

Automation, Competence, Safety Culture

Sectoral Dialogue Committee – Rail Transport
Meeting 15 November 2018

Automation - Background

- Rapid growth of automation in railways (e.g. ATO, ERTMS)
- There are different levels of automation:

No automation	Fully manual control
Automated assistance	Specific support for a limited range of tasks; human is still in control
Partial automation	A subset of tasks is automated; human is still in control
Conditional automation	All tasks are automated but human is expected to intervene if necessary
High automation	All tasks are automated even if human does not intervene
Full automation	No need for any manual control

- Automation can bring many benefits but sometimes causes new problems

Automation - Advantages/Disadvantages

- Higher safety levels
- Higher performance
- Lower costs
- Need of a person as a monitor or 'fall-back' for the system
- Skill degradation, situation awareness
- Vigilance
- Worker satisfaction
- Designers may made mistakes too

Automation - Proposed approach

- Human-centred automation designs the system around the human user
- Design-focused solutions, rather than relying on training of the human operator
- Consider whether the automation is ‘hard’ (it has ultimate authority) or ‘soft’ (human has ultimate authority)
- Retain a meaningful role for the human user if they are required as a ‘fall-back’ option in the system
- Consider the automation as another team member

Competence, Safety Culture – ERA works

- Operating language and communication, harmonised operating vocabulary and messages (RNE, ERFA, UIC, ERA teamwork)
- Evaluation of staff competences requirements for operating staff (potential need of harmonised specifications)
- NSA annual performance workshop (4-5 Dec. 2018) will also address competence of safety-critical staff
- Contribute to develop a positive safety culture, e.g.:
 - fostering just culture, learning from accidents
 - developing a model for a European safety culture and its assessment



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