EPICS Also for Small and Medium Sized Experiments

**Measurement @ 20 kV**

Small, but fine devices

- Raspberry Pi Zero W (80.21 b/g/n WLAN)
- Runs an EPICS IOC, on top of Fluke 287
- Communication with the device via infrared connector
- Battery of multimeter powers the IOC.

**Devices @ facility**

- Access control FHI campus
- Door controller based on Raspberry Pi 3
- Mifare, Wiegand card reader
- Runs an EPICS IOC
- Trainee project

- Operator interface with phoebus
- ArchiverAppliance monitors PV
- IOC configuration versioning with mercurial

**Devices @ industry**

- Industrial PC based on the Raspberry Pi
- Slim DIN-rail housing
- 24V powered
- Industrial suitability to EN 61131-2

**Default @ chemistry**

- Read out temperature
- Read out pressure
- Control temperature (oven)
- Switch valves
- Interlock / machine protection
- Control / read out devices (GC, RGA, ...)
- Read out cameras
  - e.g. SRS SR860
  - Lock-in-Amplifier
  - asyn/IP with streamDevice
  - e.g. Terminalserver

- Management via web interface
- Logging by rsyslog to mongo db
- Administrative data and audit log in mysql db
- Operating states monitored by alarmHandler (alh)
- Gateway to building automation system (BacNet)
- IOC configuration versioning with mercurial

**Equipment in "normal" research facilities**

- Suitable I/O modules and fieldbus gateways
- Runs EPICS IOC with support for asyn, modbus, BacNet, ...
- IOC configuration versioning with mercurial

- Fast data acquisition
- Tight synchronization
- High data rate
- Event driven
- High density I/O
- Very fast interlock / machine protection

**Realtime @ physics**

- E.g. atomically resolved STM image of the vitreous silica film revealing the Si positions

**Algus**

 algae Physik System GmbH

**Some what larger experiments**

- FEL@FHI

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