DRAFT International Standard

IEC/DIS 81346-50

Industrial systems, installations and equipment and industrial products — Structuring principles and reference designations —

Part 50: **Processes**

Systèmes industriels, installations et appareils, et produits industriels — Principes de structuration et désignations de référence —

Partie 50: Processus

ICS: 25.040.01; 01.110

ISO/TC **10**

Secretariat: **SIS**

Voting begins on:
2026-02-06

Voting terminates on:
2026-05-01

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENTS AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

This document is circulated as received from the committee secretariat.

This draft is submitted to a parallel vote in ISO and in IEC.

Reference number
IEC/DIS 81346-50:2026(en)

© IEC 2026



COPYRIGHT PROTECTED DOCUMENT

© ISO 2026

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 at the 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
Website: www.iso.org

Published in Switzerland

Annex H (informative) Example of reference designations within a system 13
Annex I (normative) Designation of relations between objects 13
Annex J (informative) Requirements for developing sector-specific parts of the International Standard 81346 series 13
Annex K (informative) Metadata resource for structure management 13
Annex L (informative) Recommendations for documentation of the application of the reference designation system 13
Annex M (informative) Fundamental ideas for this document 13
Annex N (informative) Relationship to other standards 13
Annex AA (normative) Classification letter codes for processes 14
AA.1 General 14
AA.2 Classes of prime processes 14
AA.3 Classes of activity processes 14
AA.4 Classes of task processes 17
Annex BB (informative) Use cases 30
BB.1 General 30
BB.2 Use case: Pump maintenance 30
BB.3 Use case: Project management planning 31
BB.4 Use case: Product development following ISO/IEC/IEEE 15288 33
Bibliography 36

Figure 1 – Classification hierarchy of processes 12
Figure BB.1 – Process flow diagram of pump maintenance 31
Figure BB.2 – Process breakdown structure of pump maintenance, ... 32
Figure BB.3 – Example of project management planning 33
Figure BB.4 – System life cycle processes as provided in ISO/IEC/IEEE 15288:2023, Figure 4 35

Table AA.1 – Classes of prime processes 14
Table AA.2 – Entry classes of the classification of activity processes 15
Table AA.3 – Classes of activity processes 15
Table AA.4 – Entry classes of task processes 18
Table AA.5 – Classes of task processes 19
Table BB.1 – Explanation to some of the processes shown in Figure BB.3 34
Table BB.2 – Example of mapping of technical processes of ISO/IEC/IEEE 15288 to the classification scheme of this document 36

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

Industrial systems, installations and equipment and industrial products — Structuring principles and reference designations

Part 50: Processes

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 81346-50 has been prepared by IEC technical committee 3: Documentation, graphical symbols and representations of technical information, in close cooperation with ISO technical committee 10: Technical product documentation. It is an International Standard.

It is published as a double logo standard and has the status of a horizontal publication in accordance with IEC Guide 108.

The text of this standard is based on the following documents: [IN PROGRESS]

FDIS	Report on voting
3/[xxx]/FDIS	3/[xxx]/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table. In ISO, the standard has been approved by [xx] members out of [xx] having cast a vote.

The language used for the development of this International Standard is English.

This document is to be read in conjunction with IEC 81346-1:2022. The provisions of the general rules dealt with in IEC 81346-1 are only applicable to this document insofar as they are specifically cited. When this document states “addition”, “modification” or “replacement”, the relevant text in IEC 81346-1:2022 is to be adapted accordingly.

Subclauses that are numbered with a 101 (102, 103, etc.) suffix are additional to the same subclause in IEC 81346-1:2022.

Tables and figures in this document that are new are numbered starting with 101.

New annexes in this document are lettered AA, BB, etc.

A list of parts of the 81346 International Standard, published under the general title *Industrial systems, installations and equipment and industrial products — Structuring principles and reference designations*, can be found on the IEC website.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications. [IN PROGRESS]

In this document, *italic type* is used as follows:

- the introductory statement in the clauses describing the applicability of the corresponding clause of IEC 81346-1:2022; and
- for the initial process (i.e. prime process, activity process and task process) in the definition of the entry classes of the classification schemes; and
- for the name indicating the parent class in the definition of a sub-class in the classification schemes.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

This document considers and supports the designation of processes and activities within industrial systems. The application of a reference designation system tailored for this purpose may lead to innovative perspectives and structuring of these elements, offering opportunities and potential for enhanced efficiency and optimization.

The users of this standard will be able to manage processes, relation among these and related properties in a more efficient and consistent way. When implemented, information across various data processing systems can be handled in an unambiguous way.

The focus of this addition to the 81346 International Standard series is to define classes of processes which are used in life cycle of a technical system or product.

The following advantages of designation systems in accordance with this international standard and the 81346-standard series in general will be more and more important in the future:

- The reference designation system can be applied in several technical fields in the same way and is not designed only for one;
- The reference designation is not bound to a fixed structural pattern. Thus, the designation system is expandible, which makes the interpretability in some cases quite complex. Therefore, an exact and computer sensible documentation and description is essential.

193 (Blank)

Industrial systems, installations and equipment and industrial products — Structuring principles and reference designations

Part 50: Processes

1 Scope

This part of 81346 International Standard, published jointly by IEC and ISO, provides, in combination with IEC 81346-1, rules and recommendations on the structuring of processes and the information on processes used in the life cycle of technical systems. It also provides classification schemes of those processes.

The structuring principles and the classes of processes are intended to be applied for providing unambiguous identification of processes throughout their life cycles.

This document is also a horizontal publication intended for use by technical committees in preparation of publications related to reference designations in accordance with the principles laid down in IEC Guide 108.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 81346-1:2022, *Industrial systems, installations and equipment and industrial products – Structuring principles and reference designations – Part 1: Basic rules*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 81346-1:2022 and the following apply.

3.1
information
knowledge concerning objects, such as facts, events, things, processes, or ideas (including concepts) that, within a certain context, has a particular meaning

[SOURCE: IEC 60050-171:2019, 171-01-01]

3.2
data
representation of *information* (3.1) in a formalized manner suitable for human or automatic processing

Note 1 to entry: Processing includes communication and interpretation.

Note 2 to entry: In English, the word "data" is generally used in plural form. For use in singular form, it can be called "data item".

[SOURCE: IEC 60050-171:2019, 171-01-02]

3.3
prime process
process that constitutes an overall step in the life cycle of a system

Note 1 to entry: A prime process is usually performed by an organization.

3.4
activity process
process where the set of operations are performed in a given sequence

Note 1 to entry: A activity process is usually performed by a team.

3.5
task process
process consisting of a specific work to be done

Note 1 to entry: A task process is usually performed by an individual.

Note 2 to entry: The work can be performed by using tools and resources.

3.6
procedure
specified way to carry out an activity or a process

[SOURCE: ISO 9000:2015, 3.4.5, modified – Note 1 to entry deleted.]

4 Concepts

4.1 Object

IEC 81346-1:2022, 4.1 applies.

4.2 Aspect

IEC 81346-1:2022, 4.2 applies with the following addition:

Add the following bullet to the bullets of the 2nd paragraph:

- intended or accomplished activities constituting an object – the process aspect.

4.3 Systems

IEC 81346-1:2022, 4.3 applies.

4.4 Structuring

IEC 81346-1:2022, 4.4 applies.

4.5 Function

IEC 81346-1:2022, 4.5 applies.

4.6 Products and components

IEC 81346-1:2022, 4.6 applies.

4.7 Location

IEC 81346-1:2022, 4.7 applies.

4.8 Types

IEC 81346-1:2022, 4.8 applies.

4.9 Object occurrences and product individuals

IEC 81346-1:2022, 4.9 applies.

4.10 Relations between concepts

IEC 81346-1:2022, 4.10 applies with the addition of the following subclause:

4.101 Processes

4.101.1 General

In this document the process aspect is introduced to filter process information about an object that is of relevance to it throughout its life cycle.

The application of the process aspect involves a structured approach to identify and designate processes. The process aspect is used to describe what happens with an object (e.g. system, person, organization) over time. This allows designers to create references in areas of:

1. **Organizational Strategies and Plans** such as market analysis, product development, and marketing campaigns, designated to track progress and ensure alignment with organizational goals. This helps in managing and executing strategic initiatives effectively, provides a clear roadmap, aligns activities with strategic goals, and enhances the ability to monitor and adjust plans as needed.

2. **Overall Development Projects** where software, construction, or other fields, processes such as requirements gathering, design, implementation, testing, and deployment can to be clearly identified. Reference designations help in managing these phases systematically, ensuring systematic progress, improving coordination among different phases, and enhancing the ability to manage project timelines and deliverables.

3. **Work Breakdown Structures (WBS)**, used to break down a project into smaller, manageable sections. By applying reference designations to each process within the WBS, project managers can ensure that every task is clearly identified and tracked, facilitating better planning, execution, and monitoring. Thereby, clarity is enhanced, task management is improved and ensuring that all project components are accounted for and properly coordinated

4. **Standard Operating Procedures (SOPs),** critical for maintaining consistency and quality. Reference designations for each procedure ensure that all steps are documented and easily accessible, which is essential for training, compliance and quality control. This promotes uniformity, ensures compliance with standards, and facilitates training and quality assurance.

5. **Lessons Learned Projects,** either as part of design projects, construction projects or other field processes, or as separate projects, where information such as cost, emissions, time and more, can be systemized, aggregated and related, for further analysis.

The process aspect is recognized by the prefix $ - DOLLAR

To differentiate between levels of abstraction, three classification libraries are used with definition of their own process types:

- prime processes;
- activity processes; and
- task processes.