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PO01 - Dual disciplinary beam injections for particle physics and photon science experiments

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The electron and positron accelerator complex at KEK provides experimental opportunities for elementary particle physics with SuperKEKB collider and photon science with two light sources. In order to maximize the experimental performances at those facilities the injector linac delivers beams with widely differing properties in pulse-to-pulse modulation at 50 Hz. Different beam flavors are managed with the event-based control system. This injection scheme has been fully employed since 2019. Many further improvements were introduced every year. As the event-based controls are tightly coupled with RF, machine protection systems and so on, their modifications need deliberate plan. However, the requirements from particle physics and photon science are very different because of the nature of experimental users. Patient arbitration is often required to satisfy users from those distinct fields.

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