



**ANEC - European Association for the Co-ordination  
of Consumer Representation in Standardization**

**Consumer Requirements  
in relation to ICT Standardization**

**Part I  
Consumer Requirements in  
Information and Communications Technology**

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**ANEC  
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## 1. Executive Summary

### Consumer Requirements and Priorities in ICT

This document is part one of a policy statement on consumer requirements and priorities in information and communications technology. The consumer requirements identified in this paper have been adopted by the European ICT Standards Board, a joint CEN/CENELEC/ETSI body, as part of its own policy in April 1997.

#### Generic Consumer Requirements

In the first part of this document ANEC identifies a number of generic consumer requirements applicable to all standardization projects in Information and Communications Technology. This includes issues such as ease of use, functionality of solution, design for all amongst others. Further details can be found in chapter 8. It is proposed that these recommendations could be promoted as a joint CEN/CENELEC/ETSI memorandum to ensure their application across all the standardisation work in the ICT sector. This would contribute to the production of a coherent and consistent catalogue of standards even where consumer representatives are not actually present.

#### Specific Consumer Priorities

The following consumer priorities were identified and further explained in the entire document (ANEC97/ICT/12) which has been split into two parts in 1998. Whilst part one remains unchanged the second part of this document will be available in a considerably revised version in April 1998 as ANEC98/ICT/07.

Please note therefore that the consumer priorities and key aspects for standardisation as given below will be more detailed in the new 1998 document!

<b>Specific ICT Priority Project</b>	<b>Consumer Priority</b>	<b>Key Aspects for Standardization</b>
<b>Electronic Commerce</b>	<ul style="list-style-type: none"> <li>• Encryption systems</li> <li>• Electronic signatures</li> <li>• Security</li> </ul>	<ul style="list-style-type: none"> <li>• Security of transaction</li> <li>• Error tolerance</li> <li>• Transparency of costs</li> <li>• Privacy</li> </ul>
<b>Interlinking technology</b>	<ul style="list-style-type: none"> <li>• Horizontal standards</li> </ul>	<ul style="list-style-type: none"> <li>• Interoperability</li> <li>• Compatibility</li> </ul>
<b>Information kiosks</b>	<ul style="list-style-type: none"> <li>• Categorized list of information</li> <li>• Consistent user information</li> </ul>	<ul style="list-style-type: none"> <li>• Ease of use</li> <li>• Reliability of information</li> </ul>
<b>Digital broadcasting</b>	<ul style="list-style-type: none"> <li>• Electronic programming guide</li> <li>• Encryption systems</li> </ul>	<ul style="list-style-type: none"> <li>• Access control</li> <li>• Cost transparency</li> <li>• Grading systems</li> <li>• Backward compatibility</li> </ul>
<b>Set-top units</b>	<ul style="list-style-type: none"> <li>• Single distributable and adaptable standard</li> </ul>	<ul style="list-style-type: none"> <li>• Interoperability</li> <li>• Expandability</li> <li>• Upgradability</li> </ul>
<b>Mobile communications</b>	<ul style="list-style-type: none"> <li>• Minimum service level</li> <li>• Transparency of geographical coverage area</li> </ul>	<ul style="list-style-type: none"> <li>• Cost transparency</li> <li>• Interoperability</li> <li>• Suppression of call-line identification</li> </ul>
<b>Generic Internet issues</b>	<ul style="list-style-type: none"> <li>• Standard for the categorization of sites</li> <li>• Access control system</li> <li>• Minimum service level</li> </ul>	<ul style="list-style-type: none"> <li>• Privacy</li> <li>• Rating system</li> </ul>
<b>Smart cards</b>	<ul style="list-style-type: none"> <li>• Access to smart card systems</li> <li>• Electronic purses</li> </ul>	<ul style="list-style-type: none"> <li>• Privacy</li> <li>• Clear legal responsibilities</li> </ul>

<b>Smart houses</b>	<ul style="list-style-type: none"> <li>• Interoperability</li> <li>• Single standardised home bus</li> </ul>	<ul style="list-style-type: none"> <li>• Ease of use</li> <li>• Guaranteed minimum service in case of system failure</li> </ul>
<b>Self-service systems</b>	<ul style="list-style-type: none"> <li>• Standard for uniform design of system</li> <li>• Coding of user profiles</li> </ul>	<ul style="list-style-type: none"> <li>• Access for all</li> <li>• Ease of use</li> <li>• Privacy</li> </ul>
<b>Public transport informatics</b>	<ul style="list-style-type: none"> <li>• Access to information</li> <li>• Billing/ ticketing</li> </ul>	<ul style="list-style-type: none"> <li>• Transparency of costs</li> </ul>
<b>Research/ test methods</b>	<ul style="list-style-type: none"> <li>• Benchmark standard for testing</li> <li>• Tools for life-cycle analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Standardised test methods to provide consumer information before purchase</li> </ul>
<b>Power consumption</b>	<ul style="list-style-type: none"> <li>• Standard method for testing power consumption</li> </ul>	<ul style="list-style-type: none"> <li>• Access to comparative information on energy usage</li> </ul>
<b>Information to consumers</b>	<ul style="list-style-type: none"> <li>• Standard on what information is given (time/ type/ means)</li> <li>• Standard product profile</li> </ul>	<ul style="list-style-type: none"> <li>• Standardised information provision before sale, at point of sale and while using ICT</li> </ul>

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## 2. Table of contents

1. Executive Summary .....	2
2. Table of contents .....	4
3. Background.....	6
4. Scope.....	6
5. About this document .....	6
6. Definitions .....	7
7. Consumer Requirements in Standardization.....	7
7.1 ANEC .....	7
8. GENERAL CONSUMER PRINCIPLES .....	8
8.1 Generic consumer requirements for ICT Standardization .....	10
<b>8.1.1 Ease of use</b> .....	11
<b>8.1.2 Design for all</b> .....	11
<b>8.1.3 Functionality of solution</b> .....	11
<b>8.1.4 Multicultural and multi-linguistic aspects</b> .....	11
<b>8.1.5 Terminology</b> .....	11
<b>8.1.6 Comprehensible standards</b> .....	12
<b>8.1.7 Inter-operability and compatibility</b> .....	12
<b>8.1.8 Consistent user interface</b> .....	12
<b>8.1.9 Adaptability</b> .....	12
<b>8.1.10 Provision of system status information</b> .....	12
<b>8.1.11 Error tolerance and system stability</b> .....	13
<b>8.1.12 Minimise the consumer's need to remember system operation</b> .....	13
<b>8.1.13 Explorability</b> .....	13
<b>8.1.14 Privacy and security of information</b> .....	13
<b>8.1.15 Cost transparency</b> .....	13
<b>8.1.16 Quality of service, system reliability and durability</b> .....	13

<b>8.1.17 Reliability of information</b> .....	14
<b>8.1.18 Health and safety issues</b> .....	14
<b>8.1.19 Environmental issues</b> .....	14
<b>8.1.20 Rating and grading systems</b> .....	14
<b>8.1.21 Further work</b> .....	14
<b>9. Bibliography</b> .....	15

### 3. Background

The vast opportunities offered by the advent of the Information Society are revolutionising the daily lives of citizens across the world. It has been acknowledged however at the highest political levels in Europe that not only industry but in particular the consumer should benefit from the information society. The desire to put the citizen first is driving the current political agenda. This has emphasised the urgent need to incorporate consumers, with their requirements and expectations of user friendly ICT products into a rapidly changing ICT standardization process.

In response to this, ANEC, the European Association for the Co-ordination of Consumer Representation in Standardization has decided to become more active in the area of Information and Communications Technology. This document is one part of a project undertaken by a specifically set up ANEC group of European consumer experts on ICT. The aim of the project is to identify generic consumer requirements, ICT areas of interest to the consumer and to define ways how consumer input can be most efficiently achieved in the European ICT standardization process. Considering the speed of developments in ICT this document will be updated regularly.

This document states consumer requirements and priority projects in ICT standardization.

### 4. Scope

The purpose of this document is to provide the ICT standardization process with consumer requirements that should be incorporated when producing ICT standards and to provide an overview of areas ANEC recommends for standardization.

### 5. About this document

These consumer requirements have been identified and consolidated from several sources including:

- THE ISO/ IEC User/ CONSUMER MANIFESTO AND ANEC/ CONSUMERS INTERNATIONAL CONTRIBUTIONS TO THIS JTC1 INITIATED DOCUMENT
- SEVERAL ROUNDS OF CONTRIBUTIONS FROM THE ANEC AD HOC GROUP OF EUROPEAN CONSUMER EXPERTS ON INFORMATION AND COMMUNICATIONS TECHNOLOGY.
- SEVERAL ROUNDS OF CONTRIBUTIONS FROM THE ANEC GENERAL ASSEMBLY AND CO-ORDINATION GROUP (COMPRISING ALL EUROPEAN CONSUMER ORGANIZATIONS AND WHERE EXISTING CONSUMER COUNCILS OF THE NATIONAL STANDARDS BODIES)

- THE GII MEETING ON ICT STANDARDS IN GENEVA, JANUARY 1996;THE WORKSHOP ON ICT AND SERVICES AT THE ANEC GENERAL ASSEMBLY IN 1995;
- ANEC PARTICIPATION IN THE WORK OF THE INFORMATION SOCIETY FORUM
- MONITORING OF THE WORK OF THE EPN STANDARDS BODIES AND THE EUROPEAN INSTITUTIONS BY THE ANEC SECRETARIAT
- ANEC CONTRIBUTIONS TO THE ETSI USER GROUP ON MOBILE COMMUNICATIONS;
- THE LITERATURE;

## 6. Definitions

For the purposes of this document, the following definitions apply:

Consumer: The consumer is a natural person or group of persons using products and/or systems for purposes which are outside his or her trade, business or profession. The consumer is the end user of the products/systems and is usually the one paying for them.

Dialogue: Interaction between a consumer and a system to achieve a particular goal.

System: A configuration of hardware and software which is designed to perform tasks in a particular environment. The system typically interacts with consumers via some form of dialogue.

Interoperability: The ability of equipment from different manufacturers (or different systems) to communicate together on the same infrastructure (same system).

## 7. Consumer Requirements in Standardization

### 7.1 ANEC

ANEC, the European Association for the Co-ordination of Consumer Representation in Standardization was set up following an agreement in 1993 between the Consumer Consultative Committee of the European Commission and its EFTA counterpart for the setting up of a single voice for EU and EFTA consumers in European standardization. The Association has on top become an associate member of CEN, fully accepted into the CENELEC family, a full member of ETSI, European member of EOTC and is in liaison with the ICT Standards Board. The objective of ANEC shall be to ensure that consumer interests are represented in the work of the European standardization bodies and any similar bodies who are concerned with standards directly or indirectly

affecting consumers.

ANEC's policy framework is laid out in its strategic programme.

The general aims which ANEC pursues at the political level are the following:

- ensure consumer interests are given their full weight at the political level in the work of the European standards bodies and European institutions
- improve participation at the national level
- enhance professionalism and effectiveness of consumer observers through training and access to expertise e.g. comparative testing results, product safety research, accident data and consultants.
- The aims which ANEC pursues at the technical level are the following
  - improving consumer safety by
    - preventing accidents
    - mitigating the effects of accidents
    - promoting and maintaining health and hygiene
  - enhancing product/service performance
  - improving product/service information for consumers
  - facilitating consumer choice
  - contributing to environmental protection

## 8. GENERAL CONSUMER PRINCIPLES

The following "Consumer Principles" elaborate on those fundamental consumer rights previously identified by President J.F. Kennedy, the United Nations and the European Commission. These key consumer tests, which guide ANEC's work and this submission to the ICT Standards Board are:

- **Access: Can people actually get the goods or services they need or want?**

In the generality of consumer work this is a function of consumers' ability to afford to buy the things they need or want and of their availability to all consumers regardless of location, social and economic considerations. For ANEC, this may lead to considerations of whether the use of national, rather than international or European, standards inhibits access to national markets throughout the community.

- **Choice: Is there any? And can consumers affect the way goods or services are provided through their own decisions?**

Promoting consumer choice is fundamental to consumer policy. In standardization, this supports the principle that a standard should not favour any one particular manufacturer or supplier or be unnecessarily restrictive as to the design of or materials used in a product's manufacture.

- **Safety: Are the goods or services a danger to health or welfare?**

The safety of products used by consumers has always been the first priority of consumer representatives active in standardization. A detailed discussion on the implications of this and the ways it can be pursued is given later in this document.

- **Information: Is it available, and in the right way to help consumers make the best choices for themselves?**

The provision of adequate information, both to assist in consumer choice and to support the safe and effective use of the product/service, is a key consumer concern. Allied to this is a concern regarding the dangers of providing more information than consumers can readily absorb and, hence, reducing the impact of vital messages.

- **Equity: Are some or all consumers subject to arbitrary or unfair discrimination?**

ANEC has adopted the specific aim of looking after the interests of various groups of consumers who are felt to be at particular risk.

- **Redress: If something goes wrong, is there an effective system for putting it right?**

Ensuring that consumers can be confident in claims of compliance with standards is an important concern. This means that, in their technical committee work, consumer representatives should aim to ensure that tests are repeatable and reproducible. At a policy level it requires influence on systems for product certification.

- **Representation: If consumers cannot affect the supply of goods or services through their own decisions, are there ways for their views to be represented?**

By definition, individual consumers cannot materially influence the content of product standards. ANEC and consumer representatives on national delegations are the main conduits for representing their interests and, whatever resource constraints there may be, must participate effectively in key areas of consumer concern.

## 8.1 Generic consumer requirements for ICT Standardization

When designing, selecting, commissioning, modifying and standardising ICT systems, certain generic consumer requirements need to be taken into account.

### **Proposal**

It is recommended that these generic consumer requirements should be addressed in a joint CEN'CENELEC'ETSI memorandum to ensure their application across all the standardisation work in the ICT sector. Industry and consumers alike demand consistency in the standardisation process and this initiative could contribute enormously to the production of a coherent and consistent catalogue of standards even where consumer representatives are not actually present.

The specific requirements identified by ANEC are the following

1. Ease of use
2. Design for all
3. Functionality of solution
4. Multi-cultural and multi-linguistic aspects
5. Terminology
6. Comprehensible standards
7. Interoperability and compatibility
8. Consistent user interface
9. Adaptability
10. Provision of system status information
11. Error tolerance and system stability
12. Ease the consumer's need to remember system operation
13. Explorability
14. Privacy and security of information
15. Cost transparency
16. Quality of service, system reliability and durability
17. Reliability of information
18. Health and safety issues
19. Environmental issues
20. Rating and grading systems

Note 1. It should be noted that it is important to see all the requirements in relation to each other as they are interlinked. Resolving just one or two of the issues will not ensure that consumer interests are satisfactorily taken account of.

Note 2. Requirements are not presented in any hierarchical order of importance. This is because the relevance and thereby importance of each and every requirement is situation dependant. In some situations some of the requirements may not be applicable.

### 8.1.1 Ease of use

ICT must be easy to use for all intended user groups stated in the scope of the standard (see above). Following ergonomics software principles for user interface design<sup>1</sup> should help achieve ease of use.

ICT standards should address ergonomical aspects of ICT hardware, software, services and support. Existing standards should be applied<sup>2</sup>.

Note: Ease of use can be measured in terms of performance (e.g. the time taken by users to complete a predetermined task, and/or number of errors, and/or satisfaction with a service: see EN 29241 -11 Guidance of usability ). Goals for ease of use (known as usability statements) should be developed.

### 8.1.2 Design for all

ICT standards should support the principle of "Design for all"<sup>3</sup>. This is a process of creating products, systems, services which are accessible and usable by people with the widest possible range of abilities operating within the widest possible range of situations.

There may however be occasions where a system is not intended for all users. In these instances, the standard should state which users and tasks the system is not designed for and why these groups' requirements are not taken into account.

### 8.1.3 Functionality of solution

With regard to functionality of solution, one has to ensure that the standard addresses the problems actually faced by consumers and will actually help solve those problems. There should be advice on which user groups and tasks the system should be used for, and in which operating environments. This advice should be in the scope of the standard. The advice should be open for review.

### 8.1.4 Multicultural and multi-linguistic aspects

Multicultural and multi-linguistic aspects need to be considered when developing global ICT standards.

### 8.1.5 Terminology

As part of a consumer centred design, the terminology used in user interfaces, (this includes brochures, user instructions and information presented by the system) should meet the basic generic consumer requirements<sup>4</sup>.

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<sup>1</sup> e.g. EN 29241-10 Dialogue principles and ISO/CD 13407 - 2 Human centred design processes for interactive systems

<sup>2</sup> e.g. IS 9241

<sup>3</sup> in line for example with *UN Standard Rules on the Equalisation of Opportunities for Persons with Disabilities*

<sup>4</sup> or meet ISO Guide 37

### 8.1.6 Comprehensible standards

Standards must be unambiguous and easy to understand, i.e. written in plain language so that non-technical people can comprehend them and contribute to the standardization process.

### 8.1.7 Inter-operability and compatibility

Different services must be interoperable so that, in practice, any service can be accessed on any appropriate network on any relevant device, thus avoiding the acquisition of access to several different networks and terminals for similar services (i.e. portability is achieved). Compatibility within a system should be ensured for example new versions of systems should be compatible with previous versions of the same system and components for systems originating from different manufacturers should be also be compatible. Different systems should be compatible so as to allow their joint operation.

### 8.1.8 Consistent user interface

The systems must have a consistent user interface. It is especially important that the method of processing storing and accessing the systems is consistent for the user.

Note. A consistent user interface can be achieved by different means e.g.:

1. all components of the user interface are uniform.
2. the user interface adapts to the user, so that the user always meets a personalised uniform interface. This principle is the subject of the TIDE project 1040 "SATURN", where the feasibility of using a smart card to trigger a personalised user interface is being evaluated and promoted for standardization.

### 8.1.9 Adaptability

The system should be adaptable to meet a user's specific requirements and abilities. For example, provide output in a format and at a pace that meets the individuals' needs.

Note 1: This is a way of achieving consistency for the user: see above

Note 2: This principle could be applied to prevent unintended users gaining access to a system.

Note 3: This principle could be applied in the case of custom upgrading of systems.

### 8.1.10 Provision of system status information

The status of the system (e.g. waiting for input, checking, fetching, etc.) should be always available for the consumer. Different mechanisms should be employed to give complete feedback to the consumer e.g. audio/visual for error messages data input required. All messages should be positive and not place blame on the consumer.

### **8.1.11 Error tolerance and system stability**

The system should anticipate errors of operation and be forgiving. Informative error messages should lead the consumer forward. The system should be robust and should remain stable if consumers try services which cannot be delivered or make choices that are redundant.

### **8.1.12 Minimise the consumer's need to remember system operation**

Systems should display dialogue elements to the consumer and allow them to choose from items generated by the system or to edit them. Menus are a typical technology to achieve this goal.

### **8.1.13 Explorability**

The system should allow consumer to discover its functions.

### **8.1.14 Privacy and security of information**

The system should ensure privacy of the individual. It should not be possible for unauthorised people to follow a user's activities on an electronic network. Electronic footprints are to be avoided. Standards should help provide methods for checking this, especially in open and decentralised networks (Internet). Inevitable footprint data must be deleted after an appropriate time. The system should not allow disclosure of information about the consumer to unauthorised people and should indicate clearly to whom information is given.

Security of information, sent, stored or received or deleted, must be ensured. The level of security should be clearly stated to the consumer.

### **8.1.15 Cost transparency**

The system must be transparent regarding all costs involved. Cost information should be presented in a standardised way. This includes both initial costs involved for the user and costs in terms of subscribing to and operating the system, especially when interworking on networks, or when using on-line help or other fundamental services (e.g. directory enquiries, short message service on a mobile phone). Disconnecting from a service must be free of charge or the charge must be stated in a standardised way at point of purchase.

### **8.1.16 Quality of service, system reliability and durability**

There should be a standardised way to determine and present quality of service, system reliability and durability. This should include the development of standardised performance indicators. This information should be displayed at the point of sale. Batteries are an example of products that consumers need such information at point of sale (durability and reliability).

### 8.1.17 Reliability of information

The system should indicate reliability of information (possibly by quoting sources) provided on the system. (e.g. Balance of account is xxx ECU at 1000 hours on ddmmy. Note: bank clearing system has been out of action last two days).

### 8.1.18 Health and safety issues

When developing ICT standards any health & safety issues should be assessed. Existing standards should be applied.

### 8.1.19 Environmental issues

ICT standards should indicate that environmental issues, such as power consumption have been addressed. A clean life-cycle from manufacturing to disposal should be the goal of all ICT systems/products. Possible environmental risks that may arise in the product/system life cycle should be identified and indicated to the consumer.

A standardised way of assessing and indicating environmentally friendly ICT products, services and systems should be developed.

### 8.1.20 Rating and grading systems

ICT standards should allow the application of rating and grading systems.

### 8.1.21 Further work

In order to fulfil the above consumer requirements, standards for calculating and presenting ICT systems in terms of ease of use, cost, durability, system reliability and information reliability (source and content) will need to be developed.

Active consumer participation **MUST** be ensured throughout all phases of the standardization process in order to ensure "consumer friendly" systems. This includes the programming of standardization work, priority setting and participating in the technical work.

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