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If a full version of AVT Corp.'s Advanced Vehicle Transporter is successful, the company could merge automobiles and trains.

Riding the rail, Chinese style

Thousand Oaks firm pushes transit solution

By **BILL LASCHER**
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Imagine riding the train and taking your car with you.

Nearly 20 years ago Thousand Oaks inventor Frank Randak devised a new type of train that may do just that. Now Randak is on course to unveil plans for a 50-kilometer demonstration of his advanced vehicle transport, a solar-powered magnetic levitation train that would provide what's known as "dual

mode" transportation.

By the end of August, the Beijing Lin Liu Cultural Exchange is expected to announce that it will fund the construction of a full-scale model of Randak's project. Randak's AVT Corp. presented its concept at a 2005 technology presentation in Los Angeles attended by Lin Liu, the head of the cultural exchange's Chinese parent, which invests in entertainment and sports projects in China. Liu said that the concept was "fabulous."

Now, if all goes according to plan, the AVT will be featured at a theme park just east of Beijing that Liu's company is developing. Liu said that once constructed it will be the Chinese city's largest such park. She said that her engineers see a potential in Randak's technology and she is enthusiastic about being on the leading edge of AVT's development.

"As the Chinese, we always respect American technology," she said. "We
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can involve AVT from the beginning. We definitely think this could have some kind of world impact."

Randak originally thought of the AVT in 1987 while working in the computer business. He had a number of clients in Orange County, where he often commuted.

"One day I was sitting there on the Golden State Freeway and I said 'This is an impossible situation, how did we get to that point?'" he said.

By 1999 he had built a capital reserve from a software business he ran and he decided to re-examine the brainstorm he had early in his career. He said other mass transit concepts were complicated, and he tried to develop a simplified solution.

His idea: trains that ran continuously on a track similar to a conveyor belt. They would run on an elevated platform in existing highway rights of way. Cars would exit the highway up a ramp connecting to the track as they would a normal off ramp. At that point, the car would park in a specially constructed shuttle that would ferry the cars up the ramp and gain speed to deck with the main train. Then the driver would set his or her destination. They could then get out of the car, watch TV, work, surf the Internet, use the restroom or relax. When the destination approached, they would get back in their car and the shuttle would detach from the train and carry them back to the highway.

Although the design sounds futuristic, a technical analysis published in October



Frank Randak is the inventor of the Advanced Vehicles Transport pictured behind him.

2005 by Boeing's Pratt and Whitney Division (now owned by Rocketdyne) showed that AVT's business plan was technically feasible. While certain elements, such as the transfer from the shuttle to the main vehicle, the magnetic levitation technology and the ramps needed to be proven, the analysis said that other elements such as the solar system, the induction motor and braking systems that stored kinetic energy for future use were already feasible for implementation.

In 2001, Randak built a model of the train and presented the technology at a seminar at California Lutheran University in Thousand Oaks. He said that with oil prices around \$23 a barrel at the time, there was little interest in radically new transportation technologies. Now with oil

made much progress. At one point, the Federal Highway Administration said that the AVT idea had promise, but it would not support the project until it saw a successful full-scale demonstration.

"There are too many levels of government in this country," Randak said. "Through our years of talks we've learned that the government will not make improvements unless they have to."

At one point, he communicated with a representative from the highway administration's Intelligent Transportation Systems division—which focuses on new vehicle and infrastructure technology. Randak was told that there was too much infrastructure in the United States already, and he would be better off taking his project to China. When he turned to the state government, a representative from Governor Arnold Schwarzenegger's office reiterated the message.

"I said 'Okay, I guess I better go to China,'" Randak said.

He said that once a demonstration occurs, he will be able to show that the AVT can be built with private support. He said that the collaboration with Liu's company, which is funding the project, will show that such a project can be profitable. The only cost to government agencies interested in the project will be to develop the routes—private investors will fund the construction.

"We were surprised that in the United States there was an issue, the first conception should have happened here," Liu said from offices in Marina Del Rey. "There's nothing wrong with China and their team and Frank's team doing this together. That might mean more."