



INTERNATIONAL TELECOMMUNICATION UNION

# ITU-T

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

# G.7710/Y.1701

**Corrigendum 2**  
(04/2011)

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

Data over Transport – Generic aspects – Transport  
network control aspects

SERIES Y: GLOBAL INFORMATION  
INFRASTRUCTURE, INTERNET PROTOCOL ASPECTS  
AND NEXT-GENERATION NETWORKS

Internet protocol aspects – Operation, administration and  
maintenance

---

Common equipment management function  
requirements

**Corrigendum 2**

***CAUTION !***

***PREPUBLISHED RECOMMENDATION***

This prepublication is an unedited version of a recently approved Recommendation. It will be replaced by the published version after editing. Therefore, there will be differences between this prepublication and the published version.

## 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/had not] 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/>.

© ITU 2011

All rights reserved. No part of this publication may be reproduced, by any means whatsoever, without the prior written permission of ITU.

## **ITU-T Recommendation G.7710/Y.1701 (2007) Corrigendum 2**

### **Common equipment management function requirements**

#### **Corrigendum 2**

##### **Summary**

Corrigendum 2 to Recommendation ITU-T G.7710/Y.1701 (2007) corrects text in Amendment 1 to ITU-T G.7710/Y.1701 (2007), which updates the packet layer related specification of severely errored second (SES) in ITU-T G.7710/Y.1701 to align it with the SES definition in Recommendation ITU-T Y.1563.

While lost block count (LBC) was defined in clause 10.1.2 and included in the NPME input/output signal tables (Table 27 and Table 28), it was left out in the process description in clause 10.2.1. This corrigendum corrects the error by adding the missing 6 LBC terms to the process description.

# ITU-T Recommendation G.7710/Y.1701 (2007) Corrigendum 2

## Common equipment management function requirements

### Corrigendum 2

#### 1 Scope

This Corrigendum corrects text in Amendment 1 to Recommendation ITU-T G.7710/Y.1701 (2007), which updates the packet layer related specification of severely errored second (SES) in ITU-T G.7710/Y.1701 to align it with the SES definition in Recommendation ITU-T Y.1563.

While lost block count (LBC) was defined in clause 10.1.2 and included in the NPME input/output signal tables (Table 27 and Table 28), it was left out in the process description in clause 10.2.1. This corrigendum corrects the error by adding the missing 6 LBC terms to the process description.

#### 2 References

[ITU-T G.7710/Y.1701 Am.1] Recommendation G.7710/Y.1701 Amendment 1 (07/2010),  
*Common equipment management function requirements*  
*Amendment 1: Required specification of severely errored second to align with Recommendation ITU-T Y.1563*

#### 3 Clauses to be updated

The following text and clauses are updated as shown by the blue marked text.

##### 3.1 Update section 10.2.1 (Near-end performance monitoring event function – NPME) as shown below:

Symbol:

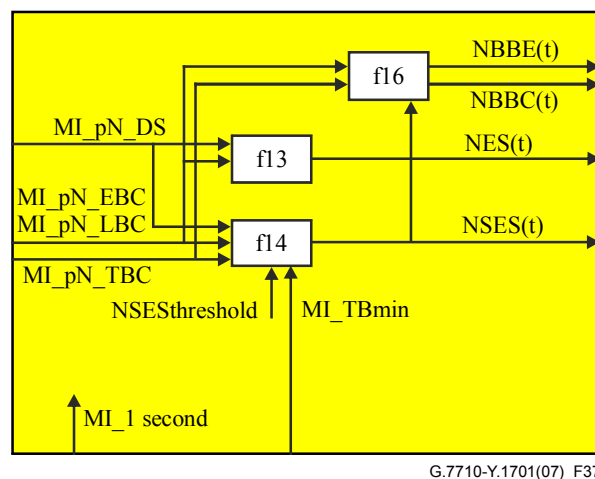


Figure 37 – NPME

Interfaces:

**Table 27 – NPME input and output signals**

Input(s)	Output(s)
MI_pN_DS	NBBE(t)
MI_pN_EBC or MI_pN_LBC	NBBC(t)
MI_pN_TBC	NES(t)
MI_1second	NSES(t)
MI_TBmin	
NSESthreshold	

**Processes:**

This function determines, on a per second basis, the number of near-end background block errors (BBE), near-end background block count, and whether an ES and/or SES occurred.

The TBC, EBC or LBC, and DS performance monitoring primitive signals, received from a transport atomic function, are the inputs for the determination of the performance events BBE, BBC, ES, SES.

For the case a DS input is not connected, DS shall be assumed to be false. In the case where an EBC input is not connected, EBC shall be assumed to be "0". In the case where a TBC input is not connected, TBC shall be assumed to be "1".

Figure 37 presents the processes and their interconnections within the near-end performance monitoring event (NPME) atomic performance monitoring function.

**f13:** A near-end errored second (NES) performance monitoring event signal shall be generated if pN\_DS is set or if pN\_EBC  $\geq 1$ ; i.e.:

–  $NES \leftarrow (pN\_DS = \text{true}) \text{ or } (pN\_EBC \geq 1).$

**f14:** A near-end severely errored second (NSES) performance monitoring event signal shall be generated if pN\_DS is set or if pN\_EBC (or pN\_LBC)  $\geq NSESthreshold \times pN\_TBC$  and more than a minimum number of blocks (TBmin) were transmitted; i.e.:

–  $NSES \leftarrow (pN\_DS = \text{true}) \text{ or } ((pN\_TBC \geq TBmin) \text{ and } (pN\_EBC \text{ or } pN\_LBC \geq NSESthreshold \times pN\_TBC)).$

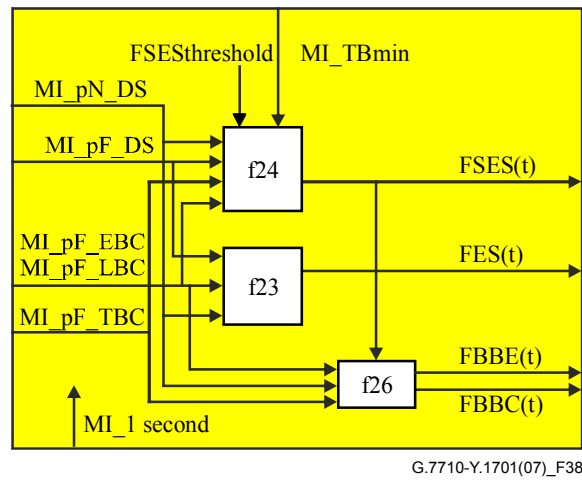
The value of the near-end SES threshold, NSESthreshold, depends on the network layer this NPME is connected to. The value of NSESthreshold is a real value between 0 and 1.

NOTE – For circuit layers (SDH, PDH, OTN) where the number of blocks within a one-second period is a fixed known value, pN\_TBC is representing this fixed known value. For packet layers (e.g. ETH) where the number of blocks (i.e., frames or packets) within a one-second period is variable, pN\_TBC represents the counted number of transmitted blocks within the one-second period.

**f16:** The near-end background block error (NBBE) and near-end background block count (NBBC) performance monitoring event signals shall equal pN\_EBC and pN\_TBC resp. if the NSES of that second is not set. Otherwise, NBBE and NBBC shall be zero.

**3.2 Update section 10.2.2 (Far-end performance monitoring event function – FPME) as shown below:**

**Symbol:**



**Figure 38 – FPME**

**Interfaces:**

**Table 28 – FPME input and output signals**

Input(s)	Output(s)
MI_pN_DS	FBBE(t)
MI_pF_DS	FBBC(t)
MI_pF_EBC or MI_pF_LBC	FES(t)
MI_pF_TBC	FSES(t)
MI_1second	
MI_TBmin	
FSESthreshold	

**Processes:**

This function determines, on a per second basis, the number of far-end background block errors (BBE), far-end background block count, and whether an ES and/or SES occurred.

The TBC, EBC or LBC, and DS performance monitoring primitive signals received from an atomic function are the inputs for the determination of the performance events BBE, BBC, ES, SES.

In the case where a DS input is not connected, DS shall be assumed to be false. For the case an EBC input is not connected, EBC shall be assumed to be "0". In the case where a TBC input is not connected, TBC shall be assumed to be "1".

Figure 38 presents the processes and their interconnections within the far-end performance monitoring event (FPME) atomic performance monitoring function. Note that "far-end" represents either those signals that are called "far-end" or those signals that are called "outgoing".

**f23:** A far-end errored second (FES) performance monitoring event signal shall be generated if pF\_DS is set or if pF\_EBC ≥ 1, and if that second is not a near-end defect second (pN\_DS); i.e.:

–  $FES \leftarrow (pN\_DS = \text{false}) \text{ and } ((pF\_DS = \text{true}) \text{ or } (pF\_EBC \geq 1)).$

**f24:** A far-end severely errored second (FSES) performance monitoring event signal shall be generated if pF\_DS is set or if pF\_EBC (or pF\_LBC) ≥ FSESthreshold × pF\_TBC and more than a minimum number of blocks (TBmin) were transmitted, and that second is not a near-end defect second; i.e.:

- $FSES \leftarrow (pN\_DS = \text{false}) \text{ and } ((pF\_DS = \text{true}) \text{ or } ((pN\_TBC \geq TBmin) \text{ and } (pF\_EBC \text{ or } pF\_LBC \geq FSESthreshold \times pF\_TBC)))$ .

The value of the far-end SES threshold, FSESthreshold, depends on the network layer this FPME is connected to. The value of FSESthreshold is a real value between 0 and 1.

NOTE – For circuit layers (SDH, PDH, OTN) where the number of blocks within a one-second period is a fixed known value, pF\_TBC is representing this fixed known value. For packet layers (e.g. ETH) where the number of blocks (i.e., frames or packets) within a one-second period is variable, pF\_TBC represents the counted number of transmitted blocks within the one-second period.

**f26:** The far-end background block error (FBBE) and far-end background block count (FBBC) performance monitoring event signal shall equal pF\_EBC and pF\_TBC resp. if the FSES of that second is not set and if that second is not a near-end defect second. Otherwise, FBBE and FBBC shall be zero.