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Russian FusionSpace.RU

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Currently, a large amount of knowledge has been accumulated in the field of Fusion Research. Long-term experience of several generations of scientists disposes in accumulated experimental databases, theoretical works, mathematical models, codes, literature, technical documentation etc.
Modern information technologies make it possible to consolidate such databases on a single information platform and organize mass processing of this data in one IT space. As an example of such commodity processing are: cross checking the computation codes, data mining, tasks of multivariant optimization and classification plasma discharges, construction of empirical models, modeling of the discharges etc.
In addition, such an information platform makes it possible to provide a standardized access to experimental data from existing scientific installations from a single place for scientists, engineers and other profile specialists from other institutes and research centers. Such solutions, in particular, are the result of the modeling of the Russian Remote Participation Center for ITER (Model Russion Remote Participation Center - RPC [2]), whose tasks at the construction stage of the ITER installation is also to include comprehensive testing of the functions of remote interaction between the technological and diagnostic systems of the ITER installation during commissioning stage.
Currently, in Russia, Common IT space for Fusion Research - FusionSpace.ru [1] –is being created. The main aim of this system is to unite main Fusion Research Scientific Institutes (physics, technology and materials) for performing joint research, development and construction activities in the field of controlled fusion.
The report presents FusionSpace.ru platform, which makes it possible to unite Russian institutions for the exchange of experimental data and knowledge, sharing mathematical codes and computing resources, as well as conducting joint experiments in the frame of Remote Control Room, including the experience of creating a model of the Russian Center for Remote Participation ITER
The work was done under contract with state corporation "Rosatom"№Н.4к.241.09.23.1036 and Task Agreement with International Organization ITER №IO/21/TA/4500000169.

[1] Infrastructural Hardware Platform of the Common IT Space
for Fusion Research (Fusionspace.ru); S. Portone, E. Mironova, O.Semenov, Z. Ezhova, E. Semenov, A. Mironov, A. Larionov, N. Nagorny, A. Zvonareva, L. Grigoryan, D. Guzhev, A. Nikolaev, I. Semenov, and A. Krasilnikov; ISSN 1063-7788, Physics of Atomic Nuclei, 2023, Vol. 86, Suppl. 1, pp. S1–S9.
[2] Approach to Remote Participation in the ITER experimental program. Experience from model of Russian Remote Participation Center; O. Semenov, L. Abadie, A. Larionov, L. Lobes, X. Mocquard, A. Mironov, E. Mironova, N. Nagornyi, S. Portone, N. Pons, I. Semenov, D. Stepanov; 13th Technical Meeting on Plasma Control Systems, Data Management and Remote Experiments in Fusion Research.

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