

# Agile Systems Engineering

By Bruce Powel Douglass



### **Agile Systems Engineering** By Bruce Powel Douglass

Agile Systems Engineering presents a vision of systems engineering where precise specification of requirements, structure, and behavior meet larger concerns as such as safety, security, reliability, and performance in an agile engineering context.

World-renown author and speaker Dr. Bruce Powel Douglass incorporates agile methods and model-based systems engineering (MBSE) to define the properties of entire systems while avoiding errors that can occur when using traditional textual specifications. Dr. Douglass covers the lifecycle of systems development, including requirements, analysis, design, and the handoff to specific engineering disciplines. Throughout, Dr. Douglass couples agile methods with SysML and MBSE to arm system engineers with the conceptual and methodological tools they need to avoid specification defects and improve system quality while simultaneously reducing the effort and cost of systems engineering.

- Identifies how the concepts and techniques of agile methods can be effectively applied in systems engineering context
- Shows how to perform model-based functional analysis and tie these analyses back to system requirements and stakeholder needs, and forward to system architecture and interface definition
- Provides a means by which the quality and correctness of systems engineering data can be assured (before the entire system is built!)
- Explains agile system architectural specification and allocation of functionality to system components
- Details how to transition engineering specification data to downstream engineers with no loss of fidelity
- Includes detailed examples from across industries taken through their stages, including the "Waldo" industrial exoskeleton as a complex system



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### Agile Systems Engineering By Bruce Powel Douglass Bibliography

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#### **Editorial Review**

From the Back Cover

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### **Key Features:**

Includes detailed examples from across industries taken through their stages, including the "Waldo" industrial exoskeleton as a complex system About the Author

Embedded Software Methodologist. Triathlete. Systems engineer. Contributor to UML and SysML specifications. Writer. Black Belt. Neuroscientist. Classical guitarist. High school dropout. Bruce Powel Douglass, who has a doctorate in neurocybernetics from the USD Medical School, has over 35 years of experience developing safety-critical real-time applications in a variety of hard real-time environments. He is the author of over 5700 book pages from a number of technical books including Real-Time UML, Real-Time UML Workshop for Embedded Systems, Real-Time Design Patterns, Doing Hard Time, Real-Time Agility, and Design Patterns for Embedded Systems in C. He is the Chief Evangelist at IBM Rational, where he is a thought leader in the systems space and consulting with and mentors IBM customers all over the world. He can be followed on Twitter @BruceDouglass. Papers and presentations are available at his Real-Time UML Yahoo technical group (http://tech.groups.yahoo.com/group/RT-UML) and from his IBM thought leader page (www-01.ibm.com/software/rational/leadership/thought/brucedouglass.html). Users ReviewFrom reader reviews:

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