

## THE HARMONISATION OF RELAY SERVICES IN EUROPE

### *Improving accessibility to telecommunications*

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**Abstract.** This paper describes the continuing work of an ETSI Specialist Task Force STF) funded by EC/EFTA to develop a standard setting out requirements for the harmonisation of relay service provision in Europe.

### 1. Introduction

Profoundly deaf, deaf-blind and speech-impaired people are unable to use ordinary telephones and so "they are locked out of the normal telephone network by their inability to hear and/or speak" (Martin, 1991). They are able partly to overcome this problem by using text telephones to "talk" to one another, but to achieve universal accessibility, some facility is required to enable them to converse with telephone users who do not have text terminals. Such a facility can be provided by a relay service that can convert from text to speech and vice versa, normally by means of a human intermediary.

Early in 2007 the European Commission and ETFA mandated the European Standards Institute to set up a small task force to write a harmonized standard for relay services in Europe. This standard was to be based on an earlier technical report (TR 101 806 2000) written some seven years before containing a set of guidelines for relay services but which was to be updated to cover next generation relay services, able to take into account new broadband services.

### 2. Outline of the work

The earlier ETSI Technical Report (TR 101 806 2000) was originally based on the Nordic Guidelines for Telecommunications Relay Services for Text Telephones (NFTH 4/1998) and was an attempt to give these guidelines wider exposure. In the report, the original guidelines were extended with

quality assurance and traffic requirements derived from some American invitations to tender. The original Technical Report, TR 101 801, set out detailed guidelines for a basic text relay service based upon PSTN text phones as shown in figure 1 and also for an ISDN videophone based signing relay service. Some reference was also made to providing textphone capability for Fax to speech conversion services and also for SMS and paging services. As the report was only a guideline, it was able to recommend very high performance targets based upon what were the best available in the world.

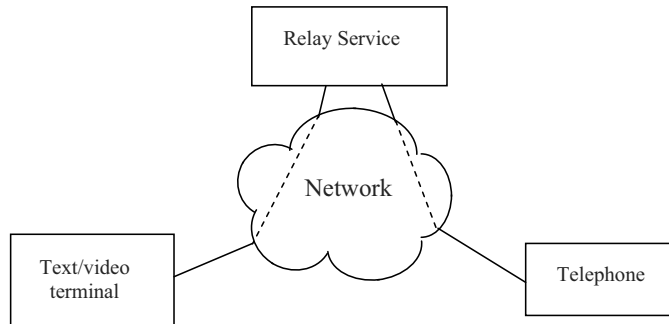


Figure 1. A basic relay service..

A requirement of the mandate was to produce a standard suitable for reference in legislation that also considered new communications services introduced since the original Technical Report. The work commenced with a review of existing and proposed relay services that suggested that the work would have to be extended to cover conversion between a number of other modes of communication besides text and speech. The provision of a signing service over IP was known to exist, as was a similar service over mobile telephony. A lip-reading service was thought to be a possibility, as was the translation of Fax to speech or text. In addition a service to assist users with impaired speech was investigated. Specifying requirements for captioned telephony were also investigated.

The current draft of the standard contains proposed requirements for text/speech conversion, a basic speech to speech relay service for use by users with speech or cognitive impairments, a signing relay service for those whose preferred language is sign language, a lip-reading relay service for lip-readers, a text to text service to provide conversion between text terminals using differing protocols and a facsimile relay service. Consideration is currently being given to requirements for captioned telephony and SMS and paging services.

### 3. Preparing for the standard

The initial draft of the standard as described above contained descriptions of those relay services that could be envisioned as practical offerings. As the document was to be a standard with mandatory requirements, rather than as a listing of best practice recommendations and user requirements, it required to be tested in the market place. To this end, it was decided that interviews should be conducted with existing service providers and with regulators.

A survey was therefore made of relay service provision throughout Europe. It proved remarkably difficult to contact knowledgeable representatives of disability organizations or of administrations who were able to give information on such provision. Where contact could be made, interviews were conducted to determine what relay services were available, which were planned for the future and what quality and traffic requirements were acceptable. This phase of the work is still ongoing.

The early interviews revealed the significant differences in the approach to provision and regulation in the various Countries in Europe. Whereas earlier studies (Olesen, 1992) described national standards for textphones and national providers of relay services, it was found that the market place has produced fragmentation of both standards and of service providers. In some Countries the regulator commissioned and set standards for the relay services, in others the provision was completely delegated to a network provider. One Country uses a range of contact numbers for the relay service, a different number for each make of textphone.

Information is still being collected from around Europe but it is becoming clear that there has not been much progress in the provision of relay services in the last 15 years (Olesen, 1992). At the time of writing this paper it can be confirmed that there are some relay services in Denmark, Eire, Finland, Germany, Greece, Italy, Netherlands, Norway, Spain, Sweden, Switzerland and the UK. There are no services in Austria, Bulgaria, Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Slovakia and Slovenia.

A number of new relay services were found to be in use or in development, most of these new services being IP based, with a number offering multimedia versions with sign language capability. There were a number of protocols and standards in use, most being proprietary, using free software provided by the service provider. Most of the signing services were provided on an unsubsidised commercial basis, offering general sign language interpretation as well as a relay service.

#### **4. The content of the standard**

The current draft of the standard contains general requirements for the various relay services. Requirements for call handling, set out operator procedures, requirements for confidentiality, the handling of messaging services and dealing with profanity and obscenity.

There is a section on system requirements which treats a system plan, traffic recording and standards, system reliability, transmission quality, quality assurance and operator training, proficiency and the availability of counselling to enable operators to deal with the emotional aspects of relaying calls.

Finally sections deal with charges, complaints handling and the provision of user information.

The information gathered so far in our survey has led to a need for changes in the originally intended content of the standard. Accommodation will have to be made for the differing provisions of relay services, both with regard to their technical and their business structure. Although such matters might be outside the scope of the standard, differing forms of regulation will have to be allowed for in the wording chosen.

Whereas 24 hours/ 7days a week/365day provision of subsidised services may be considered desirable and reasonable, it is difficult to mandate such provision for commercially based services, the provision of which must be responsive to the needs and affordability of the marketplace. The standard will need to cater for such differences.

The separation of relay service provision from the network operator makes it difficult to mandate the handling of some supplementary services such as Calling Line Identity Presentation and services such as call forwarding to an announcement or alarm calls.

There are still technical problems with emergency call systems that need to be resolved. There are calls for all users to be able to call the emergency services using the 112 service. Indeed, within Europe it can be considered to be a legal requirement (Council Decision 91/396/EEC). It is however not possible to equip and train all emergency operators to use text terminals and so it is necessary to direct text calls to special positions. Should all emergency calls be delayed by the few seconds required to perform the necessary filtering or should the requirement be resisted?

The provision of service to IP based terminals leads to new problems, many of which have been identified in VoIP systems. Relay services in particular pose cross border funding difficulties which may have to be met via registration requirements, technological adaptations or special fees (Pila, 2006).

It will be important to ensure that compatibility requirements are specified to ensure that terminals can interwork with one another as well as with any

relay service. In the coming IP based world, there is no reason why mobile and fixed terminals should not interwork satisfactorily in all available modes as described in the DUST Guide (EG 202 320 2005).

A new clause in the standard therefore sets out minimum compatibility requirements. For PSTN based systems, speech performance is required to be compatible with other voice telephones in the network and interoperability is required with any terminal compliant with V.18 or any of its sub-modes. IP based text relay services are required to be interoperable with any text terminal using IETF SIP (RFC 3261) for call control and IETF RFC 4103 for real-time text. Audio support is required for G.711  $\mu$ -Law.

Any signing relay service is required to be interoperable with IP based video terminals using IETF SIP for call control and both ITU-T Recommendation H.263 and ITU-T Recommendation H.264 for video. The service is also required to offer sign language with good usability as described in ITU-T Series H Supp. 1. Audio support for G.711  $\mu$ -Law encoding is also required. All fax services are required to be interoperable with fax terminals compliant with ITU-T Recommendation T.30 and its amendments.

Further work still needs to be done on SMS based systems and on captioned telephony.

## **5. Conclusion**

The standard is not yet complete and work continues within the STF and in the ETSI Human Factors Committee. In addition, a report is being written to record background information obtained during the writing of the standard. Progress of both aspects of the work can be monitored at [http://portal.etsi.org/stfs/STF\\_HomePages/STF325/STF325.asp](http://portal.etsi.org/stfs/STF_HomePages/STF325/STF325.asp) on the ETSI web site.

Contributions are invited, particularly those giving information on existing relay services in Europe.

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