

Motor record – next generation ?

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- Motor Record 4.1: February 2000
- Well defined interface(s) → popular
- Designed + does work well with stepper motor cards
- Configuration values for controller in record (VELO, ACCL, soft limits,...)

- ESS: Much higher (neutron) flux
 - Measure fast
 - Move fast
- Modern controllers:
 - Improved dynamics (closed loop, jerk,...)
 - Many more parameters
 - Engineering tool for setup and "tuning"

Improvements so far

- Possible to "revert" the configuration:
- Values from controller through driver into Record
(soft limits, VMAX, VELO, ACCL)

Today

- Fork from motor, called axis
- Simulator via TCP/IP
- Test suite
- Work ongoing 2016-2017

Tomorrow ?

- Split: drivers as Git submodule
- Record: call it motor (again)
- Only model 3
- Glitch compensator

- More updates: 2018 @ EPICS meeting

Thanks

- Thanks for listening
- Questions: Round table here at ICALEPCS

- local meeting here at ICALEPCS

Extra - Glitch compensator

- Motor is reported "ready", but has not yet started (workaround for EthercatMC)
- Set RTRY to 1, RDBD to MRES and "tweak"
Motor will be reported as MISS (bug)
- `caput -c -w 30 IOC:m1.HOMF`
(Is this working ?)
- Glitches in state machine(s) with asyn ?

Extra – Advanced controllers

- STOP on LS may confuse controllers:
disturbs the ongoing "ramp down"
- Solution (?)
 - use a counter before stop
 - turn off the power
- Device support: Send all data in one go!

Extra - Plans

- Split into Git submodules (axis project(?), model 3 drivers only)
- Rename axisRecord into motorRecord
- Call Git motorX
- Include foreign Gits as remotes

- Add SDBD field for servos
- Removed all "latest" fields
- Removed NTM, NTMF (did old code work?)
- FRAC does nothing (better done in driver)
- Position readback (motor/encoder) was crippled to 32 bits.
- Soft limits from controller (model1 could do, model 3 could not)

Extra – Device support

- Model 3 has methods `move()`, `moveVelocity()`
- Device support split into VEL, ACC, POS, GO
→ can be done easier → rewrite dev Support
- Model 1 & 2 convert into Model 3
- INIT, PREM, POST ?
- Soft motor already lost