



## Human Factors (HF); Requirements for relay services

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## Foreword

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

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## Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

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## Introduction

The present document is an update of previously published versions and is based on ETSI TR 101 806 [i.4].

Further significant background and research information about relay services and the development of the original version of the present document can be found in ETSI TR 102 974 [i.1].

Recent development in the area has been taken into careful consideration.

The present document is intended to support the procurement and provision of accessible and usable relay services.

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# 1 Scope

The present document specifies requirements for relay services provided over ICT networks. It is intended to give information suitable for incorporation into contracts between commissioning agents and relay service providers.

The present document is applicable to all kinds of relay services which enable a user with functional limitations related to hearing, vision, speech or cognitive functions, or combinations thereof, to converse with other users. The present document applies to text relay services, speech-to-speech relay services, video relay services, and captioned telephony services.

Requirements are specified for services provided on a 24/7 basis, as well as for limited-hour services.

The present document does not place requirements on network operators.

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## 2 References

### 2.1 Normative references

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The following referenced documents are necessary for the application of the present document.

- [1] ETSI EN 301 549 (V1.1.2): "Accessibility requirements suitable for public procurement of ICT products and services in Europe".
- [2] Recommendation ITU-T F.700: "Framework Recommendation for multimedia services".
- [3] Recommendation ITU-T H.Supp1: "Application profile - Sign language and lip-reading real-time conversation using low bit-rate video communication".

### 2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] ETSI TR 102 974: "Human Factors (HF); Telecommunications relay services".
- [i.2] ETSI EG 201 013: "Human Factors (HF); Definitions, abbreviations and symbols".
- [i.3] ETSI EG 202 320 (V1.2.1): "Human Factors (HF); Duplex Universal Speech and Text (DUST) communications".
- [i.4] ETSI TR 101 806 (V1.1.1): "Human Factors (HF); Guidelines for Telecommunication Relay Services for Text Telephones".
- [i.5] ETSI TR 102 202 (V1.1.2): "Human Factors (HF); Human Factors of work in call centres".

- [i.6] ETSI TS 101 470 (V1.1.1): "Emergency Communications (EMTEL); Total Conversation Access to Emergency Services".
- [i.7] ETSI TS 102 657 (V1.16.1): "Lawful Interception (LI); Retained data handling; Handover interface for the request and delivery of retained data".
- [i.8] ETSI ES 201 158 (V1.2.1): "Telecommunications security; Lawful Interception (LI); Requirements for network functions".
- [i.9] ETSI EG 202 116 (V1.1.1): "Human Factors (HF); Guidelines for ICT products and services; "Design for All"".
- [i.10] Recommendation ITU-T F.703: "Multimedia conversational services".
- [i.11] BT SIN 359: "Text Relay Service description".
- NOTE: Available at <http://www.sinet.bt.com/sinet/SINs/pdf/359v1p4.pdf>.
- [i.12] Void.
- [i.13] United Nations: "Convention on the rights of persons with disabilities and optional protocol".
- NOTE: Available at <http://www.un.org/disabilities/default.asp?id=150>.

## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in ETSI EG 201 013 [i.2] and the following apply:

**captioned telephony:** service that assists a deaf or hard of hearing user in a spoken dialogue by providing text captions translating the incoming voice part of the conversation to text

NOTE: The service is usually provided through a device with Internet connection capability.

**commissioning agent:** person or body that procures a relay service from a service provider by means of a purchasing contract

**Communications Assistant (CA):** person working in a relay service with media conversion, as a human intermediary (including sign language interpreters for video relay services)

NOTE: Also known as and sometimes called interpreter, operator, call handler, telephone operator, etc.

**ICT network:** technology and resources supporting the connection and operation of interconnected ICT

**Information and Communication Technology (ICT):** technology, equipment, or interconnected system or subsystem of equipment for which the principal function is the creation, conversion, duplication, automatic acquisition, storage, analysis, evaluation, manipulation, management, movement, control, display, switching, interchange, transmission, reception, or broadcast of data or information

NOTE: Examples of ICT are electronic content, telecommunications products, computers and ancillary equipment, software, information kiosks and transaction machines, videos, IT services, and multifunction office machines which copy, scan, and fax documents.

**interacting relay services:** relay services connected through a common voice path, in order to provide connectivity and modality translation between two (or several) primary relay service users

**lost call:** call that cannot be serviced as expected by the users, for reasons internal to the service and outside of control of the users

**national numbering plan:** scheme that structures the numbers used and the number space available in a country

**primary (relay service) user:** intended (target) user of a relay service who needs some communication modality conversion support in order to communicate with voice users



NOTE: A primary user can initiate and receive calls.

**real-time text:** form of text conversation in point-to-point situations or in multipoint conferencing where the text being entered is displayed in such a way that the communication is perceived by the user as being continuous

**relay service:** electronic communications service that enables users of different modes of communication (e.g. text, sign or speech) to interact by providing conversion between different modes of communication, usually through a communications assistant

**relay service user:** primary or secondary user of a relay service

**secondary (relay service) user:** persons other than primary users, using the relay service for communication with primary users

NOTE: A secondary user can initiate and receive a relayed call.

**signing:** See "video relay service".

**sign language interpreter:** person working in a video relay service with sign language interpretation

NOTE: Also called "interpreter".

**Signing relay service:** See "video relay service".

**speech to speech relay service:** electronic communications service that enables speech impaired telephone users and other users to interact by providing skilled assistance between them

NOTE: This assistance is provided by a trained communications assistant.

**text relay service:** electronic communications service that enables text capable terminal users and voice terminal users to interact by providing conversion between the two modes of communication in substantially real time

NOTE: This conversion is normally provided by a communications assistant.

**text telephone:** terminal offering text telephony functions, either as a stand-alone unit or as an addition to a voice telephone or as an application in a multi-function computer based terminal (ETSI EG 201 013 [i.2])

**text telephony:** telecommunications facility offering real time text conversation through telecommunication networks

NOTE: Text telephony may be combined with voice telephony (ETSI EG 201 013 [i.2]).

**text capable terminal:** communication device with the capability to use real-time text and optionally, other media in conversational calls

**total conversation:** audio-visual conversation service providing bidirectional symmetric real-time transfer of motion video, text and voice between users in two or more locations (Recommendation ITU-T F.703 [i.10])

**videophone:** device capable of supporting audio-visual conversation providing bidirectional symmetric real-time transfer of voice and motion video between two locations

NOTE: Bidirectional text transfer is an optional videophone feature.

**Video Relay Service (VRS):** service that enables sign language users and other users to interact by providing conversion between sign language and speech in substantially real time

NOTE: This conversion is normally provided by a sign language interpreter (this service is also known as "sign relay service").

## 3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

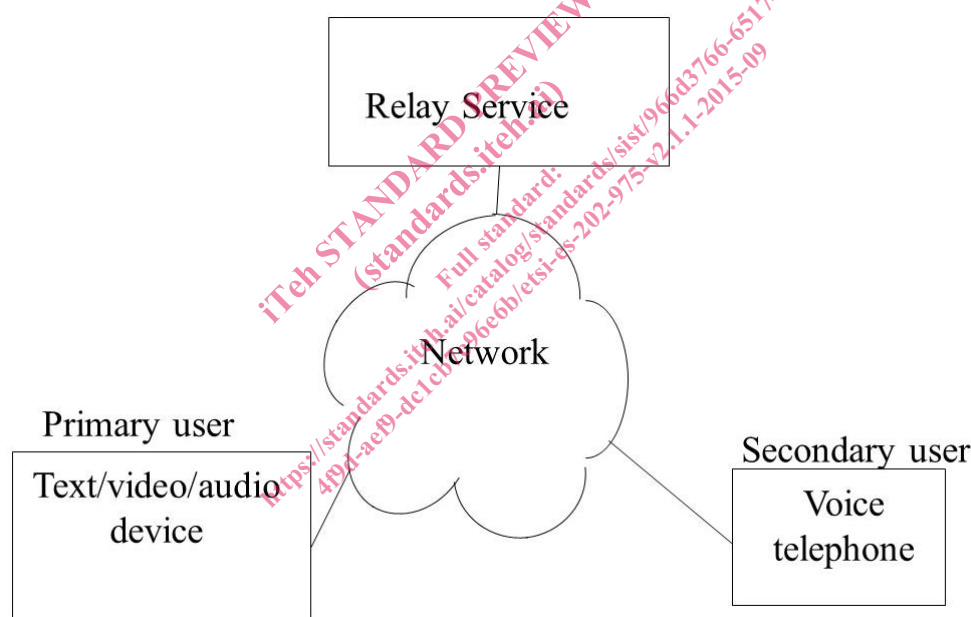
CA	Communications Assistant
CLI	Calling Line Identity
CLIP	Calling Line Identification Presentation
COLP	Connected Line Identification Presentation

COLR	Connected Line Identification Restriction
DTMF	Dual Tone Multi Frequency
GSM	Global System for Mobile communication
ICT	Information and Communication Technology
IMS	IP Multimedia Sub-system
IP	Internet Protocol
ITU-T	International Telecommunication Union - Telecommunication
IVR	Interactive Voice Response
PBX	Private Branch Exchange
PSTN	Public Switched Telephone Network
SIP	Session Initiation Protocol
UN	United Nations
VRS	Video Relay Service

## 4 General information on relay services

### 4.1 A relay service

A relay service is an ICT service, as outlined in figure 1, that enables users of different modes of communication to interact by providing conversion between the modes of communication. The connections in figure 1 represent general call and media connections and do not show the technological routes of the connections or points of media mixing.



**Figure 1: Communication via a relay service over a network**

**EXAMPLE:** In its simplest form, the relay service is outside the network and can be provided using a communications assistant to mediate between a text telephone user and a voice telephone user. The service can be provided by a relay service provider over any form of connection, for example over a mobile network or via an IP connection where the text/video/audio device can be based on mainstream ICT equipment.

The aim of a relay service is to allow any user in any network, using one mode of communication, to communicate with another user using a different mode of communication in the same, or in any other network, via a relay service.

Relay services can interpret between the different modes of communication used by call participants since ideally it is possible to send and receive high-quality real time text, video and voice-over-IP calls to and from any product used for mainstream communication (such as telecommunications terminals, computers (including public ones) and mobile phones with minimal network, firewall or terminal restrictions).

In order to satisfy the requirements of the UN Convention on the rights of persons with disabilities [i.13], it is essential that interoperability is achieved between all services, so as to provide worldwide communication equivalent to that provided for other users.

## 4.2 Service types

There are a number of different types of relay service offering conversion between differing modes of communication and many are still under development. The present document deals with the following relay services:

- text relay services;
- speech to speech relay services;
- video relay services (for sign language); and
- captioned telephony services.

NOTE: The clauses previously addressing lip reading relay services, as well as text-to-text and fax, have been removed in the present document.

## 4.3 Relay service provision

The present document provides a set of requirements for relay services that can form the basis of a purchasing contract between some commissioning organization and a relay service provider.

The service provided to the primary user with functional limitations is often subsidized in some way, e.g. to take account of the cost of interpretation, the costs being partly or wholly funded by a third party, commonly some government agency. There are various ways in which a relay service can be provided and paid for and such arrangements tend to differ from country to country (see BT SIN 359 [i.11]).

## 4.4 Service hours

Although desirable, it is not always feasible to provide a full 24-hour relay service, particularly in the case of those services with a relatively restricted usage and in the early trial stages of the provision of a new relay service.

The present document therefore provides for two possible options:

- a) a full 24-hour relay service; and
- b) a limited-hour relay service.

## 4.5 Supplementary services

Most supplementary services rely on special provisions in the network and cannot normally be provided by relay service providers. Nevertheless supplementary services such as call diversion or message storage that are provided on many networks can usually be made available in conjunction with any form of relay service.

Relay services may need to make special arrangements with network providers when offering such supplementary services. They also imply some special requirements which are dealt with in informative Annex C.

These additional services would normally be provided at the user's option at an additional charge, but may alternatively be provided as part of the basic service offering.