

## ANALYSIS OF THE NEW ARCHITECTURE PROPOSAL FOR THE CMM CONTROL SYSTEM

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Under the F4E grant “DTP2 test facility operation and upgrade preparation” few of the ITER divertor maintenance operations are demonstrated. This includes divertor cassette replacement operations with CMM (Cassette Multifunctional Mover). From the very early phases of the CMM control system development some risks and sensitivity points were discovered. These are areas of potential future concerns with the evolving CMM control system architecture that has to fulfil the demanding ITER remote handling control system requirements. Especially aspects related to reliability and safety shall be considered as control system requirements and architecture are getting more mature. According to the studies made for the CMM Control system, simplified architecture enables the use of a single software development environment and a single communication protocol. This would mean easier maintainability and hence reduced development costs. [1]

In software engineering several different architecture evaluation methods are used. Some are used to evaluate a proposed architecture before it is implemented. Analysis methods can also be utilized for comparing two different architecture solutions. The first documented method for analysing software architectures was SAAM (Software Architecture Analysis Method) but because of its constraints several other methods have been developed.

The objective of this paper is to assess the consequences of architectural decisions by utilizing and tailoring the most suitable architecture analysis method. The analysis itself concentrates on evaluating the control system level architecture including hardware and software interfaces but discusses the internal software architecture such as the real-time system only briefly. Purpose of evaluating the CMM control system by utilizing architecture analysis methods is to ensure that proposed modifications to the system architecture are practical and acceptable.