TYPE: C1 Control Character Set	REGISTRATION NUMBER: 136 DATE OF REGISTRATION: 31st July 1987

ESCAPE SEQUENCE:

G0: -
G1: -
G2: -
G3: -
C0: -
C1: ESC 2/2 4/6

NAME The Supplementary Control Set of Data Syntax III of CCITT Rec. T.101.

DESCRIPTION A control character set comprising 32 control characters for use as a C1 set in Videotex applications

NOTE

The acronyms in this registration have been introduced by the Registration Authority for the sake of uniform presentation of code tables in the International Register

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ORIGIN CCITT Rec. T.101, Data Syntax III

FIELD OF UTILISATION

Videotex and Broadcast Videography (teletext) applications.

This registration is sponsored by CCITT. If required at a later stage, this registration may be amended under the procedure of clause 8.2 of ISO 2375. In this case the already allocated escape sequence will remain unchanged.

C1 SET

7-bit coding

DEFM	ESC 4/0
DEFP	ESC 4/1
DEFT	ESC 4/2
DEFD	ESC 4/3
DEFX	ESC 4/4
END	ESC 4/5
REP	ESC 4/6
REPE	ESC 4/7
REVV	ESC 4/8
NORV	ESC 4/9
SMTX	ESC 4/10
METX	ESC 4/11
NOTX	ESC 4/12
DBH	ESC 4/13
BSTA	ESC 4/14
DBS	ESC 4/15
PRO	ESC 5/0
EDC1	ESC 5/1
EDC2	ESC 5/2
EDC3	ESC 5/3
EDC4	ESC 5/4
WWON	ESC 5/5
WWOF	ESC 5/6
SCON	ESC 5/7
SCOF	ESC 5/8
USTA	ESC 5/9
USTO	ESC 5/10
FLC	ESC 5/11
STC	ESC 5/12
COF	ESC 5/13
BSTO	ESC 5/14
UNP	ESC 5/15

8-bit coding

b_8		1	1		
b_7		0	0		
b_6		0	0		
b_5		0	1		
		08	09		
b_4	b_3 b_2 b_1				
0	0 0 0	00	DEFM	PRO	
0	0 0 1	01	DEFP	EDC1	
0	0 1 0	02	DEFT	EDC2	
0	0 1 1	03	DEFD	EDC3	
0	1 0 0	04	DEFX	EDC4	
0	1 0 1	05	END	WWON	
0	1 1 0	06	REP	WWOF	
0	1 1 1	07	REPE	SCON	
1	0 0 0	08	REVV	SCOF	
1	0 0 1	09	NORV	USTA	
1	0 1 0	10	SMTX	USTO	
1	0 1 1	11	METX	FLC	
1	1 0 0	12	NOTX	STC	
1	1 0 1	13	DBH	COF	
1	1 1 0	14	BSTA	BSTO	
1	1 1 1	15	DBS	UNP	

Acronym	Name	Description
DEFM	DEFINE MACRO	This control character defines a macro. The bit combinations following this control character shall be in the range 2/0 to 7/15 and identifies the macro being defined. All characters subsequent to this control function are stored (but not executed) within the receiving device under the specified macro name. Definition of the macro terminates upon receipt of one of the following C1 control characters: DEFINE MACRO, DEFP MACRO, DEFT MACRO DEF DRCS, DEF TEXTURE, or END. The terminating control character (preceded by ESC in a 7-bit environment) is not stored as part of the macro. If the bit combination following the DEFINE MACRO is not in the specified range. the entire command (i.e. the C1 control and the following bit combination which is out of the range) is in error and is executed as a null operation. During the definition of a macro, a reference to a macro results in the storage of that reference only, not the expansion. The definition of a macro replaces any previously existing macro under the same name. A macro may be longer or shorter than the previously existing macro that it replaces. A null macro definition, i.e. a macro definition in which there are no characters between the macro name and the terminating C1 control character (preceded by ESC in a 7-bit environment) causes that macro to be deleted. Definition of a macro is independent of whether the macro set is invoked or not.
DEFP	DEFINE P-MACRO	The operation of this control character is identical with that of DEFINE MACRO, except that incoming characters that make up the macro definition are simultaneously executed and stored. A macro is considered to be undefined during definition until the definition is terminated. Therefore, if a DEFP MACRO contains a reference to itself, or if it references another macro which references the one being defined, the reference to the macro being defined is executed as a null operation.
DEFT	DEFINE TRANSMIT-MACRO	This control character defines a transmit-macro. Transmit-macros, when called, are not executed, but are transmitted in their entirety to the host computer or to a local application process. Transmit-macros are defined and deleted in a manner similar to that described for normal macros, and they share the same 96 macro names.

Acronym	Name	Description
DEFD	DEFINE DRCS	This control character starts the downloading operation for one of the DRCS characters, of which a total of 96 are permitted. The bit combination following this control character shall be in the range 2/0 to 7/15 and identifies the DRCS character being defined. The DRCS downloading command is terminated when an END, DEFINE MACRO, DEFP MACRO, DEFT MACRO, DEF TEXTURE or another DEF DRCS is received. When the current DRCS downloading operation is terminated by another DEF DRCS, the next character of the DRCS G-set (i.e. in the circular sequence 2/0, 2/1, ... 2/15, 3/0, 3/1,...,7/14, 7/15, 2/0, 2/1 ...) is defined by the presentation layer bit combination immediately following this new DEF DRCS. If the bit combination following the DEF DRCS control character is not in the range 2/0 to 7/15 and the DEF DRCS control function is not terminating a previous DEF DRCS, the entire command (i.e. the C1 control character and the following bit combination which is out of range) is in error and is executed as a null operation. The presentation layer bit combination defining the DRCS control character shall be executed upon being received. It is executed within the unit screen but is not displayed in the display area. The effect of this execution is to modify a separate storage buffer that is used for any subsequent display of the DRCS control character. The aspect ratio of the storage buffer shall be the same as that of the character field dimensions when the DEF DRCS control character is received. The lower left corner of the buffer shall coincide with the lower left corner of the unit screen. The larger buffer dimension (dx or dy) shall coincide with the entire corresponding axis of the unit screen.
DEFX	DEFINE TEXTURE	This control character defines one of the four programmable texture masks. The bit combination following this control character shall be one of the following 4/1, 4/2, 4/3, 4/4, that causes mask A, B, C or D, respectively, to be defined. Any existing texture pattern associated with the specified mask is deleted. The mask is cleared by terminating the command at this point. If a presentation layer bit combination follows, it describes the texture mask in the same manner as the DRCS control character, except that the texture mask size is used rather than the character field size. The DEF TEXTURE is terminated when an END, DEF MACRO, DEFP MACRO, DEFT MACRO, DEF DRCS, or another DEF TEXTURE is received. If the bit combination following the DEF TEXTURE control character is not in the range 4/1 to 4/4, the entire command (i.e. the C1 control character and the bit combination which is out of range) is in error and is executed as a null operation.
END	END	This control character terminates the current DEF MACRO, DEFP MACRO, DEFT MACRO, DEF DRCS, or DEF TEXTURE operation. It is also used in the transmission of data in an unprotected field.

Acronym	Name	Description
REP	REPEAT	This control character causes the immediately preceding byte to be repeated a specific number of additional times if the byte is SPACE or any spacing character from the primary, supplementary, DRCS, or mosaic sets. The bit combination following the REPEAT control shall be interpreted as the repeat count. This repeat count character shall be in the range 4/0 to 7/15; otherwise the command is in error and shall be executed as a null operation, and the count character is executed as a character from columns 0 to 3 or 8 to 11.
REPE	REPEAT TO END OF LINE	This control character causes the immediately preceding byte to be repeated until the last character position along the current character path is reached if the byte is SPACE or any spacing character from the primary, supplementary, DRCS, or mosaic sets. Otherwise the command is in error and shall be executed as a null operation. If the full character field corresponding to the text cursor lies entirely within the active field when this command is encountered, then characters are repeated only up to the last character position along the current character path within the active field.
REVV	REVERSE VIDEO	This control character causes the receiving device to enter reverse video mode in which any subsequently received alphanumeric text, mosaic, and DRCS characters are drawn so that the pixels surrounding the character shape in the character field are drawn in the drawing colour. The pixels of the character shape are not drawn, except in colour mode 2, when they are drawn in the background colour.
NORV	NORMAL VIDEO	This control character causes the receiving device to exit from reverse video mode.
SMTX	SMALL TEXT	This control character causes the dimensions of the character field to be set to dx = 1/80 and dy = 5/128, consistent with the physical resolution.
METX	MEDIUM TEXT	This control character causes the dimensions of the character field to be set to dx = 1/32 and dy = 3/64, consistent with the physical resolution.
NOTX	NORMAL TEXT	This control character causes the dimensions of the character field to be set to dx = 1/40 and dy = 5/128, consistent with the physical resolution.
DBH	DOUBLE HEIGHT	This control character causes the dimensions of the character field to be set to dx = 1/40 and dy = 5/64, consistent with the physical resolution.
BSTA	BLINK START	This control character creates a blink process in which: the blink-from colour is the drawing colour; the blink-to colour is nominal black in colour modes 0 and 1 or the background colour in colour mode 2; the on and off intervals are implementation-dependent; and the phase delay is 0.

Acronym	Name	Description
DBS	DOUBLE SIZE	This control character causes the dimensions of the character field to be set to dx = 1/20 and dy = 5/64, consistent with the physical resolution.
PRO	PROTECT	This control character causes all unprotected fields of which any portion lies within the active field to be made protected.
EDC1	EDC ONE	This control character is reserved for future standardization, and is executed as null operation.
EDC2	EDC TWO	This control character is reserved for future standardization, and is executed as null operation.
EDC3	EDC THREE	This control character is reserved for future standardization, and is executed as null operation.
EDC4	EDC FOUR	This control character is reserved for future standardization, and is executed as null operation.
WWON	WORD WRAP ON	This control character causes the receiving device to enter word wrap mode. In this mode, subsequently received alphanumeric text is buffered into words. A word is displayed on the current line only if the entire buffered word fits into the space remaining on the current line within the unit screen (or within the active field, should the full character field corresponding to the text cursor lie entirely within the active field). If the word does not fit into the space remaining on the current line, an automatic APR APD is executed and the word is displayed. The character SPACE should be dropped if the last word on the line is terminated with a SPACE that does not fit on that line. A word is defined as being an accumulation of characters between SPACE characters. Words consisting entirely of alphabetic characters and one or more of the following embedded (i.e. not at the beginning or end of the word) special terminating characters: EXCLAMATION MARK, QUOTATION MARK, DOLLAR SIGN, PERCENT SIGN, LEFT PARENTHESIS, RIGHT PARENTHESIS, LEFT SQUARE BRACKET, RIGHT SQUARE BRACKET, LESS-THAN SIGN, GREATER-THAN SIGN, LEFT CURLY BRACKET, RIGHT CURLY BRACKET, CIRCUMFLEX ACCENT, ASTERISK, PLUS SIGN, MINUS SIGN, SOLIDUS, COMMA, FULL STOP, COLON, SEMICOLON, LOW LINE and TILDE may be broken between the special terminating character and the following character, which causes as much of the word to fit on the current line as possible. All other words shall be kept together on a single line. A word is also terminated by a mosaic set character, a PDI, and C-set character defined at the presentation layer except SO, SI, SS2 and SS3; or any character that causes the length of the word to be equal to the maximum length of a line.

Acronym	Name	Description
WWOF	WORD WRAP OFF	This control character causes the receiving device to exit from word wrap mode. In this mode all text is broken on character boundaries whenever an automatic APR and APD are executed.
SCON	SCROLL ON	In this mode, a subsequently received APD or APU control character or an automatic APR APD that would advance any part of the cursor out of the display area (or the active field, should the full character field corresponding to the cursor lie entirely within the active field) causes the entire display within the area or field to be scrolled. Scrolling occurs pixel-by-pixel in a direction perpendicular to the character path and far enough to bring the next intended character location just into the area or field. The colour of background pixels scrolled into the area or field in nominal black in colour modes 0 and 1 and the background colour in colour mode 2.
SCOF	SCROLL OFF	In this mode an APD or APU command or an automatic APR APD that would advance any part of the cursor out of the display area (or the active field, should the full character field corresponding to the cursor lie entirely within the active field), causes the cursor to be repositioned to the opposite edge of the area or field such that the character field so defined lies entirely within the area or field.
USTA	UNDERLINE START	This control character causes the receiving device to enter underline mode. In this mode, all subsequently received primary, supplementary, DRCS characters, and the SPACE character have a line added to their patterns. The line appears in the character field starting at the character field origin and extending across the entire width (dx dimension) of the character field, but not across the space between character fields when the intercharacter spacing is greater than one. Its thickness is determined by the vertical dimensions (dy) of the logical pel size. The underline mode also causes subsequently received mosaic characters to be displayed in separate mode. Mosaic characters are not underlined.
USTO	UNDERLINE STOP	This control character causes the receiving device to exit from underline mode. While in this mode characters from the mosaic set are displayed in continuous mode, i.e. the six mosaic elements composing each mosaic character completely span their normal element areas.
FLC	FLASH CURSOR	This control character turns on the cursor display and causes it to flash intermittently and may enable user input and user activation of linked macros.
STC	STEADY CURSOR	This control character turns on the cursor display, which remains constantly visible and may enable user input and user activation of linked macros.

Acronym	Name	Description
COF	CURSOR OFF	This control character causes the cursor to be made invisible. The cursor still functions and moves as usual; it is just not visible while in this mode.
BSTO	BLINK STOP	This control character turns off any currently active blink processes utilizing the drawing colour as the blink-from colour.
UNP	UNPROTECT	Unprotected fields are rectangular areas on the display into which the user may enter or edit data for possible subsequent transmission. By default, the entire unit screen is protected; i.e. it is not possible for the user to enter or alter data that displays on the unit screen. The UNPROTECT control character causes the active field to be made unprotected and the user may subsequently enter or locally edit data within that field. Any number of unprotected fields may be defined by defining an active field via a FIELD command and then issuing the UNPROTECT control character. Should an UNPROTECT result in unprotecting a field that partially or wholly lies within an already unprotected field, the already unprotected field is made protected (without affecting the displayed contents) before the new field is made unprotected. Data that are received and displayed in an unprotected field after it has been unprotected, and when that unprotected field coincides with the active field, can also be subsequently edited by the user. When the user initiates a transmission, the information in the unprotected field(s) is transmitted. The FIELD command containing the coordinates of the origin of the unprotected field as well as its dimensions is transmitted, followed by the contents of the field, and then by the END control character. When more than one unprotected field is transmitted, the order of transmission is from the top to the bottom of the unit screen, using field origin points as a reference. If two or more field origins have the same Y coordinate, the order of transmission is leftmost first.