Strategy and current status of SPring-8 upgrade

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In the SPring-8 campus, two advanced light sources have been operated. One is the 3^{rd} generation SR, SPring-8 released to user experiments since 1997 and the other is the X-ray free electron laser facility, SACLA released to user experiments since 2012. The next upgrade target is therefore to dramatically improve light source performances of 20-years old SPring-8 by adopting a MBA concept. Features of our SPring-8 upgrade are (1) combination of a short period undulator technology with lowering beam energy from 8 to 6 GeV to maintaine the undulator spectral range, (2) adoption of longitudinally gradient bending magnets to reduce the beam emittance down to a 100 pmrad range, and (3) reduction of the power consumption by timesharing the XFEL linear accelerator as a ring injector and replacing electromagnet dipoles by permanent magnet ones. Intentionally, we did not pursuit an aggressive low emittance of $\sim$50 pmrad for smoother beam commissioning and easily achieving high beam stability. Three-years R&D on the main components will be finished in FY2017 and a first beam injection test from the SACLA linear accelerator to the current SPring-8 is planned in the autumn of 2018. This talk will present the strategy and current status of SPring-8 upgrade.