PREPARATION OF THE FINAL PROJECTS OF THE UPPER PORTS 02, 07, 08 ITER [[1]](#footnote-1)\*)

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The goal of the work is to develop the final designs of structures for placing and protection the diagnostic and auxiliary equipment in the upper ports # 02 and # 08, as well as preparation for the manufacturing of the port plug in upper port # 07 of the ITER tokamak. The diagnostic port plugs belong to the components of the world's largest fusion reactor, which does not have any analogues. Therefore, they will be a unique development, created for the first time for harsh operating conditions.

During the past period, the following works were performed:

- 3D models of port plugs, support structures in the interspace and support structures in the port cell for the upper ports # 02 and # 08 have been improved to the level of the final project;

- Interfaces between integrated diagnostics and devices for their placement in the upper ports # 02 and # 08 were coordinated after their designs were finalized;

- The documents for the Design Review of the final projects of UP # 02 and UP # 08 in the ITER Organization were prepared;

- The Design Review of the final project of UP # 07 was carried out. In the frames of the FDR, the set of relevant technical documentation was prepared and engineering calculations of the modified structures of the upper port plug # 07 were carried out, taking into account the comments of the Preliminary Design Review;

- Standard forges were made from stainless steel for DSM upper port plugs # 02, 07 and 08;

- Components of the neutron shielding system were made from boron carbide for the upper port plugs ## 02, 07 and 08;

- The documentation for the Manufacturing Readiness Review in the ITER Organization of the upper port # 07 was prepared;

- The tilting mechanisms for the assembly and maintenance of DSMs and port-plugs at the assembly site of the INP SB RAS were manufactured.

The results obtained during the implementation of the project can be used in the design of other ITER port plugs, as well as for large experimental fusion facilities of the tokamak type. The results of the work carried out under the project contribute to the solution of the most complex scientific and technical problem - the creation of diagnostic ports operating in the difficult conditions of the unique ITER facility.

1. \*) [abstracts of this report in Russian](http://www.fpl.gpi.ru/Zvenigorod/L/E/ru/JJ-Listopad.docx) [↑](#footnote-ref-1)