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Title:	**Rel-5 TS 32.674-200 (State Management IRP: CMIP Solution Set)**
Document for:	**Approval**
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3GPP TSG-SA5 (Telecom Management)   S5-026495
Meeting #29, Beijing, China, 24-28 June 2002

Presentation of Technical Specification to TSG SA

Presentation to:	**TSG SA Meeting #17**
Document for presentation:	**TS 32.674, Version 2.0.0**
	State Management IRP: CMIP Solution Set
Presented for:	**Approval**

Abstract of document:

This Specification defines the CMIP Solution Set of the State Management IRP.

Work done against the WID contained in SP-010461 (Work Item ID: OAM-NIM).

Purpose of These Specifications:

This CMIP Solution Set Specification is intended for Release 5 and is part of the State Management IRP (32.67x-family), which consists of the four specifications, a Requirement Specification (32.671), an Information Service Specification (32.672) and a Stage 3 CORBA Solution Set (32.674) and CMIP Solution Set (32.674) Specifications.

The purpose of this set of specifications is to provide the management state of managed objects, which represents the instantaneous condition of availability and operability of the associated resource from the point of view of management.

The State Management IRP is defined to specify and to standardise the generic attributes for modelling and managing the resources of 3G networks at the Itf-N.

Status of These Specifications:

Jun 2002	S_16	SP-020329	--	--	Submitted to TSG SA #16 for Information	1.0.0	

he State Management IRP: CMIP Solution Set Specification (32.674) is complete and ready as v2.0.0 for Approval as Release 5.

Outstanding Issues:

None.

Contentious Issues:

None.

3GPP TS 32.674 V2.0.0 (2002-09)

Technical Specification

**3rd Generation Partnership Project;
Technical Specification Group Services and System Aspects;
Telecommunication Management;
Configuration Management (CM);
State Management Integration Reference Point (IRP):
CMIP solution set
(Release 5)**

Keywords
Configuration Management

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Contents

Foreword

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

The present document is 32.674 of the 32.67x-series covering the 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; Configuration Management (CM); State Management Integration Reference Point (IRP), as identified below:

32.671: "Requirements";

32.672: "Information service";

32.673: "CORBA Solution set";

32.674: "CMIP Solution set".

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

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 specifies the Common Management Information Protocol (CMIP) Solution Set (SS) for the Generic State Management: Information Service defined in 3GPP TS 32.672 [6]. In detail:

- Clause 4 contains an introduction to some concepts that are the base for some specific aspects of the CMIP interfaces.

- Clause 5 contains the GDMO definitions for the Generic State Management over the CMIP interfaces

- Clause 6 contains the ASN.1 definitions supporting the GDMO definitions provided in clause 5.

This solution set is related to 3GPP TS 32.672 (V5.0.X).

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: "3G Telecom Management principles and high level requirements".

[2] 3GPP TS 32.102: "3G Telecom Management Architecture".

[3] 3GPP TS 32.304: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point: CMIP Solution Set Version 1:1".

[4] 3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and main requirements".

[5] 3GPP TS 32.602: "Telecommunication management; Configuration Management (CM); Basic configuration management Integration Reference Point (IRP) information model".

[6] 3GPP TS 32.672: "Telecommunication management; Configuration Management (CM); State management Integration Reference Point (IRP): Information service".

[7] ITU-T Recommendation X.721 / ISO/IEC 10165-2: "Information technology - Open Systems Interconnection - Structure of management information: Definition of management information".

[8] ITU-T Recommendation M.3100 (1995): "Generic network information model".

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 [4] apply.

3.2 Abbreviations

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

ASN.1	Abstract Syntax Notation 1
CM	Configuration Management
CMIP	Common Management Information Protocol
GDMO	Guidelines for the Definition of Managed Objects
IEC	International Electro-technical Commission
IOC	Information Object Class
IRP	Integration Reference Point
IS	Information Service (see 3GPP TS 32.101 [1])
ISO	International Standards Organization
ITU-T	International Telecommunication Union, Telecommunication Sector
MOC	Managed Object Class
NE	Network Element
NR	Network Resource
OS	Operations System
QoS	Quality of Service
SS	Solution Set

4 Basic aspects

4.1 General

The present document provides all the GDMO definitions necessary to implement the Generic State Management Information Service [6] for the CMIP interface.

4.2 State and Status attributes

This solution set introduces the packages:

- 'operationalStateAttributePackage';

- 'usageStateAttributePackage';

- 'administrativeStateAttributePackage';

- 'alarmStatusAttributePackage';

- 'proceduralStatusAttributePackage';

- 'availabilityStatusAttributePackage';

- 'controlStatusAttributePackage';

- 'standbyStatusAttributePackage'; and

- 'unknownStatusAttributePackage'.

Each of these packages contain just one single state management attribute as defined in ITU-T Recommandation X.721 [7] or ITU-T Recommendation M.3100 [8]. The packages can be used in other MOCs by explicitly importing one or more of the attributes, depending on the needs of that MOC.

4.3 Mapping

The semantics of the Generic State Management are defined in 3GPP TS 32.672 [6]. The definitions of the management services and management information defined there are independent of any implementation technology and protocol. This subclause maps these technology and protocol independent definitions onto the equivalencies of the CMIP Solution Set of the Generic State Management.

4.3.1 Mapping of IOCs

The following table shows the mapping of the information object classes defined in the IS of the Generic State Management to the equivalent MOCs of this CMIP Solution Set.

Table 4.1: Mapping of IOCs

IOCs of the Genric State Management: IS	MOCs of this CMIP SS
StateManagementEntity	no mapping needed for an archetyp

4.3.2 Mapping of Attributes

The following table shows the mapping of the IOC attributes defined in the IS of the Generic State Management to their equivalents in this CMIP Solution Set.

Table 4.2: Mapping of Attributes

Attribute defined in 3GPP TS 32.672 [6]	Attribute defined in this CMIP SS
operationalState	operationalState (ITU-T Recommendation X.721 [7])
usageState	usageState (ITU-T Recommendation X.721 [7])
administrativeState	administrativeState (ITU-T Recommendation X.721 [7])
alarmStatus	alarmStatus (ITU-T Recommendation M.3100 [8])
proceduralStatus	proceduralStatus (ITU-T Recommendation X.721 [7])
availabilityStatus	availabilityStatus (ITU-T Recommendation X.721 [7])
controlStatus	controlStatus (ITU-T Recommendation X.721 [7])
standbyStatus	standbyStatus (ITU-T Recommendation X.721 [7])
unknownStatus	unknownStatus (ITU-T Recommendation X.721 [7])

5 GDMO Definitions

5.1 Packages

5.1.1 operationalStateAttributePackage

```
operationalStateAttributePackage PACKAGE
    BEHAVIOUR
        operationalStateAttributePackageBehaviour;
    ATTRIBUTES
        "Rec. X.721 | ISO/IEC 10165-2 : 1992":operationalState GET;
    REGISTERED AS {ts32-674Package 1};

operationalStateAttributePackage BEHAVIOUR
DEFINED AS
    "This package has been defined to provide the operationalState attribute as described in ITU-T
    Rec. X.721 of a managed object.";
```

5.1.2   usageStateAttributePackage

```
usageStateAttributePackage PACKAGE
    BEHAVIOUR
        usageStateAttributePackageBehaviour;
    ATTRIBUTES
        "Rec. X.721 | ISO/IEC 10165-2 : 1992":usageState GET;
    REGISTERED AS {ts32-674Package 2};

usageStateAttributePackage BEHAVIOUR
DEFINED AS
    "This package has been defined to provide the usageState attribute as described in ITU-T Rec.
    X.721 of a managed object.";
```

5.1.3   administrativeStateAttributePackage

```
administrativeStateAttributePackage PACKAGE
    BEHAVIOUR
        administrativeStateAttributePackageBehaviour;
    ATTRIBUTES
        "Rec. X.721 | ISO/IEC 10165-2 : 1992":administrativeState GET-REPLACE;
    REGISTERED AS {ts32-674Package 3};

administrativeStateAttributePackage BEHAVIOUR
DEFINED AS
    "This package has been defined to provide the administrativeState attribute as described in ITU-T
    Rec. X.721 of a managed object.";
```

5.1.4   alarmStatusAttributePackage

```
alarmStatusAttributePackage PACKAGE
    BEHAVIOUR
        alarmStatusAttributePackageBehaviour;
    ATTRIBUTES
        "Rec. M.3100 | 1995":alarmStatus GET;
    REGISTERED AS {ts32-674Package 4};

alarmStatusAttributePackage BEHAVIOUR
DEFINED AS
    "This package has been defined to provide the alarmStatus attribute as described in ITU-T Rec.
    M.3100 of a managed object.";
```

5.1.5   proceduralStatusAttributePackage

```
proceduralStatusAttributePackage PACKAGE
    BEHAVIOUR
        proceduralStatusAttributePackageBehaviour;
    ATTRIBUTES
        "Rec. X.721 | ISO/IEC 10165-2 : 1992": proceduralStatus GET;
    REGISTERED AS {ts32-674Package 5};

proceduralStatusAttributePackage BEHAVIOUR
DEFINED AS
    "This package has been defined to provide the proceduralStatus attribute as described in ITU-T
    Rec. X.721 of a managed object.";
```

5.1.6   availabilityStatusAttributePackage

```
availabilityStatusAttributePackage PACKAGE
    BEHAVIOUR
        availabilityStatusAttributePackage Behaviour;
    ATTRIBUTES
        "Rec. X.721 | ISO/IEC 10165-2 : 1992": availabilityStatus GET;
    REGISTERED AS {ts32-674Package 6};

availabilityStatusAttributePackage BEHAVIOUR
DEFINED AS
    "This package has been defined to provide the availabilityStatus attribute as described in ITU-T
    Rec. X.721 of a managed object.";
```

5.1.7 controlStatusAttributePackage

```
controlStatusAttributePackage PACKAGE
    BEHAVIOUR
        controlStatusAttributePackageBehaviour;
    ATTRIBUTES
        "Rec. X.721 | ISO/IEC 10165-2 : 1992": availabilityStatus GET;
    REGISTERED AS {ts32-674Package 7};

controlStatusAttributePackage BEHAVIOUR
DEFINED AS
    "This package has been defined to provide the controlStatus attribute as described in ITU-T Rec.
    X.721 of a managed object.";
```

5.1.8 standbyStatusAttributePackage

```
standbyStatusAttributePackage PACKAGE
    BEHAVIOUR
        standbyStatusAttributePackageBehaviour;
    ATTRIBUTES
        "Rec. X.721 | ISO/IEC 10165-2 : 1992": standbyStatus GET;
    REGISTERED AS {ts32-674Package 8};

standbyStatusAttributePackage BEHAVIOUR
DEFINED AS
    "This package has been defined to provide the standbyStatus attribute as described in ITU-T Rec.
    X.721 of a managed object.";
```

5.1.9 unknownStatusAttributePackage

```
unknownStatusAttributePackage PACKAGE
    BEHAVIOUR
        unknownStatusAttributePackageBehaviour;
    ATTRIBUTES
        "Rec. X.721 | ISO/IEC 10165-2 : 1992": unknownStatus GET;
    REGISTERED AS {ts32-674Package 9};

unknownStatusAttributePackage BEHAVIOUR
DEFINED AS
    "This package has been defined to provide the unknownStatus attribute as described in ITU-T Rec.
    X.721 of a managed object.";
```

Annex A (informative):
Change history

<table>
<tr><td colspan="8" align="center">**Change history**</td></tr>
<tr><td>**Date**</td><td>**TSG #**</td><td>**TSG Doc.**</td><td>**CR**</td><td>**Rev**</td><td>**Subject/Comment**</td><td>**Old**</td><td>**New**</td></tr>
<tr><td>Jul 2002</td><td>--</td><td>--</td><td>--</td><td>--</td><td>SA5 has sent to SA email list for Information</td><td>1.0.0</td><td></td></tr>
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