INTERNATIONAL TELECOMMUNICATION UNION

ITU-T Q.2725.3

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TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

SERIES Q: SWITCHING AND SIGNALLING

Broadband ISDN – B-ISDN application protocols for the network signalling

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Extensions to the B-ISDN User Part – Modification procedures for sustainable cell rate parameters

ITU-T Recommendation Q.2725.3

Superseded by a more recent version

(Previously CCITT Recommendation)

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ITU-T RECOMMENDATION Q.2725.3

EXTENSIONS TO THE B-ISDN USER PART – MODIFICATION PROCEDURES FOR SUSTAINABLE CELL RATE PARAMETERS

Summary

This Recommendation extends the capabilities of Recommendation Q.2725.2, concerned with Peak Cell Rate (PCR) modification, to allow the modification of Sustainable Cell Rate (SCR) and Maximum Burst Size (MBS). In addition, it allows the modification of PCR, SCR and MBS parameters for a given direction to be incremented or decremented independently.

Source

ITU-T Recommendation Q.2725.3 was prepared by ITU-T Study Group 11 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 12th of September 1997.

FOREWORD

ITU (International Telecommunication Union) is the United Nations Specialized Agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the ITU. 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, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

INTELLECTUAL PROPERTY RIGHTS

The ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. The ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, the ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

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Recommendation Q.2725.3

EXTENSIONS TO THE B-ISDN USER PART – MODIFICATION PROCEDURES FOR SUSTAINABLE CELL RATE PARAMETERS

(Geneva, 1997)

3 Modification procedures extensions for sustainable cell rate parameters

3.1 Overview

3.1.1 Scope

This Recommendation extends the capabilities of Recommendation Q.2725.2, Peak Cell Rate (PCR) modification, to allow the modification of Sustainable Cell Rate (SCR) and Maximum Burst Size (MBS).

– Modification procedure is only allowed during the active phase.

– The actions to be taken at six exchange types are described as:
  - initiating exchange;
  - intermediate national exchange;
  - outgoing international exchange;
  - intermediate international exchange;
  - incoming international exchange;
  - terminating exchange.

– Connection characteristics that may be modified are: Forward PCR (CLP = 0 + 1), Forward PCR (CLP = 0), Forward SCR (CLP = 0 + 1), Forward SCR (CLP = 0), Forward MBS (CLP = 0 + 1), Forward MBS (CLP = 0), Backward PCR (CLP = 0 + 1), Backward PCR (CLP = 0), Backward SCR (CLP = 0 + 1), Backward SCR (CLP = 0), Backward MBS (CLP = 0 + 1), Backward MBS (CLP = 0). The above parameters can be requested to be incremented or decremented independently.

– The request will only be accepted if all requested modifications are accepted.

– The request can be accepted in which one or more requested parameter modification is the same as the present value.

– Neither re-routing nor re-establishment procedures are supported.

– Sequential modification is applicable per connection. Parallel modification is not applicable per connection.

– Transferring of u-plane cells is not disturbed with the modification procedure.

– A connection release procedure takes precedence over the modification procedure of the connection.

– Only the connection owner is allowed to initiate the modification procedures.

– Only parameters specified during the initial connection establishment may be modified (e.g. if the Forward SCR (CLP = 0) parameter was not specified at connection establishment, then it cannot be modified by this procedure). The modification request may be for all or a subset of the parameters specified during call establishment.

– During the modification, the initiating user transmits based on an ATM traffic descriptor for which the transmit traffic parameters are the lesser of the existing transmit traffic parameters and of the requested modified transmit traffic parameters.

– No error procedure is required in the NNI for the case that a MODIFY CONFIRM message is not returned from the access.

3.1.2 References

See Recommendation Q.2725.2, with the following addition:

– ITU-T Recommendation Q.2963.2 (1997), *Digital subscriber Signalling System No. 2 – Connection modification – Modification procedures for sustainable cell rate parameters*.

3.1.3 Abbreviations

See Recommendation Q.2764. This Recommendation also uses:

MBS Maximum Burst Size

SCR Sustainable Cell Rate

3.1.4 Terminology

See Recommendation Q.2725.2.

3.1.5 Specification model

See Recommendation Q.2725.2.

3.1.6 General functions of messages and parameters

See Recommendation Q.2725.2.

3.2 B-ISDN user part messages and parameters

See Recommendation Q.2725.2 with the following modifications:

• The following is added to Table 2-1/Q.2725.2:

Table 3-1/Q.2725.3

Parameter name	Reference (Rec.)	Code
Additional ATM cell rate	1.2.1.1/Q.2723	0101 1010

• The following is added to Table 2-3/Q.2725.2:

Table 3-2/Q.2725.3 – Additional parameter to be included in the modify request

Parameter	Reference (Rec.)	Length (octets)
Additional ATM cell rate	1.2.1.1/Q.2723	9-29

3.3 Call control, application process functions

3.3.1 Primitive interface

See Recommendation Q.2725.2.

3.3.2 Successful modification

See Recommendation Q.2725.2 with the following modifications:

- Replace all occurrences of "when decrease of forward direction bandwidth is requested" with "when the decrease of any forward direction bandwidth parameter is requested".
- Replace all occurrences of "when increase of backward bandwidth is requested" with "when the increase of any backward bandwidth parameter is requested".

3.3.3 Unsuccessful modification

See Recommendation Q.2725.2.

3.3.4 Interworking with CS-1 nodes

See Recommendation Q.2725.2.

3.3.5 Interworking with narrow-band networks

Not applicable.

3.3.6 Error indication primitive

See Recommendation Q.2725.2.

3.3.7 Primitive contents

See Recommendation Q.2725.2 with the following modification:

- Replace Table 2-8/Q.2725.2 with the following:

Table 3-3/Q.2725.3 – Parameters for Modify Request/Indication Primitive

Modify Request/Indication	
Parameter	**Mandatory/Optional**
Message compatibility information	M
ATM cell rate	O (Note 1)
Additional ATM cell rate	O (Note 1)
Notification	O
Exchange type (Note 2)	M
NOTE 1 – Both of these parameters are optional but at least one must be present. NOTE 2 – The exchange type parameter takes the appropriate value from the list in 2.1.1/Q.2725.2. It is passed to the AE so that the protocol can be varied depending on the role that the exchange is performing for this call/connection. Unlike the other parameters it does not relate to a protocol information element. This parameter is only present in the request primitive.	

3.4 Maintenance control, application process functions

See Recommendation Q.2725.2.

3.5 Single Association Control Function (SACF)

See Recommendation Q.2725.2.

3.6 Bearer Connection Control ASE (BCC ASE)

See ITU-T Recommendation Q.2725.2 with the following modification:

- Replace Table 2-17/Q.2725.2 with the following:

Table 3-4/Q.2725.3 – Parameters for Link_Modify Request/Indication Primitive

Message compatibility information
ATM cell rate
Additional ATM cell rate
Notification
Exchange type (Note)
NOTE – The exchange type parameter takes the appropriate value from the list in 2.1.1/Q.2725.2. It is passed to the ASE so that the protocol can be varied depending on the role that the exchange is performing for this call/connection. Unlike the other parameters it does not relate to a protocol information element. This parameter is only present in the request primitive.

3.7 Call Control ASE (CC ASE)

See Recommendation Q.2725.2.

3.8 Maintenance Control ASE (MC ASE)

Clause 9/Q.2764 applies with no changes.

3.9 Unrecognized Information ASE (UI ASE)

Clause 10/Q.2764 applies with no changes.

3.10 Timers in B-ISUP

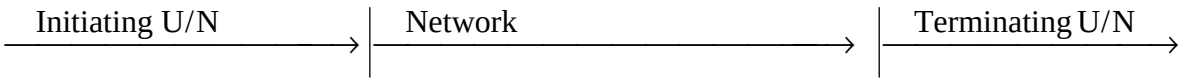
See Recommendation Q.2725.2.

3.11 Mapping tables for interworking with DSS 2

See Recommendation Q.2725.2 with the following modification:

- Replace Table 2-26/Q.2725.2 with the following:

Table 3-5/Q.2725.3 – Mapping of modification request procedure parameters



Modify Request	MOD	Modify Request
ATM traffic descriptor	ATM cell rate and/or additional ATM cell rate (Note)	ATM traffic descriptor
Notification indicator	Notification	Notification indicator
NOTE – The PCR parameters (if present) are mapped to/from the ATM cell rate and the SCR or MBS parameters (if present) are mapped to/from the additional ATM cell rate.		

3.12 Interworking with B-ISDN nodes that support Recommendation Q.2725.2 procedures and not the extensions for SCR and MBS in this Recommendation

Such nodes will treat the additional ATM cell rate parameter as an unrecognized signalling information. The instruction indicators for this parameter will be set so as to cause the discard of the modify request message and the sending of a confusion message. Hence, when such nodes receive a modify indication primitive with an additional ATM cell rate parameter, the nodes will discard the primitive and return a confusion primitive toward the preceding node following the instruction indicators. The node receiving this confusion primitive follows 2.3.3.4/Q.2725.2.

The setting of the instruction indicators is shown in Appendix I.

APPENDIX I

Setting of instruction indicators

The setting of the instruction indicators for the additional ATM cell rate parameter is as follows:

Parameter	Pass on not possible indicator	Discard parameter indicator	Discard message indicator	Send notification indicator	Release call indicator	Transit at intermed. exchange indicator	Broadband/ Narrow-band interworking indicator
Additional ATM cell rate	Default	Default	Discard message	Send notification	Do not Release call	End node interpretation	Release call

The setting of the instruction indicator for other parameters is as specified in Appendix I/Q.2725.2.

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