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PROPOSAL FOR A NEW WORK ITEM

Date of presentation of proposal: 2010-01-26	Proposer: BSI (UK)
Secretariat: Canada	**ISO/IEC JTC 1 N** XXXX ISO/IEC JTC 1/SC7 N4543

A proposal for a new work item shall be submitted to the secretariat of the ISO/IEC joint technical committee concerned with a copy to the ISO Central Secretariat.

Presentation of the proposal - to be completed by the proposer.

Title (subject to be covered and type of standard, e.g. terminology, method of test, performance requirements, etc.) Specification of Data Value Domain

System and software product Quality Requirements and Evaluation (SQuaRE) – Common industry Format for Usability: User needs report

Purpose and justification –

ISO TR 25060 has been developed by ISO/IEC JTC1/SC7/JWG1 in cooperation with ISO TC159/SC4 to provide a general framework for describing usability-related information. ISO TR 25060 defines the framework for and scope of a potential family of standards (that will incorporate ISO/IEC 25062). It was envisaged that additional work items would result from this activity to develop additional standards in this family, and the first four of these have now been identified as:

25063: Context of use description

25064: User needs report

25065: User requirements description

25066: Usability evaluation report

The usability of a product is a key factor in predicting successful deployment and benefits both the producer and the consumer of the product. A user needs report is an intermediate deliverable that links the context of use data to the user requirements. Information concerning user needs provides the rationales that serve as the basis and/or validation for both, the user requirements themselves and any further design decisions taken

Scope (and field of application)

This project will provide guidance for the content and format of user needs reports. The determination and documentation of user needs is an important prerequisite to designing and developing a system. User needs reports include:

- identified, stated, derived and implied user needs (cognitive, physiological, social)
- the needs of other stakeholders that have been identified within the context of use description (e.g., managers)
- the results of the user needs analysis relating the described context of use and its development constraints to the tasks of each user group who are affected including any resulting human-system issues or risks
- Sources of the data and data collection instruments

Programme of work

If the proposed new work item is approved, which of the following document(s) is (are) expected to be developed?

__X__ a single International Standard ___ more than one International Standard (expected number:) __ __ a multi-part International Standard consisting of ..... parts ____ an amendment or amendments to the following International Standard(s) ..... ____ a technical report , type ..... And which standard development track is recommended for the approved new work item? ____a. Default Timeframe ____b. Accelerated Timeframe __X__c. Extended Timeframe The extended timeframe will permit the work items for 25065 and 25066, planned to be submitted later this year, to be developed in parallel with 25063 and 25064.
Relevant documents to be considered ISO 9241-11, ISO 9241-210, ISO/IEC 15289, ISO/IEC 15504-6.
Co-operation and liaison Joint working group with ISO TC159/SC4.
Preparatory work offered with target date(s): A draft is attached.
Signature:
Will the service of a maintenance agency or registration authority be required? .....No..... - If yes, have you identified a potential candidate? ..... - If yes, indicate name ..... Are there any known requirements for coding? .....No..... -If yes, please specify on a separate page Does the proposed standard concern known patented items? ....No..... - If yes, please provide full information in an annex

Comments and recommendations of the JTC 1 or SC7 Secretariat - attach a separate page as an annex, if necessary

Comments with respect to the proposal in general, and recommendations thereon: Since it is proposed to assign this new item to the Joint Working Group of JTC 1/SC7 and TC159/SC4, P members are requested to take account of opinions of both national mirror committees.

Voting on the proposal - Each P-member of the ISO/IEC joint technical committee has an obligation to vote within the time limits laid down (normally three months after the date of circulation).

Date of circulation:	**Closing date for voting:**	**Signature of Secretary:**
2010-01-26	2010-04-26	W. Suryn

NEW WORK ITEM PROPOSAL - PROJECT ACCEPTANCE CRITERIA		
Criterion	**Validity**	**Explanation**
A. Business Requirement		
A.1 Market Requirement	Essential _X__ Desirable __	ISO 25062 is based on ANSI 351-2001 produced with

	Supportive ___	significant international support by the NIST Industry Usability Reporting Project (IUSR). This proposal to extend the scope of that work also has significant industry support.
A.2 Regulatory Context	Essential ___ Desirable ___ Supportive ___ Not Relevant _X__	
B. Related Work		
B.1 Completion/Maintenance of current standards	Yes ___ No___	
B.2 Commitment to other organisation	Yes __X_ No___	ISO TC159/SC4 Technical input from NIST IUSR.
B.3 Other Source of standards	Yes __ No_X	
C. Technical Status		
C.1 Mature Technology	Yes ___ No_X__	This is not a technology specific proposed standard
C.2 Prospective Technology	Yes ___ No__X_	This is not a technology specific proposed standard
C.3 Models/Tools	Yes ___ No_X__	This is not a technology specific proposed standard
D. Conformity Assessment and Interoperability		
D.1 Conformity Assessment	Yes ___ No_X__	
D.2 Interoperability	Yes ___ No_X__	N/A
E. Cultural and Linguistic Adaptability	**Yes____** **No__X___**	N/A
F. Other Justification		

Notes to Proforma

A. Business Relevance. That which identifies market place relevance in terms of what problem is being solved and or need being addressed.

A.1 Market Requirement. When submitting a NP, the proposer shall identify the nature of the Market Requirement, assessing the extent to which it is essential, desirable or merely supportive of some other project.

A.2 Technical Regulation. If a Regulatory requirement is deemed to exist - e.g. for an area of public concern e.g. Information Security, Data protection, potentially leading to regulatory/public interest action based on the use of this voluntary international standard - the proposer shall identify this here.

B. Related Work. Aspects of the relationship of this NP to other areas of standardisation work shall be identified in this section.

B.1 Competition/Maintenance. If this NP is concerned with completing or maintaining existing standards, those concerned shall be identified here.

B.2 External Commitment. Groups, bodies, or fora external to JTC 1 to which a commitment has been made by JTC for Co-operation and or collaboration on this NP shall be identified here.

B.3 External Std/Specification. If other activities creating standards or specifications in this topic area are known to exist or be planned, and which might be available to JTC 1 as PAS, they shall be identified here.

C. Technical Status. The proposer shall indicate here an assessment of the extent to which the proposed standard is supported by current technology.

C.1 Mature Technology. Indicate here the extent to which the technology is reasonably stable and ripe for standardisation.

C.2 Prospective Technology. If the NP is anticipatory in nature based on expected or forecasted need, this shall be indicated here.

C.3 Models/Tools. If the NP relates to the creation of supportive reference models or tools, this shall be indicated here.

D. Conformity Assessment and Interoperability

D.1 Indicate here if Conformity Assessment is relevant to your project. If so, indicate how it is addressed in your project plan.

D.2 Indicate here if Interoperability is relevant to your project. If so, indicate how it is addressed in your project plan

E. Cultural and Linguistic Adaptability Indicate here if cultural and linguistic adaptability is applicable to your project. If so, indicate how it is addressed in your project plan.

F. Other Justification Any other aspects of background information justifying this NP shall be indicated here

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ISO/IEC JTC1/SC7/JWG1 Nxxxx

12-Jan-10

TITLE:	ISO/IEC WD 25064: Systems and software engineering – Software product Quality Requirements and Evaluation (SQuaRE) – Common Industry Format (CIF) for usability: User needs report
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ISO/IEC JTC1/SC7/JWG1

Secretariat:

Systems and software engineering — Software product Quality Requirements and Evaluation (SQuaRE) — Common Industry Format (CIF) for Usability: User needs report

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

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.

ISO/IEC 25064 was prepared by Technical Committee ISO/TC JTC1, *Information Technology*, Subcommittee SC SC7, *Software and System Engineering in conjunction with* ISO/TC 159 *Ergonomics* SC 4 *Human-System Interaction.*

Introduction

The human-centred design approach of ISO/DIS 9241-210 is well established and focuses specifically on making systems usable. Usability can be achieved by applying human-centred design and testing throughout the lifecycle. In order to enable a human centred approach to be adopted, it is important that all the relevant information related to usability (information items) are identified and communicated. This identification and communication enables the usability of a system to be designed and tested.

This International Standard provides a framework and consistent terminology for conducting and reporting on the assessment of user needs. Specifying user needs in a consistent manner will assist those developing and acquiring interactive systems. It describes a set of user needs report content items as part of a human-centred approach to design of interactive system. A user needs report is intended to assist developers in determining usability requirements for an interactive system.

The Common Industry Format (CIF) for Usability family is part of the SQuaRE series (ISO/IEC 25000 – ISO/IEC 25099) of standards on software product quality requirements and evaluation. The scope of the CIF family covers systems rather than just software, so is broader in scope than the current SQuaRE series. The CIF family of standards uses definitions that are consistent with the ISO 9241 series of standards (Ergonomics of human system interaction), as this is the terminology that is normally used for this subject matter. In some cases these definitions differ from those in ISO/IEC 25000. The CIF for User Needs Reports is one of the information items described in PDTR 25060 and is the subject of this International Standard.

Systems and software engineering — Software product Quality Requirements and Evaluation (SQuaRE) — Common Industry Format (CIF) for Usability: User needs report

1 Scope

This International Standard describes the Common Industry Format (CIF) for User Needs Reports. This document provides specifications for the contents and format of user needs reports, including the content items to be provided. The purpose of the User Needs Report and the intended users of the information are identified, as well as the relationship of user needs to other outputs of human-centred design.

The User Needs Report is applicable to software and hardware systems, products or services used within a specific context of use (excluding generic products, such as a display screen or keyboard). The content items are intended to be used as part of system-level documentation resulting from development processes such as those in ISO 9241-210 and ISO/IEC JTC1/SC7 process standards.

This International standard does not prescribe any kind of method, lifecycle or process. To ensure that these content items can be used within the broadest range of process models and used in combination with other information items, the descriptions are given in the format defined in ISO/IEC 15289 and ISO/IEC 15504-6.

The content items for documenting user needs can be integrated in any process models. For the purpose of establishing process models, ISO/IEC 24774 and ISO/IEC 15504-2 specify the format and conformance requirements for process models respectively. In addition ISO/IEC 15289 defines the types and content of information items developed and used in process models for system and software lifecycle management. ISO/IEC 15504-5 and 6 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 TR 18529 and ISO PAS 18152 respectively.

2 Conformance

To claim conformance to this standard, all relevant information items described in clause 7 shall be provided in the user needs report.

3 Terms and Definitions

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

3.1
accessibility
<interactive systems> usability of a product, service, environment or facility by people with the widest range of capabilities

[ISO 9241-171:2008]

3.2
action
user behaviour that a system accepts as a request for a particular operation

[ISO/IEC TR 11580:2007]

3.3
context of use
the users, tasks, equipment (hardware, software and materials), and the physical and social environments in which a product is used

[ISO 9241-11:1998]

3.4
deficiency
difference between the required (or desired) level of performance and the actual performance

3.5
dialogue
interaction between a user and an interactive system as a sequence of user actions (inputs) and system responses (outputs) in order to achieve a goal

[ISO 9241-110:2006]

3.6
effectiveness
the accuracy and completeness with which users achieve specified goals

[ISO 9241-11:1998]

3.7
efficiency
the resources expended in relation to the accuracy and completeness with which users achieve goals

ISO 9241-11:1998]

3.8
goal
an intended outcome

[ISO 9241-11:1998]

3.9
potential improvement
modification in hardware, software, environment or procedures that could lead to improved usability

NOTE Contrast with deficiency.

3.10
product
the part of the equipment (hardware, software and materials) for which usability is to be specified or evaluated

[ISO 9241-11:1998]

3.11
satisfaction
freedom from discomfort, and positive attitudes towards the use of the product

[ISO 9241-11:1998]

3.12
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

[ISO/IEC 15288:2008]

3.13
system
a combination of interacting elements organized to achieve one or more stated purposes

NOTE 1 A system may be considered as a product or as the services it provides.

NOTE 2 In practice, the interpretation of its meaning is frequently clarified by the use of an associative noun, e.g. aircraft system. Alternatively the word system may be substituted simply by a context dependent synonym, e.g. aircraft, though this may then obscure a system principles perspective.

[ISO/IEC 15288:2008, 4.31]

3.14
task
activities required to achieve a goal

[ISO 9241-11:1998]

NOTE The term “task” is used here, as in ISO 9241-11, in its widest sense, rather than in reference to the specifics of use of the dialogue system.

3.15
usability
extent to which a system, product or service can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use

[ISO FDIS 9241-210]

NOTE This definition of usability is similar to that used to define quality in use in ISO/IEC 9126-1:2001.

3.16
user
person who interacts with the interactive system

[ISO 9241-110:2006]

3.17
user experience

a person's perceptions and responses that result from the use and/or anticipated use of a product, system or service

NOTE 1 User experience includes all the users' emotions, beliefs, preferences, perceptions, physical and psychological responses, behaviours and accomplishments that occur before, during and after use.

NOTE 2 User experience is a consequence of brand image, presentation, functionality, system performance, interactive behaviour, and assistive capabilities of the interactive system; the user's internal and physical state resulting from prior experiences, attitudes, skills and personality; and the context of use.

NOTE 3 Usability, when interpreted from the perspective of the users' personal goals, can include the kind of perceptual and emotional aspects typically associated with user experience. Usability criteria can be established so as to assess aspects user experience.

[ISO DIS 9241-210: 2008]

3.18
user need
factor or condition necessary for a user to achieve desired results within a specified context of use.

Note 1 Factors and conditions include the presence of a specific quality, quantity, information, process or service as well as particular social, organizational and physical environments.

Note 2 User needs often represent gaps (or discrepancies) between what should be and what is.

3.19
user requirements
usage requirements
requirements for use that provide the basis for design and evaluation of interactive systems to meet identified user needs.

NOTE 1 User requirements are derived from user needs and capabilities in order to make use of the system in an effective, efficient, safe and satisfying manner.

NOTE 2 User requirements specify the extent to which user needs and capabilities are to be met when using the system. They are not requirements on the users.

NOTE 3 In software-engineering terms, user requirements comprise both "functional" and "non-functional" requirements based on user needs and capabilities.

3.20
user interface
all components of an interactive system (software or hardware) that provide information and controls for the user to accomplish specific tasks with the interactive system

[ISO 9241-110:2006]

3.21
user interface element
entity of the user interface that is presented to the user by the software

NOTE 1 User interface elements may or may not be interactive.

NOTE 2 Both entities relevant to the task and entities of the user interface are regarded as user interface elements. Different user interface element types are text, graphics and controls. A user interface element may be a visual representation or an interaction mechanism for a task object (such as a letter, a sales order, electronic parts, or a wiring diagram) or a system object (such as a printer, hard disk, or network connection). It may be possible for the user to directly manipulate some of these user interface elements.

NOTE 3 User interface elements in a graphical user interface include such things as basic objects (such as window title bars, menu items, push buttons, image maps, and editable text fields) or containers (such as windows, grouping boxes, menu bars, menus, groups of mutually-exclusive option buttons, and compound images that are made up of several smaller images). User interface elements in an audio user interface include such things as menus, menu items, messages, and action prompts.

NOTE 4 User interface elements are also referred to as “user interface objects”.

[ISO/DIS 9241-171:2007]

4 Purpose of a User Needs Report

An effective human-centred approach relies on explicit human factors data. Collection, analysis and reporting of user needs are an essential part of this process. The purpose of the User Needs Report is to describe the data collected, its analysis and conclusions concerning the needs of intended users of an interactive system. In addition, User Needs Reports support effective communication among the target users of the report to obtain a common understanding of the user needs concerning the system, product or service.

User needs information is critical to designing any kind of system, product or service, both organizational and consumer. Existing systems, products or services and new systems, product or services require user needs information for their successful design. User Needs Reports are particularly relevant for systems, products or services with a large number of diverse users and multiple designers and developers. In such cases, a formal report helps to ensure that all designers and developers are working from the same information base. In small applications or products, with few designers and developers, a formal User Needs Reports may not be necessary. However, the relevant information content still should be collected, documented and available to the designers and developers.

5 Users of the User Needs Report

User Needs Reports are intended for the following types of users listed in terms of their use situation:

Purchase

- Requirements Developers: Specifying user requirements for a system, product or service to be purchased and specifying usage scenarios for a system, product or service to be purchased.
- Usability and Accessibility Specialists: Specifying user requirements for a system, product or service to be purchased.

Development

- Requirements Developers: Specifying user requirements for a system, product or service to be developed and specifying usage scenarios for a system, product or service to be developed.
- Usability and Accessibility Specialists: Specifying user requirements for a system, product or service to be developed.

— Usability and Accessibility Specialists: Specifying user requirements for a system, product or service to be developed.

— Developers: Specifying system requirements based on user requirements.

— Product Managers: Estimating required resources for a development based on specified requirements.

— Quality Managers: Assessing the progress of a development project based on implemented requirements.

Maintenance

— Usability and Accessibility Specialists: Identifying requirements for improving an existing system, product or service.

— Managers (in terms of sponsors and project managers): Estimating required resources for maintenance based on specified requirements and assessing the progress of a maintenance project based on implemented requirements.

— Marketing Specialists: Monitoring the processing status of requirements for improving an existing system, product or service.

— Quality Managers: Monitoring the processing status of requirements for improving an existing an existing system, product or service.

6 User Needs in Relation to other Outputs of Human-Centred Design

The identification of user and other stakeholder needs is a critical part of the Human-centred design process described in ISO DIS 9241-210. One of the first activities in the human-centred design process is to "understand and specify the context of use." This initial Context of Use Description provides the information on which the information items to be included in the User Needs Report is based. In turn, the user needs documented in the User Needs Report provides information relevant to the verification and modification of the context of use and is a critical input into specifying User Requirements.

7 User Needs Report Content

Content items specified below cover the range of content that may be included in a User Needs Report. The appropriateness of a particular content item depends on the type of system, product, or service involved. In addition, the order of presentation of the content items is based on a logical sequence of providing the data. The order chosen for a communicating data to specific audiences may differ from that presented in this International Standard. Annex A provides a format for a formal User Needs Report.

7.1 Initial indicators of the need for system/product/service or improvement

If information existed, prior to the user needs assessment, related to the need for the system, product or service or potential improvements on an existing system, product or service, such information shall be stated.

NOTE Such information can often be found in customer surveys, trouble reports, etc.

7.2 User responsibilities and goals

The following information related to intended users shall be provided for each user category identified in the Context of Use Description:

— Current or anticipated responsibilities and/or goals related to the context of use

— Products produced or anticipated to be produced

— Outputs (e.g., results of a process) produced or anticipated to be produced

NOTE 1 User categories might be based on job titles, use situations (in the case of consumer products), occupations, etc.

NOTE 2 Indirect users (e.g., supervisors, maintenance personnel) also could be included in a needs assessment.

7.3 Reported user needs

This section of the User Needs Report provides a summary of the user needs as reported by users. Needs shall be summarized by user categories and user responsibilities or goals to allow comparisons of needs across user categories.

NOTE Reported user needs are analyzed on the basis of similarity, relevancy, importance and implementation feasibility and are refined into “derived needs” as listed in 7.6.

7.3.1 Informational needs

The following data gathered from intended users shall be provided for each user category:

— Content of specific information items that are important to accomplishing a job function or user goal (either currently available or desired in the future)

— Why this information is required

The following data should be provided for each user category:

— Frequency of how often the information item is typically used (or anticipated to be used) on the job

— The quality required (e.g., accuracy, timeliness)

7.3.2 Process needs

Specific processes needed by users to accomplish their functions or goals shall be listed.

The following information should be provided for each user category:

— Frequency of how often the process is typically used (or anticipated to be used) on the job

— The quality required (e.g., accuracy, timeliness)

7.3.3 Environmental needs (if appropriate)

Environmental needs are those needs related to the physical and/or social environment in which the system, product, or service will operate. If identified, environmental needs shall be listed.

7.4 Stated organizational needs (if appropriate)

Managers have their own needs for system data and performance. If the system or manual version of the system is currently in operation, management’s views concerning the current performance and the “gap” between current performance and management’s goals is particularly important. If identified, manager and other stakeholder needs shall be listed.

NOTE 1 It is important to determine the needs of managers for systems or products that will be used within an organizations context.

NOTE 2 Other important stakeholders, in addition to managers, could also be included in the needs assessment.

7.4.1 Output needs

Description of the need for specific outputs (e.g., result of a process) produced or anticipated to be produced should be provided for each manager/stakeholder:

7.4.2 Procedural needs

Specific procedures needed by managers/stakeholders should be listed for each manager/stakeholder type

7.4.3 Quality objectives

Criteria for meeting manager/stakeholder goals in terms of quality should be listed for each manager or stakeholder type

7.4.4 Usability objectives (if determined)

High level usability objectives for achieving overall management goals in terms of effectiveness (e.g., success rate and accuracy in achieving intended outputs), efficiency (e.g., total time) and satisfaction (e.g., measured by a questionnaire).

7.5 Deficiencies/problems/potential improvements (if identified)

Deficiencies are based on measured (or reported) deviations from performance requirements set by management and problems are based on reported difficulties with using a system, product or service. However, potential improvements are more subjective in nature and are based on anticipated results. In many cases potential improvements reported by users relate to user satisfaction problems with the current system, product or service.

7.5.1 Deficiencies reported by subject matter experts, supervisors, trouble reports, alarms, etc.

Information related to deficiencies should include:

- Condition under which deficiency occurred
- Who produced the deficient output
- Description of the output
- Standard for the output
- Deviation from the standard
- Source of data
- Method of measurement
- Cause(s), penalties and value of solving.

7.5.2 Problems identified by trouble reports, customer service representatives, surveys, focus groups, etc.

NOTE Problems could be implied from the results of a user satisfaction survey.

Information related to problems should include:

— Description of problem in terms of what is wrong or seems to be wrong (e.g., user cannot perform a particular activity, system crashes when user does x).

— How identified

— Probable cause

— Probable effect

— Value of resolving

7.5.3 Potential improvements reported by users, subject matter experts, managers, etc.

Information related to potential improvements should include:

— Description of potential improvement

— How identified

— Probable effect

— Improvement anticipated

— Value of providing

7.5.4 Deficiency/problem/improvement analysis (users/stakeholders)

This clause should provide an analysis of the deficiencies, problems and potential improvements reported by users and stakeholders in terms of cause(s), effects, value of solving (or providing) and possible solutions.

NOTE To estimate the value of solving a deficiency or implementing an improvement, it is necessary to determine the cost of the deficiency or improvement in terms of its effect on quality, response time, cost, etc. In addition, Return On Investment (ROI) or Risk Management (avoiding errors) may be used in the evaluation.

7.6 Derived needs

Derived needs and the rationale for determining them shall be stated. Derived needs are those user needs that result from the analysis and combination of the stated user needs described in 7.3, as well as organizational needs described in 7.4. Data summary tables are typically used to determine similarity and importance of needs stated by various types of users. Needs are also evaluated in terms of the feasibility of meeting the needs in terms of available or planned resources (including hardware and software capabilities). While user stated needs are specifically based on information collect from users, some of these will end up derived needs and some will not (because some may not be realistic, impossible to meet, out of context with organizational needs, etc.

7.6.1 Informational needs

The derived information needs should include:

— Content of specific information items determined to be important to accomplishing a job function (either currently available or desired in the future)

— Why this information is required

— Frequency of how often the information item is typically used (or anticipated to be used) on the job

— The quality required (e.g., accuracy, timeliness)

7.6.2 Process needs

The derived process needs should include:

— Description of the process

— Frequency of how often the process is typically used (or anticipated to be used) on the job

— The quality required (e.g., accuracy, timeliness)

7.6.3 Environmental needs (if appropriate)

The derived environmental needs related to the physical and/or social environment in which the system, product, or service will operate shall be described as well as the rationale for determining them.

7.7 Recommendations

This content item describes the recommendations based on the derived needs and associated analysis. If organizational needs were included in the assessment, how these needs were reconciled with user needs should be reported. In addition, conclusions and recommendations related to any identified efficiencies and improvements should be associated with relevant user or organizational needs.

NOTE It is particularly important to reconcile manager's needs with subordinate user's needs

7.7.1 Needs and/or deficiencies/problems/improvements with hardware or software solutions

The conclusions and recommendations related to needs (or deficiencies/problems/improvements that have hardware of software solutions shall be stated in terms of:

— Need/deficiency/problem/improvement

— Source (e.g., user category, stakeholder type, supervisor, etc.)

— The rationale for determining the potential solution

— Details of any proposed solution in terms of hardware or software features

7.7.2 Needs and/or deficiencies/problem/improvements with potential performance support solutions

The conclusions and recommendations related to needs (or deficiencies/improvements that have potential performance support solutions shall be stated in terms of:

— Need/deficiency/problem/improvement

— Source (e.g., user category, stakeholder type, supervisor, etc.)

— The rationale for determining the potential solution

— Details of the proposed solution in terms of the type of performance support that would meet the need or solve the problem

NOTE Performance support solutions could include performance aids, online help, instruction, coaches/advisor/wizards or documentation.

7.7.3 Needs and/or deficiencies/problems/improvements requiring other solutions

The conclusions and recommendations related to needs (or deficiencies/problems/improvements that require other solutions shall be stated in terms of:

— Need/deficiency/problem/improvement

— Source (e.g., user category, stakeholder type, supervisor, etc.)

— The rationale for determining the potential solution

— Details of the proposed solution in terms of the type of solution that would meet the need or solve the problem

NOTE Other solutions could include process re-engineering and/or organizational action (e.g., job redesign, modification of performer objectives).

7.8 Cost/benefit analysis (if appropriate)

7.8.1 Estimated costs of current deficiencies and problems

If current deficiencies and/or problems have been identified, their estimated cost should be stated in terms that can include:

— Response time

— Error correction

— Output quality

7.8.2 Estimated costs of potential solutions

The estimated cost of each potential solution identified should be stated.

NOTE 1 The accuracy of the cost estimates will depend on the knowledge and experience of the analyst in identifying and costing out potential solutions

NOTE 2 It is important to also identify any trade-offs between speed and accuracy in regard to potential solutions.

7.8.3 Estimated benefits (both in terms of cost savings and customer satisfaction)

The estimate benefits of each potential solution identified should be stated.

NOTE Benefits can be derived from value of solving information collected from participants, but also include money saved by the organization, money made, and anything that adds directly or indirectly to the bottom line as well as the improvements in productivity and customer satisfaction.

7.9 Proposed project scope and schedule (if appropriate)

7.9.1 Deliverables

The specific project deliverable products should be listed

7.9.2 Resource requirements

Anticipated resource requirements for the various deliverable should be listed

7.9.3 Schedule

The projected schedule for the completion of the various deliverables should be provided

7.10 Data collection methods/procedures

This section of the User Needs Report shall include a detailed description of the methods and procedures used to collect data including a detailed description of the actual population used to collect data.

NOTE 1 Needs assessment methods can include document analysis, interviews, surveys, critical incidents, questionnaires, and rating scales.

NOTE 2 The selection of assessment methods and the amount of data collect depends on the scope of the project, the availability of information sources, and the resources of the needs assessment team.

As an example, some of the key questions asked during a needs assessment for an information system might include:

- What information will be required from the system?
- Who needs that information?
- Why do they need the information?
- When and in what form will it be required?
- What degree of accuracy is necessary?

In the case of an existing system, product or service, it is useful to determine what deficiencies and/or problems exist in using the current system, product or service and, in addition, determining what potential improvements might increase usability.

7.10.1 User needs assessment population selection

The users shall be selected on the basis of the Context of Use Description and the sample of such users should be as representative as possible. All relevant groups shall be identified and information relating to each group shall be provided.

The relevant characteristics of the users involved in the user needs assessment shall be identified. These can include knowledge, skill, experience, education, training, physical attributes, habits, preferences and capabilities. The characteristics of different types of users should be defined, for example with different levels of experience or physical capability. Also, the range of characteristics described should include people (such as older users) whose physical or psychological characteristics (body dimensions, strength, biomechanical abilities, visual abilities, auditory abilities, knowledge, experience, or literacy) are at the extremes of the range in the intended user population. In order to achieve accessibility, the characteristics and capabilities of people with the widest range of capabilities in the intended user groups shall be identified.

In identifying the user population to be used in the assessment, it is important to obtain as much information as possible on the number of different types of users, organizations and locations that will be using, or are using, the system, product or service. Organizations tend to have unique contexts of use that often changes the way people use a system, application or product. Also, users tend to vary in the amount that they will use a system, application or product. The difference between experienced users and novice users also needs to be considered. Some of the experienced users also may be “experts” on the system, application or product (or similar systems, applications or products). Therefore, the information concerning user needs_should be based on the intended types of users, using organizations (as appropriate) and locations. For example, users and support personnel to be represented in the user needs for a system, product or service might include:

- Expert users
- Subject matter experts (where appropriate)
- Regular users
- Infrequent users

— Novice users (with limited experience)

— Support personnel

— Supervisors of the above populations (where appropriate)

7.10.2 User needs assessment population description

NOTE This description could reference data in the annexes related to population summary data.

The description of the user needs assessment participants should include:

— The actual titles of the participating intended user population and their general job responsibilities. If the product is a consumer product, the occupations or use situations of the participating users might be listed.

— The user's previous experience stated in terms of:

1) relevant technology use (e.g., computer platforms)

2) brand, product or application subject area experience and proficiency (including typical length of job experience and self ratings as to proficiency, if appropriate)

3) relevant training courses (if appropriate)

4) experience based stereotypes and habituated activities (if appropriate)

— The skills that users already possess that are relevant for using the product or system should be stated and, if possible, should be quantified. Relevant skills might include typing, manual dexterity, information processing, problem solving, etc.

— The current or expected frequency of use of the product, application or system. Such statements might include information describing frequency of use of the product, system or service within the range of usage represented by following categories:

1) Regular users – are users that make routine use of the service, product or service on a regular basis.

2) Infrequent users – are users that make occasional use of the product, application or system, but spend most of the day doing something else. Examples would be a salesperson checking the status of an order, a manager varying some budget parameters to make a decision, or a person using a tax program to prepare their taxes once a year.

— Use pressures include time pressures and high penalties for the occurrence of errors.

NOTE 1 These pressures can be a source of stress and lead to long term inefficiencies in the operation of a system or service

NOTE 2 Often such pressures are based on the importance of meeting job standards in obtaining successful ratings by supervisors.

7.10.3 Methods and procedures

The specific methods and procedures used to collect data from the user needs assessment participants shall be described in enough detail to replicate the assessment with a different population.

NOTE This description could reference data in the annexes related to specific data collection instruments and instructions.

7.11 Report annexes

7.11.1 System/Product/Service description, objectives, constraints

The following information shall be provided:

- Description of system, product or service
- The user population for which the system product, or service is intended

The following information should be provided:

- System/product/service objectives and constraints.
- Assistive technologies that are supported, or intended to be supported by the system, product or service.
- Brief description of the physical and social environment(s) in which the system, product or service is intended to be used.
- The type of user work that is supported (or intended to be supported) by the system, product or service.

7.11.2 Data collection instruments

All data collection instruments used in the needs assessment shall be described in this annex. Any instruction for interviewers or respondents should also be included. If information is available concerning validity and reliability of any of the data collection instruments, such information should also be stated.

7.11.3 Data summaries

The following data summaries shall be provided:

- Participant characteristics (in terms of user population variables described in 4.5)
- Needs data by organization and user categories
- Needs data by stakeholder type (should be rated by importance and frequency)

The following data summaries should be provide:

- Deficiency summaries
- Problem summaries
- Improvement summaries

Annex A User Needs Report Format

A.1 General

The format described below is intended for User Needs Reports that are formally produced for distribution as a report. Other formats (e.g., data base structures) may be used for storage and access of the content for particular purposes.

A.2 Title page

The following information items should be provided:

- Identify report as: ISO/IEC 25064 Systems and Software engineering – Software product Quality Requirements and Evaluation (SQuaRE) – Common Industry Format (CIF) for Usability – User Needs Report and contact information
- Name of the system, product or service that was the focus of the needs assessment together with the version number if applicable
- Name of person who led the needs assessment.
- The date(s) that the assessment was conducted
- The date the report was prepared
- The name of the person who prepared the report
- The name of person(s) to be contacted for questions and/or clarifications

A.3 Executive summary

This section provides a high level overview of the User Needs Report. The intent of this section is to provide information for individuals (e.g., managers) that might not read the technical body of this document.

This section should begin on a new page and end with a page break to facilitate its use as a stand-alone summary.

A high level overview of the report should be provided that includes:

- Name and description of the product.
- General description of the organizations and types of users surveyed
- Summary of method(s) used to obtain information about the needs of intended users.
- General description of the types of user needs identified.
- Reason for and nature of the User Needs Report.
- Tabular summary of results.
- General description of the recommendations

A.4 Introduction

This section of the report provides a description of the system, product or service and the objectives of the user needs assessment.

A.5 Initial indicators of the need for system/product/service or improvement (If appropriate)

As specified in clause 7.1

A.6 Methods and procedures

As specified in clause 7.10.

A.7 Stated user needs

As specified in clause 7.3.

A.8 Stated organizational needs

As specified in clause 7.4.

A.9 Deficiencies/problems/potential improvements (if identified)

As specified in clause 7.5.

A.10 Conclusions and recommendations

This section of the report should start on a new page to make it easily accessible for report users mostly concerned with the results of the needs assessment. It contains:

A.10.1 Conclusions

The conclusions should contain the derived needs (see clause 7.6) and the rationale for their derivation.

A.10.2 Recommendations

As specified in clause 7.7. The recommendations section may also contain the results of a cost/benefit analysis if it has been done (see clause 7.8).

A.11 Proposed project scope and schedule (if appropriate)

As specified in clause 7.9.

A.12 Report annexes

This section of the report should start on a new page and contain the following subsections.

A.12.1 System/Product/Service description, objectives, constraints

As specified in clause 7.11.1.

A.12.2 Data collection instruments

As specified in clause 7.11.2.

A.12.3 Data summaries

As specified in clause 7.11.3.