Finnish Institute of Occupational Health

Integrating Human Factors framework into human-centred design process

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SARAH

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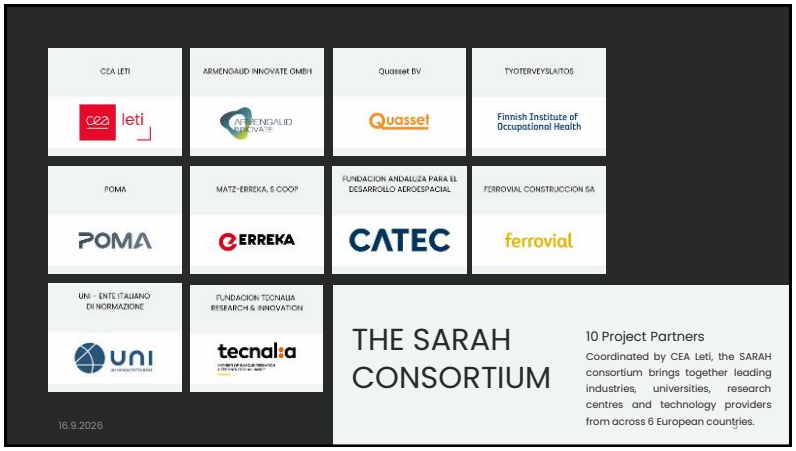

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Introduction & project overview

SARAH - User-centred Civil Infrastructure Reliable Assessment and Healing

- adopting a human-centred approach to develop a safe-by-design integrated digital solution
- →to support maintenance and repair decision and planning, intervention and reporting

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Approach in SARAH

- Human-centred design combined with a systemic Human Factors framework
- Continuous consideration of safety impacts throughout development
- Understand users, tasks and work environments
- Identify impacts of new technologies on work
- HF and HCD requirements defined alongside technical requirements

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Human Factors (HF) framework

HF Tool™



(Teperi et al., 2015; 2017; 2023)

→ Examining the current work processes and environments.

→ Analysing the planned technology and human-technology-interaction from a systemic perspective

→ Identifying how new technologies may influence work, safety and performance across multiple system levels.

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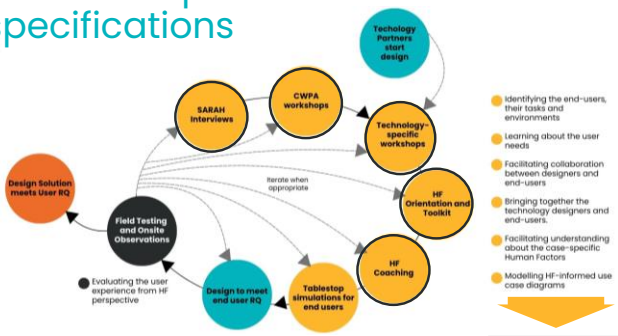
From HF aspects into HCD specifications



Transforming HF aspects into HCD-specifications for design

Identifying the critical HF & OSH aspects

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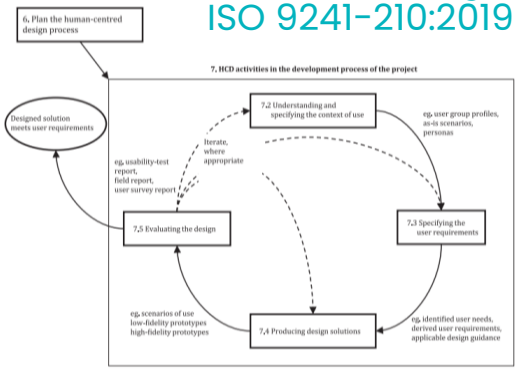
HCD activities according to ISO 9241-210:2019



Source: Ergonomics of human-system interaction. Part 210: Human-centred design for interactive systems (ISO 9241-210:2019).

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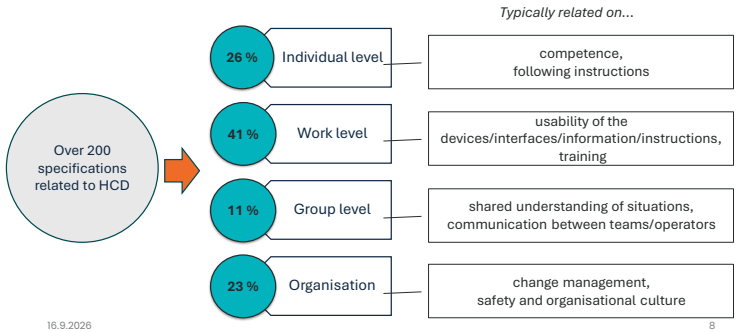
Summary of the HCD specifications



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New components for HF Tool

- During the process need for additional components in the context of technology design was identified

→Updated HF Tool for co-creational technology design

→HF Toolkit related to technology desing will be published 2027

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