

New research proposes a cross-domain safety assurance framework for automated transport

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CROSS-DOMAIN SAFETY ASSURANCE



for Automated
Transport Systems



warwick.ac.uk/wmg

Credit: University of Warwick

A new report led by academics at Warwick Manufacturing Group (WMG), University of Warwick, proposes a ground-breaking safety assurance framework that has the potential to be applied across automated transport modes.

The new report is the result of Warwick's extensive [safety](#) research which has undergone 12 months of evolution, development and validation with key stakeholders across the [transport](#) domains of land, sea and air.

Over the past year, 35 organizations in industry, academia, government and regulation from the U.K. and internationally have contributed to the discussions which have been captured in the report. The report encourages Government policy to tackle similar challenges all three domains face to realize the safe introduction of automated transport systems, in a joined-up manner.

The Cross Doman Safety Report highlights the economic potential of the global automated transport ecosystem, which is projected to reach over £750 billion by 2035, with a U.K. market share of approximately 6% representing £42 billion and creating up to 38,000 new jobs.

When it comes to safety assurance of automated [transport systems](#), the report suggests the need to not only establish the safety level of automated transport, but also to communicate the safety level to all stakeholders (society, regulators, policymakers, developers etc).

Communicating safety level is key as one of the main obstacles to the safe introduction and consumer acceptance of automated transport are safety and trust, according to this new research. The report contains a set of key recommendations which include standardized definitions, new processes for virtual test environments, a new scalable and manageable safety assurance framework, and the key role of independent organizations.

The report highlights that while there are differences between the safety assurance processes of autonomous ships, aircraft or vehicles there are also large elements of crossover. This can then be leveraged by governments, developers and manufacturers by aligning safety artifacts across the different types of transport, allowing for greater safety and consumer acceptance.

Ian Stewart MP, Chair of the Commons Transport Select Committee said, "It's important that we look ahead and horizon scan at emerging technologies... We've got to look ahead to make sure the regulations are in place.

"It's really interesting that this conference looked at these issues holistically because it's very easy in the world of transport to look at each mode as if it existed in isolation, but there will be cross cutting issues."

Professor Siddhartha Khastgir, Head of Verification and Validation at WMG, University of Warwick, commented, "Safety of automated systems needs to be pre-competitive. At WMG, we are extremely grateful to all the contributors to the report who have come on this journey with us over the past 12 months.

Capturing the collective intellectual output of the group, we have demonstrated in the [report](#) on cross domain safety assurance across land, air and marine, that there are a lot of synergies in the approaches across

the transport domains. At the same time, there are certain aspects that will be very specific to the domains that should be tackled individually."

More information: The report is available online:
[warwick.ac.uk/fac/sci/wmg/rese ... nline final v2.0.pdf](http://warwick.ac.uk/fac/sci/wmg/rese...nline_final_v2.0.pdf)

Provided by University of Warwick

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