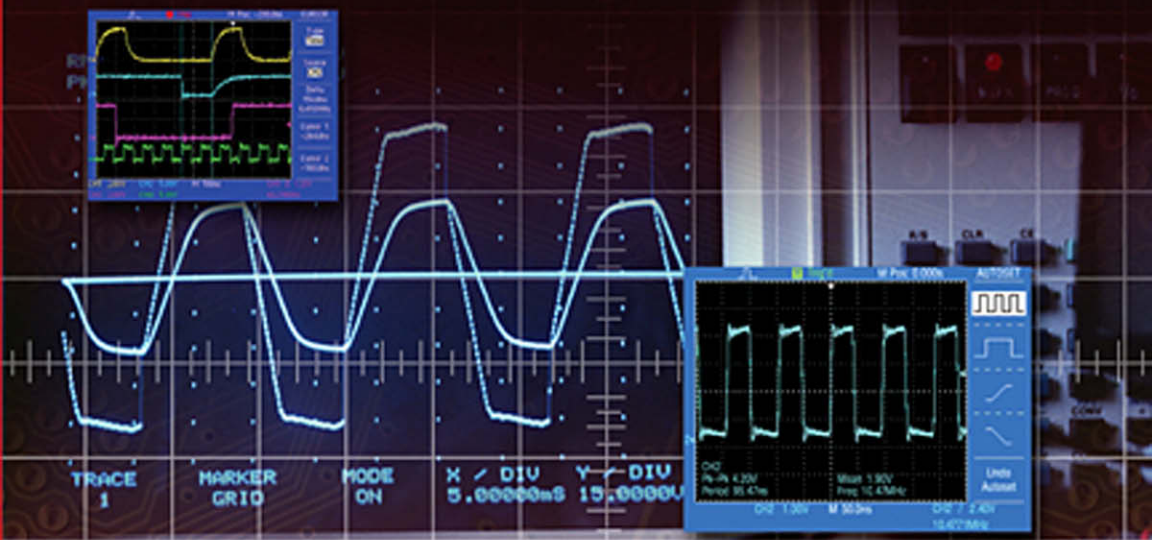
Accelerated Testing and Validation

Testing, Engineering, and Management Tools for Lean Development



Alex Porter

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Testing, Engineering, and Management Tools for Lean Development

by Alex Porter

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To my wife Theresa, whose love, patience and support made this book possible.

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Preface

Often practitioners of testing, accelerated testing, reliability testing, computer modeling and other validation tools focus on the science and math of the tool: what is innovative and cutting edge (which means "cool and fun to work on"), instead of the reason for using the tools. In this sense, testing and computer modeling engineers are a lot like kids—if you give a kid a hammer, everything will need pounding; give an engineer some neat new test method, math algorithm, or computer tool and every project will need it. This is a good attribute for engineers to have; it is the excitement that brings about the exploration and development of new methods, better techniques and faster results. But for what? New methods, better techniques, more information in a shorter period of time for what? Often computer modeling and testing engineers lose sight of the reason behind what they are doing.

Testing and validation is not about conducting experiments, tests and validation demonstrations. Testing and validation is about generating key information at the correct time so that sound business and engineering decisions can be made.

The managers and quality specialists who lack this childlike fascination with testing and modeling techniques find the obsession with the science and math to be annoying. They tolerate it because they need the information that the obsessed produce with their validation tools.

This book is a cross-discipline manual for management, quality, validation, Computer Aided Engineering (CAE), and others who produce and use validation information in the product development process. Of the wide range of validation tools, this book will focus on: 1) What

information is needed?; and 2) What tools can produce the information in a timely manner?

The relationship between information, time, cost and engineering decisions in the development process will be explored to provide a common dialog for making sound decisions about what information to collect, what validation tools to use and what resources to apply. Ultimately, if validation tools are selected and applied to provide the key information precisely when it is needed, the development process will not just be faster; it will be a truly efficient development process.

What's on the CD-ROM?

The CD-ROM that accompanies this book contains a host of useful material:

- A fully searchable eBook version of the text in Adobe pdf format.
- Most chapters contain a directory with pictures, movies, PowerPoint® slide shows, spreadsheets and/or programs that augment and reinforce the content of the book.