What is TRACSLab?

The TRAvel Choice Simulation Laboratory, abbreviated TRACSLab, is a unique laboratory that aims to investigate travel choice behaviour of car drivers. It consists of multiple connected driving simulators (Holden Commodore) in which drivers make decisions. The laboratory has been funded by the Australian Research Council under LIEF grant LE130100113, with additional funding from the University of New South Wales and the University of Sydney. Furthermore, research using the connected driving simulators is funded by the Australian Research Council under grant DP150103299 for four years (2015-2018).

What makes TRACSLab unique?

It is unique in two ways. First of all, it is the world’s first laboratory in which multiple human drivers are able to drive around and interact in a single virtual world. In other driving simulators one human driver is typically confronted with multiple computer generated drivers. In our laboratory, the human drivers influence each other, allowing novel research in travel decision making. Secondly, while most other driving simulators focus on the driving task itself (e.g., shifting gear, steering, etc.) or safety (e.g., drivers being influenced by mobile phones or drugs), TRACSLab focus on travel choices (e.g., route choice, speed choice, lane choice).

Where is TRACSLab?

The laboratory consists of two locations, namely a facility at the University of New South Wales (TRACSLab@UNSW) and a similar facility at the University of Sydney (TRACSLab@USYD). Both facilities are located in Sydney, Australia, and each is equipped with 5 driving simulators. TRACSLab@UNSW is further equipped with a bicycle simulator. All 11 simulators can be connected via the internet, creating a single virtual world in which 11 people can interact.

What kind of research can be conducted with TRACSLab?

Research possibilities are very diverse, ranging from route choice studies that include road pricing and travel time reliability, to responses to traffic management and travel information. Current joint research between the University of Sydney and UNSW is being conducted on various topics including the ones mentioned, funded by the Australian Research Council under Discovery grant DP150103299.
What hardware and software is being used?
The simulators are manufactured by Realtime Technologies (USA). Open Flight and VRML are used to create the driving scenarios. Simcreator is being used to run the simulations. Computer controlled cars can be generated by Simcreator, AIMSUN and VISSIM.

Can others access TRACSLab?
Yes, the laboratory is open to other researchers. Against a fee we provide access to TRACSLab@UNSW, or TRACSLab@USYD, or both, and we have experienced lab operators to run the simulators. Please contact us to discuss the possibilities.

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