Cold LINAC NPM building blocks

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Goal

- To improve understanding of PBI system by defining crucial building blocks

- To have a common picture on which group needs to develop/deliver/buy/etc what

- To know what are the milestones for PBI system prototype and final delivery

- To improve communication between involved parties

- To simplify information flow by using a tool to track activities (not e-mails and not corridor chats)

Workflow

1) BD prepares drafts identified system building blocks

2) ICS/IKC is presented with the draft through WIKI/issue tracker

3) ICS/IKC prepare response and corrections

4) BD prepares response and corrections

5) Involved parties agree on the content and it is baselined

6) Baseline goes into CHESS

7) Changes can be made through issue tracker

8) For new baseline in CHESS steps 3 - 7 are repeated

Elements

1) Block diagram

2) Milestones with timeline (major milestones from project plan)

3) Building blocks

4) Risks

5) Appendix (with terms, acronyms, explanations)

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Activities

- Issue tracker task is assigned for each building block so that progress and status can be transparently tracked

- Responsible party for a given building block must update its status (e.g ordered, procured, delivered, delayed,..)

- Information should be exchanged using the agreed tools (e.g. WIKI/issue tracker)

- Meeting should only be needed to handle risks and solve problems

Current status – work in progress

- https://confluence.esss.lu.se/display/BB/COLD+NPM+-+building+blocks

Software support - Timepix3

- Most complex system, no EPICS support

- Need to understand the level of software support currently available and its status (stable, under developement)

- Could use 3rd party software for evaluation purposes (up to CDR)

- Examples:

  - http://aladdin.utef.cvut.cz/ofat/others/Pixelman/index.html (Windows based toolkit)

- Level of complexity 10/10

Software support – conductive strips

- Possible new development for multi channel digitizer readout (32/64 channels, 16-bit, ? MSP/s)

- No EPICS support for such digitizer in house at the moment

- Could use 3rd party hardware / software for evaluation purposes (up to CDR)

- We have developed digitizer support before in EPICS and should be straight forward once hardware / firmware is in place

- Level of complexity 6/10

Software support – CCD camera

- Wide range of EPICS support for CCD cameras (areaDetector)

- Suggested interface would be GigE Vision based camera

- Have used support in EPICS and should be straight forward to bring up a CCD in EPICS

- Level of complexity 3/10

Software support – other equipment

- Generic software image manipulation (mostly already part of areaDetector)

- Support for high voltage control

- Support for ESS timing system (events, timestamping)

- No motion control support

- No MPS / BIS interface support

Thank you!