

Human, Machine und AI

Towards co-creative factories

Andreas Dengel

- Seven Hypotheses -

1

Connectivity

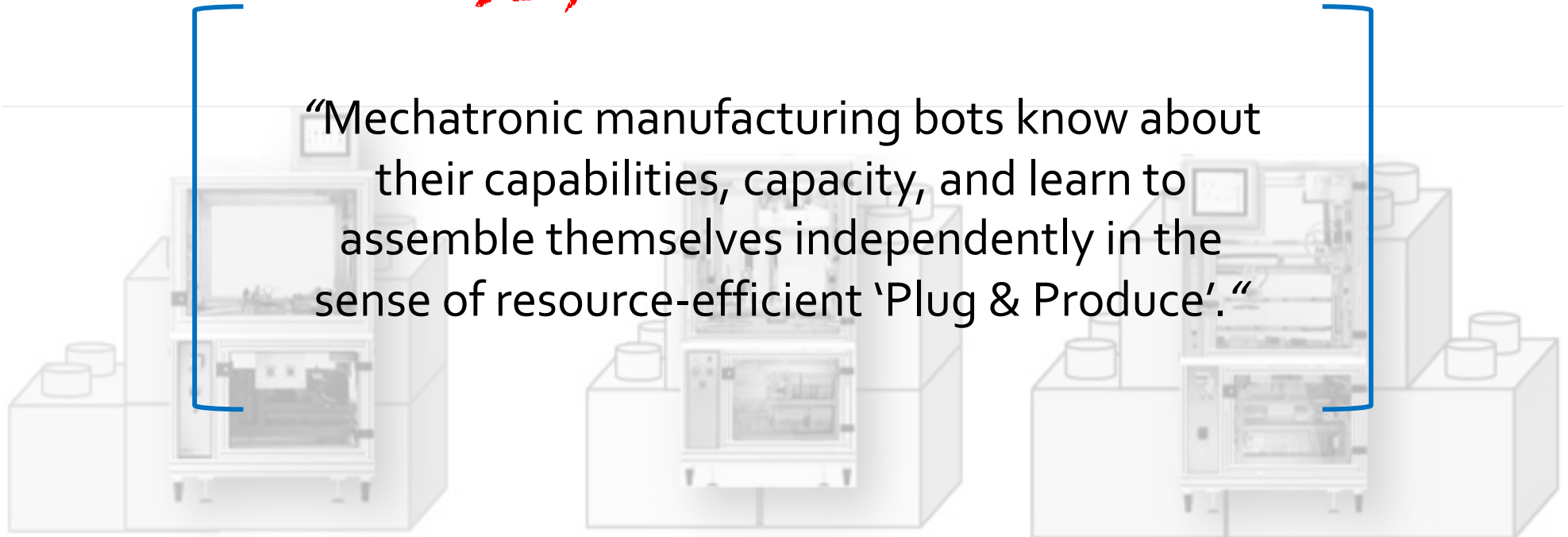
“Wireless communication is a key technology as well as a central basis for a flexible exchange and distribution of information but also for the control and orchestration of all smart objects involved in the production process.”



2

Self-Orchestration

“Mechatronic manufacturing bots know about their capabilities, capacity, and learn to assemble themselves independently in the sense of resource-efficient ‘Plug & Produce’.”



3

Self-Monitoring

“Smart manufacturing environments monitor themselves, recognize anomalies, perform self-diagnoses and predict the likelihood of defects or failures.”

4

Smart Innovation

MEASURE

LEARN

“As part of smart ecosystems, products collect rich data about their use, wear and tear, and service life, forming the basis for next product generation.”

UNDERSTAND

5

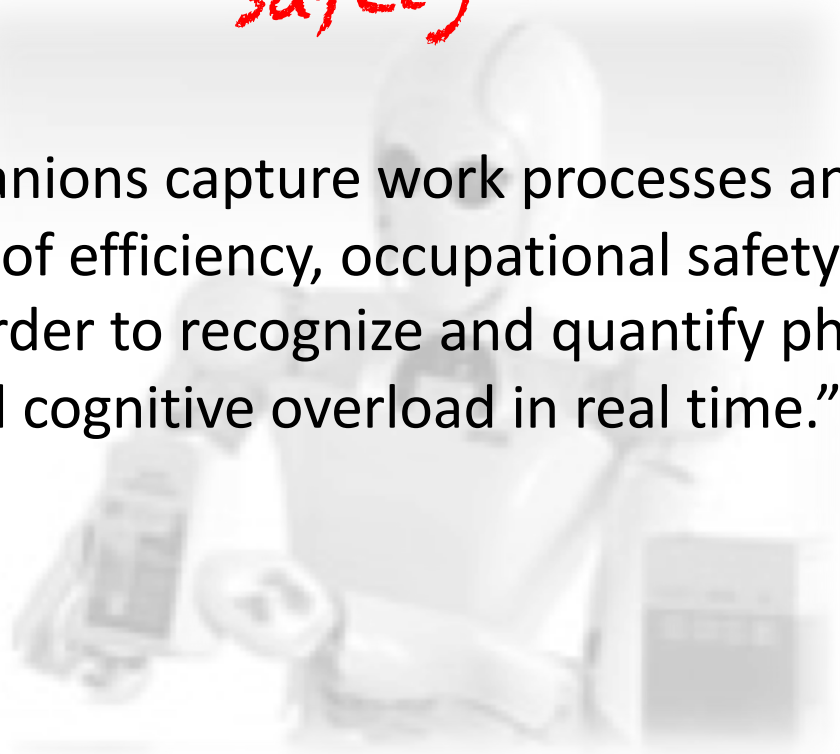
Co-Creation

“The workplace of the future is characterized by a synergetic partnership of humans and AI, which together interact with smart things and environments, learn from each other, and complement each other synergistically.”

6

Safety

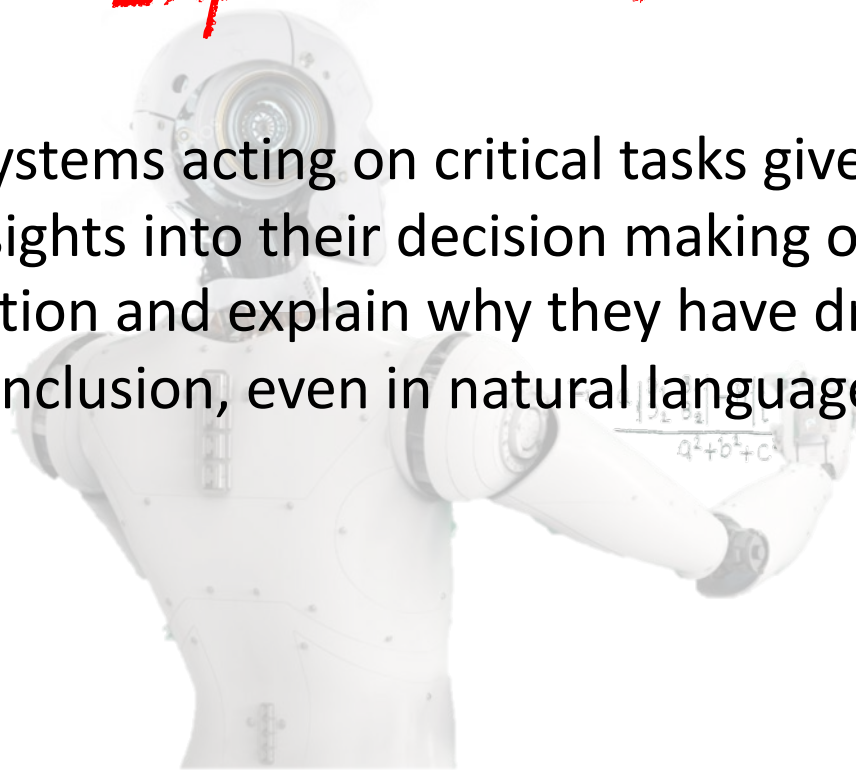
“Digital companions capture work processes and optimize them in terms of efficiency, occupational safety and health protection in order to recognize and quantify physical stress and cognitive overload in real time.”



7

Explainability

“AI systems acting on critical tasks give us insights into their decision making or prediction and explain why they have drawn a conclusion, even in natural language.”



Thank You!



Address:

Prof. Dr. Prof. h.c. Andreas Dengel

DFKI GmbH

P.O. Box 2080

D-67608 Kaiserslautern

email: andreas.dengel@dfki.de

<http://www.dfki.de/~dengel>

