

I n t e r n a t i o n a l T e l e c o m m u n i c a t i o n U n i o n

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.994.1
Amendment 6
(11/2010)

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

Digital sections and digital line system – Access networks

Handshake procedures for digital subscriber line
(DSL) transceivers

**Amendment 6: New code points and correction
of D0 values**

Recommendation ITU-T G.994.1 (2007) –
Amendment 6



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

Recommendation ITU-T G.994.1

Handshake procedures for digital subscriber line (DSL) transceivers

Amendment 6

New code points and correction of D0 values

Summary

Amendment 6 to Recommendation ITU-T G.994.1 (02/2007) contains the following changes:

- Addition of code points for the support of the new channel initialization policies.
- Addition of code points for the support of ITU-T G.993.5-friendly operation in the downstream direction.
- Correction to coding of the optional upstream D₀ values.

History

Edition	Recommendation	Approval	Study Group
1.0	ITU-T G.994.1	1999-07-02	15
1.1	ITU-T G.994.1 (1999) Cor. 1	2000-04-04	15
2.0	ITU-T G.994.1	2001-02-09	15
3.0	ITU-T G.994.1	2002-07-29	15
4.0	ITU-T G.994.1	2003-05-22	15
4.1	ITU-T G.994.1 (2003) Amend. 1	2004-02-22	15
4.2	ITU-T G.994.1 (2003) Amend. 2	2004-06-13	15
4.3	ITU-T G.994.1 (2003) Amend. 3	2005-01-13	15
4.4	ITU-T G.994.1 (2003) Amend. 4	2006-01-13	15
5.0	ITU-T G.994.1	2007-02-13	15
5.1	ITU-T G.994.1 (2007) Amend. 1	2007-11-22	15
5.2	ITU-T G.994.1 (2007) Amend. 2	2008-04-13	15
5.3	ITU-T G.994.1 (2007) Amend. 3	2009-03-22	15
5.4	ITU-T G.994.1 (2007) Amend. 4	2009-06-29	15
5.5	ITU-T G.994.1 (2007) Amend. 5	2010-04-22	15
5.6	ITU-T G.994.1 (2007) Amend. 6	2010-11-29	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.

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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/>.

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Recommendation ITU-T G.994.1

Handshake procedures for digital subscriber line (DSL) transceivers

Amendment 6

New code points and correction of D0 values

1) Code points for additional Channel Initialization policies

Modify Tables:

- 11.x.y.9 (x = 30, 32, 34, 36, 44, 46, 48, 50, 52, 58;
y = 13, 14, 15, 16, 25, 26, 27, 28, 37, 38, 39, 40, 49, 50, 51, 52);
- 11.x.y.10 (x = 30, 32, 34, 36, 44, 46, 48, 50, 52, 58;
y = 17, 18, 29, 30, 41, 41, 53, 54)

as follows:

Bits							G.992.3 Annexes A/L downstream STM TPS-TC #0 NPar(3)s – Octet 10	
8	7	6	5	4	3	2		1
x	x	x	x	x	x	x	1	CIpolicy ZERO
x	x	x	x	x	x	1	x	CIpolicy ONE
x	x	x	x	x	1	x	x	Reserved for allocation by ITU-T CIpolicy TWO
x	x	x	x	1	x	x	x	Reserved for allocation by ITU-T
x	x	x	1	x	x	x	x	Reserved for allocation by ITU-T
x	x	1	x	x	x	x	x	Reserved for allocation by ITU-T
x	x	0	0	0	0	0	0	No parameters in this octet

2) Code points for the support of ITU-T G.993.5-friendly operation in the downstream direction

Modify Table 11.67 as follows:

Table 11.67 – Standard information field – G.993.2 NPar(2) coding

Bits							G.993.2 NPar(2)s	
8	7	6	5	4	3	2		1
x	x	x	x	x	x	x	1	All-digital mode
x	x	x	x	x	x	1	x	Support of downstream virtual noise
x	x	x	x	x	1	x	x	Lineprobe
x	x	x	x	1	x	x	x	Loop diagnostic mode
x	x	x	1	x	x	x	x	Support of PSD shaping in US0
x	x	1	x	x	x	x	x	Reserved for allocation by ITU-T <u>G.993.5-friendly G.993.2 operation in the downstream direction</u>
x	x	0	0	0	0	0	0	No parameters in this octet

3) Correction to optional upstream D0 values (correction to Amendment 3 to Recommendation ITU-T G.994.1)

Modify Tables 11.x.20.2 (x = 30, 32, 34, 36, 42, 44, 46, 48, 50, 52, 58, 66) as follows:

Table 11.x.20.2 – Standard information field – G.992.3 Annexes A/L upstream PMS-TC latency path #0 NPar(3) coding – Octet 3

		Bits						G.992.3 Annexes A/L upstream PMS-TC latency path #0 NPar(3)s – Octet 3
8	7	6	5	4	3	2	1	
x	x			x	x	x	x	D ₀ max value supported, D ₀ = n * 4 + 8, n = <u>0, 2, 6, 14</u>
x	x	x	x					0 – max D ₀ value for D equal to power of 2-values Coding 1, 2 and 3 Reserved for allocation by ITU-T

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