Status of the control system of the PAL-XFEL

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Mini-Oral for MOM306
PAL-XFEL (2015. 7. 4)

0.1-nm Hard X-ray 10-GeV XFEL

- Project Period: 2011 ~ 2015
- Total Budget: 400 M$
- Accelerator Length: 1.11 km
### PAL-XFEL Control Covers:

- **EPICS Control System**
  - Embedded EPICS IOCs
  - High Level Control
- **Event Timing System**
  - Beam Synchronous Acquisition
- **RF Synchronization System**
- **Machine Interlock System**

### Parameters and Nominal Values

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Nominal Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEL Radiation Wavelength (nm)</td>
<td>0.1</td>
</tr>
<tr>
<td>Beam Energy (GeV)</td>
<td>10</td>
</tr>
<tr>
<td>Slice Emittance (mm-mrad)</td>
<td>0.5</td>
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<tr>
<td>Beam Charge (nC)</td>
<td>0.2</td>
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<tr>
<td>Peak Current (kA)</td>
<td>3.0</td>
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<tr>
<td>Repetition Rate (Hz)</td>
<td>60</td>
</tr>
<tr>
<td>Electron Source</td>
<td>Photo-cathode RF Gun</td>
</tr>
<tr>
<td>Linac Structure</td>
<td>S-band Normal Conducting</td>
</tr>
</tbody>
</table>
Future Work

- Commissioning of the PAL-XFEL
- Stabilization of the PAL-XFEL
- Upgrade of Control System

PAL-XFEL Control Group

- Changbum Kim
- Geon-Yeong Mun
- Soungyoul Beak
- Dong Cheol Shin
- Byoung Ryul Park
- Jihwa Kim
- Woul-woo Lee