

[RPPA26] Database for Control System of J-PARC 3GeV RCS

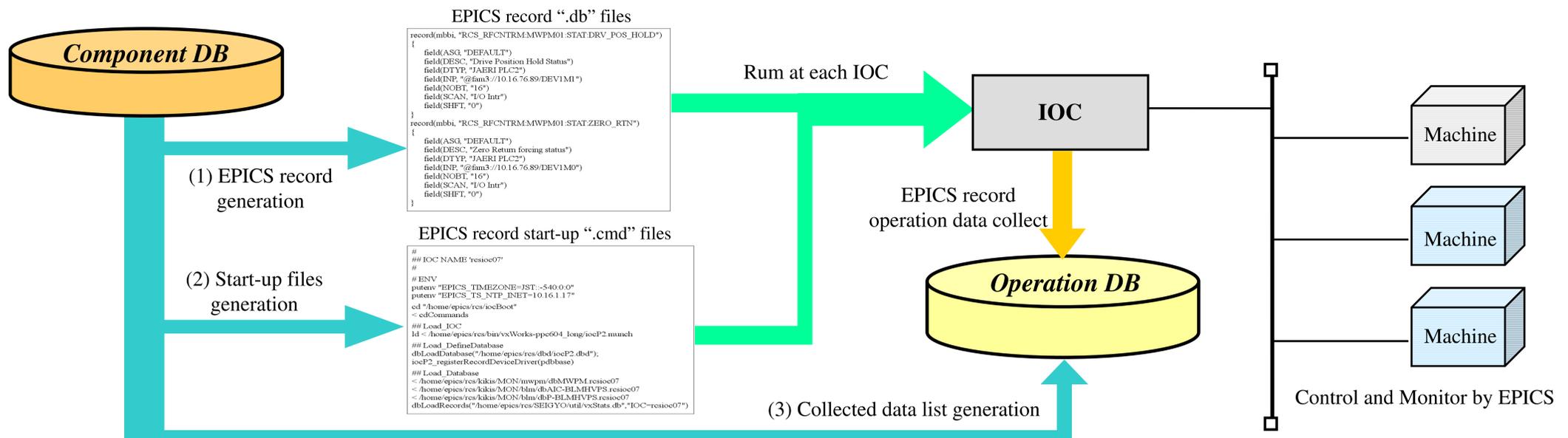
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Abstract

The Control System of J-PARC 3GeV RCS is configured based on Database, which is comprised of Component data DB and Operation data DB. Component data DB was developed mainly to manage the data on accelerator components and to generate EPICS records automatically using the data. And Operation data DB was developed to collect the two kinds of data, EPICS records data and synchronized data. This paper shows the status of development for Database for Control System of J-PARC 3GeV RCS.

EPICS record auto-generation by Component DB



(1) EPICS record ".db" files auto-generation

EPICS record ".db" files is created using components information inserted Component DB.

To reduce workload to create EPICS record. And to reduce risk of input error by human.

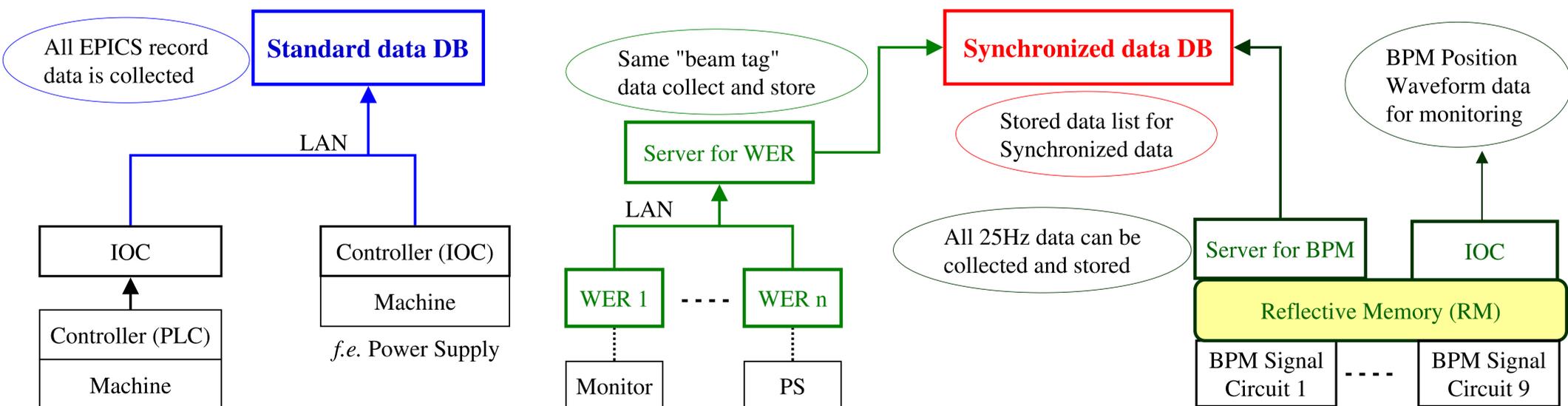
(2) EPICS record start-up ".cmd" files auto-generation

Start-up files are created when EPICS record files is generated for consistency with start-up files and record files.

(3) Collected data list files generation

Collected data list files used Operation DB are generated using the data inserted Component DB.

Operation DB Configuration



Standard data DB

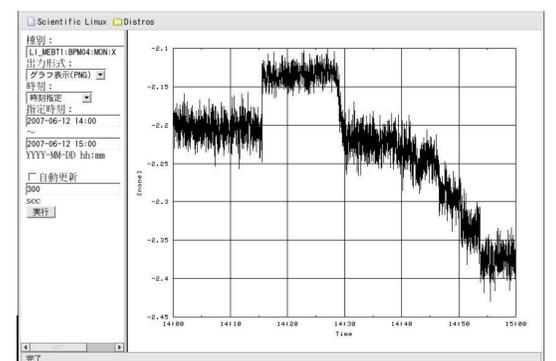
Designed to be able **to collect 6000 records / minute** for steady loading and **to collect 12000 records / second** for instantaneous loading.

- DB has the event process and the polling process → To reduce data collection load
- Using the EPICS monitor function. → To reduce DB workload.
- **Standard DB was able to collect with few troubles**, at Linac operation from 2006 and RCS operation in October.

Synchronized data DB

Most synchronized data is huge size waveform data → **Impossible to collect all synchronized data by a DB**

- To configure one DB and some PC for distribution of data collection load.
- **Synchronized data DB manages the collected data lists** and some PC collects data.



Operation data collected by Standard data DB

Conclusion

Status of database system for RCS control system is shown in this paper. RCS control system mainly configured with Component DB and Operation DB. Component DB is developed to manage component information and to generate EPICS record definition files automatically. And Operation DB is developed to collect the different kind data. Then, at the Linac and RCS operation, these DB was demonstrated that they were working with few troubles. After this, Synchronize data DB will be developing additionally. Then, it will be possible to be linked EPICS record data with synchronized data and to be retrieved from the Standard data DB and Synchronized data DB.