



# My work at CERN

Internship 4.02.2013 – 5.07.2013

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Cracow University of Technology



## The beginnings of my work



After my arrival I was really fast introduced to my future work and main responsibilities, also I really fast became convinced that this internship will be much more interesting than in many others companies...

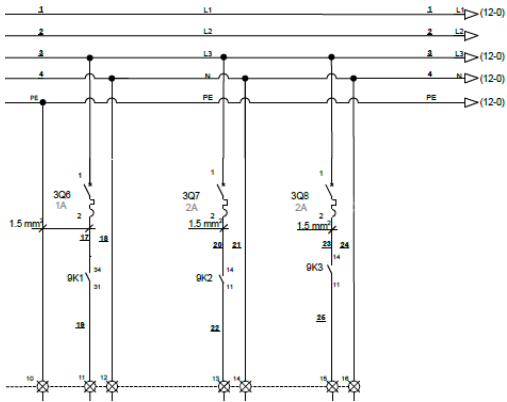
### Projects

- TRACI
- IBL detector cooling control system



### My responsibilities:

- Creation of the block algorithm describing TRACI operation
- PLC programming using the SCL language
- HMI programming
- Creation of the new electrical diagram
- Selecting new electrical components
- Assembly and wiring electrical cabinet





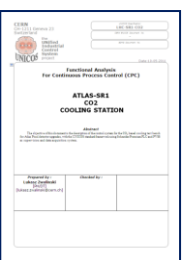
# IBL - Cooling control system

## Insertable B-Layer detector



- Prepare specification file in excel, which will be use to generate I/Os and logic for Schneider PLC and Siemens touch panel
- Programming HMI PC panel, including UNICOS framework
- Create SCADA application, using WinCC OA (PVSS)

Now I'm part of the team which is responsible for commissioning of IBL cooling control system



PLC CHANNEL	ELECTRICAL SYMBOL	OWNER	LOCATION	NAME	DESCRIPTION	REFERENCE	UNIT	RANGE MIN	RANGE MAX	SCALE MIN	SCALE MAX	UNIT
8	AI10	CO2	8	117402	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
11	AI11	CO2	8	117403	grate	Analogical_Seed	%	100.0	0.0	100	0	1.000
13	AI12	CO2	8	117404	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
14	AI13	CO2	8	117405	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
15	AI14	CO2	8	117406	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
16	AI15	CO2	8	117407	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
17	AI16	CO2	8	117408	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
18	AI17	CO2	8	117409	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
19	AI18	CO2	8	117410	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
20	AI19	CO2	8	117411	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
21	AI20	CO2	8	117412	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
22	AI21	CO2	8	117413	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
23	AI22	CO2	8	117414	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
24	AI23	CO2	8	117415	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
25	AI24	CO2	8	117416	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
26	AI25	CO2	8	117417	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
27	AI26	CO2	8	117418	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
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30	AI29	CO2	8	117421	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
31	AI30	CO2	8	117422	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
32	AI31	CO2	8	117423	Vessel 1 - Make ambient Temp. control	Analogical_Seed	K	50	90	100	0	1.000
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Specification XML

Instance Generator

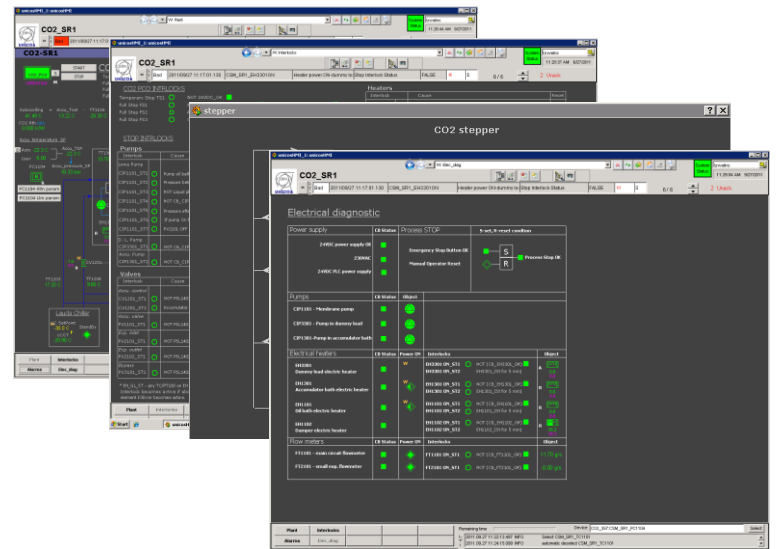
Logic Generator



Local SCADA Server (PVSS)



Schneider PLC



# Work but not only...



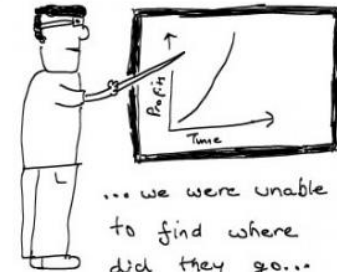


# Profits



- The internship gave me the opportunity to gained practical knowledge, which is priceless for young engineer
- I became familiar with SIEMENS and SCHNEIDER software, which is one of the most popular software, using to programming PLCs and creating SCADA applications
- I had opportunity to meet a lot of great people from all of the world
- I also star my adventure with ski 😊

As the profits of  
our company went outside  
this graph...



# Gratefulness

I would like to express my gratitude to



Dr inż. Jan Godlewski





For everything what He done for students from our university and all the help and support during my internship at CERN



Mgr inż. Łukasz Zwaliński  
Mgr inż. Maciej Ostręga  
Inż. Kacper Kapuśniak  
And all other friends

For all the help, support and invaluable knowledge gained during my work with You



Prof. dr hab. inż. Piotr Cyklis  
Dr inż. Ryszard Kantor  
 Dr inż. Bogusław Gorski

For all the help and support in matters related to the organization of my departure

# Thank you for your attention