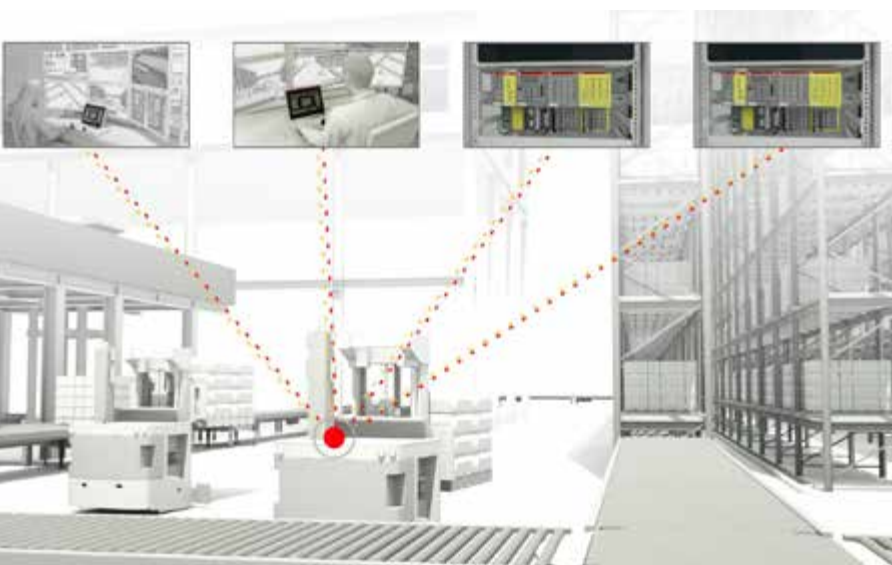


AC500-S PLC for safe communication between safety CPUs using PROFINET/PROFIsafe over 5G



Real-time exchange of high volume process and safety data

Each system needs to exchange its control and safety data via a central control system or distributed control system in an efficient and reliable manner so as to maintain productivity and minimize downtime.

ABB has moved from using just one central PLC controller to multiple controllers capable of communicating with many machines in real-time. Now each machine controller can exchange big volumes of process and safety data in real-time to more than one central control system simultaneously. 5G networks can also be used to wirelessly deliver time-critical data using PROFINET/PROFIsafe.

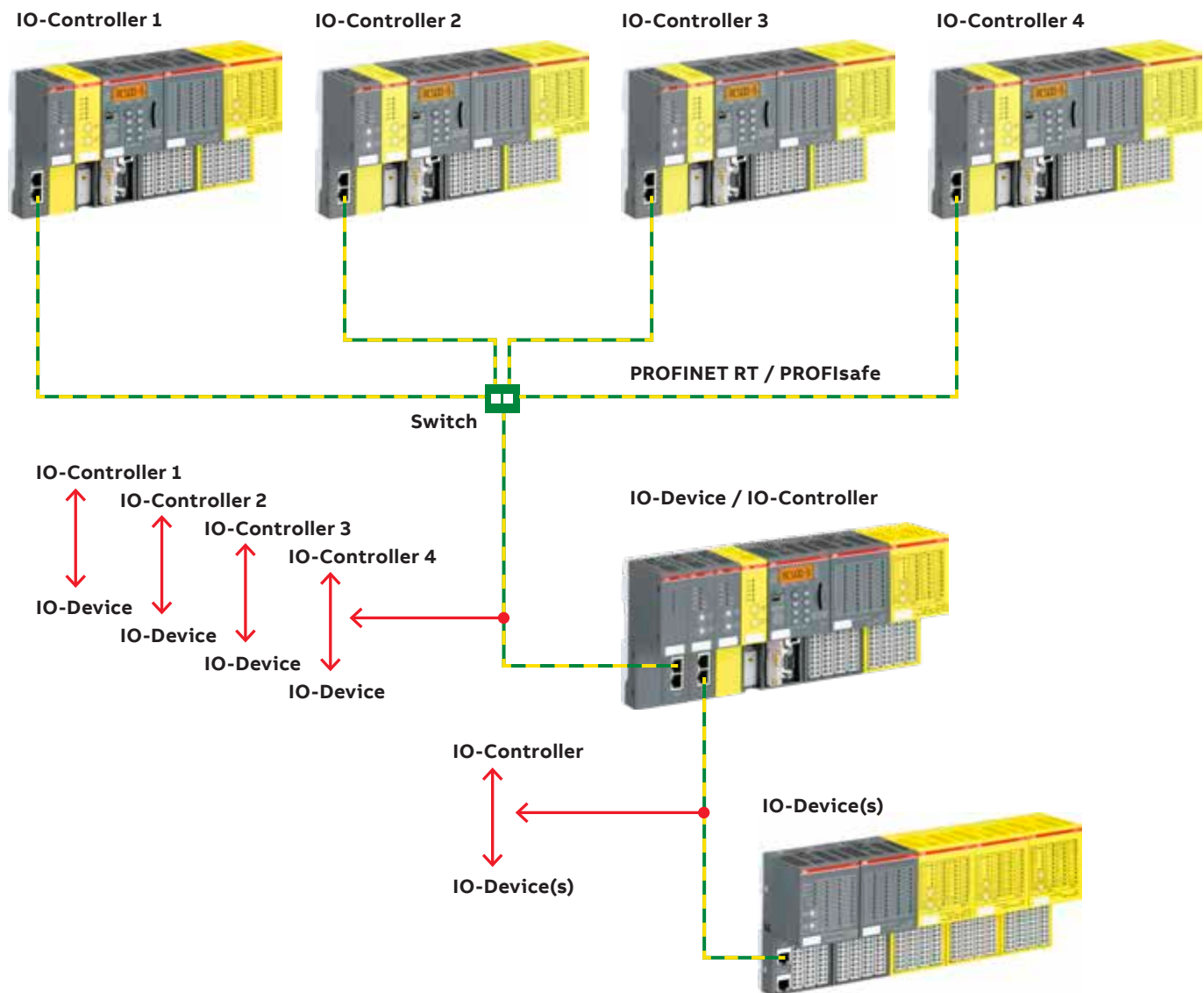
Safety CPU modules SM560-S-FD-1 (-XC) and SM560-S-FD-4 (-XC) can function as both a safety controller and a safety device. The modules, when used with ABB's AC500/AC500-S Programmable Logic Controller (PLC), feature the ability to exchange process and safety data, not only from one controller to multiple devices but also from one device to multiple controllers, using PROFINET/PROFIsafe shared device functionality.

A modern distribution center comprises several independent systems including conveyor and lift systems, robotic sorting and palletizing processes, together with autonomous guided vehicles, or AGVs, and automated stacker cranes that lift pallets to and from the high bay storage systems.

Now hybrid interconnected PLC control systems can extend traditional centralized or distributed control. As such, each controlled machine can deliver high volumes of process and safety data in real-time, simultaneously, to several central control systems.

This solution replaces gateways which are expensive, take valuable control cabinet space and because they are limited to only 12 bytes of safety data per gateway, cannot communicate in real-time with large safety data volumes. With the new solution, a maximum of 1440 bytes of process data including up to 384 bytes of functional safety data can be allocated for up to four PLC controller systems, thereby providing faster reaction to optimize the production and improve the predictive maintenance that leads to less downtime.

PROFINET/PROFIsafe communication between multiple AC500 PLC controllers



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