

**Distraction and the Use of Modern Communication Devices in the Train Driver's Cab**

**Background**

- On Swiss railways increased cases of signals passed at danger have been detected in recent years (Federal Office of Transport, 2019).
- This increase can be attributed at least in part to the distraction by mobile phones, tablets or other electronic devices used in the train driver's cab (Fig. 1 / Fig. 2).

**Goal**

Development of measures to reduce distraction by communication devices in the train driver's cab.

**Methods**

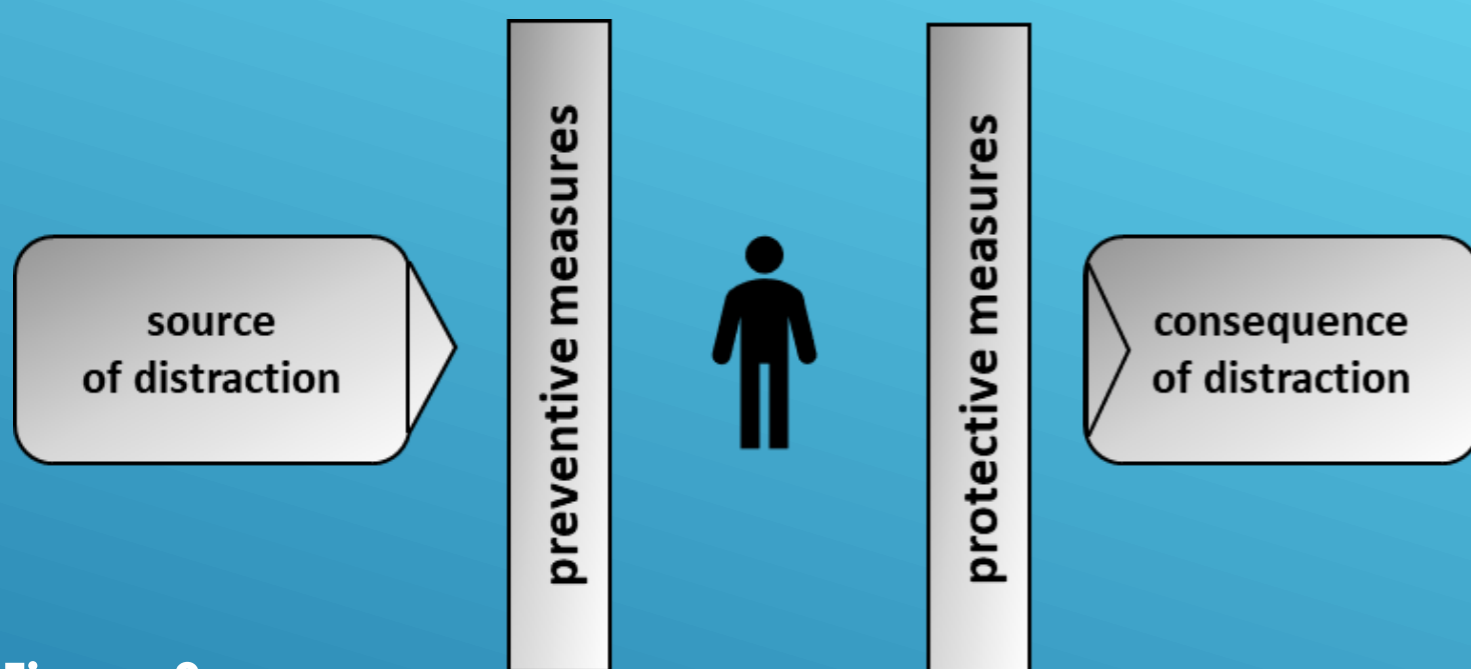
- 👁 observations in the driver's cab
- 🗣 interviews with railway experts
- 👥 workshops with railway / safety experts



**Figure 1**  
Digital devices in a modern driver's cab



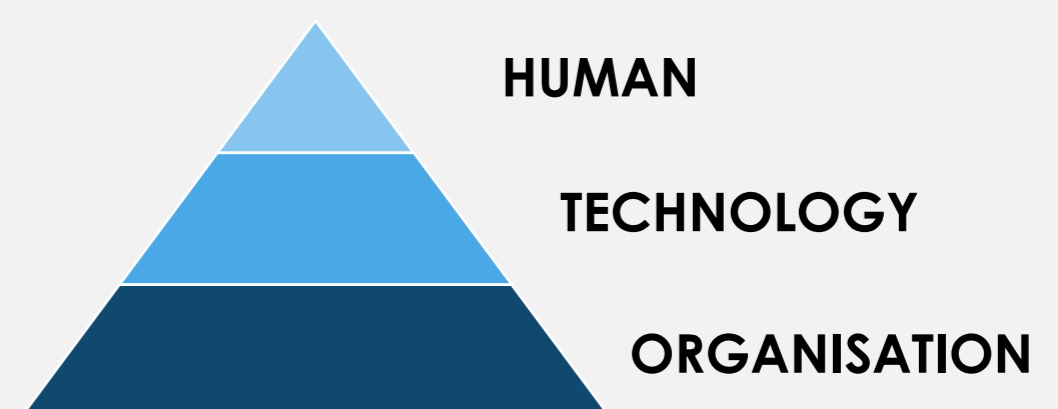
**Figure 2**  
Train driver's tablet with route plan



**Figure 3**  
Preventive and protective measures to deal with distraction

**Results**

A set of 26 preventive and protective measures (Fig. 3, examples in Tab. 1) following the socio-technical model (Hacker & Ulich, 2018):



**Table 1**  
Examples of preventive and protective approaches at the levels of human–technology–organisation.

	preventive approach	protective approach
<b>HUMAN</b>	Training of train drivers to deal with monotony.	Training of train drivers for the recovery of situational awareness after a distraction.
<b>TECHNOLOGY</b>	Automatic suppression of situationally irrelevant functions and information by the technology.	Possibility of manually suppressing incoming messages and postponing them for later processing.
<b>ORGANISATION</b>	Definition of critical areas with minimal distraction of the train drivers.	Transmission of messages only from a single point of contact to the driver's cab.

**Conclusion**

- Train drivers must be supported in the safe and sensible use of communication devices in the driver's cab.
- Railway companies can implement appropriate measures to reduce sources and consequences of distraction.
- And: Selected measures must be implemented in a participatory manner with the professional groups concerned.