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Australian STANDARD

Systems and software engineering—Life cycle management

Part 4: Systems engineering planning

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Australian Standard®

Systems and software engineering—Life cycle management

Part 4: Systems engineering planning

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PREFACE

This Standard was prepared by the Standards Australia Committee IT-015, Software and Systems Engineering.

The objective of this Standard is to specify the Technical Management processes from AS ISO/IEC/IEEE 15288:2015 *Systems and software engineering—System life cycle processes*, that are required to be implemented for planning a systems engineering project. This Standard will also provide guidelines for applying the required processes, normative definition of the content, format and content of the information item.

This Standard is identical with, and has been reproduced from ISO/IEC/IEEE 24748-4:2016 *Systems and software engineering—Life cycle management*, Part 4: *Systems engineering planning.*

As this Standard is reproduced from an International Standard, the following applies:

(a) In the source text 'this International Standard' should read 'this Australian Standard'.

(b) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian/New Zealand Standard*	
ISO/IEC/IEEC		AS/NZS	
15288	Systems and software engineering—System life cycle processes	15288	Systems and software engineering—System life cycle processes

Only normative references that have been adopted as Australian or Australian/New Zealand Standards have been listed.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the annexes to which they apply. A 'normative' annex is an integral part of a Standard, whereas an 'informative' annex is only for information and guidance.

CONTENTS

INTRODUCTION

ISO/IEC/IEEE 15288, *Systems and software engineering – System life cycle processes*, provides a common process framework covering the life cycle of man-made systems. This life cycle spans the conception of ideas through to the retirement of a system. It provides the processes for acquiring and supplying systems. In addition, this framework provides for the assessment and improvement of the life cycle processes. This common framework improves communication and cooperation among the parties that create, utilize, and manage modern systems in order that they can work in an integrated, coherent fashion.

The acquisition or supply of a system is usually done within a project. A project prepares and implements the technical plans and schedules necessary to guide the project toward accomplishment of its objectives and proper conclusion. Given the project's authorization and objectives, the project should establish a Systems Engineering Management Plan (SEMP).

This part of ISO/IEC/IEEE 24748 replaces the former ISO/IEC 26702:2007 (IEEE Std 1220-2005), *Systems engineering — Application and management of the systems engineering process.* In preparation for harmonization, ISO/IEC 26702 provided explanations regarding key differences between IEEE Std 1220 and ISO/IEC/IEEE 15288 in areas such as terminology and structure.

The evolution of the harmonized set of ISO/IEC/IEEE 15288-12207 related standards and technical reports that are discussed in this part of ISO/IEC/IEEE 24748 provides detailed requirements and guidance on the application of system life cycle processes. This part of ISO/IEC/IEEE 24748 unifies technical and management requirements and guidance from several of these sources to specify the requirements for the content of a SEMP and to provide a common SEMP format. This part of ISO/IEC/IEEE 24748 also identifies the processes as defined in ISO/IEC/IEEE 15288 to perform the necessary project planning activities to accomplish the project's technical effort and to develop the project's SEMP. Due to close alignment with the content of ISO/IEC 24748, ISO/IEC 26702 is now Part 4 of the multi-part International Standard, ISO/IEC 24748 (*Systems and software engineering – Life cycle management*).

Taken together, the parts of ISO/IEC 24748 are intended to facilitate the joint usage of the process content of ISO/IEC/IEEE 15288 and ISO/IEC 12207, *Systems and software engineering – Software life cycle processes*, which in turn may be used together with related standards such as for service management, and various other lower-level process standards. In this way, ISO/IEC 24748 provides unified and consolidated guidance on the life cycle management of systems and software. Its purpose is to help ensure consistency in system concepts and life cycle concepts, models, stages, processes, process application, key points of view, adaptation, and use in various domains as the two International Standards (and others) are used in combination. It should help a project to design a life cycle model for managing progress on a project.

The five parts of ISO/IEC 24748 are:

— ISO/IEC TR 24748-1: *Systems and software engineering – Life cycle management – Part 1: Guide for life cycle management*

— ISO/IEC TR 24748-2: *Systems and software engineering – Life cycle management – Part 2: Guide for the application of ISO/IEC 15288 (System life cycle processes)*

— ISO/IEC TR 24748-3: *Systems and software engineering – Life cycle management – Part 3: Guide for the application of ISO/IEC 12207 (Software life cycle processes)*

— ISO/IEC/IEEE 24748-4: *Systems and software engineering – Life cycle management – Part 4: Systems engineering planning*

— ISO/IEC/IEEE 24748-5: *Systems and software engineering – Life cycle management – Part 5: Software development planning*

Whereas Part 1 addresses in generic terms the purpose stated above of guidance for the life cycle management of systems and software, Part 2 focuses on and expands the coverage of those aspects for systems. Part 2 will also, in conjunction with Part 1, aid in identifying and planning the use of the life cycle processes described in ISO/IEC/IEEE 15288. The proper use of these processes will contribute to a project being completed successfully, meeting its objectives and requirements for each stage and for the overall project.

This part of ISO/IEC/IEEE 24748 focuses on the processes required for successful planning and management of the project's systems engineering effort. It calls for development of a SEMP as the key vehicle for representing a project's application of systems life cycle processes. The SEMP is a top level technical planning document for a project which addresses Technical Management processes established by three principal sources (the project's contract or agreement, applicable organizational processes, and the systems engineering project team) as necessary to successfully accomplish the systems engineering-related tasks of the project. The terms technical planning and systems engineering planning are used interchangeably in this part of ISO/IEC/IEEE 24748 to emphasize or differentiate technical contributions in the processes under discussion. This part of ISO/IEC/IEEE 24748 draws on key aspects of the former ISO/IEC 26702 (IEEE 1220) to highlight additional practices and provide normative content for a SEMP.

AUSTRALIAN STANDARD

Systems and software engineering—Life cycle management

Part 4:
Systems engineering planning

1 Scope

This part of ISO/IEC/IEEE 24748

— specifies the Technical Management processes from ISO/IEC/IEEE 15288 that are required to be implemented for planning a systems engineering project,

— gives guidelines for applying the required processes,

— specifies a required information item, a plan for the technical management and execution of the project that is to be produced through the implementation of the Project Planning processes,

— gives guidelines for the format and content of the required information item, and

— provides normative definition of the content of the information item that results from the application of these processes to that end. In this part of ISO/IEC/IEEE 24748 that plan for technical project management is termed the Systems Engineering Management Plan (SEMP).

This part of ISO/IEC/IEEE 24748 is applicable to

— those who use or plan to use ISO/IEC/IEEE 15288 on projects dealing with man-made systems including software-intensive systems, software products, and services related to those systems and products,

— those who are responsible for the technical management of projects concerned with the engineering of systems,

— those responsible for executing ISO/IEC/IEEE 15288 system life cycle processes at a project level,

— organizations and individuals who are subcontracting a project management effort,

— anyone developing engineering management documentation to complete technical planning aspects of their project's processes.

In many organizations the various responsibilities of technical management are assigned to more than one person. Where the term "technical manager" or "systems engineering manager" is used in this part of ISO/IEC/IEEE 24748, the guidance, advice or normative requirement applies to the applicable role within the project or organization.

This part of ISO/IEC/IEEE 24748 is intended to provide guidance for two-party situations and may be equally applied where the two parties are from the same organization. This part of ISO/IEC/IEEE 24748 can also be used by a single party as self-imposed tasks.

This part of ISO/IEC/IEEE 24748 can also serve as guidance in multi-party situations, where high risks are inherent in the supply and integration of complex systems, and procurement can involve several suppliers, organizations or parties.

