BESSY II BEAMLINE CONTROL - SYSTEM STATUS & FUTURE PLANS

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Motion Control Hardware
Motion Control Software

EPICS CA

EPICS DB / Device Support Layer

Abstract Mono Software Interface

Encoder  Slit  HOS  Mono  ...
Obsolescence Management – Issues & Solutions

EPICS 3.14 Branch
- Update to EPICS 7
- Involves OS: Upgrade to Linux / RTEMS / VxWorks V6.8
- Involves Hardware: CPU Boards / IPC

Old OMS Motion Controllers
- Fast upgrade: MAXv (OMS) / Geobricks
- Full stack: Omron, Beckhoff TwinCAT, Newpor, Galil, Aerotech, OMS, ...

Heidenhain Encoders RON905
- Incremental Encoders
- Absolute Encoders -> More hardware involved
- Interface to motion controller

Old DT motion controllers
- Power Brick or comparable full stack motion controllers

VME Crates / CPU Boards
- CAN Bus > Other field bus with Ethercat and IPC?
- Serial Connection, Involves AMC > EMP/2 and others
- Analog/Digital IO has to be replaced

GUI
- EPICS: Python, C++ or Java

Partial list of components:
- Heidenhain Encoders RON905: Incremental Encoders, Absolute Encoders
- Old OMS Motion Controllers: Fast upgrade, Full stack
- Old DT motion controllers: Power Brick
- VME Crates / CPU Boards: CAN Bus, Serial Connection
- Epics: Python, C++ or Java
Choosing the Motion Control Concept

- Long term availability and support
- Continuously deliver small high quality upgrades
- Hardware decisions as late as possible
- Compact industrial design

→ Lean Software development with agile work cycles
THANK YOU FOR YOUR ATTENTION!