

IFERC Newsletter

IFERC

IFERC-N-2017-10, 07 August 2017

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REC

REC demonstration with JT-60SA

To establish the ITER Remote Experimentation Centre (REC), a demonstration was organized on April 26, 2017, using the Satellite Tokamak (JT-60SA) in order to verify the functions of remote experimentation required in order to make the future experiments, such as in ITER, effectively and efficiently implemented.

Based on the overall plan of REC, which was approved by 11th BA-SC in 2012, the remote experiment system was developed by using the JT-60SA facilities.

As a first step, the control system of JT-60SA was securely connected to REC (Fig.1). The server (HMPC) for users in REC can access the remote experiment server (RESV) of JT-60SA in Naka Fusion Institute of QST by Secure Sockets Layer virtual private network (SSL-VPN) through the SINET5. After the secure network connection, the software for the remote experiment system of JT-60SA is available to permit the following functions:

- Setting the plasma parameters from REC
- Following up the status of the experiment and of the plant
- Viewing/Analyzing the result data

On April 26, the demonstration of REC was carried out by using the developed software as above mentioned and the hardware prepared in REC, which includes the broadband network of 10Gbps, servers for REC, and the REC room including a large video wall, as shown in Fig.2.

The discharge parameters were set in HMPC in REC, and sent to the control system of JT-60SA through RESV. By using this parameters, the discharge sequence was carried out after the validation of the integrity of

the parameter from the viewpoint of the JT-60SA facility. As JT60-SA is not currently in operation, a dummy discharge sequence was used. In the REC room, the status of the discharge sequence and the status of the facility were followed in the main video wall and the video conference system (Fig.2). The main results of discharge were displayed in almost real time, and the software for the analysis of detailed results was also introduced.



Fig.2 Demonstration of the remote experiment of JT-60SA in the REC room. The status of the discharge and facility were displayed in the large video wall and the video conference.

(Takahisa Ozeki)

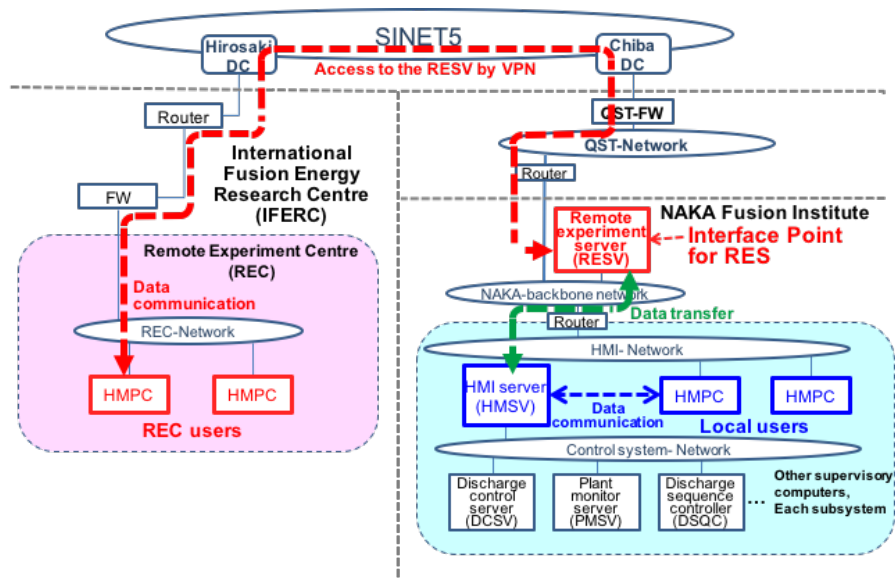


Fig.1 Secure network connection from REC to JT-60SA. REC users can participate to the JT-60SA experiments by using the same functions available in the JT-60SA control room.