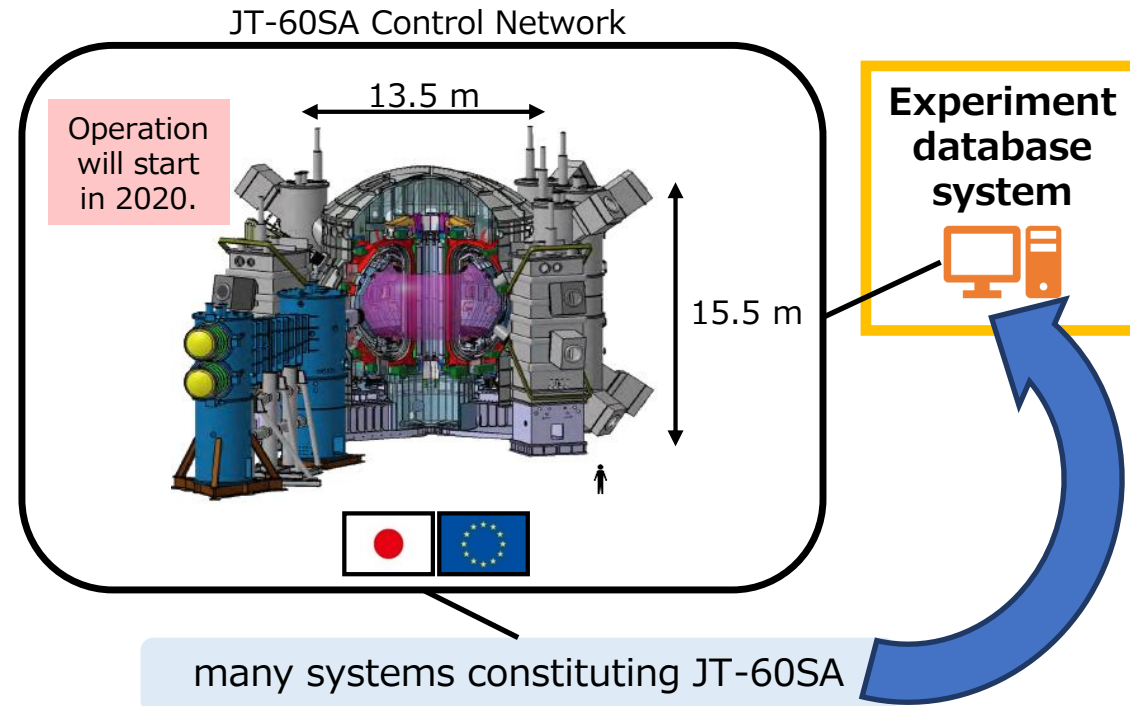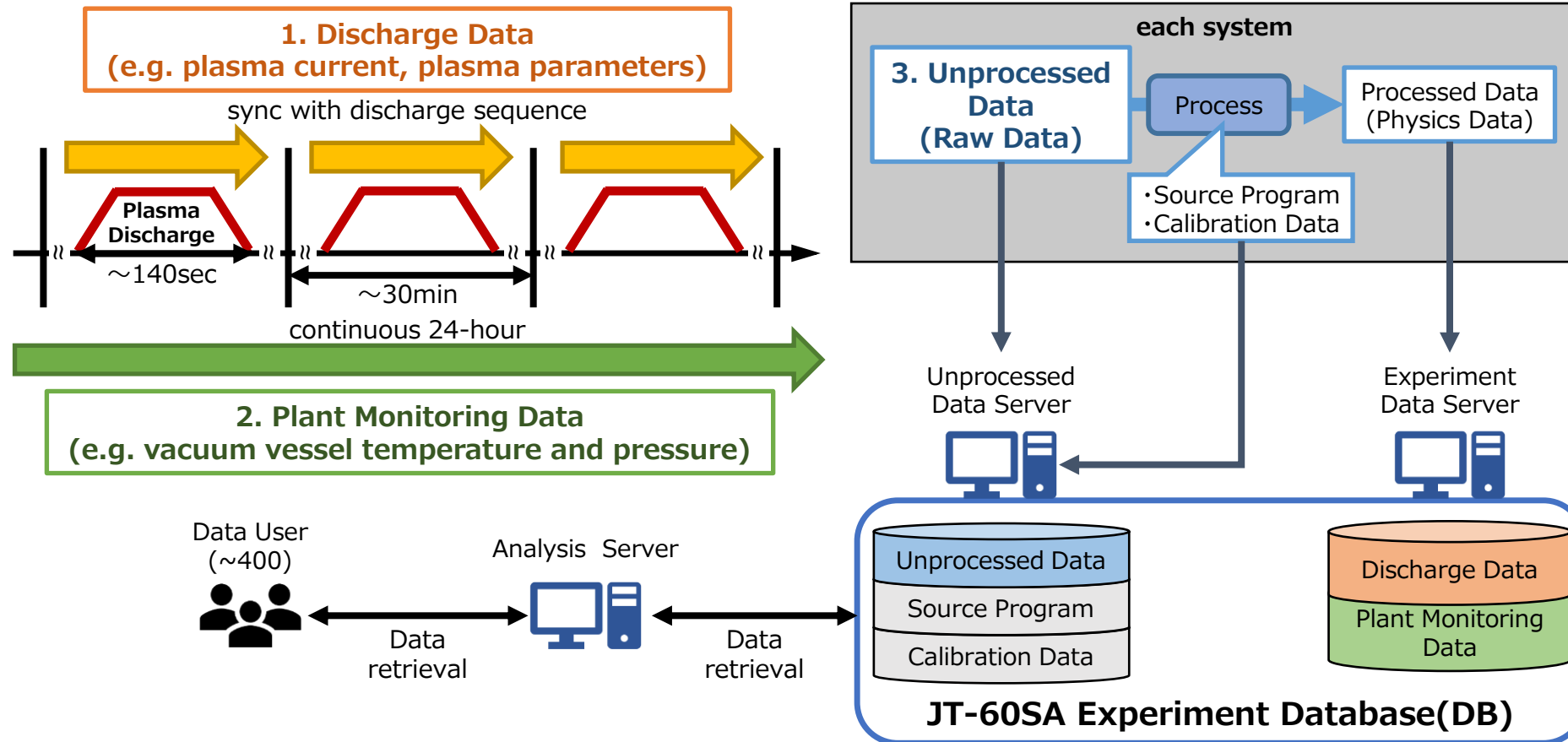# Development of JT-60SA Experiment Database System

R. Yamazaki, S. Sakata, T. Oshima, M. Sueoka, T. Totsuka,
Y. Kawamata, T. Suzuki

National Institutes for Quantum and Radiological Science and Technology

JT-60SA Experiment data

JT-60SA Experiment data are categorized into 3 types:

1. Discharge Data
(e.g. plasma current, plasma parameters)

sync with discharge sequence

Plasma Discharge
~140sec
~30min
continuous 24-hour

2. Plant Monitoring Data
(e.g. vacuum vessel temperature and pressure)

each system

3. Unprocessed Data (Raw Data) → Process → Processed Data (Physics Data)

·Source Program
·Calibration Data

Unprocessed Data Server

Experiment Data Server

Data User (~400)

Analysis Server

Data retrieval

Data retrieval

Unprocessed Data
Source Program
Calibration Data

Discharge Data
Plant Monitoring Data

JT-60SA Experiment Database(DB)

JT-60SA DB needs to meet 3 requirements:
1. to hold all the JT-60SA data and prevent loss of data
2. to allow users to use the data without knowing internal configuration and structure of DB
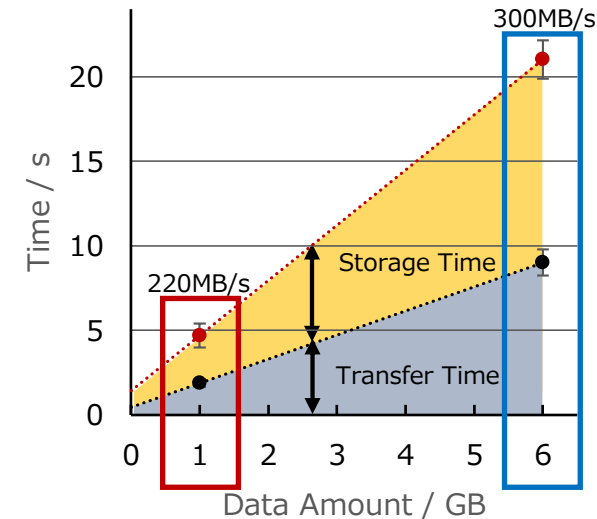3. to manage revision of data and data processing information

Discharge data needs to be referred to immediately after the plasma discharge.

Performance Test
- The data storage time is a little longer than the data transfer time.
- The data can be stored at a time sufficiently shorter than the discharge interval(30min).

	1GB	6GB
Data Transfer Time	1.9 s	9.0 s
Data Storage Time	2.6 s	11 s
Total Time	~5.0 s	~21 s

(in a 140s discharge duration)
1GB: maximum data amount of 1 data
6GB: maximum data amount of all data

We report:
- details about the hardware configuration and the software functions of JT-60SA DB
- management methods of data revision and data processing information
- performance of data transfer time and storage time