

Controls SW Group Meeting

November 16, 2023

Agenda

1. State of the machine
2. Schedule & upcoming work

T. Summers

State of the Accelerators

All operating (including SPEAR and MeV/UED!)

- **LCLS-SC**

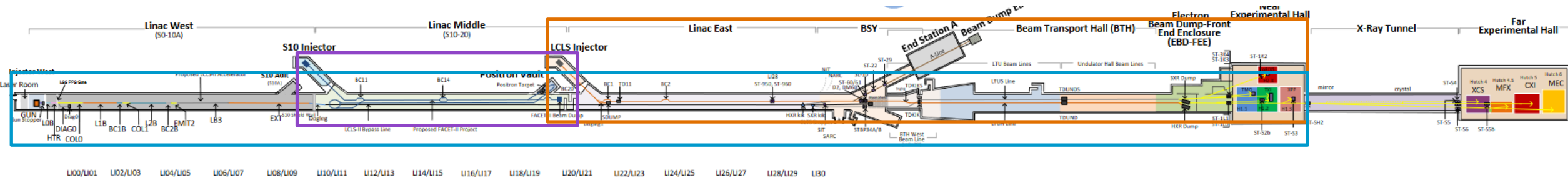
- Busy schedule finishing up what they can before shutting down for several months
- Last beam is the owl shift this Sunday night into Monday morning

- **FACET**

- Regular cadence of optimizing and tuning during the day and delivering to experiments during swing/owl
- They run right up until 8am next Thursday 11/23

- **LCLS-Cu/NC**

- Routine delivery to multiple programs
- They wrap up next Wednesday 11/22 during owl shift with some characterization and shutdown by midnight

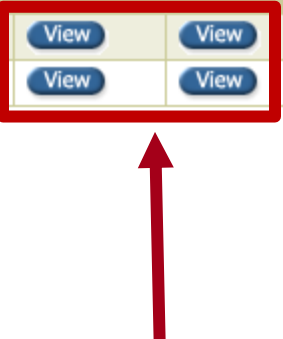


Upcoming downtime period

Next week: Partial start of the winter downtime

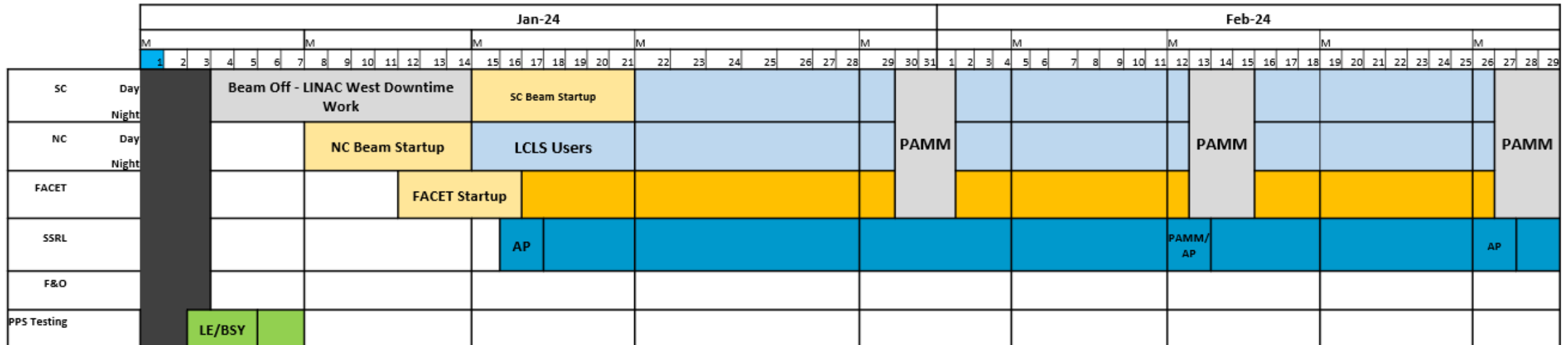
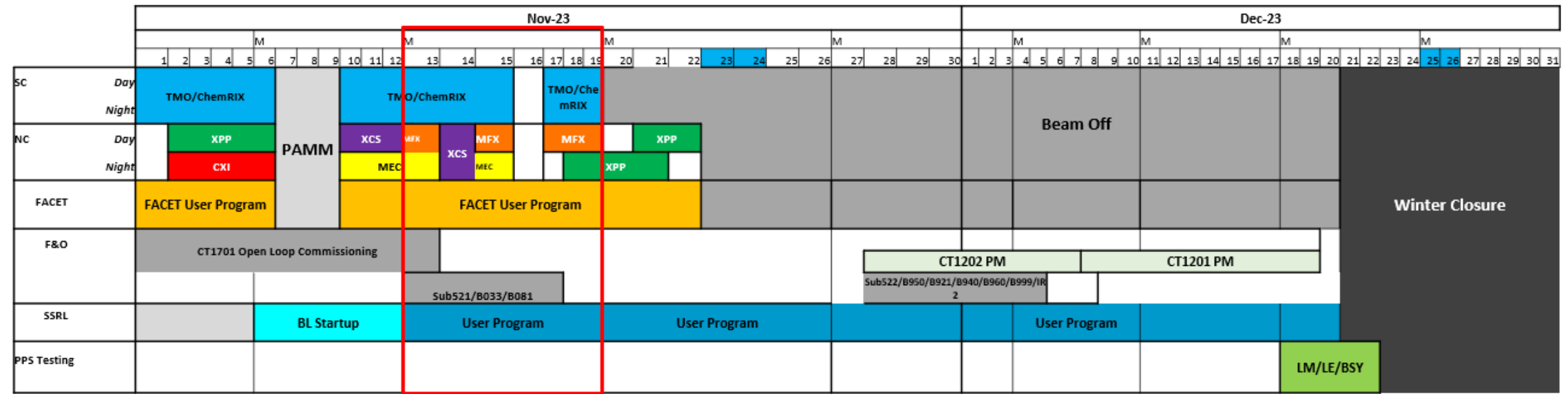
| Edit | Start Date ↓ | End Date | Program | Machine Status | Description | Job Control Status | View Jobs | Access Sched |
|----------------------|------------------------------|--------------------------|-------------------------|--------------------------------|---|------------------------------------|---------------------------|------------------------------|
| 766 | 11/27/2023 | 12/20/2023 | All Accelerators | Downtime | Nov-Dec FACET & LCLS Cu Downtime (includes BSY, BTH, and EBD-FEE) | | View | View |
| 777 | 11/20/2023 | 01/26/2024 | AOSD LCLS | Downtime | Nov-Jan Linac West Downtime | | View | View |

- Two buckets – different start and end dates
 - Linac West (STCAV and LCLS-II-HE work)
Monday Nov. 20th - Friday Jan. 26th
 - All other areas (Linac Middle, Linac East, BSY & downstream):
Monday Nov. 27th – Wednesday Dec. 20th
- Enter your PAMM and Downtime jobs **asap** to help with planning
- Winter Site Closure from Thursday Dec. 21 – Wednesday Jan. 3
 - Any requests for site access or work during this period must be submitted by Nov. 22




Most up to date job lists and access schedules

Big picture through November – February



Looking ahead – November (copied from last week)

- SC program ends Monday 11/20, NC and FACET end Wednesday night/Thursday AM

| November | | | | | |
|--|--|--|---|---|---|
| Monday | Tuesday | Wednesday | Thursday | Friday | Sat/Sun |
| 11/13/2023 <ul style="list-style-type: none"> • LCLS SC TMO/ChemRIX • LINAC Cu User Program • FACET II User Program • SSRL User Program • Elect PM-Sub521/B033/B081 | 11/14/2023 <ul style="list-style-type: none"> • LCLS SC TMO/ChemRIX • LINAC Cu User Program • FACET II User Program • SSRL User Program • Elect PM-Sub521/B033/B081 | 11/15/2023 <ul style="list-style-type: none"> • Downtime Planning Mtg • LCLS SC TMO/ChemRIX • LCLS Cu User Program • FACET II User Program • SSRL User Program • Elect PM-Sub521/B033/B081  | 11/16/2023 <ul style="list-style-type: none"> • LCLS SC TMO/ChemRIX • LCLS Cu MD • FACET II User Program • SSRL User Program • Elect PM-Sub521/B033/B081 | 11/17/2023 <ul style="list-style-type: none"> • LCLS SC TXI • LINAC Cu User Program • FACET II Program • SSRL User Program • Elect PM-Sub521/B033/B081 | 11/18 & 11/19 <ul style="list-style-type: none"> • LCLS SC TXI • LINAC Cu User Program • FACET II User Program • SSRL User Program • 11/19 4pm – 11/20 4am LCLS SC Cathode Characterization/MD |
| 11/20/2023 <ul style="list-style-type: none"> • LCLS SC Beam off 7am • LINAC West Access at 11am – STCAV2/LCLS-II-HE work begins • LINAC Cu User Program • FACET II User Program • SSRL User Program | 11/21/2023 <ul style="list-style-type: none"> • LINAC West Access • LINAC Cu User Program • FACET II User Program • SSRL User Program | 11/22/2023 <ul style="list-style-type: none"> • Downtime Planning Mtg • LINAC West Access • LINAC Cu User Program • LCLS Cu Characterize/Beam Off 6pm – 12am • FACET II User Program – Characterize/Beam Off • SSRL User Program <p>DEADLINE for Winter Closure Work Requests</p> | 11/23/2023 Thanksgiving Holiday | 11/24/2023 Thanksgiving Holiday <ul style="list-style-type: none"> • SSRL User Program | 11/25 & 11/26 <ul style="list-style-type: none"> • SSRL User Program |

Looking ahead in December

- Monday after Thanksgiving break (11/27) we have day/swing shift for controls preparation for the Sub522/IR2 power outages (half of Undulator hall and downstream) – thank you for getting these jobs into caters!
- Notably missing is the PG&E 60KV power switchover that was scheduled for Dec. 2/3 which is postponed possibly to the first week of January, but this is very tentative

| November | | | | | |
|---|---|---|--|---|--|
| Monday | Tuesday | Wednesday | Thursday | Friday | Sat/Sun |
| 11/27/2023 <ul style="list-style-type: none"> SSRL User Program Electrical PM Sub522/IR2 – Preparations Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE 8:15am Meeting | 11/28/2023 <ul style="list-style-type: none"> SSRL User Program Electrical PM Sub522/IR2 starting ~12pm Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE | 11/29/2023 <ul style="list-style-type: none"> Downtime Planning Mtg SSRL User Program Electrical PM Sub522/IR2 – power outage Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE | 11/30/2023 <ul style="list-style-type: none"> SSRL User Program Electrical PM Sub522/IR2 – power outage Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE SLAC Town Hall 9:30-10:30am | | |
| December | | | | | |
| Monday | Tuesday | Wednesday | Thursday | Friday | Sat/Sun |
| | | | | 12/01/2023 <ul style="list-style-type: none"> SSRL User Program Electrical PM Sub522/IR2 – power outage Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE | 12/02 & 12/03 <ul style="list-style-type: none"> SSRL User Program Electrical PM Sub522/IR2 – power outage Downtime – S0-S30, BSY, BTHW,BTH,EBD-FEE |

Downtime – Meetings and Control Room Staffing

Meetings During Downtime:

Mondays 8:15am Meeting (*11/27-12/18*)

B052 Mad River, Zoom Meeting ID: 742 958 069 Password: 002151

Wednesdays 11am Downtime Planning Meeting (*12/20 last meeting before Winter Closure*)

B052 Mad River, Zoom Meeting ID: 938 7262 6149 Password: 429152

ACR Staffing:

Nov 23-26: No staff (*Ext2151 will be forwarded*)

Nov 27-Dec 15: ACR 6am-5pm (*No Weekend Coverage*)

Dec 18-22: PPS Testing 8am-Midnight

SPEAR Staffing:

Nov 23: No staff

Nov 24: SPEAR Control Room coverage resumes day shift 8am

Nov 25-Dec 20: 24Hrs coverage

Dec 20: Shutdown for Winter Break

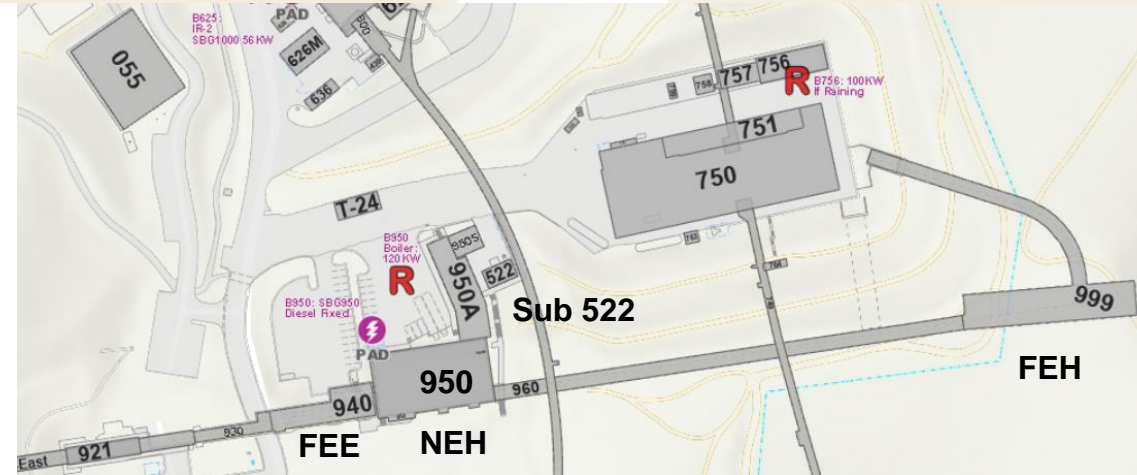
Electrical PM – Sub522/B950/B921/B930/B940/B960/B999

Scope of Work:

- 4x 12kV Substation maintenance
- All PM work for B950 and B921

Impacted by Outage:

- B522/B950
 - Central Utility Plant (CUP) at B950, (*generator required for B950 Boiler*)
 - B950 Lights, HVAC, Power, PCW, Chilled Water from B911 to FEH (rack cooling impacted) including B901, MPS/PPS, FA/ODM
 - Card Readers/Cameras
 - NEH Hutches and Labs
 - Lighting Inverter
 - Electric Vehicle Chargers
 - B950A PCW skid (*K.Chan*)



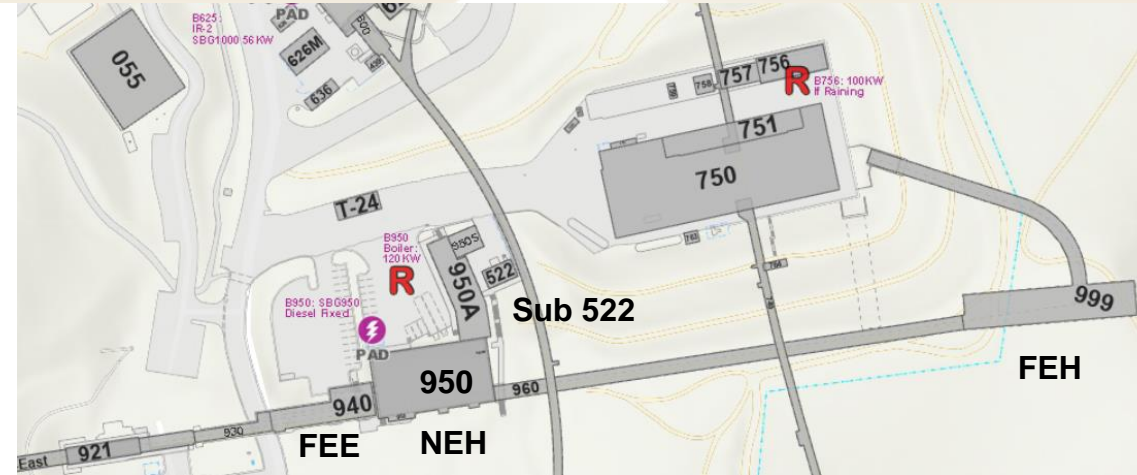
Duration: 8 Days

***Proposing: Nov 28 – Dec 7
(assessing impacts to Downtime work
planning – potential weekend work
needs review)***

Electrical PM – Sub522/B950/B921/B930/B940/B960/B999

Impacted by Outage:

- B930/B940
 - EBD-FEE area – Lights, HVAC, power, PCW, Chilled Water, MPS/PPS
 - *Downtime FEE work and auxiliary utilities required in discussion*
- B960/B999
 - XRT/FEH area – Lights, HVAC, power, PCW, Chilled Water, MPS/PPS, FA/ODM
 - Lighting Inverters
 - FEH Hutches and Labs
 - Card Readers/Cameras
- B921
 - XTCAV
 - half Undulator Hall – requires controlled systems shutdown/recovery (*motion control, vacuum, BPM, magnet PS*)
 - B921 FA
 - Undulator Hall HVAC and Lighting
 - Card Readers/Cameras



Duration: 8 Days

Proposed: Nov 28 – Dec 7

(assessing impacts to Downtime work planning - potential weekend work needs review)

Electrical PM – IR2/B055/B730



Scope of Work:

- 12kV Substation Maintenance

Impacted by Outage:

- B620 – LSST Cleanroom (*egress temporary lighting requested*)
- B621/B624/B626/B625
- B055 – ARCAS Gym (*any scheduled classes will be cancelled the week of the outage*)
- B730 – SSRL shop space/elevator sump pump (*generator required*)
- Pumps in the tunnels to move water out to the polytank (cord and plug)
- FA/ODM – need to be secured by CEFFT
- PMS Radiation Monitors fed from B625 (*notification to Ann Harris, RP*)

Duration: 8 Days

Proposed: Nov 28 – Dec 7

New Directory Service status watcher

Root cause of recent failures is being investigated

- Find the status on the PyDM Global Displays page (LCLSHOME > right side column of applications)
 - M. Gibbs, T. Summers, or M. Shankar can restart it, will share the knowledge if needed
 - Thank you Devan, Chris M., and Tyler for setting up this status page!



Testing new timing patterns to 3 destinations - 11/14/23

Report from Ryan McClanahan - SC Timing Tests 11/14/2023 1600-1700

- Limited by Beam code so higher rate tests were not able to be completed
- Completed the following tests
 - Diag0 10Hz and SXR 10Hz
 - Diag0 10Hz, BSYD 10Hz, and SXR 10Hz
 - Thanks to Alex's TPG GUI we were able to generate this pattern, test on dev, and move to prod during our testing time
 - Not able to release the patterns for operations use due to UI limitations

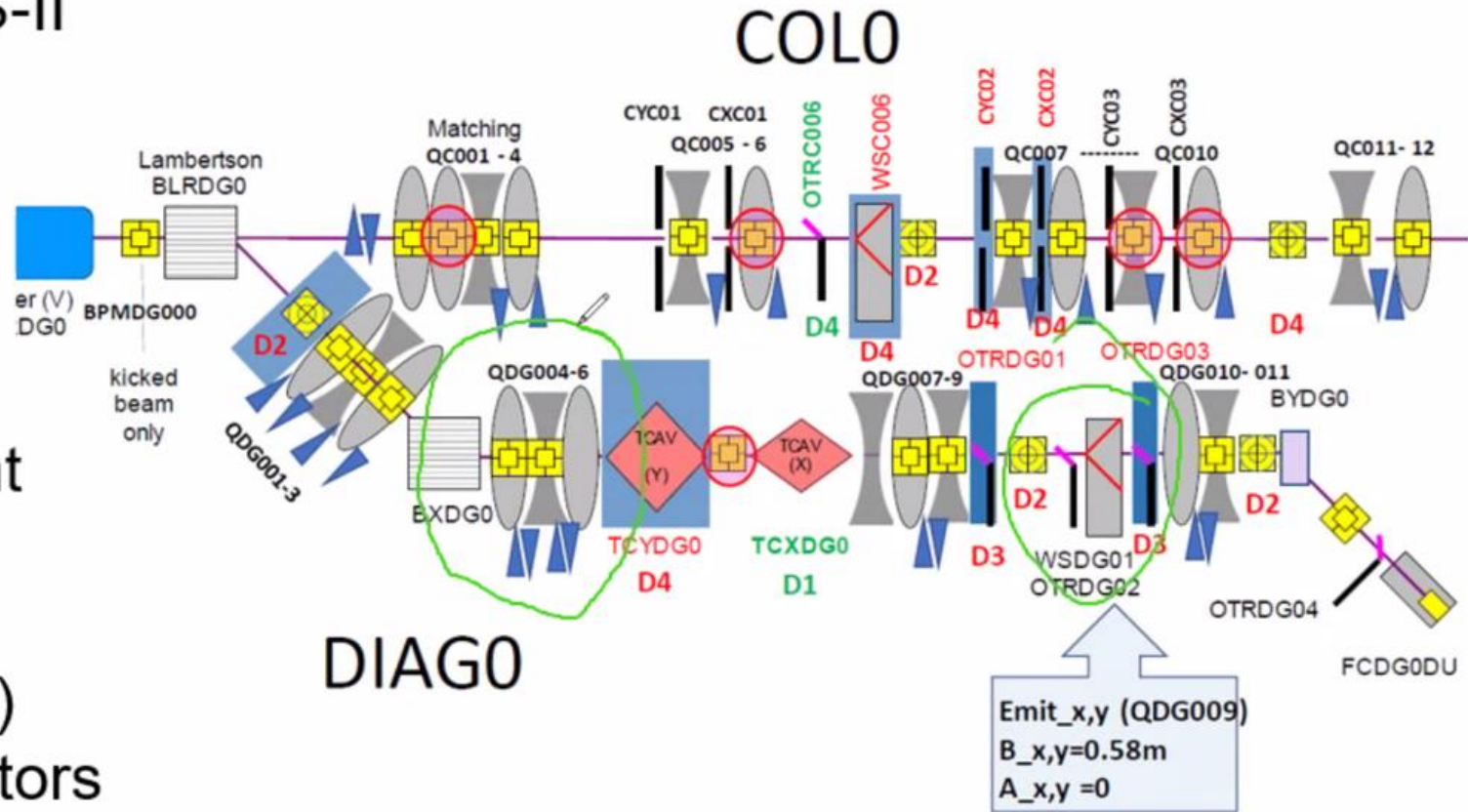
One goal of this work is to have beam always running to DIAG0 for diagnostics...

Autonomous LCLS-II Beam Measurements

Goal: Autonomous collection of beam parameters using parasitic LCLS-II diagnostics

- Transverse beam emittance
 - Beam energy spread
- Requirements:
- Independent of photoinjector configuration / time dependent effects

- No operator oversight (runs completely in the background)
- Eventually, pass info to operators



Opportunity to tour BSY during winter downtime!

Area physicist Tonee Smith has offered to show us the most complicated area of SLAC

- **Planning for some time the first two weeks of December**
 - The area has some awkward areas to access (ducking under beampipes, walking on rough floors and gratings)
 - Normally requires RWT-1 for access, but we're ok with GERT as Tonee can escort us as an official tour
- **Please email me asap if you are interested so we can get it on the schedule**
 - Since it's loud, we'll likely need multiple groups of 6-8 people

