Three experiments were conducted to check the feasibility of predicting experimental outcomes of driver distraction studies. The predictions are based on subtasks analysis and synthesis. In the first experiment, data (e.g., Total Glance Time, Single Glance Durations and Total Shutter Open Times) are gathered when subjects interacted with touch screen applications. In a second experiment, additional data were gathered about rotary knob interactions. These data were used to synthesis and predict the outcomes of a third (evaluation) experiment, which involved rotary knob and touch screen tasks. The results are promising and can help to have a better understanding of problematic subtasks and reduce testing of clearly unsuitable applications. The transfer of the procedure to other laboratories is challenging. The modeling and mapping process includes many subjective decisions.

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