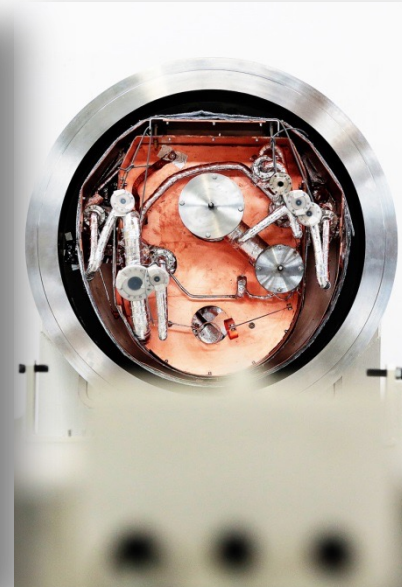


# EuXFEL

## What is new in twenty-two

Matthias Scholz  
January 18, 2022



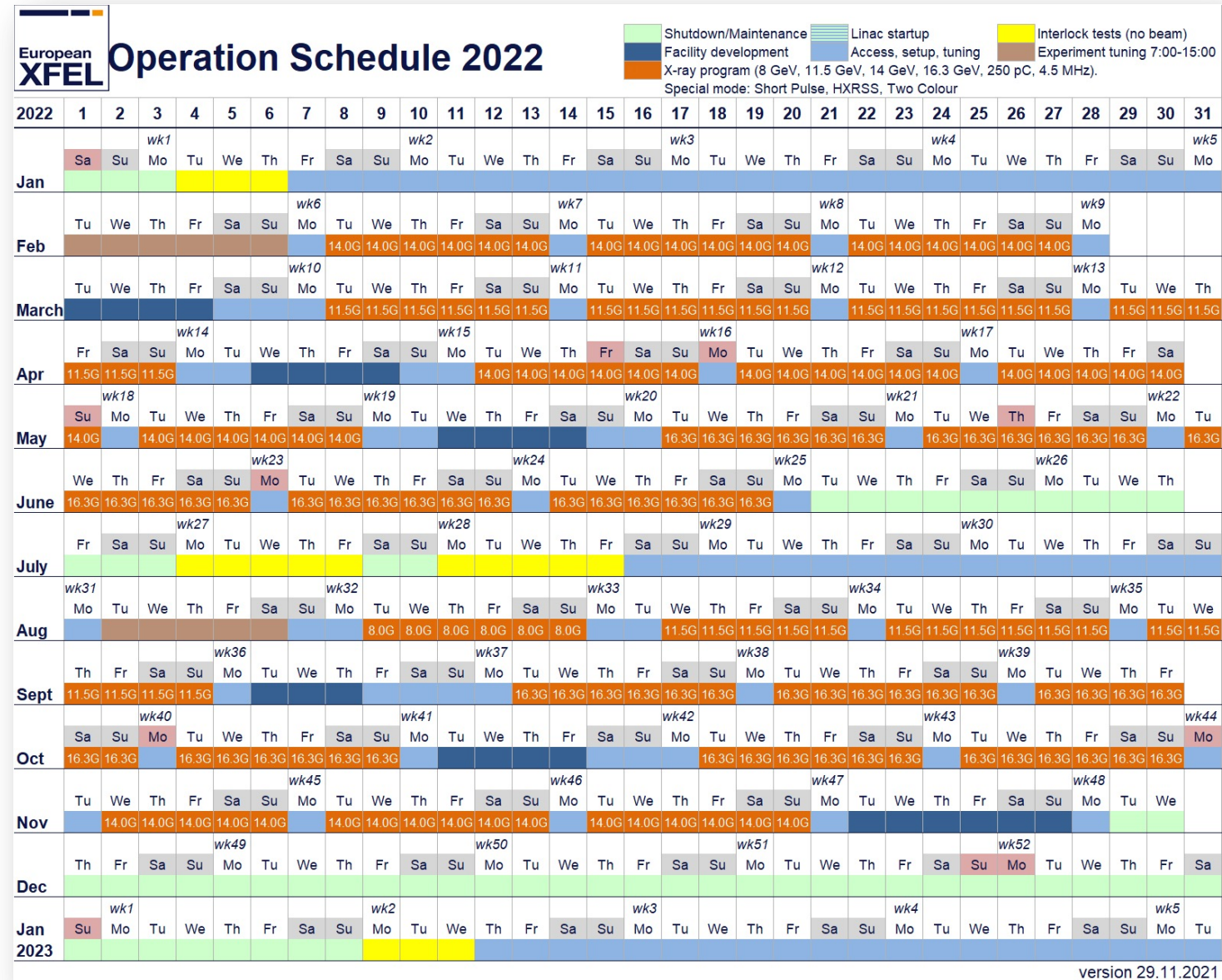
# New time for the daily operation meeting

- The daily operation meeting is now always held at 3:30 pm. This is to avoid the turbulent time in the control room during the shift change.
- In addition, the late shift has some time to orientate itself and can then better communicate the current situation in the meeting.
- My request: Remember the meeting when you are on late shift.
- The easiest way to the meeting is the link in the logbook.

The screenshot displays the XFEL e-Logbook interface for Monday 17. January 2022 Morning. The left sidebar contains a navigation menu with the following items: View Current, Hide Untagged, All Errors, All ToDo's, Schedule, Safety, Procedures, Access Requests, Beamtime Requests, **Daily Op. Meeting** (highlighted with an orange circle and arrow), Remote1, Remote2, Exp. operation slog, Logbook Search, Logbook Help, and Printer: xfellog. The main content area shows the 'shift summary' for the current shift, listing operators and difficulties (07:01 A11 Quench). Below this is the 'ACCELERATOR Operation summary' with details on down time and linac setup. A table of operation details follows, showing start/end times, duration, log type, category, and comments. At the bottom, there is a link to '17.01.2022 14:55' and a button labeled 'xfeloper'. The bottom right corner features a grid of icons for various system components like Emittance, Longitudinal, Trajectory, Optics, and Beam Dynamics.

# Operation 2022 overview

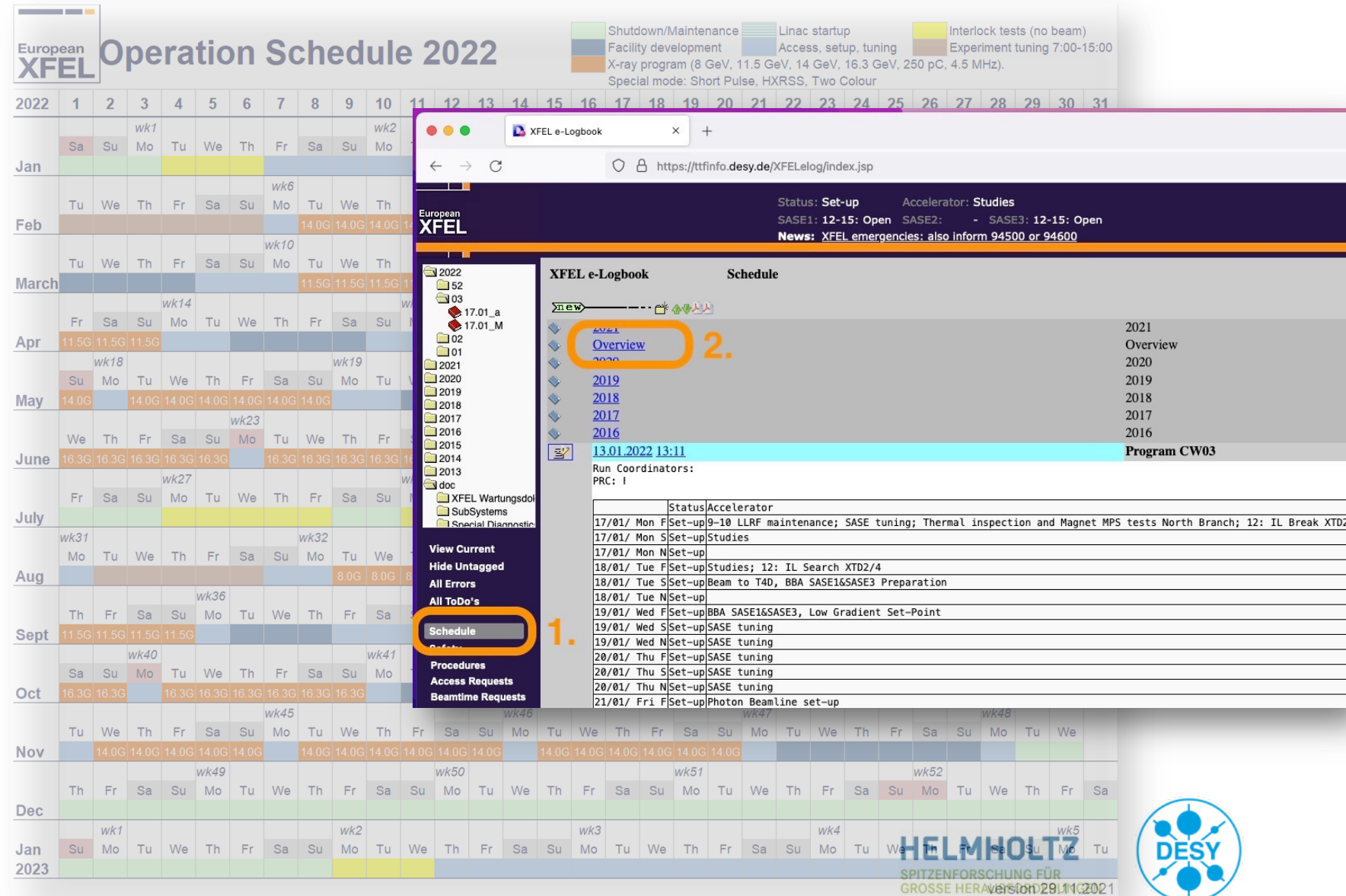
- More delivery time (orange weeks) compared to 2021.
- Reduced setup time on Mondays. Tuesdays are already for photon delivery.
- On Monday mornings R&D if possible.
- BBA in SASE2 in every blue (Facility development) week.
- There is a 8 GeV run scheduled for the first time.





# Operation 2022 overview

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- Reduced setup time on Mondays. Tuesdays are already for photon delivery.
- On Monday mornings R&D if possible.
- BBA in SASE2 in every blue (Facility development) week.
- There is a 8 GeV run scheduled for the first time.
- You can find the plan in the logbook:
  - Schedule
  - Overview

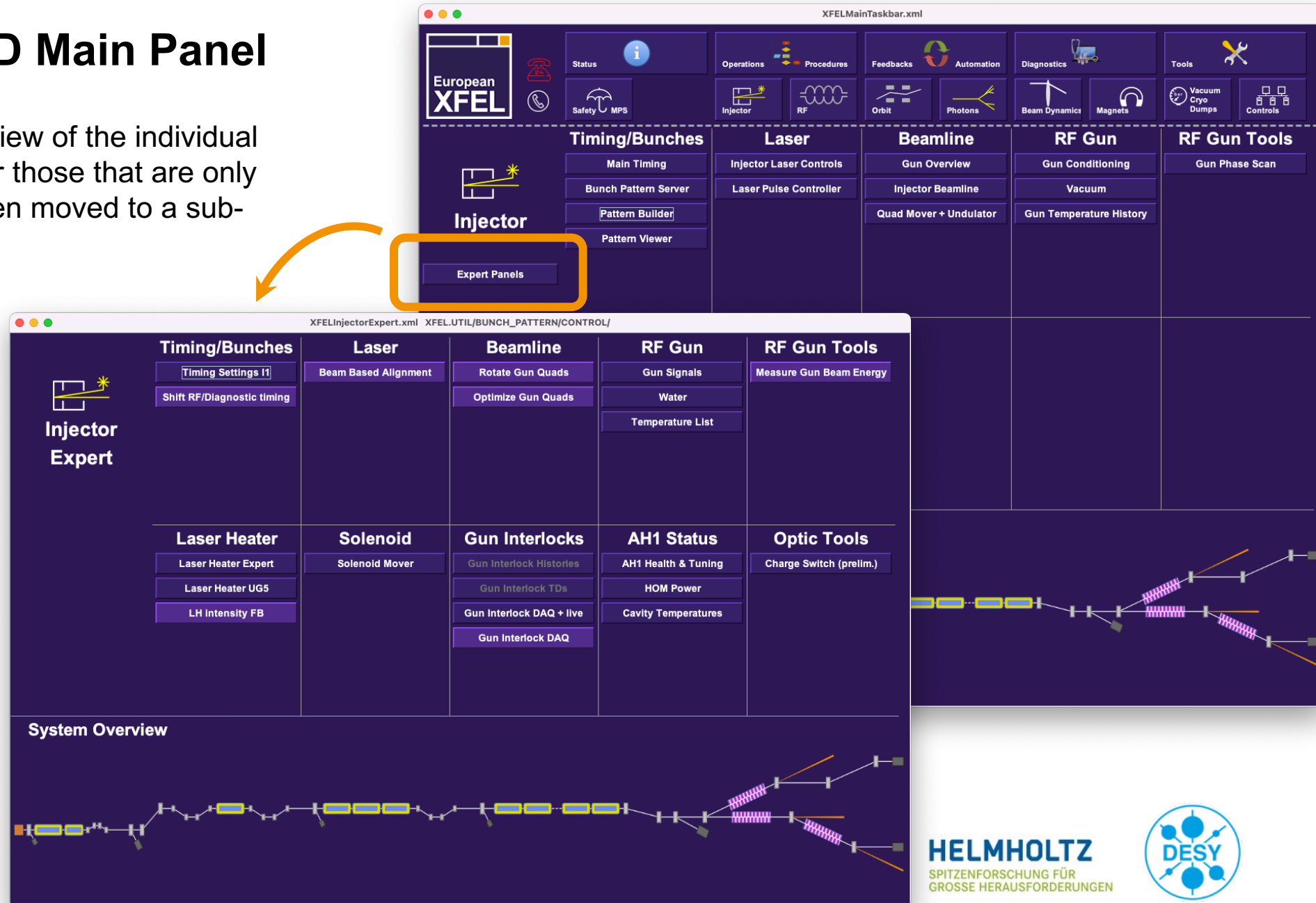




# Clean-up of JDDD Main Panel

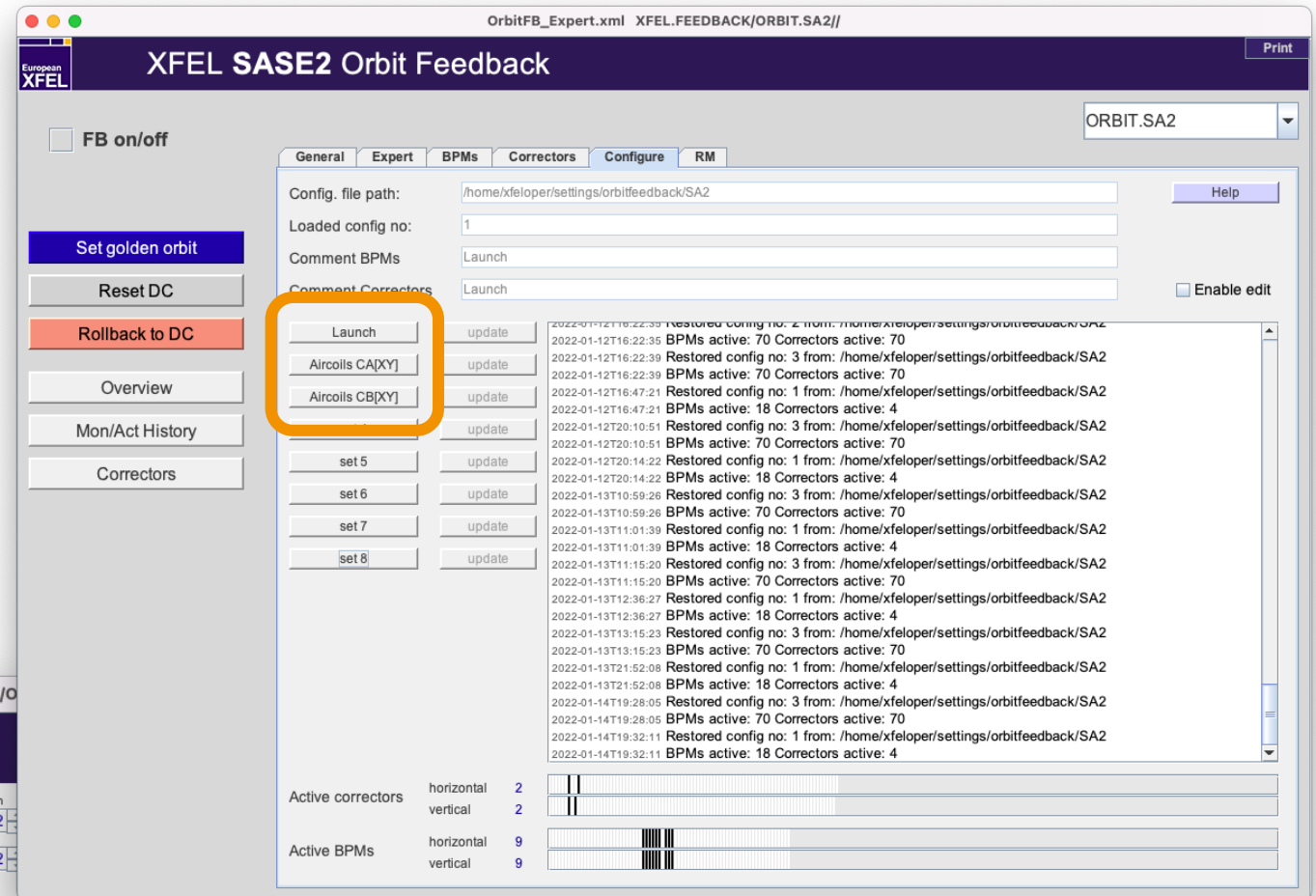
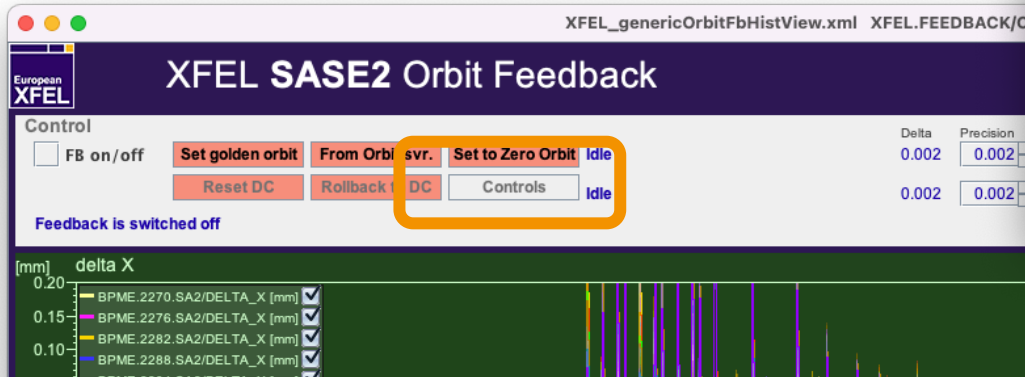
In order to increase the overview of the individual panels, rarely used buttons or those that are only intended for experts have been moved to a sub-panel.

The sub-panel can be opened via an "Expert Panels" Button on the top left corner of the respective section.



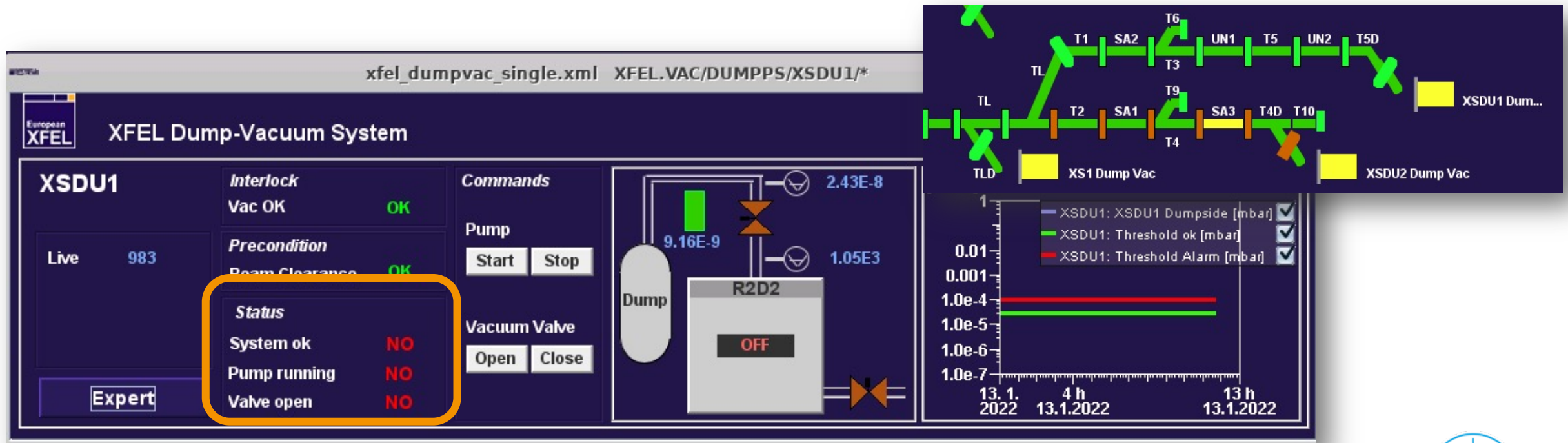
## Trajectory feedback setup

- It is not necessary any more to use the Matlab Tool to change the undulator trajectory feedback e.g. to air coils or launch.
- This is now a build-in feature that can be found on the feedback's panels.



# Dump pumps

- In the area of the dump pumps, modifications were made to protect the electronics from the increased radiation doses there.
- This also led to the fact that we no longer need the pumps that are currently still visible on the dump panels.
- The dumps are also shown in yellow on the JDDD-main panel.
- No worries, this status is ok and the panels will be adjusted accordingly soon.





## BKR consoles, new hardware



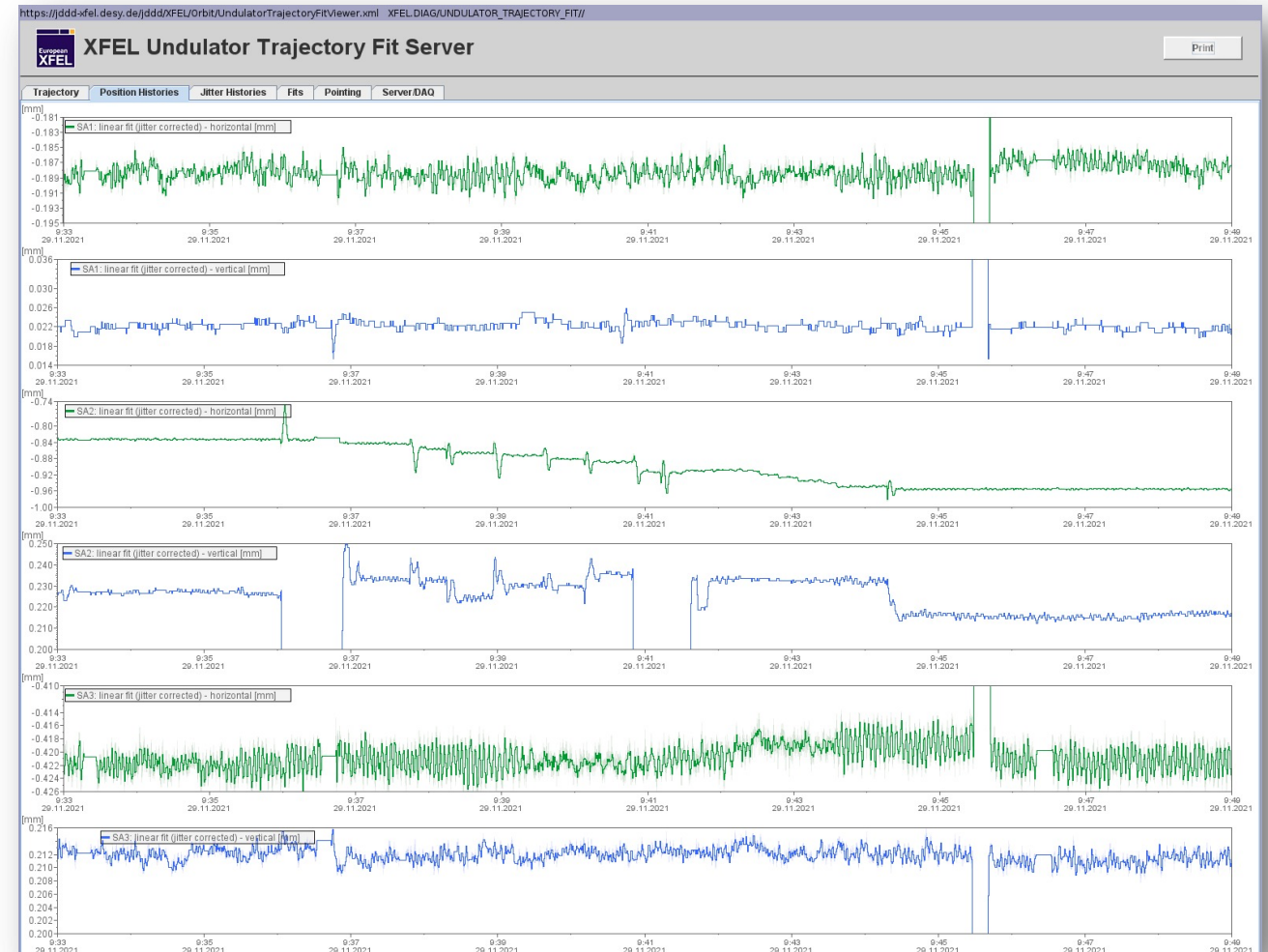
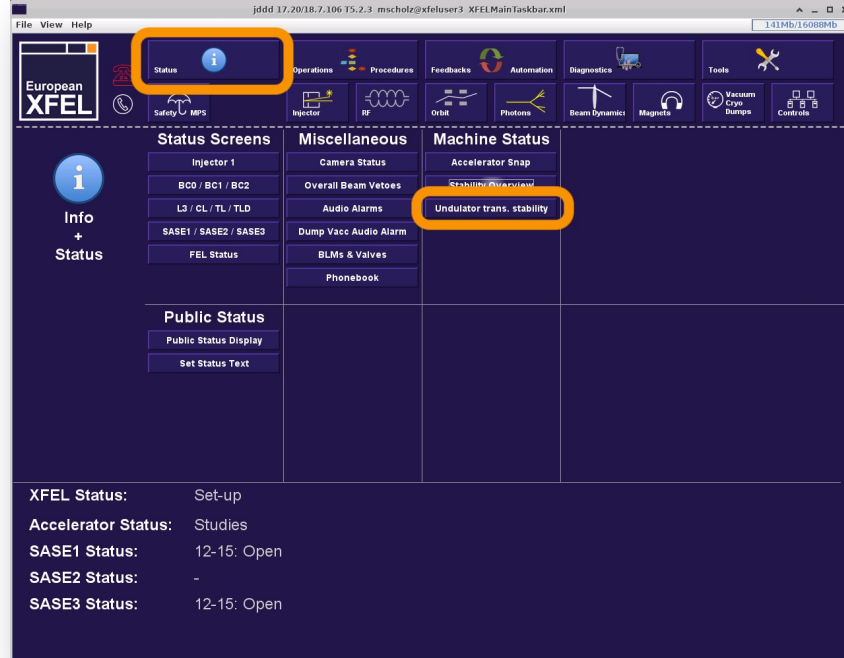
- New monitors are now installed at all places including the photon consoles.
- New Macs are now available at the accelerator consoles xfelbkr1-xfelbkr4 (the first 4 consoles starting on the right hand side).

# Undulator transverse stability

New panel with information about the undulator trajectory available.

These information help to evaluate the trajectory without jitter, the stability of the beam from shot to shot as well as the stability over time (pointing drifts).

Could be included to the shift documentation.



# Phase shifter setup

Phase shifter offsets are no longer adjusted by the gap size in mm but by the phase in units of  $2\pi$ .

The phase shifter scan tool was already adapted to that new parameter.

The screenshot displays the SASE2 Undulator Server Controls interface. The main window shows a grid of 30 cells, each with its own set of controls. A detailed view of Cell 11 (U40.2261.SA2) is highlighted, showing the following parameters:

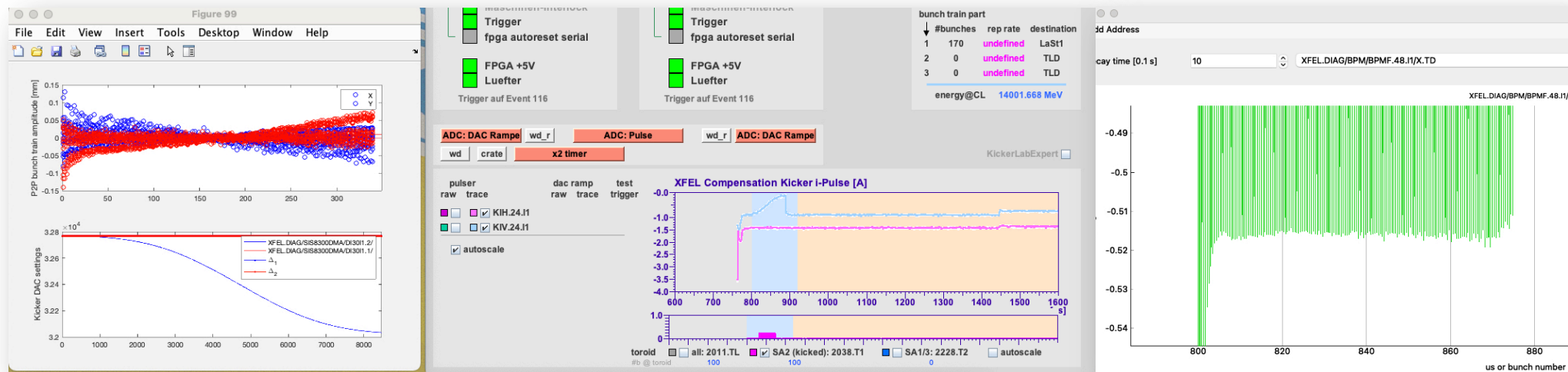
- Cell 11:** U40.2261.SA2
- Active:** 13.488 mm
- Phase Shifter:** rec./offs. 35.05
- K offset:** 0.0000
- predicted:** 2.8845
- readback:** 2.8844
- #λ:** 7.15
- Δλ:** 0.15

The interface also includes a 'Controls' section at the top with 'Wavelength' (0.0999 nm), 'Beam Energy' (14000 MeV), and 'LLRF Energy' (5025 MeV). A 'Set' button is visible. The 'Group Actions' section includes buttons for 'All stop', 'Active to park', 'Passive to park', 'All to max. gap', 'Active to max. g.', 'Passive to open', 'All close', 'Active to min. g.', and 'Passive to open'. The 'Taper Groups' section includes 'Taper' (Δk/k: linear 0.00) and 'Taper Exponent' (2.00). The 'Legend' section includes 'Open', 'Park', 'Closed', 'Moving', and 'Seeding chicane'.



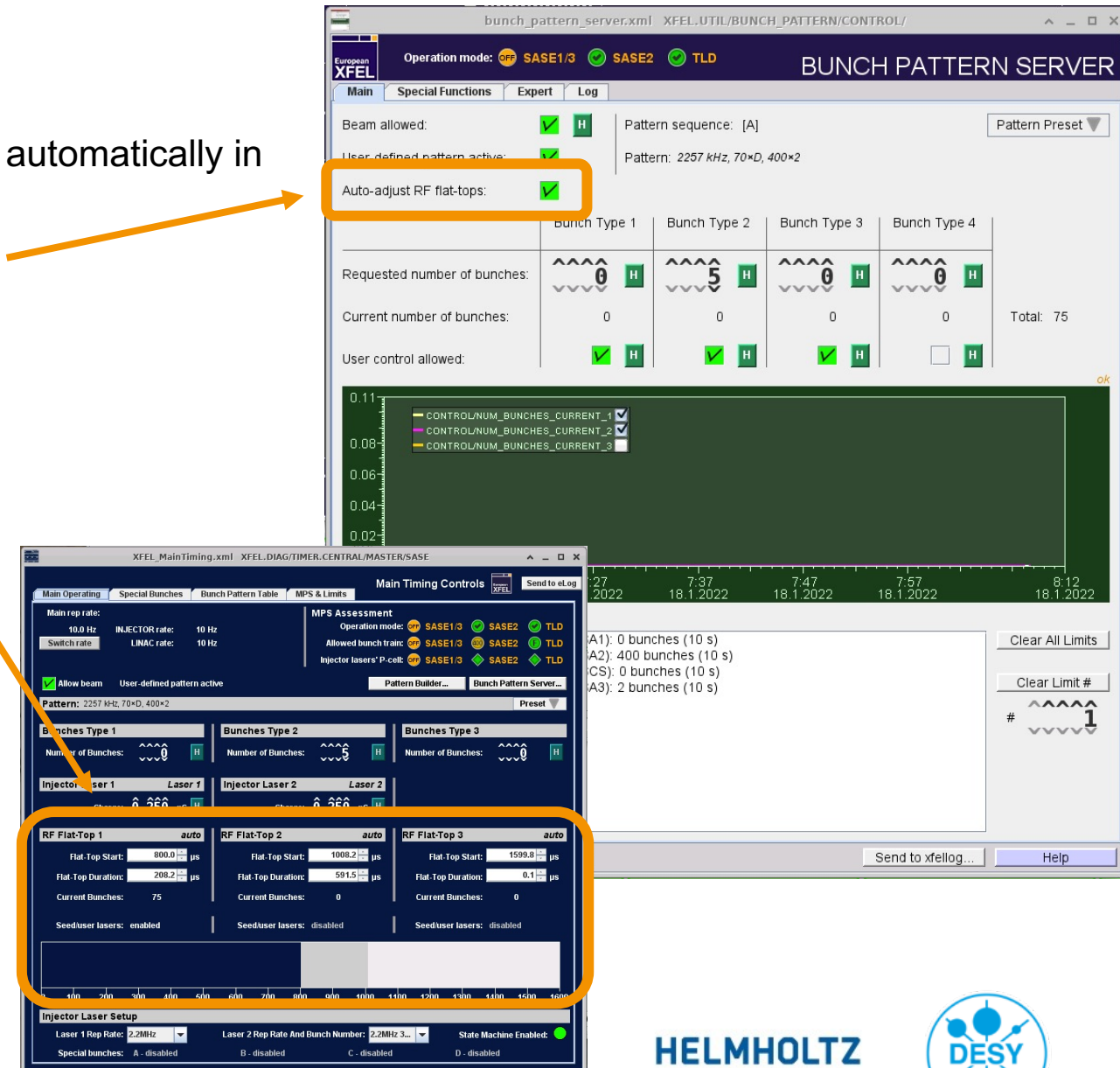
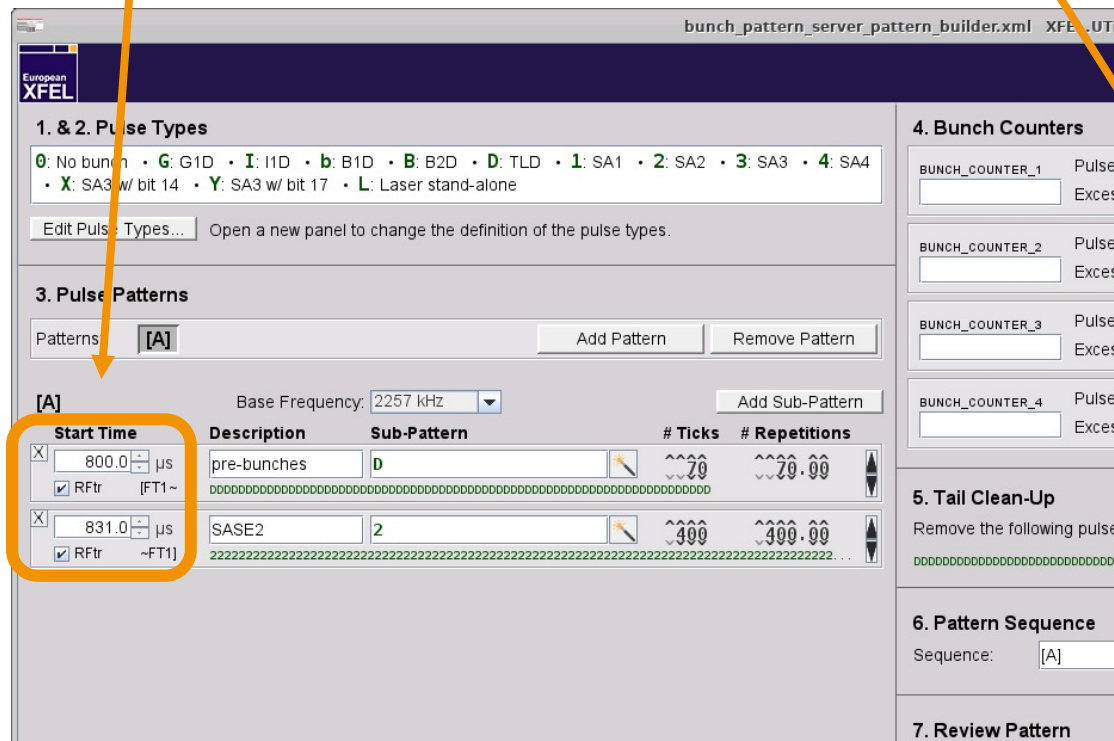
# Intra bunch train orbit correction in the injector

- As you may remember, we have always had non-negligible orbit deviations in the pulse trains in the injector.
- This can now be mitigated with new kickers similar to the trajectory adaption kickers in the TL-section.
- The new kickers are positioned downstream the gun. The dark current kicker used to be placed at this location.
- The tool will be the same as for the TL-section and the respective button will be placed in the "Magnets" section of the main JDDD-panel.
- The current Matlab-Tool will be replaced by a server-version soon.



# Flat-top setup

- It is now possible to set the start and length of flattops automatically in the bunch pattern builder.
- Activate the feature in the bunch pattern server panel.
- Check the boxes in the bunch pattern builder.
- Get the start time and length setup for free.



**Please do not forget:** News is usually announced in the Operations Blog!

The screenshot displays the Confluence interface for the 'XFEL Operations' space. The top navigation bar includes 'Confluence', 'Spaces', 'People', 'Create', and a search bar. The left sidebar lists various pages under 'SPACE SHORTCUTS' and 'PAGE TREE'. The main content area features a 'Blog stream' with a post titled 'Dump icons on the overview panels' by Matthias Scholz, dated Jan 13, 2022. The post text discusses changes in the dump pump areas and the display of vacuum pumps. To the right of the blog stream is a 'Recently updated' section listing several updates, including 'Dump icons on the overview panels', 'Operator Training', 'New time for the daily operation meeting', 'QE map', and 'Communication during ZZ for repair'.

## XFEL Operations on Confluence

