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| Title of presentation Use of modern communication devices in the train driver's cab – risks and design options | Institution University of Applied Sciences Northwestern Switzerland |
| Please highlight workshop topic(s) your paper is relevant for <input type="checkbox"/> Situation awareness | |
| Abstract <p>Most Swiss railway companies equip their train drivers with modern digital communication devices such as cell phones and tablets. The use of these devices is necessary for train drivers to perform their tasks but has a potential for distraction that should not be underestimated. Increasing irregularities and unsafe actions, including the signals passed at danger, can be attributed at least to a certain extent to the distraction of the train driver by these mobile and other digital devices in the driver's cab.</p> <p>In a research project conducted by the University of Applied Sciences Northwestern Switzerland together with a Swiss railway company, we investigated which of these digital devices and functions lead to distraction in which situations. Based on this investigation, we analyzed how this problem should be addressed from a work psychology and design perspective. The final goal was to identify appropriate measures to reduce distraction or its consequences without restricting the scope of action of the train drivers or hindering them in the performance of their primary tasks (i.e. safe train driving).</p> <p>In a qualitative approach, we conducted observations of train driving in the driver's cab and interviews with train drivers and experts. Based on the data obtained and on to the current literature, we conceived the first measures. In order to achieve a comprehensive approach, we developed measures that address the individual train driver as well as measures to improve the design of technology and organizational measures.</p> <p>In a further step, in workshops with other railway professional groups, we discussed and completed these measures in terms of their effectiveness and practicability.</p> <p>The result was a set of 26 preventive and protective measures. Preventive measures have the goal of avoiding distraction, whereas protective measures are conceived to reduce the negative consequences of distraction. While a preventive measure is for e.g. the introduction of attention trainings where train drivers learn to avoid certain distractions, a protective measure is for e.g. the feature of manual and temporary suppression of incoming messages which lead the driver to be distracted by messages but for a shorter duration. By carefully selecting and implementing these measures, the railway company can ultimately support its train drivers in the safe and sensible use of modern communication devices in the driver's cab.</p> | |