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16. Abstract

Currently, in the U.S., the average occupant of a light-duty vehicle spends about an hour a day traveling—time that could potentially be put to more productive use. Indeed, increased productivity is one of the expected benefits of self-driving vehicles.

The data presented in this white paper indicate that for about 62% of Americans, self-driving vehicles currently are not likely to result in an improvement in productivity. This is the case because 23% indicated they would not ride in such vehicles, and 36% would be so apprehensive in such vehicles that they would only watch the road. Furthermore, out of the remaining 41%, around 8% would frequently experience some level of motion sickness—for an additional 3% of occupants.

Of additional concern are nontraditional positions and postures being considered for occupants of self-driving vehicles (positions and postures for which current occupant-protection systems are not optimized), and the behavior in crashes of untethered objects being used for activities in the pursuit of increased productivity.

Consequently, the hoped-for increased productivity in self-driving vehicles would materialize only if the following are achieved: (1) an increased confidence of occupants in self-driving vehicles, which would allow them to be more interested in performing productive tasks while riding in such vehicles; (2) addressing the inherent motion-sickness problem; and (3) solving occupant-protection issues related to nontraditional seating positions and postures, and untethered objects becoming projectiles during crashes (or potentially being placed between the occupants and their airbags).

Also of importance is the fact that current trips in light-duty vehicles average only about 19 minutes—a rather short duration for sustained productive activity or invigorating sleep.

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