

ASME Y14.47-2019

Model Organization Practices

**Engineering Product Definition and
Related Documentation Practices**

AN AMERICAN NATIONAL STANDARD



**The American Society of
Mechanical Engineers**

ADOPTION NOTICE

ASME Y14.47, Model Organization Practices, was adopted on 23 January 2019 for use by the Department of Defense (DoD). Proposed changes by DoD activities must be submitted to the DoD Adopting Activity: Commander, U.S. Army ARDEC, ATTN: RDAR-EIQ-SA, Picatinny Arsenal, NJ 07806-5000 or emailed to usarmy.picatinny.ardec.list.ardec-stdzn-branch@mail.mil. Copies of this document may be purchased from The American Society of Mechanical Engineers (ASME), 150 Clove Road, 6th Floor, Little Falls, NJ 07424-2139; <http://www.asme.org>.

Custodians:

Army — AR
Navy — SA
Air Force — 16
DLA — DH

Adopting Activity:

Army — AR
(Project DRPR-2019-003)

Review Activities:

Army — AV, CR, MI, PT, TE, TM
Navy — AS, CG, CH, MC
Air Force — 04, 11, 24
DLA — IS
OSD — SE
Other — DC2, NS

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil>.

ASME Y14.47-2019

Model Organization Practices

**Engineering Product Definition and
Related Documentation Practices**

AN AMERICAN NATIONAL STANDARD



**The American Society of
Mechanical Engineers**

Two Park Avenue • New York, NY • 10016 USA

Date of Issuance: February 18, 2019

The next edition of this Standard is scheduled for publication in 2023.

Periodically certain actions of the ASME Y14 Committee may be published as Cases. Cases are published on the ASME website under the Y14 Committee Page at <http://go.asme.org/Y14committee> as they are issued.

Errata to codes and standards may be posted on the ASME website under the Committee Pages to provide corrections to incorrectly published items, or to correct typographical or grammatical errors in codes and standards. Such errata shall be used on the date posted.

The Y14 Committee Page can be found at <http://go.asme.org/Y14committee>. There is an option available to automatically receive an e-mail notification when errata are posted to a particular code or standard. This option can be found on the appropriate Committee Page after selecting "Errata" in the "Publication Information" section.

ASME is the registered trademark of The American Society of Mechanical Engineers.

This code or standard was developed under procedures accredited as meeting the criteria for American National Standards. The Standards Committee that approved the code or standard was balanced to assure that individuals from competent and concerned interests have had an opportunity to participate. The proposed code or standard was made available for public review and comment that provides an opportunity for additional public input from industry, academia, regulatory agencies, and the public-at-large.

ASME does not "approve," "rate," or "endorse" any item, construction, proprietary device, or activity.

ASME does not take any position with respect to the validity of any patent rights asserted in connection with any items mentioned in this document, and does not undertake to insure anyone utilizing a standard against liability for infringement of any applicable letters patent, nor assume any such liability. Users of a code or standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, is entirely their own responsibility.

Participation by federal agency representative(s) or person(s) affiliated with industry is not to be interpreted as government or industry endorsement of this code or standard.

ASME accepts responsibility for only those interpretations of this document issued in accordance with the established ASME procedures and policies, which precludes the issuance of interpretations by individuals.

No part of this document may be reproduced in any form,
in an electronic retrieval system or otherwise,
without the prior written permission of the publisher.

The American Society of Mechanical Engineers
Two Park Avenue, New York, NY 10016-5990

Copyright © 2019 by
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
All rights reserved
Printed in U.S.A.

CONTENTS

Foreword	v
Committee Roster	vi
Correspondence With the Y14 Committee	vii
1	General	1
1.1	Scope	1
1.2	Introduction	1
1.3	ASME Y14 Series Conventions	1
1.4	Reference to This Standard	2
1.5	Symbols	3
2	References	3
3	Terms and Definitions	3
3.1	Annotated Model	3
3.2	Annotation	3
3.3	Annotation and Attribute State	3
3.4	Annotation Plane	3
3.5	Associated Group	3
3.6	Attribute	3
3.7	Feature	3
3.8	Geometry State	4
3.9	Maturity State	4
3.10	Model-Based Definition (MBD)	4
3.11	Model-Based Enterprise (MBE)	4
3.12	Model Geometry	4
3.13	Notes	4
3.14	Organizational Element	4
3.15	Presentation	4
3.16	Presentation State	4
3.17	Representation	4
3.18	Saved View	4
3.19	Acronyms	4
4	Schema Framework Overview	5
4.1	General	5
4.2	Defining a Data Set Using MBD	5
4.3	Mapping Between Schemas	5
5	Data Set Completeness States	6
5.1	General	6
5.2	Maturity State	6
5.3	Geometry State	6

5.4	Annotation and Attribute State	6
6	Organizational Framework Requirements	10
6.1	Naming Conventions	10
6.2	Associated Groups	10
6.3	Presentation States	11
6.4	Product Definition Elements	17
6.5	Metadata	17

Nonmandatory Appendix

A	Application Examples of Data Set Completeness States	20
---	--	----

Figures

4-1	Example of an Annotated Model Used in MBD	5
5-1	Examples of Maturity States	7
5-2	Examples of Geometry States	8
5-3	Examples of Annotation and Attribute States	9
6-1	Associated Group of Fasteners	10
6-2	Characteristics Example	12
6-3	Datums Example	12
6-4	Default Notice Example	13
6-5	Management Data Example	13
6-6	Model-Only Example	14
6-7	Notes Example	15
6-8	Properties Example	15
6-9	Site Map Example	16
6-10	User-Defined Example — Runout Values	17

Tables

6-1	Examples of Types of Associated Groups That Can Be Used in a Part or Assembly	10
6-2	Example Naming Conventions for Presentation States	11
6-3	Metadata Elements	18
A-1	Application Examples of Data Set States	20