Source:	**SA5 (Telecom Management)**
Title:	**Rel-5 TS 32.673-100 (State Management IRP: CORBA Solution Set)**
Document for:	**Approval**
Agenda Item:	**7.5.3**

3GPP TSG-SA5 (Telecom Management)   S5-026752
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Presentation of Technical Specification to TSG SA

Presentation to:	**TSG SA Meeting #17**
Document for presentation:	**TS 32.673, Version 1.0.0**
	State Management IRP: CORBA Solution Set
Presented for:	**Approval**

Abstract of document:

This Specification defines the CORBA 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 CORBA 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	

The State Management IRP: CORBA Solution Set Specification (32.673) is now submitted for the first time to SA but it is ready for Rel-5 approval.

Outstanding Issues:

None.

Contentious Issues:

None.

3GPP TS 32.673 V1.0.0 (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):
CORBA solution set
(Release 5)**

Keywords

Fault Management, Alarms

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Contents

Foreword

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

The present document is 32.673 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.

1 Scope

The present document specifies the CORBA Solution Set (SS) for the IRP whose semantics is specified in State Management IRP: Information Service (IS) (3GPP TS 32.672 [2]).

Clause 1 to 3 provides background information. Clause 4 provides key architectural features supporting the SS. Clause 5 defines the mapping of operations, notification, parameters and attributes defined in IS to their SS equivalents. Annex A contains the IDL specification.

This Solution Set specification 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 32.311: "Telecommunication management; Generic Integration Reference Point (IRP) management; Requirements".

[2] 3GPP TS 32.672: "Telecommunication management; Configuration Management (CM); State Management Integration Reference Point (IRP): Information service".

[3] ITU-T Recommendation X.721: "Information technology - Open Systems Interconnection - Structure of management information: Definition of management information".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions defined in 3GPP TS 32.672 [2] apply. There are no additional definitions applicable to the present document.

3.2 Abbreviations

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

CORBA	Common Object Request Broker Architecture
IDL	Interface Definition Language
IOC	Information Object Class
IRP	Integration Reference Point
IS	Information Service
NE	Network Element
OMG	Object Management Group
SS	Solution Set

3.3 IRP document version number string

The IRP document version number (sometimes called "IRP version" or "version number") string is used to identify this specification. The definition of "IRP document version number string" in 3GPP TS 32.311 [1] provides the rule to derive such a string.

As the State Management IRP IS as defined in 3GPP TS 32.672 [2] does not specify operations & notification (only State Management related data definitions), this string definition is stated here for potential future use only.

4 Architectural Features

The overall architectural feature of State Management IRP is specified in 3GPP TS 32.672 [2].

For this release there are no features identified that are specific to the CORBA SS.

5 Mapping

5.1 IOC Mapping

Table 1 provides the mapping of the information object classes defined in the IS of the State Management IRP [2] to the equivalent of this CORBA Solution Set.

Table 1: Mapping of IOCs

IOCs defined in State Management IRP IS [2]	CORBA SS Method
StateManagementEntity	No mapping applicable for this <<Archetyp>> class.

5.2 Mapping of Attributes

Table 2 provides the mapping of the IOC attributes defined in the IS of the State Management IRP [2] to their equivalents in this CORBA Solution Set. As [2] specified the Support Qualifier for these attributes as not applicable, mappings towards Mandatory and Optional are provided.

Table 2: Mapping of Attributes

Attributes defined in State Management IRP IS [2]	CORBA SS Method attributes	Qualifier
operationalState	OperationalState (ITU-T Recommention X.721 [3])	M
operationalState	OperationalStateTypeOpt (ITU-T Recommention X.721 [3])	O
usageState	UsageState (ITU-T Recommention X.721 [3])	M
usageState	UsageStateTypeOpt (ITU-T Recommention X.721 [3])	O
administrativeState	AdministrativeState (ITU-T Recommention X.721 [3])	M
administrativeState	AdministrativeStateTypeOpt (ITU-T Recommention X.721 [3])	O
alarmStatus	AlarmStatus (ITU-T Recommention X.721 [3])	M
alarmStatus	AlarmStatusTypeOpt (ITU-T Recommention X.721 [3])	O
proceduralStatus	ProceduralStatus (ITU-T Recommention X.721 [3])	M
proceduralStatus	ProceduralStatusTypeOpt (ITU-T Recommention X.721 [3])	O
availabilityStatus	AvailabilityStatus (ITU-T Recommention X.721 [3])	M
availabilityStatus	AvailabilityStatusTypeOpt (ITU-T Recommention X.721 [3])	O
controlStatus	ControlStatus (ITU-T Recommention X.721 [3])	M
controlStatus	ControlStatusTypeOpt (ITU-T Recommention X.721 [3])	O
standbyStatus	StandbyStatus (ITU-T Recommention X.721 [3])	M
standbyStatus	StandbyStatusTypeOpt (ITU-T Recommention X.721 [3])	O
unknownStatus	UnknownStatus (ITU-T Recommention X.721 [3])	M
unknownStatus	UnknownStatusTypeOpt (ITU-T Recommention X.721 [3])	O

Annex A (normative): IDL specifications

A.1 IDL specification (file name "StateManagementIRPConstDefs.idl")

```
#ifndef StateManagementIRPConstDefs_idl
#define StateManagementIRPConstDefs_idl

#include "CosNotification.idl"
#include "ManagedGenericIRPConstDefs.idl"

// This statement must appear after all include statements
#pragma prefix "3gppsa5.org"

/* ## Module: StateManagementIRPConstDefs
This module contains commonly used definitions for State Management IRP
========================================================================
*/
module StateManagementIRPConstDefs
{

   /*
   Definition of Operational State based on X.721 [3], if mandatory.
   */
   enum OperationalState
   {
      Disabled, Enabled
   };

   /*
   Definition of Usage State based on X.721 [3], if mandatory.
   */
   enum UsageState
   {
      Idle, Active, Busy
   };

   /*
   Definition of Administrative State based on X.721 [3], if mandatory.
   */
   enum AdministrativeState
   {
      Locked, Unlocked, ShuttingDown
   };

   /*
   Definition of Alarm Status based on X.721 [3], if mandatory.
   */
   enum AlarmStatusValues
   {
      UnderRepair, Critical, Major, Minor, AlarmOutstanding
   };
   typedef sequence <AlarmStatusValues,5> AlarmStatus;

   /*
   Definition of Procedural Status based on X.721 [3], if mandatory.
   */
   enum ProceduralStatusValues
   {
      InitializationRequired, NotInitialized, Initializing, Reporting,
      Terminating
   };
   typedef sequence <ProceduralStatusValues,5> ProceduralStatus;

   /*
   Definition of Availability Status based on X.721 [3], if mandatory.
   */
   enum AvailabilityStatusValues
```

```
   {
      InTest, Failed, PowerOff, OffLine, OffDuty, Dependency, Degraded,
      NotInstalled, LogFull
   };
   typedef sequence <AvailabilityStatusValues,9> AvailabilityStatus;

   /*
   Definition of Control Status based on X.721 [3], if mandatory.
   */
   enum ControlStatusValues
   {
      SubjectToTest, PartOfServicesLocked, ReservedForTest, Suspended
   };
   typedef sequence <ControlStatusValues,4> ControlStatus;

   /*
   Definition of Standby Status based on X.721 [3], if mandatory.
   */
   enum StandbyStatus
   {
      HotStandby, ColdStandby, ProvidingService
   };

   /*
   Definition of Unknown Status based on X.721 [3], if mandatory
   (if switch is TRUE then value equal to TRUE implies "unknown status").
   */
   union UnknownStatus switch(boolean)
   {
      case TRUE: boolean value;
   };

};
#endif
```

A.2 IDL specification (file name "StateManagementIRPOptConstDefs.idl")

```
#ifndef StateManagementIRPOptConstDefs_idl
#define StateManagementIRPOptConstDefs_idl

#include "CosNotification.idl"
#include "ManagedGenericIRPConstDefs.idl"
#include " StateManagementIRPConstDefs_idl"

// This statement must appear after all include statements
#pragma prefix "3gppsa5.org"

/* ## Module: StateManagementIRPOptConstDefs
This module contains commonly used optional definitions for State Management IRP
================================================================================
*/
module StateManagementIRPOptConstDefs
{

   /*
   Definition of Operational State based on X.721 [3], if optional.
   */
   union OperationalStateTypeOpt switch(boolean)
   {
      case TRUE: StateManagementIRPConstDefs::OperationalState operational_state;
   };

   /*
   Definition of Usage State based on X.721 [3], if optional.
   */
   union UsageStateTypeOpt switch(boolean)
   {
      case TRUE: StateManagementIRPConstDefs::UsageState usage_state;
   };

   /*
```

```
    Definition of Administrative State based on X.721 [3], if optional.
    */
    union AdministrativeStateTypeOpt switch(boolean)
    {
       case TRUE: StateManagementIRPConstDefs::AdministrativeState administrative_state;
    };

    /*
    Definition of Alarm Status based on X.721 [3], if optional.
    */
    union AlarmStatusTypeOpt switch(boolean)
    {
       case TRUE: StateManagementIRPConstDefs::AlarmStatus alarm_status;
    };

    /*
    Definition of Procedural Status based on X.721 [3], if optional.
    */
    union ProceduralStatusTypeOpt switch(boolean)
    {
       case TRUE: StateManagementIRPConstDefs::ProceduralStatus procedural_status;
    };

    /*
    Definition of Availability Status based on X.721 [3], if optional.
    */
    union AvailabilityStatusTypeOpt switch(boolean)
    {
       case TRUE: StateManagementIRPConstDefs::AvailabilityStatus availability_status;
    };

    /*
    Definition of Control Status based on X.721 [3], if optional.
    */
    union ControlStatusTypeOpt switch(boolean)
    {
       case TRUE: StateManagementIRPConstDefs::ControlStatus control_status;
    };

    /*
    Definition of Standby Status based on X.721 [3], if optional.
    */
    union StandbyStatusTypeOpt switch(boolean)
    {
       case TRUE: StateManagementIRPConstDefs::StandbyStatus standby_status;
    };

    /*
    Definition of Unknown Status based on X.721 [3], if optional.
    */
    union UnknownStatusTypeOpt switch(boolean)
    {
       case TRUE: StateManagementIRPConstDefs::UnknownStatus unknown_status;
    };
};
#endif
```

Annex B (informative):
Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Sep 2002	S_17	SP-020470	--	--	Submitted to TSG SA #17 for Approval	1.0.0	