

Automation and tragic
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Automation is the use of a technology or machine to complete a duty or function that was previously carried out by a human. In vehicle, automation involves use of camera, radar and various sensors to accumulate information about a vehicle's surroundings. This collected data is processed by computer programs to perform parts or all the driving task on a continuous basis. 1 The continuous development of automotive technology aims to deliver even higher safety advantage, and one-day Automated Driving Systems (ADS) can handle all the functions of driving when we don't wish or can't do it our-self. ADS innovations help vehicle to see, think and act. 2 In today's motor vehicles, driver assistance technologies are already helping in saving lives and preventing injuries.

One of the critical and tragic fact is that, 94% of serious crashes occurred due to human error. As per other statistics in 2016, more than 37, 461 people died in motor vehicle-related crashes in the U. S. Automated vehicles have the potential to remove human error from the crash equation, which will help protect and save life of drivers and passengers, as well as bicyclists and pedestrians. Since 1975, the U. S. population is growing steadily.

The road traffic death rate per 100, 000 people, in 2016, is reduced to half of what it was 40 years ago. 3 This is being achieved via implementing the five eras of safety: Safety/Convenience Features, Advanced Safety Features, Advanced Driver Assistance Features, Partially Automated Safety Features and Fully Automated Safety Features among which last two plays a vital role in accomplishing 'Vision Zero Accidents' in coming decades. 24 Along with such life saving benefits of autonomous vehicle, there are still many major flaws. Google car involved in minor crashes shows the hazards of sharing the

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road with human drivers. A fatal crash between a Tesla Model S (in “Autopilot” mode) and a tractor-trailer in May 2016 highlighted questions about the limits of the technology.

5 Also, if other technology fails, taking an example of traffic signals that the cars depend on, there's no accounting for human traffic signals that is in case of an accident where a traffic is directed by police officer, the cars will not understand human signals. Even, autonomous vehicles are not yet ready to operate at a high level of safety in all weather conditions. Furthermore, a self-driving car doesn't eliminate the possibility of a car accidents. In fact, there's no legal precedent for how to handle such case.

On top of all, Electronics systems in cars presently have no or limited security measures. Use of autonomous vehicle will still demand driver's education. Purpose of self-driving cars will not be served unless they are widely adopted. 6 Though there are many concerns related to autonomous vehicles, but the potential benefits of autonomous vehicle are immense. Thousands of lives could be saved by preventing crashes caused by driver-related factors. Within few decades, Fully Automated Vehicle (Level 5 vehicle) can perform the entire driving task without driver's input, under all conditions that a person could perform.

Looking at the technology advance pace in implementation of autonomous vehicles, the 'Vision Zero Accidents' is not far away.