EESTI STANDARD

EVS-EN IEC 62890:2020

Industrial-process measurement, control and automation - Life-cycle-management for systems and components

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA / NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 62890:2020 sisaldab Euroopa standardi EN IEC 62890:2020 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 62890:2020 consists of the English text of the European standard EN IEC 62890:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 11.09.2020.	Date of Availability of the European standard is 11.09.2020.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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ICS 25.040.40

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62890

September 2020

ICS 25.040.40

English Version

Industrial-process measurement, control and automation - Life-cycle-management for systems and components (IEC 62890:2020)

Mesure, commande et automation dans les processus industriels - Gestion du cycle de vie des systèmes et produits (IEC 62890:2020)

Industrielle Leittechnik - Life-cycle-Management von Systemen und Komponenten (IEC 62890:2020)

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CENELEC

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

Ref. No. EN IEC 62890:2020 E

European foreword

The text of document 65/805/FDIS, future edition 1 of IEC 62890, prepared by IEC/TC 65 "Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62890:2020.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2021-05-26
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2023-08-26

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61804-2	NOTE	Harmonized as EN IEC 61804-2
IEC 61804-3	NOTE	Harmonized as EN 61804-3
IEC 61987 (series)	NOTE	Harmonized as EN IEC 61987 (series)
IEC 61987-10	NOTE	Harmonized as EN 61987-10
IEC 62402:2019	NOTE	Harmonized as EN IEC 62402:2019 (not modified)
IEC 62264-1	NOTE	Harmonized as EN 62264-1

IEC 62890

Edition 1.0 2020-07

INTERNATIONAL STANDARD

colour inside

Industrial-process measurement, control and automation – Life-cycle-management for systems and components

IEC 62890:2020-07(en)

IEC 62890

Edition 1.0 2020-07

INTERNATIONAL STANDARD

colour inside

Industrial-process measurement, control and automation – Life-cycle-management for systems and components

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 25.040.40

ISBN 978-2-8322-8683-8

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INDUSTRIAL-PROCESS MEASUREMENT, CONTROL AND AUTOMATION – LIFE-CYCLE-MANAGEMENT FOR SYSTEMS AND COMPONENTS

FOREWORD

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International Standard IEC 62890 has been prepared by IEC technical committee 65: Industrial-process measurement, control and automation.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
65/805/FDIS	65/820/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

In today's automation applications, an increasing divergence of the life-cycles of components, devices and systems in comparison to the life time of overall plants is evident. The increasing functionality of components, the advancing development of electronics and the innovation dynamics inherent to hardware and software are continuously shortening the life-cycle of individual automation components. Certain semiconductor components are only manufactured for a short period of time, for example, and subsequently abandoned.

By comparison, the time in use of automation systems is considerably longer. Moreover, there are considerable differences depending on the industry sector. The time in use of a production line in the automobile industry is usually identical with the period of time in which a new model is manufactured which is around 7 to 8 years today. By comparison, the operational life of a process plant in the chemical industry is typically some 15 years, while up to 50 years may be reached in the case of oil and energy, and power plants. The plant and product life-cycles have to be considered by the management for the overall plant functionality and economic considerations.

Increased utilization and integration of plant process data from automation systems towards enterprise and asset management systems has caused technology dependencies between hierarchy layers of automation systems. A more uniform way of dealing with Life-Cycle Management between these layers and all partners in the value chain is essential with respect to plant regularity, operability and security aspects.

Consequently, this necessitates different strategies to maintain the availability of the plant by. sophisticated maintenance strategies. As a result, considerable demands are made on the delivery capacity of automation products and spare parts, as well as the provision of services, such as maintenance and repairs. For example, when the planning of a new plant envisages the usage of a newer version of an engineering system, the producer has to ensure that this newer version can also be employed for older components and systems already in use in the existing plant and may have to develop upgrades accordingly. To an increasing extent, this calls for close cooperation between the partners along the value chain.

The presented situation illustrates that mastering these conflicting characteristics of Life-Cycle-Management will become increasingly significant in automation, not least in the ongoing discussions between plant users and manufacturers as well as manufacturers and suppliers. The interaction between global, legal and technical aspects – including demands for high functionality and efficiency, as well as the influence of IT technologies in automation – helps to demonstrate the scope of this topic.

This International Standard has been prepared in response to this situation. It is comprised of basic, complementary and consistent models and strategies for Life-Cycle-Management in automation. These generic models and strategies are then applied to various examples.

Consequently, this document represents a consistent general approach, which is applicable to automation in various industrial sectors. The economic significance of Life-Cycle-Management is a recurring theme of this document. The definitions of generic models, terms, processes and strategies form an indispensable foundation for a joint understanding between plant users and manufacturers and between manufacturers and suppliers regarding Life-Cycle-Management.

Proactive Life-Cycle-Management focuses on the selection of robust components, specifications, and technologies that consequently have long-term stability. The proactive approach includes the application of this set of generic reference models in the development of standards in order to be able to efficiently ensure sustainable interoperability and compatibility.

INDUSTRIAL-PROCESS MEASUREMENT, CONTROL AND AUTOMATION – LIFE-CYCLE-MANAGEMENT FOR SYSTEMS AND COMPONENTS

1 Scope

This International Standard establishes basic principles for Life-Cycle-Management of systems and components used for industrial-process measurement, control and automation. These principles are applicable to various industrial sectors. This standard provides definitions and reference models related to the life-cycle of a product type and the life time of a product instance, It defines a consistent set of generic reference models and terms. The key models defined are:

– Life-Cycle-Model;
– structure model;
– compatibility model.

This document also describes the application of these models for Life-Cycle-Management strategies. The content is used for technical aspects concerning the design, planning, development and maintenance of automation systems and components and the operation of the plant.

The definitions of generic models and terms regarding Life-Cycle-Management are indispensable for a common understanding and application by all partners in the value chain such as plant user, product and system producer, service provider, and component supplier.

The models and strategies described in this standard are also applicable for related management systems, i.e. MES and ERP.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviations

3.1 Terms and definitions

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

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

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1.1
after-sales support phase
phase in the life-cycle of a product type which begins at the end of the selling phase and ends with product abandonment

3.1.2
backward compatibility
downward compatibility
fulfilment by a new component of all the specified requirements of the compatibility profile of its predecessor

Note 1 to entry: Antonyms are forward compatibility and upward compatibility, respectively.