ETSI TS 132 122 V14.0.0 (2017-04)

**Digital cellular telecommunications system (Phase 2+) (GSM);
Universal Mobile Telecommunications System (UMTS);
LTE;
Telecommunication management;
Advanced Alarm Management (AAM)
Integration Reference Point (IRP):
Information Service (IS)
(3GPP TS 32.122 version 14.0.0 Release 14)**

Reference
RTS/TSGS-0532122ve00

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/CommiteeSupportStaff.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 5
Introduction 5
1 Scope 6
2 References 6
3 Definitions and abbreviations 7
3.1 Definitions 7
3.2 Abbreviations 7
4 System overview 8
4.1 System context 8
5 Information Object Classes 9
5.1 Imported information entities 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 definitions 11
5.3.1 advancedAlarmManagementRule 11
5.3.1.1 Definition 11
5.3.1.1.1 General Definition 11
5.3.1.2 Attributes 11
5.3.2 advancedAlarmManagementIRP 11
5.3.2.1 Definition 11
5.4 Information relationships definition 12
5.4.1 relation- AdvancedAlarmManagementIRP-AdvancedAlarm ManagementRule (M) 12
5.4.1.1 Definition 12
5.4.1.2 Roles 12
5.4.1.3 Constraints 12
5.5 Information attributes definition 12
5.5.1 Definitions and legal values 12
6 Interface Definition 13
6.1 Class diagram representing interfaces 13
6.2 AAMIRPOperation_1 Interface (M) 14
6.2.1 Scope 14
6.2.2 Operation activateAAMRule (M) 14
6.2.2.1 Definition 14
6.2.2.2 Input parameters 14
6.2.2.2.1 Generic Input parameters 14
6.2.2.2.2 Content of Input parameter aAMRuleParameterList depending on value of aAMRuleType 14
6.2.2.2.2.1 aAMRuleType = ThresholdRule 14
6.2.2.2.1.2 aAMRuleType = TransientRule 15
6.2.2.2.2.3 aAMRuleType = ToggleRule 15
6.2.2.2.2.4 aAMRuleType = vendorSpecificRule 15
6.2.2.3 Output parameters 15
6.2.2.4 Pre-condition 15
6.2.2.5 Post-condition 15
6.2.2.6 Exceptions 15
6.2.3 Operation getAAMRules (M) 16
6.2.3.1 Definition 16

6.2.3.2 Input parameters 16
6.2.3.3 Output parameters 16
6.2.3.4 Pre-condition 16
6.2.3.5 Post-condition 16
6.2.3.6 Exceptions 16
6.2.4 Operation `deactivateAAMRule` (M) 17
6.2.4.1 Definition 17
6.2.4.2 Input parameters 17
6.2.4.3 Output parameters 17
6.2.4.4 Pre-condition 17
6.2.4.5 Post-condition 17
6.2.4.6 Exceptions 17

Annex A (normative): Advanced Alarm Management Rules 18

A.1 General 18

A.2 AAM Rules 20
A.2.1 Threshold Rule 20
A.2.1.1 Parameters 20
A.2.1.2 Criterion to determine alike alarm 20
A.2.1.3 Treatment of alike alarm 20
A.2.1.4 Relation to Log and AlarmList 20
A.2.1.5 Samples 21
A.2.1.6 Example for Use cases 21
A.2.2 Transient Rule 22
A.2.2.1 Parameters 22
A.2.2.2 Criterion to determine alike alarm 22
A.2.2.3 Treatment of alike alarm 22
A.2.2.4 Relation to Log and AlarmList 22
A.2.2.5 Samples 23
A.2.2.6 Example for Use cases 23
A.2.3 Toggle Rule 24
A.2.3.1 Parameters 24
A.2.3.2 Criterion to determine alike alarm 24
A.2.3.3 Treatment of alike alarm 24
A.2.3.4 Relation to Log and AlarmList 25
A.2.3.5 Samples 25
A.2.3.6 Example for Use cases 26
A.2.3.7 Exception Handling 26
A.2.4 Definition of vendor specific rule 27

A.3 Relation of Rule and Notification filter 28

Annex B (informative): Change history 29

History 30

Foreword

This Technical Specification has been produced by the 3rd 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 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; as identified below:

32.121: Advanced Alarm Management (AAM) Integration Reference Point (IRP): Requirements;

32.122: Advanced Alarm Management (AAM) Integration Reference Point (IRP): Information Service (IS);

32.126: Advanced Alarm Management (AAM) Integration Reference Point (IRP); Solution Set (SS) definitions.

The Itf-N interface is built up by a number of IRPs and a related Name Convention, which realize the functional capabilities over this interface. The basic structure of the IRPs is defined in 3GPP TS 32.150 [1].

A single network fault may generate a large number of alarms over space and time. In a large and complex network, simultaneous network faults may occur, causing the network operator to be flooded with high volume of alarms. The high volume of alarms, typically the one received by an `IRPManager` via the `getAlarmList` or alarm notifications of Alarm IRP specification, greatly inhibits the operator ability to quickly identify and locate the responsible network faults. AAM IRP is intended to provide methods to improve this situation.

1 Scope

The purpose of Advanced Alarm Management (AAM) IRP is to define an interface through which an `IRPManager` can categorize alarm notifications.

The present document is the Information Service of AAM. It defines, for the purpose of categorizing alarm notifications, the information observable and controlled by management system's client and it also specifies the semantics of the interactions used to carry this information.

2 References

The following documents contain provisions that, 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 32.150: "Telecommunication management; Integration Reference Point (IRP) Concept and definitions".

[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 32.121: "Telecommunication management; Advanced Alarm Management Reference Point (IRP): Requirements".

[5] void.

[6] 3GPP TS 32.622: "Telecommunication management; Configuration Management (CM); Generic network resources Integration Reference Point (IRP): Network Resource Model (NRM)".

[7] 3GPP TS 32.312: "Telecommunication management; Generic Integration Reference Point (IRP) management; Information Service (IS)".

[8] 3GPP TS 32.602: "Telecommunication management; Configuration Management (CM); Basic CM Integration Reference Point (IRP): Information Service (SS)".

[9] 3GPP TS 32.662: "Telecommunication management; Configuration Management (CM); Kernel CM; Information service (IS)".