



NSAI
Standards

Irish Standard
I.S. EN ISO 9241-220:2019

Ergonomics of human-system interaction -
Part 220: Processes for enabling,
executing and assessing human-centred
design within organizations (ISO 9241-
220:2019)

I.S. EN ISO 9241-220:2019

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:

EN ISO 9241-220:2019

Published:

2019-04-17

This document was published under the authority of the NSAI and comes into effect on:

2019-05-05

ICS number:

13.180

35.180

NOTE: If blank see CEN/CENELEC cover page

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN ISO 9241-220:2019 is the adopted Irish version of the European Document EN ISO 9241-220:2019, Ergonomics of human-system interaction - Part 220: Processes for enabling, executing and assessing human-centred design within organizations (ISO 9241-220:2019)

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

For relationships with other publications refer to the NSAI web store.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This page is intentionally left blank

EUROPEAN STANDARD

EN ISO 9241-220

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2019

ICS 13.180; 35.180

English Version

**Ergonomics of human-system interaction - Part 220:
Processes for enabling, executing and assessing human-
centred design within organizations (ISO 9241-220:2019)**

Ergonomie de l'interaction homme-système - Partie
220: Processus de validation, d'exécution et
d'évaluation de la conception centrée sur l'opérateur
humain au sein des organisations (ISO 9241-220:2019)

Ergonomie der Mensch-System-Interaktion - Teil 220:
Prozesse zur Ermöglichung, Durchführung und
Bewertung menschenzentrierter Gestaltung für
interaktive Systeme in Hersteller- und
Betreiberorganisationen (ISO 9241-220:2019)

This European Standard was approved by CEN on 17 March 2019.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

EN ISO 9241-220:2019 (E)

Contents	Page
European foreword.....	3

European foreword

This document (EN ISO 9241-220:2019) has been prepared by Technical Committee ISO/TC 159 "Ergonomics" in collaboration with Technical Committee CEN/TC 122 "Ergonomics" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2019, and conflicting national standards shall be withdrawn at the latest by October 2019.

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

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 9241-220:2019 has been approved by CEN as EN ISO 9241-220:2019 without any modification.

This page is intentionally left blank

INTERNATIONAL
STANDARD

ISO
9241-220

First edition
2019-03

**Ergonomics of human-system
interaction —**

Part 220:
**Processes for enabling, executing
and assessing human-centred design
within organizations**

Ergonomie de l'interaction homme-système —

*Partie 220: Processus de validation, d'exécution et d'évaluation de la
conception centrée sur l'opérateur humain au sein des organisations*



Reference number
ISO 9241-220:2019(E)

© ISO 2019

ISO 9241-220:2019(E)



COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

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
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	2
3 Terms and definitions	2
4 Abbreviated terms	10
5 Conformance	10
6 Purpose and benefits of this document	11
6.1 Purpose of human-centred design	11
6.2 Purpose of HCD process descriptions	12
6.3 Benefits of using HCD process descriptions	12
7 HCD processes	12
7.1 HCD process model	12
7.2 HCD processes	13
7.3 Relationships between the HCD processes	15
8 Using the HCD process descriptions	16
8.1 Uses of the process descriptions	16
8.1.1 General	16
8.1.2 Implementing human-centred design as part of a system development or procurement process and/or support life cycle	16
8.1.3 Assessing an enterprise's existing capability to carry out the human- centred processes	16
8.1.4 Improving the application of human-centred design as part of an existing system development process	17
8.1.5 Development of competence in human-centred design	17
8.2 Applying the process descriptions	17
8.2.1 General	17
8.2.2 Integration with systems and software engineering	18
8.2.3 Implementation of the processes	18
8.2.4 Iteration of processes	19
9 HCD process descriptions	19
9.1 Format	19
9.2 Ensure enterprise focus on human-centred quality (HCP.1)	19
9.2.1 Purpose and outcomes of HCP.1	19
9.2.2 Incorporate human-centred quality in business strategy (HCP.1.1)	20
9.2.3 Institutionalize human-centred quality (HCP.1.2)	21
9.3 Enable human-centred design across projects and systems (HCP.2)	22
9.3.1 Purpose and outcomes of HCP.2	22
9.3.2 Integration of human-centred design (HCP.2.1)	22
9.3.3 Resources for human-centred design (HCP.2.2)	23
9.3.4 Authorization and control of human-centred quality (HCP.2.3)	24
9.4 Execute human-centred design within a project (HCP.3)	25
9.4.1 Purpose and outcomes of HCP.3	25
9.4.2 Plan and manage human-centred design for the project (HCP.3.1)	26
9.4.3 Identify the context of use (HCP.3.2)	31
9.4.4 Establish the user requirements (HCP.3.3)	33
9.4.5 Design solutions that meet user requirements (HCP.3.4)	39
9.4.6 User-centred evaluation (HCP.3.5)	43
9.5 Introduction, operation and end of life of a system (HCP.4)	47
9.5.1 Overall purposes and outcomes	47
9.5.2 Introducing the system (HCP.4.1)	48

ISO 9241-220:2019(E)

9.5.3	Human-centred quality in operation (HCP.4.2).....	50
9.5.4	Human-centred quality during upgrades (HCP.4.3).....	50
9.5.5	Human-centred quality at the end of life of a system (HCP.4.4).....	51
Annex A	(informative) Work products for HCD processes.....	53
Annex B	(normative) Tailoring of processes and work products.....	65
Annex C	(informative) Relationship to other human-centred design standards.....	68
Annex D	(informative) Uses of the document.....	75
Annex E	(informative) Human-centred quality.....	79
Annex F	(informative) Risk management and human-centred design.....	85
Bibliography	88

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 4, *Ergonomics of human-system interaction*.

This first edition of ISO 9241-220 cancels and replaces ISO/TR 18529:2000.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

ISO 9241-220:2019(E)

Introduction

This document describes processes that represent good practice for human-centred design within and across projects. Human-centred design is an approach to system design and development that aims to improve usability, accessibility and user experience and avoid harm from use, by focussing on the use of the system.

The primary intended users of this document are professionals responsible for institutionalising human-centred design in an organization, who need to specify, assess and improve human-centred design in the organization. This application needs the clear and consistent structure that is provided by process definitions, as described in ISO/IEC TR 24774. For an introduction to human-centred design, see ISO 9241-210 (described below).

Process models were developed to provide:

- the potential to analyse the ability of an organization to deliver and/or maintain a system that meets a required level of performance and quality;
- a description of the factors that hinder this ability; and
- a means of addressing such shortcomings and mitigating associated risks of adverse consequences.

These have led to the widespread adoption of process modelling and assessment as an element in the assurance of timely and effective system delivery. Processes are defined at the level of **what** is done to develop and operate a system or organization.

The processes in this document represent good practice in human-centred design from a range of industries. They are described from the perspective of those who analyse, design and evaluate the human use of interactive systems. This includes associated requirements for project management and top management support for human-centred design.

This document uses the same structured format as other International Standards for process models (such as ISO/IEC/IEEE 12207 and ISO/IEC/IEEE 15288). ISO/IEC/IEEE 12207 refers to this document for information on human-centred design and usability.

Human-centred design aims to achieve required levels of human-centred quality. In this document, human-centred quality is the collective term used to refer to usability, accessibility, user experience, and avoidance of harm from use (see [Annex E](#)).

This document can be used to:

- implement human-centred design as part of a system development or procurement process and/or support life cycle;
- assess an enterprise's existing capability to carry out the human-centred processes;
- improve the application of human-centred design as part of an existing system development process;
- develop competence in human-centred design.

For executives/top management, this document gives guidance on governance in the area of human-centred quality. Use of this guidance gives confidence that interactive systems developed and used by an organization are usable and accessible.

For managers, this document facilitates integration of human-centred design into the system life cycle and quality management system. Human-centred activities can be specified, assessed and improved as required for projects.

This document enables efficient interaction between human-centred design and other disciplines. The services and information that human-centred design staff provide to projects are defined so that their value and purpose can be understood.

Relationship to ISO 9241-210

ISO 9241-210 describes the principles of a human-centred approach and the activities necessary for human-centred design of an interactive system. Conformance is achieved by carrying out all the required activities and those recommended activities that are identified as being relevant. ISO 9241-210 describes HCD activities in less detail than this document and can be used to provide an overview of a project's basic capabilities in human-centred design.

This document extends the model in ISO 9241-210, and elaborates the principles and activities as structured processes with defined outcomes for the execution of human-centred design within a project.

[Annex C](#) identifies the specific aspects of the processes in this document that are associated with the requirements and recommendations in ISO 9241-210 by mapping between them. Application of relevant HCD processes as described in document can be used as a means of showing conformance to ISO 9241-210. The extra detail can provide a basis for organizational improvements in human-centred design where any non-compliances are identified.

Ergonomics of human-system interaction —

Part 220:

Processes for enabling, executing and assessing human-centred design within organizations

1 Scope

This document describes the processes and specifies the outcomes by which human-centred design (HCD) is carried out within organizations. Human-centred design aims to meet requirements for human-centred quality (see [Annex E](#)) throughout the life cycle of interactive systems. The processes are described from the viewpoint of those responsible for the analysis, design and evaluation of the human use of interactive systems. The process descriptions include the purpose, benefits, outcomes, typical activities and work products for each process, and are for use in the specification, implementation, assessment and improvement of the activities used for human-centred design and operation in any type of system life cycle. They can also provide the basis for professional development and certification.

The processes are associated with the domains of ergonomics/human factors, human-computer interaction, usability and user experience. This document does not include specific methods for human-centred design, nor does it describe processes for organizational redesign.

The scope of this document does not include other aspects of ergonomics, which include the design of organizations as well as systems for human use, and which extend beyond the domain of design; for example in the forensic analysis of the causes of accidents and in the generation of data and methods of measurement.

NOTE 1 ISO/TS 18152 is a related standard with a broader scope than this document. It includes the organizational processes for the identification and handling of issues related to both users and other stakeholders.

The intended application of this document is computer-based interactive systems. While the processes apply to interactive systems that deliver services, they do not cover the design of those services. The relevant aspects of the processes can also be applied to simple or non-computer-based interactive systems.

NOTE 2 Human-centred design concentrates on the human-centred aspects of design and not on other aspects of design such as mechanical construction, programming or the basic design of services.

The process descriptions in this document provide the basis for a rigorous assessment of an enterprise's capability to carry out human-centred processes in compliance with the ISO/IEC 33000 family of standards.

This document is intended for use by organizations that want to address and improve their treatment of human-centred design of either their internal systems or the products and services they provide, and the procurement of systems and parts of systems. The processes can be applied by small- and medium-sized enterprises as well as by large organizations.

Copyright release for the process descriptions

Users of this document may freely reproduce the process descriptions contained in [Clause 9](#) as part of any process assessment model, or as part of any demonstration of compatibility with this document, so that it can be used for its intended purpose.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
 - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-