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OF ITU

G.783

Corrigendum 2
(03/2003)

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

Digital terminal equipments – Principal characteristics of
multiplexing equipment for the synchronous digital
hierarchy

Characteristics of synchronous digital hierarchy
(SDH) equipment functional blocks

Corrigendum 2

ITU-T Recommendation G.783 (2000) – Corrigendum 2

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ITU-T Recommendation G.783

Characteristics of synchronous digital hierarchy (SDH) equipment functional blocks

Corrigendum 2

Summary

This corrigendum contains editorial and technical corrections to dLOM validation time and clarifications to the third revision (10/2000) of Recommendation G.783.

Source

Corrigendum 2 to ITU-T Recommendation G.783 (2000) was prepared by ITU-T Study Group 15 (2001-2004) and approved under the WTSA Resolution 1 procedure on 16 March 2003.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. 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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**Characteristics of synchronous digital hierarchy (SDH)
equipment functional blocks**

Corrigendum 2

1) Clause 6.2.1.1

In the Note, replace:

... LOS defect in ...

With:

... LOS defect is ...

2) Clause 6.2.5.2

Replace this clause:

6.2.5.2 HOVC Loss Of Multiframe defect (dLOM)

If the multiframe alignment process (see 8.2.2) is in the OOM state, and the H4 multiframe is not recovered within X ms, a dLOM defect shall be declared. Once in a dLOM state, this state shall be exited when the multiframe is recovered (multiframe alignment process enter the IM state). X shall be a value in the range 1 ms to 5 ms. X is not configurable.

With:

6.2.5.2 Loss Of Multiframe defect (dLOM) for VC-1/2 mapped into HOVC

If the multiframe alignment process (see 8.2.2) is in the OOM state, and the H4 multiframe is not recovered within m VC-3/4 frames, a dLOM defect shall be declared. Once in a dLOM state, this state shall be exited when the multiframe is recovered (multiframe alignment process enters the IM state). m shall be in the range of 8 to 40 and is not configurable.

3) Clause 6.2.5

Add the following new clauses:

6.2.5.4 Loss Of Multiframe defect (dLOM) for VC-3/4 virtual concatenation

If any of the two multiframe alignment processes is in the out-of-multiframe (OOM1 or OOM2) state (see 8.2.5.1) and the whole H4 two-stage multiframe is not recovered within m VC-3/4 frames, a dLOM defect shall be declared. Once in a dLOM state, this state shall be exited when both multiframe alignment processes are in the in-multiframe state (IM1 and IM2).

m shall be in the range of 40 to 80 and is not configurable.

6.2.5.5 Loss Of Multiframe defect (dLOM) for VC-1/2 virtual concatenation

If any of the two multiframe alignment process (extended overhead multiframe in 8.2.3.1 or virtual concatenation frame counter multiframe in 8.2.5.2) is in the OOM state, and the whole virtual concatenation two-stage multiframe is not recovered within m VC-1/2 frames, a dLOM defect shall be declared. Once in a dLOM state, this state shall be exited when both multiframe alignment processes are in the in-multiframe state (IM state).

m shall be in the range of 200 to 400 and is not configurable.

NOTE 1 – A dLOM for the extended overhead multiframe (extended signal label) only is not defined. According to 8.2.3.2 a missing multiframe (OOM state) will result in dPLM.

NOTE 2 – Loss of TCM multiframe is covered by the dLTC defect defined in ITU-T Rec. G.806.

4) Clause 8.2.2

Replace clause 8.2.2 as follows:

8.2.2 Lower order VC-1, VC-2 multiframe alignment

If the TUG structure contains TUG-2s, the 500 μ s (multi)frame start phase shall be recovered performing multiframe alignment on bits 7 and 8 of byte H4. Out-of-multiframe (OOM) shall be assumed once an error is detected in the H4 bit 7 and 8 sequence. Multiframe alignment shall be assumed to be recovered, and, the in-multiframe (IM) state, shall be entered when, in four consecutive VC-n frames, an error-free H4 sequence is found.

With:

8.2.2 Multiframe alignment for VC-1, VC-2 mapped into HOVC

If the TUG structure of a HOVC contains TUG-2s, the 500 μ s (multi)frame start phase shall be recovered performing multiframe alignment on bits 7 and 8 of byte H4. Out-of-multiframe (OOM) shall be assumed once an error is detected in the H4 bit 7 and 8 sequence. Multiframe alignment shall be assumed to be recovered and, the in-multiframe (IM) state, shall be entered when, in four consecutive VC-n frames, an error-free H4 sequence is found.

5) Clause 8.2.5.1

Replace the last paragraph as follows:

Multiframe stage 2:

The function shall recover the second (256 frame) multiframe performing multiframe alignment on the multiframe indication MFI2 in bits 1 to 4 of byte H4 of frame 0 and 1 of the first multiframe stage. Out-of-multiframe of stage 2 (OOM2) shall be assumed once an error is detected in the MFI2 sequence; or the first multiframe stage is in the out-of-multiframe (OOM1) state. Recovery of the second multiframe shall start as soon as the first multiframe stage is in the in-multiframe (IM1) state. Multiframe alignment of stage 2 shall be assumed to be recovered, and the In-Multiframe state (IM2) shall be entered, when in two consecutive VC-3/4 frames an error free MFI2 sequence is found.

With:

Multiframe stage 2:

The function shall recover the second (256 frame) multiframe performing multiframe alignment on the multiframe indication MFI2 in bits 1 to 4 of byte H4 of frame 0 and 1 of the first multiframe stage. Out-of-multiframe of stage 2 (OOM2) shall be assumed once an error is detected in the MFI2 sequence, or the first multiframe stage is in the out-of-multiframe (OOM1) state. Recovery of the second multiframe shall start as soon as the first multiframe stage is in the in-multiframe (IM1) state. Multiframe alignment of stage 2 shall be assumed to be recovered and, the In-Multiframe state (IM2), shall be entered when, in two consecutive first-stage multiframes, an error-free MFI2 sequence is found.

6) Clause 12.3.1.2

Replace the following paragraph:

H4: In the case of payloads requiring multiframe alignment, a multiframe indicator is derived from the H4 byte (see 8.2.2). The received H4 value is compared to the next expected value in the multiframe sequence. The H4 value is assumed to be in phase when it is coincident with the expected value. If several H4 values are received consecutively not as expected but correctly in sequence with a different part of the multiframe sequence, then subsequent H4 values shall be expected to follow this new alignment. If several H4 values are received consecutively not correctly in sequence with any part of the multiframe sequence, then a loss of multiframe (LOM) event shall be reported at the Sn/Sm_A_Sk_MP. When several H4 values have been received consecutively correctly in sequence with part of the multiframe sequence, then the event shall be ceased and subsequent H4 values shall be expected to follow the new alignment.

NOTE 2 – The meaning of "several" is that the number should be low enough to avoid excessive delay in reframing but high enough to avoid re-framing due to errors; a value in the range 2 to 10 is suggested.

With:

H4: In the case of payloads requiring multiframe alignment, a multiframe indicator is derived from the H4 byte and multiframe alignment is performed as defined in 8.2.2. The multiframe indicator is further used to derive the LOM defect (see 6.2.5.2).

7) Clause 12.5.1.1.2

Replace the following paragraph:

Loss of Multiframe defect (dLOM): If any of the two multiframe alignment processes is in the out-of-multiframe (OOM1 or OOM2) state and the whole H4 two-stage multiframe is not recovered within X ms, a dLOM defect shall be declared. Once in a dLOM state, this state shall be exited when both multiframe alignment processes are in the in-multiframe state (IM1 and IM2).

X shall be a value in the range 5 ms to 10 ms. X is not configurable.

With:

Loss of Multiframe defect (dLOM): see 6.2.5.4.

8) Clause 12.5.2.2

Replace the following paragraph:

Loss of Multiframe defect (dLOM): If any of the two multiframe alignment processes is in the outof-multiframe (OOM1 or OOM2) state and the whole H4 two stage multiframe is not recovered within X ms, a dLOM defect shall be declared. Once in a dLOM state, this state shall be exited when both multiframe alignment processes are in the in-multiframe state (IM1 and IM2).

X shall be a value in the range 5 ms to 10 ms. X is not configurable.

With:

Loss of Multiframe defect (dLOM): see 6.2.5.4.

9) Clause 13.5.1.1

Replace the last four lines of this clause:

For S11_Xv $1 \leq X \leq 64$, S12_Xv $1 \leq X \leq 63$, S2_Xv $1 \leq X \leq 21$ when mapped in an AU4.

NOTE – Even though 84 VC-11s can be multiplexed into an AU4, the number of VC-11s that can be virtually concatenated is limited to 64 by the 6-bit sequence number.

For S11_Xv $1 \leq X \leq 28$, S12_Xv $1 \leq X \leq 21$, S2_Xv $1 \leq X \leq 7$ when mapped in an AU3.

With:

For S11_Xv $1 \leq X \leq 64$, S12_Xv $1 \leq X \leq 63$, S2_Xv $1 \leq X \leq 21$ when mapped in a VC-4.

NOTE – Even though 84 VC-11s can be multiplexed into a VC-4, the number of VC-11s that can be virtually concatenated is limited to 64 by the 6-bit sequence number.

For S11_Xv $1 \leq X \leq 28$, S12_Xv $1 \leq X \leq 21$, S2_Xv $1 \leq X \leq 7$ when mapped in a higher-order VC-3.

10) Clause 13.5.1.2.2

Replace the following paragraph:

Loss of Multiframe defect (dLOM): If the multiframe alignment process (see 8.2.5.2) is in the OOM state and the virtual concatenation multiframe is not recovered within X ms, a dLOM defect shall be declared. Once in a dLOM state, this state shall be exited when the multiframe is recovered (multiframe alignment process enters the IM state). X shall be a value in the range 1 ms to 5 ms. X is not configurable.

With:

Loss of Multiframe defect (dLOM): see 6.2.5.5.

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