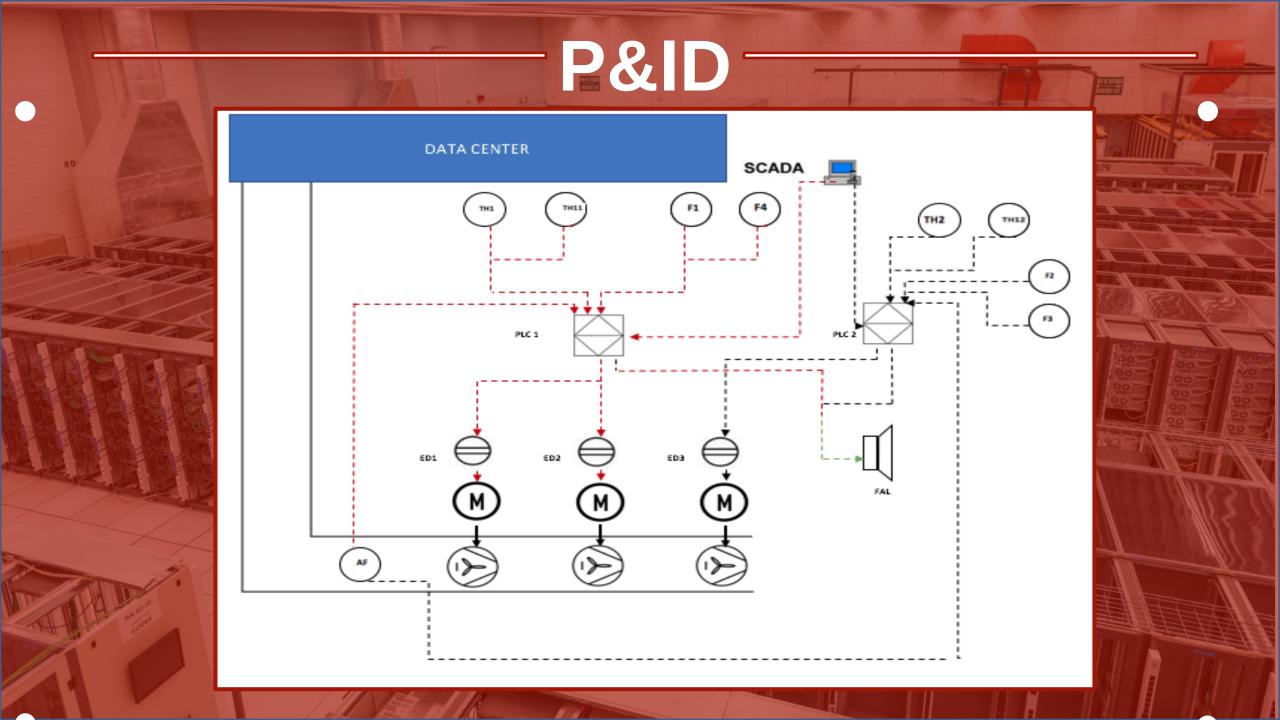
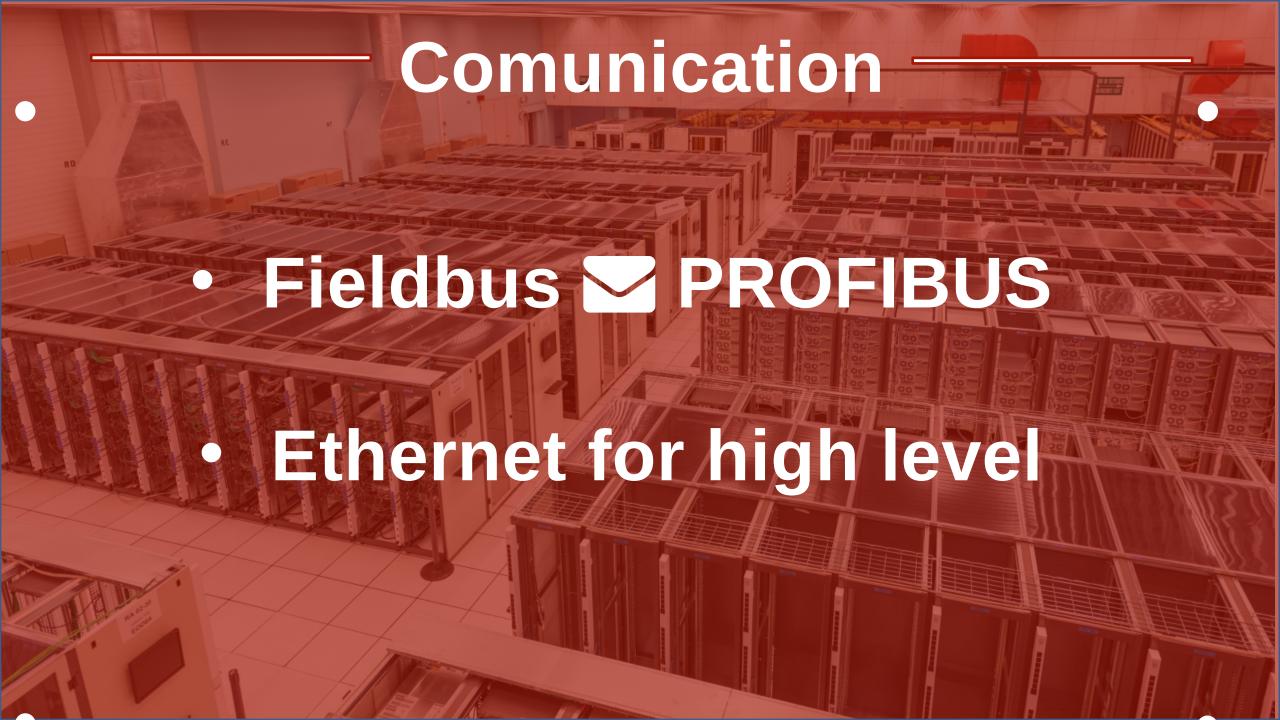


Problem Statement 7700 servers Fans/actuators **PLCs Temperature** sensor **Humidity sensors** 3300 servers Fire sensors







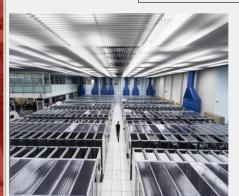




TANGO

- 3 device servers
 - **Easy monitoring**
- Controllable fan speeds
- Random server load and alarm triggering for simulation

Swiss datacenter



(18°C - 27 °C) Temperature:

Humidity:

Fire:

Air flow:

Sensors details

Ventilation system







start

stop

Speed at 50.00 %

fire 01: (iii)

temp_00: 31.20C	temp_06: 31.20C
temp_01: 31.20C	temp_07: 31.20C
temp_02: 31.20C	temp_08: 31.20C
temp_03: 31.20C	temp_09: 31.20C
temp_04: 31.20C	temp_10: 31.20C
temp 05: 31.20C	temp 11: 31.20C

np_00: 31.20C	temp_06: 31.20C	hum_00: 42.00%	hum_06: 4:
np_01: 31.20C	temp_07: 31.20C	hum_01: 42.00%	hum_07: 4
np_02: 31.20C	temp_08: 31.20C	hum_02: 42.00%	hum_08: 4
np_03: 31.20C	temp_09: 31.20C	hum_03: 42.00%	hum_09: 4
np_04: 31.20C	temp_10: 31.20C	hum_04: 42.00%	hum_10: 4
np_05: 31.20C	temp_11: 31.20C	hum_05: 42.00%	hum_11: 4

Humidity sensors:

.00%	hum_06:	42.00%
.00%	hum_07:	42.00%
.00%	hum_08:	42.00%
.00%	hum_09:	42.00%
.00%	hum_10:	42.00%
.00%	hum_11:	42.00%

Hungarian datacenter



(18°C - 27 °C) Temperature:

Humidity:



Air flow:

Sensors details

air_flow_00:	86.70%
air_flow_01:	86.70%
air_flow_02:	86.70%

-		•
-	fire_01:	
	fire_02:	
	fire_03:	

temp 05: 23,40C temp 11: 23,40C

Humidity sensors:

(66% - 100%)

hum_00	: 32.00%	hum_06:	32.00%
hum_01	32.00%	hum_07:	32.00%
hum_02	32.00%	hum_08:	32.00%
hum_03	: 32.00%	hum_09:	32.00%
hum_04	: 32.00%	hum_10:	32.00%
hum_05	: 32.00%	hum_11:	32.00%



