

Reception and processing of visual information in traffic

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Abstract

The theoretical part of this work deals with the visual perception of the driver. Special attention is paid to the perception of visual information in the whole range of the field of view. From psychological point of view, the term functional field of view is important, the construct taking into account not only perception, but also the attention. Its size depends on the amount of information which have to be processed at any given moment. Foreign literature uses the term „Useful field of view“ under the abbreviation UFOV, german literature uses the term „nutzbares Sehfeld“ under the abbreviation NSF.

The experimental part of the work focuses on evaluating the changes of the visual perception in the range of the visual field in relation to age. For this the SET of 1361 people in age group from 18 to 90 years. In further subchapters the experiment is described where the secondary task was used as variable in order to find out whether the increased cognitive load affects the range of the useful field of view. For this experiment, the set of 645 people of age 18-90 years was used. The parameters of the visual perception in the situations with and without added secondary task were also monitored for the relationship to the results of several personality and performance methods.

Based on the analysis, it was discovered that all the followed parameters of the visual perception correlate significantly with age, decreasing the performance. Other findings confirmed that during increased demand on the attention distribution the range of the field of view is narrowing and the number of incorrect reactions on the peripheral stimuli is increasing. The purpose of this work was to contribute not only to the extension of the knowledge of the driver's visual perception, but also to the extension of possibilities of the psychodiagnostics within the scope of assessing the psychical fitness for driving