

# Evaluation of the In-vehicle Experience

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Christian Roth

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# Evaluation of the In-vehicle Experience

## Abstract

Modern in-vehicle experiences are brimming with functionalities and convenience driven by automation, digitalization, and electrification. While automotive manufacturers are competing to provide the best systems to their customers, there is no common ground to evaluate these in-vehicle experiences as they become increasingly complex. Through conversations with industry experts and leading researchers in academia, this report explores why existing automotive guidelines do not offer thresholds for cognitive distraction and what researchers can do to change this. It starts the discussion around acceptable levels of distraction by evaluating the driving context and exploring how system reliability can translate to distraction and frustration. This report covers the need to test systems for their complexity and ease of use and to prevent users from resorting to alternative systems while driving (e.g., smartphones). It highlights the value of naturalistic data generation using vehicles already sold to customers and the issues around privacy and trust concerning such methods. Lastly, it talks about the opportunities and challenges behind developing automated testing methods for in-vehicle experiences that simulate human behavior and how to shorten evaluation timelines to enable a much larger scale of systems testing.

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