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**ELECTRICAL & COMPUTER
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TEXAS A & M UNIVERSITY

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Power Management Challenges in Highly Integrated Systems

by

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Abstract: A number of approaches are commonly used for power management. Series regulators, switched capacitor regulators and inductor-based (buck) converters each have their pros and cons. Buck converters tend to be more widely used today. Traditionally, they have been implemented on a dedicated chip (a power management IC or PMIC). But there is a trend to move them directly onto the load (e.g. a processor or a system on a chip). This requires specialized inductors and much faster switching rates.

Eric Soenen holds a Civil Electro-Mechanical Engineering degree from the Katholieke Universiteit Leuven, Belgium. He received a Master's and a Ph.D. degree from Texas A&M University in College Station, TX, in 1989 and 1992 and an Executive M.B.A. from the University of Texas at Austin in 2000.

In 1991, he joined Texas Instruments in Dallas, Texas. From 1995 on, he led the company's World-Wide Data Converter design efforts. In 2002, he took a position at Barcelona Design, a start-up company in Silicon Valley spun off from Stanford University. He re-joined Texas Instruments in 2004, as part of the Wireless Terminals Business Unit.

In July of 2007, he moved to TSMC to open the Austin Design Center, an R&D organization focused on design exploration and process improvement. He specializes in Power Management and Analog applications in a wide range of process technologies.