

## **Investing in Integrated Car and Roadway Technology**

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90% of Australia's population lives in urban areas. There are more than 700 cars per 1000 population a higher rate than Canada, Japan and Germany and second only to the United States (800 per 1000 population) amongst the larger economies. Average car occupancy is 1.25 persons, indicating that the normal form of use is single occupant. Despite these statistics cars conform to a general purpose design made to carry at least four passengers and luggage in comfort on long extra urban trips with an increasing preference by consumers for even larger sports-utility vehicles (SUV). Governments are struggling to maintain an efficient and effective urban transport system in the context of increasing density of cars and other road transport. Governments cannot make radical changes because the private motor car is ingrained in the culture.

The large automobile manufacturers have acknowledged that the private car cannot continue to be a completely independent unit on the roadway. The Intelligent Transport Industry is currently focussing on vehicle to vehicle and vehicle to roadside communication technologies for various applications, particularly safety. Recent car models can do parking manoeuvres in conventional parking spaces without driver intervention. More radical experimental vehicles have been developed by the large automobile manufacturers, seemingly waiting for the consumer market to give some direction on requirements.

One of the main reasons that Australia is now being questioned as a location for manufacturing cars for the world market is that local designs did not meet the recent demand for fuel efficient engines and for overall vehicle fuel economy. However Australia is well placed to participate in developing the urban roadway environment of the future in which car and infrastructure conform to an integrated design. **Australia should demand a role in this type of development in return for its future investment in the activities of the international automobile companies.**

Some of the advantages that the Australian environment offers to automobile manufacturers are highly competent and well managed road instrumentalities that operate at the state and national level, strong research and industry sectors in both automobile engineering and information technology, and a readiness to invest in new transport infrastructure. The participation of Australian research and development sectors in new automobile technology is essential to opportunities in the broader transport infrastructure of the future.

It is clear that General Motors and Toyota have had an urban commuter car in mind in the experimental cars that they have developed (see [http://www.gm.com/vision/design\\_technology/emerging\\_technology.html](http://www.gm.com/vision/design_technology/emerging_technology.html) and [http://www.toyota-europe.com/about/news\\_and\\_events/editorial/i-road.tmex](http://www.toyota-europe.com/about/news_and_events/editorial/i-road.tmex)). The city of Grenoble, France has recently established a cooperative project with Toyota (see <http://newsroom.toyota.eu/pressrelease/3269/1141/city-grenoble-grenoble-alpes-m%C3%A9tropole-cit%C3%A9-lib-edf>). An appropriate Australian participation in the development of urban commuting infrastructure would be to participate in the development of cars that extend the automated parking concept using limited forms of driverless car technology. Automated parking stations can deliver higher density parking and efficient access to vehicles without requiring radical social change.