

Cobotics, digital skills and the re-humanization of the workspace



Berner Fachhochschule
Haute école spécialisée bernoise
Bern University of Applied Sciences

Industrie
:: 2025



Digitale Transformation
Nationales Forschungsprogramm

6. R&D Conference
on Industry 4.0
03. February 2021

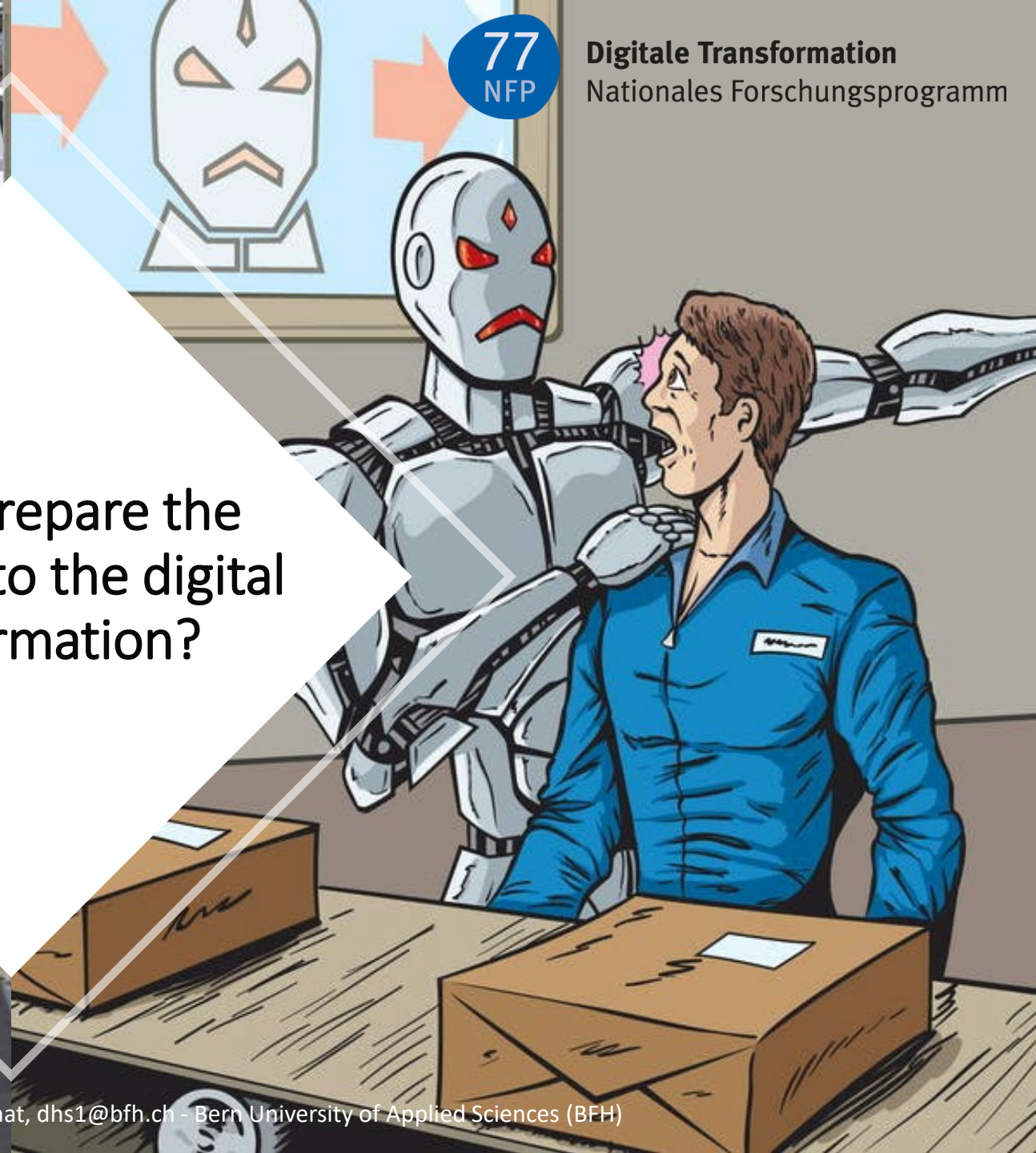
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Bern University of Applied Sciences (BFH)

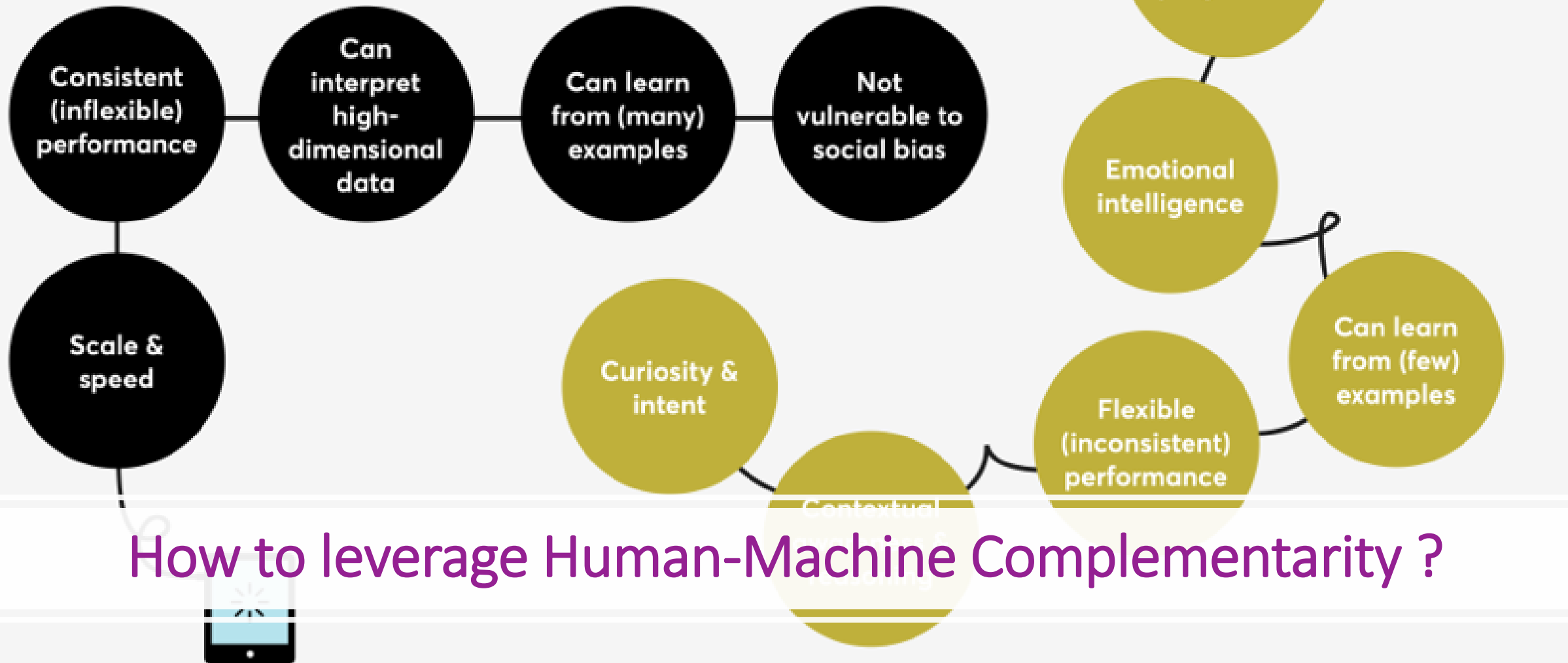


How to prepare the
workforce to the digital
transformation?



Machine intelligence

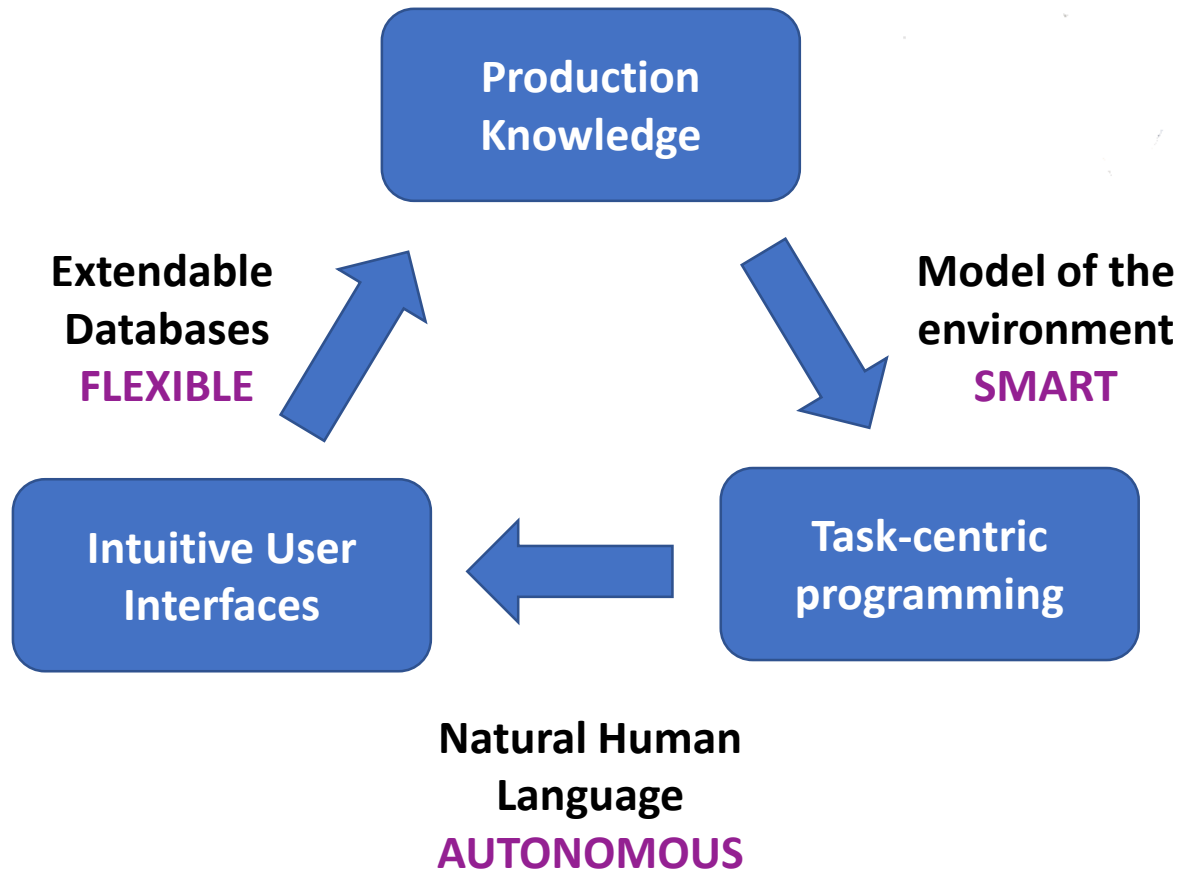
Human intelligence



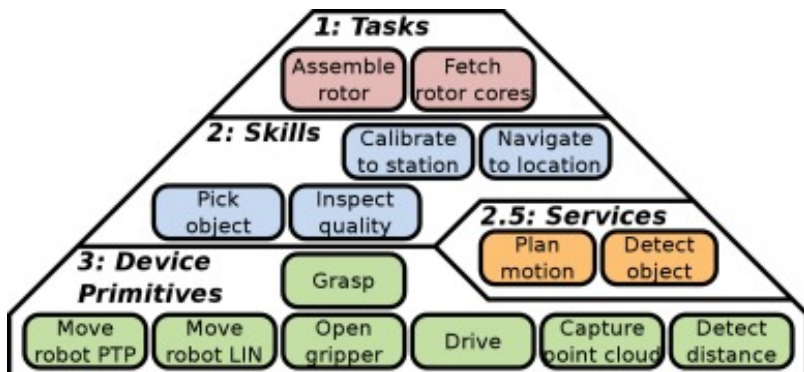
How to leverage Human-Machine Complementarity ?

SMART & FLEXIBLE APPROACH

the worker is the expert




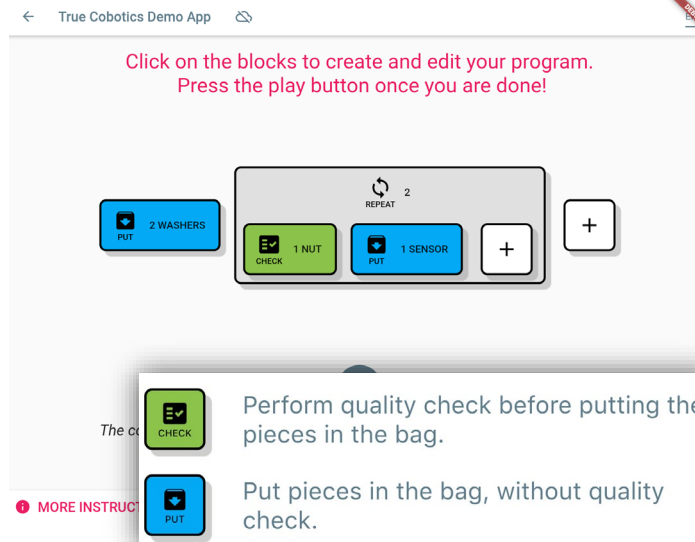
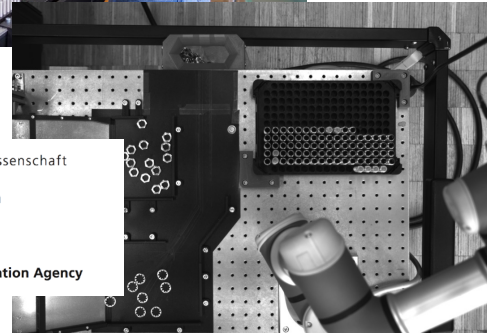
INTUITIVE PROGRAMMING



- Schou et al (2018) "Skill-Based Instruction of Collaborative Robots in Industrial Settings." *Robotics and Computer-Integrated Manufacturing* 53



 Schweizerische Eidgenossenschaft
Confédération suisse
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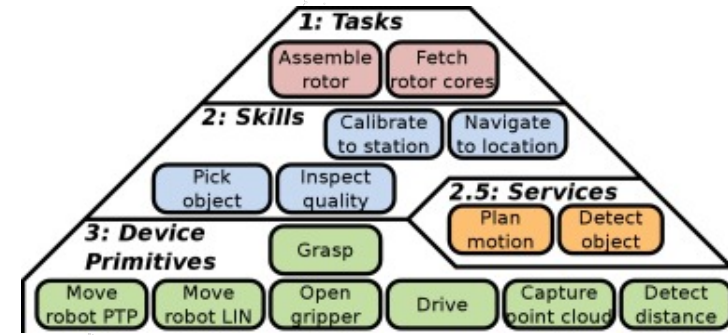
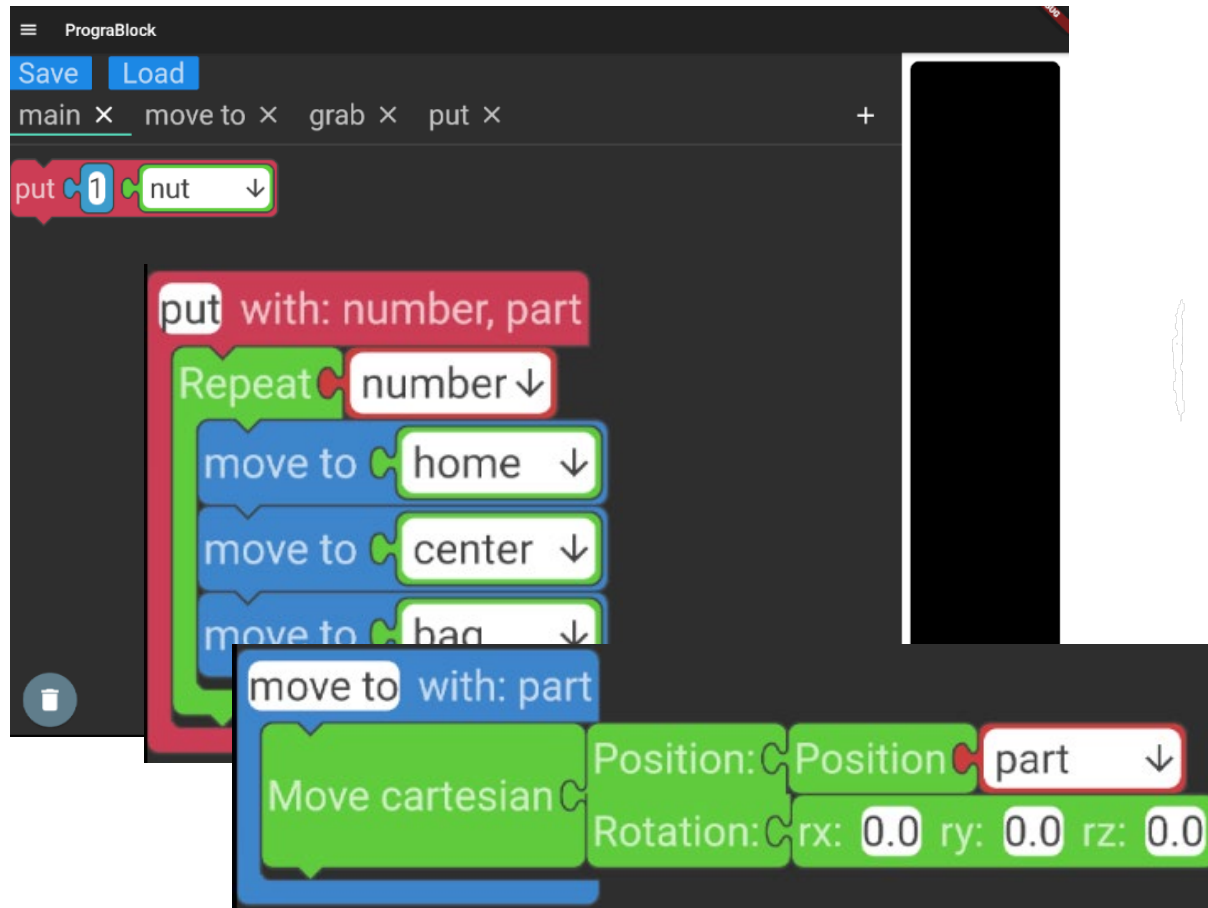
<https://urfree-robot.web.app>

BIEL BIENNE

Révolutions au travail dès 1800
Revolutionen an der Arbeit seit 1800

25.9.2020 – 3.1.2021

FOSTERING AUTONOMY

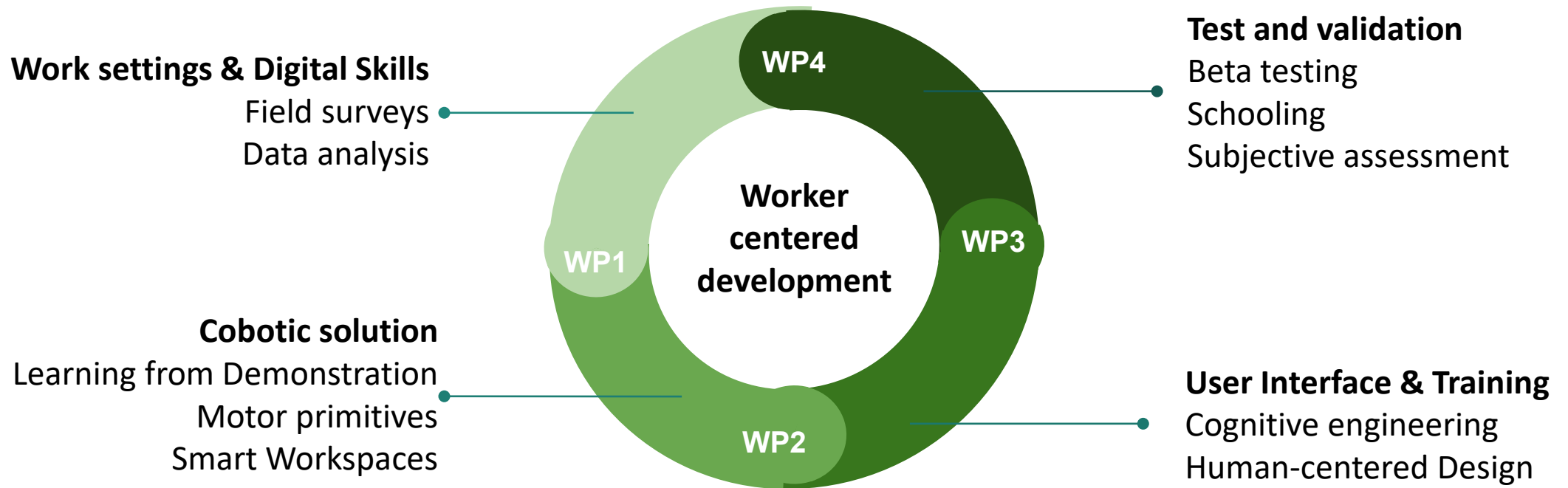


Die Gewerkschaft.
Le Syndicat.
Il Sindacato.

- Survey : What makes work humane ?
 - Target 10'000 participants
- Workshops: Co-design of programming interfaces
 - 40-60 participants



Co-design on the shopfloor – 4 years long



Three industrial partners:

- Quality
- Productivity
- Flexibility



Digitale Transformation
Nationales Forschungsprogramm



What does it bring to the industry ?

- Upskilling of the workforce
- Leverage of task expertise



- Creativity
- Reactivity
- Autonomy



Automation in the 4th Industry

A robot system must be **easily adaptable to changes in products or processes without the need to rely on extensively trained employees** in order to be profitable for **small production batches and customized products**.

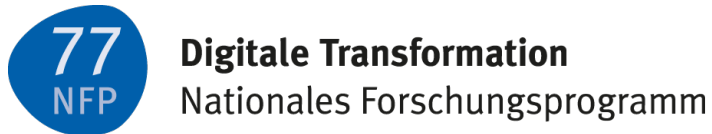
euRobotics Multi-Annual Roadmap

(SPARC Robotics, 2016)

Thank you for your attention!

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With the kind support of



In collaboration with



**Die Gewerkschaft.
Le Syndicat.
Il Sindacato.**

