Properties

- multiple protocols at the same time on the same IOC
- generic protocol support (GPS), new protocols can be added easily
- same code runs on IOC and EC
- common interface to different HW (SCI)
- in short: It has what GPIB support is still lacking

- device support currently uses only LowCAL protocol
- standard record types are supported (ai/o, bi/o, mbbi/o, stringin/out, ...)
- used by a number of facilities
- another protocol (DCanal) was developed by Jens Bergl and has been successfully integrated (no support for EPICS records)

Shortcomings

- complicated HW link description consists of 10 hexadecimal numbers (two COB-IDs, data length, multiplexor, a code for the data type, timeouts, ...)
- LowCAL's array variables not supported

Concept

- a dedicated record type for LowCAL variables
- one instance for each variable
- 8 input and 8 output fields, configuration fields for all parameters
- handles & stores only raw values
- a special 'raw soft' device support for normal records (ai,...) gets/puts raw values from/to the hardware record via normal DB links
- these 'client records' do the conversion to engineering units
- an additional RSET function to be called by the client records is necessary to
  - exchange information about the raw value type
  - register the client record with the hardware record for asynchronous processing

CAN Bus Support - LowCAL Hardware Record (contd.)

Status

- implemented & tested
- used at BESSY for beamline control and at PTB for Undulator control
- no documentation yet
- not (yet?) the official approach at BESSY

Problems

- it’s slow: any I/O through a LowCAL variable needs processing of two records and one DB link
- the DB link is badly misused, some hacks were necessary to make this work
- an additional RSET function is a questionable solution

CAN Bus Support - Example LowCAL HW record