

# CHAPTER 1

# INTRODUCTION

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## SCOPE

The *Ada 95 Adoption Handbook* was developed to help organizations exploit the opportunities that Ada 95 brings. It covers prospects, issues, actions and decisions to be addressed when a project or organization is preparing to adopt Ada 95 — the latest version of the Ada language. It offers an issues-based and answers-oriented look at the task of transitioning software development efforts. It builds on past experiences and focuses on achieving results. Suggested Ada 95 adoption efforts may include the following kinds of systems:

- A new software development project,
- A family of related development efforts,
- Enhancements to an existing system, or
- Maintenance of an existing system.

This handbook covers all elements of the decision-making process — from the initial Ada 95 investigation through research of the issues, to analysis and issue resolution. However, the detailed planning of the transition to Ada 95 for a specific effort is beyond the scope of this handbook. The *Ada 95 Transition Planning Guide*, a companion document to this handbook, provides a template for planning a specific transition effort.

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## AUDIENCES FOR THE ADA 95 ADOPTION HANDBOOK

The *Ada 95 Adoption Handbook's* primary audiences are Department of Defense (DOD) Program Executive Officers (PEOs) and Program Managers (PMs), who manage software development and maintenance efforts, and their staffs. Within the DOD, PEOs and PMs may be responsible for either the acquisition or the internal life-cycle development of software; this document addresses both scenarios. These managers must decide when, under what circumstances, and how to transition to Ada 95.

The handbook discusses the needs of managers of *information systems* and managers of *weapons systems*. Most sections of the handbook address issues common to both audiences. When issues differ, separate subsections of the handbook will give audience-specific information.

A secondary audience may find the handbook useful: software project managers from industry who are interested in transitioning to Ada 95. Industry users will find subsections addressed to their needs, where appropriate.

## AUDIENCE PREREQUISITES

The handbook assumes that readers possess an understanding of project management and software development, as defined below.

- Familiarity with project management concepts, software project management, and basic software engineering principles.
- General familiarity with modern software development trends and concepts (software development methodologies, software development life-cycles, software development standards, software re-engineering, etc.).

No prior experience with Ada or object-oriented techniques is expected, as the following explains.

- *No prior experience in Ada 83 project management is assumed.* If any specific project management information on Ada 83 is necessary, either it will be provided in the handbook or the reader will be referred to the appropriate document.
- *No detailed knowledge of Ada 83 is assumed.* General Ada 83 programming language terminology (e.g., subprogram and package) is used. If any specific technical information on Ada 83 is necessary, either it will be provided in the handbook or the reader will be referred to the appropriate document.
- *No detailed knowledge of Ada 95 is assumed.* New Ada 95 programming language terminology and concepts are introduced and related to Ada 83 concepts (e.g., child packages and packages). If any specific technical information on Ada 95 is necessary, either it will be provided in the handbook or the reader will be referred to the appropriate document.
- *No detailed knowledge of object-oriented techniques is assumed.* Basic object-oriented benefits and features are referenced within the document. If any specific technical information on object-oriented technology is necessary, either it will be provided in the handbook or the reader will be referred to the appropriate document.
- *No detailed knowledge of real-time techniques is assumed.* Basic real-time concepts and features are referenced within the document. If any specific technical information on real-time technology is necessary, either it will be provided in the handbook or the reader will be referred to the appropriate document.

## GOALS OF THIS HANDBOOK

The primary goal of this handbook is to help managers take advantage of the opportunities presented by Ada 95. The handbook also addresses key issues in adopting Ada 95 on projects, products and product lines. The most crucial needs of managers preparing to adopt Ada 95 are:

- To get answers to the issues associated with adopting Ada 95,
- To be able to resolve the issues associated with the adoption of Ada 95, and

- To be able to successfully manage the transition to Ada 95 within their organization.

To this end, the handbook focuses on the issues and answers that are foremost in a PEO's or PM's mind during the early stages of Ada 95 adoption.

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## OBJECTIVES

To meet the goals of this handbook, its chapters will:

- Describe the reasons that PEOs and PMs may want to adopt Ada 95,
- Address both contracted and in-house development efforts,
- Answer the most frequent questions from managers preparing to transition to Ada 95 from either Ada 83 or another language,
- Identify the main issues that occur when transitioning to the use of Ada 95,
- Analyze the issues associated with a transition to the use of Ada 95,
- Discuss strategies that managers can employ to resolve Ada 95 adoption issues, thereby making the transition as smooth as possible, and
- Supply supplementary information in appendixes, including contacts and sources of information on Ada 95 as well as detailed supplementary material on specific recommended RFP wording and checklists for Ada 95 adoption.

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## READING THIS HANDBOOK

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.

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## RELATED DOCUMENTS

PEOs and PMs may find two other documents useful in their Ada 95 adoption effort:

- *The Ada 95 Transition Planning Guide* (the companion to this Adoption Handbook), and
- The Software Engineering Institute's Ada 83 Adoption Handbook — *Ada Adoption Handbook: A Program Manager's Guide Version 2.0* CMU/SEI-92-TR-29.

