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Contents

Page

Foreword

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Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

0 Introduction

0.1 Rationale for architecture processes

The complexity of human-made systems has grown to an unprecedented level, which leads to new opportunities and greater challenges for organizations that create, trade and utilize systems. To address these opportunities and challenges, it is increasingly necessary to apply concepts, principles, procedures and tools to make better architecture-related decisions, more effective architectures, better architecture strategy and increased architecture maturity. Architecture-related activities are now strategic aspects of projects and enterprises, and the use of architecture frameworks has become common practice in commercial, government, civil and military domains.

Architecture is increasingly applied to systems—and to other entities that are not traditionally considered to be systems, such as enterprises, services, data, business functions, mission areas, product lines, families of systems, software items, etc. The concept of architecture used in this document goes beyond the traditional use where the architecture entity is a system. This allows for a more generalized usage of architecture when the processes in this document are applied. These entities are becoming more complex and architecture practices are increasingly adopted to manage the complexity.

Within enterprises and the engineering disciplines, acknowledgement is increasing for the value added by architecture, both as a practice and in the realization of artifacts that guide engineering and management activities.

This document complements the architecture-related processes identified in ISO/IEC/IEEE 15288, ISO/IEC/IEEE 12207 and ISO 15704 with activities and tasks that enable architects and others to more effectively and efficiently implement architecture practices. Implementing these practices can help ensure that the architecture has greater influence on business and mission success.

0.2 Use of the term architecture in this document

This document uses the term architecture in a broad sense. When the word architecture is used without any qualifier the word refers to the general case where the architecture entails the fundamental concepts and properties of an architecture entity. When a qualifier is prepended to the word architecture, this indicates that the architecture applies to that entity, such as in the following cases:

— System Architecture: When the entity is a system.

— Enterprise Architecture: When the entity is an enterprise.

The following are kinds of architecture entities that can be dealt with by the architecture processes of this document: enterprise, organization, solution, system (including software systems), subsystem, business, data (as a data element or data structure), application, information technology (as a collection), mission, product, service, software item, hardware item, etc. The kind of entity can also be a product line, family of systems, system of systems, collection of systems, collection of applications, etc.

There can be cases where the word architecture is prepended by the subject of interest, not by the entity being architected, such as in the following examples: security architecture, functional architecture, physical architecture and so on. See E.4.1 for more examples.

Finally, there are cases when the word architecture is prepended by the purpose of the architecture, for example integration architecture, coherence architecture, design-control architecture, etc. See E.4.1 for more examples.

0.3 Purpose

The purpose of this document is to set the standard of performance for the governance, management, conceptualization, evaluation and elaboration of architectures, and activities that enable these processes. This document can be used as a process reference model in establishing architecture practice and be used across a range of contexts and situations. It provides guidance in conforming to