

## Lessons learned from upgrades to the JET RF real-time control system.

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The plasma control system of the Joint European Torus (JET) is distributed and heterogeneous. This modularity has advantages in separating concerns that span several engineering domains, but creates integration challenges. This paper examines these issues in relation to the JET RF real-time control system. It describes how the system software has evolved over decades to respond to project upgrades. These have varied in scale from embedded systems updates, through major RF plant changes and up to facility wide modifications such as the introduction of the ITER-like wall. We highlight lessons learned from having addressed these projects while maintaining reliable operations and conforming to ever stricter quality processes.

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