5i’

Recommendation T.35

In the context of this Recommendation the term ‘‘CCITT member’’
should be understood to mean a scientific or an industrial organization
having been admitted in accordance with the provisions of Article 68 of
the International Telecommunication Convention, Nairobi, 1982, to participate
in an advisory capacity in meetings of the CCITT. It is understood that
Administrations or RPOAs can apply directly to the Director of the CCITT
for a registered CCITT code for their own purposes.

PROCEDURE FOR THE ALLOCATION

OF CCITT MEMBERS’ CODES

(Malaga-Torremolinos, 1984)

1 CCITT has defined Recommendation T.30 which details the control procedures for facsimile apparatus. The binary coded control procedures provide for the inclusion of non-standard facilities in addition to the standard facilities given in the appropriate Series T Recommendations and require a unique code to be allocated to each registered CCITT member who includes such non-standard facilities.

For the assignment of these codes, registered CCITT members may apply to the appropriate Administration, who will forward their request to the Director of the CCITT

If authorized by an Administration, the Director of the CCITT will accept such requests direct from registered CCITT members of the appropriate country.

2 For Group 3 facsimile apparatus, the country codes should be as given in Annex A to this Recommendation.

The code 1111 1111 in Annex A should be reserved for further study.

The allocation of codes to subsequent octets should be carried out nationally.

3 For Group 4 facsimile, teletex and mixed-mode, the allocation of country codes should also be as given in Annex A with the code 1111 1111 again being reserved for further study.

4 The Member countries of the International Telecommunication Union not mentioned in this list who wish to obtain a country code should ask the Director of the CCITT for the assignment of an available country code. In their request, they may indicate the available code preferred.

Assignments by the Director of the CCITT of country codes as well as assignments by countries of the members’ codes will be published in the Operational Bulletin of the International Telecommunication Union.

Note — Non-standard facilities are not defined in CCITT Recommendations but are laid down by Administrations and/or individual manufacturers. On request a CCITT member may be required to disclose the functional description related to the bit assignments contained within the Facsimile Information Field of the non-standard facilities frame.

ANNEX A
(to Recommendation T.35)

List of country or area codes for

non-standard facilities in telematic services

Code								
Countries or areas	Bit							
b_8	b_7	b_6	b_5	b_4	b_3	b_2	b_1	
0	0	0	0	0	0	0	0	Japan
0	0	0	0	0	0	0	1	Albania
0	0	0	0	0	0	1	0	Algeria
0	0	0	0	0	0	1	1	American Samoa
0	0	0	0	0	1	0	0	Germany (Federal Republic of)
0	0	0	0	0	1	0	1	Anguilla
0	0	0	0	0	1	1	0	Antigua and Barbuda
0	0	0	0	0	1	1	1	Argentina
0	0	0	0	1	0	0	0	Ascension (see S. Helena)
0	0	0	0	1	0	0	1	Australia
0	0	0	0	1	0	1	0	Austria
0	0	0	0	1	0	1	1	Bahamas
0	0	0	0	1	1	0	0	Bahrain
0	0	0	0	1	1	0	1	Bangladesh
0	0	0	0	1	1	1	0	Barbados
0	0	0	0	1	1	1	1	Belgium
0	0	0	1	0	0	0	0	Belize
0	0	0	1	0	0	0	1	Benin
0	0	0	1	0	0	1	0	Bermudas
0	0	0	1	0	0	1	1	Bhutan
0	0	0	1	0	1	0	0	Bolivia
0	0	0	1	0	1	0	1	Botswana
0	0	0	1	0	1	1	0	Brazil
0	0	0	1	0	1	1	1	British Antarctic Territory
0	0	0	1	1	0	0	0	British Indian Ocean Territory
0	0	0	1	1	0	0	1	British Virgin Islands

0	0	0	1	1	0	1	0	Brunei
0	0	0	1	1	0	1	1	Bulgaria
0	0	0	1	1	1	0	0	Burma
0	0	0	1	1	1	0	1	Burundi
0	0	0	1	1	1	1	0	Byelorussia
0	0	0	1	1	1	1	1	Cameroon
0	0	1	0	0	0	0	0	Canada
0	0	1	0	0	0	0	1	Cape Verde
0	0	1	0	0	0	1	0	Cayman Islandas
0	0	1	0	0	0	1	1	Central African Republic
0	0	1	0	0	1	0	0	Chad
0	0	1	0	0	1	0	1	Chile
0	0	1	0	0	1	1	0	China
0	0	1	0	0	1	1	1	Colombia
0	0	1	0	1	0	0	0	Comoros
0	0	1	0	1	0	0	1	Congo
0	0	1	0	1	0	1	0	Cook Islands
0	0	1	0	1	0	1	1	Costa Rica
0	0	1	0	1	1	0	0	Cuba
0	0	1	0	1	1	0	1	Cyprus
0	0	1	0	1	1	1	0	Czechoslovakia
0	0	1	0	1	1	1	1	Democratic Kampuchea

Code

Countries or areas	Bit							
b_8 b_7 b_6 b_5 b_4 b_3 b_2 b_1	0 0	1 1	0 0	0 0				
Democratic People's Republic of Korea								
0 0 1 1 0 0 0 1	Denmark							
0 0 1 1 0 0 1 0	Djibouti							
0 0 1 1 0 0 1 1	Dominican Republic							
0 0 1 1 0 1 0 0	Dominica							
0 0 1 1 0 1 0 1	Ecuador							
0 0 1 1 0 1 1 0	Egypt							
0 0 1 1 0 1 1 1	El Salvador							
0 0 1 1 1 0 0 0	Equatorial Guinea							
0 0 1 1 1 0 0 1	Ethiopia							
0 0 1 1 1 0 1 0	Falkland Islands							
0 0 1 1 1 0 1 1	Fiji							
0 0 1 1 1 1 0 0	Finland							
0 0 1 1 1 1 0 1	France							
0 0 1 1 1 1 1 0	French Polynesia							
0 0 1 1 1 1 1 1	French Southern and Antarctic Lands							
0 1 0 0 0 0 0 0	Gabon							
0 1 0 0 0 0 0 1	Gambia							
0 1 0 0 0 0 1 0	German Democratic Republic							
0 1 0 0 0 0 1 1	Angola							
0 1 0 0 0 1 0 0	Ghana							
0 1 0 0 0 1 0 1	Gibraltar							
0 1 0 0 0 1 1 0	Greece							
0 1 0 0 0 1 1 1	Grenada							
0 1 0 0 1 0 0 0	Guam							
0 1 0 0 1 0 0 1	Guatemala							
0 1 0 0 1 0 1 0	Guernsey							
0 1 0 0 1 0 1 1	Guinea							
0 1 0 0 1 1 0 0	Guinea-Bissau							

0	1	0	0	1	1	0	1	Guyana
0	1	0	0	1	1	1	0	Haiti
0	1	0	0	1	1	1	1	Honduras
0	1	0	1	0	0	0	0	Hongkong
0	1	0	1	0	0	0	1	Hungary
0	1	0	1	0	0	1	0	Iceland
0	1	0	1	0	0	1	1	India
0	1	0	1	0	1	0	0	Indonesia
0	1	0	1	0	1	0	1	Iran (Islamic Republic of)
0	1	0	1	0	1	1	0	Iraq
0	1	0	1	0	1	1	1	Ireland
0	1	0	1	1	0	0	0	Israel
0	1	0	1	1	0	0	1	Italy
0	1	0	1	1	0	1	0	C | te d’Ivoire
0	1	0	1	1	0	1	1	Jamaica
0	1	0	1	1	1	0	0	Afghanistan
0	1	0	1	1	1	0	1	Jersey
0	1	0	1	1	1	1	0	Jordan
0	1	0	1	1	1	1	1	Kenya
0	1	1	0	0	0	0	0	Kiribati
0	1	1	0	0	0	0	1	Korea (Republic of)
0	1	1	0	0	0	1	0	Kuwait
0	1	1	0	0	0	1	1	Lao (People’s Democratic Republic)
0	1	1	0	0	1	0	0	Lebanon

Code

Countries or areas Bit

b_8	b_7	b_6	b_5	b_4	b_3	b_2	b_1	
0	1	1	0	0	1	0	1	Lesotho
0	1	1	0	0	1	1	0	Liberia
0	1	1	0	0	1	1	1	Libya
0	1	1	0	1	0	0	0	Liechtenstein
0	1	1	0	1	0	0	1	Luxembourg
0	1	1	0	1	0	1	0	Macao
0	1	1	0	1	0	1	1	Madagascar
0	1	1	0	1	1	0	0	Malyasia
0	1	1	0	1	1	0	1	Malawi
0	1	1	0	1	1	1	0	Maldives
0	1	1	0	1	1	1	1	Mali
0	1	1	1	0	0	0	0	Malta
0	1	1	1	0	0	0	1	Mauritania
0	1	1	1	0	0	1	0	Mauritius
0	1	1	1	0	0	1	1	Mexico
0	1	1	1	0	1	0	0	Monaco
0	1	1	1	0	1	0	1	Mongolia
0	1	1	1	0	1	1	0	Montserrat
0	1	1	1	0	1	1	1	Morocco
0	1	1	1	1	0	0	0	Mozambique
0	1	1	1	1	0	0	1	Nauru
0	1	1	1	1	0	1	0	Nepal
0	1	1	1	1	0	1	1	Netherlands
0	1	1	1	1	1	0	0	Netherlands Antilles
0	1	1	1	1	1	0	1	New Caledonia
0	1	1	1	1	1	1	0	New Zealand
0	1	1	1	1	1	1	1	Nicaragua
1	0	0	0	0	0	0	0	Niger
1	0	0	0	0	0	0	1	Nigeria
1	0	0	0	0	0	1	0	Norway

1	0	0	0	0	0	1	1	Oman
1	0	0	0	0	1	0	0	Pakistan
1	0	0	0	0	1	0	1	Panama
1	0	0	0	0	1	1	0	Papua New Guinea
1	0	0	0	0	1	1	1	Paraguay
1	0	0	0	1	0	0	0	Peru
1	0	0	0	1	0	0	1	Philippines
1	0	0	0	1	0	1	0	Poland
1	0	0	0	1	0	1	1	Portugal
1	0	0	0	1	1	0	0	Puerto Rico
1	0	0	0	1	1	0	1	Qatar
1	0	0	0	1	1	1	0	Romania
1	0	0	0	1	1	1	1	Rwanda
1	0	0	1	0	0	0	0	Saint Kitts and Nevis
1	0	0	1	0	0	0	1	Saint Croix
1	0	0	1	0	0	1	0	Saint Helena and Ascension
1	0	0	1	0	0	1	1	Saint Lucia
1	0	0	1	0	1	0	0	San Marino
1	0	0	1	0	1	0	1	Saint Thomas
1	0	0	1	0	1	1	0	Sao Tom´e and Principe
1	0	0	1	0	1	1	1	Saint Vincent and the Grenadines
1	0	0	1	1	0	0	0	Saudi Arabia
1	0	0	1	1	0	0	1	Senegal
1	0	0	1	1	0	1	0	Seychelles

Code

Countries or areas	Bit							
	b_8	b_7	b_6	b_5	b_4	b_3	b_2	b_1
Sierra Leone	1	0	0	1	1	0	1	1
Singapore	1	0	0	1	1	1	0	0
Solomon Islands	1	0	0	1	1	1	0	1
Somalia	1	0	0	1	1	1	1	0
South Africa	1	0	0	1	1	1	1	1
Spain	1	0	1	0	0	0	0	0
Sri Lanka	1	0	1	0	0	0	0	1
Sudan	1	0	1	0	0	0	1	0
Suriname	1	0	1	0	0	0	1	1
Swaziland	1	0	1	0	0	1	0	0
Sweden	1	0	1	0	0	1	0	1
Switzerland	1	0	1	0	0	1	1	0
Syria	1	0	1	0	0	1	1	1
Tanzania	1	0	1	0	1	0	0	0
Thailand	1	0	1	0	1	0	0	1
Togo	1	0	1	0	1	0	1	0
Tonga	1	0	1	0	1	0	1	1
Trinidad and Tobago	1	0	1	0	1	1	0	0
Tunisia	1	0	1	0	1	1	0	1
Turkey	1	0	1	0	1	1	1	0
Turks and Caicos Islands	1	0	1	0	1	1	1	1
Tuvalu	1	0	1	1	0	0	0	0
Uganda	1	0	1	1	0	0	0	1
Ukrainia	1	0	1	1	0	0	1	0
United Arab Emirates	1	0	1	1	0	0	1	1
United Kingdom	1	0	1	1	0	1	0	0
United States	1	0	1	1	0	1	0	1
Burkina Faso	1	0	1	1	0	1	1	0
Uruguay	1	0	1	1	0	1	1	1
U.S.S.R.	1	0	1	1	1	0	0	0

1	0	1	1	1	0	0	1	Vanuatu
1	0	1	1	1	0	1	0	Vatican City State
1	0	1	1	1	0	1	1	Venezuela
1	0	1	1	1	1	0	0	Viet Nam
1	0	1	1	1	1	0	1	Wallis and Futuna
1	0	1	1	1	1	1	0	Western Samoa
1	0	1	1	1	1	1	1	Yemen Arab Republic
1	1	0	0	0	0	0	0	Yemen (People’s Democratic Republic of)
1	1	0	0	0	0	0	1	Yugoslavia
1	1	0	0	0	0	1	0	Zaire
1	1	0	0	0	0	1	1	Zambia
1	1	0	0	0	1	0	0	Zimbabwe
1	1	0	0	0	1	0	1	
1	1	0	0	0	1	1	0	
1	1	0	0	0	1	1	1	
1	1	0	0	1	0	0	0	
1	1	0	0	1	0	0	1	
1	1	0	0	1	0	1	0	
1	1	0	0	1	0	1	1	
1	1	0	0	1	1	0	0	
1	1	0	0	1	1	0	1	
1	1	0	0	1	1	1	0	
1	1	0	0	1	1	1	1	
1	1	1	1	1	1	1	1	Reserved for further study

Recommendation T.50

INTERNATIONAL ALPHABET No. 5

(former Recommendation V.3, Mar del Plata, 1968;

amended at Geneva, 1972 and Malaga-Torremolinos, 1984)

Introduction

A seven-unit alphabet capable of meeting the requirements of private users on leased circuits and of users of data transmission by means of connections set up by switching on the general telephone network or on telegraph networks has been established jointly by the CCITT and the International Organization for Standardization (ISO)

This alphabet — International Alphabet No. 5 (IA5) — is not intended to replace International Telegraph Alphabet No. 2 (ITA2). It is a supplementary alphabet for the use of those who might not be satisfied with the more limited possibilities of International Telegraph Alphabet No. 2 language for data transmission and for elaborated message systems.

International Alphabet No. 5 does not exclude the use of any other alphabet that might be better adapted to special needs.

1 Scope and field of application

1.1 This Recommendation specifies a set of 128 characters (control characters and graphic characters such as letters, digits and symbols) with their coded representation. Most of these characters are mandatory and unchangeable, but provision is made for some flexibility to accommodate national and other requirements.

1.2 This Recommendation specifies a 7-bit coded character set with a number of options. It also provides guidance on how to exercise the options to define specific national versions and application-orientated versions. Furthermore it specifies the International Reference Version (IRV) in which such options have been exercised.

1.3 This character set is primarily intended for the interchange of information among data processing systems and associated equipment, and within data communication systems. The need for graphic characters and control functions in data processing has also been taken into account in determining this character set.

1.4 This character set is applicable to all alphabets of Latin letters.

1.5 This character set includes control characters for code extension where its 128 characters are insufficient for particular applications. Procedures for the use of these control characters are specified in ISO Standard 2022.

1.6 The definitions of some control characters in this Recommendation assume that data associated with them are to be processed serially in a forward direction. When they are included in strings of data which are processed other than serially in a forward direction or when they are included in data formatted for fixed-record processing they may have undesirable effects or may require additional special treatment to ensure that they result in their desired function.

This Recommendation corresponds to International Standard ISO 646 (1983).

2 Conformance and implementation

2.1 *Conformance*

A coded character set is in conformance with this Recommendation if it is a version in accordance with § 6. Equipment claimed to implement this Recommendation shall be able to interchange information by means of a version of the 7-bit coded character set, this version shall be identified in any such claim.

2.2 *Implementation*

The use of this character set requires definitions of its implementation in various media. For example, these could include punched tapes, punched cards, magnetic media and transmission channels, thus permitting interchange of data to take place either indirectly by means of an intermediate recording in a physical medium, or by local connection of various units (such as input and output devices and computers) or by means of data transmission equipment.

The implementation of this coded character set in physical media and for transmission, taking into account the need for error checking, is the subject of ISO publications.

3 Definitions

For the purpose of this Recommendation the following definitions apply.

3.1 **bit combination**

An ordered set of bits used for the representation of characters.

3.2 **character**

A member of a set of elements used for the organization, control or representation of data.

3.3 **coded character set; code**

A set of unambiguous rules that establishes a character set and the one-to-one relationship between the characters of the set and their bit combinations.

3.4 **code extension**

The techniques for the encoding of characters that are not included in the character set of a given code.

3.5 **code table**

A table showing the character allocated to each bit combination in a code.

3.6 **control character**

A control function the coded representation of which consists of a single bit combination.

3.7 **control function**

An action that affects the recording, processing, transmission or interpretation of data and that has a coded representation consisting of one or more bit combinations.

3.8 **graphic character**

A character, other than a control function, that has a visual representation normally handwritten, printed or displayed.

3.9 **position**

That part of a code table identified by its column and row co-ordinates.

4 Specification of the coded character set

The bits of the bit combinations of the 7-bit code are identified by b_7, b_6, b_5, b_4, b_3, b_2 and b_1, where b_7 is the highest-order, or most-significant, bit and b_1 is the lowest-order, or least-significant, bit.

The bit combinations may be interpreted to represent integers in the range 0 to 127 in binary notation by attributing the following weights to the individual bits:

H.T. [T1.50]

Table [T1.50], p.

In this Recommendation, the bit combinations are identified by notation of the form *x* /*y* , where *x* is a number in the range 0 to 7 and *y* is a number in the range 0 to 15. The correspondence between the notations of the form *x* /*y* and the bit combinations consisting of the bits b_7 to $_1$ is as follows:

— *x* is the number represented by b_7, b_6 and b_5 where these bits are given the weights 4, 2 and 1 respectively;

— *y* is the number represented by b_4, b_3, b_2 and b_1 where these bits are given the weights 8, 4, 2 and 1 respectively.

The notations of the form *x* /*y* are the same as those used to identify code table positions, where *x* is the column number and *y* the row number (see § 7).

The 128 bit combinations of the 7-bit code represent control characters and graphic characters. The allocation of characters to bit combinations is based on the following principles:

— the bit combinations 0/0 to 1/15 represent 32 control characters;

— the bit combination 2/0 represents the character SPACE, which is interpreted both as a control character and as a graphic character;

— the bit combinations 2/1 to 7/14 represent up to 94 graphic characters as one or more of these bit combinations may be declared to be unused (see § 4.3);

— the bit combination 7/15 represents the control character DELETE.

The allocation of individual characters to the bit combinations of the 7-bit code is specified in §§ 4.1, 4.2 and 4.3 below.

This Recommendation assigns at least one name to each character. In addition, it specifies an acronym for each control character and for the character SPACE, and a graphic symbol for each graphic character. By convention, only capital letters and hyphens are used for writing the names of the characters, except for small letters. For acronyms only capital letters and digits are used. It is intended that the acronyms and this convention be retained in all translations of the text.

The names chosen to denote graphic characters are intended to reflect their customary meaning. However, this Recommendation does not define and does not restrict the meanings of graphic characters. Neither does it specify a particular style or font design for the graphic characters when imaged.

4.1 *Control characters*

The control characters of the 7-bit coded character set are classified in the following categories:

a) *Transmission control characters*

Transmission control characters are intended to control or facilitate transmission of information over telecommunication networks. Procedures for the use of the transmission control characters on telecommunication networks are the subject of other ISO publications.

b) *Format effectors*

Format effectors are mainly intended for the control of the layout and positioning of information on character-imaging devices such as printing and display devices.

c) *Code extension control characters*

Code extension control characters are used to extend the character set of the code. They may alter the meaning of one or more bit combinations that follow them in the data stream. Procedures for the use of the code extension control characters are specified in ISO Standard 2022.

d) *Device control characters*

Device control characters are intended for the control of local or remote devices or ancillary devices connected to a data processing or data communication system. These control characters are not intended to control data communication systems; this should be achieved by the use of transmission control characters.

e) *Information separators*

Information separators are used to separate and qualify data logically. There are four such characters. They may be used either in hierarchical order or non-hierarchically; in the latter case, their specific meanings depend on the application.

f) *Other control characters*

These are the control characters that fall outside the preceding categories.

The composition of each category, and the allocation of the individual control characters in each category to bit combinations of the 7-bit code are specified in §§ 4.1.1 to 4.1.6. Each of these sub-clauses contains a

table consisting of three columns. The first column specifies the acronym of each control character, the second column specifies the standard name of the control character and the third column, labelled ‘‘Coded representation’’, specifies the bit combination representing the control character concerned.

Detailed functional descriptions of all control characters are given in § 8.

4.1.1 *Transmission control characters*

The transmission control characters and their coded representations are specified in Table 1/T.50.

H.T. [T2.50]

lw(36p) | lw(102p) | lw(42p) .

Table 1/T.50 [T2.50], p.

4.1.2 *Format effectors*

The format effectors and their coded representations are specified in Table 2/T.50.

H.T. [T3.50]

lw(36p) | lw(102p) | lw(42p) .

Table 2/T.50 [T3.50], p.

4.1.2.1 *Concepts*

The definitions of the format effectors use the following concepts:

a) A page is composed of a number of lines, each being composed of a number of character positions.

b) Each character position is capable of imaging SPACE or a graphic symbol.

c) The graphic symbol imaged at a character position represents a graphic character, a control function, or a combination of one or more graphic characters and/or control functions.

d) The active position is the character position at which the action required by the next character in the data stream is to be effected. If the next character is a graphic character, it is imaged at that position; if it is a control character, the corresponding function is performed relative to that position.

e) Movements of the active position are effected as follows:

1) The active position is advanced one character position immediately after imaging a SPACE or a graphic character, and upon the execution of the function corresponding to a control character for which a graphic symbol is required to be imaged.

2) The active position is moved to a specified character position upon the execution of the function corresponding to a control character that is defined to cause a movement of the active position (i.e. a format effector).

f) The active position is not moved upon execution of the function corresponding to a control character that is neither required to be imaged by a graphic symbol nor defined to cause a movement of the active position.

g) The effect of an attempt to move the active position beyond the boundaries of a line or a page is not defined by this Recommendation.

4.1.2.2 *Combined horizontal and vertical movements of the active position*

The format effectors are defined for applications in which horizontal and vertical movements of the active position are effected separately. If a single control character is required to effect the action of CARRIAGE RETURN in combination with a vertical movement, the format effector for that vertical movement shall be used. For example, if the function ‘‘new line’’ (equivalent to the combination of CARRIAGE RETURN and LINE FEED) is required as a single control character, bit combination 0/10 shall be used to represent it. This substitution requires agreement between the sender and the recipient of the data, and the format effectors (LINE FEED, VERTICAL TABULATION and/or FORM FEED) that are affected shall be identified (see § 6).

In order to avoid the need for such prior agreement, to facilitate interchange and to avoid conflicts with specifications in other ISO publications, the use of format effectors for vertical movements is to effect combined horizontal and vertical movements deprecated. It is strongly recommended to use two control characters, for example CARRIAGE RETURN (CR) and LINE FEED (LF) to obtain the effect of ‘‘new line’’.

4.1.3 *Code extension control characters*

The code extension control characters and their coded representations are specified in Table 3/T.50.

H.T. [T4.50]

lw(36p) | lw(102p) | lw(42p) .

Table 3/T.50 [T4.50], p.

4.1.4 *Device control characters*

The device control characters and their coded representations are specified in Table 4/T.50.

H.T. [T5.50]

lw(36p) | lw(102p) | lw(42p) .

Table 4/T.50 [T5.50], p.

4.1.5 *Information separators*

The information separators and their coded representations are specified in Table 5/T.50.

H.T. [T6.50]

lw(36p) | lw(102p) | lw(42p) .

Table 5/T.50 [T6.50], p.

Each information separator is given two names. The names INFORMATION SEPARATOR FOUR, INFORMATION SEPARATOR THREE, INFORMATION SEPARATOR TWO and INFORMATION SEPARATOR ONE are the general names. The names FILE SEPARATOR , GROUP SEPARATOR , RECORD SEPARATOR and UNIT SEPARATOR are the specific names and are intended mainly for applications where the information separators are used hierarchically. The ascending order is then US, RS, GS, FS. In this case, data normally delimited by a particular separator cannot be split by a higher-order separator but will be considered as delimited by any higher-order separator.

4.1.6 *Other control characters*

The control characters outside the categories in §§ 4.1.1 to 4.1.5 and their coded representation, are specified in Table 6/T.50.

H.T. [T7.50]

lw(36p) | lw(102p) | lw(42p) .

Table 6/T.50 [T7.50], p.

4.2 *Character SPACE*

The acronym of the character SPACE is SP and its coded representation is 2/0. This character is interpreted both as a graphic character and as a control character. As a graphic character, it has a visual representation consisting of the absence of a graphic symbol. As a control character, it acts as a format effector that causes the active position to be advanced one character position.

4.3 *Graphic characters*

The 94 bit combinations 2/1 to 7/14 are used for the representation of graphic characters as specified in §§ 4.3.1, 4.3.2 and 4.3.3 below. Each of the §§ 4.3.1 and 4.3.2 contains a table consisting of three columns. The first column is labelled ‘‘Graphic’’ and specifies the graphic symbol of each graphic character, the second column specifies the standard name of the graphic character and the third column, labelled ‘‘Coded representation’’, specifies the bit combination representing the graphic character concerned.

All graphic characters of any version of the 7-bit coded character set are spacing characters , i.e. they cause the active position to advance.

4.3.1 *Unique graphic character allocations*

A unique graphic character is allocated to each of the 82 bit combinations 2/1, 2/2, 2/5 to 3/15, 4/1 to 5/10, 5/15 and 6/1 to 7/10. These characters are specified in Table 7/T.50.

4.3.2 *Alternative graphic character allocations*

Two alternative graphic characters are allocated to each of the bit combinations 2/3 and 2/4. These characters are specified in Table 8/T.50.

Either the character POUND SIGN or the character NUMBER SIGN shall be allocated to bit combination 2/3 and either the character DOLLAR SIGN or the character CURRENCY SIGN shall be allocated to bit combination 2/4 (see § 6).

Unless otherwise agreed between sender and recipient, the graphic symbols Ł, $ and do not designate the currency of a specific country.

4.3.3 *National or application-oriented graphic character allocations*

No specific graphic character is allocated to the ten bit combinations 4/0, 5/11 to 5/14, 6/0, and 7/11 to 7/14. These bit combinations are available for national or application-orientated use. A unique graphic character shall be allocated to each of these bit combinations, or the bit combination shall be declared unused (see § 6).

H.T. [T8.50]

lw(24p) | lw(56p) | lw(36p) .

Table 7/T.50 [T8.50], p.

H.T. [T9.50]

lw(36p) | lw(102p) | lw(42p) .	lw(36p) | lw(102p) | lw(42p) . Currency sign 2/4

Table 8/T.50 [T9.50], p.

5 Composite graphic characters

In any version of the 7-bit coded character set specified according to this Recommendation, all graphic characters are spacing characters which cause the active position to move forward. However, by using BACK SPACE or CARRIAGE RETURN, it is possible to image two or more graphic characters at the same character position.

For example, SOLIDUS and EQUALS SIGN can be combined to image ‘‘not equals’’. The character LOW LINE, that may be used as a free-standing character, can also be associated with other character(s) to represent the graphic rendition ‘‘underlined’’.

Diacritical marks may be allocated to the bit combinations specified in § 4.3.3 and be available for composing accented letters. For such composition, it is recommended to use a sequence of three characters, the first or last of which is the letter to be accented and the second of which is BACKSPACE. Furthermore, QUOTATION MARK, APOSTROPHE or COMMA can be associated with a letter by means of BACKSPACE for the composition of an accented letter with a diaeresis, an acute accent or a cedilla, respectively.

6 Versions of the coded character set

6.1 *General*

In order to use the 7-bit coded character set for information interchange, it is necessary to exercise the options left open in § 4:

— to each of the bit combinations 2/3 and 2/4 one of the alternative graphic characters specified in § 4.3.2 shall be allocated;

— each of the bit combinations 4/0, 5/11 to 5/14, 6/0, and 7/11 to 7/14 shall have a unique graphic character allocated to it, or be declared unused;

— the format effectors, if any, to which the facility of § 4.1.2.2 applies, shall be identified.

A graphic character allocated to a bit combination specified in §§ 4.3.1 and 4.3.2 shall not be allocated to any other bit combination. For example the POUND SIGN, if not allocated to bit combination 2/3, shall not be allocated to any other bit combination.

A character set completed in this way is called a ‘‘version of ISO Standard 646/CCITT T.50’’ (see Appendix I).

6.2 *National versions*

6.2.1 The responsibility for defining national versions lies with the national standardization bodies. These bodies shall exercise the options available and make the required selection (see Appendix I).

6.2.2 If so required, more than one national version can be defined within a country. The different versions shall be separately identified. In particular when for a given bit combination, for example 5/12, alternative graphic characters are required, two different versions shall be identified, even if they differ only by this single character.

6.2.3 If there is in a country no special demand for specific graphic characters, it is strongly recommended that the characters of the International Reference Version (IRV) (see § 6.4) be selected and allocated to the same bit combinations as in the IRV.

However, when graphic characters that are different from the characters of the IRV are required, they shall have distinct forms and be given distinctive names which are not in conflict with any of the forms or the names of any of the graphic characters in the IRV.

6.3 *Application-orientated versions*

Within national or international industries, organizations or professional groups, application-orientated versions can be used. They require precise agreement among the interested parties, who will have to exercise the options available and to make the required selection.

6.4 *International Reference Version (IRV)*

This version is available for use when there is no requirement to use a national or an application-orientated version. In information interchange, the IRV is assumed unless a particular agreement exists between sender and recipient of the data. The graphic characters allocated to the IRV are specified in Table 9/T.50.

H.T. [T10.50]

lw(36p) | lw(102p) | lw(42p) . lw(36p) | lw(102p) | lw(42p) . Currency sign 2/4 lw(36p) | lw(102p) | lw(42p) .
{

Commercial at 4/0 [Left square bracket 5/11
} lw(36p) | lw(102p) | lw(42p) .
{

Reverse solidus 5/12] Right square bracket 5/13
| Circumflex accent 5/14 ò Grave accent 6/0 { Left curly bracket 7/11 | Vertical line 7/12 } Right curly bracket 7/13 — Tilde, overline 7/14
}

Table 9/T.50 [T10.50], p.

It should be noted that no substitution is allowed when using the IRV and that the facility of § 4.1.2.2 does not apply to any format effector.

According to § 5 it is permitted to use composite graphic characters and there is no limit to their number. Because of this freedom, their processing and imaging may cause difficulties at the receiving end. Therefore agreement between sender and recipient of the data is recommended if composite characters are used.

7 Code tables

A 7-bit code table consists of 128 positions arranged in 8 columns and 16 rows. The columns are numbered 0 to 7, and the rows are numbered 0 to 15.

The code table positions are identified by notations of the form *x* /*y* , where *x* is the column number and *y* is the row number.

The 128 positions of the code table are in one-to-one correspondence with the bit combinations of the 7-bit code. The notation of a code table position, of the form *x* /*y* , is the same as that of the corresponding bit combination (see § 4).

Each code table position contains a symbol and/or a reference to a clause of this Recommendation. When a code table position corresponds to a bit combination that represents a control character or the character SPACE, the symbol is the acronym of the character allocated; otherwise it is the graphic symbol representing the character allocated, if any. A reference to §§ 4.1.2.2, 4.3.2 or 4.3.3 is denoted by 1 , 2 or 3 respectively.

Table 10/T.50 is the basic 7-bit code table. It shows the 7-bit coded character set specified in § 4 and indicates the options related to format effectors (§ 4.1.2.2), alternative graphic characters (§ 4.3.2) and national or application-orientated use (§ 4.3.3).

Table 11/T.50 is the code table for the IRV of the 7-bit coded character set. It shows the result of exercising the three identified options in the manner specified in § 6.4.

TABLE 10/T.50, p.

TABLE 11/T.50, p.

8 Description of the control characters

The control characters are listed below in the alphabetical order of their acronyms.

8.1 *ACK Acknowledge*

A transmission control character transmitted by a receiver as an affirmative response to the sender.

8.2 *BEL Bell*

A control character that is used when there is a need to call for attention; it may control alarm or attention devices.

8.3 *BS Backspace*

A format effector which causes the active position to move one character position backwards.

8.4 *CAN Cancel*

A character, or the first character of a sequence, indicating that the data preceding it is in error. As a result, this data shall be ignored. The specific meaning of this character shall be defined for each application and/or between sender and recipient.

8.5 *CR Carriage Return*

A format effector which causes the active position to move to the first character position on the same line.

8.6 *DC1 Device Control One*

A device control character which is primarily intended for turning on or starting an ancillary device. If it is not required for this purpose, it may be used to restore a device to the basic mode of operation (see also DC2 and DC3), or for any other device control function not provided by other DCs.

8.7 *DC2 Device Control Two*

A device control character which is primarily intended for turning on or starting an ancillary device. If it is not required for this purpose, it may be used to set a device to a special mode of operation (in which case DC1 is used to restore the device to the basic mode), or for any other device control function not provided by other DCs.

8.8 *DC3 Device Control Three*

A device control character which is primarily intended for turning off or stopping an ancillary device. This function may be a secondary level stop, for example wait, pause, stand-by or halt (in which case DC1 is used to restore normal operation). If it is not required for this purpose, it may be used for any other ancillary device control function not provided by other DCs.

8.9 *DC4 Device Control Four*

A device control character which is primarily intended for turning off, stopping or interrupting an ancillary device. If it is not required for this purpose, it may be used for any other device control function not provided by other DCs.

8.10 *DEL Delete*

A character used primarily to erase or obliterate an erroneous or unwanted character in punched tape. DEL characters may also serve to accomplish media-fill or time-fill. They may be inserted into, or removed from, a stream of data without affecting the information content of that stream, but such action may affect the information layout and/or the control of equipment.

8.11 *DLE Data Link Escape*

A transmission control character which will change the meaning of a limited number of contiguously following bit combinations. It is used exclusively to provide supplementary transmission control functions. Only graphic characters and transmission control characters can be used in DLE sequences.

8.12 *EM End of Medium*

A control character that may be used to identify the physical end of a medium, or the end of the used portion of a medium, or the end of the wanted portion of data recorded on a medium. The position of this character does not necessarily correspond to the physical end of the medium.

8.13 *ENQ Enquiry*

A transmission control character used as a request for a response from a remote station — the response may include station identification and/or station status. When a ‘‘Who are you’’ function is required on the general switched transmission network, the first use of ENQ after the connection is established shall have the meaning ‘‘Who are you’’ (station identification). Subsequent use of ENQ may, or may not, include the function ‘‘Who are you’’, as determined by agreement.

8.14 *EOT End Of Transmission*

A transmission control character used to indicate the conclusion of the transmission of one or more texts.

8.15 *ESC Escape*

A control character which is used to provide additional characters. It alters the meaning of a limited number of contiguously following bit combinations. The use of this character is specified in ISO Standard 2022.

8.16 *ETB End of Transmission Block*

A transmission control character used to indicate the end of a transmission block of data where data is divided into such blocks for transmission purposes.

8.17 *ETX End of Text*

A transmission control character which terminates a text.

8.18 *FF Form Feed*

A format effector which causes the active position to advance to the corresponding character position on a pre-determined line of the next form or page.

8.19 *HT Horizontal Tabulation*

A format effector which causes the active position to advance to the next pre-determined character position.

8.20 *IS1 (US) Information Separator One (Unit Separator)*

A control character used to separate and qualify data logically; its specific meaning has to be defined for each application. If this character is used in hierarchical order as specified in the general definition of IS, it delimits a data item called a unit.

8.21 *IS2 (RS) Information Separator Two (Record Separator)*

A control character used to separate and qualify data logically; its specific meaning has to be defined for each application. If this character is used in hierarchical order as specified in the general definition of IS, it delimits a data item called a record.

8.22 *IS3 (GS) Information Separator Three (Group Separator)*

A control character used to separate and qualify data logically; its specific meaning has to be defined for each application. If this character is used in hierarchical order as specified in the general definition of IS, it delimits a data item called a group.

8.23 *IS4 (FS) Information Separator Four (File Separator)*

A control character used to separate and qualify data logically; its specific meaning has to be defined for each application. If this character is used in hierarchical order as specified in the general definition of IS, it delimits a data item called a file.

8.24 *LF Line Feed*

A format effector which causes the active position to advance to the corresponding character position of the next line.

8.25 *NAK Negative Acknowledge*

A transmission control character transmitted by a receiver as a negative response to the sender.

8.26 *NUL Null*

A control character used to accomplish media-fill or time-fill. NUL characters may be inserted into, or removed from, a stream of data without affecting the information content of that stream, but such action may affect the information layout and/or the control of equipment.

8.27 *SI Shift-In*

A control character which is used in conjunction with SO and ESC to extend the graphic character set of the code. It may reinstate the standard meanings of the bit combinations which follow it. The effect of this character when using code extension techniques is described in ISO Standard 2022.

8.28 *SO Shift-Out*

A control character which is used in conjunction with SI and ESC to extend the graphic character set of the code. It may alter the meaning of the bit combinations 2/1 to 7/14 which follow it until a SI character is reached. The effect of this character when using code extension techniques is described in ISO 2022.

8.29 *SOH Start Of Heading*

A transmission control character used as the first character of a heading of an information message.

8.30 *STX Start of Text*

A transmission control character which precedes a text and which is used to terminate a heading.

8.31 *SUB Substitute character*

A control character used in the place of a character that has been found to be invalid or in error. SUB is intended to be introduced by automatic means.

8.32 *SYN Synchronous idle*

A transmission control character used by a synchronous transmission system in the absence of any other character (idle condition) to provide a signal from which synchronism may be achieved or retained between data terminal equipment.

8.33 *VT Vertical Tabulation*

A format effector which causes the active position to advance to the corresponding character position on the next pre-determined line.

APPENDIX I
(to Recommendation T.50)

Guidelines for standards derived from

Recommendation T.50 (ISO Standard 646)

I.1 *General*

When national or application-orientated standards based on Recommendation T.50/ISO 646 are drafted, it is recommended to take account of the following considerations.

I.2 *Structure of a standard*

It is recommended to adopt the same structure and editorial style as implemented for Recommendation T.50/ISO 646. All facilities, restrictions and specifications of the standard should be stated clearly in sentences using plain language, rather than be summarized by tables with notes.

I.2.1 *Control functions*

The standard should contain explicit descriptions of the control functions. Even where those descriptions are identical to the descriptions in § 8, they should be explicit descriptions, not just referenced to Recommendation T.50/ISO 646. For application-orientated standards specific meanings of the Information Separators and of the Device Controls should be defined.

I.2.2 *Graphic characters* | (see § 6.2.3)

Where there is no need for particular characters, the graphic characters of the International Reference Version (IRV) should be allocated to the same positions and with the same name as in Recommendation T.50/ISO 646.

I.2.3 *Composite graphic characters and repertoire* | (see § 5)

Recommendation T.50/ISO 646 permits the construction of composite graphic characters by using the control characters BACKSPACE and CARRIAGE RETURN so as to image two or more graphic characters at the same character position.

The total number of graphic characters which can be obtained from any version of the character set, with or without using this facility, is called the repertoire. Recommendation T.50/ISO 646 does not define a particular repertoire. However, as the interpretation and/or the imaging of composite characters may cause difficulties, agreement between sender and recipient of the data may be required. In order to avoid the necessity of such agreement and to facilitate interchange, national or application-orientated standards may specify a standard repertoire of graphic characters and thus recognize only a limited number of composite graphic characters. Such limitations are considered fully compatible with Recommendation T.50/ISO 646.

I.2.4 *Versions*

In a standard one or more versions can be specified. It should be noted that a version is not a standard but only part of a standard. The standard itself consists of the well defined version or versions and a set of clauses as mentioned above. The definition of a version requires that the options mentioned in § 6.1 be accurately exercised.

Recommendation T.51

CODED CHARACTER SETS FOR TELEMATIC SERVICES

(*Malaga-Torremolinos, 1984; amended at Melburne, 1988*)

1 Scope

1.1 The CCITT

considering

(a) the increasing interdependence of the various CCITT character sets and coding schemes in various telematic services;

(b) the introduction of new facilities such as code conversion and interworking between various telematic services;

(c) the convenience of having all relevant CCITT Recommendations on character sets and coding schemes compiled in one series of Recommendations;

(d) that Recommendations T.61 and T.100/T.101 define the character coding systems for Teletex and Videotex;

(e) that Recommendation T.50 specifies the International Reference Version (IRV) of the 7-bit coded character set,

provides the following Recommendation as a reference document

from which coded character subsets and elements of code extension mechanisms can be derived for individual telematic services.

1.2 This Recommendation specifies a primary set and two supplementary sets of graphic characters which are to be the respective supersets of primary and supplementary character sets used in various telematic services. When various telematic services restrict their primary and supplementary sets to be respective subsets of those given in this Recommendation, it will be ensured that no code position in any of the specified code tables is assigned more than one meaning within different telematic services.

1.3 This Recommendation gives the escape sequences for designating the primary and supplementary sets of graphic characters, to be used according to the code extension techniques specified.

1.4 Additional sets of graphic characters will be subject to further inclusion in this Recommendation once they become applicable to more than one CCITT telematic service.

1.5 This Recommendation describes those code extension mechanisms that are relevant to existing telematic services. Additional mechanisms will be included in this Recommendation as the need for such is identified for one or more telematic services. The purpose of this Recommendation is to include an up-to-date reference superset of all code extension mechanisms used by character coding systems in various telematic services.

1.6 In this Recommendation 7-bit code tables are described which can be used either in a 7-bit or in an 8-bit environment, with applicable code extension mechanisms that are given in other Recommendations specific to given telematic services.

1.7 This Recommendation gives a superset of the repertoire of Latin based alphanumeric characters used in CCITT telematic services, (see Annex A).

1.8 This Recommendation gives a table of character and control sets used in CCITT telematic services, (see Annex B).

1.9 There is no conformance clause in this Recommendation specifying the mandatory and optional subsets of code extension mechanisms and coded character sets. Conformance requirements will be the subject of other CCITT Recommendations specific to particular telematic services.

2 Graphic character sets

2.1 *Primary set*

2.1.1 The primary set of graphic characters specified in Figure 1/T.51 is identical with the set of graphic characters of the International Reference Version (IRV) of the 7-bit coded character set of Recommendation T.50.

A number of notes are associated with this primary set which are specific to Teletex or Videotex.

2.1.2 The primary set is designated as G0 by the sequence ESC 2/8 4/0. It can also be alternatively designated as G1, G2 or G3 by the sequences ESC 2/9 4/0, ESC 2/10 4/0 or ESC 2/11 4/0 respectively. See § 3 of this Recommendation for details on code extension techniques.

2.2 *Supplementary set*

2.2.1 The first supplementary set of graphic characters specified in Figure 2a/T.51 is a superset of the supplementary set given in Recommendation T.61 and that given in Recommendation T.100. The second supplementary set of graphic characters specified in Figure 2b/T.51 is identical to the first supplementary set, with the addition of four graphic characters, namely: ‘‘broken bar’’, ‘‘not sign’’, ‘‘no-break space’’ and ‘‘soft hyphen’’.

2.2.2 Unallocated code positions are subject to future standardization and will be allocated when a need for such is identified.

2.2.3 The first supplementary set is designated as G2 by the sequence ESC 2/10 6/2. It can be alternatively designated at G0, G1 or G3 by the sequences ESC 2/8 6/2, ESC 2/9 6/2 or ESC 2/11 6/2 respectively. See § 3 of this Recommendation for details on code extension techniques.

2.2.4 The second supplementary set is designated as G2 by the sequence ESC 2/14 F. It can be alternatively designated as G1 or G3 by the sequences ESC 2/13 F or ESC 2/15 F respectively. (The final character F to be assigned by ISO Registration Authority.)

2.2.5 *Notes on the primary and supplementary sets of graphic characters for Figures 1/T.51, 2a/T.51 and 2b/T.51*

In the figures the number of the Note being referred to is encircled.

Note 1 — All the characters in column 4 of the supplementary set are non-spacing characters. They are all diacritical marks with the exception of 4/12.

Note 2 — Cross-shaded code positions are reserved for future standardization by the CCITT.

Note 3 — Terminals used for CCITT defined telematic services should send only the codes 2/6 and 2/8 of the supplementary set for the number sign and currency sign, respectively. When receiving codes 2/3 and 2/4 from the primary set of graphic characters, terminals should interpret them as ## and respectively.

Note 4 — Terminals used for CCITT defined telematic services should send only the codes 4/1 of the supplementary set followed by SPACE for a stand-alone grave accent, 4/3 of the supplementary set followed by SPACE for a stand-alone circumflex accent, and 4/4 of the supplementary set followed by SPACE for a stand-alone tilde. Whenever a telematic terminal is capable of receiving and interpreting codes 6/0, 5/14 and 7/14 from the primary set of graphic characters, terminals shall interpret them as □, □ and □, respectively.

Note 5 — This code position is reserved and shall not be used.

Note 6 — In certain interactive Videotex systems the code 5/15 of the primary set is used as a terminator for data input field transmitted from terminal to host. Its graphic representation may be different from ‘‘low line’’.

Figure 1/T.51, p. 13

Figure 2a/T.51, p. 14

Figure 2b/T.51, p. 15

3 Code extension technique

3.1 *General*

3.1.1 Code extension techniques are required for the designation of various graphic or control character sets and their invocation in the 7-bit set or 8-bit set in use. Such techniques are derived from ISO Standard 2022.

3.1.2 This Recommendation describes only those code extension techniques currently specified for existing telematic services. Additional techniques will be further incorporated as they are identified for use in one or more telematic services.

3.2 *Definitions*

For the purpose of code extension techniques given in this Recommendation, the following definitions apply.

3.2.1 **bit combination**

An ordered set of bits used for the representation of characters.

3.2.2 **byte**

A bit string that is operated upon as a unit and the size of which is independent of redundancy or framing techniques.

3.2.3 **character**

A member of a set of elements used for the organization, control or representation of data.

3.2.4 **coded character set; code**

A set of unambiguous rules that establishes a character set and the one-to-one relationship between the characters of the set and their bit combinations.

3.2.5 **code extension**

The techniques for the encoding of characters that are not included in the character set of a given code.

3.2.6 **code table**

A table showing the character allocated to each bit combination in a code.

3.2.7 **control character**

A control function the coded representation of which consists of a single bit combination.

3.2.8 **control function**

An action that affects the recording, processing, transmission or interpretation of data and that has a coded representation consisting of one or more bit combinations.

3.2.9 **to designate**

To identify a set of characters that are to be represented, in some cases immediately and in others on the occurrence of a further control function, in a prescribed manner.

3.2.10 **environment**

The characteristic that identifies the number of bits used to represent a character in a data processing or data communication system or in part of such a system.

3.2.11 **escape sequence**

A bit string that is used for control purposes in code extension procedures and that consists of two or more bit combinations. The first of these bit combinations represents the character ESCAPE (1/11).

3.2.12 **final character**

The character the bit combination of which terminates an escape sequence.

3.2.13 **graphic character**

A character, other than a control function, that has a visual representation normally handwritten, printed or displayed.

3.2.14 **intermediate character**

A character the bit combination of which occurs between that of the ESCAPE character and that of the Final character in an escape sequence consisting of more than two bit combinations.

3.2.15 **to invoke**

To cause a designated set of characters to be represented by the prescribed bit combinations whenever those bit combinations occur, until an appropriate code extension function occurs.

3.2.16 **position**

That part of a code table identified by its column and row coordinates.

3.2.17 **to represent**

a) to use a prescribed bit combination with the meaning of a character in a set of characters that has been designated and invoked; or

b) to use an escape sequence with the meaning of an additional control function.

3.3 *Code extension facilities*

These are depicted in Figure 3/T.51 for the 7-bit environment and Figure 4/T.51 for the 8-bit environment. They include the following functions:

a) designation and invocation of control sets C0 and C1 by means of the relevant escape sequences given in § 3.4;

b) designation of a graphic character set G0 by means of the relevant escape sequence given in § 3.4;

c) designation of up to three additional G-sets called G1, G2 and G3 by means of the relevant escape sequences given in § 3.4;

d) invocation of the designated graphic sets, by means of locking and/or non-locking shift functions, given in § 3.5;

e) designation and invocation of a complete code by means of the relevant escape sequence given in § 3.4.

3.4 *Types of character sets*

There are a number of different types of control and graphic character sets that can be designated and invoked for use in the 7-bit or 8-bit environment. These are listed in Table 3/T.51 and defined below. A given control or graphic character set can be designated by an escape sequence terminated by a Final character F from bit combination 4/0 to 7/14, specific to the character set to be designated. Final characters are allocated by ISO and registered in the ISO ‘‘International register of coded character sets to be used with escape sequences.’’

3.4.1 C0 set of 32 control characters (bit combinations 0/0 to 1/15). A C0 set is designated and invoked by the sequence ESC 2/1 F, where F identifies a registered C0 set.

Figure 3/T.51, p. 16

Figure 4/T.51, p. 17

3.4.2 C1 set of 32 control characters (bit combinations 8/0 to 9/15 in an 8-bit environment, or ESC 4/0 to ESC 5/15 in a 7-bit environment). A C1 set is designated and invoked by the sequence ESC 2/2 F, where F identifies a registered C1 set.

3.4.3 G0 set of 94 graphic characters (bit combinations 2/1 to 7/14).

3.4.4 G1, G2 and G3 sets of 94 graphic characters (bit combinations 2/1 to 7/14 or 10/1 to 15/14). A registered set of 94 graphic characters can be designated by the escape sequence ESC 2/8 F, ESC 2/9 F, ESC 2/10 F or ESC 2/11 F in order to be used as a G0, G1, G2 or G3 set respectively, where F identifies the designated set.

3.4.5 G1, G2 and G3 sets of 96 graphic characters (bit combinations 2/0 to 7/15 or 10/0 to 15/15). A registered set of 96 graphic characters can be designated by the escape sequence ESC 2/13 F, ESC 2/14 F or ESC 2/15 F in order to be used as a G1, G2 or G3 set respectively, where F identifies the designated set.

3.4.6 Multiple-byte G0 set of more than 94 graphic characters each represented by more than one bit combinations from 2/1 to 7/14.

3.4.7 Multiple-byte G1, G2 and G3 sets of more than 94 graphic characters each represented by more than one bit combination from 2/1 to 7/14 or from 10/1 to 15/14. A registered multiple-byte set of more than 94 graphic characters can be designated by the escape sequence ESC 2/4 F, ESC 2/4 2/9 F, ESC 2/4 2/10 F or ESC 2/4 2/11 F in order to be used as a G0, G1, G2 or G3 set respectively, where F identifies the designated set.

3.4.8 Multiple-byte G1, G2 and G3 sets of more than 96 graphic characters each represented by more than one bit combination from 2/0 to 7/15 or from 10/0 to 15/15. A registered multiple-byte set of this type identified by a Final character F can be designated by the escape sequence ESC 2/4 2/13 F, ESC 2/4 2/14 F or ESC 2/4 2/15 F in order to be used as G1, G2 or G3 set respectively.

3.4.9 Complete code containing all bit combinations 0/0 to 7/15 in 7-bit environment, or 0/0 to 15/15 in 8-bit environment. A complete code identified by a Final character F, can be designated and invoked by the escape sequence ESC 2/5 F.

Note — Complete code is now referred to in ISO 2022 as ‘‘Coding System different from that of ISO 2022’’.

3.5 *Invocation functions*

Following the designation of a G0, G1, G2 or G3 set as specified in § 3.4, any one of these sets will require invocation into the 7-bit or 8-bit in-use code table. This is performed by the use of either locking shift functions or non-locking shift functions listed in Table 4/T.51. Coding for these functions is given in Table 5/T.51.

3.5.1 *Use of locking shift functions*

There are seven locking shift functions as given in Tables 4/T.51 and 5/T.51. A locking shift function invokes the relevant G0, G1, G2 or G3 set into columns 2 to 7 or into columns 10 to 15 (8-bit code only) in order to replace the previously invoked G-set. The occurrence of a locking shift function shall not affect those bit combinations that are included in any escape sequence or those that follow single shift function SS2 or SS3. If a particular set has already been invoked, use of the corresponding locking shift function has no effect.

3.5.2 *Use of single shift functions*

The single shift function SS2 shall invoke one character from the last designated G2 set. Similarly SS3 shall invoke one character from the last designated G3 set. In the case of using single-byte graphic sets, these invocations alter the meaning of the immediately following bit combination only and ascribe to it the meaning of the corresponding bit combination of the G2 or G3 set. The bit combination permitted to follow SS2 or SS3 is limited to one from columns 2 to 7. If a single-shift function is used to invoke a character from a multiple-byte set, the shift function will affect two or more bit-combinations to represent that character. The use of a single-shift function does not affect the current shift status established by a locking-shift function.

H.T.[T1.51]

lw(48p) | lw(30p) | lw(36p) | lw(60p) | lw(54p) .

{ ESC 2/5 F 0/0 to 7/15 0/0 to 15/15
}

lw(48p) | lw(30p) | lw(36p) | lw(60p) | lw(54p) .

Tableau 3/T.51 [T1.51], p. 18

H.T.[T2.51]

lw(24p) | lw(72p) | lw(60p) | lw(72p) .

Tableau 4/T.51 [T2.51], p. 19

H.T. [T3.51]

lw(132p) | lw(60p) .

Tableau 5/T.51 [T3.51], p. 20

ANNEX A
(to Recommendation T.51)

Superset of the Repertoire of the Latin Based Character Set

A.1 This Annex contains a superset of the repertoire of Latin based alphanumeric graphic characters used in CCITT telematic services, with the exception of the following four characters which are not yet in use in telematic services.

‘‘ Broken Bar ´LP ‘‘ Not Sign ´LP ‘‘ No-Break SPACE ´LP ‘‘ Soft-Hyphen ´bp

Each graphic character is identified by the identification system identical to that used in Recommendation T.61 (see § A.2).

In the tables of § A.4, DS I, DS II and DS III refer to the Data Syntaxes I, II and III respectively of Recommendation T.101.

In the tables of § A.4, a mark ‘‘x’’ signifies the particular graphic character is used. On the other hand a ‘‘—’’ mark signifies that the graphic character is not used.

A.2 *Identification system*

A system was developed that allows for the identification and description of each graphic character or control function. The system is shown in Figure A-1/T.51.

Each identifier consists of two letters and two digits.

The first letter indicates the alphabet, the language, etc.

The second letter indicates the letter of an alphabet or, in the case of a nonalphabetic graphic character or a control function, the group of characters or control functions.

The first digit indicates whether the letter in the second position is an accented one, whether the diacritical mark is above or below the letter, etc. It has not special meaning in the case of the first letter being a C, N or S.

The second digit indicates whether the letter is a capital or a small (even or odd). If the first letter is a C, N or S, this digit being even or odd has no significance.

The numbering is used in a consistent manner so that each diacritical mark is always given the same number.

The numbering principle is shown in Table A-1/T.51.

H.T. [T4.51]
TABLE A-1/T.51
Numbering principle for alphabetic characters

Item	Small	Capital
No diacritical mark	01	02
Acute accent	11	12
Grave accent	13	14
Circumflex accent	15	16
Diaeresis or umlaut mark	17	18
Tilde	19	20
Caron	21	22
Breve	23	24
Double acute accent	25	26
Ring	27	28
Dot	29	30
Macron	31	32
Cedilla	41	42
Ogonek	43	44
Diphthong or ligature	51	52
Special form	61, 63, etc.	62, 64, etc.

Table A-1/T.51 [T4.51], p.

Figure A.1/T.51, p.

A.3 *Combination of diacritical marks and basic letters*

Figure A-2/T.51 specifies the combinations of diacritical marks and basic letters that are defined in this Annex A/T.51.

Figure A.2/T.51, p.

A.4 *Tables of superset of repertoire*

A.4.1 *Latin alphabetic characters*

H.T. [1T5.51]

Identifier	Graphic	Name or description	T.61	DS I	DS II	DS III
LA01	a	small a	x	x	x	x
LA02	A	capital A	x	x	x	x
LA11	á	small a with acute accent	x	—	x	x
LA12	Á	capital A with acute accent	x	—	x	x
LA13	à	small a with grave accent	x	—	x	x
LA14	À	capital A with grave accent	x	—	x	x
LA15	|	{ small a with circumflex accent }	x	—	x	x
LA16	|	{ capital A with circumflex accent }	x	—	x	x
LA17	ä	{ small a with diaeresis or umlaut mark }	x	—	x	x
LA18	Ä	{ capital A with diaeresis or umlaut mark }	x	—	x	x
LA19	ã	small a with tilde	x	—	x	x
LA20	Ã	capital A with tilde	x	—	x	x
LA23	a	small a with breve	x	—	x	x
LA24	A	capital A with breve	x	—	x	x
LA27	a	small a with ring	x	—	x	x
LA28	A	capital A with ring	x	—	x	x
LA31	a	small a with macron	x	—	x	x
LA32	A	capital A with macron	x	—	x	x
LA43	a	small a with ogonek	x	—	x	x
LA44	A	capital A with ogonek	x	—	x	x
LA51		small diphtong	x	—	x	x
LA52		capital diphtong	x	—	x	x
LB01	b	small b	x	x	x	x
LB02	B	capital B	x	x	x	x
LC01	c	small c	x	x	x	x
LC02	C	capital C	x	x	x	x
LC11	ć	small c with acute accent	x	—	x	x
LC12	Ć	capital C with acute accent	x	—	x	x
LC15	ĉ	{ small c with circumflex accent }	x	—	x	x
LC16	Ĉ	{ capital C with circumflex accent }	x	—	x	x
LC21	c	small c with caron	x	—	x	x
LC22	C	capital c with caron	x	—	x	x
LC29	c	small c with dot	x	—	x	x
LC30	C	capital C with dot	x	—	x	x
LC41	ç	small c with cedilla	x	—	x	x
LC42	Ç	capital C with cedilla	x	—	x	x
LD01	d	small d	x	x	x	x
LD02	D	capital D	x	x	x	x
LD21	d or d’	small d with caron	x	—	x	x
LD22	D	capital D with caron	x	—	x	x
LD61	d	small d with stroke	x	—	x	x
LD62	D	{ capital D with stroke, Icelandic eth }	x	—	x	x
LD63		small eth, Icelandic	x	—	x	x
LE01	e	small e	x	x	x	x
LE02	E	capital E	x	x	x	x
LE11	é	small e with acute accent	x	—	x	x
LE12	É	capital E with acute accent	x	—	x	x

LE13	è	small e with grave accent	x	—	x	x
LE14	È	capital E with grave accent	x	—	x	x
LE15	|	{				
small e with circumflex accent						
}	x	—	x	x		
LE16	|	{				
capital E with circumflex accent						
}	x	—	x	x		
LE17	ë	{				
small e with diaeresis or umlaut mark						
}	x	—	x	x		
LE18	Ë	{				
capital E with diaereis or umlaut mark						
}	x	—	x	x		
LE21	e	small e with caron	x	—	x	x
LE22	E	capital E with caron	x	—	x	x
LE29	e	small e with dot	x	—	x	x
LE30	E	capital E with dot	x	—	x	x
LE31	e	small e with macron	x	—	x	x
LE32	E	capital E with macron	x	—	x	x
LE43	e	small e with ogonek	x	—	x	x
LE44	E	capital E with ogonek	x	—	x	x
LF01	f	small f	x	x	x	x
LF02	F	capital F	x	x	x	x
LG01	g	small g	x	x	x	x
LG02	G	capital G	x	x	x	x

Note — ‘‘x’’ means used, ‘‘—’’ means not used.

Table [1T5.51], p.

H.T. [2T5.51]

Identifier	Graphic	Name or description	T.61	DS I	DS II	DS III
LG11	ǵ	small g with acute accent	x	—	x	x
LG15	ĝ	{				
small g with circumflex accent						
}	x	—	x	x		
LG16	Ĝ	{				
capital G with circumflex accent						
}	x	—	x	x		
LG23	ğ	small g with breve	x	—	x	x
LG24	Ğ	capital G with breve	x	—	x	x
LG29	ġ	small g with dot	x	—	x	x
LG30	Ġ	capital G with dot	x	—	x	x
LG42	Ģ	capital G with cedilla	x	—	x	x
LH01	h	small h	x	x	x	x
LH02	H	capital H	x	x	x	x
LH15	ĥ	{				
small h with circumflex accent						
}	x	—	x	x		
LH16	Ĥ	{				
capital H with circumflex accent						
}	x	—	x	x		
LH61	h	small h with stroke	x	—	x	x
LH62	H	capital H with stroke	x	—	x	x
LI01	i	small i	x	x	x	x
LI02	I	capital I	x	x	x	x
LI11	í	small i with acute accent	x	—	x	x
LI12	Í	capital I with acute accent	x	—	x	x
LI13	ì	small i with grave accent	x	—	x	x
LI14	Ì	capital I with grave accent	x	—	x	x
LI15	ı	{				
small i with circumflex accent						
}	x	—	x	x		
LI16	I	{				
capital I with circumflex accent						
}	x	—	x	x		
LI17	ï	{				
small i with diaeresis or umlaut mark						
}	x	—	x	x		
LI18	Ï	{				
capital I with diaeresis or umlaut mark						
}	x	—	x	x		
LI19	ĩ	small i with tilde	x	—	x	x
LI20	Ĩ	capital I with tilde	x	—	x	x
LI30	I	capital I with dot	x	—	x	x
LI31	i	small i with macron	x	—	x	x
LI32	I	capital I with macron	x	—	x	x
LI43	i	small i with ogonek	x	—	x	x
LI44	I	capital I with ogonek	x	—	x	x
LI51	ij	small ij ligature	x	—	x	x
LI52	IJ	capital IJ ligature	x	—	x	x
LI61	i	small i without dot	x	—	x	x
LJ01	j	small j	x	x	x	x
LJ02	J	capital J	x	x	x	x
LJ15	ĵ	{				
small j with circumflex accent						
}	x	—	x	x		
LJ16	Ĵ	{				
capital J with circumflex accent						
}	x	—	x	x		
LK01	k	small k	x	x	x	x
LK02	K	capital K	x	x	x	x
LK41	ķ	small k with cedilla	x	—	x	x

LK42	Ķ	capital K with cedilla	x	—	x	x
LK61	ĸ	small k, Greenlandic	x	—	x	x
LL01	l	small l	x	x	x	x
LL02	L	capital L	x	x	x	x
LL11	ĺ	small l with acute accent	x	—	x	x
LL12	Ĺ	capital L with acute accent	x	—	x	x
LL21 small l with caron or apostrophe	l or l’	{ }	x	—	x	x
LL22 capital L with caron or apostrophe	L or L’	{ }	x	—	x	x
LL41	l	small l with cedilla	x	—	x	x
LL42	Ļ	capital L with cedilla	x	—	x	x
LL61	l	small l with stroke	x	—	x	x
LL62	L	capital L with stroke	x	—	x	x
LL63	l	small l with middle dot	x	—	x	x
LL64	L	capital L with middle dot	x	—	x	x
LM01	m	small m	x	x	x	x
LM02	M	capital M	x	x	x	x
LN01	n	small n	x	x	x	x
LN02	N	capital N	x	x	x	x
LN11	n	small n with acute accent	x	—	x	x
LN12	N	capital N with acute accent	x	—	x	x
LN19	ñ	small n with tilde	x	—	x	x
LN20	Ñ	capital N with tilde	x	—	x	x

Table suite [2T5.51], p.

H.T. [3T5.51]

Identifier	Graphic	Name or description	T.61	DS I	DS II	DS III
LN21	ň	small n with caron	x	—	x	x
LN22	Ň	capital N with caron	x	—	x	x
LN41	ņ	small n with cedilla	x	—	x	x
LN42	Ņ	capital N with cedilla	x	—	x	x
LN61		small eng, Lapp	x	—	x	x
LN62		capital eng, Lapp	x	—	x	x
LN63	’n	small n with apostrophe	x	—	x	x
LO01	o	small o	x	x	x	x
LO02	O	capital O	x	x	x	x
LO11	ó	small o with acute accent	x	—	x	x
LO12	Ó	capital O with acute accent	x	—	x	x
LO13	ò	small o with grave accent	x	—	x	x
LO14	Ò	capital O with grave accent	x	—	x	x
LO15	|	{				
small o with circumflex accent						
}	x	—	x	x		
LO16	|	{				
capital O with circumflex accent						
}	x	—	x	x		
LO17	ö	{				
small o with diaeresis or umlaut mark						
}	x	—	x	x		
LO18	Ö	{				
capital O with diaeresis or umlaut mark						
}	x	—	x	x		
LO19	õ	small o with tilde	x	—	x	x
LO20	Õ	capital O with tilde	x	—	x	x
LO25	ő	{				
small o with double acute accent						
}	x	—	x	x		
LO26	Ő	{				
capital O with double acute accent						
}	x	—	x	x		
LO31	o	small o with macron	x	—	x	x
LO32	O	capital O with macron	x	—	x	x
LO51	oe	small oe ligature	x	—	x	x
LO52	OE	capital OE ligature	x	—	x	x
LO61	ø	small o with slash	x	—	x	x
LO62	Ø	capital O with slash	x	—	x	x
LP01	p	small p	x	x	x	x
LP02	P	capital P	x	x	x	x
LQ01	q	small q	x	x	x	x
LQ02	Q	capital Q	x	x	x	x
LR01	r	small r	x	x	x	x
LR02	R	capital R	x	x	x	x
LR11	ŕ	small r with acute accent	x	—	x	x
LR12	Ŕ	capital R with acute accent	x	—	x	x
LR21	r	small r with caron	x	—	x	x
LR22	R	capital R with caron	x	—	x	x
LR41	ŗ	small r with cedilla	x	—	x	x
LR42	Ŗ	capital R with cedilla	x	—	x	x
LS01	s	small s	x	x	x	x
LS02	S	capital S	x	x	x	x
LS11	ś	small s with acute accent	x	—	x	x
LS12	Ś	capital S with acute accent	x	—	x	x
LS15	ŝ	{				
small s with circumflex accent						
}	x	—	x	x		
LS16	Ŝ	{				
capital S with circumflex accent						
}	x	—	x	x		

LS21	s	small s with caron	x	—	x	x
LS22	S	capital S with caron	x	—	x	x
LS41	ş	small s with cedilla	x	—	x	x
LS42	Ş	capital S with cedilla	x	—	x	x
LS61		small sharp s, German	x	—	x	x
LT01	t	small t	x	x	x	x
LT02	T	capital T	x	x	x	x
LT21	t or t’	{				
small t with caron or apostrophe						
}	x	—	x	x		
LT22	T	capital T with caron	x	—	x	x
LT41	ţ	small t with cedilla	x	—	x	x
LT42	Ţ	capital T with cedilla	x	—	x	x
LT61	t	small t with stroke	x	—	x	x
LT62	T	capital T with stroke	x	—	x	x
LT63		small thorn, Icelandic	x	—	x	x
LT64		capital thorn, Icelandic	x	—	x	x
LU01	u	small u	x	x	x	x
LU02	U	capital U	x	x	x	x

Table suite [3T5.51], p.

Table suite [4T5.51], p.

A.4.2 *Non-alphabetic characters*

A.4.2.1 *Decimal digits*

H.T. [T6.51]

Identifier	Graphic	Name or description	T.61	DS I	DS II	DS III
ND01	1	digit 1	x	x	x	x
ND02	2	digit 2	x	x	x	x
ND03	3	digit 3	x	x	x	x
ND04	4	digit 4	x	x	x	x
ND05	5	digit 5	x	x	x	x
ND06	6	digit 6	x	x	x	x
ND07	7	digit 7	x	x	x	x
ND08	8	digit 8	x	x	x	x
ND09	9	digit 9	x	x	x	x
ND10	0	digit 0	x	x	x	x

Table [T6.51], p.

A.4.2.2 *Currency signs*

H.T. [T7.51]

Identifier	Graphic	Name or description	T.61	DS I	DS II	DS III
SC01		general currency sign	x	—	x	x
SC02	Ł	pound sign	x	x	x	x
SC03	$	dollar sign	x	x	x	x
SC04	c	cent sign	x	x	x	x
SC05	Y	yen sign	x	x	x	x

Table [T7.51], p.

A.4.2.3 *Punctuation marks*

H.T. [T8.51]

Identifier	Graphic	Name or description	T.61	DS I	DS II	DS III
SP01		space (see also § 3.3.2)	x	x	x	x
SP02	!	exclamation mark	x	x	x	x
SP03	¡	inverted exclamation mark	x	—	x	x
SP04	"	quotation mark	x	x	x	x
SP05	’	apostrophe	x	x	x	x
SP06	(	left parenthesis	x	x	x	x
SP07	)	right parenthesis	x	x	x	x
SP08	,	comma	x	x	x	x
SP09	_	low line	x	x	x	x
SP10	-	hyphen or minus sign	x	x	x	x
SP11	.	full stop, period	x	x	x	x
SP12	/	solidus	x	x	x	x
SP13	:	colon	x	x	x	x
SP14	;	semicolon	x	x	x	x
SP15	?	question mark	x	x	x	x
SP16	¿	inverted question mark	x	—	x	x
SP17	<<	angle quotation mark left	x	—	x	x
SP18	>>	angle quotation mark right	x	—	x	x
SP19	‘	single quotation mark left	—	—	x	x
SP20	’	single quotation mark right	—	—	x	x
SP21	‘‘	double quotation mark left	—	—	x	x
SP22	’’	double quotation mark right	—	—	x	x

Note — In Teletex (and Videotex), *Quotation mark*, *Apostrophe* and *Comma* are independent characters that cannot have the meaning of diacritical marks.

Table [T8.51], p.

A.4.2.4 *Arithmetic signs*

H.T. [T9.51]

Identifier	Graphic	Name or description	T.61	DS I	DS II	DS III
SA01	+	plus sign	x	x	x	x
SA02	±	plus/minus sign	x	x	x	x
SA03	<	less-than sign	x	x	x	x
SA04	=	equals sign	x	x	x	x
SA05	>	greater-than sign	x	x	x	x
SA06	÷	divide sign	x	x	x	x
SA07	×	multiply sign	x	x	x	x

Note — For *minus sign* see SP10.

Table [T9.51], p.

A.4.2.5 *Subscripts and superscripts*

H.T. [T10.51]

Identifier	Graphic	Name or description	T.61	DS I	DS II	DS III
NS02	^{2}	superscript 2	x	—	x	x
NS03	^{3}	superscript 3	x	—	x	x

Table [T10.51], p.

A.4.2.6 *Fractions*

H.T. [T11.51]

Identifier	Graphic	Name or description	T.61	DS I	DS II	DS III
NF01	½	fraction one-half	x	—	x	x
NF04	¼	fraction one-quarter	x	—	x	x
NF05	¾	fraction three-quarters	x	—	x	x
NF06	$^{1}/_{8}$	fraction one-eight	—	—	x	x
NF07	$^{3}/_{8}$	fraction three-eights	—	—	x	x
NF08	$^{5}/_{8}$	fraction five-eights	—	—	x	x
NF09	$^{7}/_{8}$	fraction seven-eights	—	—	x	x

Table [T11.51], p.

A.4.3 *Miscellaneous symbols*

H.T. [T12.51]

Identifier	Graphic	Name or description	T.61	DS I	DS II	DS III
SM01	##	number sign	x	x	x	x
SM02	%	percent sign	x	x	x	x
SM03	&	ampersand	x	x	x	x
SM04	*	asterisk	x	x	x	x
SM05		commercial at	x	x	x	x
SM06	[	left square bracket	x	x	x	x
SM07		reverse solidus	—	x	x	x
SM08	]	right square bracket	x	x	x	x
SM11	{ fR	left curly bracket	—	x	x	x
SM12	—	{				
central horizontal bar jointive						
}	—	x	x	x		
SM13	|	vertical line	x	x	x	x
SM14	}	right curly bracket	—	x	x	x
SM17	µ	micro sign	x	—	x	x
SM18	Ω	ohm sign	x	—	x	x
SM19	°	degree sign	x	—	x	x
SM20	o	ordinal indicator, masculine	x	—	x	x
SM21	a	ordinal indicator, feminine	x	—	x	x
SM24	§	section sign	x	x	x	x
SM25		paragraph sign, pilcrow	x	—	x	x
SM26	×	middle dot	x	—	x	x
SM30	←	leftward arrow	—	x	x	x
SM31		rightward arrow	—	x	x	x
SM32	↑	upward arrow	—	x	x	x
SM33	↓	downward arrow	—	x	x	x
SM34	□	delete	—	x	x	—
SM53	R	registered sign	—	—	x	x
SM57	C	copyright sign	—	—	x	x
SM54	TM	trade mark	—	—	x	x
SM93		musical note	—	x	x	x
SM45	|	left vertical bar jointive	—	—	x	—
SM46	|	right vertical bar jointive	—	—	x	—
SM65		broken bar	—	—	—	—
SM66		not sign	—	—	—	—
SP31	NBSP	no-break space	—	—	—	—
SP32	SHY	soft hyphen	—	—	—	—
SM94	□	diagonal	—	x	—	x
SM95	□	reverse diagonal	—	x	—	x
SM96		filled diagonal	—	—	—	x
SM97		filled reverse diagonal	—	—	—	x
SM98		cross	—	x	—	x
SM99		full vertical line	—	x	—	x
SM100		horizontal bar	—	—	—	x

Table [T12.51], p.

A.4.4 *Diacritical marks as separate graphic characters*

H.T. [T13.51]

Identifier	Graphic	Name or description	T.61	DS I	DS II	DS III
SD11	☐	acute accent with space	x	x	x	x
SD13	☐	grave accent with space	x	x	x	x
SD15	☐	circumflex accent with space	x	x	x	x
SD17	☐	{ diaeresis or umlaut mark with space }	x	x	x	x		
SD19	☐	tilde with space	x	x	x	x
SD21	☐	caron with space	x	—	x	x
SD23	☐	breve with space	x	—	x	x
SD25	☐	{ double acute accent with space }	x	—	x	x		
SD27	☐	ring with space	x	—	x	x
SD29	☐	dot with space	x	—	x	x
SD31	☐	macron with space	x	—	x	x
SD41	☐	cedilla with space	x	—	x	x
SD43	☐	ogonek with space	x	—	x	x

Note — The diacritical marks are illustrated together with a rectangle representing the relative position of the graphic character with which they are normally associated.

Table [T13.51], p.

A.4.5 *Non-spacing characters*

H.T. [T14.51]

Identifier	Graphic	Name or description	T.61	DS I	DS II	DS III
SM27		non spacing underline	x	—	—	x
SM101		non spacing vector overbar	—	—	—	x
SM102	/	non spacing slant	—	—	—	x

Note — The *Non-spacing underline* character is never used individually but always in combination with some other graphic character to represent the graphic rendition ‘‘underlined’’ for the associated character. The *Non-spacing underline* character can be used in combination with any graphic character of the repertoire, including an accented letter or an umlaut, or *Space*

Table [T14.51], p.

ANNEX B
(to Recommendation T.51)

Table of character and control sets

H.T. [1T15.51]

Reg. No.	Name of registered set	(Note 1)	Final character	C0	C1	G0	G1	G2	C
2 Rec. T.50. International reference version, IRV. This is also the primary set of T.51, as modified by Notes 3 and 4 of T.51	{								
	94	4/0			x	x	x	x	
70 Rec. T.51. First supplementary graphic set	{								
	94	6/2			x	x	x	x	
132 Rec. T.101. Data Syntax I Primary control set	{								
	C0	4/9	x						
125 Rec. T.101. Data Syntax I Supplementary control set	{								
	C1	4/4		x					
42 Rec. T.101. Data Syntax I Kanji set (2 byte set) JISC 6226 (1978)	{								
	94 | (mu | 4	4/0			x	x	x	x	
137 Rec. T.101. Data Syntax I Mosaic 1 set	{								
	94	7/9			x	x	x	x	
14 Rec. T.101. Data Syntax I Primary character set (JISC 6220 (1969))	{								
	94	4/10			x	x	x	x	
131 Rec. T.101. Data Syntax I Complete code	{								
	—	4/3							
134 Rec. T.101. Data Syntax II Primary control set	{								
	C0	4/10	x						
56 Rec. T.101. Data Syntax II Serial supplementary control set	{								
	C1	4/0		x					
73 Rec. T.101. Data Syntax II Parallel supplementary control set	{								
	C1	4/1		x					
70 Rec. T.101. Data Syntax II	{								

Supplementary character set }	94	6/2			x	x	x	x	
71 Rec. T.101. Data Syntax II 2nd supplementary mosaic set }	{ 94	 6/3			x	x	x	x	
72 Rec. T.101. Data Syntax II 3rd supplementary mosaic set }	{ 94	 6/4			x	x	x	x	

Table [1T15.51], p.

H.T. [2T15.51]

Reg. No.	Name of registered set	(Note 1)	Final character	C0	C1	G0	G1	G2	G3
145 Rec. T.101. Data Syntax II Complete code }	{ —	 4/4							
Note 2 Rec. T.101. Data Syntax II Greek primary set }	{ 94	 Note 2			x	x	x	x	
108 Rec. T.101. Data Syntax III Complete code }	{ —	 4/1							
135 Rec. T.101. Data Syntax III Primary control set }	{ C0	 4/11	x						
136 Rec. T.101. Data Syntax III Supplementary control set }	{ C1	 4/6		x					
6 Rec. T.101. Data Syntax III Primary character set }	{ 94	 4/2			x	x	x	x	
128 Rec. T.101. Data Syntax III Supplementary character set }	{ 94	 7/12			x	x	x	x	
Cannot be reg. Rec. T.101. Data Syntax III PDI set }	{ 96	 (5/7) never to be assigned				x	x	x	
129 Rec. T.101. Data Syntax III Mosaic set }	{ 96	 7/13			x	x	x	x	
102 Rec. T.61. Primary graphic character set (left half of Fig. 2/T.61) }	{ 94	 7/5			x	x	x	x	
103 Rec. T.61. Supplementary character set (right half of Fig. 2/T.61) }	{ 94	 7/6			x	x	x	x	
106 Rec. T.61. Primary control set }	{ C0	 4/5	x						

107 Rec. T.61. Supplementary control set }	{ C1	 4/8		 x					
Note 2 Rec. T.51. Second supplementary graphic set }	{ 96	 Note 2				 x	 x	 x	

Note 1 — The 94 or 96 character set applies only to single byte graphic character sets. The 94 × 94 set applies to two byte graphic character set. Primary control sets are C0. Supplementary control sets are C1. Complete code is also referred to as ‘‘Coding System different from that of ISO 2022’’.

Note 2 — Application for ISO Registration will take place after the Recommendation T.51 is approved.

Table [2T15.51], p.