Contribution ID: **84** Type: **POSTER**

jPix - a multiplatform acquisition package for Timepix 3

Monday, 10 December 2018 17:40 (10 minutes)

We present a newly developed modular and multiplatform acquisition and control package dedicated for high performance Timepix 3 pixel detector. The software package was originally developed for operation at Atlas experiment. Afterwards, it was further extended as an independent package for general purpose measurements with Timepix 3.

Timepix 3 detector is a semiconductor detector of 256x256 square pixels providing information about energy and time of arrival with resolution less than 2 ns, which generate a high amount of data to be processed in real time with the data acquisition package. The processed data stream from the detector can be stored on a hard drive and also displayed online using graphical interface with capability to control several number of acquisitions and display measured data using variable modules. Moreover, due to the architecture it can be further extended using external libraries working independently on the software. The software is developed in Java standard edition, which gives the possibility of deployment on various operating systems (Windows, Linux, MacOS, etc.). All peaks in data transmission can be further balanced by several buffers, which size depends on the available random access memory.

The software package architecture is based on independent modules. The modularity of the package and possibility of extensions working independently make the software unique. Also, basically, any number of detectors is supported. The possible number of connected detectors depends on the performance of DAQ computer and it is not limited by the software architecture. The package was tested to process 7 millions events per second when using SSD as a data storage.

Primary authors: BROULIM, Jan (IEAP, Czech Technical University in Prague (CZ);University of West Bohemia (CZ)); HOLIK, Michael (IEAP, Czech Technical University in Prague (CZ);University of West Bohemia (CZ)); MORA, Yesid (IEAP, Czech Technical University in Prague (CZ);University of West Bohemia (CZ)); BURIAN, Petr (IEAP, Czech Technical University in Prague (CZ);University of West Bohemia (CZ))

Presenter: BROULIM, Jan (IEAP, Czech Technical University in Prague (CZ);University of West Bohemia (CZ))

Session Classification: Poster section

Track Classification: Calibration and data processing