

# ETSI TS 132 332 V14.0.0 (2017-04)



**Digital cellular telecommunications system (Phase 2+) (GSM);  
Universal Mobile Telecommunications System (UMTS);  
LTE;  
Telecommunication management;  
Notification Log (NL) Integration Reference Point (IRP);  
Information Service (IS)  
(3GPP TS 32.332 version 14.0.0 Release 14)**



---

Reference

RTS/TSGS-0532332ve00

---

Keywords

GSM,LTE,UMTS

***ETSI***

---

650 Route des Lucioles  
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C  
Association à but non lucratif enregistrée à la  
Sous-Préfecture de Grasse (06) N° 7803/88

---

***Important notice***

The present document can be downloaded from:  
<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status.  
Information on the current status of this and other ETSI documents is available at  
<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:  
<https://portal.etsi.org/People/CommitteeSupportStaff.aspx>

---

***Copyright Notification***

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.  
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2017.  
All rights reserved.

**DECT™, PLUGTESTS™, UMTS™** and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.  
**3GPP™** and **LTE™** are Trade Marks of ETSI registered for the benefit of its Members and  
of the 3GPP Organizational Partners.  
**oneM2M** logo is protected for the benefit of its Members  
**GSM®** and the GSM logo are Trade Marks registered and owned by the GSM Association.

---

## Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

---

## Foreword

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under  
<http://webapp.etsi.org/key/queryform.asp>.

---

## Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are NOT allowed in ETSI deliverables except when used in direct citation.

---

## Contents

Intellectual Property Rights .....	2
Foreword.....	2
Modal verbs terminology.....	2
Foreword.....	6
Introduction .....	6
1    Scope .....	7
2    References .....	7
3    Definitions and abbreviations.....	7
3.1    Definitions .....	7
3.2    Abbreviations .....	8
4    System overview .....	8
4.2    Compliance rules.....	8
5    Information Object Classes (IOCs) .....	9
5.1    Information entities imported and local labels .....	9
5.2    Class diagram .....	9
5.2.1    Attributes and relationships .....	9
5.2.2    Inheritance .....	10
5.3    Information Object Class (IOC) definitions .....	11
5.3.1    NLIRP.....	11
5.3.1.1    Definition .....	11
5.3.1.2    Attributes.....	11
5.3.2    Log.....	11
5.3.2.1    Definition .....	11
5.3.2.2    Attributes.....	11
5.3.2.3    State diagram.....	12
5.3.3    LogRecord .....	12
5.3.3.1    Definition .....	12
5.4    Information relationship definitions .....	13
5.4.1    Relation-nLIRP-log (M) .....	13
5.4.1.1    Definition .....	13
5.4.1.2    Role .....	13
5.4.1.3    Constraint.....	13
5.4.2    Relation-log-logRecord (M) .....	13
5.4.2.1    Definition .....	13
5.4.2.2    Role .....	13
5.4.2.3    Constraint.....	13
5.4.3    Relation-logRecord-notificationIRPNotification (M).....	14
5.4.3.1    Definition .....	14
5.4.3.2    Role .....	14
5.4.3.3    Constraint.....	14
5.5    Information attribute definition .....	15
5.5.1    Definition and legal values .....	15
5.5.2    Constraints .....	16
6    Interface definition .....	16
6.1    Class diagram .....	16
6.2    Generic rules .....	17
6.3    NLIRPOperations_1 Interface (M)....	17
6.3.1    Operation subscribeLog (M).....	17
6.3.1.1    Definition .....	17
6.3.1.2    Input parameters.....	17
6.3.1.3    Output parameters.....	18
6.3.1.4    Pre-condition.....	18

6.3.1.5	Post-condition .....	18
6.3.1.6	Exceptions .....	18
6.3.2	Operation unsubscribeLog (M).....	19
6.3.2.1	Definition .....	19
6.3.2.2	Input parameters.....	19
6.3.2.3	Output parameters .....	19
6.3.2.4	Pre-condition.....	19
6.3.2.5	Post-condition .....	19
6.3.2.6	Exceptions .....	19
6.3.3	Operation exportLogRecords (O).....	20
6.3.3.1	Definition .....	20
6.3.3.2	Input parameters.....	20
6.3.3.3	Output parameters .....	20
6.3.3.4	Pre-condition.....	20
6.3.3.5	Post-condition .....	20
6.3.3.6	Exceptions .....	20
6.3.4	Operation getLogRecords (O).....	21
6.3.4.1	Definition .....	21
6.3.4.2	Input parameters.....	21
6.3.4.3	Output parameters .....	21
6.3.4.4	Pre-condition.....	21
6.3.4.5	Post-condition .....	21
6.3.4.6	Exceptions .....	21
6.4	NLIRPOperations_2 Interface (O) .....	22
6.4.1	Operation getLogSubscriptionIds (M).....	22
6.4.1.1	Definition .....	22
6.4.1.2	Input parameters.....	22
6.4.1.3	Output parameters .....	22
6.4.1.4	Pre-condition.....	22
6.4.1.5	Post-condition .....	22
6.4.1.6	Exceptions .....	22
6.4.2	Operation getLogSubscriptionStatus (M) .....	23
6.4.2.1	Definition .....	23
6.4.2.2	Input parameters.....	23
6.4.2.3	Output parameters .....	23
6.4.2.4	Pre-condition.....	23
6.4.2.5	Post-condition .....	23
6.4.2.6	Exceptions .....	23
6.5	NLIRPNotifications_1 Interface (M) .....	24
6.5.1	Notification notifyLogSubscribed (M).....	24
6.5.1.1	Definition .....	24
6.5.1.2	Input Parameters .....	24
6.5.1.3	Triggering Event .....	24
6.5.1.3.1	From-state.....	24
6.5.1.3.2	To-state.....	24
6.5.2	Notification notifyLogUnsubscribed (M).....	25
6.5.2.1	Definition .....	25
6.5.2.2	Input Parameters .....	25
6.5.2.3	Triggering Event .....	25
6.5.2.3.1	From-state.....	25
6.5.2.3.2	To-state.....	25
6.6	NLIRPNotifications_2 Interface (O) .....	26
6.6.1	Notification notifyOccupancyLevelCrossed (M) .....	26
6.6.1.1	Definition .....	26
6.6.1.2	Input Parameters .....	26
6.6.1.3	Triggering Event .....	26
6.6.1.3.1	From-state.....	26
6.6.1.3.2	To-state.....	26
6.6.2	Notification notifyLoggingResumed (O).....	27
6.6.2.1	Definition .....	27
6.6.2.2	Input Parameters .....	27

6.6.2.3	Triggering Event .....	27
6.6.2.3.1	From-state.....	27
6.6.2.3.2	To-state.....	27
<b>Annex A (informative):</b>	<b>Change history .....</b>	<b>28</b>
History .....		29

---

## Foreword

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

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

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.

---

## Introduction

The present document is part of a TS-family covering the 3<sup>rd</sup> Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; as identified below:

TS 32.331 "Notification Log (NL) Integration Reference Point (IRP): Requirements"

**TS 32.332 "Notification Log (NL) Integration Reference Point (IRP): Information Service (IS)"**

TS 32.336 "Notification Log (NL) Integration Reference Point (IRP); Solution Set (SS) definitions"

The present document describes the requirements and information model necessary for Telecommunication Management (TM). The TM principles and TM architecture are specified in 3GPP TS 32.101 [1] and 3GPP TS 32.102 [2].

A communications system is composed of a multitude of Network Elements (NE) of various types and, typically, different vendors, which inter-operate in a co-ordinated manner in order to satisfy the network users' communication requirements.

The occurrence of faults in an NE may cause deterioration or loss of this NE's function. Fault Management is the functional area, which allows the operator to detect the occurrence of faults in the network in real-time. Configuration Management and Performance Management are two more functional areas, which require the operator to be alerted to certain conditions in the network.

A standard general-purpose mechanism for the management of logs containing selected notifications from the network is required to provide an ability to perform historical analysis on faults and conditions, which occurred in the network. The TS 32.33x-series, constituting the Notification log IRP, sets forth such a mechanism - and the present document contains the IS definition.

## 1 Scope

The present document specifies the Information Service for the Notification Log Integration Reference Point (NLIRP) as it applies to Itf-N.

This IRP IS defines the semantics of operations (and their parameters) visible across the Itf-N in a protocol and technology neutral way. It does not define the syntax or encoding of the operations and their parameters.

## 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 TS 32.101: "Telecommunication management; Principles and high level requirements".   |
| [2] | 3GPP TS 32.102: "Telecommunication management; Architecture".   |
| [3] | 3GPP TS 32.302: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP): Information Service (IS)".                  |
| [4] | 3GPP TS 32.622: "Telecommunication management; Configuration Management (CM); Generic network resources Integration Reference Point (IRP): Network Resource Model (NRM)". |
| [5] | 3GPP TS 32.111-2: "Telecommunication management; Fault Management; Part 2: Alarm Integration Reference Point (IRP): Information Service (IS)".                            |
| [6] | 3GPP TS 32.312: "Telecommunication management; Generic Integration Reference Point (IRP) management; Information Service (IS)".   |
| [7] | 3GPP TS 32.331: "Telecommunication management; Notification Log (NL) Integration Reference Point (IRP): Requirements".  |
| [8] | 3GPP TS 32.342 "Telecommunication management; File Transfer (FT) Integration Reference Point (IRP): Information Service (IS)".  |
| [9] | 3GPP TS 32.150: "Telecommunication management; Integration Reference Point (IRP) Concept and definitions".  |

## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TS 32.101 [1], 3GPP TS 32.102 [2], 3GPP TS 32.111-2 [5] and 3GPP TS 32.331 [7] apply.

**notification category:** it refers to the set of notifications of one 3GPP IRP Information Service specification  
A Notification Category is identified by the name of the IRP specification and the IRP specification version number.