

SPD detector control system

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SPD detector control system (DCS)



TOF
HV/LV power
GAS mixing
lectronics LV and t ^o

Tagging station									
HV/LV power									
ectronics LV and t ^o									

<u>SPD DCS basic principles and rules</u>

Current DCS layout on the base of the current status of the SPD subsystems and open for corrections.

Control system of each SPD system should be developed according to the predefined rules and principals described in SPD TDR

Used (or planned to use) technologies, software and hardware components should fullfilled predefined rules and agree with the SPD DCS responsible persons.





SPD control system architecture

1st Coordination meeting of the initiative group of the WinCC-OA @ NICA project



1st WinCC OA coordination meeting, 11 October 2021 (Offline at JINR & Online)

- Siemens office in Russia recognized a development of WinCC OA application for NICA and promised the support
- NICA project (SPD representative person is Danil Gribkov)
- the needs of SPD DCS at BTZ

In October, a meeting was held between representatives of SPD, MPD, accelerator, cryogenics, other departments, as well as representatives of Siemens to discuss the joint use of WinCC OA at NICA.

We learned that there are many of us, the exchange of experience and best practices will allow us to achieve highly effective work with WinCC OA, as well as, regardless of the NICA system, to ensure the uniformity of different control systems

"WinCC OA application c initiative group" was established to synconize the process of WinCC OA implementation within the

• A centralized purchasing of WinCC OA developer licenses for the entire NICA was launched. This week we should receive it for







SPD DCS architecture based on WinCC OA





1. To test prototypes of control systems for different SPD

systems;

2. To test separate components of SPD DCS with WinCC OA;

3.To develop and test software prototypes for common SPD DCS services such as HMI, DB etc;

4. To test interoperability between SPD DCS of different systems;

5. To test interoperability between SPD DCS of different systems and NICA accelerator.





BTZ high level of control system actual status



Control screen example for thermometry (24 channels)



Control Screen for motion control of target station

Multimethas crantups: Multimethas ynpasnetwe multimetas Multimetas Terytuan nosinges, Multimetas Basecener Basecener CANOK Uterease nosinges, Multimetas Cantor Basecener Terytuan nosinges, Multimetas Caretagenee nosinges, Multimetas Caretagenee nosinges, Multimetas Caretagenee nosinges, Multimetas Caretagenee nosinges Caretagenee nosinges Terytues of nosinges Multimetas Caretagenee nosinges Havanassed kongesses, Kuminimetas Reserved Multimetas Operations Multimetas Control screen for target stations (for configuration and debugging, final view of screen could be different)	Газовая система ВВ-модули Мишенная станция Термометрия Магнитная система Детекторы	е Синхронизация Видео контроль
Upperson noshups, MM Vitable Ministry Crept Con Con Con Buttons for selecting 2 targets stations and profilometer Buttons for selecting 2 targets stations and profilometer Description Control screen for target stations (for configuration and debugging, final view of screen could be different).	Мишенная станция: управление мишенями Мишень 1 Текущая позиция, мм О мм Включить Выключить В движении САN ОК Позиционирование	Профилометр Мишень 1 Мишень 2
Смещение нулевой позиции Авария Image: Control screen for target stations (for configuration and debugging, final view of screen could be different)	Целевая позиция, мм Омм Установить Уставка принята О Задание поз. Старт Стоп Цель достигнута	
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A	60	11.08.2021 13:28:30	ExampleDP_Rpt3.	Аларм УСТН.	YCTH.	159	x	09.09.20

Control Screen for gas system



A	60	11.08.2021 13:28:30	ExampleDP_Rpt3.	Аларм УСТН.	YCTH.	159	x	09.09.2021 16:50:50		

CANopen – WinCC OA connection





Intergroup interaction proposal



Presentation slide DCS of the SPD stand (miniSPD) from FE, DAQ and DCS meeting (29 April 2021) Kirill Salamatin, Temur Enik

Grafana tool on Tango is used in miniSPD control system for charts and trends.

This tool is actively used also at **CERN together with WinCC OA.**

Due to the fact that the miniSPD will be installed in the BTZ in the future, we propose to intergroup interaction already now, and the first goal of this interaction is to designate the introduction of all developments with the Grafana tool in the WinCC OA.



- system for SPD prototypes at BTZ
- developer licenses for ordering from Siemens was created
- porting their developments to WinCC OA

Conclusion

• We continue to work on the development and implementation of a control

• The first meeting of the WinCC OA initiative group was held, where a council for NICA inter-group interaction was created, and a list of

• We propose to start interaction with the miniSPD group on the issue of