An EPICS solution that can provide a comprehensive, and high performance motor control system for use at synchrotrons and other research laboratories
Model 3 motor architecture

Model 3
• Top level object is the EPICS motor record
  • Lots of code/scripts written to this object
• Next layer is the device support
  • Knows about the motor record and talks to the driver
• Lowest layer is EPICS driver
  • Knows nothing about the motor record and talks to the hardware
• C++ model based on asynPortDriver
• ASYN paramList makes it easy to support hardware specific features
• Support for ad-hoc coordinated motion
• Support for coordinated profile motion
• Easily extended to provide a framework for coordinate system motors
Model 3 motor architecture

- To be written
- Model 3 architecture parent
- CSAxis.cpp coordinate system motor kinematics. Could be moved into parent class asynMotorAxis.
Hardware specific features

- ASYN paramList
  - Auto amplifier on/off
  - Auto brake on/off
  - Encoder stall time
  - Motor type
  - Encoder type
Ad-hoc coordinated motion

- Deferred moves facility
  - Select deferred
  - Select coordinate system
  - Move all motors
  - Select go
  - Motion coordinated by hardware
HowTo: Profile moves

Spreadsheet

Shell script caput

EPICS database waveforms

Build, plot, and check. Save profile to file

Trajectory file

Execute
HowTo: Profile moves

• Motor profile in action
Coordinate system (CS) motors

- CSAxis.cpp provides kinematics for coordinate system motors
- 8 Real motors are A to H
- 8 CS motors are I to P
- 10 variables for use in kinematics
Coordinate system (CS) motors

- Kinematics changed by database
- Kinematics could be moved into asynMotorAxis parent class or remain in CSAxis
Questions?

- Demo at Motion Solutions Australia booth