Conquering Complexity

Complexity is becoming a major concern for practitioners and researchers are working at ways to identify and control it. This set of papers is organized in three categories: Part I addresses the sources and types of complexity; Part II addresses areas of significance in dealing with complexity, and Part III identifies particular application areas and means of controlling complexity in those areas. The authors of the various contributions are recognized experts in the relevant areas and renowned authorities recognized for their publications and practical contributions.Software has long been perceived as complex, at least within Software Engineering circles. We have been living in a recognised state of crisis since the first NATO Software Engineering conference in 1968. Time and again we have been proven unable to engineer reliable software as easily/cheaply as we imagined. Cost overruns and expensive failures are the norm. The problem is fundamentally one of complexity: software is fundamentally complex because it must be precise. Problems that appear to be specified quite easily in plain language become far more complex when written in a more formal notation, such as computer code. Comparisons with other engineering disciplines are deceptive. One cannot easily increase the factor of safety of software in the same way that one could in building a steel structure, for example. Software is typically built assuming perfection, often without adequate safety nets in case the unthinkable happens. In such circumstances it should not be surprising to find out that (seemingly) minor errors have the potential to cause entire software systems to collapse. The goal of this book is to uncover techniques that will aid in overcoming complexity and enable us to produce reliable, dependable computer systems that will operate as intended, and yet are produced on-time, in budget, and are evolvable, both over time and at run time. We hope that the contributions in this book will aid in understanding the nature of software complexity and provide guidance for the control or avoidance of complexity in the engineering of complex software systems. EAN/ISBN : 9781447122975 Publisher(s): Springer, Berlin, Springer, London Discussed keywords: Komplexitt Format: ePub/PDF Author(s): Hinchey, Michael G. - Coyle, Lorcan

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