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Base Transceiver Station (BTS)
Interface, Layer 3 Specification
Part 3**

ETSI

European Telecommunications Standards Institute

ETSI Secretariat: B.P.152 . F - 06921 Sophia Antipolis Cedex . France

TP. + 33 92 94 42 00 TF. + 33 93 65 47 16 Tx. 47 00 40 F

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Preface:

This specification is an addendum to GSM 08.58 version 3.5.0 and shall only be read in connection with that specification.

The page numbers used in this document is equivalent to those used in GSM 08.58 version 3.5.0 and can be seen as a page by page replacement.

Changes with GSM 08.58 version 3.5.0 as reference are marked as follows:

Double Underline : New added text.

Strikethrough : Deleted text.

Vertical Bar in margin : Changes occur in the corresponding line.

The support of the additional functionality specified in this addendum is not mandatory, however if the functionality is supported, it shall be supported completely in accordance with this specification.

ETSI/GSM

Recommendation GSM 08.58 - EXT

version 3.0.0

Title :Base Station Controller (BSC) to Base Transceiver Station (BTS)
Interface.

Layer 3 Specification
(Based on version 3.5.0 of GSM 08.08)

Date : June 1993

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Original Language : English

1. SCOPE

The use and general aspects of the BSC to BTS interface (the A-bis interface) are given in Recommendation GSM 08.51. This recommendation specifies the general structure of layer 3 and traffic management procedures and messages used on the A-bis interface to support signalling procedures as defined in Recommendation GSM 04.08. Network management procedures and messages for the A-bis interface are defined in Recommendation GSM 08.59. The functional split between BSC and BTS is defined in recommendation 08.52. The procedures and messages required to support this split are defined in detail in this recommendation.

This delta recommendation only includes modified parts concerning the short term solution (phase 1) for support of an alternative ciphering algorithm (A5/2).

2. PROTOCOL MODEL

A model for L3 can be found in figure 2.1. L2 addressing is made to TRX (or BCF) using the TEI of LAPD. Different L2 links are used for traffic management messages (RSL, Radio Signalling Link), network management messages (OML, Operation & Maintenance Link) and L2 management messages (L2ML, Layer 2 Management Link). For traffic management, two types of signalling messages have been defined:

Transparent Messages: Messages which are forwarded by BTS without interpretation or changes.

Non-Transparent Messages: Messages which are sent only between BSC and BTS and which BTS is acting upon or which are the results of BTS actions.

In addition, the messages have been grouped into four main groups: Radio Link Layer Management, Dedicated Channel Management, Common Channel Management and TRX Management messages.

Discrimination between these types and groups is based on the Message Discriminator which is sent as the first octet in all messages. Transparent and non-transparent messages are discriminated by a transparency flag (T-bit) in the Message Discriminator. Transparent messages are merely forwarded to L2 on the radio interface.

In order to address the relevant radio channel, a Channel Number element is included to support the distribution of messages to relevant physical channels on the TRX. A Link Identifier element supports the distribution on logical links/channels on the radio interface (compare the DLCI element of the A interface, Rec 08.06).

All messages in this recommendation are to be transmitted on the A-bis interface using the I format of LAPD, except for "MEASUREMENT RESULT" which is sent in UI format.

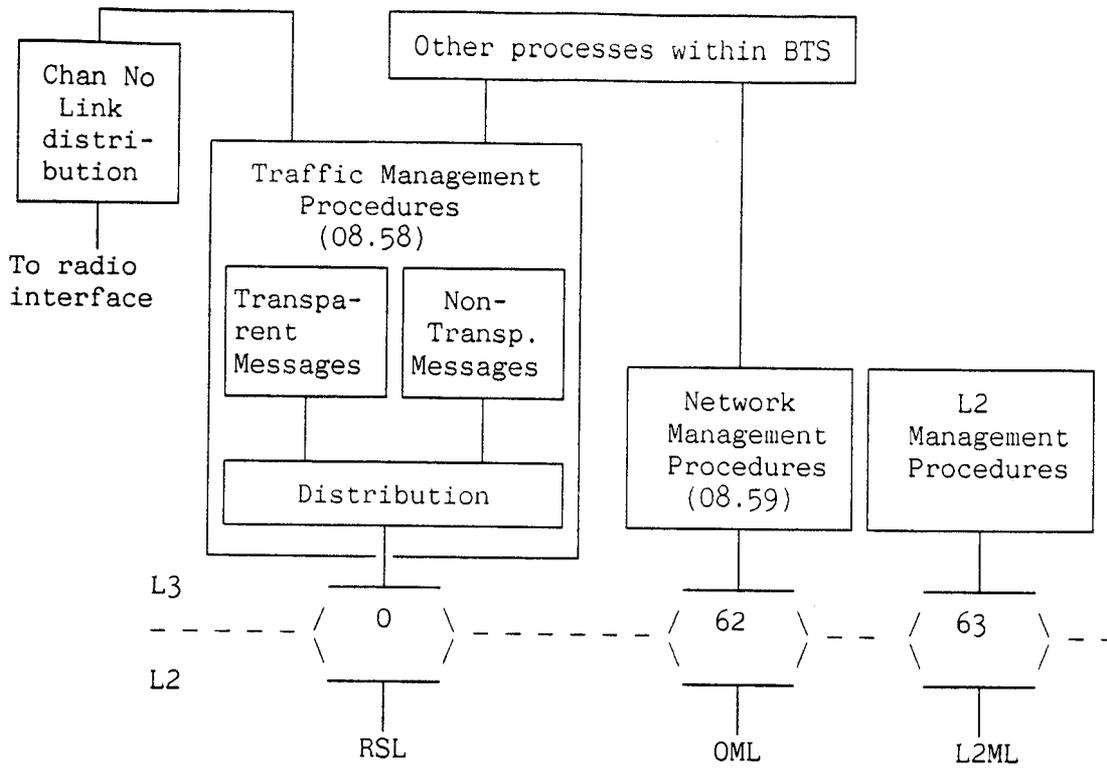
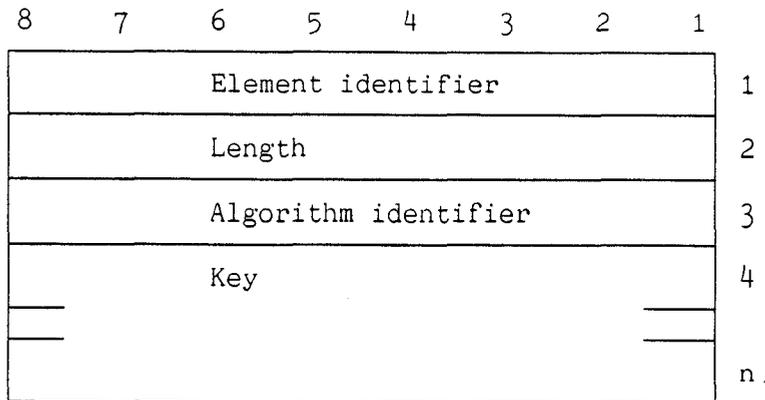


Figure 2.1/08.58 L3 model.

9.3.7 Encryption information

This element is a variable length element. It contains necessary information to control encryption devices.



~~Octets 2-n are coded as the corresponding octets of the Encryption Information element of Recommendation GSM-08-08.~~

The Algorithm Identifier field (octet 3) indicates the relevant ciphering algorithm. It is coded as:

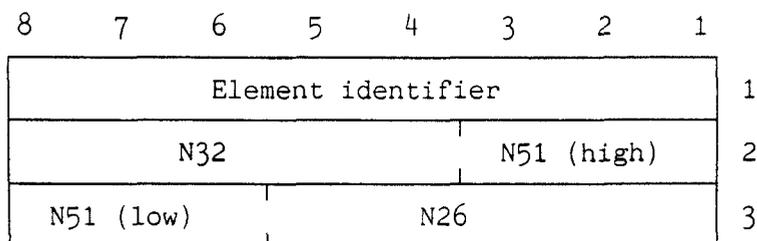
- 0000 0001 No encryption shall be used.
- 0000 0010 GSM encryption algorithm version 1 (A5/1)
- 0000 0011 GSM A5/2

All other values are reserved

The Key field (octets 4-n) indicates the ciphering key. It shall be an integral number of octets and the length is the value of the Length field minus 1.

9.3.8 Frame Number

This element contains the absolute frame number (FN) modulo 42432. It is used to carry the current timing in BTS to BSC for calculation of the Starting Time parameter required in some messages.



Octets 2-3 are coded as defined for octets 2-3 of the Starting Time information element of Recommendation GSM 04.08.