

**Additional requirements
to
60802-industrial-requirements-0918-v10.pdf**

Contributors:

Thomas Enzinger, B&R
Marius Petru Stanica, ABB

1.1 General

- The TSN-IA Profile shall support the following configuration models:
 - centralized
 - hybrid
 - fully distributed

1.2 Synchronization

- The Universal Time (see R6.1) shall be used as primary timestamp for log messages. Log messages shall also contain an incrementing number (log order). When relevant the log message should also contain the corresponding Working Clock value (see R6.2).
- Given qualified SW and HW, time synchronization mechanism(s) shall be available to be used by safety components

1.4.4 TSN Domain Protection

- All nodes are allowed to send unscheduled asynchronous frames at arbitrary times

1.7 Industrial automation machines, production cells, production lines

Functional Safety:

- Bootup of the safety part of the network shall be accomplished in parallel to the non-safe part

1.8 DCS Reconfiguration

- Support of load balancing between virtual controllers shall be assured

1.9 Further Industrial automation use cases

Security:

- Bootup of the security certified devices (like IEC 62443 SL) in a network shall be accomplished in parallel to the bootup of devices without security certification
- IEC 62443 part 3-3 shall be considered in the TSN-IA profile

Firmware Update:

- The FW update procedure shall be specified and happen in the same way for all devices, if supported by the device
- The TSN-IA profile shall define a standardized way(s) how a device signals that a FW upgrade is in progress