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Automatic Beamline Operation at SPring-8 RIKEN Structural Genomics Beamlines. M. Yamamoto^{1&2}, G. Ueno¹, R. Hirose³, K. Hasegawa², Okazaki², T. Kumasaka^{1&4}, ¹RIKEN SPring-8 Center, Sayo, Hyogo 679-5148 JAPAN, ²JASRI/SPring-8, Sayo, Hyogo 679-5148 JAPAN, ³PharmAxess Inc., Kamigori, Hyogo 678-1205 JAPAN, ⁴Tokyo Tech, Midori-ku, Yokohama, 226-8505 JAPAN.

RIKEN Structural Genomics Beamlines (BL26B1&B2) at the SPring-8 have been constructed for high throughput protein crystallography. The beamline operation is automated cooperating with the sample changer robot SPACE [1]. Since October 2003, BL26B2 has been continuously operated with SPACE. In 2005 fiscal year, more than twenty crystals a day have been constantly delivered by sample tray to the beamline. The operation software BSS [2] and beamline management database D-Cha (Diffraction Check Assistance utilities) provide the intuitive GUI and unified control of beamline instruments. Combination of BSS, SPACE and D-cha enables Mail-in data collection that consists of day time crystal screening and night time full automatic data collection. Web interface of D-Cha allows user to deposit measurement condition or to observe recorded images from home laboratory. The crystal screening at the beamline finished within daytime in the rate of 10 min/sample. Our mail-in system is now routinely operated at BL26B2.

[1] Ueno, G. et al. J. Synchrotron Rad. (2005). 12, 380-384

[2] Ueno, G. et al. J. Appl. Cryst. (2004). 37, 867-873