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Amendment 1
Corrigendum 1
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SERIES G: TRANSMISSION SYSTEMS AND MEDIA, DIGITAL SYSTEMS AND NETWORKS

Digital sections and digital line system – Access networks

Corrigendum 1 to Amendment 1 of Recommendation G.992.3

FOREWORD

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CORRIGENDUM 1 TO AMENDMENT 1 OF RECOMMENDATION G.992.3

Summary

This Corrigendum is intended to clarify some issues of the Amsendment 1 to Rrecommendation G.992.3 for some clauses in paragraphs 7, 9 and K.x.7

1. Automode

Exchange Phase (§ 7.10.3 and Amendment Item 6)

Change paragraph as follows:

Octet 0	[p fff 00bb]	The bits bb encode the value of $MSG_{LP.}$ MSG_{LP}. Indicates the latency path in which the message based overhead information is to be transmitted. The values 00, 01, 10, and 11 correspond to latency path #0, #1, #2, #3, respectively. The bits fff encode the initialization success/failure code as defined in this section. The bit p is the probing bit. A value 1 indicates that the current initialization is used for automode probing. A value 0 indicates that the current initialization is normal initialization.

Change the last paragraph of section Exchange Phase (§ 7.10.3)as follows:

If within those constraints, the receiver is unable to select a set of configuration parameters, then an initialization failure cause shall be indicated in the PMS-TC PARAMS information (3-bit integer, see Table 7-20), with the other bits in the PMS-TC PARAMS information set to 0. If a non-zero success/failure code is set by one of the ATU's, the transmitter shall enter the SILENT state (see Annex D) instead of the SHOWTIME state at completion of the initialization procedures. Valid failure causes are the failure cause values 1 (configuration error) and 2 (configuration not feasible on line), as defined in G.997.1. If within those constraints, the receiver is able to select a set of configuration parameters, then value 0 is used to indicate a successful initialization. If a zero success/failure code is set by both of the ATU's, and the probing bit is not set by both of the ATU's, the transmitter shall enter the SHOWTIME state at completion of the initialization procedures.

The values 3 to 7 are reserved.

If during an initialization used for probing during an automode procedure, the ATU decides not to go into SHOWTIME, then the probing bit p shall be set in the PMS-TC PARAMS information. Whether the other bits in the PMS-TC PARAMS information are completed is controlled by the value of the fff bits as defined above. If the probing bit is set by one of the ATU's, the transmitter shall enter the SILENT state (see Annex D) instead of the SHOWTIME state at completion of the initialization procedures.

Initializations with the probing bit set to 1, are considered as part of normal operation and are not to be considered as a Line Initialization (LINIT) failure (as defined in G.997.1 section 7.1.1.3). Therefore, in this case, the initialization success/failure codes during probing shall not be communicated to the G.997.1 LINIT functionality and the G.997.1 Line initialization performance monitoring parameters Full Initialization Count (as defined in G.997.1 section 7.2.1.3.1) and Failed Full Initialization Count (as defined in G.997.1 section 7.2.1.3.2).

2. Test Parameter messages (§ 9.4.1.10)

Change text as follows:

The PMD test parameters read commands shall be used to access the value of certain PMD test parameters maintained by the far ATU in accordance with the description of the PMD function. The local parameter values shall be retrieved as described in this sub-clause. The PMD test parameter read command may be initiated by either ATU as shown in Table

9-28. The responses shall be using the command shown in Table 9-29. The PMD test parameter read command shall consist of two to four octets. The first octet shall be PMD test parameter command designator shown in Table 9-4. The remaining octets shall be as shown in Table 9-28. The PMD test parameter read response command shall be multiple octets. The first octet shall be PMD test parameter read command designator shown in Table 9-4. The second shall correspond to received ~~management counter read command~~ PMD test parameter read command second octet, XOR 80_{16}, except for the Next Multiple Read command (see Table 9-28 and Table 9-29).. The remaining octets shall be as shown in Table 9-29. The octets shall be sent using the format described in § 7.8.2.3 and using the protocol described in § 7.8.2.4.

Table 9-28/G.992.3 - PMD Test Parameter Read Commands Transmitted by the Initiator

Message length (Octets)	ELEMENT NAME (Command)
3	01_{16} Single Read followed by 1 octet describing the test parameter id
3	02_{16} Multiple Read Block followed by 1 octet describing the sub-carrier index
2	03_{16} Next Multiple Read
4	04_{16} Block Read followed by 1 octet describing the start sub-carrier index 1 octet describing the stop sub-carrier index
	All other octet values are reserved by the ITU-T.

Table 9-29/G.992.3 - PMD Test Parameter Read Command Transmitted by the Responder

Message length (Octets)	ELEMENT NAME (Command)
Variable (see Note)	81_{16} followed by octets for the test parameter arranged for the single read format
12	82_{16} followed by octets for the test parameters arranged for the multiple read format
2	80_{16} NACK
Variable (see Note)	84_{16} followed by octets for the test parameter arranged for the block read format
	All other octet values are reserved by the ITU-T.
NOTE – Variable length equals 2 plus length shown in Table 9-30.	

Upon receipt of one of the PMD test parameter read commands, the receiving ATU shall transmit the corresponding response message. If an unrecognised test parameter is requested, the response shall be a PMD test parameter command for NACK. The function of the receiving or transmitting ATUs is not otherwise affected.

The PMD test parameters are all derived according to the procedures in the PMD function sub-clause of this Recommendation. Following initialization, the PMD shall maintain training test parameters until the overhead command for update test parameters is received.

The parameters are transferred in the order and format defined in Table 9-30. During a test parameter read command for single read, all information for the test parameter is transferred. If the test parameter is an aggregate parameter, only one

value is transferred. If the test parameter has a value per sub-carrier, then all values are transferred from sub-carrier index #0 to sub-carrier index #NSC-1 in a single message. The format of the octets is as described in PMD sub-clause. Values that are formatted as multiple octets shall be inserted in the response message most significant to least significant octet order.

During a test parameter read command for multiple read or next, information for all test parameters associated with a particular sub-carrier is transferred. Aggregate test parameters are not transferred with the PMD test parameter read command for multiple read or next. The sub-carrier used for a PMD test parameter read command for multiple read shall be the sub-carrier contained within the command. This sub-carrier index shall be saved. Each subsequent PMD test parameter command for next shall increment and use the saved sub-carrier index. If the sub-carrier index reaches NSC, the response shall be a PMD test parameter command for NACK. The per sub-carrier values are inserted into the message according to the numeric order of the octets designators show in Table 9-30. The format of the octets is as described in PMD sub-clause of this Recommendation. Values that are formatted as multiple octets shall be inserted in the response message most significant to least significant octet order.

During a test parameter read command for a block read, information for ~~the test parameter is transferred within~~ all test parameters associated with the specified block of sub-carriers is transferred. Aggregate test parameters are not transferred with the PMD test parameter block read command. If the test parameter has a value per sub-carrier, then all values are transferred from sub-carrier index #start sub-carrier to sub-carrier index #stop_sub-~~-~~carrier in a single message. The format of the octets is as described in the PMD sub-clause. Values that are formatted as multiple octets shall be inserted in the response message most significant to least significant octet order.

Table 9-30/G.992.3 - PMD Test Parameter ID Values

Test Parameter ID	**Test Parameter Name**	**Length for Single Read**	**Length for Multiple Read**	**Length for Block Read**
01_{16}	Channel Transfer Function *Hlog(f)* per sub-carrier	2 + *NSC* * 2 octets	4 octets	2 + (stop sub-carrier – start sub_carrier + 1) * 2 octets
02_{16}	Reserved by ITU-T			
03_{16}	Quiet Line Noise PSD *QLN(f)* per sub-carrier	2 + *NSC* octets	3 octet	2 + (stop sub-carrier – start sub_carrier + 1) octets
04_{16}	Signal to noise ratio *SNR(f)* per sub-carrier	2 + *NSC* octets	3 octet	2 + (stop sub-carrier – start sub_carrier + 1) octets
05_{16}	Reserved by ITU-T			
21_{16}	Line Attenuation *LATN*	2 octets	N/a	N/a
22_{16}	Signal Attenuation *SATN*	2 octets	N/a	N/a
23_{16}	Signal-to-Noise Margin *SNRM*	2 octets	N/a	N/a
24_{16}	Attainable Net Data Rate *ATTNDR*	4 octets	N/a	N/a
25_{16}	Near-end Actual Aggregate Transmit Power *ACTATP*	2 octets	N/a	N/a
26_{16}	Far-end Actual Aggregate Transmit Power *ACTATP*	2 octets	N/a	N/a

In transferring the value of the channel transfer function *Hlog(f*), the measurement time shall be inserted into the message, followed by the valuem (see § 8.12.3.1). The measurement time is included only once in a PMD test parameter response for single read or block read. The measurement time is included in each response for multiple read or next multiple read.

In transferring the value of the quiet line noise *QLN(f),* the measurement time shall be inserted into the message, followed by the n value (see § 8.12.3.2). The measurement time is incuded only once in a PMD test parameter response for single read or block read. The measurement time is included in each response for multiple read or next multiple read.

In transferring the value of the signal-to-noise ration *SNR(f)*, the measurement time shall be inserted into the message, followed by the snr value (see § 8.12.3.3). The measurement time is included only once in a PMD test parameter response for single read or block read. The measurement time is included in each response for multiple read or next multiple read.

The values for test parameters defined with fewer bits than shown in Table 9-30, shall be inserted into the message using the least significant bits of the two octets. Unused more significant bits shall be set to 0 for unsigned quantities and to the value of the sign bit for signed quantities.

9.4.1.10.1 Single Read Command

Aggregate test parameters shall be retrieved using a single read and response procedure. Per sub-carrier test parameters may be exchanged in a similar manner with a single read and response exchanged used to exchange all values for a test parameter, starting from sub-carrier 0 to NSC-1.

9.4.1.10.2 Multiple Read Protocol with Next

Per sub-carrier exchange parameters may also be exchanged using shorter messages. The first command retrieves each test parameter for a requested sub-carrier. A subsequent command retrieves all sub-carrier test parameters for the next sub-carrier. An invalid response is used to indicate a sub-carrier index out of range or when the end of the sub-carrier list has been reached.

9.4.1.10.3 Block Read Command

The Block Read Command and Response messages are optional. Data over a range of sub-carriers may also be exchanged to allow shorter messages than the single read but still greater efficiency than the Multiple Read Protocol with Next. An invalid response is used to indicate sub-carrier indices out of range .

3. Net Data Rate tolerance

Control Parameters (§ K.x.7 and Amendment Item 34)

Change paragraph as follows:

During initialization and reconfiguration procedures, the actual net data rate net_act_n for stream #*n* shall always be set to the value of the derived parameter $net\_act_{p\ n}$ of the underlying PMS-TC latency path function and shall be constrained such that $net\_min_n \leq net\_act_n \leq net\_max_n$. However, in case the $net\_min_n = net\_max_n$, the net_act_n may exceed the net_max_n by up to 8 kbit/s, to allow for the PMS-TC net data rate granularity (see Table 7-7). If $net\_min_n < net\_max_n$, the net_max_n shall be set at least 8 kbit/s above the net_min_n , to allow for the PMS-TC net data rate granularity to meet the $net\_min_n \leq net\_act_n \leq net\_max_n$. requirement. The latency $delay\_act_n$ shall always be set to the value of the derived parameter $delay_p$ of the underlying PMS-TC latency path function and constrained such that $delay\_act_n \leq delay\_max_n$ The values net_act_n and $delay\_act_n$ are not control parameters; these values are the result of specific initialization and reconfiguration procedures.