CASE STUDY

DRIVEN (Innovate UK, 2018)

The Challenge

In-car technologies are becoming more and more common in UK vehicle fleets, but the impact of these technologies on safety needs to be understood so that road safety policies can be targeted effectively. Roads are likely to become safer as these technologies infiltrate the fleet, but the impact on road casualty statistics will differ by area, depending on the characteristics of the routes and which type of collisions are most frequent.

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Our Approach

We developed a tool using GIS techniques to map collisions and traffic along routes across the UK; users can then apply different Advanced Driver Assistance System (ADAS) filters and see the impact on collision risk for a particular area or road. The tool was developed using Stats19 collision data and data from in-depth accident investigations (from RAIDS). The filters were built using expert knowledge on ADAS systems and insights gained from TRL's awarding working with European Commission into effectiveness of different technologies (link).

Figure 1: Bristol to Oxford route showing collision numbers from last 5 years with and without technology adoption

The Results

The tool has been developed in RShiny and parameterised with data from all Motorways and A roads in the UK, so that the collision risk along routes between start locations and destinations can be found and calculated both with and without in-car technologies.

The ability to apply filter for different in-car technologies allows road safety decision makers to find out what road safety could look like in their area, if those technologies are adopted.
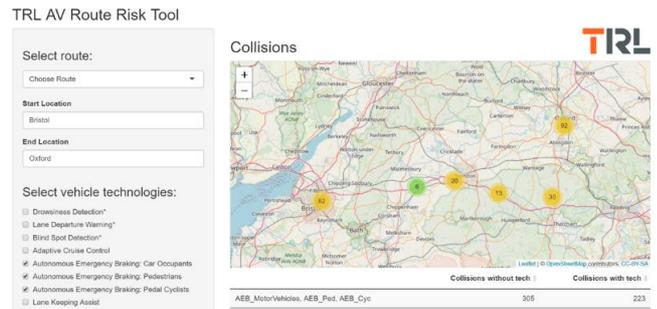

Figure 2: Bristol to Oxford route showing collision risk with and without technology adoption