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# First light received by Beamline Experiment Control

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Beamline Experiment Control (BEC) has become the standardized high-level user interface for data-acquisition orchestration, adopted by nearly all beamlines. Built on a distributed server-client architecture, BEC seamlessly integrates with the underlying EPICS control system at Swiss Light Source (SLS), yet can also be used to steer and configure non-EPICS devices through Bluesky's hardware abstraction layer "ophyd". Beamlines are integrated through a plugin structure, which allows them to individually extend and adapt the system' s behavior: integrating new devices, customizing the user interface, rearranging visualization components, developing bespoke GUIs (BEC Widgets) or creating custom data analysis pipelines for on-the-fly execution. In addition, BEC enables beamlines to coordinate user access to the data acquisition through user access permissions, which can be fine-tuned either through manual interaction by the beamline scientist or automated updates from the digital user office. The long-term stability of the open-source project is ensured through automated testing (unit and end-to-end tests), semantic versioning, and automated deployment triggered on-demand by the beamline. BEC's modularity, flexibility and its intuitive graphical user interfaces are streamlining data acquisition after the upgrade of the SLS to a fourth generation synchrotron.

## Footnotes

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