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### FRONT-END DESIGN GUIDELINES FOR INFOTAINMENT SYSTEMS

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This paper presents a set of front-end design guidelines intended to provide a starting point to designers of user interfaces for infotainment systems. The proposed approach suggests guidance on four dimensions inferred from state of the art such as crucial to achieve well designed automotive interfaces: a) Design; b) Interaction; c) Security & Trust; and d) Connectivity. Guidelines were thought by integrating conceptual-insights from Graphic Design; User Centered Design; Human-Machine Interfaces; Usability; and Human-Computer interaction. Additionally, were specified and structured to be used also as a comparing tool (Like Heuristic-Evaluation technique) to analyze front-end of existent infotainment systems. Said duality allowed to revise the pertinence of the proposal through a case study where 30 participants (25 regular users and 5 technical-experts) compared suggested guidelines' specification against interactions provided by the front-end of Mazda Connect® infotainment System. Obtained results suggested that setting of proposed guidelines was compatible with participants' perceptions facilitating to identify pain-points on current design; thus, proposed guidance could scaffold base-insights for new front-end designs.

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