Concisely Measuring Cognitive Workload of the Interactive User Interface

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ISO17488 has been developed and is being used to measure the cognitive workload of interactive in-vehicle user interfaces. This ISO specifies how to conduct the DRT(Detection Response Task) as a secondary task to measure RT(Reaction Time) which is the main index of cognitive workload. However, to apply this ISO to the development of actual interactive in-vehicle user interfaces, The use of DS(Driving Simulator) is required as a primary task, which increases the cost of the experiment. Therefore, a simple method that can measure cognitive workload without using DS is desired.

We measured light cognitive workload using two types of measurement application software, we have developed. Those are "8DOT_DRT" and "8DOTs_Expansion Detection" .They are without using DS. Also,the conventional DS + ISO17488 method is used to measure light cognitive workload. All results are compared, and we found that whereas "8DOT_DRT" and "8DOTs_Expansion Detection" are not as good as DS + ISO17488. But They are capable of detecting light cognitive workload and can be used in development of the interactive in-vehicle user interfaces.