



Experimental Physics and Industrial Control System



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Subject: Re: Motion controls alternatives to MAXv?

From: Krzysztof Lazarski <lazarski@anl.gov>

To: Dirk Zimoch <dirk.zimoch@psi.ch>, EPICS <tech-talk@aps.anl.gov>

Date: Thu, 12 Aug 2010 13:01:18 -0500

Hi Dirk,

At Sector 19 at APS at Structural Biology Center we are using Delta Tau VME

and PCI controllers exclusively for 15 years already.

I am working with these controllers already 11 years and I would say they are the most advanced motor controllers on the market, even nowadays.

I have also a little experience with Galil controllers when helping my friend to develop temporary EPICS interface to it, 5 years ago. From my experience with Galil I would say, it is very good controller with very similar features to Delta Tau controllers, but not so transparent as PMAC (I remember having some issues while setting up the S-curve motion and blending such movements together)

The original author of the EPICS driver for VME Delta Tau controllers is Tom Coleman. Tom's driver is exposing the most of the PMAC functionality to EPICS (DPRAM, coordinate systems, almost all motor parameters, parameterized PLC programs, all PMAC internal variables (M, I, P, Q), downloading sources to controller, parameterized motion programs, all communication methods). Which could be considered as an overkill for synchrotron beamline's limited usage of the motors.

Together with this driver Tom developed tsub record, which helped in implementing several abstraction layers above the motor level: motors, drives, stages and axis (This is like csub record but with multiple inputs and outputs)

Our new effort here (at sector 19) is replacing VME PMACs with PCI Ultralites MACRO (over fiber). The software which we are using consists of using SNL (seq) with Delta Tau PMAC driver (commercial driver on Windows)

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and PostgreSQL.

Such design is making us independent from the communication methods to PMAC

controllers (Serial, Ethernet, USB, PCI).

Our new design is simplifying most of the previous complexity, and keeping

exposition of the PMAC functionality as modular as possible.

Setting up controllers, tuning motors and troubleshooting is done using commercial suite - "PMAC Executive", which over the years became stable and

reliable enough with many automatic features (automatic motor tuning (PID),

calculating clocks settings...). We can use this suite while running PMAC IOC.

The documentation for Delta Tau controllers is very detailed (and gigantic),

and Delta Tau technical support very helpful.

Cheers,
Krzysztof

Krzysztof Lazarski lazarski@anl.gov

Beamline Software Coordinator

Structural Biology Center (SBC-CAT)

On 8/12/10 8:48 AM, "Dirk Zimoch" <dirk.zimoch@psi.ch> wrote:

> Hi all,
 >
 > I am looking for an alternative to our current MAXv motion controller
 > solution.
 >
 > Can anyone tell me about experiences with
 >
 > * DeltaTau pmac
 > * Newport XPS
 > * Galil
 > * other systems?
 >
 > Dirk
 >

References:

[Motion controls alternatives to MAXv?](#) Dirk Zimoch

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