

Automated driving: Are we heading down the right path?

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Abstract: Automated vehicles are attracting attention worldwide. Human support functions provided by those vehicles vary depending on the goals that are aimed at. Five levels of driving automation are distinguished in SAE J3016, originally published in January 2014 and revised in September 2016. Their definitions for the levels of driving automation are reasonably precise. However, they have some debatable points from human factors perspectives. For instance, SAE level 2 – partial driving automation executes the lateral and longitudinal vehicle motion control with the expectation that the human driver supervises the automation properly. In SAE level 3 – conditional driving automation, on the other hand, the machine performs the entire dynamic driving tasks and the human can be free from any driving task. However, he or she is expected to resume control appropriately when the automation requests. Is it reasonable to expect that the assumptions made in levels 2 and 3 hold for ordinary human drivers? What have we learnt from aviation automation? This talk argues that our real goal for a sensible level of driving automation may not be among those defined in J3016 of September 2016, which will be proven with the aid of the well-established classical concept of levels of automation.