**TSGS#24(04)0260**

**Source:** SA5 (Telecom Management)

**Title:** 2 Rel-6 CR 32.661/2 (CM Kernel CM Requirements / IS)

**Document for:** Decision

**Agenda Item:** 7.5.3

| Doc-1st- | Spec | CR | R | Phase | Subject | Cat | Ver | Doc-2nd- | Workitem | Relation |
|---|---|---|---|---|---|---|---|---|---|---|
| SP-040260 | 32.661 | 003 | - | Rel-6 | Add State Management Support to Kernel CM IRP Requirements | B | 6.0.0 | S5-046437 | OAM-NIM | **Parent** |
| SP-040260 | 32.662 | 006 | - | Rel-6 | Add State Management Support to Kernel CM IRP IS 32.622 | B | 6.2.0 | S5-046489 | OAM-NIM | **Child** |

**3GPP TSG-SA5 (Telecom Management)** **S5-046437**
**Meeting #38, Beijing, CHINA, 10 - 14 May 2004**

*CR-Form-v7*

# CHANGE REQUEST

⌘ **32.661** **CR** **003** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

***Proposed change affects:*** UICC apps⌘ ☐ ME ☐ Radio Access Network **X** Core Network **X**

| | | |
|---|---|---|
| ***Title:*** | ⌘ | Add State Management Support to Kernel CM IRP Requirements |
| ***Source:*** | ⌘ | **SA5** (J.Schmidt@Motorola, olaf.pollakowski@siemens.com) |
| ***Work item code:*** | ⌘ | OAM-NIM |
| ***Date:*** | ⌘ | 14/05/2004 |
| ***Category:*** | ⌘ | **B** |
| ***Release:*** | ⌘ | Rel-6 |

*Use one of the following categories:*
***F*** *(correction)*
***A*** *(corresponds to a correction in an earlier release)*
***B*** *(addition of feature),*
***C*** *(functional modification of feature)*
***D*** *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

*Use one of the following releases:*

| | |
|---|---|
| *2* | *(GSM Phase 2)* |
| *R96* | *(Release 1996)* |
| *R97* | *(Release 1997)* |
| *R98* | *(Release 1998)* |
| *R99* | *(Release 1999)* |
| *Rel-4* | *(Release 4)* |
| *Rel-5* | *(Release 5)* |
| *Rel-6* | *(Release 6)* |

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | Add State Management Support to Kernel CM IRP Requirements |
| ***Summary of change:*** | ⌘ | Add Requirements for State Change Notification |
| ***Consequences if not approved:*** | ⌘ | No support for State Management related notification |

| | | | | | |
|---|---|---|---|---|---|
| ***Clauses affected:*** | ⌘ | Chapter 4.2 | | | |
| | | **Y** | **N** | | |
| ***Other specs affected:*** | ⌘ | | **X** | Other core specifications | ⌘ |
| | | | **X** | Test specifications | |
| | | **X** | | O&M Specifications | 32.662 |
| ***Other comments:*** | ⌘ | | | | |

**Change in Chapter 4.2**

## 4.2 Kernel CM Requirements

The IS defined by this IRP shall include the following operations that may be invoked by the IRP Manager to retrieve management information from the IRPAgent:

- An operation to retrieve the Network Resource IRP SS document versions (IRPVersions) of the NRM Solution Sets that are supported by each Network Resource IRP present in the subject implementation.

The IS defined by this IRP shall include a notification capability by which the IRPAgent sends management information to the IRPManager whenever an event of a specific type occurs. Whether these notifications are mandatory or optional is specified in the Information Service (TS 32.662 [8]). Specifically, the following types of notifications shall be supported:

- A notification that identifies the instance of a managed object that was created.
- A notification that identifies one or more instances of a managed object that were deleted.
- A notification that identifies the values of one or more attributes of a managed object instance that were changed.
- A notification that enables reporting of state and status changes of a managed object instance.
- A notification which identifies that part of or the whole configuration information of managed system should be synchronized.

**End of Change in Chapter 4.2**

# Annex A (informative): Change history

| Change history | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Date** | **TSG #** | **TSG Doc.** | **CR** | **Rev** | **Subject/Comment** | **Old** | **New** |
| Mar 2002 | S_15 | SP-020034 | -- | -- | Submitted to TSG SA #15 for Information | 1.0.0 | |
| Sep 2002 | S_17 | SP-020464 | -- | -- | Submitted to TSG SA #17 for Approval | 2.0.0 | 5.0.0 |
| Dec 2002 | S_18 | SP-020750 | 001 | -- | Clarification regarding optionality of notifications | 5.0.0 | 5.1.0 |
| Mar 2003 | S_19 | SP-030145 | 002 | -- | Add requirement for the emission of notifyCMSynchronizationRecommended notification | 5.1.0 | 6.0.0 |
| | | | | | | | |

**3GPP TSG-SA5 (Telecom Management)** **S5-046489**
**Meeting #38, Beijing, CHINA, 10 - 14 May 2004**

*CR-Form-v7*

# CHANGE REQUEST

⌘ **32.662** **CR** **006** ⌘ **rev** **-** ⌘ Current version: **6.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

***Proposed change affects:*** UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☒

| | | |
|---|---|---|
| ***Title:*** | ⌘ | Add State Management Support to Kernel CM IRP IS |
| ***Source:*** | ⌘ | **SA5** (David.Raymer@Motorola.com, olaf.pollakowski@siemens.com) |
| ***Work item code:*** | ⌘ | OAM-NIM |
| ***Date:*** | ⌘ | 14/05/2004 |
| ***Category:*** | ⌘ | **B** |
| ***Release:*** | ⌘ | Rel-6 |

*Use one of the following categories:*
***F*** *(correction)*
***A*** *(corresponds to a correction in an earlier release)*
***B*** *(addition of feature),*
***C*** *(functional modification of feature)*
***D*** *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

*Use one of the following releases:*
*2 (GSM Phase 2)*
*R96 (Release 1996)*
*R97 (Release 1997)*
*R98 (Release 1998)*
*R99 (Release 1999)*
*Rel-4 (Release 4)*
*Rel-5 (Release 5)*
*Rel-6 (Release 6)*

| | | |
|---|---|---|
| ***Reason for change:*** | ⌘ | Add State Management Support to Kernel CM IRP IS |
| ***Summary of change:*** | ⌘ | Add IS definitions for State Change Notification; in addition correcting the UML Class diagram |
| ***Consequences if not approved:*** | ⌘ | No support for State Management related notification |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | Chapter 2, 7.1, 7.8, Annex A |

| | Y | N | | | |
|---|---|---|---|---|---|
| ***Other specs affected:*** | ⌘ | | X | Other core specifications | ⌘ |
| | | | X | Test specifications | |
| | | | X | O&M Specifications | |

| | | |
|---|---|---|
| ***Other comments:*** | ⌘ | |

**Change in Chapter 2**

# 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 32.312: "Telecommunication management; Generic Integration Reference Point (IRP) management; Information Service (IS)".

[5] 3GPP TS 32.622: "Telecommunication management; Configuration Management (CM); Generic network resources Integration Reference Point (IRP): Network Resource Model (NRM)".

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

[7] ITU-T Recommendation X.710 (1997): "Information technology - Open Systems Interconnection - Common Management Information Service".

[8] ITU-T Recommendation X.721 (1992): "Information technology - Open Systems Interconnection - Structure of Management Information: Definition of management information".

[9] ITU-T Recommendation X.730 (1992): "Information technology - Open Systems Interconnection - Systems Management: Object Management Function".

[10] ITU-T Recommendation X.733 (1992): "Information technology - Open Systems Interconnection - Systems Management: Alarm reporting function".

[11] - [12] Void.

[13] 3GPP TS 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".

[14] 3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".

[15] ITU-T Recommendation X.720: "Information technology - Open Systems Interconnection - Structure of management information: Management information model".

[16] 3GPP TS 32.623: "Telecommunication management; Configuration Management (CM); Generic network resources Integration Reference Point (IRP): Common Object Request Broker Architecture (CORBA) Solution Set (SS)".

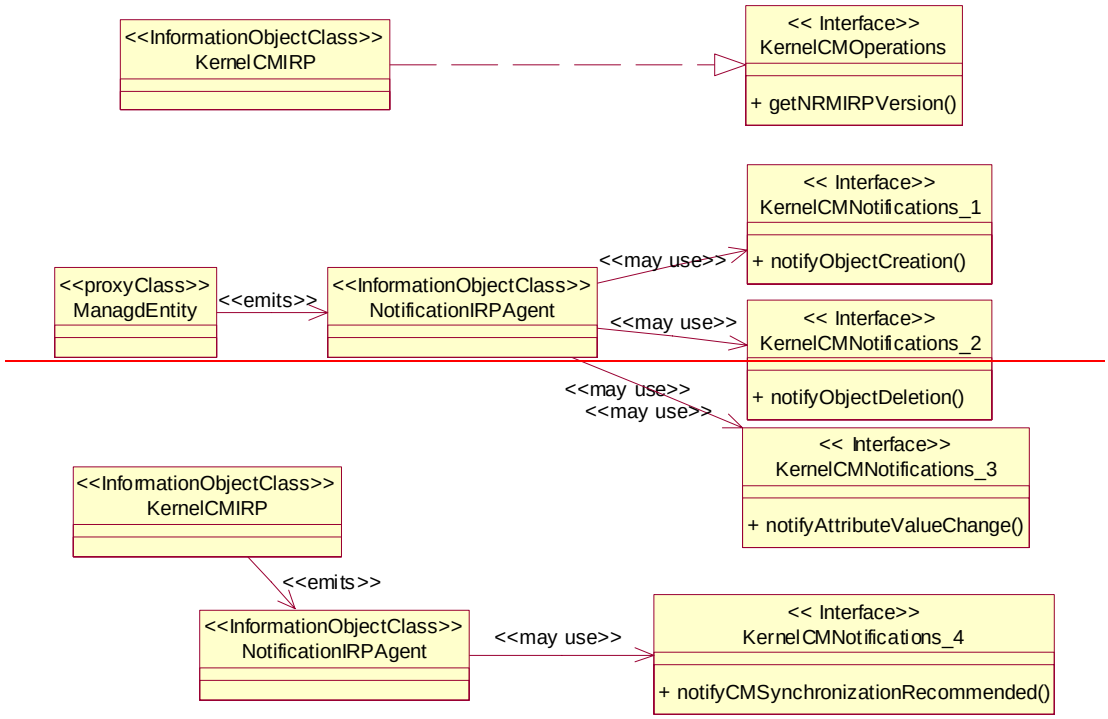
[17] 3GPP TS 32.643: "Telecommunication management; Configuration Management (CM); UTRAN network resources Integration Reference Point (IRP): Common Object Request Broker Architecture (CORBA) Solution Set (SS)".

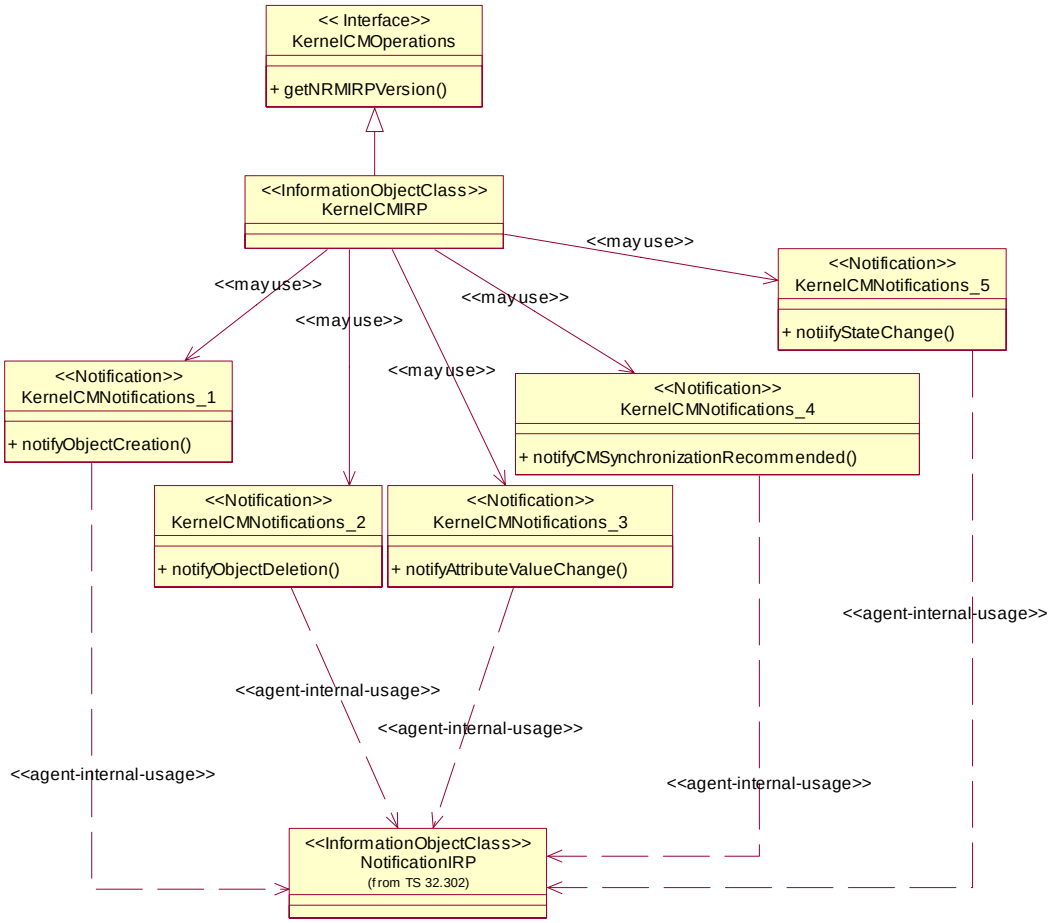
[18] 3GPP TS 32.642: "Telecommunication management; Configuration Management (CM); UTRAN network resources Integration Reference Point (IRP): Network Resource Model (NRM)".

**End of Change in Chapter 2**

**Change in Chapter 7.1**

# 7.1 Class diagram






**End of Change in Chapter 7.1**

**Change in Chapter 7.8**

# 7.8 Interface KernelCmIRPNotifications_5

## 7.8.1 notifyStateChange (O)

### 7.8.1.1 Definition

IRPAgent notifies the subscribed IRPManager of a change of state and or status of a Managed Object in the NRM. The IRPAgent invokes this notification because the subject notification satisfies the filter constraint expressed in the IRPManager `subscribe` operation (see TS 32.302 [3]). This notification is in part based on the `stateChange` notification type specified in ITU-T Recommendation X.721 [8] and using state management definitions from 32.672 [6].

### 7.8.1.2 Input Parameters

| Parameter Name | Qualifier | Matching Information | Comment |
|---|---|---|---|
| objectClass | M,Y | ManagedEntity.objectClass | Notification header - see [3]. |
| objectInstance | M,Y | ManagedEntity.distinguishedName. | Notification header - see [3]. |
| notificationId | M, N | This carries the semantics of notification identifier. | Notification header - see [3]. |
| eventTime | M,Y | ManagedEntity.StateChangedTime | Notification header - see [3]. |
| systemDN | C,Y | IRPAgent.systemDN where the IRPAgent is related to the KernelCmIRP. | Notification header - see [3]. |
| notificationType | M,Y | Mapped to notificationType in [3] – see annex A | Notification header - see [3]. |
| stateChange | M, N | LIST OF SEQUENCE <StateName (M), NewStateValue (M), OldStateValue (O)> | The changed state values (name/value pairs) of the MO (with both new and, optionally, old values). |
| correlatedNotifications | O, N | See comment | A set of notifications that are correlated to the subject notification. Defined in ITU-T Recommendation X.733 [10]. |
| additionalText | O, N | -- | It can contain further information on the attribute change of the MO. |
| sourceIndicator | O, N | ENUM( Resource_operation, Management_operation, Unknown) | This parameter, when present, indicates the source of the operation that led to the generation of this notification type. It can have one of the following values: resource operation: The notification was generated in response to an internal operation of the resource; management operation: The notification was generated in response to a management operation applied across the managed object boundary external to the managed object; unknown: It is not possible to determine the source of the operation. Defined in ITU-T Recommendation X.731 [10]. |
| NOTE: Y in the Qualifier column denotes a Filterable Parameter. | | | |

### 7.8.1.3 Triggering Event

#### 7.8.1.3.1 From-state

stateBeforeStateChange.

| Assertion Name | Definition |
|---|---|
| stateBeforeStateChange | |

#### 7.8.1.3.2 To-state

stateAfterStateChange.

| Assertion Name | Definition |
|---|---|
| stateAfterStateChange | |

**End of Change in Chapter 7.8**

**Change in Annex A**

# Annex A (normative): Notification/Event Types

Notification IRP: Information Service [3] defines an attribute called `notificationType` that shall be present in all notifications. The present document defines an attribute called `eventType` that shall be present in all CM notifications defined herein. The mapping of this `eventType` to the `notificationType` is that they are semantically equal for the CM notifications. Thus, the event types described below (also the same as in Release 99) shall be mapped to the `notificationType` of the notification header.

This annex lists and explains Event Types used by Kernel CM IRP and then lists the Event Types valid for each notification in this IRP.

Encoding of `eventType` is Solution Set dependent. For example, the value of `eventType` may be encoded as an Object Identifier in the CMIP SS and as a numeric string in the CORBA SS.

The tables below may be extended in the future.

**Table A.1: Event Types**

| Event Types | Explanation |
|---|---|
| Object creation | A notification of this type indicates that a new managed object instance has been created (as defined in ITU-T Recommendation X.721 [8] and ITU-T X.730 [9]). |
| Object deletion | A notification of this type indicates that a managed object instance has been deleted (as defined in ITU-T Recommendation X.721 [8] and ITU-T Recommendation X.730 [9]). |
| Attribute value change | A notification of this type indicates that the value(s) of one or more attributes have changed (as defined in ITU-T Recommendation X.721 [8] and ITU-T Recommendation X.730 [9]). |
| State change | A notification of this type indicates that the state and/or status of a managed object instance have changed (in part based on definitions from X.721 [8] and using state/status definitions from 32.672 [6]). |

**Table A.2: Event types applicable to each Notification**

| Notification | Event Type |
|---|---|
| notifyObjectCreation | Object creation |
| notifyObjectDeletion | Object deletion |
| notifyAttributeValueChange | Attribute value change |
| notifyStateChange | State change |

**End of Change in Annex A**

# Annex B (informative): Change history

| Change history | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Date** | **TSG #** | **TSG Doc.** | **CR** | **Rev** | **Subject/Comment** | **Old** | **New** |
| Mar 2002 | S_15 | SP-020034 | -- | -- | Submitted to TSG SA #15 for Information | 1.0.0 | |
| Sep 2002 | S_17 | SP-020465 | -- | -- | Submitted to TSG SA #17 for Approval | 2.0.0 | 5.0.0 |
| Mar 2003 | S_19 | SP-030145 | 001 | -- | Add description of notifyCMSynchronizationRecommended notification for KernelCM IRP. | 5.0.0 | 6.0.0 |
| Dec 2003 | S_22 | SP-030630 | 003 | -- | Correction of System Context | 6.0.0 | 6.1.0 |
| Mar 2004 | S_23 | SP-040119 | 005 | -- | Correction of System Context | 6.1.0 | 6.2.0 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |