

# ARGONNE NATIONAL LABORATORY

## INTRA-LABORATORY MEMO

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DATE: May 2, 2005

TO: Attendees

FROM: Ron Sluiter

SUBJECT: BCDA Group Meeting – 05/02/05

ATTENDEES: John Maclean, Peter Fuesz, Ron Sluiter, David Kline, Ben-chin Cha, Kurt Goetze, Joe Sullivan

ABSENT: Carlotta Lukowski, Brian Tieman, Tim Mooney

John (announcements):

- ICALEPCS abstract submission deadline has been extended to 5/8/05.
- Group Leader interviews will probably be held at the end of May.

Tim (per John):

- Working on orientation-matrix code for Harald Sinn. I have most of the math coded, but no database or user interface. I got tired of looking at bloated array packages intended mostly to make arrays look like a native C++ type, and including essentially no matrix math, so I just scribbled down the basics for 3x3 matrices and 3 vectors (e.g., dot, cross, mult, and matrix inversion) for now. .
- Attended the EPICS collaboration meeting and met with the following folks:
  - The Australians: I met two of the three that attended. They've been in the synchrotron field for about six months and are still coming up to speed on accelerator and -- to a much lesser extent -- beamlines. The guy in charge of beamline software is thinking mostly about vacuum gauges and PLC's. They're leaving the real beamline software to vendors and scientists, they guess.
  - Diamond, and Cosylab developing for Diamond, is very interested in coordinated servo motors. A Diamond guy said he assumed they would be taking the lead in this area, and developing stuff to run in PMAC controllers. I didn't detect any strategy for combining coordinated motion with the motor record. I mentioned the possibility of asyn support that would allow for multiple interfaces to motors. The Diamond guy didn't respond; the

Cosylab guy (Rok) said he needed software in a month, and so would not be waiting around for anything from us.

- Lots of Python and Java stuff were mentioned. Also, Eclipse was mentioned several times, sometimes in context with an EPICS integrated development environment. All the Python developers I talked to were wondering if Geoff Savage has left Earth. One guy is using Matt Newville's rewrite of Geoff's Python-EPICS interface. Also, the latest version of Java is said to be great stuff -- different from and significantly more capable than previous versions.
- John Q. mentioned to me that he's going to be looking for more client-side stuff from us, so I talked with Matthias (task leader for the user-interface part of the EPICS-future project). The idea is to design something to supplement or replace MEDM, ED/DM, EDM, and DM2K -- all indistinguishable from any distance -- with something that won't run out of gas. None of the current crop of user-interface developers seems interested in anything that would help us meet John Q.'s challenge. The emerging UI consensus seems to favor development in Java and XML, with maybe a supporting role played by Eclipse. I'm hoping we can get some Python support that would allow end users to write custom code. The whole thing needs thought, but what's most urgently needed are requirements. I said I'd get some from APS beamline users. It would be nice to get some UI features from Blue Ice into the list, and to get some of the features of Eric's old data-analysis project in there as well.
- Got disconnected from VPN three times while writing this little blurb!

David:

#### CURRENT:

- Love controller support is on hold until Marty releases asynDriver.
- Etching lab,
  - Began working on the state diagram,
  - Spoke with Kurt and Mike,
  - Wireless installation for Linux on Laptop failed,
- EPICS Collaboration meeting,
  - Finished my presentation,
  - SNS was interested so I sent my sources,
  - CozyLab and Hytec IOCs,
  - New widget for MEDM from Ken,
- Wrote and submitted an abstract for ICALEPCS 2005,
- Flash some Ebricks for EOS,

#### NEXT:

- Trip expense report,
- Continue with Etching lab application,
  - State diagram,
  - Download new MEDM version and try widget,

Ben-chin:

- Upgraded visualization tools on BEAMS/OXYGEN and GATEWAY Linux system.
- Prepared and updated download files: catcher3\_1.Tar, idl3\_1.Tar, scamSee3.4.zip, DLVM save files.
- Remove dimension restriction in scanSee R3.4.3.
- Assisted Pete Jemian to run the gateway linux epics/extensions tools for their new Linux system.
- Assisted Aub Saleen to reconstruct 2D images from 1D mda files.

Ron:

- Submitted a Technical Support Request (TSR) to Wind River Systems (WRS) on an old compiler problem. In the past, WRS has only provided work-arounds, rather than compiler fixes.
- Worked with UNI-CAT to help them get all of their IOC's running synApps R4.6 from the gateway.
- Joe Sullivan discovered a bug in the motor record; i.e., the stale data delay bug, which was fixed in the R3.13.x version of the motor record, but not in the R3.14.x version. Reviewing several through-put issues while fixing this bug.

Kurt:

- Working with Irina Koshelev of IMCA (sec. 17) to add remote shutter controls for their B hutch.
- Added PC as EPICS client to XFD mirror lab.
- IXS: first attempt at booting IOC failed. Working with D.Wallis to sort out network issues.
- Reviewed PIC630 code.
- Worked with Ulrich Lienert (sec. 1) on testing his tomography system.
- Added "user val", "offset" and "dir" capability to Mahr-Federal linear gauge readout system.

Joe:

- Attended ACS Tech80 SPiiPlus Training offsite.
- Continued work on SPiiPlus motorRecord driver. Issued addressed:
  - ENABLE/DISABLE
  - Record-Controller software travel limit synchronization.
  - Homing - required SPiiPlus programming
  - Performance Measurement (23Hz scan rate max)
  - Tested SPiiPlus motorRecord driver with both Ethernet and RS-232 asyn ports.

- Worked with R. Sluiter to debug the motorRecord common device support code that affected performance testing.
- Met with S. Sharman (Mech. Engineering) to plan the EPICS support of the "Thermal Fatigue Experiment". This experiment is currently being run with LabView. The motor controller (Parker Gemini) has an ethernet interface and I plan to write motorRecord support for it.

Peter:

- Cabinets ordered.
- OrCad licensing problem is resolved
- Orders received from IMCA-CAT.

JFM:ckl

To: Peter Fuesz  
David Kline  
Ben-chin Cha  
Kurt Goetze  
Joe Sullivan

Copies to: Carlotta Lukowski  
Brian Tieman  
Tim Mooney