

JT-X25

Interface between data terminal equipment(DTE) and data circuit- terminating equipment(DCE) for terminals operating in the packet mode and connected to public data networks by dedicated circuit

< References >

1. Relations with international Standards

- (1) This TTC Standard is based on ITU-T Recommendation X.25, which was approved in World Telecommunication Standardization Conference(WTSC) in 1993 March, with the errata and modifications of Recommendation X.25 described in Temporary Document 2035rev : Report on Question 7/SG7;APPENDIX 2 & APPENDIX 3, GENEVA, 22 June-2 July 1993.
- (2) This Standard uses terminologies "ROA" and "ITU-T" ,which were replaced from "RPOA" and "CCITT" respectively approved in World Telecommunication Standardization Conference(WTSC) in 1993 March.
- (3) This TTC Standard is revised from the 2nd edition of JT-X25 and the first edition of JT-X25(88), and they are similar in their protocol aspects.
The comparison among this TTC Standard, JT-X25 and JT-X25(88) is attached as an appendix.

2. Considerations to the above International Recommendations.

(1) Data link layer DTE/DCE interface

- This standard does not specify the LAP based on ITU-T (formerly CCITT) Recommendation X.25 (1988 : blue book version) because the LAPB is the preferred international method in International Standardization.
- In considering of the meeting report of the question 7/SG7, GENEVA, 22 June-2 July 1993, this TTC Standard specifies an active condition state for data link layer described in § 2.2.6.1 of Recommendation X.25(1993) with the following modification.

"The DCE incoming or outgoing channel is defined to be in an active condition when it is receiving or transmitting, respectively, a frame, an abortion sequence, interframe time fill, or (for start/stop transmission only) intraframe time fill."

(2) Packet layer DTE/DCE interface

- This standard specifies that the data fields of packets must contain an integral number of octets because most data communication networks require it.
- This standard makes use of the term "MOUKAN(in Japanese)" containing the interworking between national networks and also international networks.

(3) Others

- This standard does not specify the range of logical channels used for virtual calls and permanent virtual circuit described in Annex A of Recommendation X.25 because of the consideration for the existing data terminals and networks . The contents of the Annex A are described in the Appendix VII in this standard.
- This standard does not specify the items designated for further study (or FS) in Recommendation X.25, because most of them are dependent on future trends and movements in International Standardization.
- This standard specifies the text in each chapter and Annex. Appendixes are not the scope of this standard but they are attached as complementary explanation or information for the specifications in TTC Standard JT-X25.

3. Others

(1) References

TTC Standards	: JT-X31, JT-X32, JT-Q931
ITU-T (formerly CCITT) Recommendations	: X.1, X.2, X.10, X.21, X.21bis, X.25, X.29, X.31, X.32, X. 96, X.121, X.122, X.135, X.138, X.150, X.213, X.244, X.301 , E.164, E.165, E .166, T.50
ISO/IEC Standards	: ISO/IEC8208, ISO/IEC8348, ISO/IEC8802
Other	: RFC1166

(2) Structure of this standard

TTC Standard JT-X25 ITU-T Recommendation X.25(1993)

§ 1	§ 1
§ § 1.1 through 1.4	§ § 1.1 through 1.4
§ 2	§ 2
§ § 2.1 through 2.5	§ § 2.1 through 2.5
§ 3	§ 3
§ § 3.1 through 3.4	§ § 3.1 through 3.4
§ 4	§ 4
§ § 4.1 through 4.6	§ § 4.1 through 4.6
§ 5	§ 5
§ § 5.1 through 5.7	§ § 5.1 through 5.7
§ 6	§ 6
§ § 6.1 through 6.29	§ § 6.1 through 6.29
§ 7	§ 7
§ § 7.1 through 7.3	§ § 7.1 through 7.3
-----	Annex A (not included in JT-X25)
Annex A	Annex B
Annex B	Annex C
Annex C	Annex D
Annex D	Annex E
Annex E	Annex F
Annex F	Annex G
Annex G	Annex H
Appendix I	Appendix I
Appendix II	Appendix II
Appendix III	Appendix III
Appendix IV	Appendix IV
Appendix V	Appendix V
Appendix VI	Appendix VI
Appendix VII	Annex A(attached to JT-X25)

Annex A
(Summary of JT-X25)
TABLE OF CONTENTS

- 1 DTE/DCE interface characteristics (physical layer)
 - 1.1 X.21 interface
 - 1.2 X.21 bis interface
 - 1.3 V-Series interface
 - 1.4 X.31 interface
- 2 Link access procedure across the DTE/DCE interface
 - 2.1 Scope and field of application
 - 2.2 Framing aspects
 - 2.3 LAPB elements of procedure
 - 2.4 Description of the LAPB procedure
 - 2.5 Multilink procedure(MLP)
- 3 Description of the packet layer DTE/DCE interface
 - 3.1 Logical channels
 - 3.2 Basic structure of packets
 - 3.3 Procedure for restart
 - 3.4 Error handling
- 4 Procedure for virtual circuit services
 - 4.1 Procedures for virtual call services
 - 4.2 Procedures for permanent virtual circuit service
 - 4.3 Procedures for data and interrupt transfer
 - 4.4 Procedures for flow control
 - 4.5 Effects of clear, reset and restart procedures on the transfer of packets
 - 4.6 Effects of the physical and the data link layer on the packet layer
- 5 Packet formats
 - 5.1 General
 - 5.2 Call set-up and clearing packets
 - 5.3 Data and interrupt packets
 - 5.4 Flow control and reset packets
 - 5.5 Restart packets
 - 5.6 Diagnostic packet
 - 5.7 Packets required for optional user facilities
- 6 Procedures for optional user facilities (packet layer)
 - 6.1 On-line facility registration
 - 6.2 Extended packet sequence numbering
 - 6.3 D bit modification
 - 6.4 Packet retransmission
 - 6.5 Incoming calls barred
 - 6.6 Outgoing calls barred
 - 6.7 One-way logical channel outgoing
 - 6.8 One-way logical channel incoming
 - 6.9 Non-standard default packet sizes
 - 6.10 Non-standard default window size
 - 6.11 Default throughput classes assignment

- 6.12 Flow control parameter negotiation
- 6.13 Throughput class negotiation related facilities
- 6.14 Closed user group related facilities
- 6.15 Bilateral closed user group related facilities
- 6.16 Fast select
- 6.17 Fast select acceptance
- 6.18 Reverse charging
- 6.19 Reverse charging acceptance
- 6.20 Local charging prevention
- 6.21 Network user identification(NUI) related facilities
- 6.22 Charging information
- 6.23 ROA related facilities
- 6.24 Hunt group
- 6.25 Called redirection and call deflection related facilities
- 6.26 Called line address modified notification
- 6.27 Transit delay selection and indication
- 6.28 TOA/NPI address subscription
- 6.29 Alternative address related facilities

7 Formats for facility field and registration fields

- 7.1 General
- 7.2 Coding of facility field in call set-up and clearing packets
- 7.3 Coding of the registration field used for virtual calls and permanent virtual circuits

Annex A - Packet layer DTE/DCE interface state diagrams

Annex B - Actions taken by the DCE on receipt of packets in a given state of the packet layer DTE/DCE interface as perceived by the DCE

Annex C - Packet layer DCE time-outs and DTE time-limits

Annex D - Coding of X.25 network generated diagnostic fields in clear, reset and restart indication, registration confirmation, and diagnostic packets

Annex E - Applicability of the on-line registration facility to other facilities

Annex F - ITU-T-specified DTE facilities to support the OSI Network service and other purposes

Annex G - Subscription-time optional user facilities that may be associated with a network user identifier in conjunction with the NUI override facility

Appendix I - Examples of data link layer transmitted bit patterns by the DCE and the DCE

Appendix II - An explanation of how the values for N1 in § 2.4.8.5 are derived

Appendix III - Examples of multilink resetting procedures

Appendix IV - Information on address in call set-up and clearing packets

Appendix V - Guidelines for transmission over channels with long round trip delay and/or transmission rates higher than 64 000 bit/s

Appendix VI - Format for NUI parameter fields

Appendix VII - Range of logical channels used for virtual calls and permanent virtual circuits

Appendix VIII - The comparison among JT-X25 (3rd edition), JT-X25(88) and JT-X25(2nd edition)

Appendix IX - List of technical terms

Appendix X - Abbreviation

ANNEX B
(to summary of JT-X25)

ABBREVIATION FOR NAMES OF PACKETS

This Standard makes use of the following abbreviations for the names of packets.

Abbreviation	Name of Packets
CR	Call Request
CN	Incoming Call
CA	Call Accepted
CC	Call Connected
CQ	Clear Request
CI	Clear Indication
CF	Clear Confirmation
DT	Data
IT	Interrupt
IF	Interrupt Confirmation
RR	Receive Ready
RNR	Receive Not Ready
REJ	Reject
RQ	Reset Request
RI	Reset Indication
RF	Reset Confirmation
SQ	Restart Request
SI	Restart Indication
SF	Restart Confirmation
DG	Diagnostic
GQ	Registration Request
GF	Registration Confirmation