



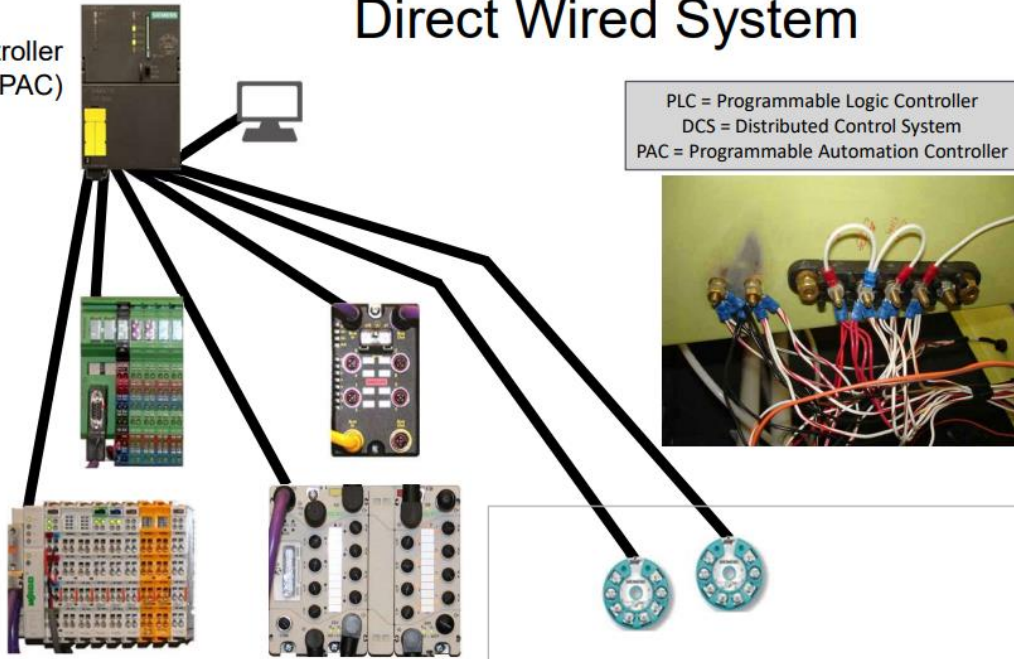
Profibus

Håvard Solbakken, Magnus Vågen,
Anna Malamura

Direct Wired System

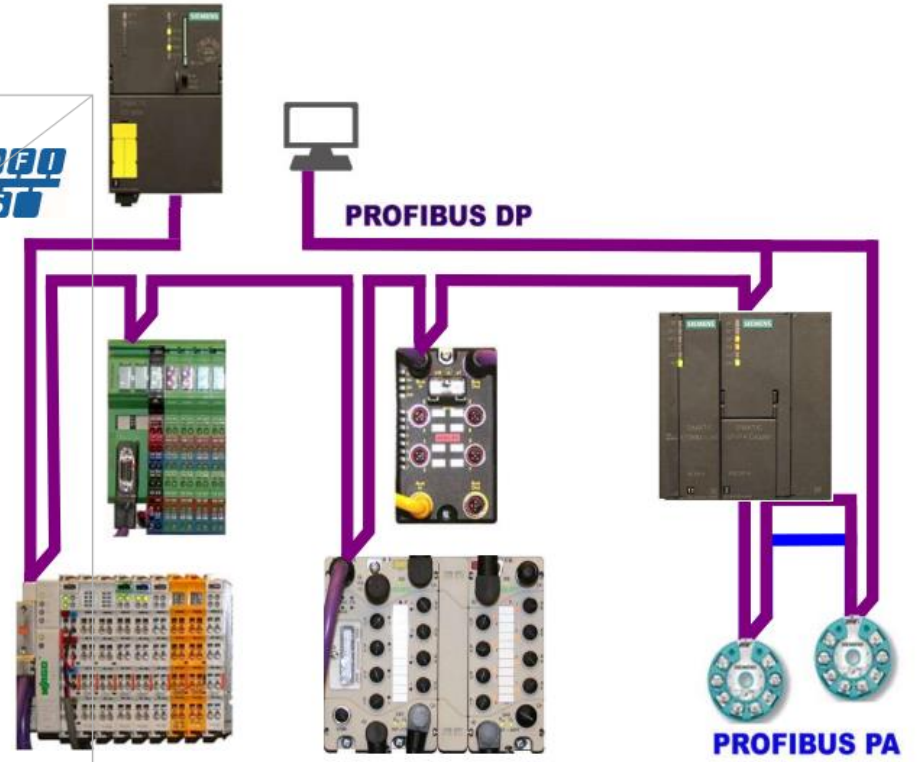
Process Controller
(PLC, DCS, or PAC)

PLC = Programmable Logic Controller
DCS = Distributed Control System
PAC = Programmable Automation Controller



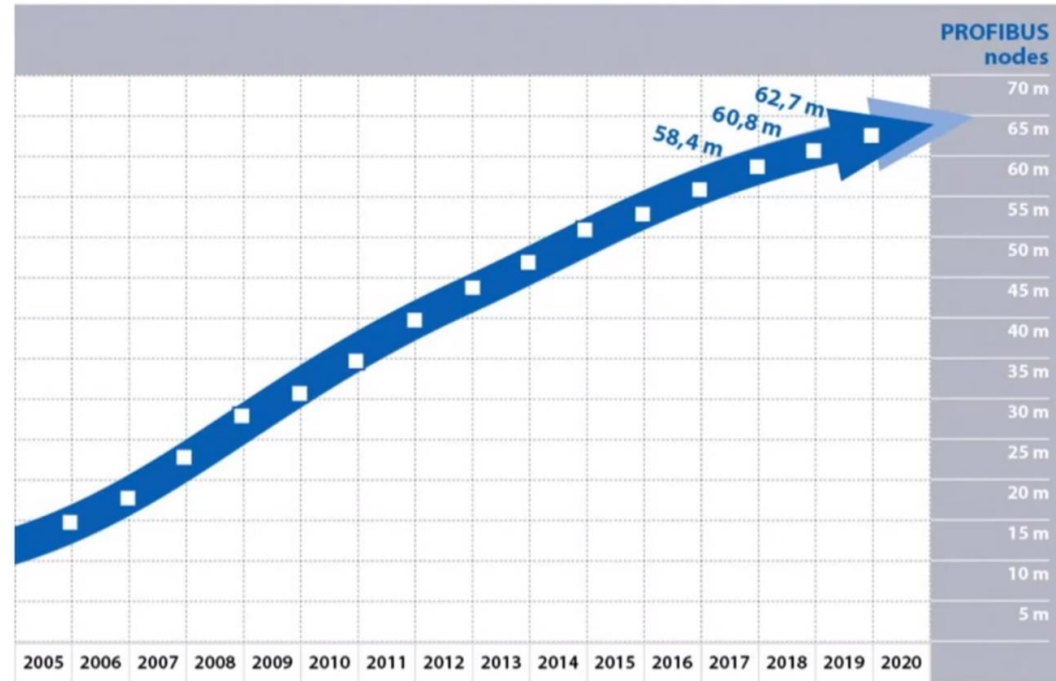
BEFORE
AFTER

PROFI
BUS



Markedsandel

Over 62M PROFIBUS nodes!



Målgruppe

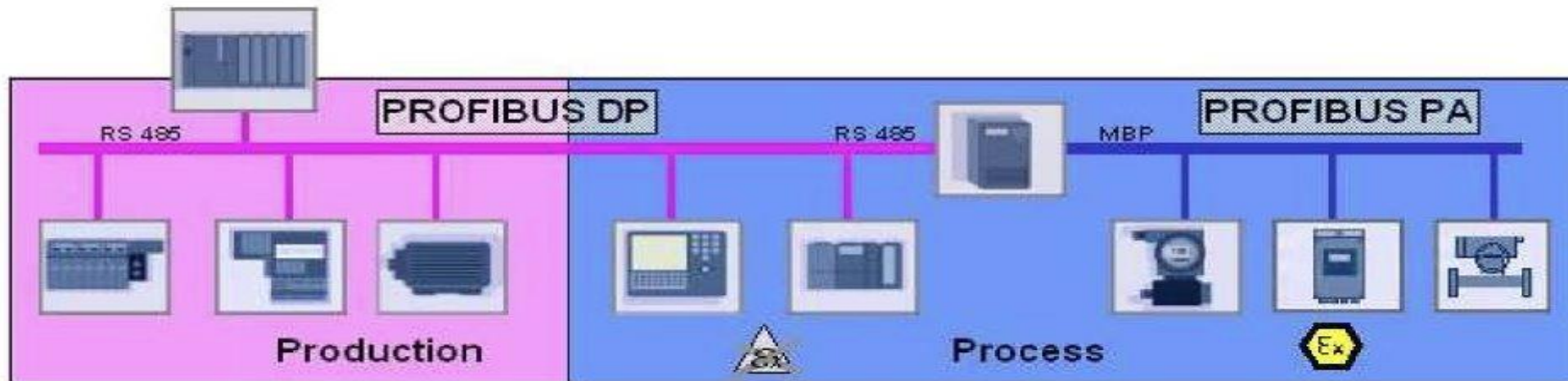
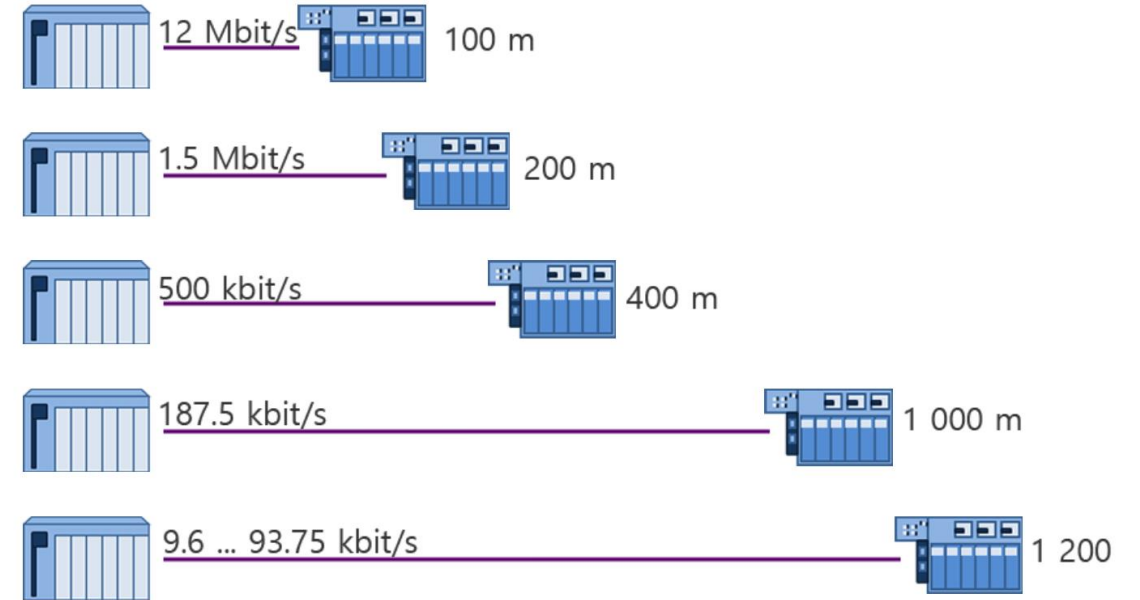
- Factory automation
 - Vehicle manufacturing
 - Bottling plants
 - Warehousing systems
- Process automation
 - Chemical industry
 - Petrochemical industry
 - Paper and textiles
 - Power stations
- Drive technology
 - Machine tools
 - Packaging machines
 - Paper production
- Hybrid applications



Profibus DP (Desentralisert periferiutstyr)



- Serial Fieldbus
- RS485 med hastighet opp mot 12 Mbit/s
- RS485-IS til EX områder
- DPV0-V1 protokoll
- Kun data
- Maks 1200m



Profibus PA(Prosess automasjon)



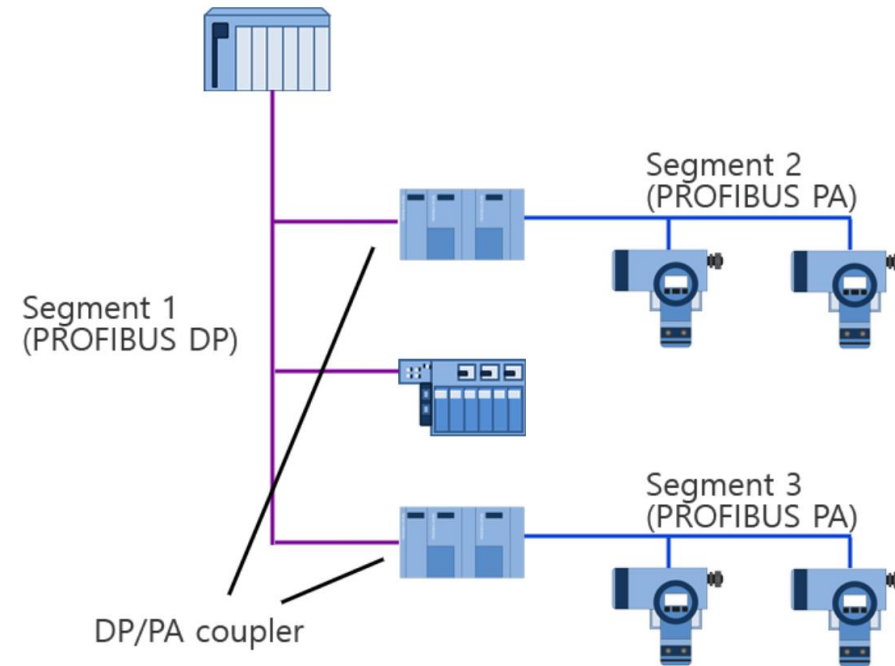
- Serial Fieldbus
- RS485
- Lik protokoll som DP
- 31.25kbit/s
- Data og strøm
- Maks 1900m



DP – Wide variety of media



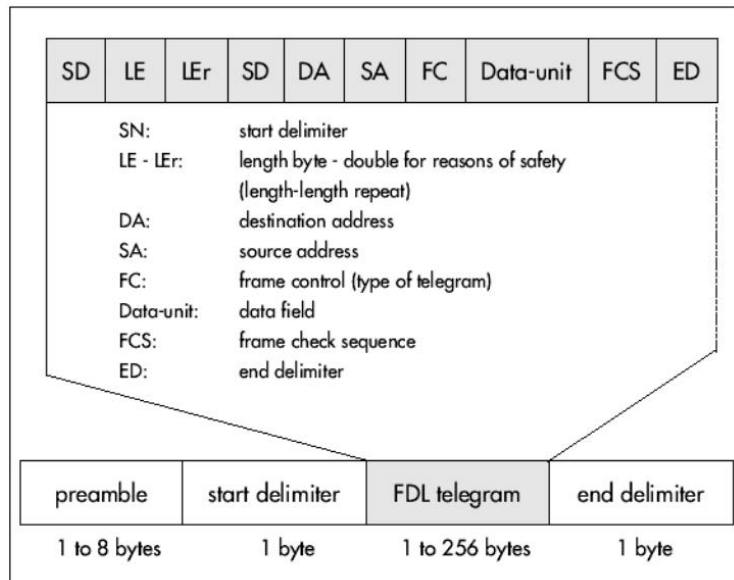
PA – Copper only



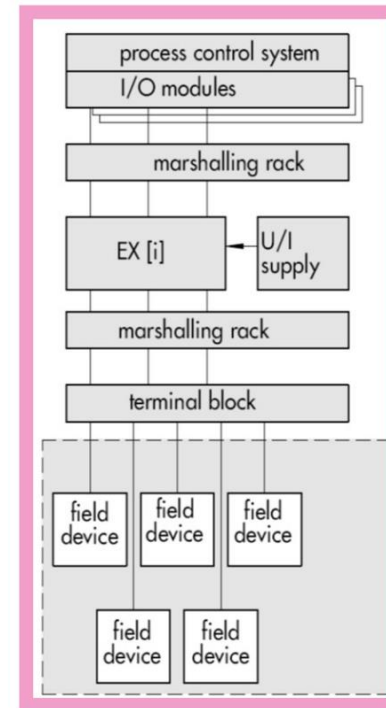
Virkemåte



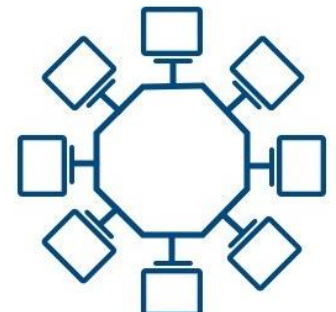
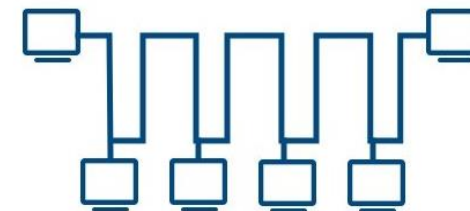
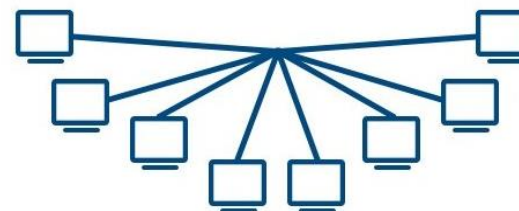
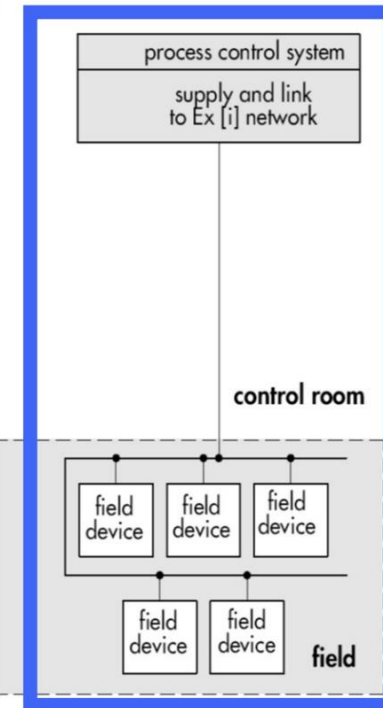
- Master / slave prinsippet
- Bus RS485
- Telegram



Conventional



PROFIBUS



OSI OPEN SYSTEMS INTERCONNECTION

	User program		Application profiles
7	Application Layer		PROFIBUS DP Protocol (DP-V0, DP-V1, DP-V2)
6	Presentation Layer		Not used
5	Session Layer		
4	Transport Layer		
3	Network Layer		
2	Data link Layer		Fieldbus Data Link (FDL): Master Slave principle Token principle
1	Physical Layer		Transmission technology
	OSI Layer Model		OSI implementation at PROFIBUS

FORSKJELLER

	Profibus	Modbus (RTU/ASCII)
Topologi	Ulike topologi: Linje, Ring, Tree, Stjerne	Linje topologi
Antall enheter	126 (32 per segment)	247 (32 per segment)
Medium	RS-485	RS-485 og RS-232(gammel)
Hastighet	Opp til 12 Mbit/s	Opp til 115 Kbit/s
Message-size/Sendingstørrelse	244 bytes	252 bytes (RTU)

BEGRENSNINGER

- Skalerbarhet
 - topologi
 - antall enheter (32 per segment)
- Pålitelig dataoverføring
 - støy
 - sendingstørrelse
- Hastighet (15 Mbit/s)
- Forsinkelse





Spørsmål?

TAKK FOR OSS

Kilder:

https://www.ntnu.no/wiki/display/iss/24_1+Gruppe+1+-+Profibus