Real-Time Software Design for Embedded Systems: 
From Centralized Control to Distributed Component-Based Product Lines

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This presentation will describe the evolution of real-time software design methods from early centralized systems, which were typically designed using structured methods, to modern real-time systems, which are both distributed and object-oriented. The presentation will then describe the key elements of design methods for component-based software product lines, which promote reuse and variability management. The role of UML and model-driven software architecture will also be described. Approaches for modeling and performance analysis of real-time design will be reviewed. Finally, some outstanding challenges will be presented.