

SVENSK STANDARD

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Vägfordon – Funktionssäkerhet i el- och elektroniksystem – Del 8: Stödprocesser (ISO 26262-8:2011, IDT)

Road vehicles – Functional safety – Part 8: Supporting processes (ISO 26262-8:2011, IDT)

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Postadress: SEK, Box 1284, 164 29 Kista
Telefon: 08-444 14 00.
E-post: sek@elstandard.se Internet: www.elstandard.se

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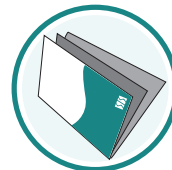
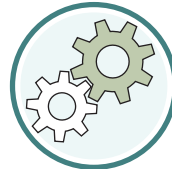
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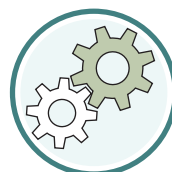
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Den internationella standarden ISO 26262-8:2011 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av ISO 26262-8:2011.

The International Standard ISO 26262-8:2011 has the status of a Swedish Standard. This document contains the official version of ISO 26262-8:2011.

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Information about the content of the standard is available from the Swedish Standards Institute (SIS), telephone +46 8 555 520 00. Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.

Denna standard är framtagen av kommittén för Funktionssäkerhet i elektronisksystem, SIS/TK 240/AG 16.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på www.sis.se - där hittar du mer information.



Contents

Page

Foreword	v
Introduction.....	vi
1 Scope	1
2 Normative references	2
3 Terms, definitions and abbreviated terms	2
4 Requirements for compliance.....	2
4.1 General requirements	2
4.2 Interpretations of tables.....	3
4.3 ASIL-dependent requirements and recommendations	3
5 Interfaces within distributed developments	3
5.1 Objectives	3
5.2 General	3
5.3 Inputs to this clause.....	4
5.4 Requirements and recommendations	4
5.5 Work products	7
6 Specification and management of safety requirements.....	7
6.1 Objectives	7
6.2 General	7
6.3 Inputs to this clause.....	9
6.4 Requirements and recommendations	9
6.5 Work products	12
7 Configuration management.....	12
7.1 Objectives	12
7.2 General	12
7.3 Inputs to this clause.....	12
7.4 Requirements and recommendations	13
7.5 Work products	13
8 Change management	13
8.1 Objectives	13
8.2 General	13
8.3 Inputs to this clause.....	13
8.4 Requirements and recommendations	14
8.5 Work products	15
9 Verification	16
9.1 Objectives	16
9.2 General	16
9.3 Inputs to this clause.....	16
9.4 Requirements and recommendations	17
9.5 Work products	18
10 Documentation	19
10.1 Objectives	19
10.2 General	19
10.3 Inputs to this clause.....	19
10.4 Requirements and recommendations	19
10.5 Work products	20
11 Confidence in the use of software tools	20

11.1	Objectives	20
11.2	General.....	21
11.3	Inputs to this clause	21
11.4	Requirements and recommendations	22
11.5	Work products.....	27
12	Qualification of software components	27
12.1	Objectives	27
12.2	General.....	27
12.3	Inputs to this clause	28
12.4	Requirements and recommendations	28
12.5	Work products.....	30
13	Qualification of hardware components	30
13.1	Objectives	30
13.2	General.....	31
13.3	Inputs to this clause	32
13.4	Requirements and recommendations	33
13.5	Work products.....	35
14	Proven in use argument.....	35
14.1	Objectives	35
14.2	General.....	35
14.3	Inputs to this clause	36
14.4	Requirements and recommendations	37
14.5	Work products.....	40
Annex A (informative)	Overview on and document flow of supporting processes	41
Annex B (informative)	DIA example.....	43
Bibliography		48

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 26262-8 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 3, *Electrical and electronic equipment*.

ISO 26262 consists of the following parts, under the general title *Road vehicles — Functional safety*:

- *Part 1: Vocabulary*
- *Part 2: Management of functional safety*
- *Part 3: Concept phase*
- *Part 4: Product development at the system level*
- *Part 5: Product development at the hardware level*
- *Part 6: Product development at the software level*
- *Part 7: Production and operation*
- *Part 8: Supporting processes*
- *Part 9: Automotive Safety Integrity Level (ASIL)-oriented and safety-oriented analyses*
- *Part 10: Guideline on ISO 26262*

Introduction

ISO 26262 is the adaptation of IEC 61508 to comply with needs specific to the application sector of electrical and/or electronic (E/E) systems within road vehicles.

This adaptation applies to all activities during the safety lifecycle of safety-related systems comprised of electrical, electronic and software components.

Safety is one of the key issues of future automobile development. New functionalities not only in areas such as driver assistance, propulsion, in vehicle dynamics control and active and passive safety systems increasingly touch the domain of system safety engineering. Development and integration of these functionalities will strengthen the need for safe system development processes and the need to provide evidence that all reasonable system safety objectives are satisfied.

With the trend of increasing technological complexity, software content and mechatronic implementation, there are increasing risks from systematic failures and random hardware failures. ISO 26262 includes guidance to avoid these risks by providing appropriate requirements and processes.

System safety is achieved through a number of safety measures, which are implemented in a variety of technologies (e.g. mechanical, hydraulic, pneumatic, electrical, electronic, programmable electronic) and applied at the various levels of the development process. Although ISO 26262 is concerned with functional safety of E/E systems, it provides a framework within which safety-related systems based on other technologies can be considered. ISO 26262:

- a) provides an automotive safety lifecycle (management, development, production, operation, service, decommissioning) and supports tailoring the necessary activities during these lifecycle phases;
- b) provides an automotive-specific risk-based approach to determine integrity levels [Automotive Safety Integrity Levels (ASIL)];
- c) uses ASILs to specify applicable requirements of ISO 26262 so as to avoid unreasonable residual risk;
- d) provides requirements for validation and confirmation measures to ensure a sufficient and acceptable level of safety being achieved;
- e) provides requirements for relations with suppliers.

Functional safety is influenced by the development process (including such activities as requirements specification, design, implementation, integration, verification, validation and configuration), the production and service processes and by the management processes.

Safety issues are intertwined with common function-oriented and quality-oriented development activities and work products. ISO 26262 addresses the safety-related aspects of development activities and work products.

Figure 1 shows the overall structure of this edition of ISO 26262. ISO 26262 is based upon a V-model as a reference process model for the different phases of product development. Within the figure:

- the shaded “V”s represent the interconnection between ISO 26262-3, ISO 26262-4, ISO 26262-5, ISO 26262-6 and ISO 26262-7;
- the specific clauses are indicated in the following manner: “m-n”, where “m” represents the number of the particular part and “n” indicates the number of the clause within that part.

EXAMPLE “2-6” represents Clause 6 of ISO 26262-2.

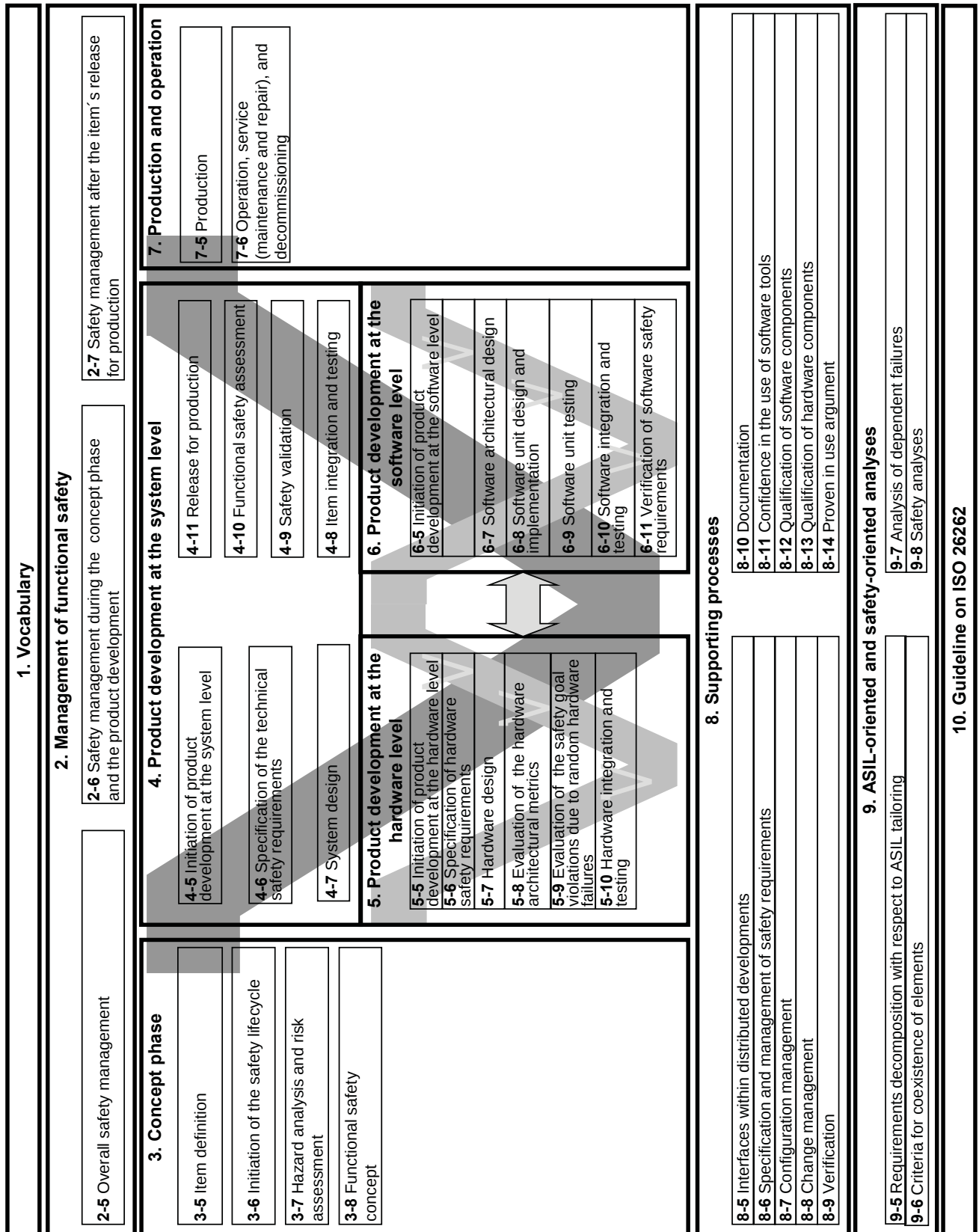


Figure 1 — Overview of ISO 26262

Road vehicles — Functional safety —

Part 8: Supporting processes

1 Scope

ISO 26262 is intended to be applied to safety-related systems that include one or more electrical and/or electronic (E/E) systems and that are installed in series production passenger cars with a maximum gross vehicle mass up to 3 500 kg. ISO 26262 does not address unique E/E systems in special purpose vehicles such as vehicles designed for drivers with disabilities.

Systems and their components released for production, or systems and their components already under development prior to the publication date of ISO 26262, are exempted from the scope. For further development or alterations based on systems and their components released for production prior to the publication of ISO 26262, only the modifications will be developed in accordance with ISO 26262.

ISO 26262 addresses possible hazards caused by malfunctioning behaviour of E/E safety-related systems, including interaction of these systems. It does not address hazards related to electric shock, fire, smoke, heat, radiation, toxicity, flammability, reactivity, corrosion, release of energy and similar hazards, unless directly caused by malfunctioning behaviour of E/E safety-related systems.

ISO 26262 does not address the nominal performance of E/E systems, even if dedicated functional performance standards exist for these systems (e.g. active and passive safety systems, brake systems, Adaptive Cruise Control).

This part of ISO 26262 specifies the requirements for supporting processes, including the following:

- interfaces within distributed developments,
- overall management of safety requirements,
- configuration management,
- change management,
- verification,
- documentation,
- confidence in the use of software tools,
- qualification of software components,
- qualification of hardware components, and
- proven in use argument.

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.

ISO 26262-1:2011, *Road vehicles — Functional safety — Part 1: Vocabulary*

ISO 26262-2:2011, *Road vehicles — Functional safety — Part 2: Management of functional safety*

ISO 26262-3:2011, *Road vehicles — Functional safety — Part 3: Concept phase*

ISO 26262-4:2011, *Road vehicles — Functional safety — Part 4: Product development at the system level*

ISO 26262-5:2011, *Road vehicles — Functional safety — Part 5: Product development at the hardware level*

ISO 26262-6:2011, *Road vehicles — Functional safety — Part 6: Product development at the software level*

ISO 26262-7:2011, *Road vehicles — Functional safety — Part 7: Production and operation*

ISO 26262-9:2011, *Road vehicles — Functional safety — Part 9: Automotive Safety Integrity Level (ASIL)-oriented and safety-oriented analyses*

ISO/IEC 12207, *Systems and software engineering — Software life cycle processes*