



**Universal Mobile Telecommunications System (UMTS);  
LTE;  
Evolved Universal Terrestrial  
Radio Access Network (E-UTRAN);  
SLm interface layer 1  
(3GPP TS 36.457 version 19.0.0 Release 19)**



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# Foreword

This Technical Specification has been produced by the 3<sup>rd</sup> Generation Partnership Project (3GPP).

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Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

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# 1 Scope

The present document specifies the standards allowed to implement layer 1 on the SLm interface.

The specification of transmission delay requirements and O&M requirements are not in the scope of the present document.

In the following, 'layer 1' and 'physical layer' are assumed to be synonymous.

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# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

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# 3 Definitions, symbols and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

## 3.2 Symbols

For the purposes of the present document, the following symbols apply:

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

|         |                           |
|---------|---------------------------|
| E-UTRAN | Evolved UTRAN             |
| O&M     | Operation and Maintenance |

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## 4 Introduction

The main functions of layer 1 are summarized in the following:

- Interface to physical medium;
- Frame delineation;
- Line clock extraction capability;
- Layer 1 alarms extraction and generation;
- Transmission quality control.

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## 5 Layer 1 specifications

The support of any suitable layer 1 technique - like point-to-point or point-to-multipoint techniques - shall not be prevented.

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## 6 Interface to management plane

The description of the interface towards the management plane is out of scope of this document, but at least the following O&M functions should be foreseen:

- Performance monitoring functions;
- Alarm status reporting functions;
- Synchronisation source management.

## Annex A (informative): Change history

| Change history |       |           |    |     |                                                 |        |
|----------------|-------|-----------|----|-----|-------------------------------------------------|--------|
| Date           | TSG # | TSG Doc.  | CR | Rev | Subject/Comment                                 | New    |
| 2012-12        | 58    | RP-121767 |    |     | Approved in RAN#58 and put under change control | 11.0.0 |
| 2014-09        |       |           |    |     | Update to Rel-12 version (MCC)                  | 12.0.0 |
| 2015-12        |       |           |    |     | Update to Rel-13 version (MCC)                  | 13.0.0 |

| Change history |         |      |    |     |     |                                                  |             |
|----------------|---------|------|----|-----|-----|--------------------------------------------------|-------------|
| Date           | Meeting | TDoc | CR | Rev | Cat | Subject/Comment                                  | New version |
| 2017-03        | SA#75   |      |    |     |     | Promotion to Release 14 without technical change | 14.0.0      |
| 2018-06        | SA#80   | -    | -  | -   | -   | Promotion to Release 15 without technical change | 15.0.0      |
| 2020-07        | SA#88-e | -    | -  | -   | -   | Update to Rel-16 version (MCC)                   | 16.0.0      |
| 2022-03        | SA#95-e |      |    |     |     | Promotion to Release 17 without technical change | 17.0.0      |
| 2024-03        | SA#103  | -    | -  | -   | -   | Update to Rel-18 version (MCC)                   | 18.0.0      |
| 2025-09        | SA#109  | -    | -  | -   | -   | Update to Rel-19 version (MCC)                   | 19.0.0      |



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# History

| Document history |              |             |
|------------------|--------------|-------------|
| V19.0.0          | October 2025 | Publication |
|                  |              |             |
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