



Cleanroom Robotic Logistics

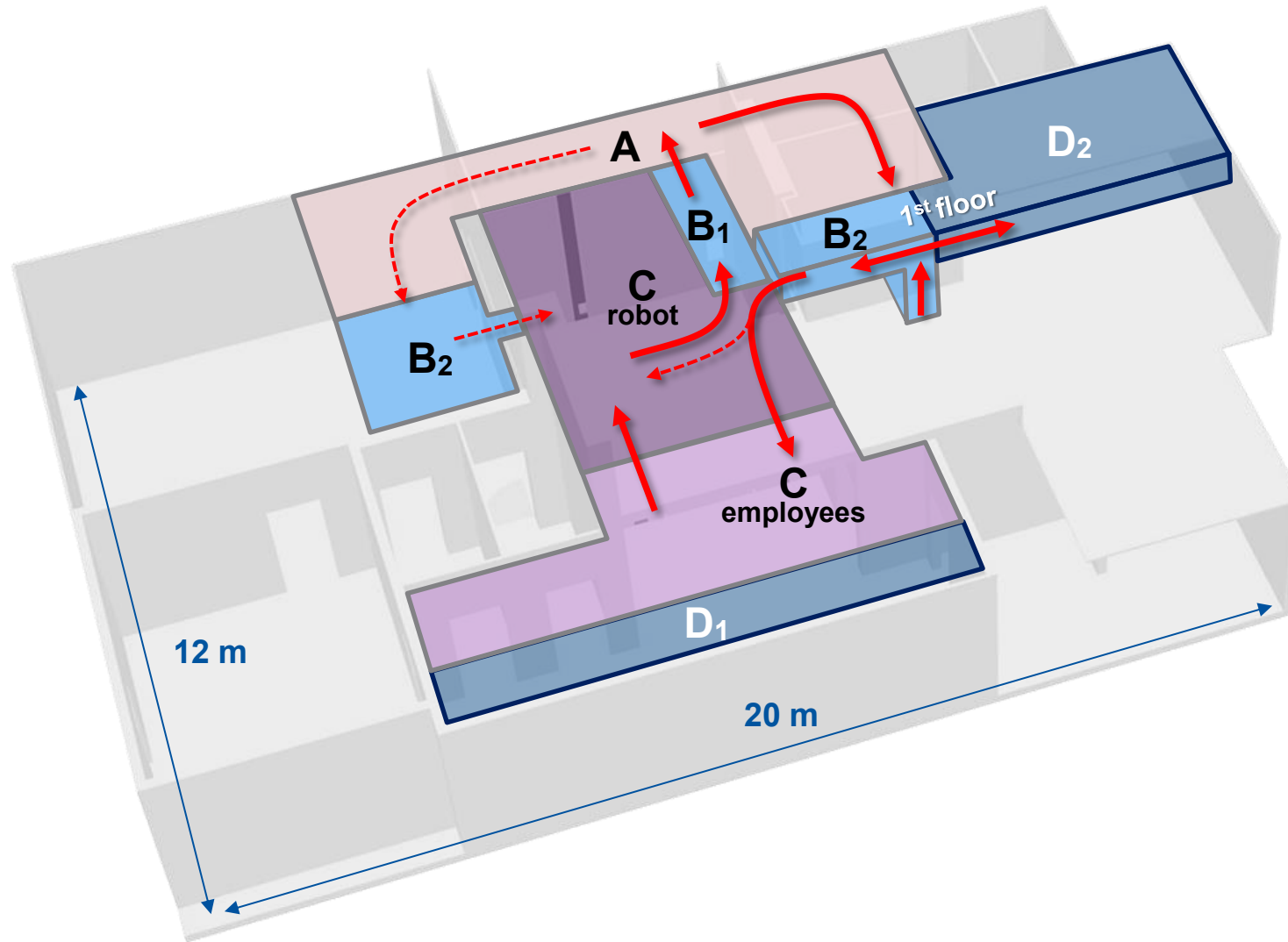
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GOLDFUSS ENGINEERING GMBH

RAYA 2025 Finalist Event



The Challenge for Cleanroom Robotic Logistics



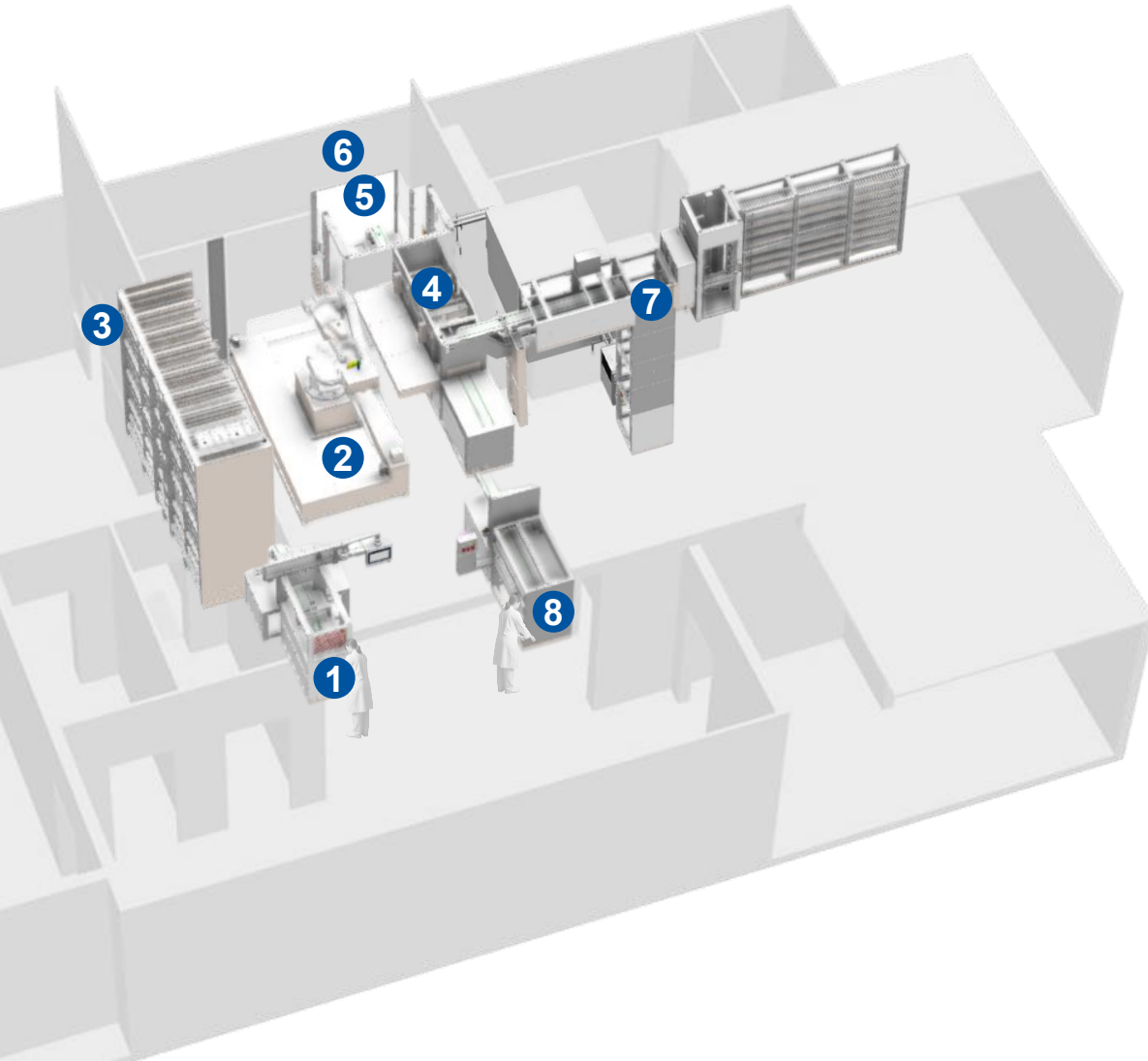
■ Cleanroom areas grade D to A

➡ Product logistics



Ready-To-Use Tubs

The Solution for Cleanroom Robotic Logistics



- ① **Infeed airlock:** Manual removal of outer packaging; RFID labelling of tubs (Class C)
- ② **Robot 1:** Transfers tubs to logistics section (Class C/robot)
- ③ **Robot 1:** Stores tubs in 4-unit groups after ID check (Class C)
- ④ **Robot 1:** Sends tubs through UV-C tunnel (airlock between Classes C, B, A)
- ⑤ **Robot 2:** Opens tubs (removes Tyvek® seal and cover in Class A)
- ⑥ **Conveyor:** Transfers to filling lines (Class A)
- ⑦ **Transfer:** Filled containers from Class A to B to Class C or D (1st floor)
- ⑧ **Robot 1** Feeds output airlock with finished products.

Video

Video



Available after
ISPE event !



Features of the Cleanroom Robotic Logistics

Double functionality of both robots



Robot 1 uses a four-position tool with disinfectant for automated rack cleaning, increasing efficiency and safety without ladders or telescopic tools.



Robot 2 manages cyclic placement, opening, and replacement of sedimentation plates for cleanroom grade A (RABS), with plate magazines prefilled during line setup.

Features of the Cleanroom Robotic Logistics



1. Industry Attractiveness

Fully automated, lights-out logistics with integrated buffering, decontamination, and sterile transfer. Stäubli robots deliver seamless aseptic processing at 2 tubs per minute.



2. Economic Potential

Saves 3 FTEs per shift (€180k/year) and doubles throughput. Smaller footprint and modular reusability deliver ROI < 5 years.



3. Pharma Applicability

Supports Fill & Finish with RTU containers (syringes, vials, carpules). Ideal for CMOs and pharma with small to medium batches and frequent changeovers.



4. Flexibility

Handles all RTU tub formats with random-access buffering and multi-line integration. RFID and format-free grippers minimize cleanroom interventions.



5. Ease of Integration

Applicable to standardized tubs without customization (GMP qualification required). Six validated syringe variants ensure broad transferability.

FINAL MESSAGE



- ▶ **Protecting Europe. Creating the Future.**
- ▶ **Together Unique. Together Strong.**
- ▶ **Pioneering Pharma-Robotics Worldwide.**
- ▶ **Solve Skills Shortage with Lights-Out Factories.**

**This project is just an example – many more will follow.
Challenge the machine builders!**