

### **Case Study 3: Road Traffic Safety (RTS) - Guidance on Ethical Considerations Relating to Safety for Autonomous Vehicles: ISO 39003:2023**

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ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Dr Lisa Dorn, TAS-S Co-I based at Cranfield University was invited to join the Technical Committee ISO/TC 241 Road Traffic Safety Management Systems in recognition of her research in the field. The committee aimed to prepare a new standard called 'Guidance on ethical considerations relating to safety for autonomous vehicles' (AVs). Several standards are available, or under development, to address the engineering and technological aspects of AVs, but none that cover the decision-making processes of the vehicle control system. The new standard called ISO39003 is from the 'family' of Standards with ISO39001 being the first. ISO39001 is a full management system standard for Road Traffic Safety Management Systems providing a framework for a safe system approach for organisations. ISO39002 gives guidance on safe commuting practices. The intent for ISO39003 is that all manufacturers and designers should consider the identified safety aspects using a self-developed, standardized, methodology for AVs. ISO39003 is applicable to vehicles in level 5 mode according to SAE J3016 in 2022, as part of its report.

The ISO39003 standard aimed to address:

- Methodology for Identification and Evaluation of aspects
- Those aspects that should be considered
- Possible outcomes of those decisions

Working draft 1 to 9 of the draft ISO39003 standard was developed between October 2019 to January 2022. The Committee draft was published on February 14<sup>th</sup>, 2022. The working draft was approved further to a review and ballot by members of ISO TC 241 and the draft International Standard was published on July 11, 2022. The entire ISO approved the draft further to a review and ballot and the Final Draft International Standard ballot was initiated. BSI published ISO 39003 on 27<sup>th</sup> July 2023 to give guidance on ethical considerations with regards to road traffic safety of AVs. The ISO39003 standard does not apply to the technical method used to control the decision-making process, nor does it give any guidance on the desired outcomes of those decisions; it gives guidance on ethical aspects for consideration in the design of the decision-making process. The standard does not offer the technical precision to prescribe the required controls but offers a set of 'protocol guidelines' that all decision makers for the design of AVs could choose to self-certify against to assure that the desired necessary ethical considerations were addressed during design and effectively controlled. ISO39003 considers those aspects of AVs that require considerations to be made by the designer/manufacturer to ensure that key ethical aspects are not overlooked or disregarded. It provides manufacturers and distributors with a mechanism to enable

formal declaration of compliance to an International Standard and will give assurance to purchasers, end-users, and society, that the vehicles' design has considered and addressed the ethical issues identified within the standard.

BS ISO 39003:2023

Road traffic safety (RTS). Guidance on ethical considerations relating to safety for autonomous vehicles