present status of works in budker institute sb ras on iter diagnostic ports integration [[1]](#footnote-1)\*)

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The aim of the work is to develop final designs of devices for placing diagnostic and auxiliary equipment in the upper ports No. 02, No. 07 and No. 08 and preparation for the manufacture of devices for placing diagnostic and auxiliary equipment in the equatorial port No. 11 of the ITER tokamak.

During the past period, the next stage of design of the upper ports was completed. In particular, the 3-D models of the port-plugs, ISS and PCSS support structures were modernized to the level of the final project. At each design stage, the integrity of the structures developed, was confirmed by a series of engineering calculations to simulate radiation, thermohydraulic, electromagnetic, seismic and mechanical loads. The necessary documents have been prepared for the Final Design Review of the UP#02, UP#07, UP#08 integration projects in the ITER Organization.

As a part of the implementation of integration projects in the upper ports, a new version of the model of the gas / water feedthrough was manufactured using specially designed automatic welding equipment capable of working in cramped conditions on the port plug closure plate.

Design work on the integration of diagnostic and service elements in the vacuum part of the equatorial port - plug No. 11 is almost completed, the report presents the results of the final iteration of engineering calculations of protective structures.

The preparation of the production capabilities of the INP SB RAS for the manufacture and assembly of equipment for the diagnostic systems accommodation in accordance with the rules and requirements of the French RCC-MR 2007 code is discussed. In particular, it mentions the qualification of special manufacturing processes used in the process of manufacturing vacuum products for ITER classified as part of a nuclear power facility. A brief overview of the retrofitting and the process of commissioning the assembly room with the provision of special cleanliness conditions in accordance with the RCC-MR 2007 rules is given. In particular, for large-sized products of the upper ITER ports, four tilters were manufactured: this is a technological equipment for assembling and testing the upper port plug on the integration site. In addition, the integration site has prepared for testing procedures and final factory acceptance of the assembled port plugs.

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