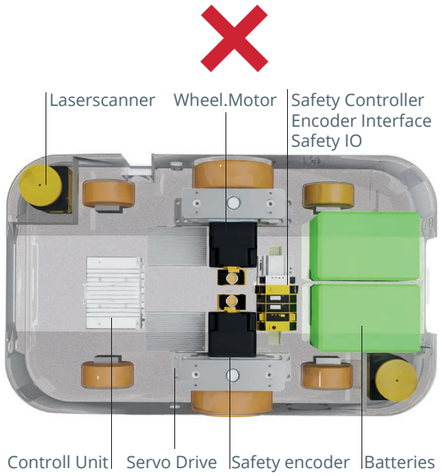
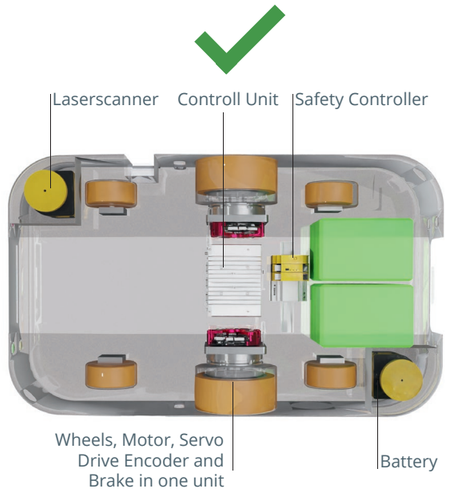
The Next Generation AGV-Platform FSoE

AGVs / AMRs have become an indispensable part of modern manufacturing and logistics.
Such high-tech products have an elaborate AGV system architecture, comprising a large number of individual components and complex cabling. The complexity results in high development, procurement and commissioning costs, causing a clutter of cables and resulting in space shortages inside the vehicle.
Therefore, AGVs are extremely costly to manufacture and most demanding in terms of maintenance.

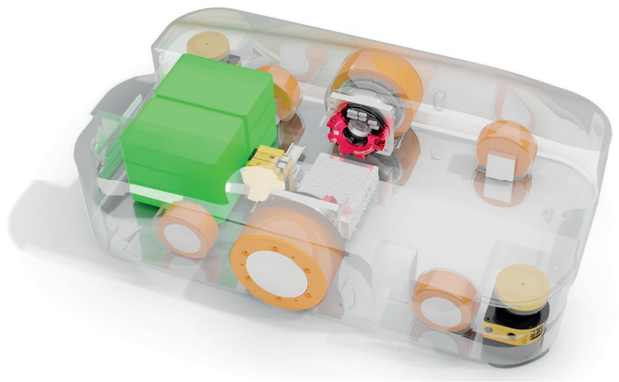




We do it differently

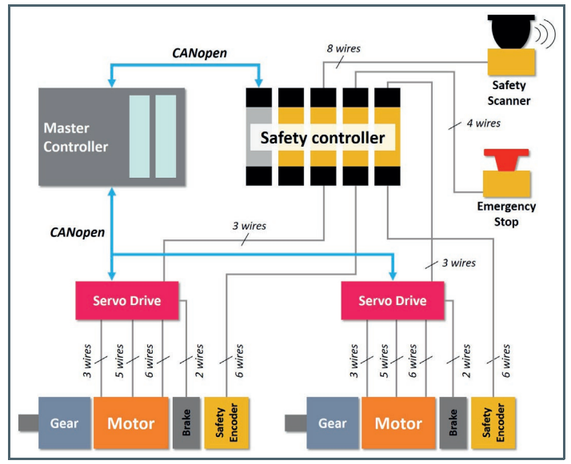
In cooperation with the companies Synapticon, Kontron, Brinkmann and Sick, we have developed a future-oriented Next Generation AGV system architecture (FSoE = FailSafe over EtherCAT):

Rather than using complex mechanical drive components, we use the ultra-compact gearless **Ketterer i-Wheel C 3213 direct drive** with a fully integrated Synapticon Circulo 9 safety controller.
Combined with just one Safety Master Controller, simple safety logic and proven protective field detection, our new FSoE system architecture covers everything a modern AGV/AMR needs.
What makes it special is the simple connection of all components via a single cable due to FSoE via EtherCAT protocol. Consequently, the AGVS / AMR gets by with significantly fewer components and minimal interior cabling.
Such integration reduces components and interfaces, as well as development effort and assembly time.

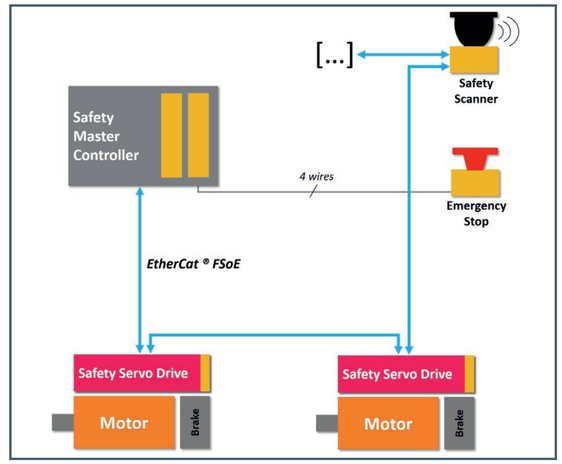


Less complexity of the system	→	Faster R&D time
More space for batteries	→	Longer runtime
Quick maintenance	→	Shorter downtime
Fewer components	→	Lesser system failures

Traditional System



NEW FSoE System



Increased performance with reduced system costs

Fewer components	→	**More space**
Fewer cables	→	**More efficiency**
Less complexity	→	**More performance**

- More straightforward, faster development
- Leaner, more cost-efficient production
- Easier procurement
- Maintenance becomes less complex
- System cost savings of up to 50 %
- More space for batteries: Vehicles with more power, greater mileage and higher availability
- Dependable functional safety based on FSoE technology: STO, SS1, SS2, SLS, etc.
- Expandable as desired, scalable and future-proof with EtherCAT FSoE