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**Renewal of Control System for Efficient Operation
in RIKEN 18 GHz Electron Resonance Ion Source**

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To produce beams intensity for medium mass heavy ions, RIKEN 18 GHz electron resonance ion source (18GHz ECRIS) is used as one of the external ion sources of Radioactive Ion Beam Factory (RIBF) accelerator complex. In the majority of components which RIBF is composed, the control systems are integrated by Experimental Physics and Industrial Control System (EPICS). On the other hand, non-EPICS-based system, which has hardwired-controllers, was used in the 18GHz ECRIS control system as independent system. From the view point of efficient and effective operation, the 18GHz ECRIS control system should be renewed as well as RIBF control system by using EPICS. Therefore, we constructed 18GHz ECRIS control system by utilizing programmable logic controllers with embedded EPICS technology. In the renewal system, it is possible to handle the data analysis with each other between the RIBF accelerator complex and 18GHz ECRIS. In this contribution, we report the system design, the unique features of the system, and present status in detail.