Preface

Objective

The FAA System Engineering Manual (SEM), version 3.1, aligns with the current decision-making paradigm in the FAA Acquisition Management System. The SEM provides a framework for implementing system engineering across the FAA. The intended audience includes the new systems engineer, an engineer in another discipline who needs to perform system engineering, and the experienced systems engineer who needs a convenient reference to implement the practice within the FAA context.

This SEM describes a set of standard practices combined with industry and government "best practices" to implement system engineering in the context of the National Airspace System, both from acquisition and operational perspectives. The relevance of these processes and practices will vary widely, depending on the complexity, size, objectives, and point in the product lifecycle a project or organization may find itself. Some aspects will be effectively handled informally; others will require a high degree of discipline and rigor.

This document is not intended to mandate any level of formality as necessary or appropriate in all situations. Within certain bounds, the implementing organization can best determine the appropriate degree of implementation. Section 4.14 (System Engineering Process Management) presents recommended tailoring guidelines to achieve the proper balance between technical objectives, business objectives, and process implementation.

Acknowledgments

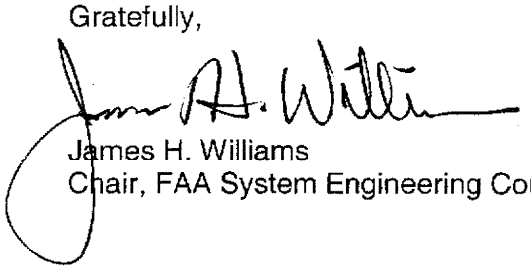
The FAA System Engineering Council owes a debt of gratitude to all the contributors to prior SEM editions (versions 1.0, 2.0, and 3.0). The framework they provided has been a solid basis for implementing system engineering across the FAA. However, SEM version 3.1 includes significantly more information than previous versions.

We want to thank the SEM review team members—who also served as principal authors—for their dedication and enthusiasm in melding the contributions of many other authors into a coherent document and implementation framework. The review team members included Ken Kepchar, Cheryl Souders, and Linda Suppan and were supported by Eric Weill.

It would be difficult to accurately characterize the specific contributions of each of the authors, reviewers, and support personnel because several served multiple roles. We wish to acknowledge them in alphabetical order: George Barboza, Basilyn Bunting, Gail Frazier, Steve French, Glen Hewitt, John Horrocks, Clarence M. Johnson, Shirley McGowan, Ron Stroup, and Danette Warren. In addition, representatives from the International Council on Systems Engineering provided valuable inputs and comments.

We apologize in advance if we—in our final rush to publish—omitted anyone from this list.

Gratefully,



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