



INTERNATIONAL TELECOMMUNICATION UNION

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R.140

TELEGRAPHY

TELEGRAPH TRANSMISSION

DEFINITIONS OF ESSENTIAL TECHNICAL TERMS IN THE FIELD OF TELEGRAPH TRANSMISSION

ITU-T Recommendation R.140

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation R.140 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.

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Recommendation R.140

DEFINITIONS OF ESSENTIAL TECHNICAL TERMS IN THE FIELD OF TELEGRAPH TRANSMISSION

(Geneva, 1980 amended at Malaga-Torremolinos, 1984
and Melbourne, 1988)

Note – Each term is designated by a number in the original CCITT numbering scheme and additionally by the nearest equivalent number in Chapter 721 of the IEV.

02 SERIES – GENERAL TRANSMISSION PROCESSES

02.081 **hypothetical reference connection (in telegraphy); hypothetical reference circuit** (deprecated)

F: *communication fictive de référence (en télégraphie); circuit fictif de référence* (terme déconseillé)

S: *conexión ficticia de referencia (en telegrafía); circuito ficticio de referencia* (desaconsejado)

Hypothetical connection made up for two terminals in the world telex network, or other telegraph network, corresponding in principle to the most onerous case in order to study the transmission and switching characteristics necessary to ensure satisfactory operation.

721.33.14

02.24 **subtelephone telegraphy**

F: *télégraphie infra-téléphonique*

S: *telegrafía infratelefónica; telegrafía infraacústica*

Telegraphy using a frequency band below that part of the audio range usually employed in telephone transmission.

02.25 **super-telephone telegraphy**

F: *télégraphie supra-téléphonique*

S: *telegrafía supratelefónica; telegrafía supraacústica*

Telegraphy using a frequency band above that part of the audio range usually employed in telephone transmission.

31 SERIES – GENERAL ALPHABETIC TELEGRAPHY

31.01 **code character**

F: *caractère (télégraphique)*

S: *carácter de código*

The set of conventional elements established by the code to enable the transmission of a written character (letter, figure, punctuation sign, arithmetical sign, etc.) or the control of a particular function (spacing, shift, line-feed, carriage return, phase correction, etc.); this set of elements being characterized by the variety, the duration and the relative position of the component elements (or by some of these features).

Note – The French and English terms are not equivalent.

31.011 telegraph signal

F: *signal télégraphique*

S: *señal telegráfica*

A signal representing all or part of one or more telegraph messages.

721.31.03

31.02 signal element

F: *élément de signal*

S: *elemento de señal*

Each of the parts constituting a signal and distinguished from the others by one or more characteristics such as its nature, magnitude, duration and relative position.

721.21.06

31.021 transition

F: *transition*

S: *transición*

A transient phenomenon separating two successive signal elements having different significant conditions.

721.21.28

31.022 change-over

F: *mutation*

S: *cambio*

A change from one significant condition to another.

721.21.27

31.023 character signal

F: *signal de caractère*

S: *señal de carácter*

A set of signal elements representing a character.

721.22.10

31.024 character format

F: *format de caractère*

S: *formato de carácter*

A general description of a character signal, indicating for example the number of unit elements it contains.

31.025 character length

Number of unit intervals contained in a character signal.

31.05 start signal

F: *signal de départ*

S: *señal de arranque*

In start-stop transmission, a signal preceding each group of signal elements which prepares the receiving device for the reception of the elements of the group.

721.22.15

31.051 start element

F: élément de départ

S: elemento de arranque

A start signal limited to one signal element generally having the duration of a unit interval.

721.22.16

31.06 stop signal

F: signal d'arrêt

S: señal de parada

In start-stop transmission, a signal following each group of signal elements which prepares the receiving device for the reception of the subsequent start signal, or brings the device to rest.

721.22.17

31.061 stop element

F: élément d'arrêt

S: elemento de parada

A stop signal limited to one signal element having any duration equal to or greater than a specified minimum value.

721.22.18

31.07 telegraph code

F: code télégraphique

S: código telegráfico

A system of rules and conventions according to which a succession of significant conditions representing a message should be formed and translated in alphabetic telegraphy.

721.31.05

31.08 telegraph alphabet

F: alphabet télégraphique

S: alfabeto telegráfico

A convention indicating correspondence between a set of characters and a set of groups of elements which represent them.

721.31.07

31.081 n-unit code alphabet

F: alphabet d'un code à n moments

S: alfabeto de código de n unidades

A telegraph alphabet indicating correspondence between a set of characters and a set of n-unit code combinations.

721.31.08

31.082 **international telegraph alphabet No. 1 (ITA1)**

F: alphabet télégraphique international n° 1 (ATI n° 1)

S: alfabeto telegráfico internacional N.º 1 (ATI N.º 1)

A telegraph alphabet using a two-condition five-unit code, used in Baudot synchronous telegraphy.

Note – This alphabet is specified by Article 16 of the Telegraph Regulations, Geneva 1958.

721.31.09

31.083 **international telegraph alphabet No. 2 (ITA2)**

F: alphabet télégraphique international n° 2 (ATI n° 2)

S: alfabeto telegráfico internacional N.º 2 (ATI N.º 2)

An alphabet using a two-condition five-unit code, used in start-stop telegraphy generally for teleprinters.

Note – This alphabet is specified in Recommendation S.1.

721.31.10

31.084 **international telegraph alphabet No. 3 (ITA3)**

F: alphabet télégraphique international n° 3 (ATI n° 3)

S: alfabeto telegráfico internacional N.º 3 (ATI N.º 3)

An alphabet using the two-condition seven-unit constant-ratio code.

Note – This alphabet is defined by CCIR Recommendation 342-2 or CCITT Recommendation S.13 (1972).

721.31.11

31.085 **international telegraph alphabet No. 4 (ITA4)**

F: alphabet télégraphique international n° 4 (ATI n° 4)

S: alfabeto telegráfico internacional N.º 4 (ATI N.º 4)

An alphabet using a two-condition six-unit code for the time division multiplex synchronous telegraphy, comprising in particular two code combinations corresponding to the permanent conditions A and Z, so that the multiplex channel can be operated in a switched network.

Note – This alphabet is defined in Recommendation R.44 (1968).

721.31.12

31.086 **international alphabet No. 5 (IA5)**

F: alphabet international n° 5 (AI n° 5)

S: alfabeto internacional N.º 5 (AI N.º 5)

An alphabet using a two-condition eight-unit code with seven primary information elements and one parity check element, comprising in particular upper and lower case characters, diacritical signs and miscellaneous control functions.

Note – The character coding rules using the seven primary elements are the subject of Recommendations T.50 and V.4.

721.31.13

31.09 **character**

F: caractère (d'écriture)

S: carácter

A member of a set of elements agreed upon to be used for organisation, representation or control of information.

Note – Characters may be letters, digits, punctuation marks or other symbols and, by extension, function controls such as space, shift, carriage return or line-feed contained in a message.

721.22.09

31.10 equal-length code

F: code à moments

S: código de igual longitud

A code, the character signals of which are composed of the same number of unit elements.

721.22.21

31.11 n-unit code

F: code à n moments; code à n éléments (unitaires)

S: código de n unidades; código de n elementos unitarios

Equal-length code according to which the character signals are composed of n unit elements.

721.22.22

31.111 code combination

F: combinaison de code

S: combinación de código

A combination of n-unit elements formed in accordance with an n-unit code which assigns a significant condition to each of the unit elements.

721.22.23

31.112 code element

F: élément de code

S: elemento de código

A unit element constituting part of a character signal from the arrangements of which a code combination is formed.

Note – Figure 1/R.140 shows an example of the use of this term.

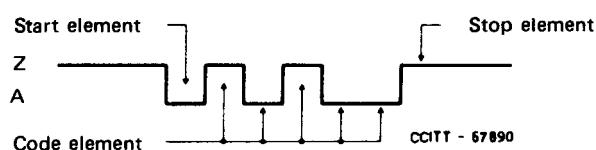


FIGURE 1/R.140

Example of the use of the term code element

31.113 redundant code

F: code redondant

S: código redundante

A code using more signal elements than strictly necessary to represent the contents of the message.

For example:

- 1 A seven-unit code, such as International Telegraph Alphabet No. 3 which uses only character signals made of four unit elements of A condition and three unit elements of Z condition, is redundant.
- 2 A five-unit code, using all the characters of International Telegraph Alphabet No. 2, is not redundant.

721.27.23

31.12 code conversion

F: conversion de code

S: conversión de código

The conversion from a representation of coded information to another representation of the same information in accordance with another code.

Example: Conversion of character signals or groups of character signals in one telegraph code into corresponding signals or groups of signals in another code.

721.21.21

31.14 semateme (not used in English)

F: sématème (à l'émission)

S: sematema

Contiguous succession in time of significant conditions.

721.31.14

31.15 restitution

F: restitution

S: restitución

The formation of a succession in time of significant conditions resulting from a received signal.

721.31.15

31.211 significant condition

F: état significatif

S: estado significativo; condición significativa

Condition of a signal element defining the meaning of that signal element, in accordance with a code.

Note – This condition can be a function of the value of the signal element e.g. amplitude, frequency, phase or a combination of these.

721.21.22

31.22 significant interval

F: intervalle significatif

S: intervalo significativo

Time interval between two consecutive significant instants.

721.21.30

31.23 **theoretical duration of a significant interval**

F: durée théorique d'un intervalle significatif

S: duración teórica de un intervalo significativo

The exact duration prescribed for a significant interval.

Note – In determining this duration, the standardized and, where necessary, the mean modulation rate has to be taken into account.

721.21.31

31.24 **significant instant**

F: instant significatif

S: instante significativo

That instant at which a change-over occurs.

Note – The instant of change from one significant condition to another.

721.21.29

31.25 **restitution delay**

F: délai de restitution [retard à la restitution]

S: retardo de restitución; retardo en la restitución

Transfer time of a significant instant between a transmitter and the corresponding receiver.

31.26 **unit interval**

F: intervalle unitaire

S: intervalo unitario

The shortest theoretical duration of a significant interval.

Note – In telegraphy the unit interval is the same as the minimal interval.

31.27 **modulation rate**

F: rapidité de modulation

S: velocidad de modulación

The reciprocal of the duration of the unit interval or of the shortest theoretical duration of signal element.

721.22.26

31.271 **character rate**

F: rapidité de transfert de caractères

S: velocidad de caracteres

The average number of characters transferred per unit time between two points.

721.22.29

31.272 **binary rate**

F : débit binaire

S : *velocidad binaria*

The aggregate rate in a transmission path expressed in bits per second.

Note 1 – The transmission rate is given by:

$$\sum_{i=1}^{i=m} \frac{1}{T_i} \log_2 n_i$$

where

m is the number of parallel transmission channels,

T_i is the shortest theoretical duration of signal element for the i th channel expressed in seconds, and

n_i the number of significant conditions of the modulation in the i th channel.

For a single channel (serial transmission) it reduces to:

$$\frac{1}{T} \log_2 n;$$

with two-condition modulation ($n = 2$), it is $1 / T$.

For a parallel transmission with equal minimum intervals and equal number of significant conditions on each channel, it is:

$$m \left(\frac{1}{T} \right) \log_2 n;$$

with two-condition modulation it reduces to m/T .

Note 2 – The symbol of the unit of binary rate is bit/s.

721.22.30

31.273 **effective character rate**

F : cadence utile de transfert

S : velocidad efectiva de caracteres

The average number of binary digits, characters or blocks transferred per unit time between two points and accepted as valid at the reception.

721.22.31

31.274 full character rate

In synchronous telegraphy, the maximum number of character signals per unit time achievable in a given synchronous channel.

31.275 **half [quarter] character rate**

Character rate reduced to one half [one quarter] of the full character rate by using half [quarter] of the available time in the full rate channel.

31.28 **baud (Bd)**

F: baud (Bd)

S: baudio (Bd)

The unit of modulation rate; the number of bauds is equal to the reciprocal of the duration in seconds of the shortest signal element or of the unit interval in such signal.

Note – For example, if the duration of the unit interval is 20 ms, the modulation rate is 50 bauds.

721.22.27

31.29 **isochronous**

F: isochrone

S: isócrono

Pertaining to a signal or a time-varying phenomenon characterized by significant instants separated by time intervals having a duration theoretically equal to the duration of a unit interval or to an integral multiple of this duration.

721.22.01

31.291 **anisochronous**

F: anisochrone

S: anisócrono

Pertaining to a signal or a time-varying phenomenon characterized by significant instants separated by time intervals having durations not constrained to be all equal to the duration of a unit interval or to an integral multiple of this duration.

721.22.02

31.30 **start-stop telegraph signal**

F: signal télégraphique arythmique

S: señal telegráfica arrítmica

A telegraph signal containing sequences of unit elements, each sequence being of equal duration and corresponding to a transmitted character and preceded by a start element and followed by a period of condition Z, the duration of which is not fixed.

721.22.03

31.35 **number of significant conditions**

F: valence

S: valencia (número de estados significativos)

Number of different significant conditions that a signal element can assume in accordance with a code.

721.21.23

31.351 **two condition [three condition] [four condition]**

F: bivalent [etc.]

S: bivalente [trivalente] [tetraivalent]; de dos estados, etc.

A qualifying term indicating that the number of significant conditions used is two [three] [four].

721.21.24-26