INTERNATIONAL TELECOMMUNICATION UNION

ITU-T　　　　　　　　S.2

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

TELEGRAPHY

**ALPHABETICAL TELEGRAPH TERMINAL
EQUIPMENT**

**CODING SCHEME USING INTERNATIONAL
TELEGRAPH ALPHABET No. 2 (ITA2) TO
ALLOW THE TRANSMISSION OF CAPITAL
AND SMALL LETTERS**

ITU-T Recommendation S.2

(Extract from the *Blue Book*)

NOTES

1   ITU-T Recommendation S.2 was published in Fascicle VII.1 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

2   In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Recommendation S.2

CODING SCHEME USING INTERNATIONAL TELEGRAPH ALPHABET No. 2 (ITA2)
TO ALLOW THE TRANSMISSION OF CAPITAL AND SMALL LETTERS

(Melbourne, 1988)

The CCITT,

considering
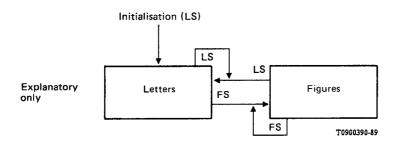
(a) that CCITT Recommendation S.1, International Telegraph Alphabet No. 2 (ITA2), permits capital or small letter printing;

(b) that there are advantages in establishing an international standard for the transmission of capital and small letters using International Telegraph Alphabet No. 2,

unanimously declares the view

(1) that the ability to transmit and print capital and small letters should be based on an extended use of ITA2;

(2) that figure-shift (FS) and letter-shift (LS) should be the only shift characters used;

(3) that the number of shift characters introduced in the transmitted information should be minimized;

(4) that the operating principles described in this Recommendation should apply.

1   Scope

1.1   Existing terminal equipment making use of ITA2 may not discriminate between capital and small letter printing. The decision to print in all capital or all small letters is a national matter and not affected by the received code combination of ITA2.

1.2   This Recommendation specifies a procedure whereby the terminal equipment may transmit information to allow the receiving terminal to discriminate between capital and small letter printing.

1.3   To assist understanding, Figure 1/S.2 shows diagrammatically the operating procedure of existing terminal equipment; Figure 2/S.2 shows the operating procedure specified in this Recommendation.
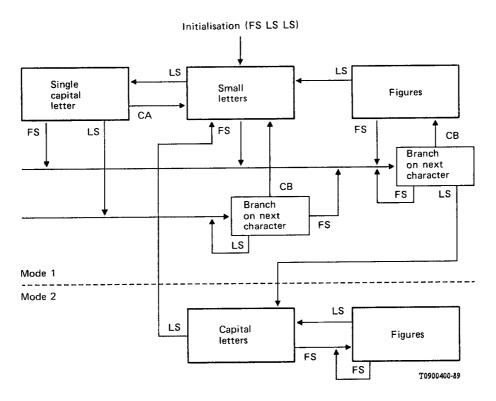

Change occurs:
LS   On receipt of letter-shift character
FS   On receipt of figure-shift character

FIGURE 1/S.2

Operating procedures of existing terminal equipments (ITA2)

Initialisation (FS LS LS)

Change occurs:
LS On receipt of letter-shift character
FS On receipt of figure-shift character
CA After the processing of non-shift character
CB Before the processing of any non-shift character

FIGURE 2/S.2

**Operating procedures of terminal equipments specified in this
Recommendation (ITA2)**

2 Operating principles

2.1 *Operating modes*

2.1.1   The terminal equipment should operate in the following two modes:

Mode 1 – Transmission/reception of small letters, single capital letters and figures;

Mode 2 – Transmission/reception of capital letters and figures.

The introduction of two modes of operation is to minimize the number of shift-characters transmitted.

2.1.2   At the beginning of any transmission, it may normally be assumed, that the equipment concerned is in Mode 1, small letters. If an initialization sequence is required it should consist of a contiguous sequence of FS, LS, LS characters.

2.2 *Selection within operating modes*

2.2.1   Where the terminal equipment is set to small letters in Mode 1 and a single capital letter is to be transmitted it should be denoted as a capital letter by preceding the character transmission with a single LS character. Two LS characters will be required when the previously transmitted character was a figure. If the next character is a non-shift character then it will be transmitted/printed and the terminal equipment should be reverted to small letter operation. If the next character is a shift character, the terminal equipment should be prepared to branch on the next character.

2.2.2   In Mode 1 a single FS character should change the terminal equipment from small letter to figure transmission/reception.

2.2.3   In Mode 2 a single FS or LS character should change the terminal equipment between figure and capital letter operation respectively.

2.3   *Selection of operating mode*

2.3.1   Where the terminal equipment is set to Mode 1 and a group of three or more capital letters is to be transmitted, ignoring any non-letter characters separating them, then to improve efficiency of transmission, the terminal equipment may be set to Mode 2 (capital letters) and precede subsequent letter character transmission by a contiguous sequence of a single FS and a single LS character.

The receiving terminal equipment on detecting the FS, LS sequence should set the receiving terminal to Mode 2 and print all following received letter characters as capital letters.

2.3.2   Where the terminal is set to Mode 2 and small letter is to be transmitted the terminal equipment should be set to Mode 1 and precede subsequent letter character transmission by a single LS character. Two LS characters will be required where the previously transmitted character was a figure.

The receiving terminal equipment on detecting the one or two LS characters respectively should set the receiving terminal to Mode 1 and print the following received letter character as a small letter.

2.4   *Manual terminal operation*

2.4.1   For manual operation the terminal should be provided with, in addition to the normal shift key, a capital-lock key or a shift-lock key or both.

2.4.2   Where the terminal is set to Mode 1 the condition of the lock key should be examined for the groups of capital letters. If the locked condition is detected the terminal should be set to Mode 2 and the subsequent letter character transmission preceded by the transmission of a contiguous sequence of a single FS and single LS character.

2.4.3   Where the terminal is set to Mode 2 the shift key (single character) and the lock key (groups of characters) should be simultaneously examined. If neither the shift key is operated nor the locked condition is detected, the terminal should be set to Mode 1 and the subsequent letter character transmission should be preceded by a single extra LS character.

2.4.4   A start key to generate the initialization sequence may be provided.

2.5   *Automatic terminal operation*

2.5.1   Where the terminal is set to Mode 1 and the next letter character to be transmitted is a capital letter, the next two letter characters should be examined for capital letters, ignoring any non-letter characters separating them. If all three letter characters are capital letters then the terminal should be set to Mode 2 and subsequent letter character transmission should be preceded by a contiguous sequence of a single FS and a single LS character. If the first letter character to be transmitted is a capital letter but either, or both, of the two subsequent letter characters are not, the first letter character should be transmitted preceded by a single extra LS character.

2.5.2   Where the terminal is set to Mode 2 the next character to be transmitted should be examined and if it is a small letter the terminal should be set to Mode 1.
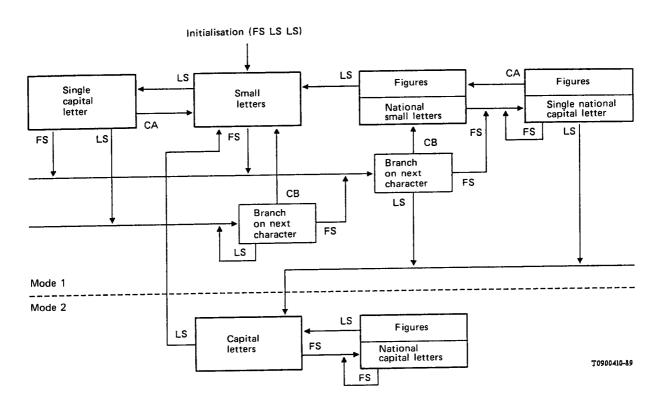

3   **Transmission of WRU and answerback**

3.1   The coding and transmission of the WRU and answerback signals is not affected by this Recommendation.

4   **Provision of LS and FS functions**

4.1   It should be noted that in some circumstances it may be necessary to generate separate LS and FS characters for national applications.

5   **National versions**

5.1   The use of ITA2 combination No. 32, either in an escape sequence or as a single character, to enter a national alphabet is not affected by this Recommendation.

5.2   It is possible to apply the principles described in this Recommendation to small and capital letter transmission/printing of a national alphabet.

5.3   Figure 3/S.2 of this Recommendation gives some guidance to Administrations, who may wish to include national capital and small letters.

Initialisation (FS LS LS)

Change occurs:
LS   On receipt of letter-shift character
FS   On receipt of figure-shift character
CA   After the processing of non-shift character
CB   Before the processing of any non-shift character

FIGURE 3/S.2

**Operating procedures of terminal equipments specified in this
Recommendation (ITA2)
(national version)**