RECOMMENDATION ITU-R V.607-3*

Terms and symbols for information quantities in telecommunications

(1982-1986-1990-2000)

Scope

This text recommends the use of terms and units for data transmissions.

The ITU Radiocommunication Assembly,

considering

a)   that in telecommunications data transmission is more and more widely used;

b)   that the ISO/IEC (International Organization for Standardization/International Electrotechnical Commission) Joint Technical Committee for information technology (JTC 1) is concerned with international standardisation in the field of data processing;

c)   that IEC Technical Committee No. 25 is standardizing letter symbols for terms and units used in data communication;

d)   that ITU-R texts and documents sometimes contain equivalent designations of the baud or its multiples, for example the megasymbol per second and its symbol MSPS,

recommends

1   that the terms "binary digit" or "bit", "baud", "shannon", "byte" or "octet" or "8-bit byte" and "*n*-bit byte" should be used with the definitions appearing in Annex 1, which are extracted from the International Electrotechnical Vocabulary (IEV) or from the vocabulary established by JTC 1, and that other terms should not be used for the same concept;

2   that the term "bit" is synonymous with "binary digit" and is also used as the letter symbol for this unit; the term being an abbreviation of the English term "binary digit" and being adopted also in French and Spanish; for multiples of this unit and for derived units letter symbols such as kbit, Mbit, kbit/s should be used;

3   that the unit "baud" should have as its letter symbol Bd with possible multiples such as kBd and MBd;

4   that the unit "shannon" should have as its letter symbol Sh;

5   that the term "byte" or "octet", used as a unit, should have as its letter symbol "B" or "o"; for multiples of this unit letter symbols such as kB or MB should be used.

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*   This Recommendation was updated in 2005 for editorial reasons only.

Annex 1

binary digit, bit; *élément binaire, bit; dígito binario, bit*

A member of a set of two elements commonly used to represent information.

NOTE – In the interest of clarity, it is recommended that the term "bit" shall not be used in two-condition start-stop modulation instead of "unit-element".

binary digit rate, bit rate; *débit binaire; velocidad binaria*

The number of binary elements transferred in a time interval divided by that time.

NOTE – The binary digit rate is expressed in bits per second (bit/s) and multiples of this unit.

baud (Bd); *baud (Bd); baudio (Bd)*

The unit of modulation rate in telegraphy and data communication or the unit of line digit rate in digital transmission; when expressed in terms of this unit, the modulation rate or line digit rate equals the reciprocal of the duration in seconds of the shortest signal element or of the unit interval in a digital signal composed of signal elements of constant duration.

Example: If the duration of the unit interval is 20 ms, the modulation rate is 50 Bd.

shannon (Sh); *shannon (Sh); shannon (Sh)*

A unit of logarithmic measure of information equal to the decision content of a set of two mutually exclusive events expressed as a logarithm to base two.

Example: The decision content of a character set of 8 characters equals 3 Sh ($\log_2 8 = 3$).

octet, 8-bit byte; *octet; octeto, byte*

An ordered set group of 8 binary digits operated upon as an entity.

***n*-bit byte;** *multiplet, n-uplet; multibit, n-bit*

An ordered set of a specified number of binary digits operated upon as an entity.

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