Engineering a digital thread for complex products

Improve productivity and quality with MBSE

The challenge

Increasing product complexity, stringent industry and government specifications, and shrinking design and development windows are forcing change. To compete engineers need to adopt precise descriptive models that are easy to understand and provide digital representations of the products they are designing.

For many projects it is no longer possible to describe their desired functionality with just traditional requirements documentation. Teams need to embrace a solution that further encourages collaboration, mitigates ambiguous specifications, accelerates understanding and time to market.

Many companies also need to bridge the gap between their physical and digital product design in order to better integrate processes across the entire development lifecycle.

IBM **Engineering**

Building a Digital Thread to Improve Your Systems Design

IBM is not alone in recommending that companies adopt a model-based (MBSE) process to improve development results. Both the International Council of Systems Engineering (INCOSE) and the US Department of Defense echo this same recommendation. IBM recommends a solution that provides precise, easy-to-understand, digital representations of the process and requirements, based on industry standards such as SysML, UAF/UPDM, UML and AUTOSAR.

IBM Engineering Systems Design Rhapsody provides an environment where developers can prototype, simulate and execute designs for early validation of requirements, architecture and behavior. This environment allows your teams to analyze and elaborate on requirements, make architecture trade-offs with parametric evaluations, and better document designs.

Rhapsody offers an integrated software engineering environment to graphically architect C++, C, Java or Ada applications.

It can generate code from the models (including MISRA-C and MISRA-C++), reuse existing code with reverse engineering, generate design documentation and graphically specify test cases for use with IBM Model Based Test tools Test Conductor and Automatic Test Generator**.**

IBM Engineering Systems Design can help you:

Improve productivity.
Enables analysis and elaboration of requirements, optimizing trade-offs early in development cycle.

Enhance collaboration.
Models provide precise understanding of design which improves communication between stakeholders.

Improve quality.
Digital models can be thoroughly tested to detect defects earlier and protect against costly recalls after release.

Reduce risk.
Modeling improves cost estimates as well as enables ongoing validation and design verification.

Improved business outcomes

As a leader in engineering lifecycle management solutions, IBM's systems design modeling products have a proven track record across industries. IBM Engineering Systems Design Rhapsody can help your systems and software engineering teams tackle increasingly complex development projects. As products become more complicated and sophisticated, as well as more software intensive an IBM modeling solution can help your company be more competitive.

Results speak for themselves. For example, one client who adopted the IBM engineering solution reports they reduced time-to-market by 30%, improved their development time by 25%, and unlocked huge cost savings because they did not have to build physical prototypes.

Learn more about IBM Engineering Systems Design Rhapsody →