



Robotica Mobile e sue applicazioni
in ambienti industriali strutturati e/o caotici



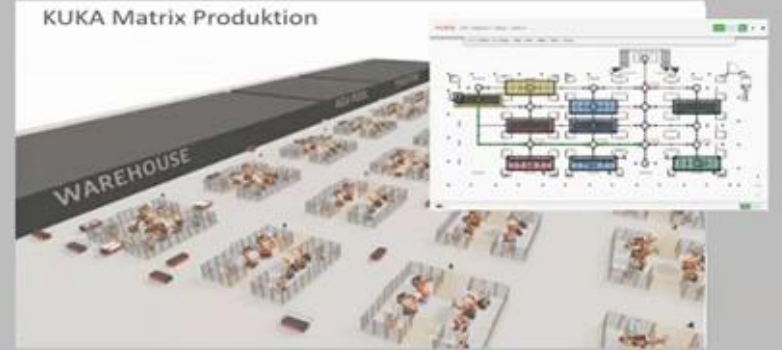
KUKA | La Fabbrica del Futuro



Robots



AI and Robotics



Matrix - Cells

Mobility



Digital Service

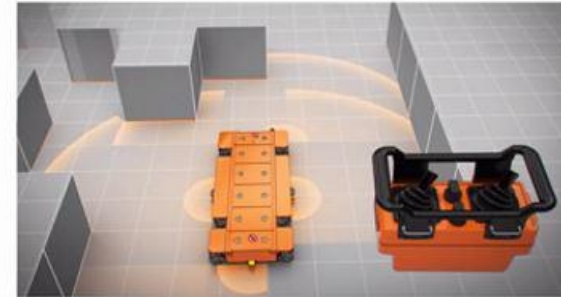


KUKA Mobile Robots | 3 Domande a cui rispondere

1. How does the world look like



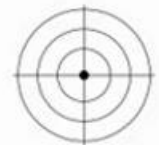
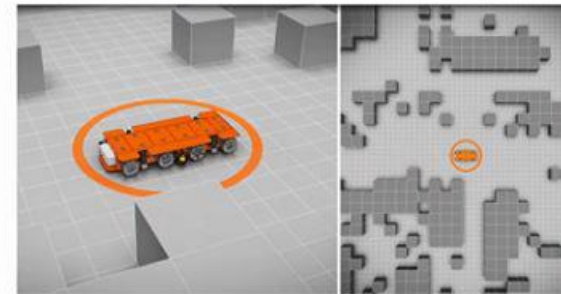
Mapping !



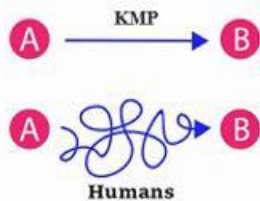
2.



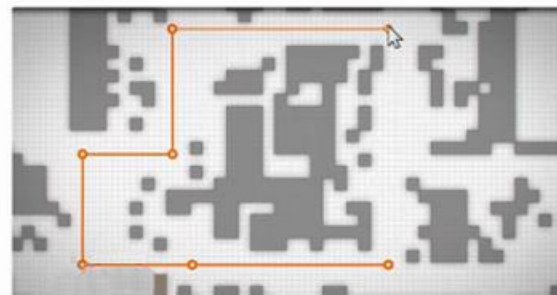
Localization !



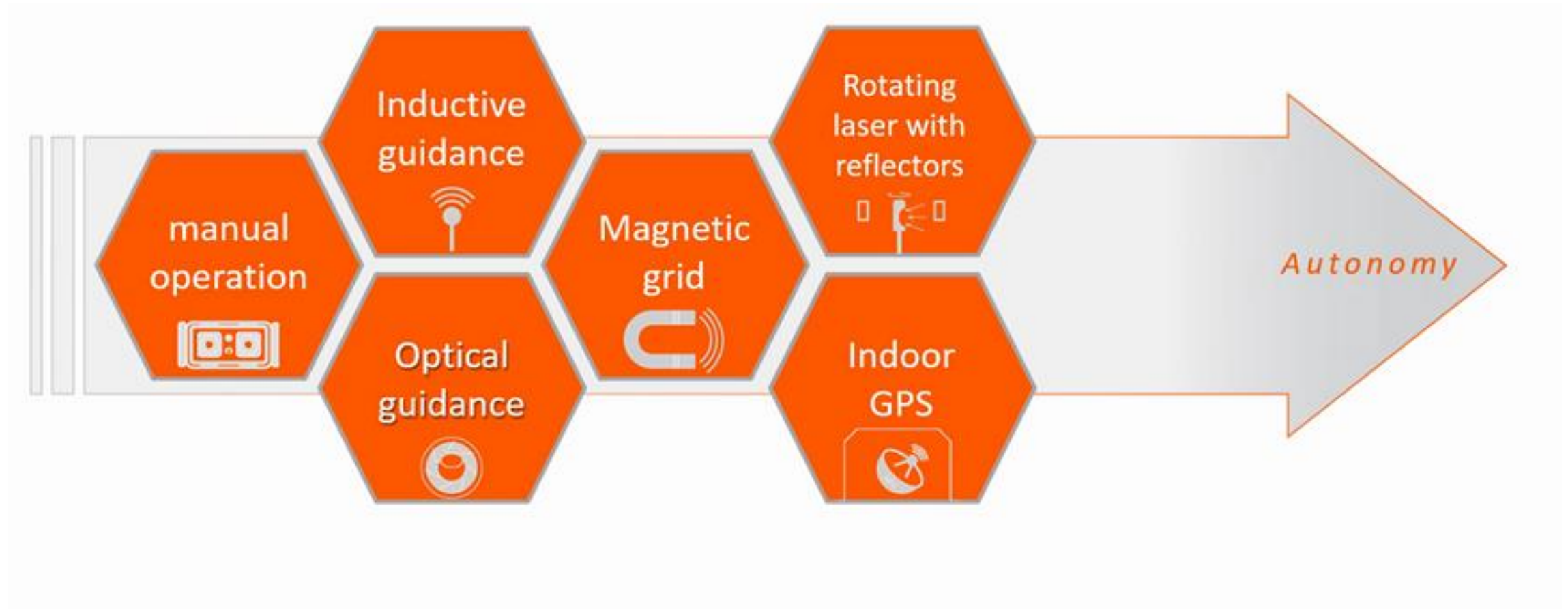
3. How to get from „A“ to „B“



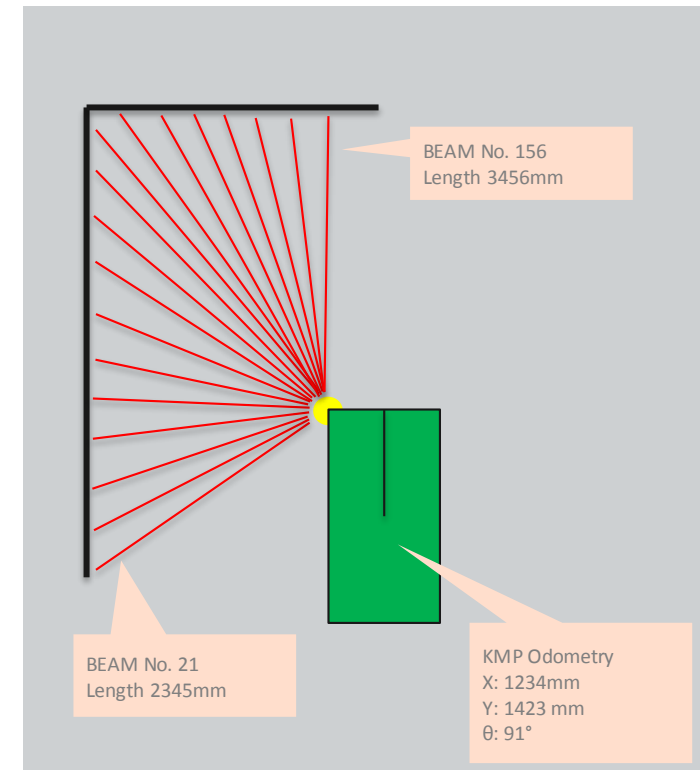
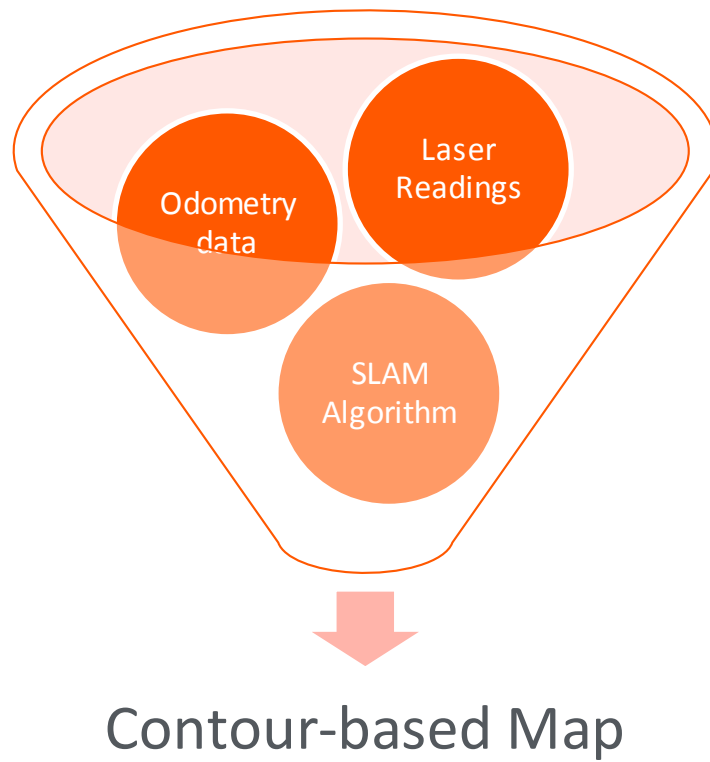
Path Creation !



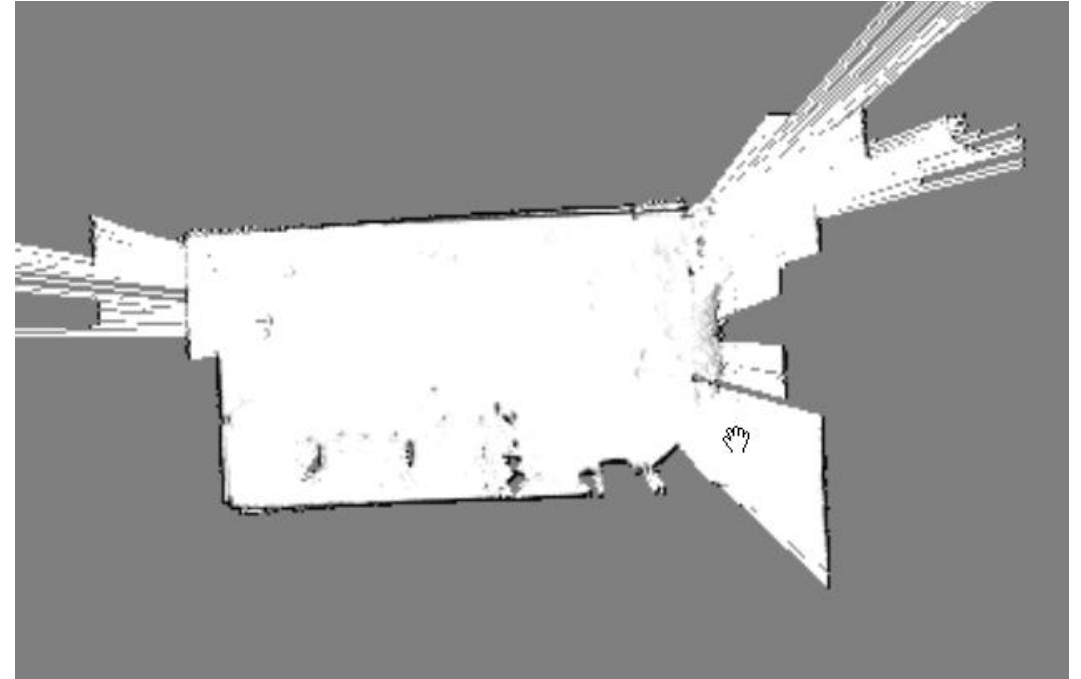
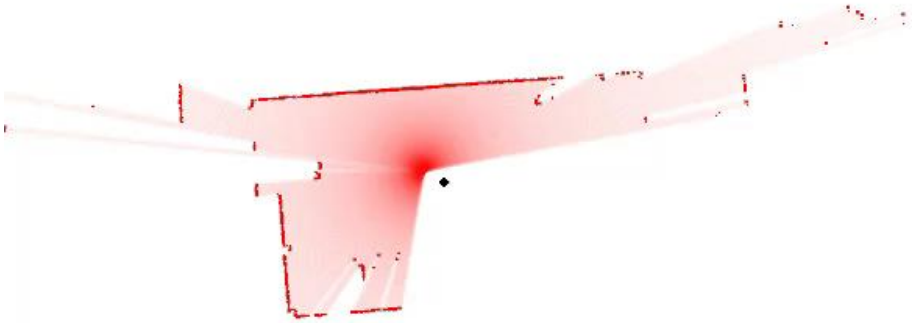
KUKA Mobile Robots | Possibili Tecnologie di Navigazione



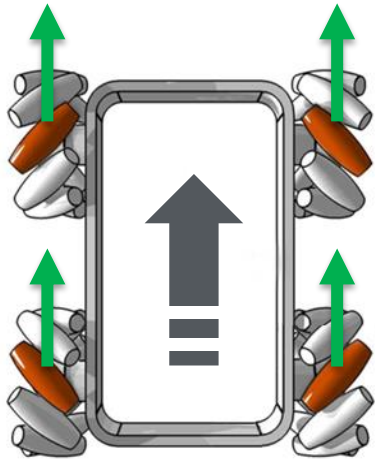
KUKA Mobile Robots | Tecnologie di Navigazione



KUKA Mobile Robots | Simultaneous Localization and Mapping

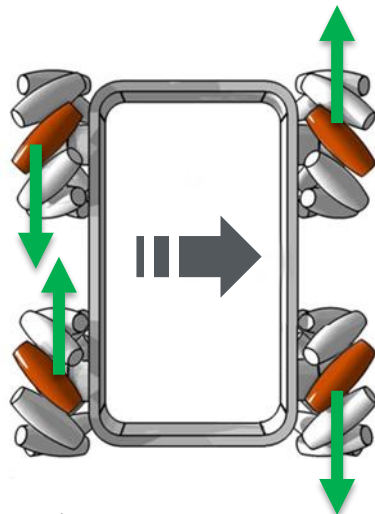


KUKA Mobile Robots | KUKA Omniwheels



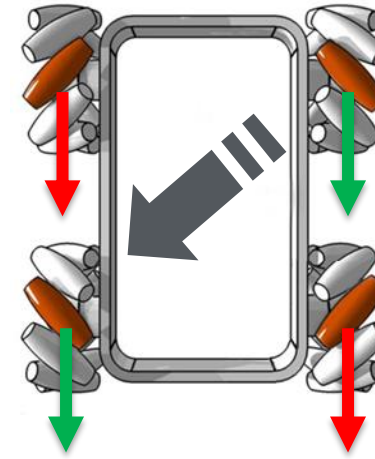
Moving Straight Ahead

All wheels move at the same speed and in the same direction.



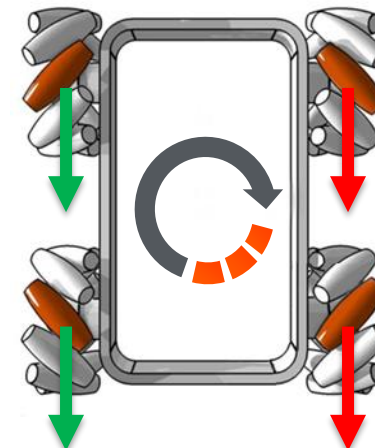
Moving Sideways

Each wheel moves in the opposite direction to the one next to it. All wheels move at the same speed.



Moving diagonally

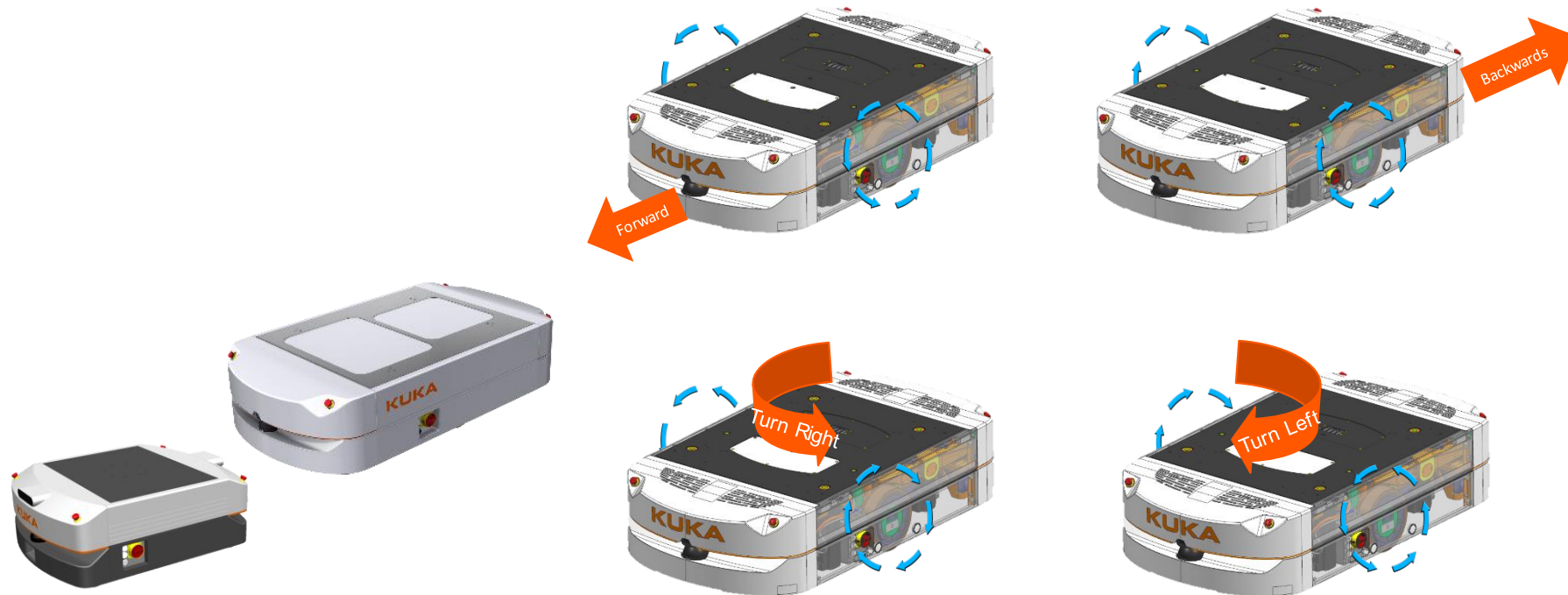
Each pair of wheels across a diagonal moves at the same speed, while the two pairs move at different speeds; all wheels rotate in the same direction.



Rotation

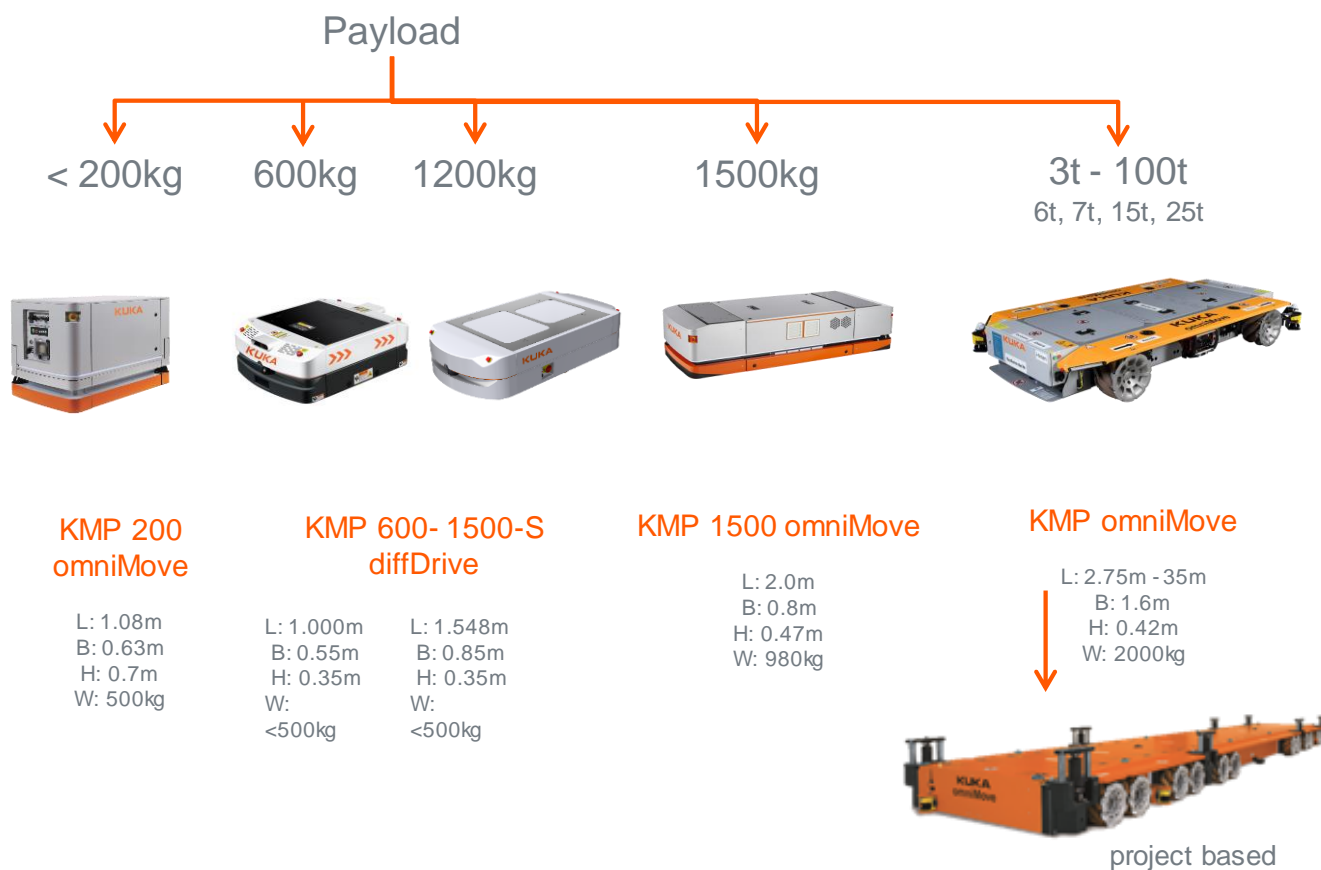
The two wheels of each side move at the same speed and in opposite directions to the other side.

KUKA Mobile Robots | KUKA Differential Drives

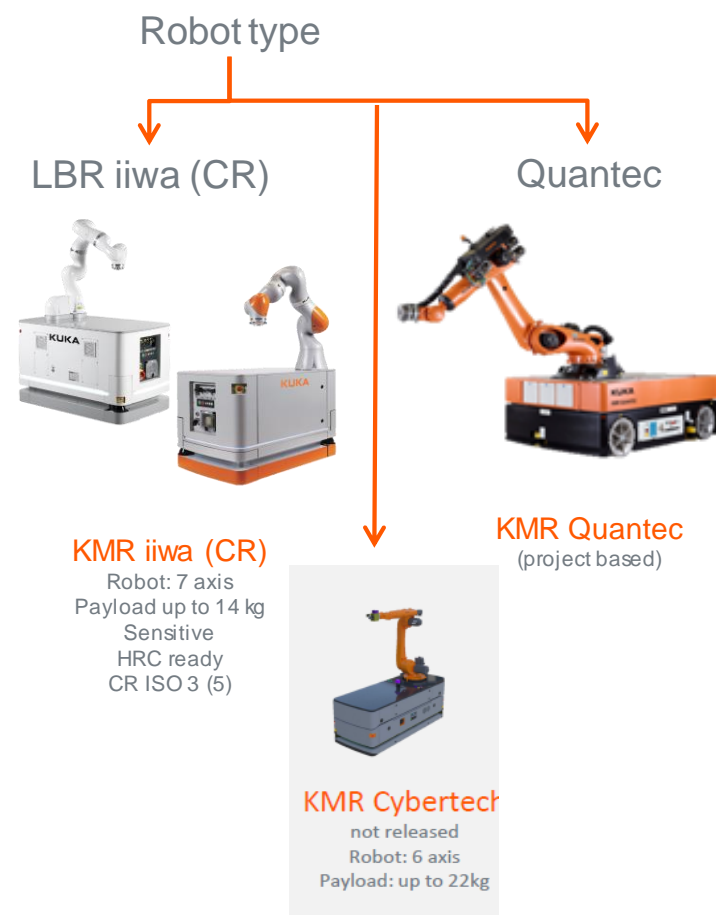


KUKA Mobile Robots | Portfolio

KMP - KUKA Mobile Platforms



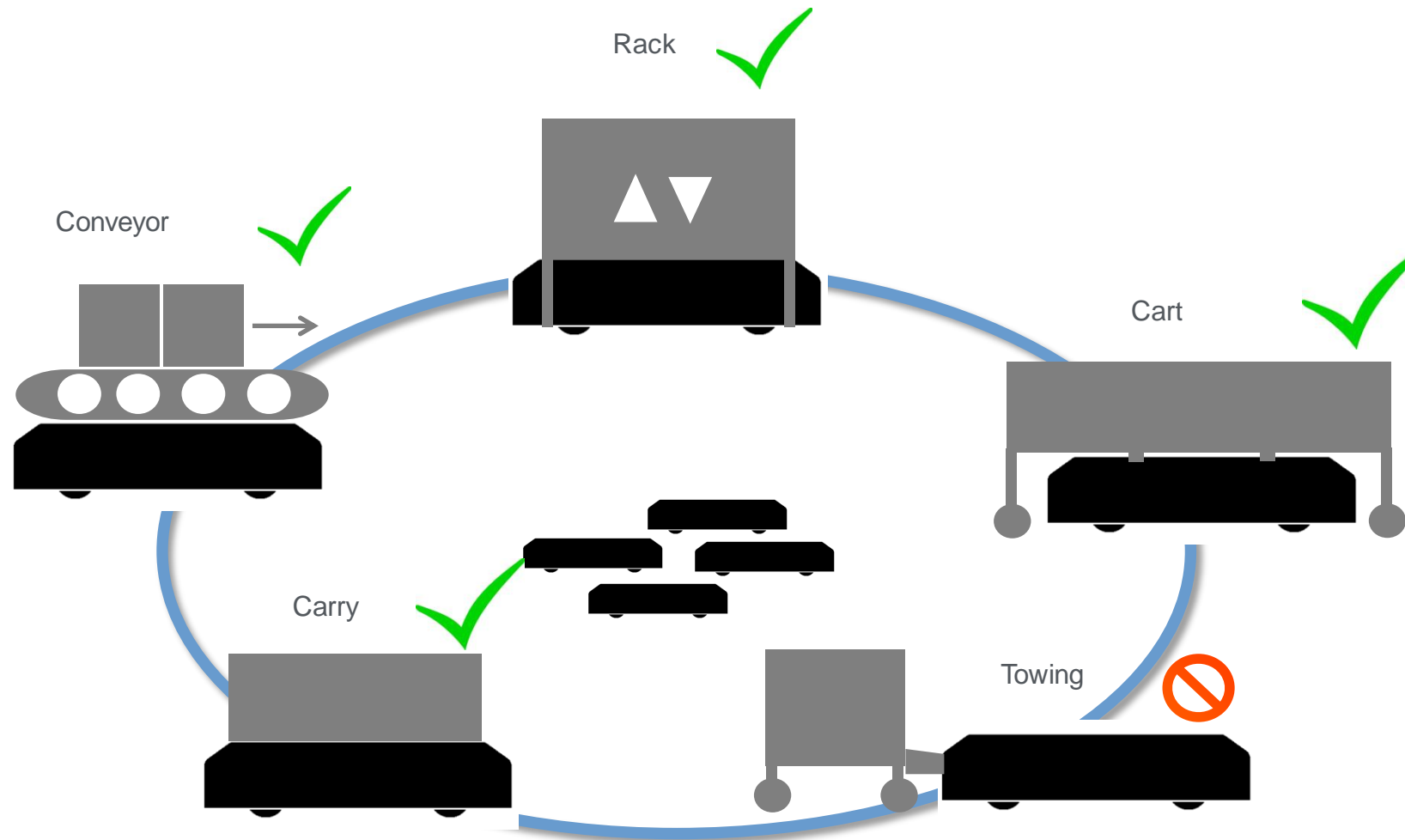
KMR - KUKA Mobile Robots



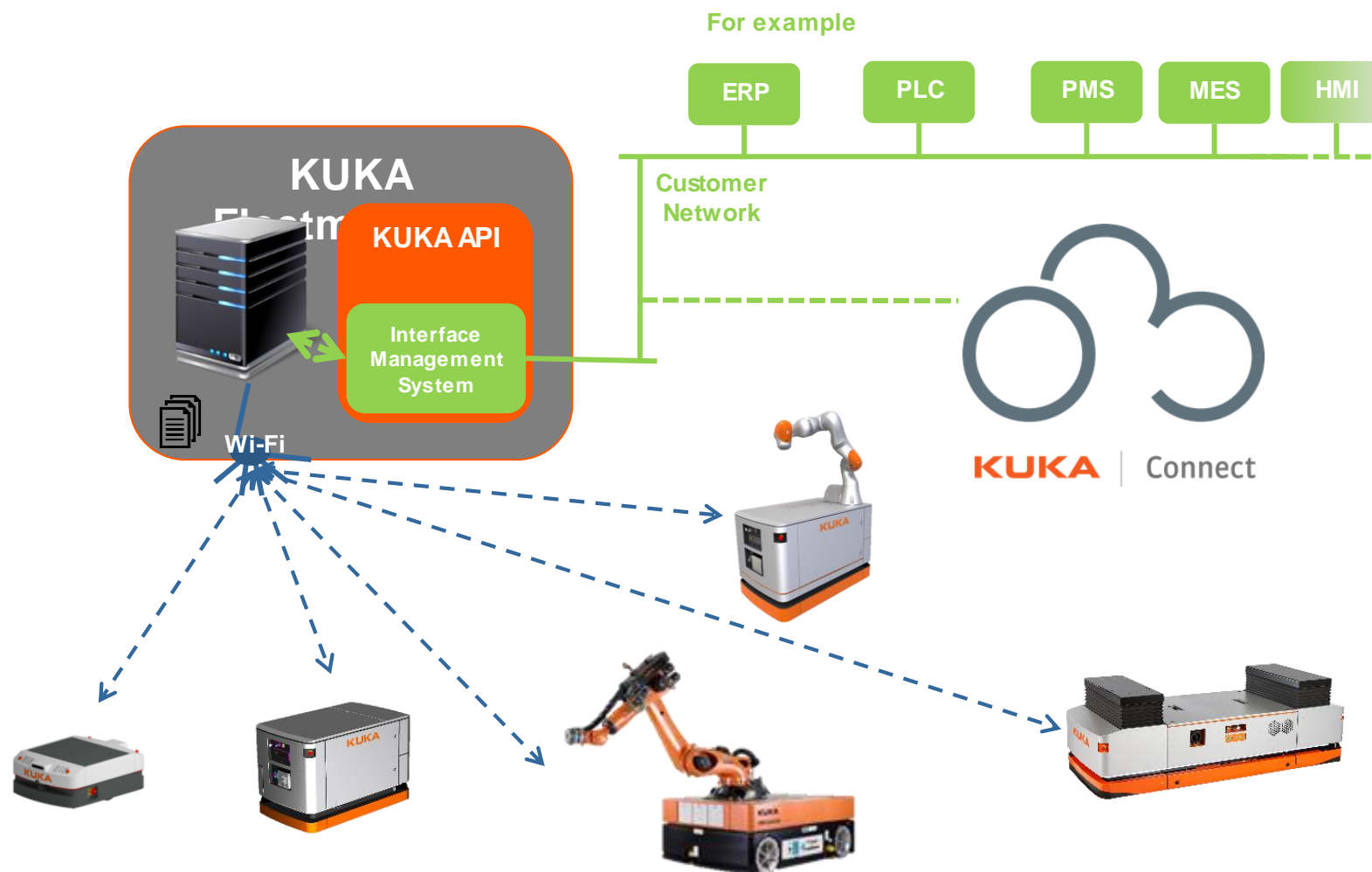
KUKA Mobile Robots | Caratteristiche di tutti gli AGV



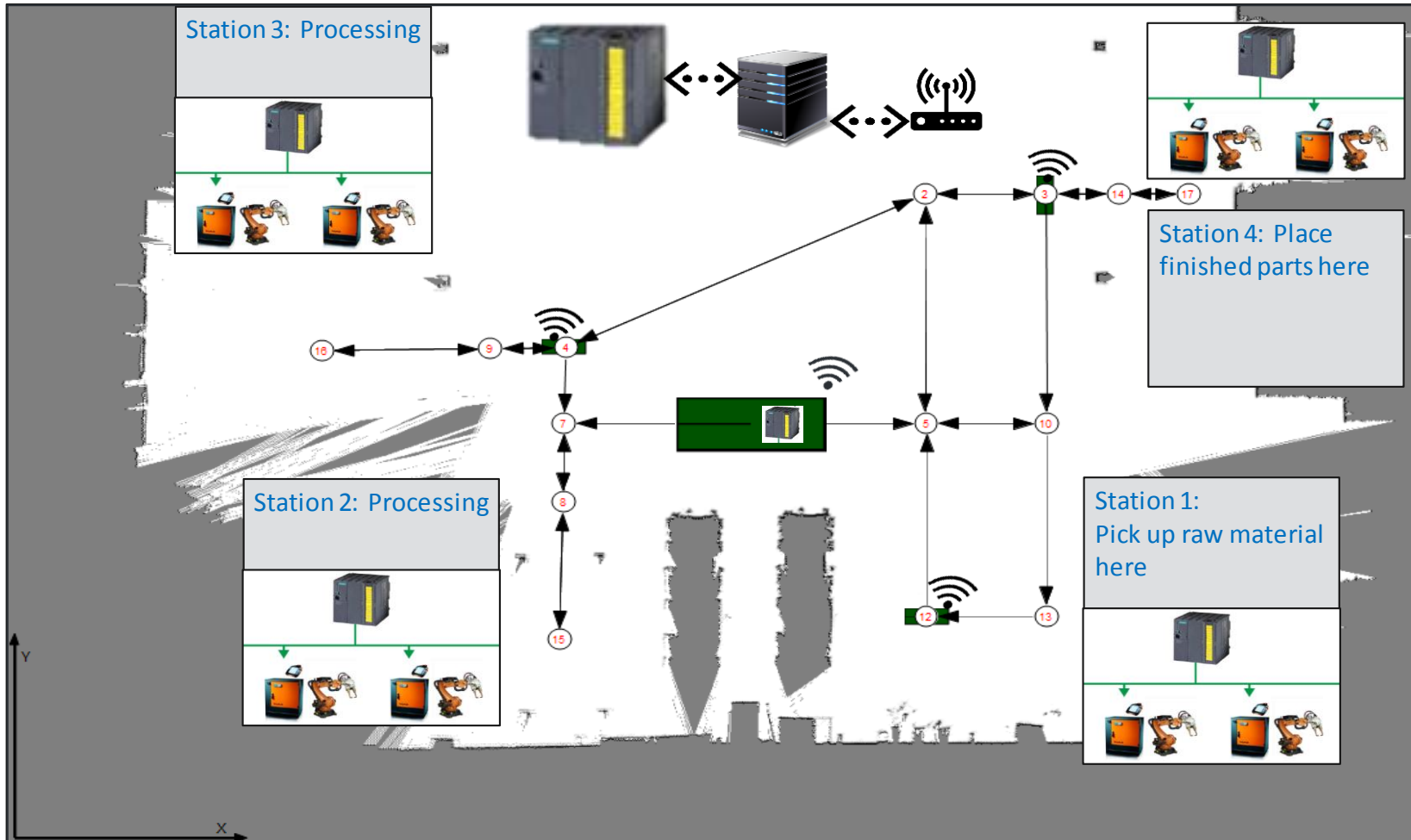
KUKA Mobile Robots | Come viene trasportato un carico



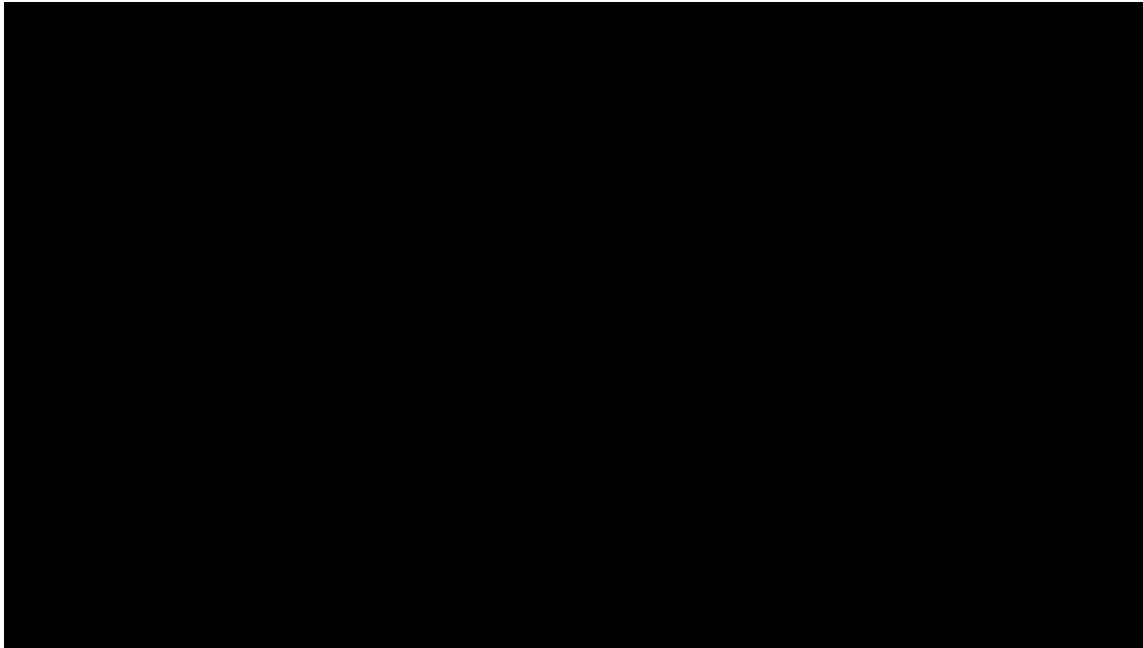
KUKA Mobile Robots | Architettura di comunicazione



KUKA Mobile Robots | Gestione flessibile delle stazioni



KUKA Mobile Robots | KMRiiwa e KMP1500 in contesti industriali



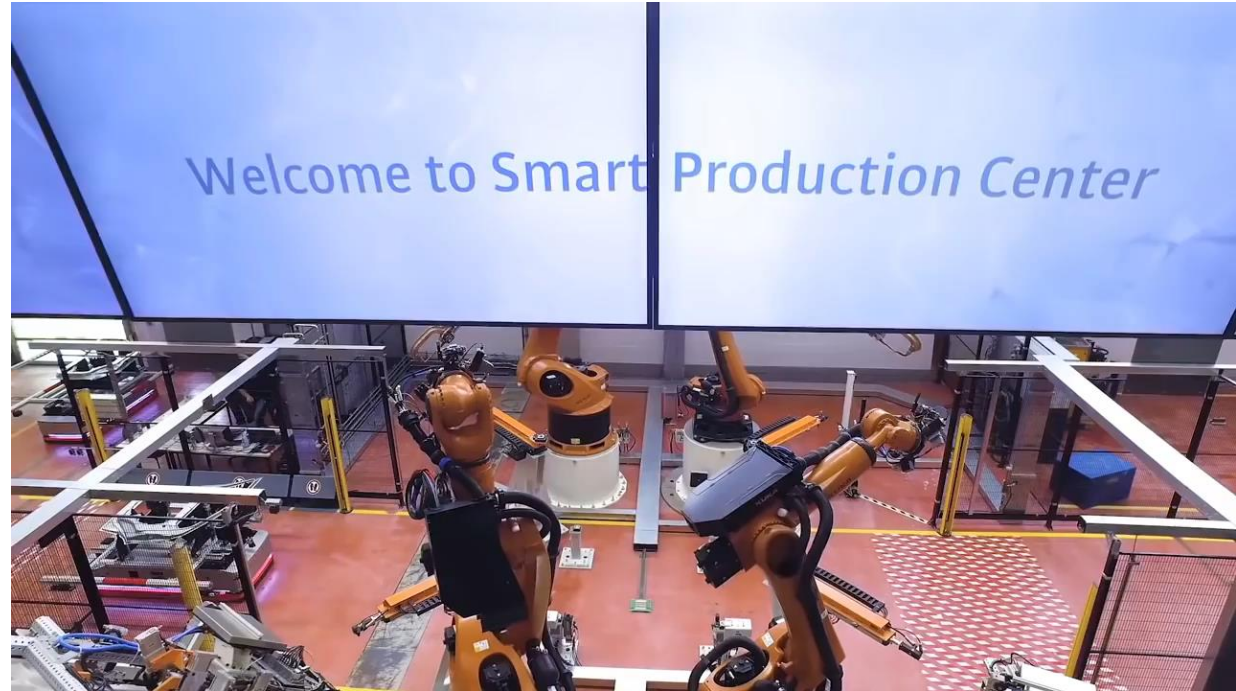
KUKA Matrix Production | Matrix Production



Enabler

- **Separation** of production and logistics
- Usage of **one transport system** (AGV) only for Tools and Parts
- **Cell- and Toolingconcept** – the modular product independent production cell
- **AGV** technology with SLAM navigation – the interconnecting transport technology
- **smartProduction_control** - the controls software
- **RFID-applications** – identification
- **Safety technology** – the WLAN concept
- **3D Scanning** – „Pick by Light & Display“ worker guidance
- **OPC-UA** – communication protocol

KUKA Matrix Production | Esempi di Matrix Production



Grazie per l'attenzione