

Human Factors (HF); Specification of user requirements for use in ETSI deliverables



Reference

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Foreword

This ETSI Standard (ES) has been produced by ETSI Technical Committee Human Factors (HF).

Introduction

The present document explains the key elements of user requirements that need to be understood to ensure that the utility and usability of a telecommunications product or service are met. The present document includes a "User Requirements" form that has sections that address each of these key elements together with some instructions and examples to assist the person completing the form.

It is expected that all ETSI Technical Bodies will complete a "User Requirements" form, as specified in this present document, for each document that they produce that specifies a product or service with which users interact.

1 Scope

The present document explains the key elements of user requirements that need to be understood to ensure that the utility and usability of a telecommunications product or service are met. The present document includes a "User Requirements" form that has sections that address each of these key elements together with some instructions and examples to assist the person completing the form.

It is expected that all ETSI Technical Bodies will complete a "User Requirements" form, as specified in the present document, for each document that they produce that specifies a product or service with which users interact and that this form would be included as an annex to the deliverable.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] ETSI EG 201 472 (V1.1.1): "Human Factors (HF); Usability evaluation for the design of telecommunication systems, services and terminals".

3 Definitions

For the purposes of the present document, the following terms and definitions apply:

user: person who uses a telecommunications terminal to gain access to and control a telecommunications service

The user may or may not be the person who has subscribed to the provision of the service and may or may not be a person with special needs, e.g. elderly or disabled.

4 What do users require?

Every user has a set of requirements that they expect from any product or service that they may wish to use. This set includes the following fundamental requirements:

- 1) The user must be aware what capabilities the telecommunications product or service provides.
- 2) The capabilities provided must be of value to the user. This value will frequently be that the product or service enables the user to perform some useful task. Email is an obvious example of a service that enables a user to perform the useful task of communicating with business contacts. However a user may also value capabilities that bring them pleasure without necessarily being of practical use in a business task. Entertainment television is a classic example of a service that is valued for the pleasure it brings.
- 3) The capabilities must be provided in a way that enables the user to perform their tasks efficiently and effectively.

5 How should ETSI deliverables meet user requirements?

5.1 How should the requirements be stated?

It is important that products or services based upon specifications or guidelines contained in ETSI deliverables meet user requirements such as those specified above. In order for this to be achieved it is important to identify these user requirements in each appropriate ETSI deliverable. The ETSI deliverable must be able to state the following:

- 1) Who are the intended users? It is necessary to consider what their previous experience may be and whether they may have special requirements due to some form of disability, etc. Without this information it is not possible to determine whether the capabilities provided are what this group of users would find valuable.
- 2) What are the goals that the users are trying to satisfy? These goals are the purpose and outcomes that users are trying to achieve, they are not the activities that are undertaken to achieve the outcomes. In other words, they are the "why?" and the "what?", they are not the "how?". Readers of the deliverable will be able to form a judgement on whether the goals appear appropriate for the intended users operating under the other circumstances described in the user requirements section.
- 3) What equipment or telecommunications services are expected to be used to achieve the users' goals? Even though in many cases the answer to this question may appear obvious from the scope of the deliverable, it is more reliable and consistent to ensure that the equipment or service is always explicitly stated. Again, readers of the deliverable will be able to judge the apparent suitability of the equipment or service to allow the users to achieve their goals.
- 4) What tasks will the user undertake and what progress/feedback information will users require? In contrast to the goals stated in 2) above, the tasks describe the specific activities that the user needs to undertake and the information they need to receive in order to achieve the goal - they are the "what?". An analysis of this section will permit a judgement to be made on whether the stated tasks are likely to be acceptable to users.
- 5) Under what circumstances and in what environments are users expected to use the product or service? Without this information it is not possible to decide whether the circumstances and environments are appropriate for the stated category of users. Also without this information it will not be possible to determine whether the capabilities provided by the product or service are appropriate in the proposed circumstances and environment of use.

In telecommunications environments it is likely that many of the products and services will involve multiple users. For example a simple telephone call involves a calling party and a called party. In these multi-party circumstances it is essential that the above information be supplied in relation to both (or all of the) parties. For example, for "a call diversion to a voice mailbox on no reply" supplementary service the goal for the called user might be stated as "to ensure that all callers have an opportunity to leave a message when I am away from my telephone". The goal for the calling party would be "it gives me an opportunity to leave a message when I feel it is appropriate to do so".

Guidance on how to evaluate the user requirements can be found in [1]. The form provided in annex A shall be used to document the requirements for the product or service that is the subject of the ETSI deliverable. This form shall be included as an annex to the deliverable.

5.2 How should the requirements be validated?

Before an ETSI deliverable is finalized, the ETSI Technical Body responsible for creating the deliverable shall demonstrate that steps have been taken to validate the stated requirements. Wherever any doubt exists about the real user requirements for the product or service described in the deliverable, people from the intended group of users shall be questioned to determine whether they believe that the proposed goals, tasks, equipment and environments are realistic. The methods by which this questioning was undertaken and the results obtained shall be included as an annex of the deliverable.

Annex A (informative): Form describing User Requirements in ETSI deliverables

User Requirements for: <i>Insert product or service name here</i>		
Question (note 1)	Answer to the question	How has this answer been validated? (note 2)
Who are the intended users?	<i>Be precise. Stating "All users" is not adequate. If it is expected that the product or service is to be used by most users, identify groups of users for whom this product or service would not be well suited.</i>	
What is the User's Goal?	<i>What is the outcome the user would be expecting when making use of this product or service? This should NOT be a description of what the user does.</i>	
What equipment will the user use?		
What tasks will the user undertake and what progress/feedback information will users require?	<i>The task descriptions should say what the user is expected to do and what the product or system will feed back to the user. This should NOT be a description of the internal working of the product or system.</i>	
Under what circumstances and in what environments are users expected to use the product or service?	<i>In this description it is very important to identify any other products or services that will be used in the process of achieving the user's goal.</i>	
NOTE 1: This should include ALL people who use or are affected by this product or service (see clause 5.1).		
NOTE 2: There are a number of methods of measuring users' views described in [1]. Where no formal assessment of users' views has been undertaken, the ETSI HF response to the validity of the stated answer should be stated.		

Annex B (informative):

An example of a completed form

User Requirements for: <i>ETS 300 201 Edition 1 (1994): "Integrated Services Digital Network (ISDN); Call Forwarding No Reply (CFNR) supplementary service; Service description".</i>		
Question (see note 1)	Answer to the question	How has this answer been validated? (see note 2)
Who are the intended users?	<i>The users who subscribe to the CFNR supplementary service (the served users) would be people who:</i> <ul style="list-style-type: none"> - <i>wish to manage their contactability;</i> <i>and</i> - <i>who either:</i> <ul style="list-style-type: none"> <i>a) have more than one communication terminal;</i> <i>or</i> <i>b) make use of a number of locations which have telecommunications terminals;</i> <i>or</i> <i>c) who have a colleague to whom unanswered calls can be directed.</i> 	<i>Information from the usage of supplementary services show that the CFNR supplementary service is used by a large number of users. When interviewed, users of CFNR in trials of supplementary services have cited the reasons given in the "Answer to the question" section.</i>
What is the User's Goal?	<i>The served user wishes to ensure that, when they are unable or unwilling to answer a call on the terminal equipment normally associated with the served user's number, the call does not go unanswered.</i>	<i>When interviewed, users of CFNR in trials of supplementary services have cited the reasons given in the "Answer to the question" section.</i>
What equipment will the user use?	<i>When activating and deactivating the CFNR supplementary service the served user will need access to the terminal equipment normally associated with the served user's number.</i> <i>The usage of this supplementary service does not assume any terminal equipment input capabilities other than a 12-button telephone keypad.</i> <i>Users of more advanced terminal equipment may make use of terminal storage facilities and dedicated function buttons to reduce the need for the direct input of activation and deactivation sequences each time they are required.</i>	<i>It will be possible to meet the equipment requirements with all conventional terminal equipment.</i>
What tasks will the user undertake and what progress/feedback information will users require?	<i>The served user will need to activate and de-activate the CFNR supplementary service at the terminal associated with the served user's terminal. When activating CFNR the user will, as a minimum, need to specify the number to which calls are diverted.</i> <i>The served user will need notification of the success or failure of their requested activation or deactivation. The user will need the address of the forwarded-to user to be included in notifications associated with activations.</i> <i>The served user may require notification when a call is being diverted (this would be of value when they are present at the served terminal but do not wish to receive calls).</i> <i>The forwarded-to user will require an indication that the incoming call is a result of the CFNR supplementary service.</i> <i>The originator of the call to a user who has activated CFNR may wish to know that a call has been diverted and they may wish to know the number to which the call has been diverted.</i>	<i>The feedback requirements are in line with the feedback requirements expressed in ETR 116.</i>

User Requirements for:	<i>ETS 300 201 Edition 1 (1994): "Integrated Services Digital Network (ISDN); Call Forwarding No Reply (CFNR) supplementary service; Service description".</i>	
Under what circumstances and in what environments are users expected to use the product or service?	<i>Users will use the CFNR supplementary service under at least the following circumstances:</i> - <i>when they expect to be using a terminal other than the terminal equipment normally associated with the served user's number;</i> - <i>when they are at the terminal equipment normally associated with the served user's number, when they wish to be undisturbed by incoming calls, but they do not want calls to go unanswered.</i>	<i>The circumstances described are very commonly met in the day-to-day usage of a large number of telecommunications services.</i>
NOTE 1: This should include ALL people who use or are affected by this product or service (see clause 5.1).		
NOTE 2: There are a number of methods of measuring users' views described in [1]. Where no formal assessment of users' views has been undertaken, the ETSI HF response to the validity of the stated answer should be stated.		

History

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