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Progress in the Design and Manufacture of High Vacuum Components for ITER

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ITER is a large experimental tokamak device being built to demonstrate the feasibility of fusion power. The main scope of this paper is to report the status of the design and manufacturing activities of two major ITER components, the ITER Vacuum Vessel (VV) and the Cryostat. Both components will provide the necessary high-vacuum required in the case of the VV for plasma operation and confinement and to allow for cooldown of the superconducting magnets to cryogenic temperature (Cryostat).

The design of the two systems has been developed by the ITER Organization (IO) with the support of many R&D activities carried out by the Parties and is almost complete. Procurement Arrangements (PAs) with four Domestic Agencies (DAs) have been signed to develop the manufacturing design and manufacture the components of these systems. Some detailed design on specific components still needs to be completed.

Manufacturing contracts have been placed in 2010-2012 with many preparation and qualification activities. The production of the full-scale VV sectors and cryostat sections has started in the four DAs with the procurement of base materials and manufacture of mock-ups or full-scale components. Realistic manufacturing schedules are being consolidated and the presently expected completion dates will also be reported in this paper.

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