

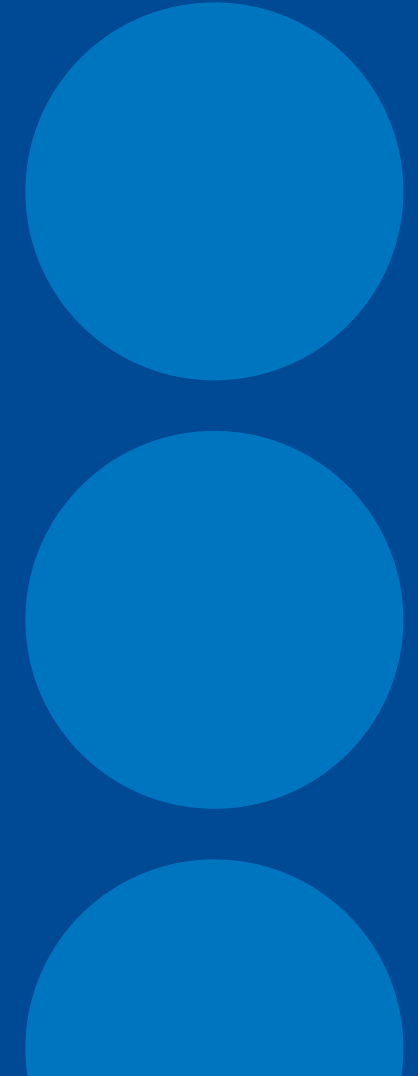
# Safety, Health and Wellbeing Technology Case Studies

## Germany

Dr. Sven Timm - DGUV

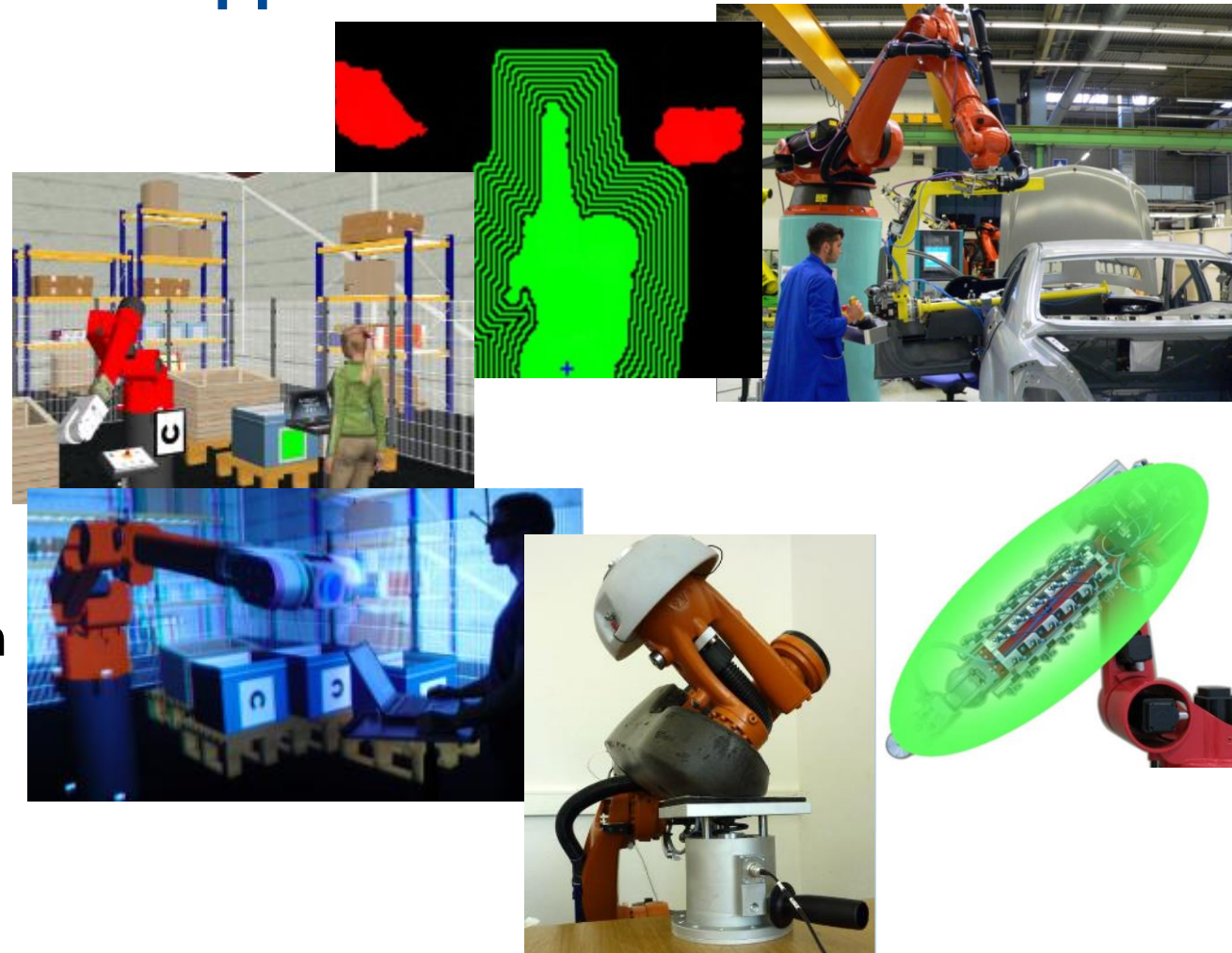
The Future of Safety, Health and Well-being (SHW): From  
the Viewpoint of Human-Robot Interaction (HRI)

Tokyo, 18 November 2024



## DGUV / IFA – Technological activities / support / case studies

- **Collaborative robots (COBOTS)**
  - Safe co-operation between human beings and robots
  - **Technical protective measures** such as
    - dynamic safety zone by a 3D camera
    - ultrasonic guard on the robot arm
  - **Design of the system ergonomics**
    - Virtual test scenario for study of the influence of the robot's distance and speed
  - **KDMG-KOLROBOT measurement system**
    - force-pressure measurement system for collisions

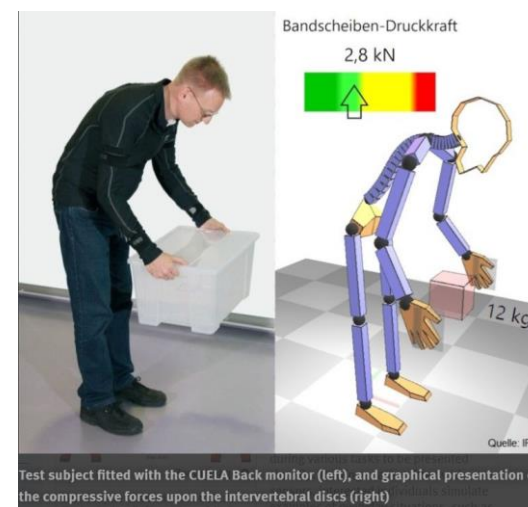


## DGUV / IFA – Technological activities / support / case studies

- **Competence Centre for Artificial intelligence and Big Data**
  - Consultancy and support on AI and big data
- **Ergonomics - The CUELA measuring system**
  - computer-based measurement and long-term analysis of stresses upon the musculoskeletal system
  - Occupational musculoskeletal diseases of the upper extremities
- **Industrial Security**
  - Protecting safety functions on machinery and plants from attacks



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Test subject fitted with the CUELA Back monitor (left), and graphical presentation of the compressive forces upon the intervertebral discs (right)

