62.4.4.6   Reference section 12 (Annex A)

62.4.4.6.1 Introduction

Replace section 12.1 with the following: The 10PASS-TS   handshake procedure is based on ITU-T Recommendation G.994.1 (G.hs). The carrier set used is specified in 61.3. During the handshake procedure, the following parameters shall be transmitted:

−   The size of IDFT/DFT;

−   the initial length of the cyclic extension;

−   flags indicating the use of the optional band, 25 ~ 138 kHz.

The parameters above shall be encoded using the Standard information fields specified in 61.3.

62.4.4.6.2 Description of signals

Replace section 12.2 with the following: The carrier set and signals used are specified in 61.3

62.4.4.6.3 Message coding format

Replace section 12.3 with the following: The message coding format and field definition tables are specified in 61.3

62.4.4.6.4 Handshake - 10PASS-TS-C

Replace section 12.4.1 with the following:–

The detailed procedures for handshake at the 10PASS-TS-C are defined in Recommendation G.994.1. A 10PASS-TS-C, after power-up, loss of signal, recovery from errors during the initialization procedure, shall enter the initial G.994.1 state C-SILENT1. The 10PASS-TS-C may transition to the Initialization Reset Procedure under instruction from the network. From either state, operation shall proceed according to the procedures defined in G.994.1.

If Recommendation G.994.1 procedures select 10PASS-TS as the mode of operation, the10PASS-TS-C shall transition to state O-QUIET (TBD) at the conclusion of G.994.1 operation.

A 10PASS-TS-C wishing to indicate 10PASS-TS capabilities during in a G.994.1 CL message shall do so by setting to 1_b the Level 1 Spar(1)10PASS-TS bit as defined in G.994.1. The Npar(2) and Spar(2) fields corresponding to the "10PASS-TS" Level 1 bit are defined in 61.3. For each Level 2 Spar(2) bit set to 1_b, a corresponding Npar(3) field shall also be present. These Npar(3) fields are defined in61.3. The Level 2 bits in a CL message are defined in Table 62-1 and Table 62-2.

Table 62-1: 10PASS-TS-C CL message Npar(2) bit definitions

Npar(2) bit	Definition
Upstream use of 25-138 KHz band	If set to 1_b, signifies that the 10PASS-TS-C is capable of using the band between 25 kHz and 138 kHz and that the band can be used for the

	upstream transmission.
Downstream use of 25-138 KHz band	If set to 1_b, signifies that the 10PASS-TS-C is capable of using the band between 25 kHz and 138 kHz and that the band can be used for the downstream transmission.
	If set to 1_b, signifies that the 10PASS-TS-C supports transmission and reception of G.997.1 OAM frames.
8.625 KHz mode	If set to 1_b, signifies that the 10PASS-TS-C is capable of supporting 8.625 KHz tone spacing

Table 62-2: 10PASS-TS-C CL message Spar(2) bit definitions

Spar(2) bit	Definition
Used bands in upstream	The use of this bit is optional. If set to 1_b, indicates the used upstream bands. The optional band between 25 kHz to 138 kHz shall not be included.
Used bands in downstream	The use of this bit is optional. If set to 1_b, indicates the used downstream bands. The optional band between 25 kHz to 138 kHz shall not be included.
IDFT/DFT size	Always set to 1_b in a CL message. Indicates the maximum IDFT/DFT size that10PASS-TS-C can support. The value shall be present in the corresponding Npar(3) field.
Initial length of CE	If set to 0_b, it signifies that the 10PASS-TS-C can support only the mandatory cyclic extension length of 40 2^n for a number of tones equal to 256 2^n. If set to 1_b in a CL message, it indicates the initial sample length of the cyclic extension that 10PASS-TS-C can support. It also signifies that the10PASS-TS-C can support CE lengths other than the mandatory length. The value shall be present in the corresponding Npar(3) field. If one of the modems supports only the mandatory value, then this value shall be used.
RFI bands	The use of this bit is optional. If set to 1_b, indicates the RFI bands.

A PHY selecting 10PASS-TS mode of operation in a G.994.1 MS message shall do so by setting to 1_b the Level 1 Spar(1) 10PASS-TS-C bit as defined in G.994.1. The Npar(2) and Spar(2) fields corresponding to this bit are defined in 61.3. For each Level 2 Spar(2) bit set to 1_b, a corresponding Npar(3) field shall also be present, as defined in 61.3. The Level 2 bits in an MS message from the 10PASS-TS-C are defined in Table 62-3 and Table 62-4.

Table 62-3: 10PASS-TS-C MS message Npar(2) bit definitions

Npar(2) bit	Definition
Upstream use of 25-138 KHz band	Set to 1_b if and only if this bit was set to 1_b in both the last previous CL message and the last previous CLR message. It signifies that the band between 25 kHz and 138 kHz shall be used for the upstream transmission.
Downstream use of 25-138 KHz band	Set to 1_b if and only if this bit was set to 1_b in both the last previous CL message and the last previous CLR message. It signifies that the band between 25 kHz and 138 kHz shall be used for the downstream transmission.
EOC-Clear	Set 1_b, if and only if this bit was set to 1_b in both last previous CL message and last previous CLR message. Signifies that both 10PASS-TS-C and 10PASS-TS-R may transmit and receive G.997.1 OAM frames.
8.625 KHz mode	Set to 1_b if and only if this bit was set to 1_b in both the last previous CL message and the last previous CLR message. It signifies that both stations shall enter the Escape to Switch tone spacing phase definition in section 14.6 in Reference Annex C

Table 62-4: 10PASS-TS-C MS message SPar(2) bit definitions

SPar(2) bit	Definition
Used bands in upstream	Always set to 0_b in an MS message.
Used bands in downstream	Always set to 0_b in an MS message.
IDFT/DFT size	Always set to 1_b in an MS message. Indicates the maximum IDFT/DFT size that both the 10PASS-TS-C and 10PASS-TS-R can support. The value shall be present in the corresponding NPar(3) field.
Initial length of CE	Set to 0_b if and only if this bit was set to 0_b in the last previous CL message or the last previous CLR message, or both. It signifies that both 10PASS-TS-C and 10PASS-TS-R shall use only the mandatory cyclic extension length. Set to 1_b if and only if this bit was set to 1_b in both last previous CL message and last previous CLR message. It indicates the initial sample length of the cyclic extension. It also signifies that both 10PASS-TS-C and 10PASS-TS-R can support CE lengths othet than the mandatory length. The value shall be given in the corresponding Npar(3) field.
RFI bands	Always set to 0_b in an MS message.

If both bits Upstream use of optional band and Downstream use of optional band are enabled in the CL and CLR message, one and only one of the bits shall be set to 1_b in an MS message sent from the 10PASS-TS-C, and the use of the band between 25 kHz and 138 kHz is at the 10PASS-TS-C's discretion. If the 10PASS-TS-C and 10PASS-TS-R have no common usage of the optional band, both bits shall be set to 0_b in an MS message sent from the 10PASS-TS-C.

62.4.4.6.5 Handshake – 10PASS-TS-R

Replace section 12.4.2 with the following

The detailed procedures for handshake at the 10PASS-TS-R are defined in Recommendation G.994.1. An 10PASS-TS-R, after power-up, loss of signal, recovery from errors during the initialization procedure, shall enter the initial G.994.1 state R-SILENT0. Upon command from the host controller, the 10PASS-TS-R shall initiate handshaking by invoking the Initialization Reset Procedure. Operation shall then proceed according to the procedures defined in G.994.1.

If Recommendation G.994.1 procedures select Committee T1 DMT VDSL as the mode of operation, the 10PASS-TS-R shall transition to state R-QUIET (TBD) at the conclusion of G.994.1 operation.

A 10PASS-TS-R wishing to indicate Committee T1 DMT VDSL capabilities during in a G.994.1 CLR message shall do so by setting to 1_b the Level 1 SPar(1) Committee T1 DMT VDSL bit as defined inG.994.1. The NPar(2) and SPar(2) fields corresponding to the "Committee T1 DMT VDSL" Level 1 bit are defined in **Error! Reference source not found.** and **Error! Reference source not found.**, respectively. For each Level 2 SPar(2) bit set to 1_b, a corresponding NPar(3) field shall also be present. These NPar(3) fields are defined in **Error! Reference source not found.** through **Error! Reference source not found.**. The Level 2 bits in a CLR message are defined in Table 62-5 and Table 62-6.

Table 62-5: 10PASS-TS-R CLR message NPar(2) bit definitions

NPar(2) bit	Definition
Upstream use of 25-138 KHz band	If set to 1_b, signifies that the 10PASS-TS-R is capable of using the band between 25 kHz and 138 kHz and that the band can be used for the upstream transmission.
Downstream use of 25-138 KHz band	If set to 1_b, signifies that the 10PASS-TS-R is capable of using the band between 25 kHz and 138 kHz and that the band can be used for the downstream transmission.
EOC-Clear	If set to 1_b, signifies that the 10PASS-TS-R supports transmission and reception of G.997.1 OAM frames.
8.625 KHz mode	If set to 1_b, signifies that the 10PASS-TS-R is capable of supporting 8.625 KHz tone spacing

Table 62-6: 10PASS-TS-R CLR message SPar(2) bit definitions

SPar(2) bit	Definition
Used bands in upstream	Always set to 0_b in a CLR message.
Used bands in downstream	Always set to 0_b in a CLR message.
IDFT/DFT size	Always set to 1_b in a CLR message. Indicates the maximum IDFT/DFT size that 10PASS-TS-R can support. The value shall be present in the corresponding NPar(3) field.
Initial length of CE	If set to 0_b, it signifies that the 10PASS-TS-C can support only the mandatory cyclic extension length of $40\ 2^n$ for a number of tones equal to $256\ 2^n$. If set to 1_b in a CL message, it indicates the initial sample length of the cyclic extension that 10PASS-TS-C can support. It also signifies that the 10PASS-TS-C can support CE lengths other than the mandatory length. The value shall be present in the corresponding NPar(3) field. If one of the modems supports only the mandatory value, then this value shall be used.
RFI bands	Always set to 0_b in a CLR message.

A 10PASS-TS-R selecting Committee T1 DMT VDSL mode of operation in a G.994.1 MS message shall do so by setting to 1_b the Level 1 SPar(1) Committee T1 DMT VDSL bit as defined in G.994.1. The NPar(2) and SPar(2) fields corresponding to this bit are defined in **Error! Reference source not found.** and **Error! Reference source not found.**, respectively. For each Level 2 SPar(2) bit set to 1_b, a corresponding NPar(3) field shall also be present, as defined in **Error! Reference source not found.** through **Error! Reference source not found.**. The Level 2 bits in an MS message from the 10PASS-TS-R are defined in Table 62-7 and Table 62-8.

Table 62-7: 10PASS-TS-R MS message NPar(2) bit definitions

NPar(2) bit	Definition
Upstream use of 25-138 KHz band	Set to 1_b if and only if this bit was set to 1_b in both the last previous CL message and the last previous CLR message. It signifies that the band between 25 kHz and 138 kHz shall be used for the upstream transmission.
Downstream use of 25-138 KHz band	Set to 1_b if and only if this bit was set to 1_b in both the last previous CL message and the last previous CLR message. It signifies that the band between 25 kHz and 138 kHz shall be used for the downstream transmission.

EOC-Clear	Set 1_b, if and only if this bit was set to 1_b in both last previous CL message and last previous CLR message. Signifies that both 10PASS-TS-C and 10PASS-TS-R may transmit and receive G.997.1 OAM frames.
8.625 KHz mode	Set to 1_b if and only if this bit was set to 1_b in both the last previous CL message and the last previous CLR message. It signifies that both stations shall enter the Escape to Switch tone spacing phase definition in section 14.6 in Reference Annex C

Table 62-8: 10PASS-TS-R MS message SPar(2) bit definitions

SPar(2) bit	Definition
Used bands in upstream	Always set to 0_b in an MS message.
Used bands in downstream	Always set to 0_b in an MS message.
IDFT/DFT size	Always set to 1_b in an MS message. Indicates the maximum IDFT/DFT size that both the 10PASS-TS-C and 10PASS-TS-R can support. The value shall be present in the corresponding NPar(3) field.
Initial length of CE	If set to 0_b, it signifies that the 10PASS-TS-C can support only the mandatory cyclic extension length of $40 \, 2^n$ for a number of tones equal to $256 \, 2^n$. If set to 1_b in a CL message, it indicates the initial sample length of the cyclic extension that 10PASS-TS-C can support. It also signifies that the 10PASS-TS-C can support CE lengths other than the mandatory length. The value shall be present in the corresponding NPar(3) field. If one of the modems supports only the mandatory value, then this value shall be used.
RFI bands	Always set to 0_b in an MS message.

If both bits Upstream use of optional band and Downstream use of optional band are enabled in the CL and CLR message, one and only one of the bits shall be set to 1_b in an MS message sent from the 10PASS-TS-R, and the use of the band between 25 kHz and 138 kHz shall be at the 10PASS-TS-R's discretion. If the 10PASS-TS-C and 10PASS-TS-R have no common usage of the optional band, both bits shall be set to 0_b in an MS message sent from the 10PASS-TS-R.

62.4.4.8　Reference section 14 (Annex C)

62.4.4.8.1 Reference section 14,1

Stet.

62.4.4.8.2 Reference section 14.2

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62.4.4.8.3 Reference section 14.3

Stet.

62.4.4.8.4 Reference section 14.4

Stet.

62.4.4.8.5 Reference section 14.5

Replace with: The capability of the PHY to support 8.625 kHz tone spacing is communicated using the G.994.1 (G.hs) handshake protocol. The message coding format is specified in 61.3. The procedures and message field settings are specifed in 62.4.4.6.4.

62.4.4.8.6 Reference section 14.6

Stet.