Control System for a Dedicated Accelerator for SACLA Wide-Band Beam Line

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MOM305
Project goal: To increase the user experiment opportunity at SACLA, the XFEL facility in Japan.

Solution: To reuse SCSS prototype accelerator

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Status</th>
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<tbody>
<tr>
<td>May 2013</td>
<td>SCSS prototype accelerator shutdown</td>
<td>✓</td>
</tr>
<tr>
<td>Sep. 2015</td>
<td>Beam commissioning start</td>
<td>✓</td>
</tr>
<tr>
<td>Oct. 2015</td>
<td>First EUV-FEL observation</td>
<td>✓</td>
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<tr>
<td>Mar. 2016</td>
<td>User experiment at BL1</td>
<td>✓</td>
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</table>

Control System for a Dedicated Accelerator for SACLA Wide-Band Beam Line (MOM305)
The dedicated accelerator for BL1

238 MHz SHB, 476 MHz booster, S-band APS, S-band TWA

Beam chopper
Thermionic gun

SACLA accelerator (400 m long)

SACLA control room

SACLA facility

238 MHz SHB, 476 MHz booster, S-band APS, S-band TWA

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Beam energy
420 MeV

Repetition rate
60 Hz

Photon wavelength
42 nm

Control System for a Dedicated Accelerator for SACLA Wide-Band Beam Line (MOM305)
Control system

The control system for the dedicated accelerator was constructed by reusing all software/hardware resources developed for SACL A.

MyCC, MySQL-based temporary data acquisition system compatible with MADOCA, was used at the RF conditioning. Then the system was smoothly transitioned to MADOCA.

The control system ensures the coordinated operation between the SACL A accelerator and the dedicated accelerator.