# INTERNATIONAL STANDARD

# ISO 9241-13

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# Ergonomic requirements for office work with visual display terminals (VDTs) —

## Part 13:
## User guidance

*Exigences ergonomiques pour travail de bureau avec terminaux à écrans de visualisation (TEV) —*

*Partie 13: Guidage de l'utilisateur*


Reference number
ISO 9241-13:1998(E)

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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.

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.

International Standard ISO 9241-13 was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 4, *Ergonomics of human-system interaction*.

ISO 9241 consists of the following parts, under the general title *Ergonomic requirements for office work with visual display terminals (VDTs):*

— *Part 1: General introduction*
— *Part 2: Guidance on task requirements*
— *Part 3: Visual display requirements*
— *Part 4: Keyboard requirements*
— *Part 5: Workstation layout and postural requirements*
— *Part 6: Guidance on the work environment*
— *Part 7: Requirements for display with reflections*
— *Part 8: Requirements for displayed colours*
— *Part 9: Requirements for nonkeyboard input devices*
— *Part 10: Dialogue principles*
— *Part 11: Guidance on usability*
— *Part 12: Presentation of information*
— *Part 13: User guidance*
— *Part 14: Menu dialogues*
— *Part 15: Command dialogues*
— *Part 16: Direct manipulation dialogues*
— *Part 17: Form filling dialogues*

Annexes A and B of this part of ISO 9241are information only.

# Introduction

This part of ISO 9241 deals with user guidance aspects of software user interfaces.

The main purpose of user guidance is to aid the user's interaction with the system by

— promoting efficient system use;

— avoiding unnecessary mental workload;

— providing support to users to manage error situations; and

— providing support for users of different skill levels.

This part of ISO 9241 serves the following types of users:

— the designer of the user guidance, who will apply this part of ISO 9241 during the development process;

— designers of user guidance development tools to be used by dialogue designers;

— the buyer, who will reference this part of ISO 9241 during the product procurement process, and whose end-users will gain from the potential benefits provided by this part; and

— those responsible for ensuring that products meet the recommendations in this part of ISO 9241.

The ultimate beneficiary of this part of ISO 9241 will be the end-user at the visual display terminal (VDT). It was the needs of this user that provided the ergonomic recommendations in this part of ISO 9241. Although it is unlikely that the end-user will read this part or even know of its existence, its application should provide user interfaces that are more usable, consistent and that enable greater productivity.

Application of this part of ISO 9241 involves an understanding of the intended user, the user environment and tasks. User tasks should be listed and key tasks, defined as the most frequent and important tasks, should be explicitly identified.

Recommendations on how to use this part of ISO 9241 can be found in Informative Annex A.

For practical reasons, the following structure has been chosen for presenting the user guidance recommendations:

- common guidance recommendations (see clause 5),
- prompts (see clause 6),
- feedback (see clause 7),
- status information (see clause 8),
- error management (see clause 9),
- on-line help (see clause 10).

# Ergonomic requirements for office work with visual display terminals (VDTs) —

# Part 13: User guidance

## 1 Scope

This part of ISO 9241 provides recommendations for user guidance attributes of software user interfaces and their evaluation. User guidance as defined in this part of ISO 9241 is information additional to the regular user-computer-dialogue that is provided to the user on request or is automatically provided by the system. In addition to the general guidance provided in this part of ISO 9241, recommendations concerning dialogue-specific user guidance are provided in ISO 9241-12, ISO 9241-14, ISO 9241-15, ISO 9241-16 and ISO 9241-17.

This part of ISO 9241 is applicable to interaction components that aid users in recovering from error conditions. User guidance as covered by this part of ISO 9241 includes recommendations specific to prompts, feedback and status, error management and on-line help as well as general recommendations common to all these types of user guidance.

While user support can be provided via other means (e.g., on-line tutorials, on-line documentation, intelligent system performance aids) these types of support are not addressed by this part of ISO 9241-13.

The recommendations in this part of ISO 9241 are formulated to be independent of applications, environment, or implementation technology. They correspond to typical situations involving special needs for information and actions.

As with other parts of ISO 9241, this part of ISO 9241 can apply in all or in part. For example, applications that do not have browsable help would not need to follow recommendations concerning this class of user guidance.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 9241. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9241 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid international Standards.

ISO 9241-12:—[1)], *Ergonomic requirements for office work with visual display terminals (VDTs) — Part 12: Presentation of information.*

ISO 9241-14:1997, *Ergonomic requirements for office work with visual display terminals (VDTs) — Part 14: Menu dialogues.*

ISO 9241-15:1997, *Ergonomic requirements for office work with visual display terminals (VDTS) — Part 15: Command Dialogues.*

ISO 9241-16:—[1)], *Ergonomic requirements for office work with visual display terminals (VDTS) — Part 16: Direct manipulation dialogues.*

ISO 9241-17:—[1)], *Ergonomic requirements for office work with visual display terminals (VDTs) — Part 17: Form filling dialogues.*

1) To be published.

## 3 Definitions

For the purposes of this part of ISO 9241, the following definitions apply.

**3.1 browsable help:** Help in which access to help is independent of the current task context. Help topics can be accessed in the order and sequence desired by the user.

**3.2 context-sensitive help:** Help in which the help text or range of help topics is derived from the contextual information associated with the user's task, user's last input, selected object, current location or the current mode within the system or application.

**3.3 error:** Mismatch between the user's goal and the response of the system. Errors can include navigation errors, syntax errors, conceptual errors, etc.

**3.4 error management:** Means to support the user in error detection, error explanation, or error recovery.

**3.5 error prevention:** Means to minimize the probability of the occurrence of errors.

**3.6 feedback:** Output presented to the user by the system in reaction to the user's input or a system event.

**3.7 guidance:** Dialogue elements that aid the users in achieving their intended results. Guidance can aid users in discovering the capabilities of a system, enable the users to generate a plan for accomplishing their goals, assist the users in accomplishing a goal, or help the users to manage error situations.

**3.8 on-line help:** Additional user guidance information beyond prompting, feedback, status, and error messages that can be obtained at the user's initiative or at the initiative of the system. Information about features of the system and dialogue and how they can be used to aid the user in completion of his/her task(s) is typically provided.

**3.9 prompt:** System output requesting input from the user.

**3.10 status information:** Information indicating the current state of the system.

**3.11 system-initiated guidance:** Guidance that is presented to the user by the system when the user has not taken an explicit action to request the guidance.

NOTE System-initiated guidance includes, for example, prompts, feedback, status information, etc.

**3.12 user guidance:** Additional information beyond the regular user-computer dialogue that is provided to the user on request or is automatically provided by the system.

**3.13 user-initiated guidance:** Guidance that is presented to the user only when the user has taken an explicit action to request the guidance.

## 4 Application of this part of ISO 9241

### 4.1 Appropriateness of user guidance

User guidance is appropriate to all styles of interaction, types of dialogues and contexts, to help users in accomplishing their tasks.

### 4.2 Applying the recommendations

General ergonomic design objectives are provided in Clauses 5 to 10. The individual recommendations aimed at achieving these objectives should be applied within the specific context for which they are relevant (e.g., particular kinds of users, tasks, environments, technology). The format for the individual recommendations is: statement of the recommendation, example (if appropriate), and notes (if appropriate). Examples provided for the various recommendations generally depict an implementation that embodies the recommendation. Some examples also indicate preferred solutions.

Individual recommendations should be evaluated for their applicability and, if judged to be applicable, should be implemented in the relevant user guidance unless there is evidence that to do so would cause deviation from the design objectives or would result in an overall degradation in usability. When determining applicability, the recommendations generally should be evaluated in the order presented in the relevant clause or subclause. In judging whether applicable recommendations have been met, evaluators should evaluate the product or observe representative users of the product in the context of accomplishing the user's tasks via the user guidance. Sample procedures which support the determination of applicability and for determining whether a recommendation has been followed are provided in Annex A.

### 4.3 Evaluation of products

If a product is claimed to have met the applicable recommendations in this part of ISO 9241, the procedure used in establishing requirements for, developing, and/or evaluating, the user guidance shall be specified. The level of specification of the procedure is a matter of negotiation between the involved parties.

Users of this part of ISO 9241 can either utilize the procedures provided in Annex A, or develop another procedure tailored to their particular development and/or evaluation environment.

## 5 Common guidance recommendations

### 5.1 Description

This clause addresses general recommendations that are applicable to user guidance (i.e., prompts, feedback, status, error management, on-line help).

### 5.2 General recommendations

**5.2.1** User guidance information should be readily distinguishable from other displayed information. (For recommendations concerning the presentation of visual information using graphical objects and coding techniques, see ISO 9241-17:—[2], Clauses 6 and 7).

EXAMPLE: When a user requests guidance, a separate dialogue box appears which has a different background colour.

**5.2.2** If system-initiated user guidance messages are no longer applicable to the current system state or user actions, the information should be removed from the display.

**5.2.3** User-initiated guidance should stay under the control of the user.

**5.2.4** User guidance messages should provide the user with specific information relative to the task context rather than generic messages.

EXAMPLE: Days must be in the range from 1 to 31
instead of
Invalid data.

**5.2.5** User guidance should not disrupt the user's task and the continuation of the dialogue.

2) To be published.

**5.2.6** Distinctive message or coding techniques should be consistently used to alert users to conditions that require special attention.

**5.2.7** Users should be able to specify the level of guidance they want if interaction with the system varies on the basis of user expertise.

## 5.3 Phrasing of user guidance

**5.3.1** The result of an action should be stated before describing how to execute the action.

EXAMPLE: To clear the screen, press RETURN.
instead of
Press RETURN to clear the screen.

**5.3.2** User guidance messages should be phrased to enhance the perception of user control rather than system control of the task.

EXAMPLE: To save your changes, press OK.
instead of
The system will only save your changes, if you press [OK].

**5.3.3** In general, user guidance messages should be worded as positive statements to emphasize 'what to do' rather than 'what to avoid'. However, negating statements should be used for denoting exceptions to rules or to emphasize a point.

EXAMPLE: To remove characters to the left of the cursor use the 'backspace key', not the 'delete key'.

EXAMPLE: Do not use the tape drive when the backup program is running
instead of
Data can be stored on the disk or tape drive except when the backup program is active.

**5.3.4** User guidance should be phrased using consistent grammatical construction.

| EXAMPLE: | | | |
|---|---|---|---|
| | The available options are:<br>display file<br>print file<br>delete file | instead of | The available options are:<br>display file<br>file print<br>deletion of a file |

**5.3.5** If user guidance contains written or spoken text, it should be stated in short, simple sentences.

**5.3.6** User guidance should be stated in the active voice unless it conflicts with the users' national language.

**5.3.7** User guidance should use terminology that the user population typically uses to perform its tasks.

NOTE: Use of user terminology avoids the use of designer terminology which may not be appropriate for the task.

**5.3.8** User guidance messages should be worded using terms which are emotionally neutral, such that

— they are not patronizing to the user,

— human characteristics are not inappropriately implied, and

— they do not contain inappropriate attempts at humour.

# 6 Prompts

## 6.1 Description

Prompts indicate that the system is available for input. Prompts can be generic or specific. Generic prompts indicate that the system is waiting for user input, but do not explicitly indicate the type of input expected (e.g. DOS ">", the UNIX command prompt "$"). Specific prompts indicate that the system is waiting for user input as well as direct the user to the type of input that is valid at this point in the dialogue (e.g. Type the name of the file to be loaded:).

## 6.2 Prompting recommendations

Many of the recommendations for prompts are equally applicable to 'labels' as they appear in form filling dialogues. For more information, see ISO 9241-17:—[3], 5.3.

**6.2.1** Prompts should indicate implicitly (generic prompt) or explicitly (specific prompt) the types of input that will be accepted by the dialogue system.

**6.2.2** Specific prompts should be displayed under the following conditions. As more conditions are met, the greater the applicability of specific prompts.

a) Users are unfamiliar with the system and will need information on how to proceed.

b) There is a limited set of valid inputs.

c)Task requirements (e.g. complicated task, task requires sequenced steps, or need to minimize errors) suggest that user inputs should be guided.

**6.2.3** Generic prompts should be displayed under the following conditions. As more conditions are met, the greater the applicability of generic prompts.

a) Conditions for specific prompts are not applicable.

b) There are many valid user inputs and there is insufficient display space to provide information on all alternatives.

NOTE When generic prompts are used, it is important to take into account different types of users (i.e., those who are familiar with prompts and those who are not).

**6.2.4** The user should be able to obtain on-line help related to prompts that are complex or that the user does not understand.

**6.2.5** If a task requires a particular sequence of user actions, prompting for the currently required step should be provided. (See also ISO 9241-12:—[3], 6.2.5.)

**6.2.6** Prompts for data/command entry should be displayed in a standard location next to the entry field.

EXAMPLE: In languages that are written from left to right, the prompt is presented to the left of the entry field.

**6.2.7** If a default value has been defined for user-prompted input, that value should be visually indicated. (See also ISO 9241-17:—[3], Clause 6.1.3.)

EXAMPLE: How many windows should be visible at login? **2**

**6.2.8** Prompts should provide cues for the type of data to be entered by formatting data entry fields consistently and distinctively. (See also ISO 9241-17:—[3], 5.3.7.)

EXAMPLE: Enter the current date: __/__/__

3) To be published.

**6.2.9** To facilitate response to prompts, the cursor should be automatically positioned in the input field at a location that is consistent with the type of input requested.

EXAMPLE: Numeric data arranged in columns are right justified, i.e., the cursor is positioned at the right-most position in the input field and numbers move to the left as they are typed. Textual data are left justified, i.e., the cursor is positioned at the left-most position in the input field and the cursor moves to the right as characters are typed.

# 7 Feedback

## 7.1 Description

Feedback provides information in response to the user's input. The type of feedback varies with changes in task, system state and user input.

Examples of feedback include

— echoing characters on the screen as the user types them;

— presentation of a message indicating a command has been received and is being processed;

— the visible change in a graphical data area after a command to modify its elements;

— presentation of a help window when the user presses a help key;

— moving the pointer on the screen to track mouse movement.

## 7.2 Feedback recommendations

**7.2.1** Every input by the user should produce timely and perceptible feedback from the system. (See also ISO 9241-15:1997, 7.9 and ISO 9241-17:—[4], 7.1.)

EXAMPLE: Key entries are echoed in the display within 150 ms of the user typing them, unless there are security requirements for not echoing characters.

**7.2.2** Feedback associated with normal task performance should be non-intrusive and should not distract the user from the task.

NOTE This recommendation does not apply to user guidance messages, like delete confirmations or alerts relating to safety critical events, that need to intrude into the user's task flow in order to elicit a considered response by the user.

**7.2.3** The type of feedback given by the system should take into account:

a) User characteristics: the feedback modality should be compatible with the capabilities of the user (e.g. a system designed for blind individuals should provide feedback through speech in addition to vision).

b) Population variability: feedback for novice users should contain more explanatory information than feedback for experienced users.

c) Task information requirements: feedback should be compatible with the attention demands of the task.

EXAMPLE: The task requires users to look away from the display; therefore a type of feedback other than visual display is presented (e.g., voice, auditory tone).

d) System capabilities: the presentation of feedback should not be dependent on the availability of specific hardware (e.g. do not use speech output as the only feedback if some systems do not have speech output capabilities).

4) To be published.

**7.2.4** The system should clearly indicate its state whenever the state (or mode) changes.

EXAMPLE: When the user types an interrupt sequence into the system, an indication of the new system state is provided.

**7.2.5** When a user selects a displayed item in order to perform some operation on it or to execute it, the item should be highlighted. (See also ISO 9241-14:1997, 7.1.4.)

**7.2.6** If servicing of remote requests is provided (e.g. print a document on a remote printer), a message should be provided on the local machine to confirm that the remote service request is being processed. (See also 9241-17:—[5], 7.4.)

**7.2.7** Feedback on completion of user requests should be provided. (See also ISO 9241-17:—[5], 7.5.)

**7.2.8** If completion of a user request is not immediate, an indication should be provided by the dialogue system that the request has been accepted. The dialogue system should also indicate when the request has been successfully completed.

EXAMPLE: Users are provided with an indication when processing is complete. When an operation will take longer than 5 s to complete, an hourglass is shown to indicate that the operation is still in progress.

**7.2.9** System response (feedback) to user entries should be appropriate so that it does not distract the user from the task (i.e. neither too slow nor too fast).

EXAMPLE 1: Feedback relative to moving to a new form field is given in under 250 ms.

EXAMPLE 2: Movement of a pointer on a display is visible within 100 ms of the movement of the pointing device (e.g. mouse).

# 8 Status information

## 8.1 Description

Status is user guidance information that indicates the current state of components in the system hardware and/or software. It includes information about available and active applications, modes, processes and hardware, etc. Status information can be presented at different levels of detail. The level of detail in status information needs to be appropriate to the user's current task. While all users can benefit from status information, it can provide a greater benefit to more experienced users who have learned enough about the system to adjust their actions to changes in the system state.

Examples of areas in which status information is provided include:

— networking or mail: summary of requested messages, other systems, or users available for communication;

— remote or local devices: queued documents waiting for printout, device malfunctions, and print completion;

— multi-tasking: summary of active processes or system load;

— currently selected items;

— current state of controls (e.g. radio buttons, check boxes).

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5) To be published.

Status, as handled in this part of ISO 9241, does not include information associated with error conditions.

## 8.2 Status recommendations

**8.2.1** Status information should be continuously presented under the following conditions. As more conditions are met, the greater the applicability of continuously presenting status information.

a) The information is relevant to the user's current task, and delays in the presentation of the information will lead to task errors, performance decrements or serious system failures.

b) The information is continuously relevant to the user's current task and the system has sufficient resources (e.g. processing capabilities and display space) to accommodate both status and task information.

**8.2.2** Status information should be automatically presented under the following conditions. As more conditions are met, the greater the applicability of automatically presented status information.

a) The status information is relevant to the user's task, and its automatic presentation is not likely to disrupt user task performance.

b) The status information is the only feedback provided for a user action (e.g. an object changes colour to show it has been selected).

c) Users have minimal training or experience with the system or application and do not know how to request status information.

d) Use of the system or application is infrequent.

e) Changes in the system state affect the response of the system to user input (e.g. change in the availability of peripheral devices).

**8.2.3** Status information should only be presented in response to a user request under the following conditions. As more conditions are met, the greater the applicability of presenting status information only in response to user request.

a) The information is not relevant to the user's current task.

b) The information is non-critical and useful for only a subset of the potential users.

c) The information is only occasionally needed to guide user responses.

d) The status information is non-critical and rapidly changing and frequent changes in displayed information are likely to be disruptive to the user's task.

**8.2.4** A consistent display (window) location should be used for each type of status information.

EXAMPLE: Whenever new mail is received, status information is presented in a box in a specified area, (e.g., in the upper right-hand corner of the screen).

**8.2.5** If user input is disabled by the dialogue system (e.g. keyboard locked), the user should be given a cue (visual or auditory) indicating this state.

**8.2.6** If a system or application has modes (i.e. a specific user action has different results depending on the state of the system), users should be able to discriminate the current mode from other modes.

EXAMPLE 1: In a task in which the user cannot see the display across mode changes, auditory cues are provided to discriminate modes.

EXAMPLE 2: The "off" or "on" status of a check button is indicated in a graphic that is placed to the left of the check button label.

# 9 Error management

## 9.1 Description

Errors in human computer interaction include:

— system malfunctions due to a software or hardware failure (e.g. a problem with the disk drive);

— user inputs not recognized by the system;

— data entry or logical errors on the part of the user;

— unexpected consequences resulting from user inputs.

Errors can be detected either by the system or by the user. System detection is only possible in cases of malfunction or logical inconsistencies and conflicts. User-detected errors are those which can only be detected by the user.

## 9.2 Error prevention

**9.2.1** Error prevention is always appropriate but it should be used particularly under the following conditions. As more conditions are met, the greater the applicability of error prevention.

a) The user has limited experience with the system or accesses the system on an intermittent basis.

b) The user is likely to be interrupted during the task.

c) The task has critical consequences for errors, or if errors are frequently occurring.

d) The task requires correctly sequenced input from users.

e) The system has multiple modes.

**9.2.2** If the system uses modes, user errors should be minimized by

a) mapping the same user input to a function key with similar or related outcomes across modes;

| | | | |
|---|---|---|---|
| EXAMPLE: | Mode 1: F4-List Directory<br>Mode 2: F4-List Files | instead of | Mode 1: F4-List Directory<br>Mode 2: F4-Change Windows |

b) avoiding reassignment of user inputs to functions that are destructive in nature.

EXAMPLE: Function key F4 is not re-assigned to Delete if it was previously assigned to File.

**9.2.3** If system failures can be anticipated, an indication of the potential problem should be provided before the failure occurs.

EXAMPLE: A warning message is given that the system is running out of memory space and may not be able to complete the transaction.

**9.2.4** When users request to exit a program or logoff, the system should check file status and pending transactions. If user data would be lost or if a pending transaction will not be completed, a message requesting user confirmation should be displayed giving indication of which data would be lost or which transaction would be aborted.

**9.2.5** Users should be able to reverse the most recent operation if the task permits and if it is beneficial to user performance (e.g. undo). If user actions can have destructive consequences and cannot be undone, a warning or confirmation message should be provided to alert the user to consequences before executing the requested action.

**9.2.6** Users should be able to modify or cancel input prior to executing an action. Users should be provided with a means to suspend and cancel operations in progress, if it is possible without damage to the system or to data.

## 9.3 Error correction by the system

**9.3.1** Error correction by the system should be used under the following conditions, as more conditions are met, the greater the applicability of error correction by the system.

a) The error results from hardware and/or software failure where the system has access to a potential solution to the error.

b) The error correction alternatives are limited, well defined, and there is no ambiguity as to which corrective action the user would want to take.

**9.3.2** If error correction by the system is provided:

a) the user should be able to configure whether or not the error correction takes place automatically, or

b) a confirmation or warning message should be provided to the user indicating the planned correction.

## 9.4 Error management by the user

**9.4.1** If the task requires error management by the user, the dialogue should provide a means (information and/or function) of enabling the user to continue the dialogue.

**9.4.2** If users are expected to correct errors, tools for error correction should be provided.

Examples of tools for error correction include:

— undo function;

— syntax checker;

— lists of cross-references;

— history function;

— spell checker.

**9.4.3** If the task requires error identification that cannot be handled by the system, diagnostic tools for error identification should be provided for the user.

Examples of diagnostic tools for error identification include:

— WYSIWYG editor;

— preview functions;

— simulation functions;

— listing of system settings.

**9.4.4** Following error detection, users should be allowed to edit the erroneous input rather than being forced to re-enter the entire input. (See also ISO 9241-15:1997, 8.3 and ISO 9241-17:—[6], 6.4.3.)

**9.4.5** If the system is able to detect multiple errors in a user entry:

a) some indication of multiple errors should be given to the user; or

6) To be published.

b) all fields or portions of fields containing errors should be simultaneously identified by the user. (See also ISO 9241-17:—[7], 6.4.2.)

## 9.5 Error messages

**9.5.1** If brief error messages are displayed, users should be able to request more detailed on-line information or should be referred to additional off-line information.

**9.5.2** If an error has occurred in a sequence of operations invoked by a single user action, information should be made available about which system operations have already been completed and which have not been completed.

**9.5.3** Error messages should convey what is wrong, what corrective actions can be taken, and

a) the cause of the error (see also ISO 9241-15:1997, 8.3 and ISO 9241-17:—[7], 7.3);

EXAMPLE: An error has been detected in a logical unit of inputs, the cursor is positioned in the data field or command word at the point of the first identified error to indicate the location of the error.

or

b) the system should provide an indication of the class of error as precisely as possible [(e.g. error reading file (file name)].

**9.5.4** If error messages are presented in a single location and will overlay previous error messages, users should be given a cue to allow them to discriminate successive occurrences of identical error messages.

EXAMPLE: When an error message is repeated, a number is appended to the message to indicate successive occurrences of the error.

**9.5.5** Error messages should be removed either:

a) as soon as the error condition has been corrected; or

b) prior to correction, if the user requests removal of the message.

**9.5.6** Error information should be presented in a consistent location; either

a) the information should be presented as close as possible to the user entry that caused the error without obscuring the user's entry; or

b) the information should be presented in a single consistent location in the display or window.

**9.5.7** The system should allow users to move error messages, if they are likely to obscure relevant task information.

**9.5.8** Error messages should be presented as quickly as possible after a task-related unit of input has been entered.

EXAMPLE: When filling out a form, typing errors in a field do not receive an error message until the user exits the field leaving the typing uncorrected.

**9.5.9** If the set of valid user inputs is small and there is sufficient display space, the set of input alternatives should be presented with the error message.

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7) To be published.

**9.5.10** Depending on user or task characteristics or preferences:

a) Users should be able to turn off advisory messages that ask for confirmation.

b) Users should be able to control the volume or turn off auditory tones or messages used to designate non-critical errors.

# 10 On-line help

## 10.1 Description

On-line help provides additional user guidance and support for the user when interacting with the dialogue and user interface. It explains what can be done, where, when, and how it can be done. On-line help can also give support to complete user goals. On-line help can provide different levels of information for users with different levels of skill.

Examples of types of support that can be provided through on-line help include:

— information concerning command syntax, available keys, task procedures;

— explanations (e.g., concepts associated with a task);

— supporting information (e.g., listing of options);

— descriptions (e.g., screens and associated actions).

## 10.2 System-initiated help

**10.2.1** The provision of system-initiated on-line help should be considered under the following conditions. As more conditions are met, the greater the applicability of system-initiated help.

a) Users are inexperienced and need to become proficient quickly.

b) Users access the system or application infrequently and need reminders to enable effective use.

c) Users are unaware of available shortcuts in the system.

**10.2.2** System-initiated on-line help should not be provided under the following conditions. As more conditions are met, the greater the applicability of user-initiated help.

a) The inexperienced users want the on-line help information presented, while the experienced do not.

b) The presentation of the on-line help text interferes with the user's interaction in the main task.

c) System/application performance is noticeably degraded by the presentation of the on-line help information.

d) The on-line help contains a great deal of detailed information that only experienced or higher level users require.

**10.2.3** The content of system-initiated on-line help information should be specific to the task context (e.g. screen, user step) and the most recent user input or set of inputs (e.g. selected object, menu selection, command typed).

**10.2.4** System-initiated on-line help should be non-intrusive:

a) System-initiated on-line help should be presented in an area that is peripheral to the task area or in a separate non-overlapping window, to avoid interference with the visibility of the user's task area.

b) Routine system-initiated on-line help should not be presented in a form that distracts the user's attention away from the main task area (e.g. should not be flashing or in an extreme colour).

c) System-initiated on-line help text should never overwrite the entire task display.

**10.2.5** If users want to turn off system-initiated help, provide the users with a means of turning system-initiated help on and off.

## 10.3 User-initiated help

**10.3.1** If user-initiated on-line help is provided, the user should be able to request on-line help by a simple, consistent action that is always available.

EXAMPLE: The "?" key; the function key F1; selection of the help icon; verbally stating "help".

**10.3.2** User specification of on-line help topics should be provided under the following conditions. As more conditions are met, the greater the applicability of user specification of help topics.

a) There is no task context available for delimiting the type of on-line help to be provided.

b) Users will be doing simultaneous tasks and may need flexibility for choosing the type of on-line help to be provided.

**10.3.3** The system should guide the user in specifying on-line help topics under the following conditions. As more conditions are met, the greater the applicability of system guidance in specifying help.

a) The task context can delimit the likely set of desired topics but not the exact topic on which the user needs information.

b) Users need flexibility in choosing the on-line help but have trouble accurately specifying the on-line help topic without assistance.

**10.3.4** If the user requests a help topic by methods other than selection (e.g. typing help request),

a) the system should accept synonyms for specifying the on-line help topic (including non-technical synonyms);

b) the system should accept close spelling matches for standard system terminology for specifying the on-line help topic.

**10.3.5** If the user's request for on-line help does not adequately specify the topic for which on-line help is to be provided, the system should

a) present on-line help information that is relevant to the task context and the current transaction, or

b) start a dialogue for clarification in which the user can specify what data, message, or command requires explanation.

## 10.4 Presentation of help information

**10.4.1** If the user specifies a topic for on-line help, only information that is relevant to the specified topic should be presented.

**10.4.2** On-line help should be presented as quickly as possible after the user's request.

**10.4.3** Response time of on-line help presentation should be predictable for the type of on-line help interaction.

**10.4.4** On-line help information should be provided in the media that are most appropriate to explain the topic using the output facilities available to the user, rather than displaying all information in a textual format.

**10.4.5** On-line help should provide task-related information about the system and its purpose.

**10.4.6** On-line help should match the user's task needs and should contain both descriptive and procedural information as required by the task.

EXAMPLE: For a given command, information is provided on its definition and syntax requirements, as well as the steps required to combine the command with other commands to perform a given task.

## 10.5 Help navigation and controls

**10.5.1** If access to on-line help takes the user out of the main dialogue for the task, the user should be provided with a way to go back and forth between the dialogue for the task and on-line help.

EXAMPLE: In a terminal environment, the user can toggle back and forth between on-line help and the task screens.

**10.5.2** If on-line training or on-line documentation is available, connections between the on-line help information and the training and documentation should be provided.

**10.5.3** If possible, user control of on-line help (system-initiated as well as user-initiated) should be provided. Users should be able to

a) configure system-initiated on-line help (e.g. turn on or off, select level) to suit their individual needs;

b) initiate an on-line help request whenever they want;

c) select and change the on-line help topic;

d) control the type of on-line help information, if different types are provided (e.g., tutorial, syntax, task);

e) exit the on-line help system at any time.

**10.5.4** If users have systems with limited capabilities, on-line help information should be modular allowing users to choose the portions of the on-line help information to be kept on their system.

**10.5.5** If applicable (supported by system capabilities), the system should allow the users to customize on-line help by

— individual user annotation of on-line help;

— saving of the context when switching between on-line help and the task;

— adding help topics.

**10.5.6** If on-line help is implemented as a mode,

a) cues should be provided to the user to indicate that the application is in an on-line help mode;

EXAMPLE: The system changes the prompt or mouse pointer into the shape of a "?".

b) the method of exiting the mode and returning to the task should be obvious to the user.

EXAMPLE: The system provides a dialogue box with an exit button.

## 10.6 Browsable help

**10.6.1** Users should be able to browse through on-line help displays (e.g. to gain familiarity with system functions and operating procedures).

**10.6.2** If browsable on-line help is provided, it should include a listing or map of on-line help topics from which the user can choose.

**10.6.3** If the number of topics in a browsable help listing is large, one or more of the following should be provided to aid the users in locating their desired topic:

— string search of list of topics;

— keyword search of on-line help text;

— hierarchical structuring of on-line help text;

— map of on-line help topics.

**10.6.4** If applicable (e.g. important to task, based on help content), the system should provide:

— direct links between related topics;

— cues that allow users to identify where links exist;

— a default path for browsing;

— a representation (e.g. map) of linkages between topics;

— user location markers for reaccessing information.

**10.6.5** If users can navigate to different topics in the help system and it is beneficial to user performance, the system should provide quick-access mechanisms such as:

— return to the previous help topic;

— return to a home location within the help system;

— access to related topics with a single action (cross-references);

— access to a history of previously accessed topics.

**10.6.6** If on-line help information has a hierarchical structure:

a) an indication of the structure of on-line help topics should be provided;

b) the user should be able to access the information for a help topic at any level in the hierarchical structure, not just the top;

c) users should be provided with an obvious and consistent method of accessing more detailed on-line help (i.e. lower levels of on-line help structure);

d) users should be allowed to navigate directly to the parent topic within the hierarchy.

**10.6.7** If users can access on-line help topics in a random access manner, on-line help information should be self-contained (i.e. the system should not assume that users have read previous sections of on-line help prior to receiving the current information).

**10.6.8** If the on-line help information extends beyond a single display and the information scrolls, the topic of the information should remain obvious (e.g. the title of the information remains visible).

## 10.7 Context-sensitive help

**10.7.1** Context-sensitive selection of on-line help topics should be provided when the task has specific sequential steps or clear contextual information that enable the system to accurately predict the on-line help information needed by the user. This information should support the requirements of the user's current task.

**10.7.2** Context-sensitive on-line help should provide access to task information on

— aspects (e.g. semantic or lexical, descriptive or procedural) of the current dialogue step;

— the current task;

— the current application;

— the task information presented on the screen.

**10.7.3** If multiple context-sensitive on-line help topics are relevant at the current dialogue step, a default should be chosen while allowing the user to access other topics.

**10.7.4** On-line help specific to user interface objects should provide an explanation of what the object is, what it does, and how to use it. This help should be context sensitive, if applicable.

EXAMPLE: An unavailable menu option is dimmed. The on-line help text indicates why the option is unavailable and what the user can do to make the menu option available.

**10.7.5** If on-line help specific to only a subset of user interface objects is provided, a visible indication of what objects can be explained should be provided.

EXAMPLE: The mouse pointer appears as a dark "?" when situated over objects that have on-line help available, or the system automatically presents a description of the object, when the pointer is over the object.

# Annex A
(informative)

# Sample procedure for assessing applicability and adherence

This Annex provides an example of a procedure for determining whether the applicable recommendations in this part of ISO 9241 have been met. It should be noted that the procedure described below is provided as guidance and is not a rigid process to be used as a substitute for the standard itself. This procedure provides a two stage process for

1) determining which recommendations are relevant, and

2) whether those relevant recommendations have been adhered to.

Interface design depends upon the task, the user, the environment, and the available technology. Consequently, ISO 9241-13 cannot be applied without a knowledge of the design and use context of the interface and it is not intended to be used as a prescriptive set of rules to be applied in their entirety. Rather, it assumes that the designer has proper information available concerning task and user requirements and understands the use of available technology (this could require consultation with a qualified ergonomics professional as well as empirical testing with real users).

The evaluation procedure should be based on an analysis of typical users, their typical and critical tasks, and their typical usage environments. User guidance evaluations generally fall into the two following categories:

a) When users and user tasks are known, evaluators evaluate the product or observe representative users of the product in the context of accomplishing typical and critical user tasks in a typical usage environment.

b) When specific users and user tasks are not known, evaluators evaluate all of the user guidance used in the product being evaluated.

Determination of whether a product meets a given recommendation should be based on the specific user guidances encountered during the evaluation described above. User guidance that can be shown to be better than ones that meet the recommendations described in this part of ISO 9241 would also be accepted as meeting the recommendations of the standard.

Users of this part of ISO 9241 could demonstrate how they met the recommendations by listing the user guidance evaluated; the method used to judge applicability (as described in A.1); the method used to judge adherence (as described in A.3); and the results.

## A.1 Applicability

The applicability of a recommendation is based on two factors.

a) Whether the conditional statement, if included as part of the provision, is true. A particular recommendation is (or is not) applicable when the conditional if-statement is (or is not) true. For example, if the task does not require a particular sequence of user actions, recommendation 6.2.5 would not be applicable.

b) The design environment. A particular recommendation may not be applicable because of user, task, environment and technology constraints, such as unknown user community, variations in tasks, noisy office, screen resolution, lack of a pointing device. However, if the design environment did involve user characteristics, tasks, or technology features addressed by a particular recommendation, that recommendation would be applicable. For example, if status information is provided to users, the recommendations in 8.2 should be evaluated to determine their applicability.

The methods which are appropriate to determine the applicability of a particular recommendation are

a) system documentation analysis,

b) documented evidence,

c) observation,

d) analytical evaluation,

e) empirical evaluation.

Clause A.2 describes each of the applicability methods in more detail.

## A.2 Description of applicability methods

### A.2.1 System documentation analysis

System documentation analysis refers to the analysis of any documents which may describe the general and specific properties of the user guidance. Such documents may include design documents containing system and user requirements, manuals, user guides, etc. For example, according to system requirements for a particular application, only user initiated help is to be provided.

### A.2.2 Documented evidence

Documented evidence refers to any relevant documented information about the task requirements or characteristics, flow of work, user skills, user aptitudes, existing user conventions or biases, test data from the design of similar systems, etc. Such information may be used to determine whether a given requirement or recommendation is applicable. For example, task analysis data may have indicated that users would frequently need to have information about the status of the system.

### A.2.3 Observation

Observation means simply to examine or inspect the user guidance for the presence of a particular observable property, e.g. prompts are used. Observations can be made by anyone who has the necessary skill to systematically check the user guidance and determine if it has the particular properties associated with the applicability of given conditional recommendations. Due to their obvious nature, such observations can readily be confirmed by another person.

### A.2.4 Analytical evaluation

Analytical evaluation pertains to "informed" judgments concerning the properties of a user guidance by a relevant expert (i.e., of those properties). This method is typically used for the evaluation of properties which can be judged only in the context of other information or knowledge. In addition, analytical evaluation may be appropriate when the system exists only in terms of design documents, user populations are not available for empirical evaluation, or time and resources are constrained. Analytical evaluation can be used to determine whether a particular recommendation is applicable, e.g., to determine if system-initiated on-line help is likely to distract the user from the main task.

Analytical evaluation can be performed by any suitably qualified person who has the necessary skill and experience to judge the relevant property of the user guidance. Where these properties concern the application of ergonomic principles, the expert needs to possess appropriate skills in software ergonomics. If the properties concern the work environment, system characteristic, or other aspects of the design, the judge needs to be an expert in the particular relevant domain.

### A.2.5 Empirical evaluation

Empirical evaluation refers to the application of test procedures using representative end-users to determine the applicability of a recommendation. This method is most appropriate when a prototype or the actual system is available and potential or actual user population representatives are available. Many kinds of test procedures could be used, but

in each case the test subjects need to be representative of the end-user population and be of sufficient number that the results can be generalized to the user population as a whole. For example, empirical evaluation to determine whether users will frequently request help on a topic could be done by having typical users perform a number of representative job tasks using only the on-line help for user guidance.

It should be noted that empirical evaluation needs to be conducted by individuals possessing appropriate skills in testing methodology and evaluation techniques.

## A.3 Adherence

If a recommendation is applicable on the basis of the criteria described in A.1, it is then necessary to determine whether or not the recommendations have been met. Adherence is determined by using one or more of the methods listed below.

NOTE The methods which are appropriate to determine adherence for a particular recommendation are listed in conjunction with that recommendation in the Checklist in table A.1.

a) measurements

b) observation

c) documented evidence

d) analytical evaluation

e) empirical evaluation

It is important to note that the results of applicability tests are often important in determining adherence. The various adherence methods are further described below.

## A.4 Description of adherence methods

### A.4.1 Measurements

Measurements refers to measuring or calculating a variable concerning properties of the user guidance. An example of such properties is response time. Adherence is determined by comparing the obtained value from the measurement with the value stated in the recommendation.

### A.4.2 Observation

Observation means simply to examine or inspect the user guidance to confirm that a particular observable condition has been met, e.g., that defined default values are visually indicated (6.2.7). Observations could be made by anyone that has the necessary skill to systematically check the user guidance and determine if a statement concerning an observable property has been consistently applied. The observed property is compared with the recommendation to determine adherence.

### A.4.3 Documented evidence

For adherence, documented evidence refers to any relevant documented information related to the user guidance's adherence to the appropriate conditional recommendations. Such evidence may include existing user conventions or biases, prototype test data, test data from the design of similar systems, etc. For example, test data from a similar system may have indicated that the help system navigation and controls (10.5) in the user guidance being evaluated were appropriate for the types of users and tasks relevant to the application. In this case, adherence is essentially determined on the basis of documented evidence of adherence for that recommendation for the similar system.

### A.4.4 Analytical evaluation

As stated in A.2.4, analytical evaluation pertains to "informed" judgments concerning the properties of a user guidance by a relevant expert (i.e., of those properties). This method is typically used for the evaluation of properties which can be judged only in the context of other information or knowledge. In addition, analytical evaluation may be an appropriate adherence method when the system exists only in terms of design documents, user populations are not available for empirical evaluation, or time and resources are constrained. For example, analytical evaluation might be used to determine adherence for whether the system clearly indicates its state whenever the state changes (7.2.4). In the above case, "clearly" is a judgmental aspect.

As stated in A.2.4, analytical evaluation can be performed by any suitably qualified person who has the necessary skill and experience to judge the relevant property of the user guidance. For adherence, the expert also should have the skills and knowledge necessary to reliably judge the appropriateness and usability of a particular design solution. It also should be noted that analytical evaluation can verify the tenability of a design, but cannot validate the design. Validation can be accomplished only by using empirical evaluation.

### A.4.5 Empirical evaluation

Empirical evaluation refers to the application of test procedures using representative end-users to determine the adherence to a recommendation. As stated in A.2.5, this method is most appropriate when a prototype or the actual system is available and potential or actual user population representatives are available. Many kinds of test procedures could be used, but in each case the test subjects should be representative of the end-user population and be of sufficient number that the results can be generalized to the user population as a whole. The task performance of end-users using the user guidance could be analyzed to determine adherence with the various conditional recommendations. For example, by analyzing the time it takes users to recover from errors, it would be possible to determine if the error messages are conveying what is wrong, what corrective actions can be taken and the cause of the error (see 9.5.3). Such tests could be performed both during the development process (e.g., by rapid prototyping) and after the design and implementation of the system (e.g., by system evaluation techniques) and could be based on both objective and subjective user data. Special tests also could be designed to measure the adherence to a particular recommendation.

Typically, empirical evaluations are used to determine adherence by comparing the test results against specific user guidance recommendations. However, it is often necessary to also evaluate test results in terms of effectiveness (e.g., the user guidance supports the user in his/her task in a manner which leads to improved performance, results in a difficult task being performed with less difficulty, or enables the user to accomplish a task that he/she would not have been able to otherwise).

## A.5 Procedure

The following procedure (also see Figure A.1) can be followed in evaluating a particular user guidance application with respect to the recommendations in this part of ISO 9241.

### A.5.1 "If clause" conditional recommendations

a) **Applicability:** Each recommendation has an if-condition either in the statement itself (e.g. 5.2.3), or implied in the title to a subclause (e.g. 10.2). For each conditional recommendation, the applicability of the if-statement should be determined using the methods proposed to test if the if-condition is true or not (e.g., in 9.5.9, documented evidence, analytical evaluation, or empirical evaluation is appropriate to determine whether the set of input alternatives should be presented within the error message). Also, when there is a set of optional conditional recommendations such as in 9.3.2 a) and 9.3.2 b), the applicable approach should be determined using the proposed method(s). The different sets of optional conditional recommendations are further depicted in the **Applicability and Adherence Checklist** by the use of and/or logic connectors.

b) **Adherence:** For each applicable conditional recommendation as defined in a), the adherence to the recommendation should be determined using the proposed methods (e.g., if 9.5.9 is applicable, then observation should be used to determine that input alternative sets have been provided in the error messages).

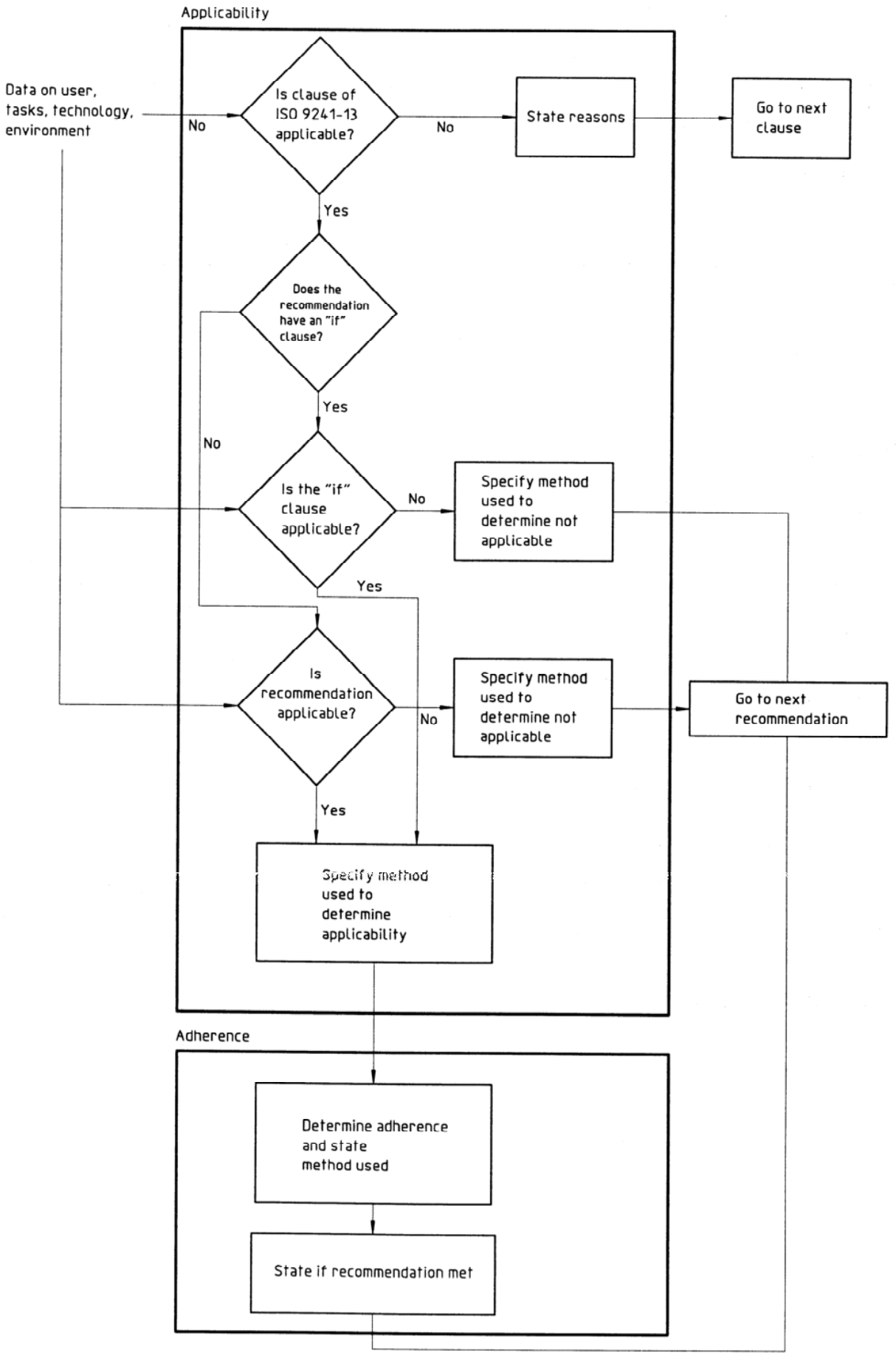


**Figure A.1 — Decision process — Evaluation situation**

### A.5.2 Other conditional recommendations

a) **Applicability:** Non-"if statement" conditional recommendations are generally appropriate to any user guidance. However, a number of the sections (e.g. 10.2, System-initiated help) are applicable only if the user guidance utilizes such features. If the user guidance did contain system-initiated help, the recommendations in that subclause would be applicable (and applicability of the "if statements" would be determined as in A.5.1).

b) **Adherence:** For each non-conditional "if statement" recommendation as determined in a), information about adherence to the recommendation as described in A.5.1 b) is necessary. For example, analytical evaluation or empiricai evaiuation would both be appropriate methods to determine adherence with respect to whether system response time to user entries is appropriate (7.2.9). If there are valid reasons for not following the proposed recommendation, both the reasons and the design solution chosen also would be of interest to users of this part of ISO 9241.

As an aid for applying the conformance test procedures described above, an Evaluation checklist for applicability and adherence is provided in table A.1.

## A.6 Checklist

NOTE Users of this part of ISO 9241 may freely reproduce the checklist in this annex so that it can be used for its intended purpose and may further publish the complete checklist.

The checklist in table A.1 is intended as an aid for both designers and evaluators of user guidance in evaluating both the applicability of, and adherence to, the conditional recommendations in this part of ISO 9241. This checklist contains a "short version" of all of the recommendations of this part of ISO 9241 and provides a logical structure to assist users in determining applicability. Many of the conditional recommendations allow a number of alternative solutions. The checklist depicts such interdependencies by means of "and" "or" connectors. These connectors are shown only for conditional recommendations within a particular clause (it is assumed that the clause have inherent "ands" to the degree that the clause is applicable). In some cases, "and/or" is specified because the choices are not mutually exclusive.

### A.6.1 Description of the checklist

#### A.6.1.1 Recommendations column

The first column of the checklist contains the "short version" conditional recommendations, connected by the logic connectors, and separated by subclause. Since each conditional recommendation is numbered with its clause number, users can look up the full text easily in the relevant subclauses and clauses.

#### A.6.1.2 Applicability columns

The first two columns of the Applicability portion of the checklist are provided for recording the result of the applicability determination by a checkmark in the "Y" or "N" column. In addition, this part of the checklist indicates which of the applicability methods are relevant for each of the conditional recommendations of this part of ISO 9241 and provides space to "check off" the method used by the designer or evaluator. Methods that are not relevant for a particular recommendation are shaded to make the checklist easier to use. The codes used for the applicability methods are:

S = System documentation analysis
D = Documented evidence
O = Observation
A = Analytical evaluation
E = Empirical evaluation
DM = Different Method (method other than above used)

If a different method is used (i.e., "DM" is checked), that method can be described in the Comments column. It also should be noted that checking off the applicability methods used is considered an optional feature of the checklist.

#### A.6.1.3 Adherence columns

This part of the checklist indicates which methods are appropriate for determining adherence to each of the conditional recommendations and provides space for designers or evaluators to "check off" the method used. Methods that are not relevant for a particular recommendation are shaded to make the checklist easier to use. If the result of the adherence test is positive, the "P" column is checked (for "passed") and if the result is negative, the "F" column is checked (for "failed"). The codes used for the adherence methods are:

M = Measurement
O = Observation
D = Documented evidence
A = Analytical evaluation
E = Empirical evaluation
DM = Different Method (method other than above used)

As for applicability, if a different method is used ("DM" checked), that method can be described in the Comments column. Also, as noted for applicability, checking off the methods used to evaluate adherence is considered an optional feature of the checklist.

#### A.6.1.4 Comments

The comment column provides space for additional statements and comments pertaining to each of the conditional recommendations and can be used to indicate the source of the assessment (e.g., name of expert, title of documented evidence) as well as for describing "Different Methods" when used. Since different solutions (methods) can be appropriate in specific situations, it is best to describe such unique solutions in the comments column. This description can include how these solutions relate to the user guidance design recommendations and appropriate dialogue principles.

### A.6.2 Summary data

Users of the Applicability and Adherence Checklist could summarize the results of the evaluation by computing an adherence rating (AR). The AR is the percentage of the applicable recommendations successfully adhered to (i.e., the number of checkmarks in the "P" column divided by the number of checkmarks in the "Y" column). It is highly recommended that all of the data (i.e., number of Ps and the number of Ys) be reported in conjunction with the ARs. Depending on the complexity of the user guidance application, it may be useful to complete a checklist for each type of user guidance used in the system and then average the ARs across the user guidance types to determine the average AR for the user guidance application. However, it should be noted that the AR is no more than an arithmetic count which cannot be used as a reliable measurement of the degree of adherence with applicable recommendations without taking into account the respective weights of the items (both by themselves and in the context of use).

Table A.1 -- Applicability and Adherence Checklist

| Recommendations | Applicability | | | | | | | | Adherence | | | | | | | | Comments (including sources) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Results | | Method Used | | | | | | Method Used | | | | | | Results | | |
| | Y | N | S | D | O | A | E | DM | M | O | D | A | E | DM | P | F | |
| 5 Common guidance recommendations | | | | | | | | | | | | | | | | | |
| 5.2 General guidance recommendations | | | | | | | | | | | | | | | | | |
| 5.2.1 Readily distinguishable from other displayed information | | | | | | | | | | | | | | | | | |
| 5.2.2 Information no longer applicable removed from display | | | | | | | | | | | | | | | | | |
| 5.2.3 User-initiated guidance stays under control of user | | | | | | | | | | | | | | | | | |
| 5.2.4 Provide specific task-relevant information | | | | | | | | | | | | | | | | | |
| 5.2.5 Not disruptive of user's task | | | | | | | | | | | | | | | | | |
| 5.2.6 Distinctive message or coding consistently used for attention | | | | | | | | | | | | | | | | | |
| 5.2.7 If interaction varies with user expertise, users able to specify the level of guidance they want | | | | | | | | | | | | | | | | | |
| 5.3 Phrasing of user guidance | | | | | | | | | | | | | | | | | |
| 5.3.1 The result stated before describing how to execute the action | | | | | | | | | | | | | | | | | |
| 5.3.2 Phrased to enhance the perception of user control | | | | | | | | | | | | | | | | | |
| 5.3.3 Worded as positive statements; negative to emphasize a point | | | | | | | | | | | | | | | | | |
| 5.3.4 Phrased using consistent grammatical construction | | | | | | | | | | | | | | | | | |
| 5.3.5 Text stated in short, simple sentences | | | | | | | | | | | | | | | | | |
| 5.3.6 Stated in active voice (unless it conflicts with the user's national language) | | | | | | | | | | | | | | | | | |
| 5.3.7 Uses terminology typical of the user population's task | | | | | | | | | | | | | | | | | |
| 5.3.8 User guidance messages should be worded emotionally neutral | | | | | | | | | | | | | | | | | |
| 6 Prompts | | | | | | | | | | | | | | | | | |
| 6.2 Prompting recommendations | | | | | | | | | | | | | | | | | |
| 6.2.1 Indicate the types of input that will be accepted by the dialogue system (generic or specific prompts) | | | | | | | | | | | | | | | | | |
| 6.2.2 Specific prompts displayed when appropriate | | | | | | | | | | | | | | | | | |
| 6.2.3 Generic prompts displayed when appropriate | | | | | | | | | | | | | | | | | |

| Recommendations | Applicability | | | | | | | | Adherence | | | | | | | | Comments (including sources) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Results | | Method Used | | | | | | Method Used | | | | | | Results | | |
| | Y | N | S | D | O | A | E | DM | M | O | D | A | E | DM | P | F | |
| 6.2.4 On-line help provided related to prompts | | | | | | | | | | | | | | | | | |
| 6.2.5 Prompting provided for steps in sequenced tasks | | | | | | | | | | | | | | | | | |
| 6.2.6 Prompts for data/command entry next to the entry field | | | | | | | | | | | | | | | | | |
| 6.2.7 If default value defined, shown in prompt entry field | | | | | | | | | | | | | | | | | |
| 6.2.8 Prompts provide cues for the type of data to be entered | | | | | | | | | | | | | | | | | |
| 6.2.9 Cursor automatically positioned in input field | | | | | | | | | | | | | | | | | |
| 7 Feedback | | | | | | | | | | | | | | | | | |
| 7.2 Feedback recommendations | | | | | | | | | | | | | | | | | |
| 7.2.1 Every user input produces timely & perceptible feedback | | | | | | | | | | | | | | | | | |
| 7.2.2 Feedback non-intrusive; does not distract the user from the task | | | | | | | | | | | | | | | | | |
| 7.2.3 Feedback takes into account: user characteristics, population variability, task requirements, system capabilities | | | | | | | | | | | | | | | | | |
| 7.2.4 State clearly indicated whenever the state (or mode) changes | | | | | | | | | | | | | | | | | |
| 7.2.5 Selected items highlighted | | | | | | | | | | | | | | | | | |
| 7.2.6 Local feedback provided for remote requests | | | | | | | | | | | | | | | | | |
| 7.2.7 Feedback provided on request completion | | | | | | | | | | | | | | | | | |
| 7.2.8 If completion not immediate, feedback provided on request acceptance and on delayed completion | | | | | | | | | | | | | | | | | |
| 7.2.9 Timing of feedback appropriate (i.e., neither too slow or too fast) | | | | | | | | | | | | | | | | | |
| 8 Status | | | | | | | | | | | | | | | | | |
| 8.2 Status recommendations | | | | | | | | | | | | | | | | | |
| 8.2.1 Information continuously presented when appropriate | | | | | | | | | | | | | | | | | |
| 8.2.2 Information automatically presented when appropriate | | | | | | | | | | | | | | | | | |
| 8.2.3 Information presented on request when appropriate | | | | | | | | | | | | | | | | | |
| 8.2.4 Consistent location provided for each type of status | | | | | | | | | | | | | | | | | |

| Recommendations | Applicability | | | | | | | | Adherence | | | | | | | | Comments (including sources) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Results | | Method Used | | | | | | Method Used | | | | | | Results | | |
| | Y | N | S | D | O | A | E | DM | M | O | D | A | E | DM | P | F | |
| 8.2.5 If user input disabled, cue indicating this state provided | | | | | | | | | | | | | | | | | |
| 8.2.6 If modes used, users able to discriminate between modes | | | | | | | | | | | | | | | | | |
| 9 Error management | | | | | | | | | | | | | | | | | |
| 9.2 Error prevention | | | | | | | | | | | | | | | | | |
| 9.2.1 Error prevention provided when appropriate | | | | | | | | | | | | | | | | | |
| 9.2.2 Error prevention provided for mode applications | | | | | | | | | | | | | | | | | |
| 9.2.3 User's provided information on potential system failures | | | | | | | | | | | | | | | | | |
| 9.2.4 Confirmation messages provided to prevent data loss | | | | | | | | | | | | | | | | | |
| 9.2.5 Most recent operation reversible or confirmation message | | | | | | | | | | | | | | | | | |
| 9.2.6 User able to modify and cancel input; suspend and cancel operations | | | | | | | | | | | | | | | | | |
| 9.3 Error correction by the system | | | | | | | | | | | | | | | | | |
| 9.3.1 System error correction provided when appropriate | | | | | | | | | | | | | | | | | |
| 9.3.2 User can configure auto error correction, or warned | | | | | | | | | | | | | | | | | |
| 9.4 Error management by the user | | | | | | | | | | | | | | | | | |
| 9.4.1 User provided means to be able to continue dialogue | | | | | | | | | | | | | | | | | |
| 9.4.2 Error correction tools provided | | | | | | | | | | | | | | | | | |
| 9.4.3 Error identification tools provided | | | | | | | | | | | | | | | | | |
| 9.4.4 User able to edit erroneous input | | | | | | | | | | | | | | | | | |
| 9.4.5 If multiple errors in user input, indication provided | | | | | | | | | | | | | | | | | |
| 9.5 Error messages | | | | | | | | | | | | | | | | | |
| 9.5.1 Additional help available for brief error messages | | | | | | | | | | | | | | | | | |
| 9.5.2 If error occurs in a sequence, completion status provided | | | | | | | | | | | | | | | | | |
| 9.5.3 Error message states what is wrong, actions which can be taken and the cause or the type of error | | | | | | | | | | | | | | | | | |

| Recommendations | Applicability | | | | | | | | Adherence | | | | | | | | Comments (including sources) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Results | | Method Used | | | | | | Method Used | | | | | | Results | | |
| | Y | N | S | D | O | A | E | DM | M | O | D | A | E | DM | P | F | |
| 9.5.4 If presented in single location, cues for successive occurrences of identical error messages provided | | | | | | | | | | | | | | | | | |
| 9.5.5 Error messages removed when corrected or requested | | | | | | | | | | | | | | | | | |
| 9.5.6 Error messages presented in consistent location | | | | | | | | | | | | | | | | | |
| 9.5.7 Movement of error messages that obscure task information allowed | | | | | | | | | | | | | | | | | |
| 9.5.8 Error messages presented quickly after input entered | | | | | | | | | | | | | | | | | |
| 9.5.9 Input alternatives provided in error messages | | | | | | | | | | | | | | | | | |
| 9.5.10 Users able to control error message characteristics | | | | | | | | | | | | | | | | | |
| 10 On-line help | | | | | | | | | | | | | | | | | |
| 10.2 System-initiated help | | | | | | | | | | | | | | | | | |
| 10.2.1 System-initiated on-line help provided when appropriate | | | | | | | | | | | | | | | | | |
| 10.2.2 System-initiated on-line help not provided when it is not appropriate | | | | | | | | | | | | | | | | | |
| 10.2.3 Task-specific content provided for system-initiated on-line help | | | | | | | | | | | | | | | | | |
| 10.2.4 System-initiated help provided is non-intrusive | | | | | | | | | | | | | | | | | |
| 10.2.5 User able to turn system-initiated help on and off | | | | | | | | | | | | | | | | | |
| 10.3 User-initiated help | | | | | | | | | | | | | | | | | |
| 10.3.1 Simple consistent means of requesting help provided | | | | | | | | | | | | | | | | | |
| 10.3.2 User can specify on-line topics when appropriate | | | | | | | | | | | | | | | | | |
| 10.3.3 System support for topic selection provided | | | | | | | | | | | | | | | | | |
| 10.3.4 If user specifies help topics by methods other than selection, synonyms and close spelling matches allowed | | | | | | | | | | | | | | | | | |
| 10.3.5 Ambiguous help requests supported by current context information or a clarification dialogue | | | | | | | | | | | | | | | | | |

| Recommendations | Applicability | | | | | | | | Adherence | | | | | | | | Comments (including sources) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Results | | Method Used | | | | | | Method Used | | | | | | Results | | |
| | Y | N | S | D | O | A | E | DM | M | O | D | A | E | DM | P | F | |
| 10.4 Presentation of help information | | | | | | | | | | | | | | | | | |
| 10.4.1 Only information relevant to the specific topic provided | | | | | | | | | | | | | | | | | |
| 10.4.2 Help presented as quickly as possible after request | | | | | | | | | | | | | | | | | |
| 10.4.3 Response time for presentation of help predictable | | | | | | | | | | | | | | | | | |
| 10.4.4 Media most appropriate to the topic used | | | | | | | | | | | | | | | | | |
| 10.4.5 Task-related information about the system and its purpose provided | | | | | | | | | | | | | | | | | |
| 10.4.6 Both descriptive and procedural information provided as required for the task | | | | | | | | | | | | | | | | | |
| 10.5 Help navigation and controls | | | | | | | | | | | | | | | | | |
| 10.5.1 If help takes the user out of the task dialogue, a means is provided to go back and forth between the dialogue and help | | | | | | | | | | | | | | | | | |
| 10.5.2 Links to on-line training and documentation provided | | | | | | | | | | | | | | | | | |
| 10.5.3 Appropriate user control of on-line help provided | | | | | | | | | | | | | | | | | |
| 10.5.4 Modular help selectable to match system capabilities | | | | | | | | | | | | | | | | | |
| 10.5.5 Capability to customize help provided to user | | | | | | | | | | | | | | | | | |
| 10.5.6 If model help, mode cues and exit methods provided | | | | | | | | | | | | | | | | | |
| 10.6 Browsable help | | | | | | | | | | | | | | | | | |
| 10.6.1 Ability to browse through help displays provided | | | | | | | | | | | | | | | | | |
| 10.6.2 Listing or map of on-line help topics provided | | | | | | | | | | | | | | | | | |
| 10.6.3 Support for large numbers of help topics provided | | | | | | | | | | | | | | | | | |
| 10.6.4 Appropriate capabilities provided in browsable help | | | | | | | | | | | | | | | | | |
| 10.6.5 Quick-access navigation aids for help provided | | | | | | | | | | | | | | | | | |
| 10.6.6 Hierarchical help structure supported appropriately | | | | | | | | | | | | | | | | | |

| Recommendations | Applicability | | | | | | | | Adherence | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Results | | Method Used | | | | | | Method Used | | | | | | Results | |
| | Y | N | S | D | O | A | E | DM | M | O | D | A | E | DM | P | F |
| **10.6.7 If help randomly accessed, information self-contained** | | | | | | | | | | | | | | | | |
| **10.6.8 Help extending beyond a single display supported** | | | | | | | | | | | | | | | | |
| **10.7 Context-sensitive help** | | | | | | | | | | | | | | | | |
| **10.7.1 Provided when task has specific steps or contextual information** | | | | | | | | | | | | | | | | |
| **10.7.2 Provides access to appropriate contextual information** | | | | | | | | | | | | | | | | |
| **10.7.3 Choice of default provided when multiple topics relevant** | | | | | | | | | | | | | | | | |
| **10.7.4 Help content provided for help on user interface objects** | | | | | | | | | | | | | | | | |
| **10.7.5 Cues when only a subset of interface objects have help** | | | | | | | | | | | | | | | | |

**Key**
Y = Yes (if applicable)
N = No (if not applicable)
S = System documentation analysis
D = Documented evidence
O = Observation
A = Analytical evaluation
E = Empirical evaluation
DM = Different method
M = Measurement
P = Pass (met recommendation)
F = Failed (did not meet recommendation)

# Annex B
(informative)

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**Descriptors:** ergonomics, office machines, computer peripheral equipment, text processing, data terminal equipment, display devices, specifications, rules (instructions), instructions for use.

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