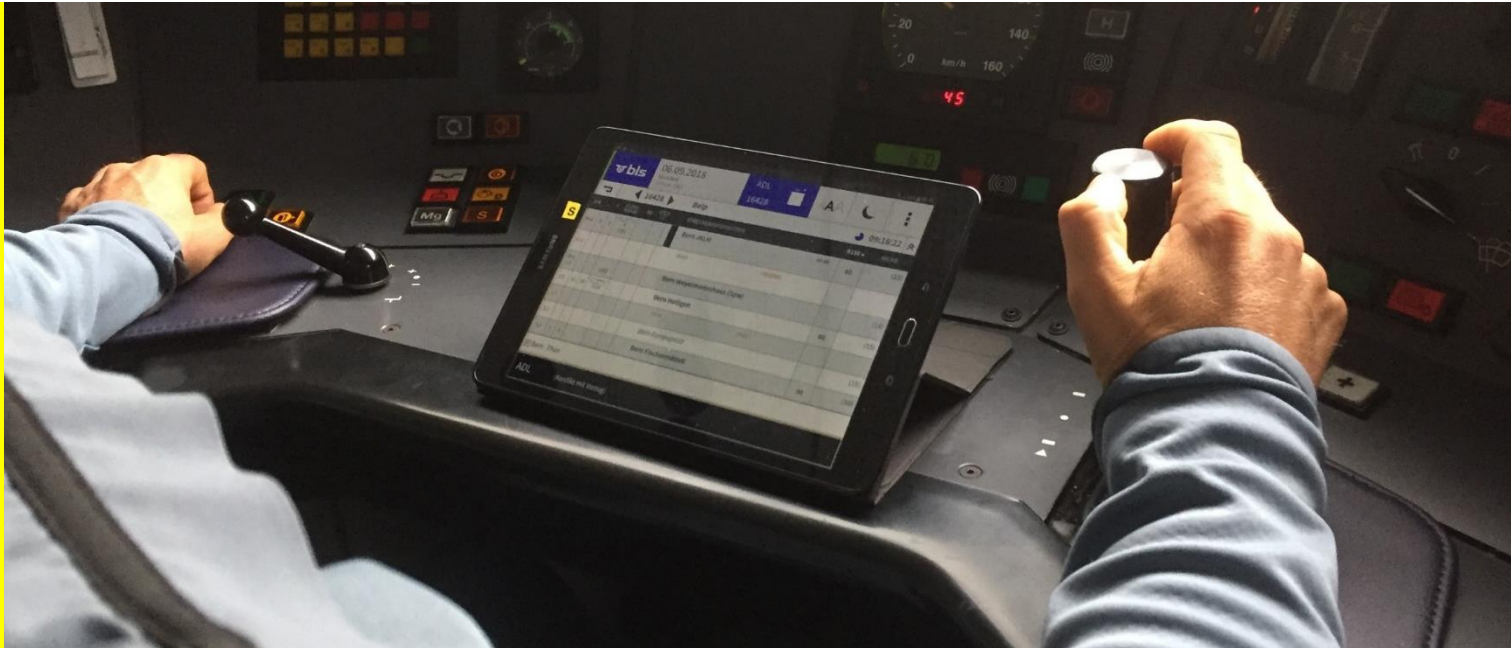


Use of modern communication devices in the train driver's cab

Risks and design options



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'Distracted' Swiss train drivers run red signals in record numbers

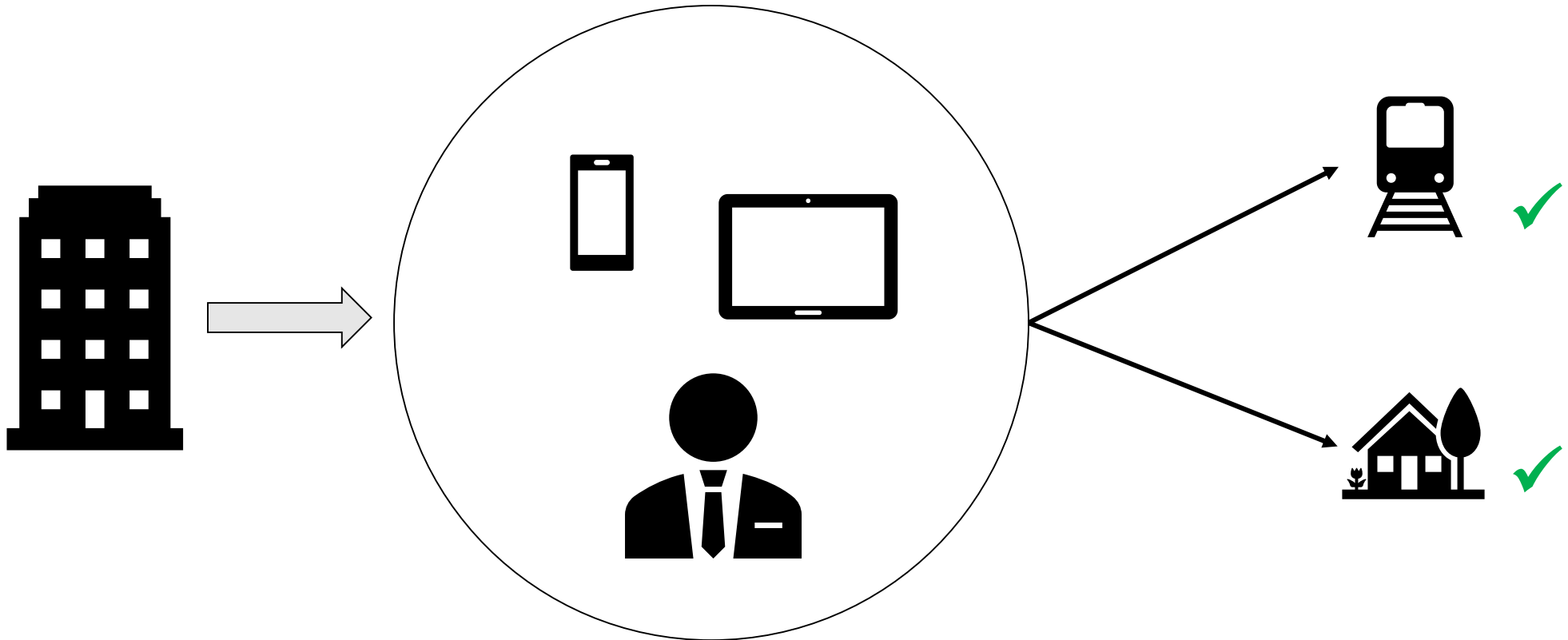
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news@thelocal.ch
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26 August 2019
08:43 CEST+02:00

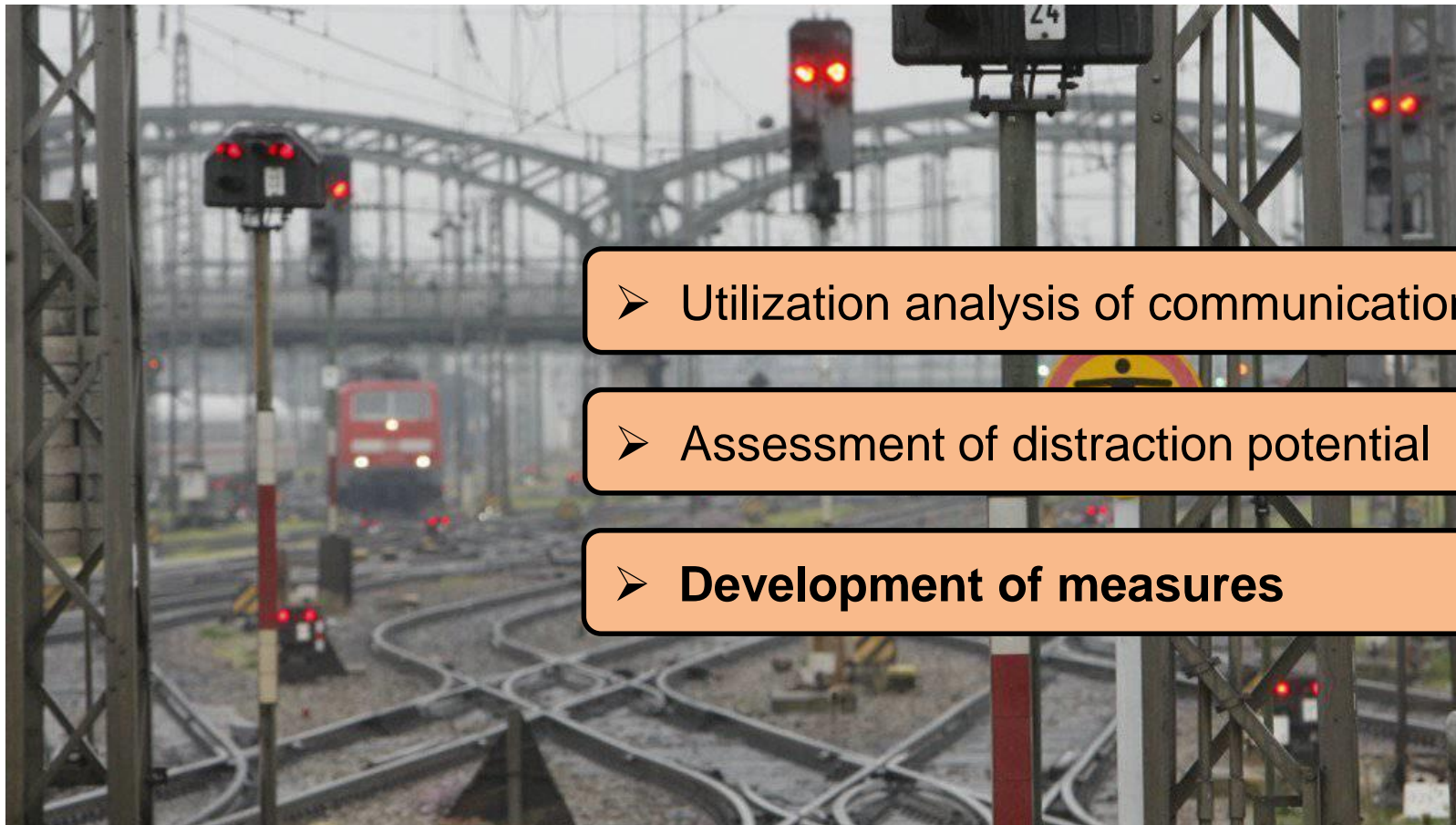


<https://www.thelocal.ch/20190826/distracted-swiss-train-drivers-run-red-signals-in-record-numbers-sbb>

Train drivers and communication devices



Goals of the project



- Utilization analysis of communication devices
- Assessment of distraction potential
- **Development of measures**

Tasks of a train driver

- **Primary task:** Safe driving (transport of passengers/goods and shunting)







- **Secondary tasks:** Communication with control center, troubleshooting etc.

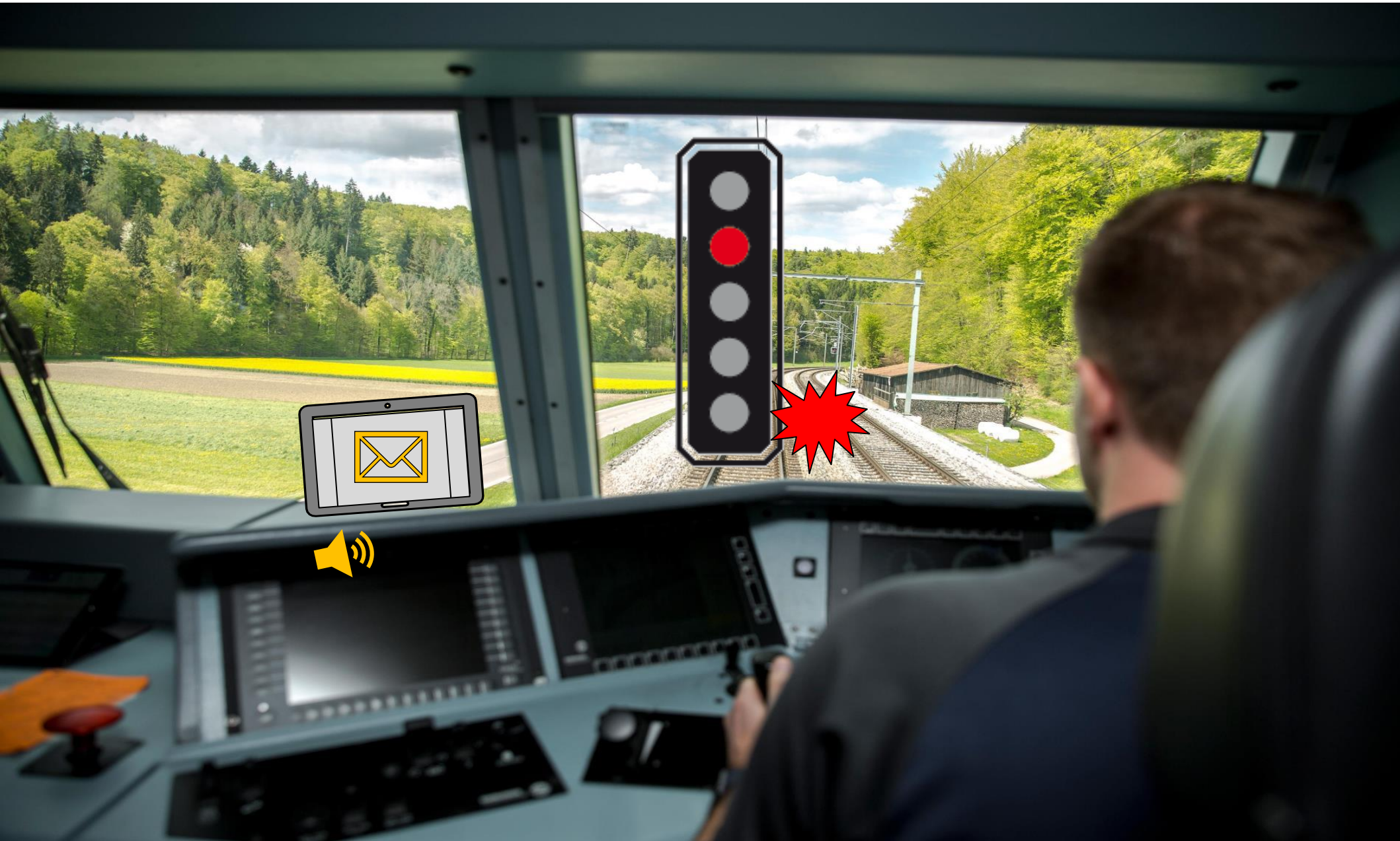
What is driver distraction?

Driver distraction is a process or condition that draws resources away from the driver's primary task. (Sheridan, 2004)

Vehicle guidance requires:

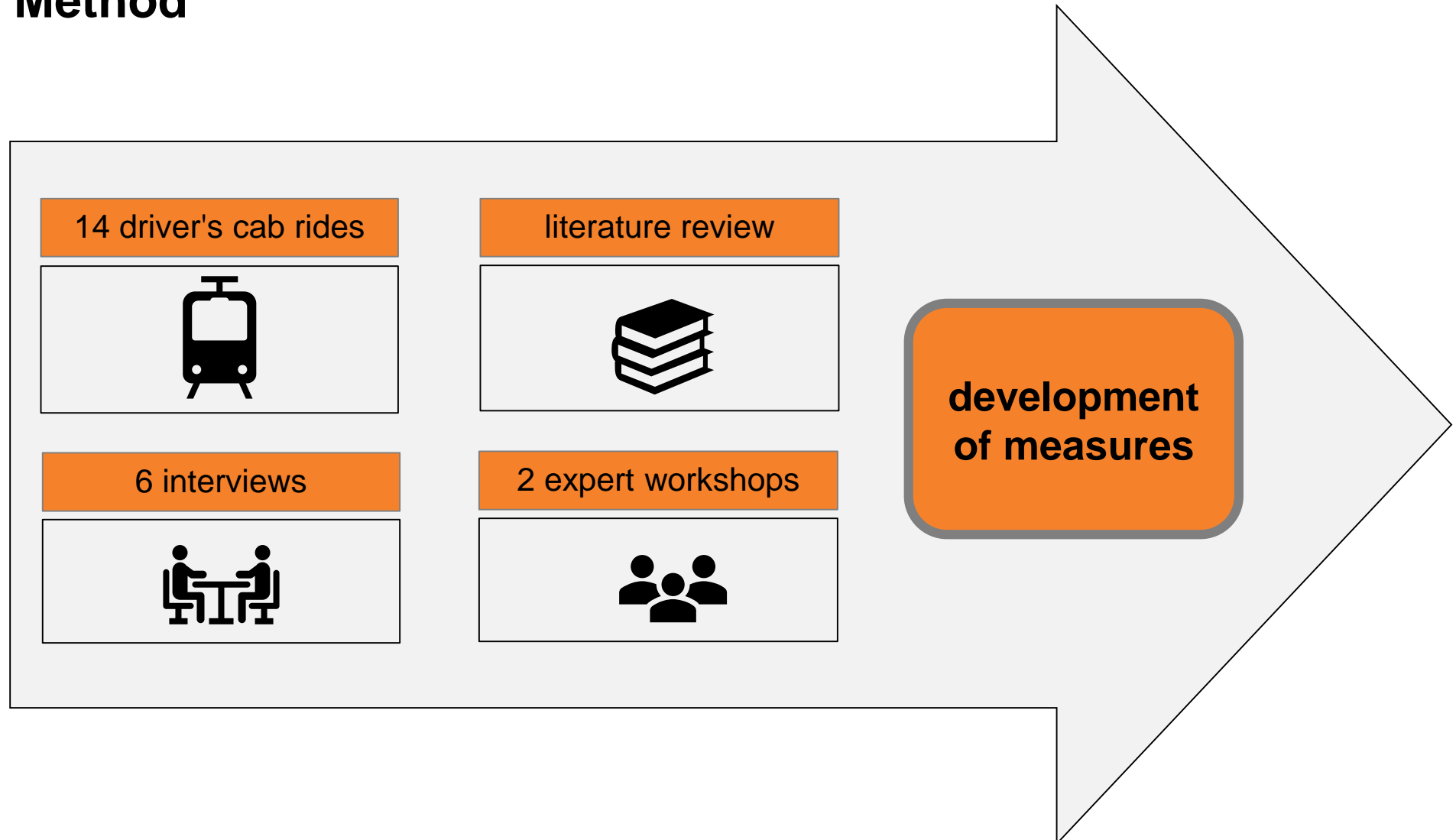
visual resources	
auditive resources	
cognitive resources	
motor resources	

(Peters & Peters, 2001)

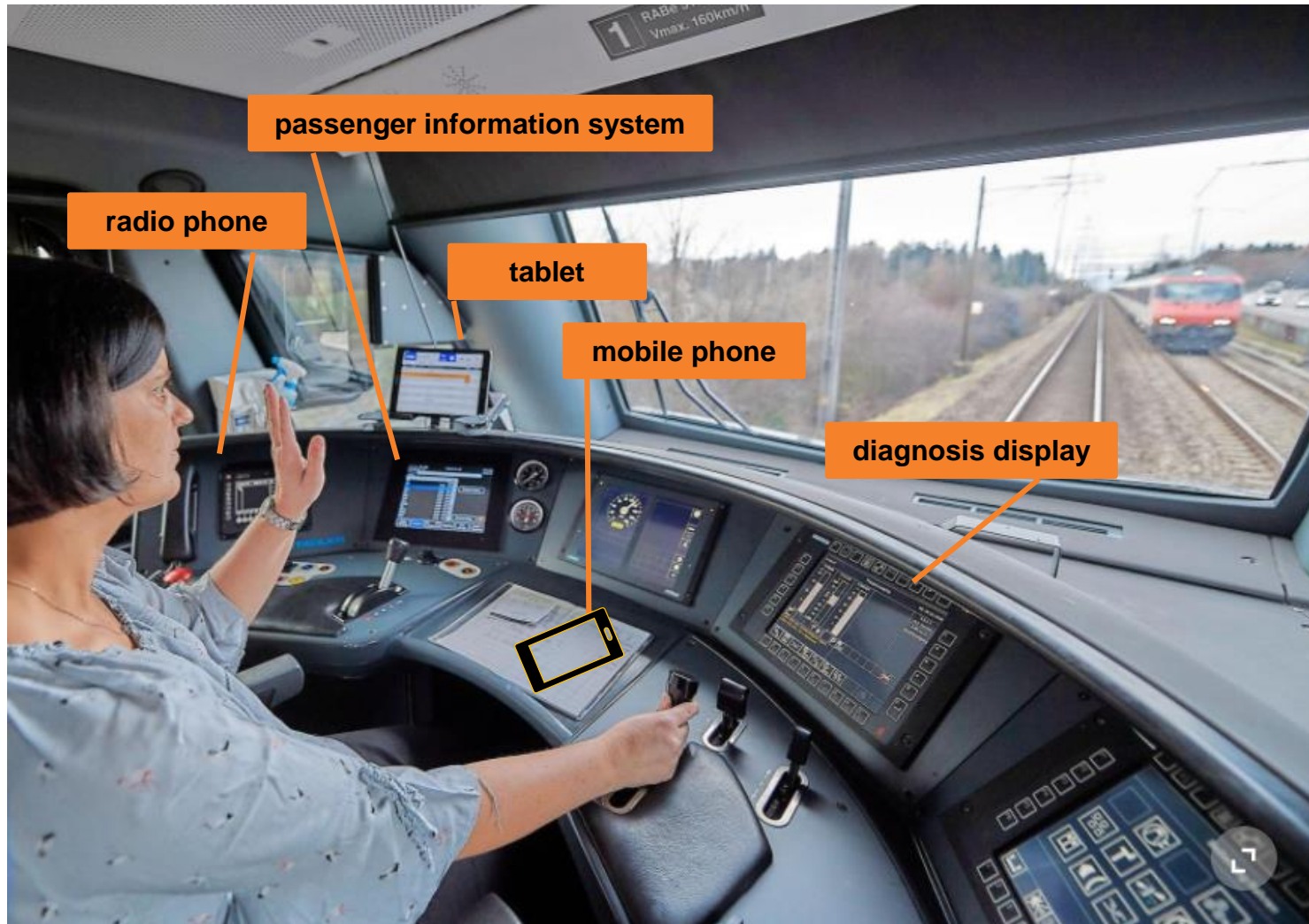


<https://www.bls.ch/de/unternehmen/medien/mediathek-bls#media:bilder> (adapted)

Method

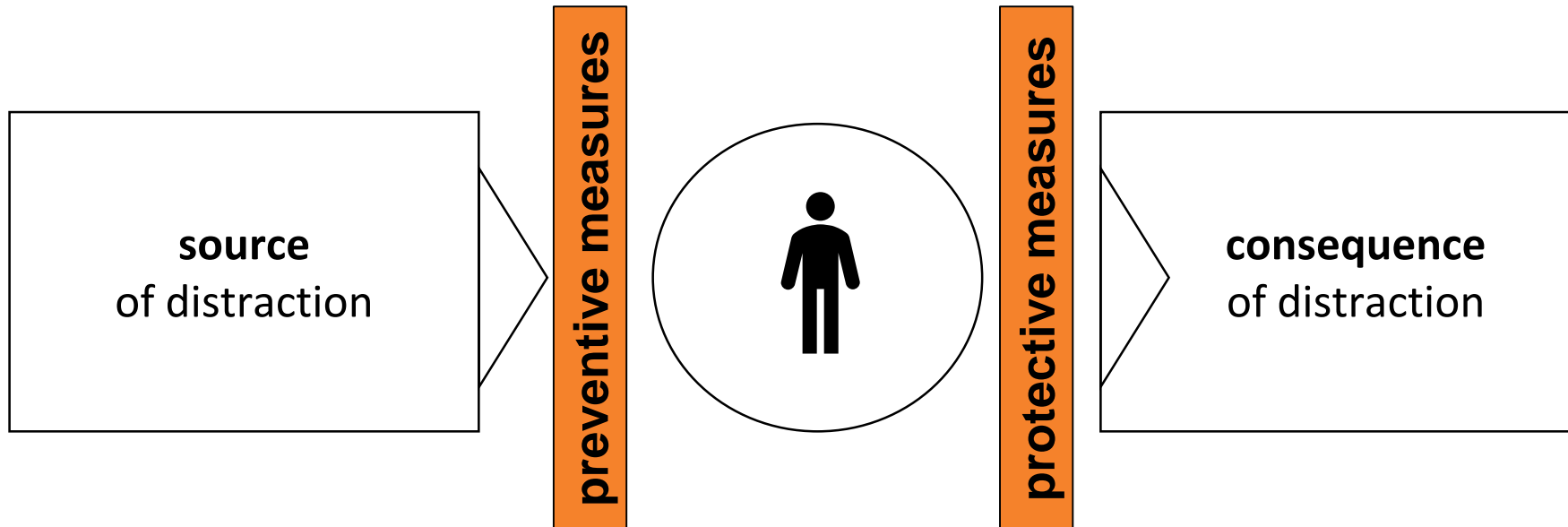


Devices with distraction potential

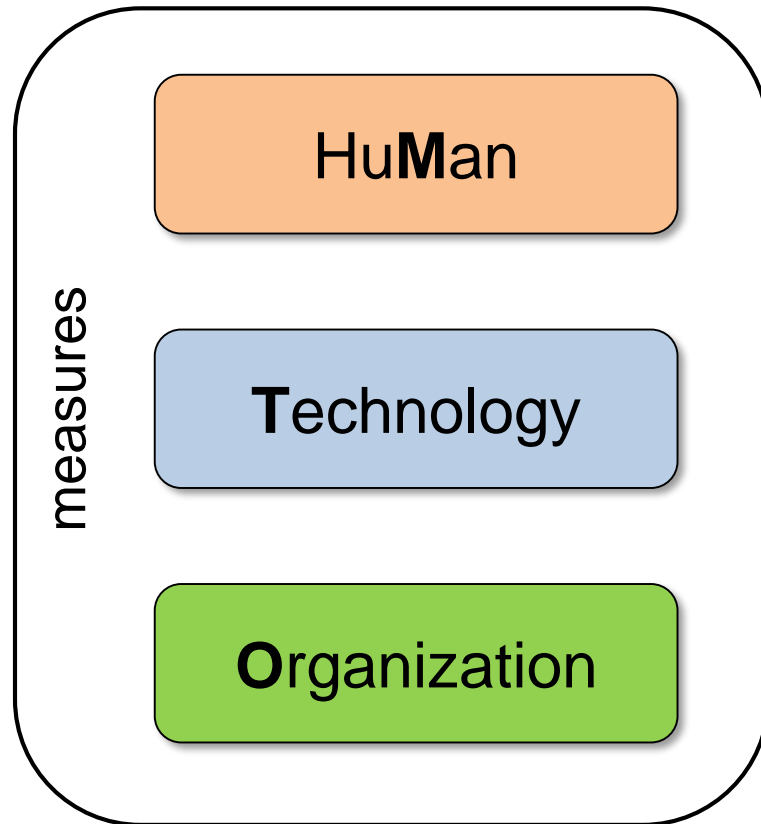


<https://www.bernerzeitung.ch/region/bern/pfeilgerade-durchs-aaretal/story/15076654> (adapted)

Preventive and protective measures

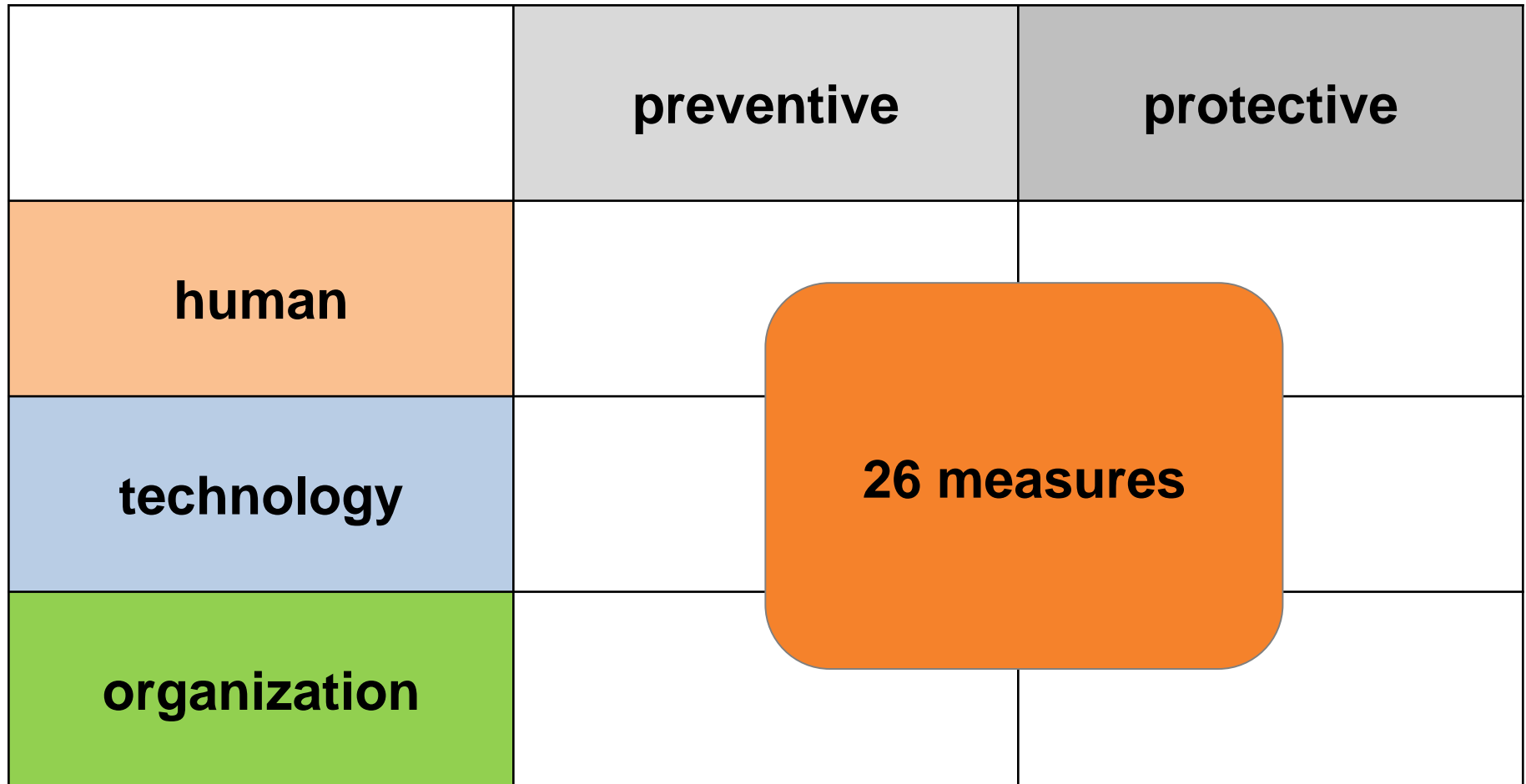


Measures on three levels



(MTO approach, Strohm, 1997)



Results




	<u>preventive</u>	<u>protective</u>
human		
<u>technology</u>		
<u>organization</u>		

Training to restore situational awareness after a distraction

- What just interrupted me?
- What was I doing before I was interrupted?
- How do I get back on track?

	risks and side effects	
<ul style="list-style-type: none"> ▪ Development of negative attitudes → involve relevant players, use appropriate training topics 		

	<u>preventive</u>	<u>protective</u>
human		
<u>technology</u>		
<u>organization</u>		


Automatic and situational suppression of non-relevant information

- What information/functions are these?
- Under what conditions?
- What are the critical sections of the route?

!
risks and side effects
!



- Automatic system can make mistakes, can suppress necessary information
- Beware of reduced situational awareness due to less information

	<u>preventive</u>	<u>protective</u>
human		
<u>technology</u>		
<u>organization</u>		



Messages to the driver's cab only from a single point of contact

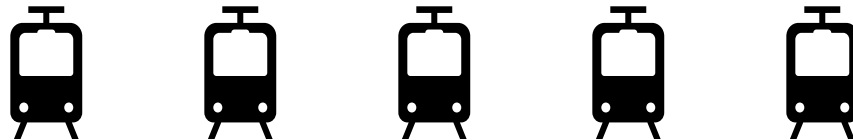
- Who is this single point of contact? Operations center?
- When are which messages transmitted?
- How are the employees of the operations center trained?

 risks and side effects 
<ul style="list-style-type: none"> ▪ Reduced situation awareness / lack of relevant information ▪ Information flow could be slowed down

Take home messages

- ❖ Mobile phones and tablets have become an integral part of our everyday lives – also for train drivers.
- ❖ In most cases there is no supposedly easy solution to ban mobile phones for work.
- ❖ Rather, train drivers must be given the best possible support in coping with distractions.

Thank you!



Sources

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