Controls Status Review, Current Efforts and Outlook

Machine Meeting, 2018-07-17

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- Main goal achieved: Most critical control system components for SIS18 successfully commissioned

- Downsides: Bugs and immature UIs
  - „PE" interlocks at main dipole
    - Late events in Timing System's Data Master
    - Bugs in function generator's FESA class
  - Injection from UNILAC
    - Address translation issues in Data Master's communication with UNILAC gateway
  - Reading status from / executing commands on devices
    - Feature to periodically trigger these actions for devices not in a Pattern / when the Pattern is not running is not yet ready
    - Device Control does not yet match the operator's requirements

Current Developments
in July Beam Time Break

- Focus on stability and usability: Reduce control system outages and lessen pain for operators
  - „PE" interlocks at main dipole and injection from UNILAC
    - Main issues identified and patched. Currently being tested and prepared for deployment. Further testing in production environment planned for coming week. Minor issues still being investigated.
  - Reading status from / executing commands on devices
    - Improved „table view" (upper section) in Device Control currently being implemented

- Conflicting goal: Minimum feature set needed for ESR operation in the next beam time block
  - Beam transfer from SIS18 to ESR
  - Multiple SIS18 injections into one ESR „cycle"
  - Timing-enabled actuators in ESR

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- There will be a major improvement in stability
  - Last week's problems with injection from UNILAC have been fixed
  - Function generator / dipole interlock incidents have been greatly reduced, remaining issues will be addressed during the beam time

- Enhancing usability will be an ongoing effort
  - Bug fixes and improvements to applications (Device Control in particular) will continue to be deployed
  - Reading status / executing commands on devices periodically without timing takes considerable effort, release is scheduled for October break
  - Deployment of intermediate solutions to supplement / partly replace Device Control could start this beam time block, but should be carefully considered and prioritized because they take away resources from other requirements and a sustainable alternative

- ESR operation will neither be comfortable nor efficient, but the control system's constraints have been discussed with machine experts and agreed upon as feasible to carry out the experiment