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# AUDIOVISUAL BEST PRACTICES

THE DESIGN AND  
INTEGRATION PROCESS  
FOR THE AV  
AND CONSTRUCTION  
INDUSTRIES

**infoComm**  
International Communications  
Industries Association, Inc.®

# AUDIOVISUAL BEST PRACTICES

## The Design and Integration Process for the AV and Construction Industries

This highly anticipated volume published by the leading AV industry association covers a broad range of territory in succinct, targeted prose with appropriate illustrations throughout.

The book's primary mission is to explain the complete AV process from start to finish, while simultaneously providing professional insight into the best and recommended practices to use for a successful audiovisual design and integration project.

A companion to the popular industry reference manual, the *Basics of Audio and Visual Systems Design: Revised Edition*, this new book builds upon the technical aspects of the *Basics* book to reveal the intricacies of the process and also to provide information about the industry, its historical roots, its growth and where it is headed. A must read for all AV professionals, and those who work alongside them to make audiovisual best practices a reality.

# AUDIOVISUAL BEST PRACTICES

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INTEGRATION PROCESS  
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AND CONSTRUCTION  
INDUSTRIES**



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*Addressing AV process questions of architects, building and construction trade personnel, consultants, contractors, developers, engineers, facility owners, project managers and AV professionals.*

First edition.

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## **DEDICATION**

To organizations that want successful audiovisual systems  
and to the professionals who know how to make it happen.

The best way possible.



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**WHAT THIS BOOK MEANS TO INFOCOMM INTERNATIONAL  
EXECUTIVE DIRECTOR, RANDAL A. LEMKE, PH.D.**



As I was reading through the first draft of *Audiovisual Best Practices*, I paused at a paragraph that reads, *"The greatest differentiation between pro-AV and other trades is that pro-AV involves the full-blown creation of communications environments. Consequently, AV professionals are concerned with more than just the cable pathway and the electronics at the end of the cable; they are concerned with making it possible for the customer to communicate."*

This statement accurately describes our industry. AV professionals, who have found their life's work in this field, are increasingly more concerned with the bigger picture in systems integration. They and their collaborators from other disciplines need to know, from the outset, how the entire building construction or renovation will affect the AV system, and vice versa. This new perspective means that the AV professional, architect, engineer, facility owner, project manager and others in the process interface routinely with one another. Successful AV installation and integration is no longer dependent upon a small group of technically savvy individuals (although they are vital to the process), but rather it requires a strong relationship among the members of a more disparate team. To be effective, this team must know as much as possible about AV projects and how they are accomplished.

This book, then, is our opportunity to disseminate information about the business of pro-AV. It is a unique publication that reveals the best of AV – from the standpoint of the industry, its roots, its professionals, its processes and practices and, importantly, its customers.

To see this book published during my tenure as Executive Director is right up there with being a part of an industry that is emerging as a powerhouse and helping the association make valuable contributions to its membership and the industry as a whole.

To all those who worked tirelessly on this book, as well as those who conceived of it and made it happen, I offer simply this statement: "You set a high goal when you conceived of this book, and clearly you have reached it."

A handwritten signature in black ink that reads "Randal A. Lemke". The signature is fluid and cursive.

Randal A. Lemke, Ph.D.  
Executive Director  
International Communications Industries Association, Inc.

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*Audiovisual Best Practices: The Design and Integration Process for the AV and Construction Industries* is the result of an extraordinary combined effort of three primary groups among the membership of the International Communications Industries Association, Inc.<sup>®</sup> (ICIA<sup>®</sup>). They are the AV systems integrators, the independent consultants and the technology managers/end-users.

Through their councils – the Sound, AudioVisual and Video Integrators (SAVVI), the Independent Consultants in Audiovisual Technology (ICAT) and the Technology Managers/End-Users – members volunteered their time and commitment in forming the AV Best Practices Subcommittee, chaired by Mark Valenti of The Sextant Group.

The result was a committee of eleven that gathered and determined the scope and goals of the project, the intended audiences, and the elements that were necessary for the completion of a useful and valuable guide to the AV process.

The collaboration of integrators and consultants was a significant accomplishment that merits a word of recognition. While often serving as team members on projects, independent consultants and systems integrators sometimes find themselves at odds philosophically. They also often compete for business. Yet, when the two groups decided to work together on this project for the good of the AV industry, they rolled up their sleeves, put aside differences, agreed that sometimes it was OK to disagree, and got to work.

The significant body of work was developed by the co-authors, Tim Cape, CTS-D, of Technitect, and Jim Smith, CTS, of HB Communications.

Our heartfelt thanks go also to Bradley P. Weber, P.E., of muse, inc., who was a major contributor and peer reviewer, as well as to architects, design consultants, integrators and technology managers who provided insight and in-depth reviews: Peter Gross, AIA, of Kohn Pederson Fox Associates PC; David Labuskes, RCDD/NTS/OSP, CSI, of RTKL Associates, Inc.; Jeff Loether of Electro-Media Design; Stephen Newbold, AIA, RIBA, of Gensler; John Pfeleiderer, MA, CTS-D, of Cornell University; Byron Tarry, CTS, of AVW-TELAV Audio Visual Solutions; and Scott Walker, CTS-D, of Waveguide Consulting, Inc.

Susan J. Higginbotham of Higginbotham Associates and Taly Walsh of InfoComm edited the publication; creative design and layout of the publication were produced by Holli Rathman.

The publisher, InfoComm, is the association for the professional audiovisual industry. InfoComm represents the entire distribution chain worldwide, including AV technology manufacturers, distributors, dealers, systems integrators, independent representatives, rental and staging companies, independent consultants, independent programmers, production companies, presentations professionals and technology managers/end-users.

Through its Board of Governors, its councils and committees, and members at large, InfoComm International has advanced numerous industry initiatives, including an AV industry awareness campaign, online and classroom education, individual and company certification at general and specialized levels for design and installation, workforce development, awards programs, online information resources, and InfoComm and Integrated Systems tradeshow for Europe, China and Asia.

The 2005 *Audiovisual Best Practices* guide, and its companion, *The Basics of Audio and Video Systems Design*, are two key initiatives to emerge from the association. InfoComm gratefully acknowledges the important contributions of its membership toward making these valuable industry references a reality.



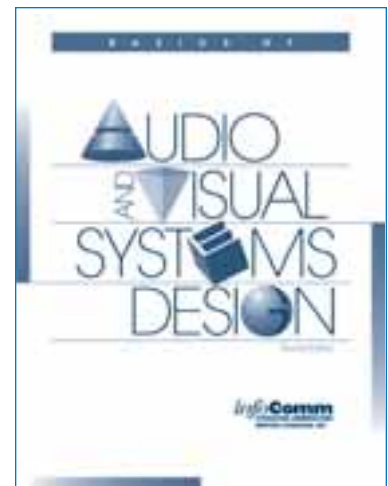
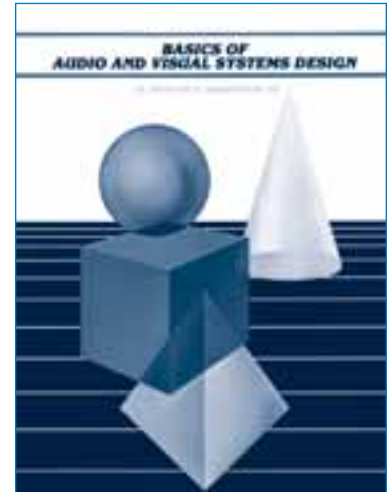
## PREFACE

The realization that AV was becoming a significant industry was reinforced by the issuance in the late eighties of InfoComm International's milestone publication, *"The Basics of Audio and Visual Systems Design."*<sup>1</sup> This landmark book, updated and re-published in 2004, delineated the complex technical aspects of professional AV design.

The AV industry, however, has become far more than simply technical design and application. Because of its pivotal role in delivery of modern information communications, it is an integral part of virtually all major construction and redevelopment projects, as well as the production of live events. As such, the industry has experienced record growth. According to a 2004 study, the AV industry represents a total market size of close to \$19 billion in North America alone.<sup>2</sup> In actuality, the worldwide statistics may exceed triple that figure.

Because of the industry's increasing significance, three leading member councils at ICIA<sup>3</sup> recognized that the time had come to produce another industry publication that would go beyond the basics. This new book would help industry professionals, as well as those with whom they work, better understand the process of managing complex information communications projects in buildings and facilities.

To accomplish this goal, the content of *Audiovisual Best Practices* needed to cover significant territory. It needed to present an overview of the industry, explore the inner workings of AV projects with start-to-finish process descriptions, and conclude with an assessment of what the



*Members of the AV Best Practices Committee during its meeting in October 2004. Pictured, l. to r., Jim Smith, CTS, Kris Kuipers, Tim Cape, CTS-D, Byron Tarry, CTS, Brad Weber, Mark Valenti, Jeff Loether, John Pfeleiderer, CTS-D. Not pictured: George Bing, Spencer Bullins, CTS, and Tom Peters, CTS.*

<sup>1</sup> Raymond Wadsworth, *The Basics of Audio and Visual Systems Design* (Fairfax, Virginia: InfoComm. 1983). The book was the first to contain the diverse set of physics, electronics, ergonomics and design that makes up the audiovisual system. Many AV professionals credit this book for advancement in their careers.

<sup>2</sup> Survey conducted May 2004 for InfoComm/ICIF by Acclaro: Market Intelligence Special Report: 2004 AV Market Definition and Strategy Study.

<sup>3</sup> The Sound, AudioVisual and Video Integrators (SAVVI), the Independent Consultants in Audiovisual Technology (ICAT) and the Technology Managers/End-Users Councils