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The Information Technology tools for remote participation and remote experiment control of WEST

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WEST is a full metallic environment tokamak, with an X-point divertor configuration. It is targeted at testing ITER like divertor prototypes made of actively cooled bulk tungsten units, in tokamak conditions during long pulse operation. Several partners around the world contribute by
providing various elements like parts of the divertor, ICRH antenna, and diagnostics, or by contributing to the scientific program. Like a few other fusion devices, the experimental program is open to the participation of these WEST partners. Since the C1 campaign, two years ago, the WEST experimental sessions are prepared and conducted in a collaborative way with remote access to several IT tools developed for this purpose. Each user needs a unique account to access all these tools:
·A Web Portal giving access to various web applications. These applications are:
1. A wiki to manage all scientific task forces information: experimental proposals, results,
meeting and related documentation.
2. A structured web site where the content of all pages are fully editable by any users. That site provides the description of all the WEST sub-systems, their operational limits and their status, the user guides for available computing systems and information for visitors.
3. The West Operation Management Software Suite [1] that gives access to all operation information (timeline, roster, logbook, physics summary, system status and real time
control room screens). Depending on their role and rights, users may update information.
4. A virtual Pinboard that allows every participant to share their scientific publication projects.
5. An online helpdesk to manage technical issues reported by the participants.
·Remote Computer Access is provided by a set of Linux servers fully implemented with data access and visualization and computation software. On one of them, the Pulse Schedule Editor [2] is also available (with some restricted functionalities) and has been used for the
first demonstration of WEST operation from the ITER Remote Experiment Center of Rokkasho-Mura in Japan [3].
·Implementation of IMAS (ITER Integrated Modelling & Analysis Suite) [4]: after each plasma shot, raw and processed data are produced in the IMAS format.
The WEST partners are routinely using all these tools when they are working remotely from their laboratory. This paper will present a brief description of these tools, their use and the perspectives for further development.
[1] E. Corbel et al. 30th edition of the Symposium on Fusion Technology (SOFT 2018)
[2] N. Ravenel et al. Fusion Engineering and Design, 2016, Volume 112, Pages 667-672
[3] S. Tokunaga et al. This conference (abstract 468)
[4] F. Imbeaux et al. 2015, Nucl. Fus., 55 123006

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