Understanding the Human Factors Challenges of Automated Vehicles: Overview of the Work Conducted in Leeds

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Main Objectives:
- Can we simulate the “out of the loop” phenomenon?
- Does performance change as a result?
- Is there any difference in pattern of eye movements?

Main Objectives:
- Using machine learning to develop natural, human-like vehicle control
- Collecting driver behaviour in “the same” real and simulated world.
- Investigating performance for three levels of risk, and for quite challenging environments, such as U.K. narrow lanes and roundabouts.

Human factors questions:
- Do drivers prefer their “own” driving style, compared to that of the automated vehicle?
- How is trust and acceptance affected?
- What can auto-confrontation tell us about design of new systems?

Selected Papers
2. Fox C; Camara F; Markkula G; Romano R; Madigan R; Merat N (2018) When should the chicken cross the road?: Game theory for autonomous vehicle-human interactions. To be confirmed.
5. Louw T; Markkula G; Boer E; Madigan R; Carsten O; Merat N (2017) Coming back into the loop: Drivers’ perceptual-motor performance in critical events after automated driving. Accident Analysis and Prevention, 108, pp.9-18.