



INTERNATIONAL TELECOMMUNICATION UNION

**ITU-T**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

**A.20**

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SERIES A: RECOMMENDATIONS ON THE  
ORGANIZATION OF THE WORK OF THE ITU  
TELECOMMUNICATION STANDARDIZATION SECTOR

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**COLLABORATION WITH OTHER  
INTERNATIONAL ORGANIZATIONS OVER DATA  
TRANSMISSION**

ITU-T Recommendation A.20

(Previously CCITT Recommendation)

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## Recommendation A.20

### COLLABORATION WITH OTHER INTERNATIONAL ORGANIZATIONS OVER DATA TRANSMISSION

(Geneva, 1964; Mar del Plata, 1968; Geneva, 1972, 1976 and 1980;  
Malaga-Torremolinos, 1984; Helsinki, 1993)

The WTSC,

*considering*

(a) that, according to Article 1 of the agreement between the United Nations and the International Telecommunication Union, the United Nations recognizes the International Telecommunication Union as the specialized agency responsible for taking such action as may be appropriate under its basic instrument for the accomplishment of the purposes set forth therein;

(b) that Article 4 of the *International Telecommunication Convention* (Nairobi, 1982) states that the purposes of the Union are:

- “a) to maintain and extend international cooperation between all Members of the Union for the improvement and rational use of telecommunications of all kinds, as well as to promote and to offer technical assistance to developing countries in the field of telecommunications;
- b) to promote the development of technical facilities and their most efficient operation with a view to improving the efficiency of telecommunication services, increasing their usefulness and making them, so far as possible, generally available to the public;
- c) to harmonize the actions of nations in the attainment of those ends”;

(c) that Article 40 of the Convention (Nairobi, 1982) states that, in furtherance of complete international coordination on matters affecting telecommunication, the Union shall cooperate with international organizations having related interests and activities;

(d) that in the study of data transmission the ITU-T has to collaborate with the organizations dealing with data processing and office equipment and particularly the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC);

(e) that this collaboration has to be organized in a manner that will avoid duplication of work and decisions that would be contrary to the principles set out above;

*unanimously declares the view*

that international standards for data transmission should be established with the following considerations in mind:

(1) Clearly it will be the responsibility of the ITU-T to lay down standards for *transmission channels*, i.e. aspects of data transmission which require a knowledge of telecommunication networks or affect performance of these networks.

(2) The standardization of signal conversion terminal equipment (modems) is the province of the ITU-T; the standardization of the junction (interface) between modem and the data terminal equipment is a matter of agreement between the ITU-T and the ISO or the IEC.

(3) Devices designed to detect and (or) correct errors must take account of:

- the error rate tolerable to the user;
- the line transmission conditions;
- the code, which has to meet the exigencies of the data alphabet and the requirements of error control (this must be such as to give an output satisfactory to the user) together with the requisite signalling (synchronism, repetition signals, etc.).

Standardization here may not come wholly within the ITU-T's province, but the ITU-T has very considerable interests at stake.

(4) The alphabet (definition 52.02 in the *List of definitions*) is a "table of correspondence between an agreed set of characters and the signals which represent them".

The ITU-T and the ISO reached agreement on an alphabet for general (but not exclusive) use for data and message transmission and have standardized a common alphabet which is known as International Alphabet No. 5 (ITU-T Recommendation T.50) (ISO/646-1983: seven-bit coded character sets for information processing interchange).

Complementary study of some control characters of the alphabet should be effected in cooperation with each other.

(5) Coding (definition 52.02 in the *List of definitions*) is "a system of rules and conventions according to which the telegraph signals forming a message or the data signals forming a block should be formed, transmitted, received and processed". Hence, it consists of a transformation of the format of the signals in the alphabet for taking account of synchronous methods, and introduction of redundancy in accordance with the error control system. This is not a field in which the ITU-T alone may be able to decide; however, no decision should be taken without reference to the Committee, because of the possible restrictions which transmission and switching peculiarities may impose on coding.

When the general switched network is used (telephone or telex) and when the error-control devices are subject to restrictions (switching signals – reserved sequences), it is the ITU-T which is in fact responsible for any necessary standardization in conjunction with other bodies.

(6) The limits to be observed for transmission performance on the transmission path (modem included) fall within the competence of the ITU-T; the limits for the transmission performance of the sending equipment and the margin of terminal data equipment (depending on the terminal apparatus and the transmission path limits) should be fixed by agreement between the ISO and the ITU-T.

(7) In all instances, the ITU-T alone can lay down manual and automatic operating procedures for the setting-up, holding and clearing of calls for data communications when the general switched networks are used, including type and form of signals to be interchanged at the interface between data terminal equipment and data circuit-terminating equipment.

(8) When a public data network is involved, the ITU-T has the responsibility to provide the Recommendations which apply. Where these Recommendations have an impact on the basic design and features of data processing systems and office equipment (normally DTE), they shall be the subject of consultation between ITU-T and ISO and in some cases a mutual agreement may be desirable. Likewise when the ISO is developing or changing standards that may affect compatibility with the public data network there shall be consultation with the ITU-T.



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