example, in Europe and Asia, where space is at a premium (even more than in this country), auto-

matic parking systems have been in place for years.

For example, Robotic Parking Inc. (RPI, 280 Walnut St., Leetonia, OH 44431; Tel: 888/762-6727; E-mail: RoboPark@juno.com) has now built a demonstration facility in Leetonia to generate interest among potential U.S. customers. Peggy Guignon, an RPI executive vice president (Tel: 330/427-2311), provides *ATTN* with background on the demonstration facility.

Although automated parking technology is not new or unique, Guignon notes that RPI's design differs from European and Asian systems. Automated parking was tried in this country, but didn't develop any real following. She describes the robotic system, known as the modular automated parking system (MAPS), as "looking like a giant erector set."

A series of steel beams running vertically and horizontally are installed within a building's structure. Drivers park their cars on steel pallets at an entrance, leave their vehicles, and pick up parking claim tickets. Then, car and pallet are moved automatically through the garage to an open parking space. The vehicle entrance resembles a single car residential garage, and is all the driver ever sees of the structure. When the driver returns, the system retrieves the car, usually within a few minutes.

Within the garage, the technology for side-to-side motion is the same as that used on auto manufacturing assembly lines. The method for controlling the up and down motion was designed for automated warehouses. Guignon emphasizes that RPI's innovations include development of a man-machine interface permitting control from a desktop computer, and a

patented system which permits independent motion along all three orthogonal (x, y, z) directions. This increases system speed and allows RPI to install redundant systems as backups. Movement of the carriers and lifts is optimized with fuzzy logic software applications.

Because each direction is independently controlled, should part of MAPS fail or lose power, cars could still be retrieved using the other directions. In older systems, control of each direction was coupled. If one failed, all failed, and garage function ceased.

Installation costs vary according to the specifics of each application. For above ground construction, pricing is competitive with existing methods, according to the company. For underground construction, Guignon says RPI offers significant savings, e.g., the excavation volume decreases 30% compared with standard subterranean garages for a given vehicle capacity. Existing garages or warehouses can also be converted to use MAPS.

Guignon points out that operating costs are expected to be much lower than those for standard garages. While the number of parking spaces can be doubled, labor costs for attendants and security are greatly reduced. In addition, power and maintenance costs are lower because lighting needs are minimal, and the only concrete in MAPS is in its foundation. Concrete repair is usually a significant portion of typical garage maintenance costs.

With its modular design, MAPS can be modified or extended as future parking needs change. Also, the entire structure can be disassembled and then reassembled in a new location. Thus far, Guignon adds, RPI has bid on two projects, and has found customer interest sufficient to attract bidding competition from European and Asian automated parking companies.