Effects of Digital Technologies and Artificial Intelligence (AI) on System Competencies Education and Training

Special topic panel, 27 October 2026 **Chair** Prof. Alessandro Golkar **Co-chair** Prof. Rob Vingerhoeds

Competencies needed

- Critical thinking, judgment, ethics and professionalism
- Drawing in other disciplines to catch blind spots
- Asking the right question; AI as a tool, never a crutch

From junior to senior

- AI risks de-skilling juniors and feeding overconfidence
- Juniors keep doing junior tasks, with AI as an aid
- Engineers do the thinking; AI checks the output

Actions within 12 months

- A lifelong learning passport collecting all credits
- Real industry problems brought into teaching
- Hands-on projects with real hardware and AI agents

Industry Alan Harding, Jon Reijneveld
University David Abbink, Bernhard Rumpe
Agencies David Nichols
Professional Organizations Davide Petrillo
Students Willem Rutten, Daan de Jong, Martijn Geenen, Thomas Barros-Jones