JT-X30
Support of X.21, X.21bis and X.20bis Based Data Terminal Equipments (DTEs) by an ISDN and Interface Specifications

1. Relations with international recommendations

This Standard is based on the ITU-T Recommendation X.30 approved in the WTSC-93 in March 1993.

2. Summary of differences from the international recommendations

2.1 Selection of options from the international recommendations

None

2.2 National specific items

None

2.3 Others

(1) ITU-T Recommendation X.30 describes the test loops for terminal adaptors (TAs) in Chapter 3. However, the test procedures are not clearly specified and it was concluded that they were not implementable. Consequently, this Chapter has been excluded from the scope of standardization and instead its contents have been attached as an Appendix to this Standard.

(2) ITU-T Recommendation X.30 is meant to support DTEs conforming to X.21, X.21bis and X.20bis. However, it was identified that there were a number of further study items for support of V-series interfaces of X.21bis and X.20bis DTEs. It is recommended, therefore, that JT-V110 be applied for conversion of electrical and physical characteristics, rate adaptation, and establishment of end-to-end synchronization at the initiation of the data transfer phase.

2.4 Differences in structure of ITU-T Recommendation and TTC Standard

The contents of Chapter 3 of Recommendation X.30 have been transferred to Appendix III of TTC Standard JT-X30.

3. Others

(1) Identification of options
To satisfy the requirements of the services to be provided by Standard JT-X30, at least one of the options may be chosen for the items as identified below. However, compatibility checking of options adopted is required between the communicating users over the network for each communication based on this Standard.

List of items with selectable options
Symbol E: Essential
O: optional
A: Either or both options selectable

No.	Item (Section No.)	Options	Option Selection	Note
1	Provision of byte timing (2.1.1.2.3)	i. Non-provision of X.21 interchange circuit B	E	
		ii. Provision of X.21 interchange circuit B	O	
2	Network-independent clock (Note 4, Table 2-1)	i. Non-support of network-independent clock	E	
		ii. Support of network-independent clock	O	
3	Determination of synchronous user rate (Note 5, Table 2-1)	i. Use of low layer compatibility information element in JT-Q931 SETUP message	E	
		ii. Determination by intermediate rate and E1, E2 and E3 bits	O	
4	Call collision at X.21 interface (2.1.6.1.1)	i. Prioritize outgoing call	A	
		ii. Prioritize incoming call		
5	Procedure on no answer from network to outgoing SETUP (2.1.6.4)	i. Call release on time-out of T2(X.21)	A	T2=20 sec T303=4 sec
		ii. Call release on time-out of T303(JT-Q931)		
6	Use of bit X for 48kb/s X.1 user rate in national network (Note in 2.2.1)	i. Bit X is fixed to 1	A	
		ii. Bit X is used for other purposes		
7	Initiation of data transfer on non-receipt of alignment pattern (2.3.4.1)	i. On timeout of $\ominus$x and $\ominus$y	A	Provisional values for 64kb/s $\ominus$x=1sec $\ominus$y=2sec
		ii. Before timeout of $\ominus$x and $\ominus$y		
8	Flow control (2.4.2)	i. Non-provision of flow control	E	
		ii. Provision of flow control	O	

(2) Items for further study

List of Items for Further Study

No.	Item (Section No.)	Contents
1	Interworking (1.3)	Half-duplex operation of X.21bis
2	Protocol mapping (2.1.2.2)	Protocol mapping between X.21bis/JT-Q931
3	Call collision (2.1.6.1)	Procedure on call collision at X.21bis or X.20bis interface
4	Identification of user rate (2.3.1)	Procedure to identify the user rate of 64kb/s for universal
5	Alarm indication signal (2.3.1)	Relation between alarm indication signal (AIS) and D-channel signalling
6	Ready-for-data compatibility (2.3.4)	Values of timer Θx (provisionally 1 sec) and Θy (provisionally 2 sec)
7	Extended address procedure of X.21 (Fig. A-2/JT-X30)	Provision of extended address of X.21

(3) Relation between this Standard and JT-V110

As described in 2.3 above, it is recommended that JT-V110 be used for support of DTEs based on X.21bis and X.20bis. Further study is still required on the half-duplex operation and mapping of interconnection circuits for interworking between a TA based on JT-X30 attached with a X.21bis or X.20bis DTE and a TA based on JT-V110 attached with a V-series DTE.

(4) Indication of this Standard in call control messages on D-channel

A supplement to JT-Q931 (Clarification on the application of layer 3) describes how to use this Standard in the information elements (Bearer Capability/Low Layer Compatibility) as specified in JT-Q931.

(5) Recommendations and Standards to be referred to

(i)TTC Standards　　　　　　　: JT-I430, JT-Q921, JT-Q931, JT-I460, JT-V110

(ii)ITU-T Recommendations : X.20bis, X.21, X.21bis, X.1, X.24, V.14, V.24