

## **REAL-TIME CONTROL SYSTEMS: A "ONE DOCUMENT" OBJECT ORIENTED DEVELOPMENT PROCESS**

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The Object Oriented community is converging toward a unified development process driven by Use Cases, while the Unified Modeling Language is now the standard analysis and design language. Control systems for scientific experiments are typically designed and developed in parallel by many different groups and user requirements are not stable. It is therefore necessary to adapt the process to these constraints. Our experience shows that:- Use cases are a very effective way of capturing requirements and are well accepted by the customer as a base for discussion. They are also a good base for modular and integration testing and for requirements tracing.- All project's documentation must be for the whole team "onedocument", easily accessible online for consultation and update. Hypertext navigability provides road maps through the document and prevents information redundancy and obsolescence. The Web can be a good solution, but also case tools can provide the same functionality.- The process must be able to produce the standard paper deliverables, defined in IEEE or similar Project Management Plans. Paper documents have anyway only archiving purposes. A wide collaboration between organizations in the definition of a unified development process for such control systems can provide significant time savings in the projects and must be pursued.