International Telecommunication Union

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.992.3

Amendment 1

(03/2010)

SERIES G: TRANSMISSION SYSTEMS AND MEDIA, DIGITAL SYSTEMS AND NETWORKS

Digital sections and digital line system – Access networks

Asymmetric digital subscriber line transceivers 2 (ADSL2)

Amendment 1: Channel initialization policies

Recommendation ITU-T G.992.3 (2009) – Amendment 1

ITU-T

International Telecommunication Union

ITU-T G-SERIES RECOMMENDATIONS

TRANSMISSION SYSTEMS AND MEDIA, DIGITAL SYSTEMS AND NETWORKS

INTERNATIONAL TELEPHONE CONNECTIONS AND CIRCUITS	G.100–G.199
GENERAL CHARACTERISTICS COMMON TO ALL ANALOGUE CARRIER-TRANSMISSION SYSTEMS	G.200–G.299
INDIVIDUAL CHARACTERISTICS OF INTERNATIONAL CARRIER TELEPHONE SYSTEMS ON METALLIC LINES	G.300–G.399
GENERAL CHARACTERISTICS OF INTERNATIONAL CARRIER TELEPHONE SYSTEMS ON RADIO-RELAY OR SATELLITE LINKS AND INTERCONNECTION WITH METALLIC LINES	G.400–G.449
COORDINATION OF RADIOTELEPHONY AND LINE TELEPHONY	G.450–G.499
TRANSMISSION MEDIA AND OPTICAL SYSTEMS CHARACTERISTICS	G.600–G.699
DIGITAL TERMINAL EQUIPMENTS	G.700–G.799
DIGITAL NETWORKS	G.800–G.899
DIGITAL SECTIONS AND DIGITAL LINE SYSTEM	G.900–G.999
General	G.900–G.909
Parameters for optical fibre cable systems	G.910–G.919
Digital sections at hierarchical bit rates based on a bit rate of 2048 kbit/s	G.920–G.929
Digital line transmission systems on cable at non-hierarchical bit rates	G.930–G.939
Digital line systems provided by FDM transmission bearers	G.940–G.949
Digital line systems	G.950–G.959
Digital section and digital transmission systems for customer access to ISDN	G.960–G.969
Optical fibre submarine cable systems	G.970–G.979
Optical line systems for local and access networks	G.980–G.989
Access networks	**G.990–G.999**
MULTIMEDIA QUALITY OF SERVICE AND PERFORMANCE – GENERIC AND USER-RELATED ASPECTS	G.1000–G.1999
TRANSMISSION MEDIA CHARACTERISTICS	G.6000–G.6999
DATA OVER TRANSPORT – GENERIC ASPECTS	G.7000–G.7999
PACKET OVER TRANSPORT ASPECTS	G.8000–G.8999
ACCESS NETWORKS	G.9000–G.9999

For further details, please refer to the list of ITU-T Recommendations.

Recommendation ITU-T G.992.3

Asymmetric digital subscriber line transceivers 2 (ADSL2)

Amendment 1

Channel initialization policies

Summary

Amendment 1 to Recommendation ITU-T G.992.3 contains initialization policies (new functionality).

History

Edition	Recommendation	Approval	Study Group
1.0	ITU-T G.992.3	2002-07-29	15
1.1	ITU-T G.992.3 (2002) Amend. 1	2003-05-22	15
1.2	ITU-T G.992.3 (2002) Cor. 1	2003-12-14	15
1.3	ITU-T G.992.3 (2002) Cor. 2	2004-02-22	15
1.4	ITU-T G.992.3 (2002) Amend. 2	2004-04-30	15
1.5	ITU-T G.992.3 (2002) Amend. 3	2004-06-13	15
1.6	ITU-T G.992.3 (2002) Amend. 4	2004-06-13	15
2.0	ITU-T G.992.3	2005-01-13	15
2.1	ITU-T G.992.3 (2005) Amend. 1	2005-09-22	15
2.2	ITU-T G.992.3 (2005) Amend. 2	2006-03-29	15
2.3	ITU-T G.992.3 (2005) Amend. 3	2006-12-14	15
2.4	ITU-T G.992.3 (2005) Amend. 4	2007-07-29	15
2.5	ITU-T G.992.3 (2005) Amend. 5	2008-06-22	15
3.0	ITU-T G.992.3	2009-04-22	15
3.1	ITU-T G.992.3 (2009) Cor. 1	2009-11-13	15
3.2	ITU-T G.992.3 (2009) Amend. 1	2010-03-01	15

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. 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 Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 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.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. 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, ITU had received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at http://www.itu.int/ITU-T/ipr/.

Recommendation ITU-T G.992.3

Asymmetric digital subscriber line transceivers 2 (ADSL2)

Amendment 1

Channel initialization policies

Change clause 7.10.3 (Exchange phase) as follows:

7.10.3 Exchange phase

• • •

Within these constraints, the receiver shall select the values so as to optimize in the priority configured through the CO-MIB channel initialization policy parameter (CIPOLICY, see clause 7.3.2.10 of [ITU-T G.997.1]). The channel initialization policy applies only for the selection of the values exchanged in the PARAMS message during initialization, and does not apply during showtime.

The following channel initialization policies are defined:

- Policy ZERO: if $CIpolicy_n = 0$, then:
  1) Maximize net data rate for bearer channel #*n*, per the allocation of the net data rate, in excess of the sum of the minimum net data rates over all bearer channels (see clause 7.10.2).
  2) Minimize excess margin with respect to the maximum noise margin MAXSNRM through gain scalings (see clause 8.6.4). Other control parameters may be used to achieve this (e.g., PCB see clause 8.13.3).
- Policy ONE: if $CIpolicy_n = 1$, then:

a) If the minimum net data rate (see clause 7.3.2.1.1 of [ITU-T G.997.1]) is set equal to the maximum net data rate (see clause 7.3.2.1.3 of [ITU-T G.997.1]), then:

   1) Maximize INP_act_n for the bearer channel #*n*.

b) If the minimum net data rate (see clause 7.3.2.1.1 of [ITU-T G.997.1]) is not set equal to the maximum net data rate (see clause 7.3.2.1.3 of [ITU-T G.997.1]), then:

   1) Maximize net data rate for all the bearer channels, per the allocation of the net data rate, in excess of the sum of the minimum net data rates over all bearer channels (see clause 7.10.2).
   2) If such maximized net data rate is equal to the maximum net data rate (see clause 7.3.2.1.3 of [ITU-T G.997.1]), maximize INP_act_n for the bearer channel #*n*.
   3) Minimize excess margin with respect to the maximum noise margin MAXSNRM through gain scalings (see clause 8.6.4). Other control parameters may be used to achieve this (e.g., PCB, see clause 8.13.3).

- Policy TWO if $CIpolicy_n = 2$, then:
  1) Maximize net data rate for all the bearer channels, per the allocation of the net data rate, in excess of the sum of the minimum net data rates over all bearer channels (see clause 7.10.2).

2) If such maximized net data rate is equal to the maximum net data rate (see clause 7.3.2.1.3 of [ITU-T G.997.1]), maximize $SNRM_n$ for the bearer channel #*n*.

3) Minimize excess margin with respect to the maximum noise margin MAXSNRM through gain scalings (see clause 8.6.4). Other control parameters may be used to achieve this (e.g., PCB, see clause 8.13.3).

If the CO-MIB sets CIPOLICY (see clause 7.3.2.10 of [ITU-T G.997.1]) to ONE for a bearer channel, it shall have the minimum net data rate (see clause 7.3.2.1.1 of [ITU-T G.997.1]) set equal to the maximum net data rate (see clause 7.3.2.1.3 of [ITU-T G.997.1]) and shall have the *MAXSNRM* set to infinity (see clause 7.3.1.3.3 of [ITU-T G.997.1]).

If only a single bearer channel is configured through the CO-MIB, then the CIPOLICY shall be set to ZERO, ~~or~~ ONE or TWO for the bearer channel. If multiple bearer channels are configured through the CO-MIB, then the CIPOLICY shall be set to ZERO for each of the bearer channels. The use of channel initialization policy ONE or TWO with multiple bearer channels is for further study.

Support of channel initialization policy ZERO is mandatory. Support of channel initialization policy ONE and TWO is optional. Additional channel initialization policies are for further study. The $CIpolicy_n$ parameter values other than 0, ~~and~~ 1 and 2 are reserved for use by ITU-T.

…

SERIES OF ITU-T RECOMMENDATIONS

Series A	Organization of the work of ITU-T
Series D	General tariff principles
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	**Transmission systems and media, digital systems and networks**
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	Cable networks and transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Construction, installation and protection of cables and other elements of outside plant
Series M	Telecommunication management, including TMN and network maintenance
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Terminals and subjective and objective assessment methods
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks, open system communications and security
Series Y	Global information infrastructure, Internet protocol aspects and next-generation networks
Series Z	Languages and general software aspects for telecommunication systems

Printed in Switzerland
Geneva, 2010