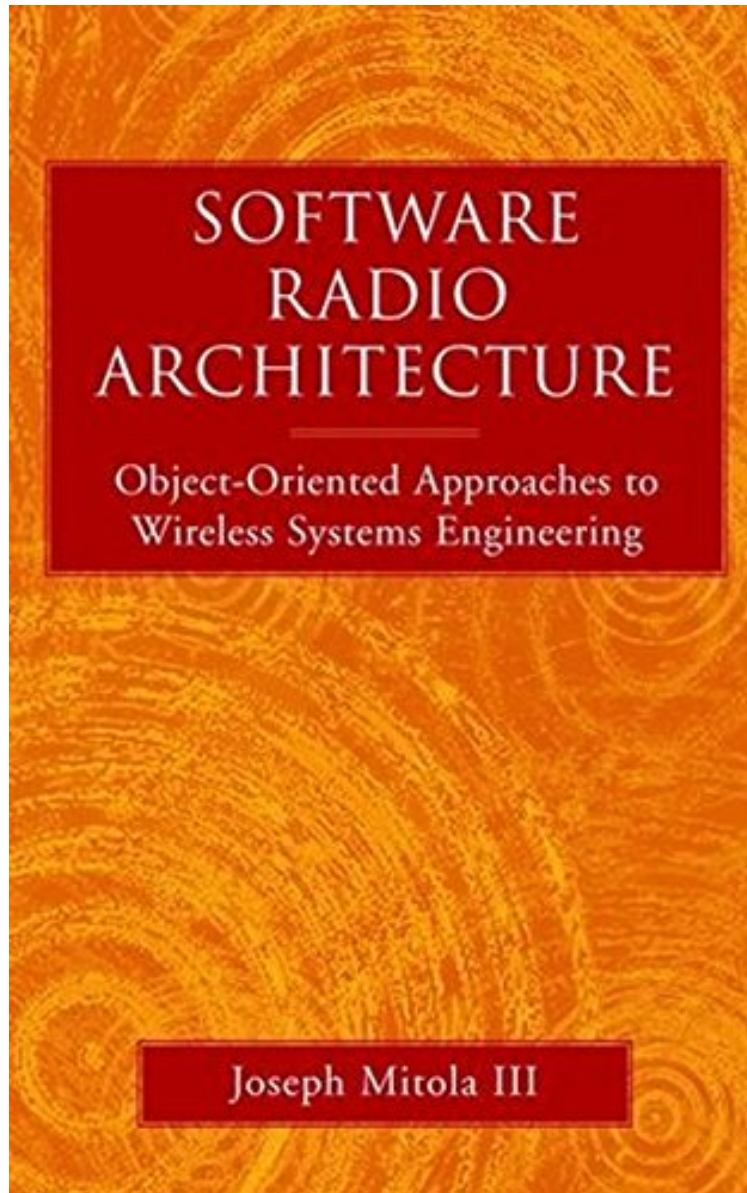


Software Radio Architecture: Object-Oriented Approaches to Wireless Systems Engineering

Joseph Mitola III

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Joseph Mitola III : Software Radio Architecture: Object-Oriented Approaches to Wireless Systems Engineering before purchasing it in order to gage whether or not it would be worth my time, and all praised Software

Radio Architecture: Object-Oriented Approaches to Wireless Systems Engineering:

A software radio is a radio whose channel modulation waveforms are defined in software. All wireless telephones are controlled by this software. Written by the leader in the field, this book covers the technology that will allow cellular telephones to greatly expand the types of data they can transmit.

"...shows how to integrate the analogue radio-frequency and digital aspect of radio with the emerging large-scale, object-oriented software technology needed for open-architecture software-defined radio." (SciTech Book News, Vol. 25, No. 3, September 2001)

From the Back Cover

An engineer's guide to systems engineering of software-radio architectures. As a crucial element of wireless technology, software radio is fast becoming a hot topic in the telecommunications field. This new book provides complete, up-to-date coverage of software radio architecture, discussing in detail functions, components, design procedures for complex radio systems, and large-scale software engineering methods such as UML and CORBA. The author bridges the inter-disciplinary gap in the field, covering what software engineers need to know about how radio "waveforms" are defined in software. Plus, he provides tutorial material on how the Unified Modeling Language-UML-is used for specifying radio architecture. The architecture tradeoffs-how to deliver predictably robust performance without unnecessarily expensive hardware, economic principles, cost considerations, and marketplace trends-are also addressed. Coverage includes:

- * Market-oriented technology trends on how software radio fits in with the larger telecommunications marketplace
- * Complexity drivers and their influence on hardware and software components
- * System integration, emphasizing the management of processing capacity available on heterogeneous ASIC, FPGA, and DSP hardware
- * Subsystem material and the unique requirements that software radio brings to the hardware and software segments-antennas, RF conversion, ADC/DAC, pooled DSP, real-time operating systems, CORBA middleware, and radio software objects
- * Relevant areas of systems engineering, including design tools, cost-benefit analysis, and an extended case study, "Mobile Infrastructure for Joint Military-Civilian Disaster Relief"
- * Hundreds of graphs, case studies, and Internet access to software design tools

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About the Author JOSEPH MITOLA III, PhD, introduced the software radio architecture in 1992. He was the founding chair of the software-defined Radio (SDR) Forum in 1996. He teaches industrial courses on the subject in the United States and Europe for clients such as the U.S. Department of Defense. He is also widely published and cited, having served as editor-in-chief for the landmark May 1995 issue of IEEE (NY) Communications Magazine, the April 1999 Journal on Selection Areas in Communication on Software Radios, and the ongoing series Software and DSP in Radio.