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## Beam diagnostics status for the Korea 4GSR project

*Wednesday, 22 May 2024 16:00 (2 hours)*

The Korean 4GSR project is currently under construction in Ochang, South Korea, with the aim of first beam commissioning in 2027. Designed to achieve an emittance approximately 100 times smaller than that of third-generation synchrotron radiation storage rings, the project requires the development of several high-precision beam diagnostic devices. In particular, the beam position monitor is designed to reduce longitudinal wake impedance, thereby suppressing heating and beam instability. The electronics component has also been developed using RFSOC to enable Turn by Turn data acquisition and Bunch by Bunch beam position monitoring. Additionally, a Beam Loss Monitor utilizing 100 Hz operating-rate scintillating optical fibers has been developed, and an enhanced beam profile monitor utilizing GAGG has also been created. Furthermore, the development progress of a multi-bunch energy measurement beam position monitor system for linear accelerator energy feedback will be introduced. This presentation aims to provide an overview of the current status of beam diagnostic devices developed for the 4GSR project, including details on the overall system configuration.

### Footnotes

### Funding Agency

### Paper preparation format

### Region represented

Asia

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