



Research Summary

Touch-Screen Task-Element Times for Improving SAE Recommended Practice J2365: A First Proposal

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Some type of information or entertainment system can now be found in all new cars. The challenge for designers and engineers is to design these systems so that their use minimally distracts drivers from the primary driving task. Part of that challenge is to try to determine, before the systems are built and installed, how much time is required to use them and therefore how much time the driver's attention will be diverted from driving.

Each of the tasks that drivers perform with these systems (dialing a phone, selecting a song to listen to, entering a destination in a navigation system, etc.) is made up of elements (pressing a button, moving a slider or a cursor, etc.). This report discusses methods for identifying the various task elements and then adding up their durations to estimate the time required to complete each task.

Unfortunately, the currently used source for data for this purpose (Society of Automotive Engineers Recommended Practice J2365, "Calculation of the Time to Complete In-Vehicle Navigation and Route Guidance Tasks,") only has data that was collected before touch screens were prevalent in motor vehicles, so there is no data for many task elements of interest (such as scrolling).

To develop task-time estimates for this project, researchers reanalyzed data that was collected in a previous UMTRI experiment in which twenty-four subjects from three age groups were timed as they performed various tasks in a "parked" vehicle mockup with a touch-screen interface.

The data acquired in the research will be used in the development of a new version of SAE J2365. Using the data in J2365, designers and engineers can make predictions about how long it will take to perform tasks, without the need to put drivers in vehicles, shortening development times and reducing development costs. Furthermore, the revisions in J2365 will allow for estimates that better account for differences due to age, so that future driver interfaces are appropriately designed for the full range of drivers.