
**Ergonomics of human-system
interaction —**

**Part 210:
Human-centred design for
interactive systems**

Ergonomie de l'interaction homme-système —

*Partie 210: Conception centrée sur l'opérateur humain pour les
systèmes interactifs*



Reference number
ISO 9241-210:2019(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	1
3 Terms and definitions	1
4 Rationale for adopting human-centred design	4
5 Principles of human-centred design	6
5.1 General	6
5.2 The design is based upon an explicit understanding of users, tasks and environments	6
5.3 Users are involved throughout design and development	6
5.4 The design is driven and refined by user-centred evaluation	7
5.5 The process is iterative	7
5.6 The design addresses the whole user experience	7
5.7 The design team includes multidisciplinary skills and perspectives	8
6 Planning human-centred design	9
6.1 General	9
6.2 Responsibility	9
6.3 Content of plan	9
6.4 Integration with project plan	10
6.5 Timing and resources	10
7 Human-centred design activities	10
7.1 General	10
7.2 Understanding and specifying the context of use	12
7.2.1 General	12
7.2.2 Context-of-use description	13
7.2.3 Sufficient detail to support design	13
7.2.4 Context of use specified for design	13
7.3 Specifying the user requirements	13
7.3.1 General	13
7.3.2 Identifying user and other stakeholder needs	14
7.3.3 Deriving user requirements	14
7.3.4 Resolving trade-offs between user requirements	14
7.3.5 Ensuring the quality of user requirements specifications	14
7.4 Producing design solutions	15
7.4.1 General	15
7.4.2 Designing user tasks, user-system interaction and user interface to meet user requirements, taking into consideration the whole user experience	15
7.4.3 Making design solutions more concrete	16
7.4.4 Altering the design solutions based on user-centred evaluation and feedback	17
7.4.5 Communicating the design solution to those responsible for implementation	17
7.5 Evaluating the design	17
7.5.1 General	17
7.5.2 Conducting user-centred evaluation	18
7.5.3 User-centred evaluation methods	18
7.5.4 User-based testing	18
7.5.5 Inspection-based evaluation	19
7.5.6 Long-term monitoring	19
8 Sustainability and human-centred design	20
9 Conformance	20
Annex A (informative) Overview of the ISO 9241 series	22

Annex B (informative) Sample procedure for assessing applicability and conformance	23
Bibliography	33

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*.

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.

This second edition cancels and replaces the first edition (ISO 9241-210:2010), of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

- [Figure 1](#) has been updated for clarity;
- additional information about accessibility has been added in [7.1](#);
- editorial changes have been made to align with the ISO/IEC Directives, Part 2.

A list of all parts in the ISO 9241 series can be found on the ISO website.