

INTERNATIONAL  
STANDARD

ISO/IEC/  
IEEE  
24774

First edition  
2021-05

---

---

**Systems and software engineering —  
Life cycle management —  
Specification for process description**

*Ingénierie du logiciel et des systèmes — Gestion du cycle de vie —  
Spécification pour la description des processus*



Reference number  
ISO/IEC/IEEE 24774:2021(E)

© ISO/IEC 2021  
© IEEE 2021

This document is a preview generated by EUS



**COPYRIGHT PROTECTED DOCUMENT**

© ISO/IEC 2021

© IEEE 2021

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO or IEEE at the respective address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

Institute of Electrical and Electronics Engineers, Inc  
3 Park Avenue, New York  
NY 10016-5997, USA

Email: [stds.ipr@ieee.org](mailto:stds.ipr@ieee.org)  
Website: [www.ieee.org](http://www.ieee.org)

# Contents

Page

<b>Foreword</b>	<b>iv</b>
<b>Introduction</b>	<b>v</b>
<b>1 Scope</b>	<b>1</b>
<b>2 Normative references</b>	<b>1</b>
<b>3 Terms and definitions</b>	<b>1</b>
<b>4 Conformance</b>	<b>4</b>
<b>5 Specification of a process description and its elements</b>	<b>4</b>
5.1 Elements of process description	4
5.2 Process and related concepts	4
5.3 Process description – required elements	6
5.3.1 General	6
5.3.2 Process name	7
5.3.3 Process purpose	7
5.3.4 Process outcomes	8
5.4 Process description – optional elements	9
5.4.1 General	9
5.4.2 Process activities	9
5.4.3 Process tasks	9
5.4.4 Notes	10
5.4.5 Process inputs	10
5.4.6 Process outputs	10
5.4.7 Process controls and constraints	11
<b>6 Process views and viewpoints</b>	<b>12</b>
6.1 The process view concept	12
6.2 Process viewpoint	12
6.3 Contents of a process view	12
<b>7 Claims of conformance to a process</b>	<b>13</b>
<b>Annex A (informative) Example process descriptions</b>	<b>14</b>
<b>Annex B (Informative) Process description traceability between elements</b>	<b>21</b>
<b>Annex C (informative) Example process view description</b>	<b>24</b>
<b>Bibliography</b>	<b>27</b>
<b>IEEE Notices and Abstract</b>	<b>29</b>

## Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO/IEC documents should be noted. This document was drafted in accordance with the rules given in the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives) or [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs)).

IEEE Standards documents are developed within the IEEE Societies and the Standards Coordinating Committees of the IEEE Standards Association (IEEE-SA) Standards Board. The IEEE develops its standards through a consensus development process, approved by the American National Standards Institute, which brings together volunteers representing varied viewpoints and interests to achieve the final product. Volunteers are not necessarily members of the Institute and serve without compensation. While the IEEE administers the process and establishes rules to promote fairness in the consensus development process, the IEEE does not independently evaluate, test, or verify the accuracy of any of the information contained in its standards.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)) or the IEC list of patent declarations received (see <https://patents.iec.ch>).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html). In the IEC, see [www.iec.ch/understanding-standards](http://www.iec.ch/understanding-standards).

ISO/IEC/IEEE 24774 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*, in cooperation with the Systems and Software Engineering Standards Committee of the IEEE Computer Society, under the Partner Standards Development Organization cooperation agreement between ISO and IEEE.

This first edition cancels and replaces ISO/IEC TR 24774:2010, which has been technically revised.

The main changes compared to ISO/IEC TR 24774:2010 are as follows:

- process definition and examples have been updated to reflect SC 7 latest standards;
- the former ISO/IEC Technical Report has been jointly revised with IEEE as an International Standard.

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](http://www.iso.org/members.html) and [www.iec.ch/national-committees](http://www.iec.ch/national-committees).

## Introduction

For an organization to function effectively, the organization has to determine and manage numerous interrelated activities and tasks to achieve its goals. An activity or a set of activities using resources and managed in order to enable the achievement of outcomes through the transformation of inputs into outputs can be considered a process. Often the output from one process forms the input to other processes. When processes are explicitly described and performed in a systematic manner, the likelihood of consistent quality in the results is improved. Thus, process descriptions and process models (frameworks of related processes) enable consistent performance and delivery of expected results.

A number of international, national and industry standards describe processes and process reference models. The process descriptions vary in format, content and level of prescription. The purpose of this document is to encourage uniformity in the description of processes. Uniform description of processes facilitates adoption, adaptation and improvement of standardized processes, as well as process assessment. The combination of processes and the development of process views from different reference models eases the development of new models and facilitates comparison of processes.

In order for users of standards to select the appropriate forms of process description and apply them in a consistent fashion, it is desirable to develop a common characterization of all of these forms of process description. This document presents requirements for the description of processes in terms of their format, content and level of prescription. The requirements of this document can be applied to any process model developed for any purpose.

This document is intended for use by all parties that define process models, for example systems and software engineers, sector or special interest groups, professional standards groups, researchers, and process assessors.



# Systems and software engineering — Life cycle management — Specification for process description

## 1 Scope

This document provides an explanation of considerations involved in defining a process. This document gives requirements and recommendations for the description of processes by identifying elements and rules for their formulation.

This document also describes the use of process views.

This document explains how conformance to a process can be defined, when the process is described in accordance with this document.

This document does not describe how processes are composed or otherwise aggregated into larger frameworks or life cycle models. Nor does the document cover how to assess or evaluate the performance of a process, or the output (products) of a process.

**NOTE** Two prominent International Standards in process description for software and system engineering are ISO/IEC/IEEE 12207 and ISO/IEC/IEEE 15288. These two standards have very similar process models. The information items associated with their process definitions are given in ISO/IEC/IEEE 15289. Other International Standards provide further characterization of a single life cycle process by elaborating the process elements and levying specific requirements on the execution of the process.

This document is applicable when processes are described for various process definitions in any party, organization or standard relating to systems and software engineering processes.

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO, IEC, and IEEE maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org>
- IEEE Standards Dictionary Online: available at <http://dictionary.ieee.org>

**NOTE 1** For additional terms and definitions in the field of systems and software engineering, see ISO/IEC/IEEE 24765, which is published periodically as a “snapshot” of the SEVOCAB (Systems and software Engineering Vocabulary) database and is publicly accessible at [computer.org/sevocab](http://computer.org/sevocab).

### 3.1 activity

set of cohesive *tasks* (3.20) of a *process* (3.8)

[SOURCE: ISO/IEC/IEEE 12207:2017, 3.1.3]