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P4.137 Design and analysis of dual arm robot for the intelligence maintenance of CFETR

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The China Fusion Engineering Test Reactor (CFETR) is the testing fusion device which would be the prototype for future commercial reactor. However, the traditional maintenance way is mainly remote handling which is time-wasting and low efficiency. To meet the demands for more complicated maintenance, it is no hesitation to start the more intelligent devices for the fusion device. The dual arm robot is a part of the intelligent devices which is mainly responsible for some delicate mission, for example, bolting, welding and snatch. These actions cannot be completed by the single robot because of its operation complexity. Consulting with the previous experience, the RH team in Institute of Plasma Physics Chinese Academy of Sciences (ASIPP) and Lappeenranta University of Technology (LUT) has studied the actual usage and designed the dual arm system together for the CFETR. This paper will introduce a dual arm robot system which will be shown about its design and analysis range from the mechanism to the system frame work, from control strategy to the task-based algorithm briefly.

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