

# SLOVENSKI STANDARD SIST-TP CLC IEC/TR 61511-0:2019

01-november-2019

Funkcijska varnost - Sistemi z varnostnimi instrumenti za sektor procesne industrije - 0. del: Funkcijska varnost za procesno industrijo in IEC 61511

Functional safety - safety instrumented systems for the process industry sector - Part 0: Functional safety for the process industry and IEC 61511

Funktionale Sicherheit - PLT-Sicherheitseinrichtungen für die Prozessindustrie - Teil 0: Funktionale Sicherheit für die Prozessindustrie und IEC 61511

Sécurité fonctionnelle - Systèmes instrumentes de sécurité pour le secteur des industries de transformation - Partie 0: Sécurité fonctionnelle relative aux industries de transformation et l'IEC 61511 SIST-TP CLC IEC/TR 61511-0:2019 https://standards.iteh.ai/catalog/standards/sist/96e0d7d1-21a3-48df-a6b0-0131d4f11ad2/sist-tp-clc-iec-tr-61511-0-2019

Ta slovenski standard je istoveten z: CLC IEC/TR 61511-0:2019

ICS:

25.040.01 Sistemi za avtomatizacijo v

industriji na splošno

Industrial automation systems in general

SIST-TP CLC IEC/TR 61511-0:2019

en,fr,de

SIST-TP CLC IEC/TR 61511-0:2019

# iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST-TP CLC IEC/TR 61511-0:2019
https://standards.iteh.ai/catalog/standards/sist/96e0d7d1-21a3-48df-a6b0-0131d4f11ad2/sist-tp-clc-iec-tr-61511-0-2019

TECHNICAL REPORT

**CLC IEC/TR 61511-0** 

RAPPORT TECHNIQUE

TECHNISCHER BERICHT

July 2019

ICS 13.110; 25.040.01

### **English Version**

Functional safety - Safety instrumented systems for the process industry sector - Part 0: Functional safety for the process industry and IEC 61511 (IEC/TR 61511-0:2018)

Sécurité fonctionnelle - Systèmes instrumentés de sécurité pour le secteur des industries de transformation - Partie 0:
Sécurité fonctionnelle relative aux industries de transformation et l'IEC 61511
(IEC/TR 61511-0:2018)

Funktionale Sicherheit - PLT-Sicherheitseinrichtungen für die Prozessindustrie - Teil 0: Funktionale Sicherheit für die Prozessindustrie und IEC 61511 (IEC/TR 61511-0:2018)

## This Technical Report was approved by CENELEC on 2019-07-01. D PREVIEW

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

https://standards.iteh.ai/catalog/standards/sist/96e0d7d1-21a3-48df-a6b0-0131d4f11ad2/sist-tp-clc-iec-tr-61511-0-2019



European Committee for Electrotechnical Standardization Comité Européen de Normalisation Electrotechnique Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

### CLC IEC/TR 61511-0:2019 (E)

## **European foreword**

This document (CLC IEC/TR 61511-0:2019) consists of the text of IEC/TR 61511-0:2018 prepared by IEC/SC 65A "System aspects", of IEC technical committee 65 "Industrial-process measurement, control and automation".

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

#### **Endorsement notice**

The text of the International Standard IEC/TR 61511-0:2018 was approved by CENELEC as a European Standard without any modification.

# iTeh STANDARD PREVIEW (standards.iteh.ai)

<u>SIST-TP CLC IEC/TR 61511-0:2019</u> https://standards.iteh.ai/catalog/standards/sist/96e0d7d1-21a3-48df-a6b0-0131d4f11ad2/sist-tp-clc-iec-tr-61511-0-2019

CLC IEC/TR 61511-0:2019 (E)

## Annex ZA

(normative)

# Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication IEC 61511-1	<u>Year</u> 2016 <b>iT</b>	Title  Functional safety - Safety instrumented systems for the process industry sector Part 1: Framework, definitions, system, hardware and application programming requirements		<u>Year</u> 2017
IEC 61511-2	2016 https://sta	Functional safety Safety instrumented systems for the process industry sector 48 Part 2 Guidelines for the application of JEC 61511-1:2016		2017
IEC 61511-3	2016	Functional safety - Safety instrumented systems for the process industry sector - Part 3: Guidance for the determination of the required safety integrity levels	EN 61511-3	2017

SIST-TP CLC IEC/TR 61511-0:2019

# iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST-TP CLC IEC/TR 61511-0:2019
https://standards.iteh.ai/catalog/standards/sist/96e0d7d1-21a3-48df-a6b0-0131d4f11ad2/sist-tp-clc-iec-tr-61511-0-2019



# IEC TR 61511-0

Edition 1.0 2018-01

# **TECHNICAL REPORT**

Functional safety instrumented systems for the process industry Part 0: Functional safety for the process industry and IEC 61511

SIST-TP CLC IEC/TR 61511-0:2019 https://standards.iteh.ai/catalog/standards/sist/96e0d7d1-21a3-48df-a6b0-0131d4fl1ad2/sist-tp-clc-iec-tr-61511-0-2019

**INTERNATIONAL ELECTROTECHNICAL COMMISSION** 

ICS 13.110, 25.040.01 ISBN 978-2-8322-5302-1

Warning! Make sure that you obtained this publication from an authorized distributor.

IEC TR 61511-0:2018 © IEC 2018

## **CONTENTS**

– 2 –

FOREWORD		
1 Scope	5	
2 Normative references	5	
3 Terms and definitions	5	
4 Process industry environment and the Safety Instrumented System (SIS)	5	
4.1 General	5	
4.2 Safety Instrumented Functions (SIF)	6	
4.3 Safety Instrumented System (SIS) components	6	
5 IEC 61511 – Part 1		
6 IEC 61511 – Part 2	8	
7 IEC 61511 – Part 3	8	
8 Utilization of IEC 61511 in system design	8	
Figure 1 – SIS safety life-cycle phases and functional safety assessment (FSA) s	tages7	

# iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST-TP CLC IEC/TR 61511-0:2019 https://standards.iteh.ai/catalog/standards/sist/96e0d7d1-21a3-48df-a6b0-0131d4f11ad2/sist-tp-clc-iec-tr-61511-0-2019

#### INTERNATIONAL ELECTROTECHNICAL COMMISSION

FUNCTIONAL SAFETY –
SAFETY INSTRUMENTED SYSTEMS
FOR THE PROCESS INDUSTRY SECTOR –

### Part 0: Functional safety for the process industry and IEC 61511

#### **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.

The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

IEC TR 61511-0, which is a technical report, has been prepared by subcommittee 65A: System aspects, of IEC technical committee 65: Industrial-process measurement, control and automation.