BRITISH STANDARD

BS EN
1922 : 1998

Information technology — Character repertoire and coding for interworking with Telex services

The European Standard EN 1922 : 1997 has the status of a British Standard

ICS 35.040

National foreword

This British Standard is the English language version of EN 1922 : 1997. It supersedes DD ENV 41504 : 1991 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee IST/2, Character Sets and Information Coding, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled 'International Standards Correspondence Index', or by using the 'Find' facility of the BSI Standards Electronic Catalogue.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 6, an inside back cover and a back cover.

This British Standard, having been prepared under the direction of the DISC Board, was published under the authority of the Standards Board and comes into effect on 15 February 1998

ISBN 0 580 28883 8

Amendments issued since publication

Amd. No.	Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1922

September 1997

ICS 35.040.70; 35.040

Descriptors: Data processing, teleprocessing, information interchange, data transmission, telex, coded character sets, directories, codification

English version

Information technology — Character repertoire and coding for interworking with Telex services

Technologies de l'information — Répertoire des caractères et codage pour l'interaction avec les services télex

Informationstechnik — Zeichenvorrat und Codierung für die Zusammenarbeit mit Telex-Diensten

This European Standard was approved by CEN on 15 August 1997.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Ref. No. EN 1922 : 1997 E

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 304, Character Set Technology, the secretariat of which is held by STRI.

This European Standard supersedes ENV 41504 : 1990 (drawn up by CEN/CENELEC/IT/WG-CSC).

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 1998, and conflicting national standards shall be withdrawn at the latest by March 1998.

This standard is available in English and German only.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Contents

		Page
Foreword		2
1	Scope	3
2	Normative references	3
3	Definitions	3
4	Description	3
5	Conformance	4
5.1	Conformance of information interchange	4
5.2	Conformance of devices	4
5.2.1	General	4
5.2.2	Device description	4
5.2.3	Originating devices	4
5.2.4	Receiving devices	4
6	Repertoire description	4
6.1	Repertoire options	4
6.2	Graphic characters	4
6.2.1	Latin graphic repertoire	4
6.2.2	Greek letter case	5
6.3	Control functions	5
7	Coding methods	5
7.1	Coding methods for Latin repertoire	5
7.2	Coding methods for Latin and Greek repertoire	5
7.3	Coding methods for control characters	5
7.4	16/32 coding environments	5
8	Identification of options	5
Annexes		
A	(normative) Extended repertoire for national or private use	5
B	(informative) Application to Latin and Greek character repertoires	5

1 Scope

This European Standard specifies the graphic character repertoire and control functions relevant for information interchange via Telex services. It is intended to be used with and identified within other European functional standards that specify strings of coded characters for the interchange of coded information between information processing systems (IPS) via Telex services.

This standard specifies two alternative options for graphic character repertoires:

– option A for Latin graphic characters; and

– option B for Latin and Greek graphic characters.

NOTE. The assignment of characters to three of the code positions is outside the scope of this standard. Such assignment is subject to national or private agreement.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated by amendment or revision. For undated references the latest edition of the publication referred to applies.

prEN 1923	*European character repertoires and their coding — 8-bit single-byte coding*
ISO/IEC 6429	*Information technology — Control functions for coded character sets*
ISO/IEC 8859-1	*Information processing — 8-bit single-byte coded graphic charactersets — Part 1: Latin alphabet No. 1*
ISO/IEC 8859-7	*Information processing — 8-bit single-byte coded graphic character sets — Part 7: Latin/Greek alphabet*
ISO/IEC 10646-1	*Information technology - Universal multiple-octet coded character set (UCS) - Part 1: Architecture and basic multilingual plane*
ITU-T Recommendation S.1, 1993	*International Telegraph Alphabet No. 2*
ELOT 1095	*Character set intended to be used in the Hellenic Telex and telegraphic service (in Greek)*

3 Definitions

For the purposes of this standard the definitions given in ISO/IEC 10646-1 and the following apply.

3.1 CC-data-element

An element of interchanged information that is specified to consist of sequences of coded representations of characters, in accordance with one or more identified standards of coded character sets.

3.2 device

A component of information processing equipment which can transmit, and/or can receive, coded information within CC-data-elements. (It may be an input/output device in the conventional sense, or a process such as an application program or gateway function).

3.3 user

A person or other entity that invokes the services provided by a device. (This entity may be a process such as an application program if the 'device' is a code converter or a gateway function, for example).

4 Description

Within the scope of this standard the processing of information interchange via Telex network equipment is as in figure 1. Information processing systems (IPS) work with character sets and coding in an ISO 8-bit environment, and these systems need to communicate via the international Telex service, with the restriction on coding and characters this implies. This standard defines a transformation module that will transform 8-bit CC-data-elements (IPS side) in accordance with an option of prEN 1923 into 5-bit CC-data-elements in accordance with ITU-T Recommendation S.1 (Telex side) and vice versa, while retaining as much as possible of the character repertoire's functionality.

This transformation module deals only with the repertoire of clause **6** of this standard, while the transformation of CC-data-elements other than those conforming to clause **6** is outside the scope of this standard.

In addition, **6.2.2** specifies a Greek character repertoire, as in ELOT 1095.

It follows from this, that the device to which conformance in accordance with **5.2** applies is the transformation module, and the user is the IPS.

One transformation module may be replaced by a sending or receiving Telex terminal.

NOTE. This standard does not describe the international Telex service. In the preparation of this standard the specification of the international Telex service was assumed to be as in ITU-T Recommendation S.1 for option A, and in ITU-T Recommendation S.1 and ELOT 1095 for option B, respectively.

The use of the three code combinations in Figure Shift in the Telex code, which have been reserved for national or private use, is outside the scope of this standard.

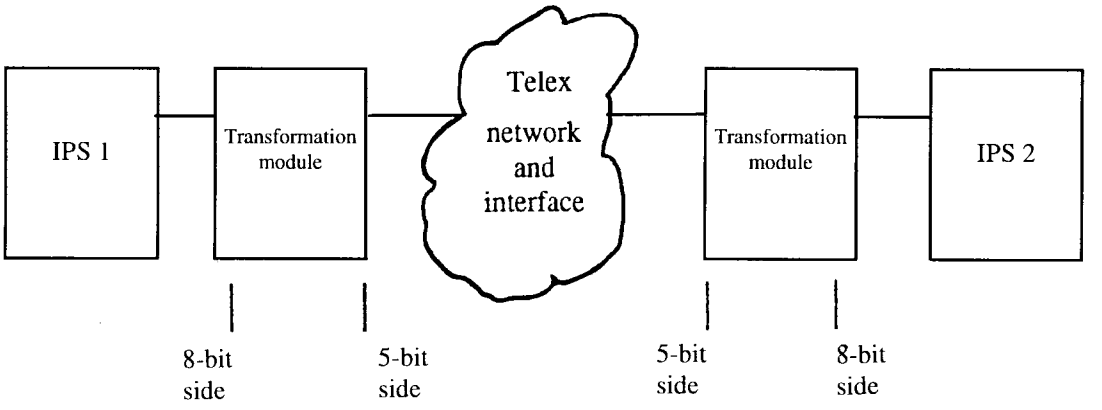

Figure 1.

5 Conformance

5.1 Conformance of information interchange

A CC-data-element within coded information for interchange is in conformance with this standard if all the coded representations of characters within that CC-data-element conform to the requirements of clause **7** of this standard. A claim of conformance shall identify the option adopted as specified in clause **8**.

5.2 Conformance of devices

5.2.1 *General*

A device is in conformance with this standard if it conforms to the requirements of **5.2.2**, and either or both of **5.2.3** and **5.2.4**. A claim of conformance shall identify the documents which contain the description specified in **5.2.2** and shall identify the option adopted.

5.2.2 *Device description*

A device that conforms to this standard shall be the subject of a description that identifies the means by which the user may supply characters to the device, or may recognize them when they are made available to him, as specified respectively in **5.2.3** and **5.2.4**.

5.2.3 *Originating devices*

An originating device shall allow its user to supply any sequence of characters conforming to the adopted option of this standard, and shall be capable of transmitting their coded representations within a CC-data-element.

5.2.4 *Receiving devices*

A receiving device shall be capable of receiving and interpreting any coded representations of characters that are within a CC-data-element, and that conform to **5.1** of this standard, and shall make the corresponding characters available to its user in such a way that its user can identify them from among those of the adopted option, and can distinguish them from each other.

6 Repertoire description

6.1 Repertoire options

This standard specifies the following two graphic character repertoires:

– option A : Latin graphic character repertoire (**6.2.1**); or

– option B : Latin and Greek graphic character repertoire (**6.2.1** and **6.2.2**).

6.2 Graphic characters

6.2.1 *Latin graphic character repertoire*

The Latin graphic character repertoire consists of:

– the character 'space';

– the 26 Latin letters 'A' (a) through to 'Z' (z);

– the 10 digits 'zero' through to 'nine';

– the following punctuation and miscellaneous characters:

. full stop;
, comma;
: colon;
? question mark;
' apostrophe;
+ plus sign;
- hyphen-minus;
/ solidus;
= equals sign;
(left parenthesis;
) right parenthesis;

– three unidentified characters, see note 1 and annex A.

In this repertoire, no distinction is made between the capital and small forms of the same letter. However, a transmitting product shall allow its user to supply any letter in either its capital or its lower case form.

NOTE.1. ITU-T Recommendation S.1 contains three code combinations for which no graphic characters have been determined. The selection of these characters is left to national or regional agreement.

NOTE.2. The use of extra control functions to distinguish between the capital and the small forms of the same letter is subject to national or private agreement.

6.2.2 *Greek letter case*

The Greek graphic repertoire consists of the 24 (25) Greek letters 'alpha' to 'omega', see Annex B.

This repertoire makes no distinction between the capital and lower case forms of the same letter, nor between the small Greek letter 'sigma' and the small Greek letter 'terminal sigma'. However, a transmitting product shall allow its user to supply any letter in either its capital or any of its lower case forms.

NOTE. A special control function is provided by the Telex service to shift between Latin and Greek graphic character repertoires, see ELOT 1095.

6.3 Control functions

The repertoire of control functions shall comprise the following three control functions:

– line feed;
– carriage return;
– bell.

NOTE. The control function WRU ('Who are you?') is used only during the establishment and confirmation of a connection, which is outside the scope of this standard.

7 Coding methods

7.1 Coding methods for Latin graphic character repertoire

Information received at the 5-bit side of the transformation module, which is coded in accordance with ITU-T Recommendation S.1, shall subsequently be transformed to be coded at the information processing side (8-bit side) in accordance with the G0 set of ISO/IEC 8859-1, except that the three unidentified characters mentioned in note 1 to **6.2.1** need not necessarily belong to the G0 set.

After this transformation, the alphabetic characters shall all be represented either by the codes for capital letters, or by the codes for lower case letters, unless agreed otherwise by the communicating parties.

Information received at the transformation module from the 8-bit side shall initially be coded in accordance with ISO/IEC 8859-1, without any restrictions on the use of lower case or capital letters. Subsequently it shall be transformed by the transformation module to be coded at the 5-bit side in accordance with ITU-T Recommendation S.1.

7.2 Coding methods for Latin and Greek graphic character repertoire

Information received at the 5-bit side of the transformation module, which is coded in accordance with ITU-T Recommendation S.1 and ELOT 1095, shall subsequently be transformed to be coded at the 8-bit side in accordance with ISO/IEC 8859-7. After this transformation, the Latin and Greek letters shall all be represented by the codes for capital letters.

Information received at the transformation module from the 8-bit side shall be coded in accordance with ISO/IEC 8859-7, without any restrictions on the use of lower case or capital letters. Subsequently it shall be transformed by the transformation module to be coded at the 5-bit side in accordance with ITU-T Recommendation S.1 and ELOT 1095.

Code combinations 17 and 23 in ELOT 1095, which have no Greek letters assigned to them, shall not be used in Greek letter case.

7.3 Coding methods for control functions

For the control function repertoire specified in **6.3** 8-bit single-byte coding shall be used as specified for the C0 set of ISO/IEC 6429.

7.4 16/32 coding environments

The same description can be used when the coding environment in the IPS side is the one in ISO/IEC 10646-1.

8 Identification of options

If a reference to this standard is made in another standard, the repertoire shall be clearly identified. Table 1 summarizes the options defined by this standard.

Table 1.

Option reference	Repertoire
A	Latin graphic character repertoire and control fuctions
B	Latin and Greek graphic character repertoires and control functions

Annex A (normative)
Extended repertoire for national or private use

The code table of ITU-T Recommendation S.1 contains three unidentified code combinations which may be applied for national or private use.

For the graphic characters selected, the same coding method as specified in **7.1** shall be used on the 8-bit side except that the appropriate bit-combinations need not necessarily be from the G0 set.

Annex B (informative)
Application to Latin and Greek graphic character repertoires

While in information processing systems or in information interchange between such systems the Greek letters specified in **6.2.2** can be used in combination with the Latin letters in **6.2.1**; in the Telex service the two repertoires can only be used alternately.

The attached table B.1 shows the relevant coding forms in accordance with ELOT 1095. In order to be able to interpret the code combinations correctly, code combination number 29 is interpreted as Latin letter 'shift', and combination number 32 is interpreted as Greek letter 'shift'. This extension of the control combinations is in accordance with **4.7.3** of ITU-T Recommendation S.1:1993. It can also be used by a transformation module to determine whether for the coding of the alphabetic characters the coded representation of the Latin or the Greek letters is to be used.

Table B.1

Combination number	Latin letter case	Greek letter case	Names of Greek characters
1	A	Α (α)	Alpha
2	B	Β (β)	Beta
3	C	Ψ (ψ)	Psi
4	D	Δ (δ)	Delta
5	E	Ε (ε)	Epsilon
6	F	Φ (φ)	Phi
7	G	Γ (γ)	Gamma
8	H	Η (η)	Eta
9	I	Ι (ι)	Iota
10	J	Ξ (ξ)	Xi
11	K	Κ (κ)	Kappa
12	L	Λ (λ)	Lamda
13	M	Μ (μ)	Mu
14	N	Ν (ν)	Nu
15	O	Ο (ο)	Omicron
16	P	Π (π)	Pi
17	Q	—	—
18	R	Ρ (ρ)	Rho
19	S	Σ (σ,ς)	Sigma
20	T	Τ (τ)	Tau
21	U	Θ (θ)	Theta
22	V	Ω (ω)	Omega
23	W	—	—
24	X	Χ (χ)	Chi
25	Y	Υ(υ)	Upsilon
26	Z	Ζ (ζ)	Zeta

blank

BSI — British Standards Institution

BSI is the independent national body responsible for preparing British Standards. It presents the UK view on standards in Europe and at the international level. It is incorporated by Royal Charter.

Revisions

British Standards are updated by amendment or revision. Users of British Standards should make sure that they possess the latest amendments or editions.

It is the constant aim of BSI to improve the quality of our products and services. We would be grateful if anyone finding an inaccuracy or ambiguity while using this British Standard would inform the Secretary of the technical committee responsible, the identity of which can be found on the inside front cover. Tel: 020 8996 9000. Fax: 020 8996 7400.

BSI offers members an individual updating service called PLUS which ensures that subscribers automatically receive the latest editions of standards.

Buying standards

Orders for all BSI, international and foreign standards publications should be addressed to Customer Services. Tel: 020 8996 9001. Fax: 020 8996 7001.

In response to orders for international standards, it is BSI policy to supply the BSI implementation of those that have been published as British Standards, unless otherwise requested.

Information on standards

BSI provides a wide range of information on national, European and international standards through its Library and its Technical Help to Exporters Service. Various BSI electronic information services are also available which give details on all its products and services. Contact the Information Centre. Tel: 020 8996 7111. Fax: 020 8996 7048.

Subscribing members of BSI are kept up to date with standards developments and receive substantial discounts on the purchase price of standards. For details of these and other benefits contact Membership Administration. Tel: 020 8996 7002. Fax: 020 8996 7001.

Copyright

BSI
389 Chiswick High Road
London
W4 4AL