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Technical Specification

**3rd Generation Partnership Project;
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State Management Integration Reference Point (IRP);
Information Service (IS)
(Release 11)**

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Foreword

This Technical Specification (TS) 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:

32.671:   Configuration Management (CM); State Management Integration Reference Point (IRP); Requirements

32.672:   Configuration Management (CM); State Management Integration Reference Point (IRP); Information Service (IS)

32.676:   Configuration Management (CM); State Management Integration Reference Point (IRP); Solution Set (SS) definitions

Configuration Management (CM), in general, provides the operator with the ability to assure correct and effective operation of the 3G network as it evolves. CM actions have the objective to control and monitor the actual configuration on the Network Elements (NEs) and Network Resources (NRs), and they may be initiated by the operator or by functions in the Operations Systems (OSs) or NEs.

CM actions may be requested as part of a deployment program (e.g. additions and deletions), as part of an optimisation program (e.g. modifications), and to maintain the overall Quality of Service (QoS). The CM actions are initiated either as single actions on single NEs of the 3G network, or as part of a complex procedure involving actions on many resources/objects in one or several NEs.

1 Scope

The present document defines the Information Service (IS) part of the State Management IRP. It specifies the semantics of the network resource state and status information visible across the Itf-N. It also specifies the interaction required for the management of the state and status information.

The state and status attributes specified in this document shall be used, where applicable, as attributes in Information Object Class (IOC) definitions of other 3GPP IRPs. When used by the IOC definition, the semantics of the state and status attributes can be qualified and enhanced if deemed necessary.

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 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".

[4] 3GPP TS 32.302: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP): Information Service (IS)".

[5] 3GPP TS 32.312: "Telecommunication management; Generic Integration Reference Point (IRP) management; Information Service (IS)".

[6] 3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".

[7] ITU-T Recommendation X.731: "Information technology - Open Systems Interconnection - Systems Management: State management function".

[8] ITU-T Recommendation X.733: "Information technology - Open Systems Interconnection - Systems Management: Alarm reporting function".

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] and 3GPP TS 32.600 [6] apply.

3.2 Abbreviations

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

CM	Configuration Management
EM	Element Manager
IOC	Information Object Class
IRP	Integration Reference Point
IS	Information Service (see 3GPP TS 32.101 [1])
M	Mandatory
NE	Network Element
NM	Network Manager
NR	Network Resource
O	Optional
OMG	Object Management Group
OS	Operations System
QoS	Quality of Service
UML	Unified Modelling Language (OMG)

4 Void

5 Information Object Classes (IOCs)

5.1 Information entities imported and local labels

Label reference	Local label

There are no information entities imported.

5.2 Class diagram

5.2.1 Attributes and relationships

This subclause depicts the set of information object classes (IOCs) that encapsulate information within the Generic State Management IRP. The intent is to identify the information required for the State Management IRP implementation of its operations and notification emission. This subclause provides the overview of all information object classes in UML. Subsequent subclauses provide more detailed specification of various aspects of these information object classes.
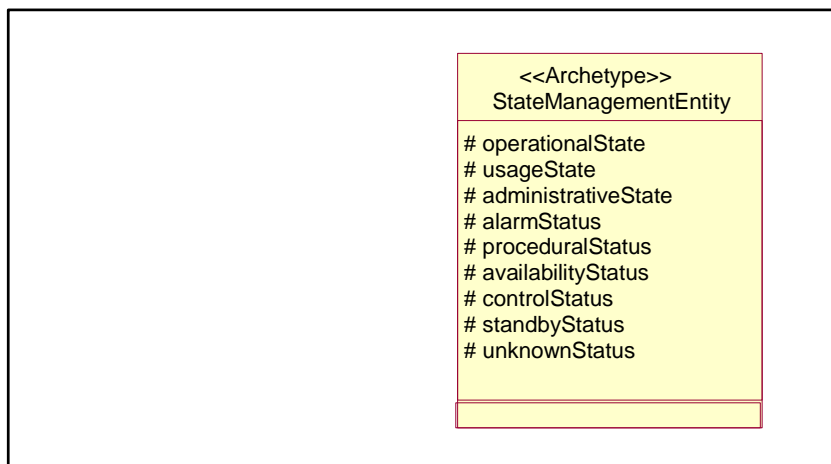
5.2.2   Inheritance

There are no inheritance relationships.

5.3   Information object classes definition

5.3.1   StateManagementEntity

5.3.1.1   Definition

StateManagementEntity is a Archetype, that may represent any IOC defined in the Network Resource Models,
e.g. Generic Network Resource Model, Core Network Resource Model, UTRAN Network Resource Model or GERAN
Network Resource Model.

The attributes defined for this Archetype can be imported and used in any IOC of the Network Resource Models, where
such attributes are needed. These attributes shall be used in the same way as defined in the ITU-T Recommendation
X.731 [7] and ITU-T Recommendation X.733 [8], unless otherwise stated. That document gives also examples of state
diagrams, defining possible state transitions when one or more of the state attributes defined here are used in a class.

5.3.1.2   Attributes

The following attributes are defined for this information object class.

Attribute name	Support Qualifier
operationalState	N/A
usageState	N/A
administrativeState	N/A
alarmStatus	N/A
proceduralStatus	N/A
availabilityStatus	N/A
controlStatus	N/A
standbyStatus	N/A
unknownStatus	N/A

5.4 Information attributes definition

5.4.1 Definition and legal values

The following table gives the definition and legal values for each attribute.

Attribute Name	Definition	Legal Values
operationalState	It indicates the operational state of the object instance. "It describes whether or not the resource is physically installed and working." [7] This attribute is READ-ONLY.	"Enabled", "Disabled" The meaning of these values is as defined in ITU-T Recommendation X.731 [7].
usageState	It indicates the usage state of the object instance. "It describes whether or not the resource is actively in use at a specific instant, and if so, whether or not it has spare capacity for additional users at that instant." [7] This attribute is READ-ONLY.	"Idle", "Active", "Busy" The meaning of these values is as defined in ITU-T Recommendation X.731 [7].
administrativeState	It indicates the administrative state of the object instance. "It describes the permission to use or prohibition against using the resource, imposed through the management services." [7]	"Locked", "Shutting down", "Unlocked" The meaning of these values is as defined in ITU-T Recommendation X.731 [7].
alarmStatus	It indicates the alarm status of the object instance. This is mapped to the perceived severity of the most severe active alarm associated to the object instance.	"Cleared", "Indeterminate", "Warning", "Minor", "Major", "Critical", The meaning of these values is as defined for the attribute perceived severity in ITU-T Recommendation X.733 [8].
proceduralStatus	It indicates the procedural status of the object instance.	A set consisting of zero or more of the following values: "Initialisation required", "Not initialised", "Initialising", "Reporting", "Terminating". The meaning of these values is as defined in ITU-T Recommendation X.731 [7].
availabilityStatus	It indicates the availability status of the object instance.	A set consisting of zero or more of the following values: "In test", "Failed", "Power off", "Off line", "Off duty", "Dependency", "Degraded", "Not installed", "Log full" The meaning of these values is as defined in ITU-T Recommendation X.731 [7].
controlStatus	It indicates the control status of the object instance.	A set consisting of zero or more of the following values: "Subject to test", "Part of services locked", "Reserved for test", "Suspended" . The meaning of these values is as defined in ITU-T Recommendation X.731 [7].
standbyStatus	It indicates the standby status of the object instance.	"Hot standby", "Cold standby", "Providing service", . The meaning of these values is as defined in ITU-T Recommendation X.731 [7].
UnknownStatus	It indicates whether the state of the resource represented by the managed object is unknown.	"True" (state is unknown, the values of the state attributes may not reflect the actual state of the resource); "False" (state is known, the values of the state attributes reflect the actual state of the resource).

Annex A (informative):
Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
Jun 2002	SA_16	SP-020329	--	--	Submitted to TSG SA #16 for Information	1.0.0	
Sep 2002	SA_17	SP-020469	--	--	Submitted to TSG SA #17 for Approval	2.0.0	5.0.0
Mar 2004	SA_23	SP-040105	--	--	Automatic upgrade to Rel-6 (no CR)	5.0.0	6.0.0
Mar 2005	SA_27	SP-050051	0001	--	Remove the irrelevant clause 4	6.0.0	6.1.0
Jun 2007	SA_36	--	--	--	Automatic upgrade to Rel-7 (no CR) at freeze of Rel-7. Deleted reference to CMIP SS, discontinued from R7 onwards.	6.1.0	7.0.0
Dec 2008	SA_42	--	--	--	Upgrade to Release 8	7.0.0	8.0.0
Dec 2009	-	-	-	-	Update to Rel-9 version	8.0.0	9.0.0
2011-03	-	-	-	-	Update to Rel-10 version (MCC)	9.0.0	10.0.0
2012-09	-	-	-	-	Update to Rel-11 version (MCC)	10.0.0	**11.0.0**