Report of RFTech presentation during Mixdes conference
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Title of presentation:

Image Visualisation and Processing in DOOCS and EPICS

Presenter:

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Jan Wychowaniak presented the DOOCS control system architecture with special attention paid to the physical infrastructure, software and algorithms for visual data processing. The high energy physics experiments, facilities for which are installed at the DESY research center, require efficient and detailed operation quality diagnostics and parameters tracking. DOOCS, developed at DESY, communicates for this purpose with cameras dedicated to observing the appropriate physical phenomena. The algorithms discussed in the paper process data they produce, in order to calculate the desired quality parameters.

Abstract: The High Energy Physics (HEP) experiments, due to their large scale, required performance and precision, have to be controlled by complex, distributed control systems. The systems are responsible for processing thousands of signals from various sensors of different types. Very often, one of the data sources applied in such systems are visible light/infrared cameras or other imaging sensors. They can provide additional information about studied phenomena, which is not available on the basis of analysis data from other sensors. However, they require dedicated mechanisms for data collecting and processing. Moreover, often the images from cameras should be available to system operator. It needs the support from both operator panels interface and control application which should provide data in the dedicated format.

The paper presents two different approaches to image distribution, processing and visualisation applied in distributed control systems. Discussed is the issue of support for cameras and image data implemented in the Distributed Object Oriented Control System (DOOCS) and an example control system designed to the needs of image acquisition system on the base of the Experimental Physics and Industrial Control System (EPICS) environment.

Index Term: DOOCS, EPICS, HEP, MicroTCA, distributed control system, image acquisition system, visualisation, cameras, data processing

Remarks:

During the conference the presenter expanded his knowledge in the area of high energy physics experiments, especially learned about current trends in hardware development for the MicroTCA applications.

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