International Standard

ISO 25062

First edition
2025-01

Systems and software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE) — Common Industry Format (CIF) for reporting usability evaluations

Ingénierie des systèmes et logiciels — Exigences et évaluation de la qualité des systèmes et logiciels (SQuaRE) — Format industriel commun pour le reporting des évaluations d'utilisabilité

Reference number
ISO 25062:2025(en)

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Published in Switzerland

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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 document 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).

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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 25062 cancels and replaces the first edition ISO/IEC 25062:2006, which has been technically revised.

The main change is as follows:

— the scope of the document has been significantly expanded to go beyond usability test reports and deal with all types of usability evaluations.

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.

Introduction

This document provides a framework and consistent terminology for reporting the results of usability evaluations of an interactive system. It is intended to assist those who perform usability evaluations in documenting and communicating the results of usability evaluations as part of the system development lifecycle.

NOTE ISO/IEC 25040 specifies a framework for quality evaluation.

The human-centred design approach of ISO 9241-210 is well established and focuses specifically on making systems usable. Usability can be achieved by applying human-centred design throughout the system development lifecycle. It is important that all the relevant types of information related to usability (information items) are identified and communicated as part of a human-centred approach. The identification and communication of relevant types of information related to usability enables the design and testing of the usability of a system.

The information items for reporting the results of usability evaluations of an interactive system can be integrated in any process models. For the purpose of establishing process models, ISO/IEC/IEEE 24774 and ISO/IEC TS 33061 specify the format and conformity requirements for process models, respectively. In addition, ISO/IEC/IEEE 15289 defines the types and content of information items developed and used in process models for system and software life cycle management. ISO/IEC TS 33060 and ISO/IEC TS 33061 define work products, including information items, for the purpose of process capability assessment. Process models and associated information items for human-centred design of interactive systems are contained in ISO 9241-210 and ISO TS 18152, respectively.

The common industry format (CIF) for usability documents are part of the SQuaRE (Systems and software Quality Requirements and Evaluation) group of standards developed by ISO/TC 159, and described in ISO/IEC 25000, *Systems and software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE) — Guide to SQuaRE*.

The CIF documents use definitions that are consistent with the ISO 9241 series on ergonomics of human-system interaction, as this is the terminology that is normally used for this subject matter.

ISO TR 25060 gives an overview of the CIF standards, which include documents covering the following information items:

— reporting usability evaluations (ISO 25062);

— context of use description (ISO/IEC 25063);

— user needs report (ISO/IEC 25064);

— user requirements specification (ISO 25065).

Table 1 presents an overview of the structure and the contents of the SQuaRE standards.

Table 1 — Organization of the SQuaRE series

SQuaRE architecture and sub-projects		
ISO/IEC 25030 covering quality requirements	ISO/IEC 25010, ISO/IEC 25011, ISO/IEC 25012, and ISO/IEC 25019 covering quality models	ISO/IEC 25040 covering quality evaluation
	ISO/IEC 25001 covering quality management	
	ISO/IEC 25020, ISO/IEC 25021, ISO/IEC 25022, ISO/IEC 25023, ISO/IEC 25024 and ISO/IEC 25025 covering quality measurement	
Future standards are planned, covering the following, outside of the current architecture: — requirements for quality of ready to use software products (RUSP); — the common industry format (CIF) for usability division.		

While this document specifies the minimum content of the various types of usability evaluation reports, ISO 9241-220 introduces the human-centred design processes including:

— identifying the context of use;

— identifying user needs;

— specifying the user requirements;

— specifying the user-system interaction;

— producing and refining user interface design solutions;

— evaluating user-centred design.

Table 2 illustrates the interdependence of these information items with the human-centred design processes described in ISO 9241-220, as well as the corresponding system life cycle processes described in ISO/IEC/IEEE 15288.

Table 2 — Relationship of CIF documents to ISO 9241-220 and ISO/IEC/IEEE 15288

Human-centred design (HCD) processes ISO 9241-220:2019	CIF International Standards	System lifecycle processes ISO/IEC/IEEE 15288:2023
9.4.3 — Identify the context of use	ISO/IEC 25063: *Common Industry Format (CIF) for usability: Context of use description*	6.4.2 b) 1) — Define context of use
9.4.4.2 — Identify user needs	ISO/IEC 25064: *Common Industry Format (CIF) for usability: User needs report*	6.4.2 b) 2) — Identify stakeholder needs
9.4.4.3 — Specify the user requirements	ISO 25065: *Common Industry Format (CIF) for Usability: User requirements specification*	6.4.3 — System requirements definition process
9.4.5.2 — Specify the user-system interaction 9.4.5.3 — Produce and refine user interface design solutions	ISO 25067: *Common Industry Format (CIF) for Usability: User interaction and user interface specification*	6.4.4 — Architecture definition process (6.4.5) Design definition process
9.4.6 — User-centred Evaluation	ISO 25062: *Common Industry Format (CIF) for Usability: Reporting usability evaluations (this document)*	6.4.9 — Verification process 6.4.11 — Validation process

Systems and software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE) — Common Industry Format (CIF) for reporting usability evaluations

1 Scope

This document describes the common industry format (CIF) for reporting usability evaluations. It provides a classification of evaluation approaches and the specifications for the content items (content elements) to be included in an evaluation report based on the selected evaluation approach(es). The intended users of the usability evaluation reports are identified, as well as the situations in which the usability evaluation report can be applied.

The usability evaluation reports in this document are applicable to software and hardware systems and products or services used for predefined tasks (excluding generic products, such as a display screen or a keyboard). The content elements are intended to be used as part of system-level documentation resulting from development processes such as those in ISO 9241-210 and the ISO/IEC JTC 1/SC 7 process standards (e.g. ISO/IEC/IEEE 15288 on systems lifecycle management, ISO/IEC/IEEE 12207 on software lifecycle management and ISO/IEC 33001 on process capability assessment).

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
accessibility
extent to which products, systems, services, environments and facilities can be used by people from a population with the widest range of *user* (3.19) needs, characteristics and capabilities to achieve identified *goals* (3.6) in identified contexts of use

Note 1 to entry: *Context of use* (3.3) includes direct use or use supported by assistive technologies.

[SOURCE: ISO 9241-112:2017, 3.15]

3.2
conformity assessment
demonstration that specified *requirements* (3.9) are fulfilled

[SOURCE: ISO/IEC 17000:2020, 4.1, modified — Notes to entry deleted.]

3.3
context of use
combination of *users* (3.19), *goals* (3.6), *tasks* (3.13), resources, and environment

Note 1 to entry: The "environment" in a context of use includes the technical, physical, social, cultural and organizational environments.

[SOURCE: ISO 9241-11:2018, 3.1.15]

3.4
effectiveness
accuracy and completeness with which *users* (3.19) achieve specified *goals* (3.6)

[SOURCE: ISO 9241-11:2018, 3.1.12]

3.5
efficiency
resources used in relation to the results achieved

Note 1 to entry: Typical resources include time, human effort, costs and materials.

[SOURCE: ISO 9241-11:2018, 3.1.13]

3.6
goal
intended outcome

[SOURCE: ISO 9241-11:2018, 3.1.10]

3.7
harm from use
negative consequences regarding health, safety, finances or the environment that result from use of the system

Note 1 to entry: The negative consequences can be for the *user* (3.19) or for any other *stakeholder* (3.11).

Note 2 to entry: Although avoidance of harm from use, i.e. eliminating any exposure of risk that poses a potential harm, cannot be achieved completely, designing an *interactive system* (3.12) can aim at mitigating risks to an acceptable minimum.

[SOURCE: ISO 9241-220:2019, 3.10]

3.8
information item
separately identifiable body of information that is produced and stored for human use during a system or software life cycle

Note 1 to entry: A document produced to meet information *requirements* (3.9) can be an information item, part of an information item, or a combination of several information items.

Note 2 to entry: An information item can be produced in several versions during a project or system life cycle.

[SOURCE: ISO/IEC/IEEE 15289:2019, 3.1.12]

3.9
requirement
condition or capability that must be met or possessed by a system, system component, product, or service to satisfy an agreement, standard, specification, or other formally imposed documents

Note 1 to entry: Requirements provide value when delivered, satisfied, or met.

Note 2 to entry: Requirements include the quantified and documented needs, wants, and expectations of the sponsor, customer, and other *stakeholders* (3.11).

[SOURCE: ISO/IEC/IEEE 24765:2017, 3.3431, definition 2, modified — Notes to entry added.]

3.10
satisfaction
extent to which the *user's* (3.19) physical, cognitive and emotional responses that result from the use of a system, product or service meet the user's needs and expectations

Note 1 to entry: Satisfaction includes the extent to which the user experience that results from actual use meets the user's needs and expectations.

Note 2 to entry: Anticipated use can influence satisfaction with actual use.

[SOURCE: ISO 9241-11:2018, 3.1.14]

3.11
stakeholder
individual or organization having a right, share, claim, or interest in a system or in its possession of characteristics that meet their needs and expectations

EXAMPLE End *users* (3.19), end user organizations, supporters, developers, customers, producers, trainers, maintainers, disposers, acquirers, suppliers, regulatory bodies, and people influenced positively or negatively by a system.

Note 1 to entry: Some stakeholders can have interests that oppose each other or oppose the system.

[SOURCE: ISO/IEC/IEEE 15288:2023, 3.44]

3.12
interactive system
combination of hardware and/or software and/or services and/or people that *users* (3.19) interact with in order to achieve specific *goals* (3.6)

Note 1 to entry: This includes, where appropriate, packaging, user documentation, online and human help, support and training.

Note 2 to entry: This definition emphasizes that the user interacts with the system. An interactive system provides feedback to user input and initiates further actions within the system or by other systems as required.

[SOURCE: ISO 25065:2019, 3.2.1]

3.13
task
set of activities undertaken in order to achieve a specific *goal* (3.6)

[SOURCE: ISO 9241-11:2018, 3.1.11, modified — Notes to entry deleted.]

3.14
usability
extent to which a system, product or service can be used by specified *users* (3.19) to achieve specified *goals* (3.6) with *effectiveness* (3.4), *efficiency* (3.5) and *satisfaction* (3.10) in a specified *context of use* (3.3)

[SOURCE: ISO 9241-11:2018, 3.1.1, modified — Notes to entry deleted.]

3.15
usability defect
attribute of the *interactive system* (3.12) that leads to a *usability problem* (3.17)

Note 1 to entry: Usability defects are typically identified during inspections.

Note 2 to entry: Usability defects can originate from incorrect or missing interaction capabilities as well as poor *task* (3.13) support.

Note 3 to entry: Typical usability defects include the following:

— additional unnecessary steps not required as part of completing a task;

— misleading information;

— insufficient and/or poor information on the user interface;

— unexpected system responses;

— limitations in navigation;

— inefficient *use error* (3.18) recovery mechanisms;

— physical characteristics of the user interface that are not suitable for the physical characteristics of the user.

3.16
usability finding
identified *usability defect* (3.15) and/or *usability problem* (3.17) or positive *usability*-related (3.14) attribute

Note 1 to entry: Deviations of attributes of the *interactive system* (3.12) from specified criteria such as *user* (3.19) *requirements* (3.9), principles, design guidelines or established conventions are also usability findings.

Note 2 to entry: Usability findings can lead to the identification of new *user requirements* (3.21).

3.17
usability problem
situation during use, resulting in poor *effectiveness* (3.4), *efficiency* (3.5) or *satisfaction* (3.10)

Note 1 to entry: Usability problems can be either directly observed during qualitative and/or quantitative *usability* (3.14) tests or are identified from analysis of use.

Note 2 to entry: Usability problems can lead to one or more *use errors* (3.18).

Note 3 to entry: Usability problems are sometimes referred to as use difficulties.

3.18
use error
user (3.19) action or lack of user action while using the *interactive system* (3.12) that leads to a different result than that intended by the manufacturer or expected by the user

[SOURCE: IEC 62366-1:2015, 3.21, modified — "Medical device" replaced by "interactive system", notes to entry deleted.]

3.19
user
person who interacts with a system, product or service

Note 1 to entry: Users include people who operate a system, people who use the output provided by a system and people who conduct support *tasks* (3.13) using the system (including maintenance and training).

Note 2 to entry: According to ISO/IEC 25010, "user" is defined as “individual or group that interacts with a system or benefits from a system during its utilization”.

Note 3 to entry: Primary and secondary users interact with a system, and primary and indirect users can benefit from a system. This definition includes a broader understanding of individuals and organizations that act as users.

[SOURCE: ISO 9241-11:2018, 3.1.7, modified — Notes 2 and 3 to entry added.]

3.20
user need
prerequisite identified as necessary for a *user* (3.19), or a set of users, to achieve an intended outcome, implied or stated within a specific *context of use* (3.3)

EXAMPLE 1 A presenter (user) needs to know how much time is left (prerequisite) in order to complete the presentation in time (intended outcome) during a presentation with a fixed time limit (context of use).

EXAMPLE 2 An account manager (user) needs to know the number of invoices received and their amounts (prerequisite), in order to complete the daily accounting log (intended outcome) as part of monitoring the cash flow (context of use).

Note 1 to entry: A user need is independent of any proposed solution for that need.

Note 2 to entry: User needs are identified based on various approaches including interviews with users, observations, surveys, evaluations, expert analysis, etc.

Note 3 to entry: User needs often represent gaps (or discrepancies) between what should be and what is.

Note 4 to entry: User needs are transformed into *user requirements* (3.21) considering the context of use, user priorities, trade-offs with other system *requirements* (3.9) and constraints.

[SOURCE: ISO/IEC 25064:2013, 4.19]

3.21
user requirements
set of *requirements* (3.9) for use that provide the basis for design and evaluation of *interactive systems* (3.12) to meet identified *user needs* (3.20)

Note 1 to entry: User requirements are derived from user needs and capabilities in order to allow the *user* (3.19) to make use of the system in an effective, efficient, safe and satisfying manner.

Note 2 to entry: User requirements are not requirements on the users.

Note 3 to entry: User requirements include *user-system interaction requirements* (3.22) and *use-related quality requirements* (3.23).

Note 4 to entry: In software engineering terms, user requirements include both "functional" and "non-functional" requirements derived from user needs and capabilities.

[SOURCE: ISO 9241-220:2019, 3.46]

3.22
user-system interaction requirements
user requirements (3.21) that specify interactions (including: recognizing information, making inputs, making selections, and receiving outputs) required by the *users* (3.19) to achieve the *goals* (3.6)

Note 1 to entry: User-system interaction *requirements* (3.9) are generally stated in qualitative terms.

[SOURCE: ISO 25065:2019, 3.1.11, modified — Note to entry added.]

3.23
use-related quality requirements
user requirements (3.21) that specify the intended outcomes of use of the *interactive system* (3.12) and associated quality criteria

Note 1 to entry: Use-related quality *requirements* (3.9) are generally stated in quantitative terms.

[SOURCE: ISO 25065:2019, 3.1.12, modified — Note to entry added.]

4 Outcomes and types of usability evaluations

4.1 Outcomes of a usability evaluation

Usability evaluations can produce a variety of outcomes, including:

— determining whether specified user requirements have been implemented;

— actual usability findings (negative and/or positive);

— identifying usability defects that cause usability problems;

— provision of performance data;

— compilation of subjective attitudes of users about the usability of an interactive system;

— provision of the basis for a procurement decision.

The content of a usability evaluation report vary based on the goals of the evaluation. The evaluation report should provide sufficient information to assess the validity of the evaluation results.

4.2 Types of usability evaluation

Usability evaluation is a systematic process using one of the following types of evaluation approaches. The content of an evaluation report depends on the type of evaluation approach used.

a) Inspection to identify:

   — usability defects, i.e. deviations of the object of evaluation from specified criteria such as user requirements, principles, design guidelines or established conventions;

   — potential usability problems and their impacts in terms of harm from use.

b) Usability tests including:

   — qualitative usability tests observing user behaviour to identify actual usability problems;

   — quantitative usability tests measuring user performance and response (e.g. time taken to perform a task, number of use errors, skin conductance or eye pupil dilation).

   NOTE 1 Usability tests can be carried out in a simulated use environment or conducted in a "real life" setting.

c) User surveys including:

   — eliciting problems, opinions and perceptions and responses from users (i.e. qualitative user surveys);

   — measuring level of user satisfaction (e.g. rating scale values for perceived satisfaction, effectiveness, efficiency, aesthetics) (i.e. quantitative user surveys);

   — other user reported data (e.g. data collected from an individual in conjunction with observation data).

   NOTE 2 Collection of information about participants, such as demographic data, does not constitute a user survey, but can be used to support interpretation.

A usability evaluation report contains information about one or more types of the evaluations listed above.

EXAMPLE 1 A usability test report describes problems encountered by users when carrying out tasks (type of information is "observing user behaviour"). A quantitative usability test report contains measures of effectiveness, efficiency and satisfaction (types of information are "measuring user performance" and "user survey").

When reporting findings in usability evaluation reports, usability defects shall be differentiated from their consequences. While usability defects are typically inappropriate attributes of the interactive system, their consequences describe the negative effect on the user that is either likely to occur or has been observed or reported.

EXAMPLE 2 A usability defect can be the fact that within a web form, required entry fields are not marked as such. The consequences can possibly be that users fail to fill in required entry fields and therefore make use errors repeatedly.

4.3 Assessing conformity of the object of evaluation against specified evaluation criteria

Evaluation report data can be used for different purposes. One purpose is to show that the object of evaluation meets specified requirements, also referred to as conformance criteria. A conformity assessment of the object of evaluation against specified criteria is defined in ISO/IEC 17000 as a "demonstration that specified requirements relating to a product, process, system, person or body are fulfilled". Assessment of conformity consists of comparing the evaluation results with pre-defined conformance criteria. The conformance criteria can be defined within a project or by a third party (e.g. a regulatory body). A rigorous

evaluation is required to produce data that can be used for a conformity assessment. When a conformity assessment is used, it shall be documented in conformance with the requirements of this document.

NOTE 1 A formal conformity assessment involves a defined "conformity assessment scheme". The formal scheme provides:

a) legal defensibility;

b) evidence of contractual compliance; and

c) consistency of application and comparability of results across assessors and organizations.

Conformity assessment schemes are implemented at an international, regional, national and sub-national level.

The conformity assessment can be included in a usability evaluation report or can be issued as a separate "conformity assessment report". Table 3 shows the different types of conformance criteria that can be specified as the basis for a conformity assessment. There can be various sets of specified conformance criteria for one conformity assessment if the underlying evaluation consisted of more than one type of evaluation (e.g. inspection plus user observation plus user survey).

Table 3 — Types of usability evaluations and corresponding conformance criteria

Type of usability evaluation	Types of specified evaluation criteria to be evaluated against
Inspection	— User-system interaction requirements e.g. "with the system, the user shall be able to select flights by duration" or "with the system, the user shall be able to select items from the last purchase for the next purchase." and/or — Principles e.g. "use error robustness." and/or — Guidelines and regulations e.g. "required entry fields shall be distinct from optional entry fields" or "the system shall be compatible with screen readers." and/or — Design conventions e.g. "the edit-button is always located at the top-right corner of the form."
Qualitative test	— User-system interaction requirements e.g. "with the system, the user shall be able to select flights by duration" or "with the system, the user shall be able to select items from the last purchase for the next purchase."
Quantitative test	— Use-related quality requirements e.g. "95 % of all users shall be able to successfully complete the authorization process without assistance."
User survey	— Specified scores for user-reported subjective measures of effectiveness, efficiency, satisfaction e.g."3,5 on a scale ranging from 1 (min) to 5 (max)." and/or — Reported severity of usability-problems e.g. "if a reported usability problem is judged as unacceptable by a user in the survey group, then the object of evaluation fails the conformity assessment."

Principles and guidelines that can be used as conformance criteria are published in various sources including the ISO 9241 series. These principles and guidelines often apply across operating systems and development environments (e.g. "Colour should not be used as the only means to code information" or "Required entry fields should be distinct from optional entry fields").

Recommendations related to user interaction can be found in the following parts of the ISO 9241 series:

— ISO 9241-13 — User guidance.

— ISO 9241-14 — Menu dialogues.

— ISO 9241-110 — Interaction principles.

— ISO 9241-112 — Principles for the presentation of information.

— ISO 9241-125 — Guidance on visual presentation of information.

— ISO/TS 9241-126 — Guidance on auditory presentation of information.

— ISO 9241-129 — Guidance on software individualization.

— ISO 9241-143 — Forms.

— ISO 9241-154 — Interactive voice response (IVR) applications.

— ISO 9241-161 — Visual user interface elements.

— ISO 9241-171 — Guidance on software accessibility.

— ISO 9241-303 — Requirements for electronic visual displays.

— ISO 9241-400 — Principles and requirements for physical input devices.

— ISO 9241-410 — Design criteria for physical input devices.

— ISO 9241-500 — Ergonomic principles for the design and evaluation of environments of interactive systems.

— ISO/TR 9241-810 — Robotic, intelligent and autonomous systems.

— ISO 9241-820 — Ergonomic guidance on interactions in immersive environments including augmented reality and virtual reality.

— ISO 9241-910 — Framework for tactile and haptic interaction.

— ISO 9241-920 — Guidance on tactile and haptic interactions.

There are other international standards containing guidance on user-system-interaction and user interfaces that can be used as conformance criteria and can be found at www.iso.org and other organizations.

NOTE 2 Established conventions can also be used as conformance criteria. These established conventions typically include rules published by suppliers of operating systems or development environments within their design guidelines.

EXAMPLE An example for an established convention is “a dialogue box always has an 'OK' and 'cancel' button at the bottom right corner of the dialogue box”.

5 Conformance

An evaluation report conforms to this document if it contains all the required content elements in Clause 7 that are applicable to the type of evaluation.

6 Overview of content elements within an evaluation report

The content elements in Clause 6 of this document for documenting evaluations can be integrated in any type of process model.

NOTE Process models and associated information items for human-centred design of interactive systems are contained in ISO 9241-220 and ISO/TS 18152 which specify human-centred design processes and ISO 9241-221 which specifies the assessment of capability in human-centred design.

Annex A provides a checklist that can be used to ensure inclusion of required and recommended information.

Annex B provides an evaluation report template that can be used to develop an evaluation report based on the requirements and recommendations in this document.

A usability evaluation report shall include the following sections:

— Executive summary.

— Description of the object of evaluation.

— Purpose of evaluation.

— Evaluation methodology.

— Data analysis and results.

A usability evaluation report should include the following sections:

— Recommendations.

— Conclusions.

— Appendix.

The content elements for each section of an evaluation report are determined by the type(s) of evaluation to be conducted. Furthermore, there are elements that are always required and conditional elements that can be selected for the evaluation, depending on whether they are used (e.g. statistical analysis or provided recommendations) or applicable (e.g. parts of the object evaluated or measures used in the evaluation).

Evaluations can contain more than one type of evaluation (e.g. usability test and subsequent user survey). As a result, the evaluation report will include the content elements for both types of evaluation.

The order in which the sections and the elements within the evaluation report are introduced does not prescribe a required order for a usability evaluation report. Furthermore, the grouping of the content elements themselves can be defined by the author of the report (e.g. combining information such as methods and procedures into one section of the evaluation report).

Annex A contains a table that gives an overview of all required and recommended content elements for each type of evaluation.

Subclauses 7.1 to 7.8 describe the content elements that are included in a usability evaluation report. The report sections refer to all three types of evaluation (inspection, usability test and user survey).

7 Description of content elements within an evaluation report

7.1 Executive summary

This section of the usability evaluation report provides a concise overview of the evaluation. This section is intended to provide information for those who will potentially not read the technical body of the report.

The executive summary shall include:

a) name and description of the object of evaluation;

b) summary of method(s) and the procedure;

c) summary of results including key findings, and any recommendations and related conclusions.

NOTE 1 Sometimes, only an executive summary is produced based on a performed evaluation. However, that is not a substitute for an evaluation report as defined in this document.

NOTE 2 Executive summaries can provide the basis for presentations about the usability evaluation.

7.2 Description of the object of evaluation

This section of the usability evaluation report identifies the entity which was actually evaluated.

NOTE Examples of objects of evaluation include concepts, user interface prototypes, functioning software and hardware products, or components of an interactive system.

Information about the object of evaluation shall include:

a) formal name and release or version;

b) brief description of the object of evaluation, the purpose of the object, and the intended use for which the object was evaluated;

c) parts of the object that were evaluated (if only parts were evaluated);

d) prior usability evaluation report summaries (if applicable).

7.3 Purpose of the usability evaluation

This section of the usability evaluation report identifies the reasons for which the evaluation was conducted, and why only specific parts of the object were evaluated (if applicable).

NOTE 1 Purposes for an evaluation can include:

— improving design by providing feedback into the design process;

— identifying usability defects and usability problems;

— confirming/identifying user requirements;

— confirming assumptions;

— testing concepts;

— measuring the level of usability (i.e. effectiveness and/or efficiency and/or user satisfaction);

— establishing benchmarks;

— assessing whether a product, system or service meets specific conformance criteria/acceptance criteria;

— identifying strengths and weaknesses of a product, system or service;

— identifying the consequences that could arise from poor usability;

— resolving disputes between users and/or stakeholders;

— identifying whether a product, system or service is accessible;

— acquiring a certification:

  — to pass an internal quality decision point;

  — to pass a certification of an external certification body.

7.4 Evaluation methodology

7.4.1 General

This section of the evaluation report describes the required content elements for documenting the methodology with which the evaluation was designed and conducted.

NOTE Further content elements related to the evaluation methodology can be placed in the appendix (see 7.8).

7.4.2 Type(s) of evaluation used

The methodology section of the evaluation report shall state which type(s) of evaluation have been used.

NOTE Types of usability evaluation are introduced in 4.2.

7.4.3 Evaluator(s)

Evaluators are the people who perform the evaluation.

The methodology section of the evaluation report shall provide information about the evaluator(s) taking part in the usability evaluation.

Information about the evaluators enables the reader of an evaluation report to judge the expertise of the evaluator(s).

Information about the evaluator(s) shall include:

a) total number of evaluators;

b) qualification of each evaluator and affiliation (if external);

c) role of each evaluator during the evaluation.

NOTE 1 Information about the qualification of an evaluator often includes general professional education, experience in performing evaluations, specific personal qualifications such as certifications in usability evaluations, expertise in the domain of the interactive system (including representing users).

NOTE 2 Typical roles of evaluators during evaluations include moderator, observer, note taker, evaluation report editor, and experimental manipulator (in case the behaviour of the object of evaluation is externally controlled during the evaluation e.g. to simulate an alarm situation).

NOTE 3 Individual evaluators can take over more than one role during an evaluation.

7.4.4 Evaluation participants

Evaluation participants are people who are actual or potential users of the object of evaluation and take part in usability tests where their behaviour and/or task performance is monitored. Participants in user surveys are also evaluation participants.

The methodology section of the evaluation report shall provide information about the evaluation participants taking part in the usability evaluation, including:

a) total number of evaluation participants;

b) planned key characteristics of evaluation participants;

c) key characteristics of the actual evaluation participants in the evaluation.

For quantitative usability tests, the minimum number of evaluation participants suitable for statistical analysis of the collected data shall be determined.

NOTE 1 Key characteristics of evaluation participants characterize attributes of the intended user population that are relevant to the validity of the evaluation.

NOTE 2 Key characteristics can include:

— demographics that are used to identify intended user groups of specific interest, e.g. age;

— task-related characteristics, e.g. training, skill level and established behaviours;

— physical and sensory characteristics, e.g. body dimensions, strength, vision and hearing;

— social and psychological characteristics, e.g. reading fluency, habits, language and culture;

— social and organizational characteristics, e.g. profession or job title, resistance to change and a risk-taking culture;

— user group membership (i.e. the groups that the test participant represents for this evaluation, e.g. smartphone users, landline phone users).

7.4.5 Tasks used for evaluation

The methodology section of the evaluation report shall describe the tasks used for evaluation. When performing usability tests (qualitative or quantitative), tasks are specified that evaluation participants must perform.

NOTE 1 Inspections can also be task-based, but not all inspections are task-based.

NOTE 2 In user surveys, it is important to identify the tasks that users' comments relate to wherever possible.

The information on tasks shall include the following:

a) Tasks used for evaluation:

The tasks used for evaluation are expressed in terms of the intended user group(s), the title of the task, one or more contextual precondition(s) that are present at the beginning of the task and the intended outcomes that evaluation participants are expected to achieve without referencing any specific means of achieving them.

b) Task scenarios for each task:

A task scenario describes an example of each task used in narrative form, that enables an evaluation participant or evaluator to complete the task and achieve the intended outcome(s) with the interactive system.

NOTE 3 Task scenarios are typically not used in user surveys.

c) Criteria for successful task completion or task abandonment for each task (for usability tests only):

These are the criteria for terminating the task by each evaluation participant, either finishing the task or quitting. These criteria are not handed out to participants within a usability test (qualitative or quantitative).

EXAMPLE 1 After the user has stated that they have recognized the confirmation of a successful purchase of all items specified in the task scenario, the task is terminated.

EXAMPLE 2 As soon as the user states that the task has been completed, the task is terminated.

EXAMPLE 3 After more than 30 min, the task is terminated.

EXAMPLE 4 After three unsuccessful attempts, the task is terminated.

d) Rationale for the tasks used:

The rationale for the tasks explains why the selected tasks were deemed to be important for the evaluation.

EXAMPLE 5 The most frequent tasks for each selected user group were used for the evaluation.

EXAMPLE 6 Tasks that give rise to potential harm for humans were used for the evaluation.

EXAMPLE 7 The source of the tasks used for the evaluation were contextual interviews with users about their use of the product.

7.4.6 Evaluation environment

7.4.6.1 Technical environment

The description of the technical environment shall include all hardware and/or software that has been used to enable the correct function of the object of evaluation.

EXAMPLE 1 In the case of a respirator, a 240 V power supply and a stationary oxygen supply.

EXAMPLE 2 In the case of a mobile app, the operating system, including version, and the name and version of the mobile device that the app was evaluated on.

7.4.6.2 Physical and social, cultural and organizational environment

The description of the physical and social, cultural and organizational environment in which the evaluation took place shall provide sufficient details to enable replication of the evaluation procedure under identical conditions.

NOTE 1 The description of the physical and social, cultural and organizational environment is especially important for usability tests (qualitative and quantitative) where the evaluation can take place in a simulated use environment or in the real use environment for the interactive system.

NOTE 2 The description of the physical and social, cultural and organizational environment can include images and videos.

EXAMPLE 1 Simulated use environments can include a usability laboratory, meeting room or home environment.

EXAMPLE 2 Remote usability testing is using video and audio conferencing and desktop sharing.

EXAMPLE 3 The usability test was performed in a radiological screening room with a dark environment.

EXAMPLE 4 The usability test was performed in three different continents to address cultural diversity.

EXAMPLE 5 The usability test of a ticket machine was performed at a subway station where many people are queuing in front of the machine.

EXAMPLE 6 The usability test took place on a shop floor within a factory at the time where most workers go to lunch.

EXAMPLE 7 The usability test took place at a gaming convention where real gamers are present (sample of convenience) as test participants.

7.4.6.3 Resources used as part of the evaluation (if used)

The description of the resources shall include any relevant hardware, software and materials that were used during the evaluation.

EXAMPLE A respirator for use in an intensive care station is the object of evaluation. Resources used include a patient monitor (that simulates the vital parameters of the patient) and a patient dummy (that allows the evaluation to use the patient dummy instead of a real patient).

7.4.6.4 Evaluation administration tools (if used)

The description of the evaluation administration tools shall include any hardware or software used to control the evaluation or to record data.

EXAMPLE Video and audio recording equipment, one-way mirrors, or automatic data collection equipment.

7.4.7 Data collected during the evaluation

7.4.7.1 General

The methodology section of the evaluation report shall include which data were collected during the evaluation. The types of collected data depend on the type of evaluation performed.

7.4.7.2 Identified usability defects

This element identifies deviations of the object of evaluation from predefined criteria (such as user requirements, principles, design guidelines or established conventions) to be collected during the evaluation, especially during usability inspections.

NOTE Deviations include all attributes of the user-system interaction with the object of evaluation that deviate from criteria and are expected to cause usability problems.

EXAMPLE 1 A dialogue box that does not have a “cancel” button.

EXAMPLE 2 In a context of use where there is a user requirement that critical controls are identifiable without navigation (criterion), the emergency shutdown button was placed below a menu item (deviation).

7.4.7.3 Observed usability findings (both negative and positive)

This element identifies all the types of observable usability findings that are to be collected, especially during usability tests.

NOTE Data collected in qualitative usability tests can include:

— evaluation participants don’t know how to proceed with the task;

— use errors;

— evaluation participants exhibit discomfort;

— evaluation participants communicate frustration;

— evaluation participants communicate satisfaction;

— evidence that one or more specific user requirements are met (or not met).

7.4.7.4 Recorded performance data

This element identifies all the types of performance data relating to effectiveness and efficiency that are to be collected, especially in quantitative usability tests. Performance data are a specific case of observation data where numerical values are obtained with a focus on measurement.

NOTE Performance data measures can include:

— accuracy and completeness of task results;

— task completion;

— time spent on task;

— number of use errors and frequency of occurrence;

— number of mouse clicks, touch events or gestures;

— number of key strokes;

— distance moved on screen with pointing device;

— physiological data (e.g. skin conductance, blood pressure).

7.4.7.5 User-reported qualitative perceptions and responses

This element identifies user-reported qualitative data (made by evaluation participants on their subjective experience with the object of evaluation) to be collected and the instrument used (e.g. questionnaire), especially in qualitative user surveys.

NOTE 1 User-reported qualitative data can include:

— problems experienced;

— positive experiences;

— expectations;

— suggestions.

NOTE 2 User-reported problems can be accompanied by subjective severity ratings.

7.4.7.6 User-reported quantitative ratings of perceptions and responses

This element identifies user-reported quantitative data (made by evaluation participants on their subjective experience with the object of evaluation) to be collected and the instrument used (e.g. questionnaire), especially in quantitative user surveys.

NOTE 1 User-reported quantitative data are experiences rated on a predefined scale.

NOTE 2 User-reported quantitative data can include subjective ratings of:

— satisfaction;

— comfort;

— trustworthiness;

— attitude;

— appeal;

— effort;

— perceived effectiveness;

— perceived efficiency.

7.4.8 Additional content for conformity assessment (if used)

This element describes the conformity assessment scheme (title, version and conformance criteria to be met by the object of evaluation).

NOTE 1 Conformity assessment schemes can exist at international, regional, national, sub-national or company-internal level.

NOTE 2 ISO/IEC 17060 recommends good practices for all elements of conformity assessment, including objects of conformity assessment, specified requirements, activities, bodies, systems, schemes and results.

EXAMPLE An electronic voting system has to pass a usability test, meeting criteria established in a defined conformity assessment scheme.

7.5 Data analysis and results

7.5.1 Data analysis

7.5.1.1 General

This section of the usability evaluation report describes the approach used for analysis of the collected data. Sufficient detail shall be provided in order to justify the recommendations (see 7.6) and conclusions (see 7.7).

7.5.1.2 Approach used for the analysis of collected data

This element describes in which way the observed, measured or collected data are analysed.

NOTE Descriptive statistics of the data can be introduced if appropriate for the audience.

EXAMPLE 1 A graphical representation of the distribution of the data is included.

EXAMPLE 2 Both geometric mean and mean are reported.

7.5.1.3 Differences in planned and collected data (if applicable)

This element describes the differences between the data planned to be collected and the data that are actually collected.

EXAMPLE At the beginning of a usability test at a manufacturing site, the shift supervisor reports that the planned test tasks are, in reality, performed by their foreman. Therefore, the planned data are collected with the user group “foreman”.

7.5.1.4 Portion of data not used in the analysis (if applicable)

This element describes the portion of the gathered data not used for the analysis and the reasons for its exclusion.

NOTE Incorrect or suspicious data are not used for the analysis.

EXAMPLE 1 During a usability test, all participants stated that one task used for the evaluation did not make any sense to them. Therefore, the test results for this task were not used for analysis.

EXAMPLE 2 Outliers are highlighted and removed if their importance is not relevant to the analysis.

7.5.1.5 Data scoring (in case of usability tests and user surveys)

This element describes the mapping between the data collected and the values used in the subsequent analysis.

EXAMPLE How use errors were categorized. How actual ages map to age ranges. How assisted use errors are mapped to a set of values.

7.5.1.6 Statistical analyses (if used for usability tests and user surveys)

This element identifies and describes the statistical analyses used to analyse the data.

NOTE For data that are calculated as means and are derived from quantitative analysis, the statistical significance can be presented.

EXAMPLE 1 Student t-test or F-test are used to show statistical significance of collected data.

EXAMPLE 2 Scores based on system usability scale (SUS), net promoter score (NPS), and AttrakDiff are used for statistical analysis.

EXAMPLE 3 For data that are calculated as means, the standard deviation and the standard error of the mean is also included.

7.5.2 Reported results

7.5.2.1 General

This section of the evaluation report shows the results of the data analysis based on the data collected.

NOTE 1 It is important that results are easy to identify and scan.

NOTE 2 Results can be presented in the order that provides the most clarity for the reader. For example, the report can be ordered by tasks (sequence followed in the test protocol) or by severity (issue impact and importance).

NOTE 3 Stakeholders can benefit from separate slide presentations in addition to the evaluation report that directly rely on the content of the evaluation report. If a slide presentation is used, it is important that it is based on the full evaluation report.

NOTE 4 Some regulatory agencies require explicit formats for reporting results.

NOTE 5 Screen captures and participant video clips can highlight specific usability findings. Tables and graphs can be used to present complex results in a concise manner. Data visuals are an effective way to present summary information. Both tables and various graphical formats are effective for providing a rapid description of quantitative data. Bar graphs are useful for describing subjective data such as that gleaned from Likert scales.

NOTE 6 For quantitative data that are reported as means, the standard deviation and the standard error of the mean ("confidence interval") are typically included. Detailed information on sample sizes, significance levels and data manipulation can be required.

Based on the type of usability evaluation performed, the results shall include the content elements in the following subclauses.

7.5.2.2 Usability findings

7.5.2.2.1 General

7.5.2.2 covers all usability findings identified in a usability evaluation.

7.5.2.2.2 Identified usability defects

This element reports the usability defects in terms of the deviations of attributes of the object of evaluation from principles, guidelines and established conventions or specified user requirements.

EXAMPLE 1 During an inspection, the evaluator identified that a "cancel" button was not present in most dialogue boxes.

EXAMPLE 2 During an inspection, the evaluator identified that the images were not related to the descriptive text.

NOTE 1 Usability defects can be identified during inspection as well as during usability tests.

NOTE 2 A mapping of deviations of attributes of the object of evaluation to specified criteria can be used to present the results.

NOTE 3 Screen shots and video recordings are effective to illustrate usability defects.

7.5.2.2.3 Potential usability problems

This element reports the potential usability problems that result from the identified usability defects, i.e. deviations of attributes of the object of evaluation from principles, guidelines and established conventions or specified user requirements. Statements of potential usability problems should be supported by rationales. These rationales include risks and their severity.

EXAMPLE 1 The fact that the shopping cart did not update the number of items during the inspection (usability defect) will cause users to repeatedly add items to the shopping cart (potential usability problem).

EXAMPLE 2 Inconsistency in labels (usability defect) will confuse users during task completion (potential usability problem).

7.5.2.2.4 Observed usability problems

This element reports both usability problems and positive findings identified during qualitative or quantitative usability tests.

EXAMPLE During a qualitative usability test, the majority of users did not manage to find specific information by using the navigation structure (usability problem).

7.5.2.2.5 Positive findings

This element reports both usability problems and positive findings identified during qualitative or quantitative usability tests.

EXAMPLE During a qualitative usability test, the majority of users managed to find specific information by using the search engine (positive finding).

7.5.2.2.6 Recorded performance data

This element reports the collected measures that characterize the performance results per task or per task group.

EXAMPLE 1 Using the online car configuration system of a car manufacturer, 80 % of all 15 users managed to configure their new car within 7 minutes. The confidence interval set for this performance measurement is 75 % to 90 % to achieve a 7 minute task success.

EXAMPLE 2 During the quantitative usability test, 5 users incorrectly entered the password three times or more before completing the registration.

NOTE Performance data can be accumulated while observing user behaviour. These can include:

— accuracy and completeness of task results (effectiveness);

— task completion rate;

— time spent on task;

— use errors and frequency of occurrence;

— number of mouse clicks, touch events or gestures;

— number of key strokes;

— distance moved on screen with pointing device (e.g. mouse);

— eye tracking paths;

— psychological data (e.g. emotional, fidgeting, level of attention);

— physiological data (e.g. skin conductance, blood pressure).

7.5.2.2.7 User-reported qualitative perceptions and responses

This element reports the problems, perceptions and responses reported by users.

EXAMPLE 1 Half of the physicians who used the medical device felt that it was dangerous in use.

EXAMPLE 2 Five users blamed their own lack of technical ability for failing to complete a task.

NOTE 1 Problems, perceptions and responses of users can be collected by standardized questionnaires.

NOTE 2 Users can report problems, perceptions and responses spontaneously while being observed.

7.5.2.2.8 User-reported quantitative ratings of perceptions and responses

This element reports the measured level of user satisfaction or perception.

EXAMPLE 1 An overall score of 78 was obtained for an interactive system by 20 users using the SUS questionnaire.

EXAMPLE 2 Users rated the interactive system 4 out of 5 regarding their satisfaction (where 1 was the lowest rating and 5 was the highest rating).

7.6 Recommendations

This section of the usability evaluation report provides a set of recommendations for the improvement of the object of evaluation based on the evaluation results and their interpretation.

NOTE 1 Recommendations can be specific or general, based on the results of the evaluation and conclusions.

NOTE 2 Recommendations are particularly useful for evaluations that aim at improving the object of evaluation.

NOTE 3 Recommendations are not the findings themselves. They are recommended changes supported by the analysis of the findings of the usability evaluation.

EXAMPLE 1 As all participants had trouble interpreting the system status, status information must be coded differently than instructions for the user.

EXAMPLE 2 Every image on the website requires alternative text associated with it.

EXAMPLE 3 As eight out of ten participants failed to complete the booking on the hotel website, the check-out process needs to be redesigned.

7.7 Conclusions

This section of the usability evaluation report provides interpretation of results, which helps identify the usability findings to be examined in detail.

NOTE Conclusions can be required by specific stakeholders.

EXAMPLE 1 The FDA requires a conclusion statement for each summative evaluation of a medical device, stating that the medical device has been found to be safe and effective for the intended users, uses and use environments.

EXAMPLE 2 Based on the findings of the evaluation, more user research is required.

EXAMPLE 3 The user interface needs to be modified based on the findings of the evaluation.

7.8 Appendix

7.8.1 General

The appendix of the evaluation report should include the elements described in subclauses 7.8.2 to 7.8.8.

7.8.2 Evaluation protocol

The evaluation report should include sufficient detail about the test protocol to allow replication at a later date or for future studies to reuse or modify.

The evaluation protocol specifies each activity that the evaluator(s) go(es) through as part of the evaluation to collect the required information including the (allowed) interaction with participants. The evaluation protocol specifies each activity for each evaluator role (see 7.4.3 for typical roles) during the evaluation in the sequence in which they shall be performed.

The evaluation protocol identifies each specific experimental manipulation and when it will occur, as well as instructions given to the participants.

EXAMPLE 1 The moderator adjusts instrument settings to simulate patient conditions for the test participant.

EXAMPLE 2 The moderator intervenes after 5 mins to terminate task activity. The test participant is directed to a subsequent task or the session is terminated.

7.8.3 Sequence of organizational activities for conducting the evaluation

This element describes the sequence of organizational activities for conducting each evaluation session in a qualitative or quantitative usability test, from welcoming each participant to dismissing them.

NOTE This can include:

— steps followed to execute the test sessions and record data;

— details of nondisclosure agreements, form completion, warm-ups, pre-task training, and debriefing;

— whether participants were paid or otherwise compensated;

— verification that the participants knew and understood their rights as human subjects.

7.8.4 Independent variables

This element describes those variables that are controlled by the evaluator during qualitative and quantitative usability tests. This is particularly relevant if the evaluation aims at identifying the effects of differences in the context of use on the usability of the object of evaluation.

EXAMPLE Independent variables can be different levels of training of participants, age of participants, noise levels or lighting conditions.

7.8.5 Predefined evaluation criteria

This element describes the criteria against which the object of evaluation was evaluated during an inspection or a usability test or a conformity assessment.

NOTE These predefined criteria can include:

— for inspection:
  — principles or heuristics;
  — guidelines;
  — established conventions;

— for inspection as well as usability tests:
  — user requirements;

— for conformity assessment:
  — published conformity assessment criteria (see 7.4.8).

EXAMPLE 1 A principle to be inspected against is “use error robustness”.

EXAMPLE 2 A guideline to be inspected against is “required entry fields shall be visually distinct from optional entry fields.”

EXAMPLE 3 An accessibility guideline to be inspected against is “whenever moving, blinking, scrolling, or auto-updating information is presented, software shall enable the user to pause or stop the presentation, except for simple progress indicators.”

EXAMPLE 4 A user requirement to be inspected against is “with the system, the user shall be able to recognize that the vital parameters of the patient are continuously decreasing”.

EXAMPLE 5 An established convention to be inspected against is “the edit-button is always at the top-right corner of the form”.

7.8.6 General instructions given to the participants

This element describes the general instructions given to the participants of the evaluation.

NOTE This can include:

— background information to the participants on the evaluation procedure;

— instructions on how participants were to interact with any other persons present, including how they were to ask for assistance and interact with other participants, if applicable.

7.8.7 Specific instructions on tasks

This element describes the specific task instructions for completing the tasks given to participants or evaluator(s) during qualitative and quantitative usability tests.

NOTE This can include:

— the task instructions themselves;

— time limits per task.

7.8.8 Additional content on ethics and intellectual property

This element reports on ethical content related to the usability evaluation including the following.

a) Consent form.

NOTE 1 Consent forms are typically used for evaluation participants in usability tests. In some cases, consent is obtained without written confirmation from the evaluation participant.

NOTE 2 Depending on legal requirements, written consent can be required.

EXAMPLE 1 A consent form requires the participant to indicate that they agree to be video and/or audio recorded during a usability test.

b) Data management policy.

NOTE 3 A data management policy covers the retention and use of data.

EXAMPLE 2 Recordings that show evaluation participants are destroyed in accordance with the participant consent agreement.

EXAMPLE 3 Data related to users are anonymized so the identity of each evaluation participant is not disclosed to the reader of the evaluation report.

EXAMPLE 4 Data related to users are treated according to legal requirements.

c) Compensation policy.

NOTE 4 In some situations, evaluation participants are offered compensation in return for their participation in the evaluation.

EXAMPLE 5 If evaluation participants do not complete the usability test, payment is still provided.

d) Use of artificial intelligence as part of generating the evaluation report.

NOTE 5 In situations where parts or all of the evaluation report is created using artificial intelligence, it is appropriate to indicate this to the reader.

EXAMPLE 6 Sections of the report that were generated automatically by artificial intelligence are highlighted as such.

Annex A
(informative)

Checklist of content elements for a usability evaluation report

Table A.1 can be used to support planning and to demonstrate completeness when the report is finished. The applicability columns are a summary of the content elements used in the types of evaluation according to this document. The checklist is also used to identify which content elements were included in the report. Within the table, a checkmark denotes required content elements; a question mark denotes content elements that are included in the evaluation report depending upon the specifics of the evaluation.

Table A.1 — Checklist

Subclause no.	Subclause	Applicability to types of usability evaluation reports					Included in Report?
		Inspection	Qualitative usability test	Quantitative usability test	Qualitative user survey	Quantitative user survey	
7.1	**Executive summary**						
	Name and description of the object of evaluation	✓	✓	✓	✓	✓	☐
	Summary of method(s) and the procedure	✓	✓	✓	✓	✓	☐
	Summary of results including key findings	✓	✓	✓	✓	✓	☐
	Recommendations and related conclusions	(?)	(?)	(?)	(?)	(?)	☐
7.2	**Description of the object of evaluation**						
	Formal name and release or version of the object	✓	✓	✓	✓	✓	☐
	Brief description of the object	✓	✓	✓	✓	✓	☐
	Purpose of the object	✓	✓	✓	✓	✓	☐
	Intended use of the object	✓	✓	✓	✓	✓	☐
	Parts of the object that were evaluated	(?)	(?)	(?)	(?)	(?)	☐
	Prior usability evaluation report summaries	(?)	(?)	(?)	(?)	(?)	☐
7.3	**Purpose of the usability evaluation**						
	Reasons for which the evaluation was conducted	✓	✓	✓	✓	✓	☐
	Reasons that only specific parts of the object were evaluated	(?)	(?)	(?)	(?)	(?)	☐
7.4	**Evaluation methodology**						
7.4.2	Type(s) of evaluation used	✓	✓	✓	✓	✓	☐
7.4.3	**Evaluators**						
	Total number of evaluators	✓	✓	✓	✓	✓	☐
	Qualification of each evaluator and their affiliation (if external)	✓	✓	✓	✓	✓	☐
	Role of each evaluator during the evaluation	✓	✓	✓	✓	✓	☐
7.4.4	**Evaluation participants**						
	Total number of evaluation participants	✓	✓	✓	✓	✓	☐
	Planned key characteristics of evaluation participants	✓	✓	✓	✓	✓	☐
	Actual key characteristics of the evaluation participants in the evaluation	✓	✓	✓	✓	✓	☐
7.4.5	**Tasks used for evaluation**						

Table A.1 *(continued)*

Subclause no.	Subclause	Applicability to types of usability evaluation reports					Included in Report?
		Inspection	Qualitative usability test	Quantitative usability test	Qualitative user survey	Quantitative user survey	
	Tasks used for evaluation	✓	✓	✓	✓	✓	☐
	Task scenarios	✓	✓	✓	✓	✓	☐
	Criteria for successful task completion or task abandonment for each task	Not applicable	(?)	✓	Not applicable	Not applicable	☐
	Rationale for the tasks used	✓	✓	✓	✓	✓	☐
7.4.6	**Evaluation environment**						
7.4.6.1	Description of the technical environment including hardware and/or software used	✓	✓	✓	✓	✓	☐
7.4.6.2	Physical and social, cultural and organizational environment in which the evaluation took place	✓	✓	✓	✓	✓	☐
7.4.6.3	Description of the resources used including relevant hardware, software, and materials	✓	✓	✓	✓	✓	☐
7.4.6.4	Description of the administration tools used to control the evaluation or to record data	(?)	(?)	(?)	(?)	(?)	☐
7.4.7	Data to be collected during the evaluation (usability defects, usability findings, performance data, qualitative data, or quantitative data)	✓	✓	✓	✓	✓	☐
7.4.8	Conformity assessment scheme	(?)	(?)	(?)	(?)	(?)	☐
7.5	**Data analysis and results**						
7.5.1	**Data analysis**						
7.5.1.2	Approach used for the analysis of collected data	✓	✓	✓	✓	✓	☐
7.5.1.3	Differences in planned and collected data	(?)	(?)	(?)	(?)	(?)	☐
7.5.1.4	Portion of data not used in the analysis	(?)	(?)	(?)	(?)	(?)	☐
7.5.1.5	Data scoring	(?)	Not applicable	✓	Not applicable	✓	☐
7.5.1.6	Statistical analyses used to analyse the data	(?)	Not applicable	✓	Not applicable	✓	☐
7.5.2	**Reported results**						
7.5.2.2	**Usability findings**						
7.5.2.2.2	Identified usability defects	✓	✓	✓	Not applicable	Not applicable	☐
7.5.2.2.3	Potential usability problems	✓	✓	✓	Not applicable	Not applicable	☐
7.5.2.2.4	Observed usability problems	Not applicable	✓	✓	Not applicable	Not applicable	☐