

# JT-Q704 Message Transfer Part (MTP) , Signaling Network Functions

## 1. Relations with international standards

This Standard conforms to Recommendation Q.704, recommended at the CCITT plenary meeting in 1988.

Service Indicator codes for “Broadband ISDN User Part” and “Satellite ISDN User Part” conforms to the Recommendation Q.704 approved at the ITU-T SG11 meeting in 1996. Service Indicator code for “Bearer Independent Call Control” conforms to the Implementer’s Guide for Q.704 approved at the ITU-T SG11 meeting in 2000.

## 2. Summary of departures from ITU-T Recommendations

### 2.1 Optional items

Table 1 indicates the optional items and their reasons.

### 2.2 National items

Table 2 indicates the national items and their reasons.

### 2.3 Others

- (1) This Standard contains nothing to precede the ITU-T Recommendation.
- (2) Table 3 indicates the deleted items and their reasons from above ITU-T Recommendation. The deleted items from the ITU-T Recommendation are indicated by the symbol "#" on the right sides of chapter's No or paragraph No.
- (3) Table 4 indicates the added items from the ITU-T Recommendation and their reasons.
- (4) Table 5 indicates the modified items from the ITU-T Recommendation and their reasons.

### 2.4 Comparison of chapter composition between the ITU-T Recommendation and this standard.

There is no difference in chapter composition with above the ITU-T Recommendation.

## 3. The history of revised versions

Versions	date	Outline
1	April28,1987	Established
1.1	July15,1987	Following pages are corrected for the reason of the state transition diagrams according to the SDL being not compatible with the contents of the text. P.145, P.149 ~ 151, P.155 ~ 156
2	Nov.28,1990	To the former standard (Version 1.1), the specifications concerned with quasi-associated mode of signalling are added. According to revision of the ITU-T Recommendation Q.704 in 1988, necessary specifications are revised in the text.
3	April 28,1992	Following to SCCP standardization, a corresponding code of service indicator is added.
4	May 30,2002	Addition new codes to Service Indicator in order to coordinate other TTC standards.

#### **4. Others**

None

T a b l e 1 O p t i o n a l I t e m s

ITU-T No.		Item	Reason
chapter	paragraph		
3	3.8.2 3.8.4	Congestion status of signalling link and congestion status of signalling route set	Signalling network with multiple congestion thresholds is standardized.
11	11.2.3.1 (i)(ii)	Signalling route set congestion (national option with congestion priority)	Signalling route set congestion specified in paragraph 11.2.4 of the original ITU-T text is standardized in paragraph 11.2.3.1 (I) (ii) according to the above mentioned reason.
13	13.7	Among the optional facilities (TFC with congestion priority, TFC without congestion priority, and TFC in the international signalling network) TFC with congestion priority is chosen as a standard	Signalling network with multiple congestion thresholds standardized.

T a b l e 2 N a t i o n a l I t e m s

ITU-T No.		Item	Reason
chapter	paragraph		
2	2.2	Bit length of routing label is changed from 32 bits to 36 bits	Bit length is changed in accordance with the TTC standard Version 1.1.
15	15.2 15.4.2 15.5.2 15.6.1 15.6.2 15.7.2 15.8.2 15.10.2 15.16.1 15.16.2	Bit length of label structure is changed from 32 bits to 48 bits	

Table 3 Deleted Items  
from the ITU-T Recommendation (1 / 6)

ITU-T No.		Item	Reason
chapter	paragraph		
1	1.3.5	Description about transfer-restricted	Not standardized the transfer-restricted.
2	2.2.4	Description about TUP	Not standardized TUP in the national network.
	2.2.6	Description about label structures for applying the national network	Not standardized these items.
	2.3.1	Description about the network indicator	
		Description about the service indicator used for routing purposes	
	2.3.5.1	Description about the congestion priorities in the international signalling network	
	2.4.2	Description about user part unavailability	Not specified the remove procedure in the ITU-T Recommendation.
	2.4.3	Description about the network indicator	Not standardized handling the international signalling traffic.
3	3.1.3a)	Description about signalling point restart and management inhibiting	Not standardized the signalling point restart, management inhibiting and automatic allocation of signalling data links.
	b)	Description about automatic allocation of signalling data links	
	c)	Description about transfer-restricted procedure	It is available to substitute the transfer-controlled procedure.
	3.2.1	Description about signalling blocked and inhibited	Not standardized the signalling blocked and inhibited.
	3.2.6 ~ 3.2.9	Description about signalling blocked and inhibited	
	3.3.1.3	Description about transfer-restricted	Not standardized the transfer-restricted.
	3.3.2 ~ 3.3.4	Description about signalling link management	Not standardized the automatic allocation of signalling data links.
	3.3.5 ~ 3.3.8	Descriptions about signalling blocked and inhibited	Not standardized the signalling blocked and inhibited.
	3.4.3	Description about signalling route restricted	Not standardized the signalling route restricted.
	3.6 3.7	Description about status of signalling points	Not standardized the signalling point restart.

Table 3 Deleted Items  
from the ITU-T Recommendation (2 / 6)

ITU-T No.		Item	Reason
chapter	paragraph		
4	4.1.2	Descriptions about blocking and unblocking	Not standardized the processor outage.
		Descriptions about inhibiting	Not standardized the management inhibiting.
		Description concerning signalling route restriction	Not standardized the transfer-restricted procedure.
		Description concerning signalling point availability	Not standardized the signalling point restart.
	4.2.1	Description concerning combined link sets	Not considered load sharing between link sets in quasi-associated mode of signalling.
	4.3.2	(a) Description about combined link sets	
	4.3.3	Description about combined link sets	
	4.4.3	Description about combined link sets	
4.7	All descriptions about signalling route restriction	Not standardized the transfer-restricted procedure.	
4.8	All descriptions about signalling point availability	Not standardized the signalling point restart.	
5	5.6.2	ii ) All descriptions about process oroutage	Not standardized the processor outage.
		iii) All descriptions about management inhibiting	Not standardized the management inhibiting.
6	6.1.2	Descriptions about uninhibited and unblocked	
	6.2.1	Descriptions about uninhibited and unblocked	
	6.2.3	iii) Description concerning thetransfer-restricted procedure	Not standardized the transfer-restricted procedure.
	6.2.4	All descriptions about transfer-restricted procedure	
	6.4.2	Description concerning signalling point restart	Not standardized the signalling point restart.
	6.5.3	Description concerning timer T <sub>s</sub>	Conform to the TTC standard version 1.1.

Table 3 Deleted Items  
from the ITU-T Recommendation (3 / 6)

ITU-T No.		Item	Reason
chapter	paragraph		
8	8.1.2	(b) All descriptions about the transfer-restricted procedure.	Not standardized the transfer-restricted procedure.
	8.2.1	Description concerning the transfer-restricted procedure	
		(b) All descriptions about the transfer-restricted procedure	
	8.2.2	Description concerning the transfer-restricted procedure	
	8.2.3	Description concerning the transfer-restricted procedure	Not standardized the transfer-restricted procedure.
9		All descriptions in this chapter	Not standardized the signalling point restart.
10		All descriptions in this chapter	Not standardized the management inhibiting.
11	11.1	Description about MTP user flow control	In accordance with deletion of the paragraph 11.2.7.
	11.2.4	All descriptions about signalling route set congestion(National option with congestion priorities)	Signalling route set congestion is specified in the paragraphs 11.2.3.1 and 11.2.3.2.
	11.2.5	All descriptions about signalling route set congestion(National option without congestion priorities)	In accordance with deletion of the paragraph 3.8.2.3 defined about S+1(1<=S<=3) levels of signalling link congestion status.
	11.2.6	All descriptions about signalling point/signalling transfer point congestion	It is not proper to define the specification about implementation dependent about as the TTC standard.
	11.2.7	All descriptions about MTP user flow control	UPU is useful to stop sending unavailable signalling information for the User Part, but it is not described how to release UPU status.
	11.2.8	All descriptions about User Part congestion	User Part congestion procedures in the MTP are not yet defined in the ITU-T recommendation.

Table 3 Deleted Items  
from the ITU-T Recommendation (4 / 6)

ITU-T No.		Item	Reason	
chapter	paragraph			
12	12.1.1	Descriptions about automatic means for allocation and reconfiguration of signalling equipments	Not required due to implementation dependency.	
	12.1.2	Descriptions about automatic means for allocation and reconfiguration of signalling equipments		
	12.1.3	Descriptions about automatic allocation and reconfiguration of signalling systems		
	12.2.1.2	Description about the signalling link test	The signalling test is not used.	
		Description about timer T <sub>17</sub>		
	12.2.2	Description about the signalling link test		
		Description about timer T <sub>17</sub>		
	12.2.4	Descriptions about distinction between the link set normal activation and emergency restart		Link set activation function is not distinguished between normal and emergency.
	12.2.4.1	The division of the paragraph 12.2.4		
		Description about the link set normal activation application condition		
	12.2.4.2	All descriptions about link set emergency restart		
	12.2.4.3	All descriptions about timer value		

Table 3 Deleted Items  
from the ITU-T Recommendation (5 / 6)

ITU-T No.		Item	Reason
chapter	paragraph		
12	12.3	All descriptions about signalling link management procedures based on automatic allocation of signalling terminals	Not required due to implementation dependency.
	12.4	All descriptions about signalling link management procedures based on automatic allocation of signalling data links and signalling terminals	
	12.5	All descriptions about automatic allocation of signalling terminals	
	12.6	All descriptions about automatic allocation of signalling data links	
	12.7	All descriptions about different signalling link management procedures at the both ends of a link set	
13	13.1	Description about the transfer restriction (TFR)	TFR is deleted in accordance with the paragraph 13.4 being deleted.
		Description about the transfer control in the international network(TFC)	Not standardized TFC in the international network.
		Description about the transfer control (TFC) without congestion priority	TFC without congestion priority is not used between different carrier's networks.
	13.2.2	Description about the processor restart	Not standardized the processor restart.
	13.4	Description about the transfer restriction (TFR)	TFR is not necessary to use between different carrier's networks.
	13.5.2 13.5.4	Description about the transfer restriction (TFR)	TFR is deleted in accordance with the paragraph 13.4 being deleted.
	13.6	Description about the transfer control (TFC) in the international network	TFC in the international network and TFC without congestion control are not standardized for the reason of TFC with congestion priority being standardized.
	13.8	Description about the transfer control (TFC) without congestionpriority	



Table 3 Deleted Items  
from the ITU-T Recommendation (6 / 6)

ITU-T No.		Item	Reason	
chapter	paragraph			
13	13.9	Description about the processor restart	Not standardized the processor restart.	
14	14.2.1	Description about the international signalling network	Service indication code of the national signalling network is used.	
		Description about service indication code assignment	Corresponding national standards are not available.	
15	15.3	Specification of code 0110 to 1010 in heading code H0	Not standardized.	
		Table 15-1 messages except COO,COA,CBD,CBA,ECO,ECA, RCT,TFC,TFP,TFA and RST		
	15.9	All descriptions concerning the transfer prohibited message (TFR)		
	15.10.3	All RSR-related codes		
	15.11	All descriptions concerning the management inhibit message		
	15.12	All descriptions concerning the traffic restart allowed message		Not standardized.
	15.13	All descriptions concerning signalling-data -link-connection-order message		
	15.14	All descriptions concerning signalling-data -link-connection acknowledgement message		
	15.17	All descriptions concerning User Part unavailable message description		
16	16.8	Values of timer T <sub>5</sub> , T <sub>7</sub> T <sub>11</sub> ~ T <sub>14</sub> , T <sub>17</sub> ~ T <sub>24</sub>	These timer values are not defined in accordance with the contents of the text in chapter 1 ~ 16.	

Table 4 Added Items  
from the ITU-T Recommendation (1 / 2)

ITU-T No.		Item	Reason
chapter	paragraph		
2	2.2.4	Description about SLS	SLS is changed in accordance with the TTC standard Version 1.1.
11	11.2.3	Description about the signalling network with multiple congestion thresholds defined in the TTC standard, version 1.1, the paragraph 7.2.1.	In accordance with the standardization of the signalling network with multiple congestion thresholds which is defined as the national option in the paragraph 3.8.4.
	11.2.3.2	Description about the procedure to detect the change of the congestion status of a signalling route set	In accordance with an addition of releasing transfer controlled status timer $T_c$ .  Also the description about the signalling route set congestion test in the paragraph 11.2.4 is added in accordance with that the above is standardized as an option.
13	13.2.1	Description about the transfer prohibited (TFP) which can designate one or more signalling points as transfer prohibited destination	By standardizing TFP,TFA and RST messages which can be sent to several accessible destination simultaneously,the number of signals of those messages can be decreased.
	13.3.1	Description about transfer allowed (TFA) which can designate one or more signalling points as transfer allowed destination	
	13.5.1	Description about signalling-route-set-test (RST) which can designate either one or more signal points as tested destination	
	13.7.4	Description about timer $T_c$	To simplify the time out procedure of releasing transfer controlled status by using timer $T_c$ .
	13.7.5	Description about time out procedure of releasing the transfer controlled status using timer $T_c$	
14	14.1	Priority indication	Conform to the TTC standard version 1.1 .
	14.2	14.2(A) Configuration of network management signal priority indication and PRI code assignment	

Table 4 Added Items  
from the ITU-T Recommendation (2 / 2)

ITU-T No.		Item	Reason
chapter	paragraph		
14	14.2	Descriptions about the priorities for signalling network messages	Signals TFP, TFA, RST, TFC, ECO, ECA and RCT are included.
15	15.1.2	Description about undefined signal unit reception	The description is changed to conform to the TCC standard version 1.1.
		Unused bit description	
	15.7.2	Definition of fields for number of DPC and fields for concerning signalling points information	The number of signals for using the broadcast method is decreased.
	15.7.3	15.7.3(A) Description about usage of newly defined field for number of DPC	
		15.7.3(B) Description about concerning signalling points information	
		15.7.3(C) Description about concerning signalling points	
	15.8.2	Definition of fields for number of DPC and concerning signalling points information	
	15.8.3	15.8.3(A) Description about concerning signalling points	
	15.10.2	Definition of for number of DPC and fields for concerning signalling points information	
	15.10.3	15.10.3(A) Description about concerning signalling points	The number of signals for using the broadcast method is decreased.
	15.15.1	Spare : 8 bits and congestion state indication: 2 bits in Figure 15-8	The congestion state indication is specified.
15.15.2	Spare : 8 bits and congestion state indication: 2 bits		
15.15.5	Description about congestion state indication		
16	16.8	Definition of timer T <sub>c</sub>	Timer T <sub>c</sub> is added in accordance with the contents of the text in chapters 13 and 16.

Table 5 Modified Items  
from the ITU-T Recommendation (1 / 2)

ITU-T No.		Item	Reason
chapter	paragraph		
3	3.1.3 c)	Signalling-route-set- congestion-test modified as an optional facility	Standardized time out procedure by using timer T <sub>c</sub> .
	3.2.2	Description about cause of signalling link failure in order to inform standard version 1.1	Due to modification of MTP level 2.
5	5.6.1	Emergency changeover procedure modified as an optional facility	Replaceable by time- controlled changeover procedure.
6	6.3.3	Descriptions concerning signal link selection and changeback code	Clarify description about the TTC standard version 1.1.
	6.4.1	Time-controlled diversion procedure	Not standardized signalling point restart procedure.
11	11.2.3	The title:International signalling network	This paragraph is applied to the national signalling network due to basic function.
13	13.2.2	The transfer prohibition (TFP) with broadcast method modified as an optional facility	Depending on network configurations, TFP and TFA with broadcast method are decided to be used or not to be used.
	13.3.2	The transfer allowed (TFA) with broadcast method modified as an optional facility	
	13.7.5	Signalling-route-set- congestion-test modified as an optional facility. Description about the transfer restriction deleted	Signalling-route-set- congestion-test is described as an optional facility in accordance with the paragraph 13.9 being adopted as an option.
	13.9	Signalling-route-set- congestion-test modified as an optional facility	Time out procedure by using timer T <sub>c</sub> is standardized.
14	14.2	14.2(A) Representation of the bit position in the signal field changed from BA to HG	The description is changed to conform to that of the JT-Q703.
	14.2.2	Description about the sub-service field	The description is changed to conform to the TTC standard version 1.1.
15	15.4.1	Figure 15-2 "Changeover message format"	
	15.5.1	Figure 15-3 "Changeback message format"	
	15.5.2	Changeback code from 8 bits to 3 bits	

Table 5 Modified Items  
from the ITU-T Recommendation (2 / 2)

ITU-T No.		Item	Reason
chapter	paragraph		
15	15.6	Emergency changeover message modified as an optional facility	The emergency changeover procedure is changed to an option.
	15.7.1	Figure 15-5 "Transfer prohibited message format"	Due to consistency with the label format in the TTC standard version 1.1 to make the broadcast method available.
	15.8.1	Figure 15-6 "Transfer allowed message format"	
	15.10.1	Figure 15-7 "Signalling-route-set-test format"	
	15.15.1	Figure 15-8 "Transfer control message format"	The label field is conformed to the TTC standard version 1.1.
	15.15.2	Label length changed to 48 bits and address length of destination point to 16 bits	