

EXECUTIVE SUMMARY

BACKGROUND

The *Ada 95 Adoption Handbook* is a comprehensive guide to help Program Executive Officers (PEOs), Program Managers (PMs), and their staffs understand and implement the transition to Ada 95.

Ada 95 is an *incremental improvement* of the Ada 83 (ANSI/MIL-STD-1815A) programming language. It is neither a new language nor some radical redesign. Ada 95 adds support for object-oriented programming, improved real-time capabilities, enhanced support for programming-in-the-large and an improved ability to work with programs written in other languages. Additionally, Ada 95 provides specialized needs annexes that define additional services for areas such as information systems, distributed systems, real-time systems, and systems programming.

USING THE HANDBOOK

PEOs, PMs, and their staffs are the handbook's primary audiences. PEOs and PMs will find sufficient information to be able to task their staffs. Likewise, their staffs will find information helpful for task execution.

Purpose

The *Ada 95 Adoption Handbook* explains the opportunities, issues and answers inherent in the adoption of Ada 95 for software development and maintenance. The handbook covers issues in both Management Information Systems and Real-Time/Embedded Systems, and addresses both contracted and in-house developments.

Once the decision to adopt Ada 95 has been made, the *Ada 95 Transition Planning Guide*, a companion to this handbook, helps managers create a transition plan tailored for their project.

Timing

Ada 95 adoption should occur at times of maximum project stability (e.g., at the beginning of a new development or maintenance effort). *PEOs and PMs will find that the majority of information in the Ada 95 Adoption Handbook is relevant for projects in these stages of development. The handbook can help the staff of projects in other stages of development prepare for the transition.*

Actions

After determining that the timing is right, the PEO and/or PM should begin the transition to Ada 95. The handbook provides detailed information that

PEOs and PMs can use to guide staffs who are working on the Ada 95 adoption. Also, [Appendix B](#) provides template text on Requests for Proposal (RFPs). The checklists in [Appendixes C](#) and [D](#) summarize the actions that PEOs and PMs should take when considering Ada 95 adoption.

Reading

This handbook supports three classes of readers:

- **PMs/PEOs who desire issues and actions without details.** Members of this class should read [Chapter 1](#), and all chapter introductions, tables, figures, and summaries
- **PMs/PEOs who desire issues, actions, and technical details without elaboration.** Members of this class should read all information presented in bold face in addition to the aforementioned material.
- **PMs/PEOs and their staffs who desire issues, actions, technical details and supplementary information.** Readers falling into this class should read the entire document including the appendices.

SIGNIFICANT FINDINGS AND RECOMMENDATIONS

Prospects

Adopting Ada 95 brings organizations the opportunity to improve the efficiency of developers by reducing the amount of source code recompilation caused by software changes; by incrementally extending existing software rather than modifying existing code; and by allowing better usage of limited hardware resources by the use of more efficient real-time facilities. Finally, Ada 95 allows projects to make use of existing legacy code and reusable software written in languages other than Ada more easily than does Ada 83.

Issues and Resolutions

This handbook alerts PEOs and PMs to the issues they will face when transitioning to Ada 95, but it also tells them how to accommodate or resolve these issues. ***Chapter 3 discusses specific risk mitigation actions that PEOs and PMs can take to resolve Ada 95 adoption issues.***

Timing of the Adoption

The lowest risk Ada 95 adoption occurs in concert with the beginning of a project or maintenance upgrade. For acquisition organizations, this also provides the most control and least rework. ***Chapter 4 discusses the impacts of beginning the Ada 95 adoption at different phases in the acquisition and development life-cycles.***

Impact on the Acquisition Process

Very few acquisition activities need to be tailored with the adoption of Ada 95. Typically, the acquisition plan must be modified to reflect the use of Ada 95 and the source selection organization must include Ada 95 expertise. ***Chapter 5 discusses the impacts of Ada 95 adoption on the software acquisition and development processes.***

METHODOLOGY

The information in this document is based upon the authors' experience of participating in Ada 83 and (preliminary) Ada 95 adoption efforts. Preliminary versions of the handbook have been reviewed by Government and Industry distinguished reviewers in a multi-step review process. Their comments have been incorporated in this version of the document. *This is a living document, a working guide for PEOs and PMs and as such will be continuously revised based on the experiences of Ada 95 adoption efforts.* Additional comments and suggestions are welcome.