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Progress in the pre-conceptual CAD engineering of European DEMO divertor cassette

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This paper presents the recent progress in the pre-conceptual design activities for the DEMO divertor Cassette Body, performed in the framework of the work package “Divertor” of the EUROfusion Power Plant Physics & Technology (PPPT) program. According to Systems Engineering Principles, the divertor CAD model is reviewed, considering the updates in the DEMO configuration model presented by the Programme Management Unit (PMU) in 2017. The design parameters affected by these changes and their impact on the divertor design and on the interfaced systems are analysed. Then, the paper focuses on the integration on the new cassette geometry of the divertor sub-systems. This includes the design of a “shielding liner” for cassette body and Vacuum Vessel protection, as well as the development of the cassette body-to-Vacuum Vessel fixation system. The design activities related to these main sub-systems are discussed in detail, in terms of CAD model and thermo- mechanical calculations.

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