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ALPHABETICAL TELEGRAPH TERMINAL EQUIPMENT

INTEX TERMINALS – REQUIREMENTS TO EFFECT INTERWORKING WITH THE INTERNATIONAL TELEX SERVICE

ITU-T Recommendation S.34

(Previously "CCITT Recommendation")

FOREWORD

The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the International Telecommunication Union. The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, established the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

ITU-T Recommendation S.34 was prepared by the ITU-T Study Group IX (1988-1993) and was approved by the WTSC (Helsinki, March 1-12, 1993).

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NOTES

1 As a consequence of a reform process within the International Telecommunication Union (ITU), the CCITT ceased to exist as of 28 February 1993. In its place, the ITU Telecommunication Standardization Sector (ITU-T) was created as of 1 March 1993. Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.

In order not to delay publication of this Recommendation, no change has been made in the text to references containing the acronyms "CCITT, CCIR or IFRB" or their associated entities such as Plenary Assembly, Secretariat, etc. Future editions of this Recommendation will contain the proper terminology related to the new ITU structure.

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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INTEX TERMINALS – REQUIREMENTS TO EFFECT INTERWORKING WITH THE INTERNATIONAL TELEX SERVICE

(Helsinki, 1993)

The CCITT,

considering

(a) that new networks are being introduced based upon stored program control techniques;

(b) that these networks as well as being able to carry the international telex service, can also carry the Intex service using alphabets other than International Telegraph Alphabet No. 2 and that interworking between these services is essential;

(c) that the Intex service requires the establishment of new types of signalling, and that these signalling types shall permit interworking between Intex terminals, between telex terminals and Intex terminals, and between telex terminals and terminals capable of operating both telex and Intex dual service terminals;

(d) that Recommendation S.33 defines the alphabet and presentation characteristics for the Intex service;

(e) that Recommendation U.210 defines the network interworking requirements between the international telex service and the Intex service;

(f) that Recommendation S.35 defines the coding of answerbacks for the Intex service;

(g) that Recommendation F.150 defines the operational and service requirements of the Intex service;

(h) that Recommendation F.82 defines the operational and service requirements for interworking between the Intex service and the international telex service;

(i) that a prompt response to the WRU/ENQ request is required.

NOTE – The development in the future of services similar to Intex may occur. It may be possible that some of the provisions of this Recommendation should be applied to such services.

unanimously declares the view

When interworking with the international telex service Intex terminals must include the operating features contained in either Clause 1 or Clause 2 as applicable to the type of network to which the terminal is connected in order to ensure that there is no impact on the existing international telex service.

Clause 1 details the requirements for interworking with the international telex service applicable to terminals connected to networks which are able to perform speed and code conversion (Type 1 networks as described in Recommendation U.210).

Clause 2 details the requirements for interworking with the international telex service applicable to terminals connected to networks which dynamically adjust the speed and code of circuits involved in a call (Type 2 networks as described in Recommendation U.210).

The Intex terminal shall ensure that both parties to the call have identical records on calls to subscribers of the international telex services.

For both Type 1 and Type 2 network operation, the operator shall be informed if a message for transfer to the destination telex terminal, either manually or automatically, contains non-ITA2 characters. The method of informing the operator is not a subject for international standardization.

The Intex operator has the opportunity to remove the non-ITA2 characters from the message for example by replacing characters with a meaningful equivalent to retain the sense of the message, e.g. IA5 character 2/6 (&) ampersand could be replaced with the word “and” and IA5 character 4/0 (@) “commercial at” could be replaced with the word “at”.

In “Telex Interworking Mode” an Intex terminal shall not allow printing enhancements such as bold printing or underlining in the local record and shall display alpha characters as either upper or lower case but not both.

1 Requirements for terminals connected to Type 1 networks

1.1 When a call is established between two customers with the Intex service then, as confirmation, at the start of the call both terminals should receive a Speed Indicator sequence for the network (see Recommendation U.101).

If no Speed Indicator sequence is received within 1.5 seconds from transmission or reception of the called terminal’s answerback then an Intex terminal shall determine that it is connected to a telex terminal and shall immediately print (or display) the “telex service identifier-TLX”, default to “Telex Interworking Mode” and then operate as detailed in the following subclauses.

In general, it is required that the Intex terminal adjusts its character rate, line length and range of characters transmitted in order to ensure that the message presentation is identical at both ends of the call.

1.2 When transmitting to a telex terminal, an Intex terminal shall extend the interval between successive transmitted characters such that the time between the start of each character is not less than 150 milliseconds.

1.3 When transmitting to a telex terminal, an Intex terminal shall not transmit more than 69 printing or spacing characters between transmissions of new line sequences comprising C/R and L/F. The local record for such transmissions shall also have a line length restricted to 69 characters to ensure that both parties to the call have identical records.

1.4 On calls to and from telex terminals an Intex terminal shall halt transmission if an IA5 character 1/3 (DC3) is received. Transmission shall only recommence after reception of IA5 character 1/1 (DC1).

NOTE – This enables the network to effect flow control with the Intex terminal. Such control may be required from time to time to allow the 50-baud character buffer in the network to catch up, for example, in the event of a large number of F/S and/or L/S changes being required in the text.

If the terminal does not start to transmit again after the network has sent a DC1 character, the network will continue to send such characters at frequent intervals until a response is obtained. This will avoid a call being locked up in the event of a terminal missing the first DC1 character due, for example, to corruption (see Recommendation U.210).

1.5 The IA5 character 0/5 (ENQ) shall be used to request the answerback or, if received, shall cause the answerback to be generated in accordance with Recommendation S.35.

2 Requirements for terminals connected to Type 2 networks

2.1 On calls to/from the international telex service an Intex terminal connected to a Type 2 network should receive a Telex Indicator sequence (see Recommendation U.101).

If a calling Intex terminal receives a Telex Indicator sequence before the called customers answerback it shall determine that the call has been terminated in the international telex network.

Similarly, if a called Intex terminal receives a Telex Indicator sequence before a WRU signal at the start of a call it shall determine that the call originates in the international telex network.

In either event the Intex terminal shall immediately print (or display) as the “telex service identifier-TLX”, switch to “Telex Interworking Mode” and then operate as detailed in the following subclauses.

If no Telex Indicator sequence is detected by a called or calling Intex terminal, the terminal shall determine that it is connected to another Intex terminal.

In general, it is required that the Intex terminal adjusts its modulation rate, character structure, line length and range of characters transmitted in order to ensure that the message presentation is identical at both ends of the call.

2.2 Within 50 milliseconds of receiving a Telex Indicator sequence the terminal shall be ready to receive, and shall only be able to transmit, ITA2 characters at a nominal modulation rate of 50 bauds.

2.3 When transmitting to a telex terminal, an Intex terminal shall not transmit more than 69 printing or spacing characters between transmissions of new line sequences comprising C/R and L/F. The local record for such transmissions shall also have a line length restricted to 69 characters to ensure that both parties to the call have identical records.