TSGS#24(04)0261

Source: SA5 (Telecom Management)

Title: 2 Rel-5/6 CR 32.663 (CM Kernel CM IRP CORBA SS)

Document for: Decision

Agenda Item: 7.5.3

Doc-1st-	Spec	CR	R	Phas	Subject	Cat	Ver	Doc-2nd-	Workitem
SP-040261	32.663	003	-	Rel-5	Add Missing CorrelatedNotificationSetType definition	F	5.1.0	S5-046497	OAM-NIM
SP-040261	32.663	004	-	Rel-6	Add Missing CorrelatedNotificationSetType definition	A	6.0.0	S5-046498	OAM-NIM

CR-Form-v7

CHANGE REQUEST

⌘ 32.663 CR 003 ⌘rev - ⌘ Current version: 5.1.0 ⌘

*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 Missing CorrelatedNotificationSetType definition
Source:	⌘	**SA5** (llrui@bupt.edu.cn, liyewen@chinamobile.com)
Work item code:	⌘	OAM-NIM
Date:	⌘	14/05/2004
Category:	⌘	**F**
Release:	⌘	Rel-5

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:	⌘	The definition of CorrelatedNotificationSetType in KernelCM IRP CORBA SS refers to NotificationIRP. But there is no such definition in NotificationIRP. Add complete definition of CorrelatedNotificationSetType in KernelCM IRP CORBA SS and remove corresponding reference.
Summary of change:	⌘	Add Missing CorrelatedNotificationSetType definition.
Consequences if not approved:	⌘	Incorrect CORBA IDL.

Clauses affected:	⌘	7, Annex B

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

Other comments:	⌘	This CR shall be approved together with corresponding R6 CR.

Change in Clause 7

7 Use of OMG Structured Event

In CORBA SS, OMG defined `StructuredEvent` (see OMG Notification Service [6]) is used to carry notifications. This clause identifies the OMG defined `StructuredEvent` attributes that carry the attributes of notifications defined in 3GPP TS 32.662 [4].

The composition of OMG Structured Event, as defined in OMG Notification Service [6], is:

```
Header
      Fixed Header
           domain_name
           type_name
           event_name
      Variable Header
Body
      filterable_body_fields
      remainder_of_body
```

The following table in this clause lists all OMG Structured Event attributes in its leftmost column. The second column identifies the SS attributes, if any, that shall be carried there.

Attributes that are denoted as "optional" may be absent from the OMG Structured Event. As an example, if the optional `additionalText` attribute is not used for a particular notification, then the IRPAgent may exclude `additionalText` from the filterable body fields for that particular notification. Individual notifications from the same IRPAgent may include or exclude the same optional attribute.

Table 7.1: Use of OMG Structured Event

SS Attribute	OMG CORBA Structured Event attribute	Comment
There is no corresponding SS attribute	domain_name	It contains the supported SS document version (see clause 4). This version is defined by the string constant KernelCmIRPSystem::VERSION defined in this specification.
Event Type	type_name	It is an attribute of notificationHeader. It shall indicate one of the following ITU-T defined semantics: Object Creation, Object Deletion and Attribute Value Change. It is a string. Its value is either defined by KernelCmNotifDefs::MOCreation::EVENT_TYPE, KernelCmNotifDefs::MODeletion::EVENT_TYPE or KernelCmNotifDefs::AttributeValueChange::EVENT_TYPE
-	event_name	Shall be set to an empty string
There is no corresponding SS attribute	variable Header	
Managed Object Class, Managed Object Instance	One NV pair of filterable_ body_fields	NV stands for name-value pair. Order arrangement of NV pairs is not significant. The name of NV-pair is always encoded in string. They are attributes of notificationHeader. Name of NV pair is a string, KernelCmNotifDefs::<interface>::MANAGED_OBJECT_INSTANCE where <interface> is either MOCreation, MODeletion or AttributeValueChange. Value of NV pair is a string. This string conveys the semantics of both the Managed Object Class and the Managed Object Instance. See corresponding table in Notification IRP: CORBA SS (3GPP TS 32.303 [9]).
Notification Id	One NV pair of filterable_ body_fields	It is an attribute of notificationHeader. Name of NV pair is a string, KernelCmNotifDefs::<interface>::NOTIFICATION_ID where <interface> is either MOCreation, MODeletion or AttributeValueChange. Value of NV pair is a long. See corresponding table in Notification IRP: CORBA SS (3GPP TS 32.303 [9]).
Event Time	One NV pair of filterable_	It is an attribute of notificationHeader. Name of NV pair is a string, KernelCmNotifDefs::<interface>::EVENT_TIME where

SS Attribute	OMG CORBA Structured Event attribute	Comment
	body_fields	<interface> is either MOCreation, MODeletion or AttributeValueChange. Value of NV pair is a ManagedGenericIRPConstDefs::IRPTime defined in 3GPP TS 32.303 [9]. See corresponding table in Notification IRP: CORBA SS (3GPP TS 32.303 [9]).
System DN	One NV pair of filterable_ body_fields	It is an attribute of notificationHeader. Name of NV pair is a string, KernelCmNotifDefs::<interface>::SYSTEM_DN where <interface> is either MOCreation, MODeletion or AttributeValueChange. Value of NV pair is a string. See corresponding table in Notification IRP: CORBA SS [9].
Correlated Notifications	One NV pair of filterable_ body_fields	It is an attribute of the Object Creation, Object Deletion and Attribute Value Change notifications. Name of NV pair is a string, KernelCmNotifDefs::<interface>::CORRELATED_NOTIFICATIONS where <interface> is either MOCreation, MODeletion or AttributeValueChange. Value of NV pair is a KernelCmNotifDefs~~NotificationIRPConstDefs~~::CorrelatedNotificationSetType ~~defined in 3GPP TS 32.303 [9]~~.
Additional Text	One NV pair of filterable_ body_fields	It is an attribute of the Object Creation, Object Deletion and Attribute Value Change notifications. Name of NV pair is a string, KernelCmNotifDefs::<interface>::ADDITIONAL_TEXT where <interface> is either MOCreation, MODeletion or AttributeValueChange. Value of NV pair is a string.
Source Indicator	One NV pair of filterable_ body_fields	It is an attribute of the Object Creation, Object Deletion and Attribute Value Change notifications. Name of NV pair is a string, KernelCmNotifDefs::<interface>::SOURCE_INDICATOR where <interface> is either MOCreation, MODeletion or AttributeValueChange. Value of NV pair is a string with values of either KernelCmNotifDefs::<interface>::RESOURCE_OPERATION, KernelCmNotifDefs::<interface>::MANAGEMENT_OPERATION or KernelCmNotifDefs::<interface>::UNKNOWN_OPERATION where <interface> is either MODeletion, MOCreation or AttributeValueChange.
There is no corresponding SS attribute		Is used to transport attribute information. For Object Creation notification, this is defined by KernelCmNotifDefs::MOCreation::InitialAttributeValues. For Object Deletion notification, this is defined by KernelCmNotifDefs::MODeletion::AttributeValues. For Attribute Value Change notification, this is defined by KernelCmNotifDefs::AttributeValueChange::ModifiedAttributeSet. The name component of InitialAttributeValues, AttributeValues and ModifiedAttributeSet will be set to attribute names defined in KernelCmNRMDefs.

End of Change in Clause 7

Change in Annex B

Annex B (normative): CORBA IDL, Notification Definitions

```
#ifndef KernelCmNotifDefs_idl
#define KernelCmNotifDefs_idl

#include <TimeBase.idl>          // CORBA Time Service
#include <NotificationIRPConstDefs.idl>

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

module KernelCmNotifDefs
```

```
{

      /**
       * Definition of ITU-T defined semantics.
       * These constants are used in the type_name
       * (header.fixed_header.event_type.type_name)
       * field to denote the notification type
       * Note all values are unique among themselves.  Other IRP documents
       * cannot use the same values.
       */
      const string ET_OBJECT_CREATION = "x6";

      const string ET_OBJECT_DELETION = "x7";

      const string ET_ATTRIBUTE_VALUE_CHANGE = "x8";



      /**
       * Information about one attribute
       * - name defines the name of the attribute
       * - value defines the value of the attribute
       *
       */
      struct MOAttribute
      {
         string name;
         any value;
      };


   typedef sequence <long> NotifIdSetType;

   /*
   This holds identifiers of notifications that are correlated.
   */
   struct CorrelatedNotification
   {
      DN source;  // Contains DN of MO that emitted the set of notifications
                  // DN string format in compliance with Name Convention for
                  // Managed Object.
                  // This may be a zero-length string.  In this case, the MO
                  // is identified by the value of the MOI attribute
                  // of the Structured Event, i.e., the notification.
      NotifIdSetType notif_id_set;  // Set of related notification ids
   };

   /*
   Correlated Notification sets are sets of Correlated Notification
   structures.
   */
   typedef sequence <CorrelatedNotification> CorrelatedNotificationSetType;


      /**
       * A set of attribute names and values
       */
      typedef sequence<MOAttribute> MOAttributeSet;


      /**
       *  This interface defines fields that are common for all
       *  notification types.
       *  All constants in the scope of this interface will be
       *  visible in the interfaces that inherits this.
       *  For instance constant
       *  NotificationCommon::MANAGED_OBJECT_CLASS
       *  can be addressed by MODeletion::MANAGED_OBJECT_CLASS
       */
      /*
      This block identifies attributes which are included as part of the Kernel
      CM IRP. These attribute values should not clash with those defined for the
      attributes of notification header (see IDL of Notification IRP).
      */
      interface AttributeNameValue
      {
         const string SOURCE_INDICATOR = "SOURCE";
```

```
    const string ADDITIONAL_TEXT = "ADD_TEXT";
    const string CORRELATED_NOTIFICATIONS = "CORREL_NOTIFS";
  };

  interface NotificationCommon
  {

    /**
     * This constant defines a field in the filterable
     * information in a StructuredEvent.
     * This string is mapped to the name part of a
     * Property in the event and the value part will
     * carry the MO class name represented
     * as a string.
     */
    const string MANAGED_OBJECT_CLASS =
      NotificationIRPConstDefs::AttributeNameValue::MANAGED_OBJECT_CLASS;



    /**
     * This constant defines a field in the filterable
     * information in a StructuredEvent.
     * This string is mapped to the name part of a
     * Property in the event and the value part will
     * carry the MO distinguished name represented
     * as a string.
     */
    const string MANAGED_OBJECT_INSTANCE =
NotificationIRPConstDefs::AttributeNameValue::MANAGED_OBJECT_INSTANCE;



    /**
     *  This constant defines the name of the notification
     *  ID property, which is transported in the
     *  filterable_body_fields
     */
    const string NOTIFICATION_ID =
      NotificationIRPConstDefs::AttributeNameValue::NOTIFICATION_ID;



    /**
     *  This constant defines the name of the
     *  event time property, which is transported in the
     *  filterable_body_fields.
     *  The data type for the value of this property
     *  is defined by datatype CommonIRPConstDefs::IRPTime
     */
    const string EVENT_TIME =
      NotificationIRPConstDefs::AttributeNameValue::EVENT_TIME;




    /**
     *  This constant defines the name of the
     *  system name property, which is transported in the
     *  filterable_body_fields
     */
    const string SYSTEM_DN =
      NotificationIRPConstDefs::AttributeNameValue::SYSTEM_DN;



    /**
     *  This constant defines the name of the
     *  source indicator  property, which is transported in the
     *  filterable_body_fields
     */
    const string SOURCE_INDICATOR =
      KernelCmNotifDefs::AttributeNameValue::SOURCE_INDICATOR;

    /**
     * Valid values for the SOURCE_INDICATOR
     * property
     */
```

```
   const string RESOURCE_OPERATION =  "RESOURCE OPERATION";
   const string MANAGEMENT_OPERATION = "MANAGEMENT OPERATION";
   const string UNKNOWN_OPERATION = "UNKNOWN";


   /**
    *  This constant defines the name of the
    *  additional text property,
    *  which is transported in the filterable_body
    *  fields.
    *  The data type for the value of this property
    *  is a string.
    */
   const string ADDITIONAL_TEXT =
     KernelCmNotifDefs::AttributeNameValue::ADDITIONAL_TEXT;



   /**
    *  This constant defines the name of the
    *  correlated notifications property,
    *  which is transported in the
    *  filterable_body_fields
    *  The value part of the property is defined
    *  in the NotificationIRP;
    *    KernelCmNotifDefsNotificationIRPConstDefs::CorrelatedNotificationSetType
    */
   const string CORRELATED_NOTIFICATIONS =
     KernelCmNotifDefs::AttributeNameValue::CORRELATED_NOTIFICATIONS;


};


/**
 *  Constant definitions for the MO deleted notification
 */
interface MODeletion : NotificationCommon
{

   const string EVENT_TYPE = ET_OBJECT_DELETION;


   /**
    * This information mapped into the remainder_of_body
    * in the StructuredEvent
    */
   typedef MOAttributeSet AttributeValues;

};



/**
 *  Constant definitions for the MO created notification
 */
interface MOCreation : NotificationCommon
{
   const string EVENT_TYPE = ET_OBJECT_CREATION;


   /**
    * This information mapped into the remainder_of_body
    * in the StructuredEvent
    */
   typedef MOAttributeSet InitialAttributeValues;

};



/**
 *  Constant definitions for the Attribute Value Change
 *  notification
 */
interface AttributeValueChange : NotificationCommon
{
```

```
        const string EVENT_TYPE = ET_ATTRIBUTE_VALUE_CHANGE;

        /**
         * Information about modidified attributes for
         * one MO instance.
         * - name defines the name of the attribute
         * - newValue defines the new value of the attribute
         * - oldValue defines the previous value of the attribute
         *    The value is optional, which means that it may contain
         *    an empty any (null inserted in the any).
         *
         */
        struct ModifiedAttribute
        {
           string name;
           any newValue;
           any oldValue;
        };


        /**
         * This information mapped into the remainder_of_body
         * in the StructuredEvent.
         */
        typedef sequence<ModifiedAttribute> ModifiedAttributeSet;


      };

};

#endif
```

End of Change in Annex B
End of Document

Annex C (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Sep 2002	S_17	SP-020466	--	--	Submitted to TSG SA #17 for Approval	1.0.0	5.0.0
Mar 2003	S_19	SP-030143	001	--	CORBA IDL Compiler Errors	5.0.0	5.1.0

CR-Form-v7

CHANGE REQUEST

⌘ 32.663 CR 004 ⌘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 Missing CorrelatedNotificationSetType definition
Source:	⌘	**SA5** (llrui@bupt.edu.cn, liyewen@chinamobile.com)
Work item code:	⌘	OAM-NIM
Date:	⌘	14/05/2004
Category:	⌘	**A**
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:	⌘	The definition of CorrelatedNotificationSetType in KernelCM IRP CORBA SS refers to NotificationIRP. But there is no such definition in NotificationIRP. Add complete definition of CorrelatedNotificationSetType in KernelCM IRP CORBA SS and remove corresponding reference.
Summary of change:	⌘	Add Missing CorrelatedNotificationSetType definition.
Consequences if not approved:	⌘	Incorrect CORBA IDL.

Clauses affected:	⌘	7, Annex B

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

Other comments:	⌘	This CR shall be approved together with corresponding R5 CR.

Change in Clause 7

7 Use of OMG Structured Event

In CORBA SS, OMG defined `StructuredEvent` (see OMG Notification Service [6]) is used to carry notifications. This clause identifies the OMG defined `StructuredEvent` attributes that carry the attributes of notifications defined in 3GPP TS 32.662 [4].

The composition of OMG Structured Event, as defined in OMG Notification Service [6], is:

```
Header
      Fixed Header
           domain_name
           type_name
           event_name
      Variable Header
Body
      filterable_body_fields
      remainder_of_body
```

The following table in this clause lists all OMG Structured Event attributes in its leftmost column. The second column identifies the SS attributes, if any, that shall be carried there.

Attributes that are denoted as "optional" may be absent from the OMG Structured Event. As an example, if the optional `additionalText` attribute is not used for a particular notification, then the IRPAgent may exclude `additionalText` from the filterable body fields for that particular notification. Individual notifications from the same IRPAgent may include or exclude the same optional attribute.

Table 7.1: Use of OMG Structured Event

SS Attribute	OMG CORBA Structured Event attribute	Comment
There is no corresponding SS attribute	domain_name	It contains the supported SS document version (see clause 4). This version is defined by the string constant KernelCmIRPSystem::VERSION defined in this specification.
Event Type	type_name	It is an attribute of notificationHeader. It shall indicate one of the following: Object Creation, Object Deletion, Attribute Value Change and CM Synchronization Recommended. It is a string. Its value is either defined by KernelCmNotifDefs::MOCreation::EVENT_TYPE, KernelCmNotifDefs::MODeletion::EVENT_TYPE, KernelCmNotifDefs::AttributeValueChange::EVENT_TYPE or KernelCmNotifDefs::CMSynchronizationRecommended::EVENT_TYPE
-	event_name	Shall be set to an empty string
There is no corresponding SS attribute	variable Header	
Managed Object Class, Managed Object Instance	One NV pair of filterable_ body_fields	NV stands for name-value pair. Order arrangement of NV pairs is not significant. The name of NV-pair is always encoded in string. They are attributes of notificationHeader. Name of NV pair is a string, KernelCmNotifDefs::<interface>::MANAGED_OBJECT_INSTANCE where <interface> is either MOCreation, MODeletion, AttributeValueChange or CMSynchronizationRecommended. Value of NV pair is a string. This string conveys the semantics of both the Managed Object Class and the Managed Object Instance. See corresponding table in Notification IRP: CORBA SS (3GPP TS 32.303 [9]).
NotificationId	One NV pair of filterable_ body_fields	It is an attribute of notificationHeader. Name of NV pair is a string, KernelCmNotifDefs::<interface>::NOTIFICATION_ID where <interface> is either MOCreation, MODeletion, AttributeValueChange or CMSynchronizationRecommended. Value of NV pair is a long. See corresponding table in Notification IRP: CORBA SS (3GPP TS 32.303 [9]).

SS Attribute	OMG CORBA Structured Event attribute	Comment
EventTime	One NV pair of filterable_ body_fields	It is an attribute of notificationHeader. Name of NV pair is a string, KernelCmNotifDefs::<interface>::EVENT_TIME where <interface> is either MOCreation, MODeletion, AttributeValueChange or CMSynchronizationRecommended. Value of NV pair is a ManagedGenericIRPConstDefs::IRPTime defined in 3GPP TS 32.303 [9]. See corresponding table in Notification IRP: CORBA SS (3GPP TS 32.303 [9]).
SystemDN	One NV pair of filterable_ body_fields	It is an attribute of notificationHeader. Name of NV pair is a string, KernelCmNotifDefs::<interface>::SYSTEM_DN where <interface> is either MOCreation, MODeletion, AttributeValueChange or CMSynchronizationRecommended. Value of NV pair is a string. See corresponding table in Notification IRP: CORBA SS [9].
Correlated Notifications	One NV pair of filterable_ body_fields	It is an attribute of the Object Creation, Object Deletion and Attribute Value Change notifications. Name of NV pair is a string, KernelCmNotifDefs::<interface>::CORRELATED_NOTIFICATIONS where <interface> is either MOCreation, MODeletion or AttributeValueChange. Value of NV pair is a KernelCmNotifDefs~~NotificationIRPConstDefs~~::CorrelatedNotificationSetType ~~defined in 3GPP TS 32.303 [9].~~
Additional Text	One NV pair of filterable_ body_fields	It is an attribute of the Object Creation, Object Deletion, Attribute Value Change and CM Synchronization Recommended notifications. Name of NV pair is a string, KernelCmNotifDefs::<interface>::ADDITIONAL_TEXT where <interface> is either MOCreation, MODeletion, AttributeValueChange or CMSynchronizationRecommended. Value of NV pair is a string.
Source Indicator	One NV pair of filterable_ body_fields	It is an attribute of the Object Creation, Object Deletion and Attribute Value Change notifications. Name of NV pair is a string, KernelCmNotifDefs::<interface>::SOURCE_INDICATOR where <interface> is either MOCreation, MODeletion or AttributeValueChange. Value of NV pair is a string with values of either KernelCmNotifDefs::<interface>::RESOURCE_OPERATION, KernelCmNotifDefs::<interface>::MANAGEMENT_OPERATION or KernelCmNotifDefs::<interface>::UNKNOWN_OPERATION where <interface> is either MODeletion, MOCreation or AttributeValueChange.
There is no corresponding SS attribute		Is used to transport attribute information. For Object Creation notification, this is defined by KernelCmNotifDefs::MOCreation::InitialAttributeValues. For Object Deletion notification, this is defined by KernelCmNotifDefs::MODeletion::AttributeValues. For Attribute Value Change notification, this is defined by KernelCmNotifDefs::AttributeValueChange::ModifiedAttributeSet. The name component of InitialAttributeValues, AttributeValues and ModifiedAttributeSet will be set to attribute names defined in KernelCmNRMDefs.
Base MO Class	One NV pair of filterable_ body_fields	It is an attribute of the CM Synchronization Recommended notifications. Name of NV pair is a string, KernelCmNotifDefs::CMSynchronizationRecommended::BASE_MO_CLASS. Value of NV pair is a string. This string conveys the semantics of the Managed Object Class.
Base MO Instance	One NV pair of filterable_ body_fields	It is an attribute of the CM Synchronization Recommendednotifications. Name of NV pair is a string, KernelCmNotifDefs::CMSynchronizationRecommended::BASE_MO_INSTANCE. Value of NV pair is a string. This is the DN string of the Managed Object Instance.
Scope	One NV pair of filterable_ body_fields	It is an attribute of the CM Synchronization Recommendednotifications. Name of NV pair is a string, KernelCmNotifDefs::CMSynchronizationRecommended::SCOPE. Value of NV pair is KernelCmNotifDefs::ScopePara.

End of Change in Clause 7

Change in Annex B

Annex B (normative):
CORBA IDL, Notification Definitions

```
#ifndef KernelCmNotifDefs_idl
#define KernelCmNotifDefs_idl

#include <TimeBase.idl>          // CORBA Time Service
#include <NotificationIRPConstDefs.idl>

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

module KernelCmNotifDefs
{


      /**
       * Definition of ITU-T defined semantics.
       * These constants are used in the type_name
       * (header.fixed_header.event_type.type_name)
       * field to denote the notification type
       * Note all values are unique among themselves.  Other IRP documents
       * cannot use the same values.
       */
      const string ET_OBJECT_CREATION = "x6";

      const string ET_OBJECT_DELETION = "x7";

           const string ET_ATTRIBUTE_VALUE_CHANGE = "x8";
     const string ET_CM_SYNCHRONIZATION_RECOMMENDED = "x9";



      /**
       * Information about one attribute
       * - name defines the name of the attribute
       * - value defines the value of the attribute
       *
       */
      struct MOAttribute
      {
         string name;
         any value;
      };


      /**
       * A set of attribute names and values
       */
      typedef sequence<MOAttribute> MOAttributeSet;


    /**
     * ScopeType defines the kind of scope to use in a CM synchronization
     * request together with ScopePara.level, in the SCOPE field.
     *
     * ScopePara.level is always >= 0. If a level is bigger than the
     * depth of the tree there will be no exceptions thrown.
     * BASE_ONLY: level ignored, just return the base object.
     * BASE_NTH_LEVEL: return all subordinate objects that are on "level"
     * distance from the base object, where 0 is the base object.
     * BASE_SUBTREE: return the base object and all of its subordinates
     * down to and including the nth level.
     * BASE_ALL: level ignored, return the base object and all of it's
     * subordinates.
     */
```

```
enum ScopeType
{
   BASE_ONLY,
   BASE_NTH_LEVEL,
   BASE_SUBTREE,
   BASE_ALL
};

struct ScopePara
{
   ScopeType type;
   unsigned long level;
};
```

```
typedef sequence <long> NotifIdSetType;

/*
This holds identifiers of notifications that are correlated.
*/
struct CorrelatedNotification
{
   DN source;  // Contains DN of MO that emitted the set of notifications
               // DN string format in compliance with Name Convention for
               // Managed Object.
               // This may be a zero-length string.  In this case, the MO
               // is identified by the value of the MOI attribute
               // of the Structured Event, i.e., the notification.
   NotifIdSetType notif_id_set;  // Set of related notification ids
};

/*
Correlated Notification sets are sets of Correlated Notification
structures.
*/
typedef sequence <CorrelatedNotification> CorrelatedNotificationSetType;
```

```
/**
 *  This interface defines fields that are common for all
 *  notification types.
 *  All constants in the scope of this interface will be
 *  visible in the interfaces that inherits this.
 *  For instance constant
 *  NotificationCommon::MANAGED_OBJECT_CLASS
 *  can be addressed by MODeletion::MANAGED_OBJECT_CLASS
 */
/*
This block identifies attributes which are included as part of the Kernel
CM IRP. These attribute values should not clash with those defined for the
attributes of notification header (see IDL of Notification IRP).
*/
interface AttributeNameValue
{
   const string SOURCE_INDICATOR = "SOURCE";
   const string ADDITIONAL_TEXT = "ADD_TEXT";
   const string CORRELATED_NOTIFICATIONS = "CORREL_NOTIFS";
  const string BASE_MO_CLASS = "BASE_MOC";
  const string BASE_MO_INSTANCE = "BASE_MOI";
  const string SCOPE = "SCOPE";
};

interface NotificationCommon
{

   /**
    * This constant defines a field in the filterable
    * information in a StructuredEvent.
    * This string is mapped to the name part of a
    * Property in the event and the value part will
    * carry the MO class name represented
    * as a string.
    */
   const string MANAGED_OBJECT_CLASS =
     NotificationIRPConstDefs::AttributeNameValue::MANAGED_OBJECT_CLASS;



   /**
```

```
       * This constant defines a field in the filterable
       * information in a StructuredEvent.
       * This string is mapped to the name part of a
       * Property in the event and the value part will
       * carry the MO distinguished name represented
       * as a string.
       */
      const string MANAGED_OBJECT_INSTANCE =
NotificationIRPConstDefs::AttributeNameValue::MANAGED_OBJECT_INSTANCE;



      /**
       *  This constant defines the name of the notification
       *  ID property, which is transported in the
       *  filterable_body_fields
       */
      const string NOTIFICATION_ID =
        NotificationIRPConstDefs::AttributeNameValue::NOTIFICATION_ID;



      /**
       *  This constant defines the name of the
       *  event time property, which is transported in the
       *  filterable_body_fields.
       *  The data type for the value of this property
       *  is defined by datatype CommonIRPConstDefs::IRPTime
       */
      const string EVENT_TIME =
        NotificationIRPConstDefs::AttributeNameValue::EVENT_TIME;




      /**
       *  This constant defines the name of the
       *  system name property, which is transported in the
       *  filterable_body_fields
       */
      const string SYSTEM_DN =
        NotificationIRPConstDefs::AttributeNameValue::SYSTEM_DN;



      /**
       *  This constant defines the name of the
       *  source indicator  property, which is transported in the
       *  filterable_body_fields
       */
      const string SOURCE_INDICATOR =
        KernelCmNotifDefs::AttributeNameValue::SOURCE_INDICATOR;

      /**
       * Valid values for the SOURCE_INDICATOR
       * property
       */
      const string RESOURCE_OPERATION =  "RESOURCE OPERATION";
      const string MANAGEMENT_OPERATION = "MANAGEMENT OPERATION";
      const string UNKNOWN_OPERATION = "UNKNOWN";


      /**
       *  This constant defines the name of the
       *  additional text property,
       *  which is transported in the filterable_body
       *  fields.
       *  The data type for the value of this property
       *  is a string.
       */
      const string ADDITIONAL_TEXT =
        KernelCmNotifDefs::AttributeNameValue::ADDITIONAL_TEXT;




      /**
       *  This constant defines the name of the
```

```
         *  correlated notifications property,
         *  which is transported in the
         *  filterable_body_fields
         *  The value part of the property is defined
         *  in the NotificationIRP;
         *    KernelCmNotifDefsNotificationIRPConstDefs::CorrelatedNotificationSetType
         */
        const string CORRELATED_NOTIFICATIONS =
          KernelCmNotifDefs::AttributeNameValue::CORRELATED_NOTIFICATIONS;


    };


    /**
     *  Constant definitions for the MO deleted notification
     */
    interface MODeletion : NotificationCommon
    {

        const string EVENT_TYPE = ET_OBJECT_DELETION;


        /**
         * This information mapped into the remainder_of_body
         * in the StructuredEvent
         */
        typedef MOAttributeSet AttributeValues;

    };



    /**
     *  Constant definitions for the MO created notification
     */
    interface MOCreation : NotificationCommon
    {
        const string EVENT_TYPE = ET_OBJECT_CREATION;


        /**
         * This information mapped into the remainder_of_body
         * in the StructuredEvent
         */
        typedef MOAttributeSet InitialAttributeValues;

    };



    /**
     *  Constant definitions for the Attribute Value Change
     *  notification
     */
    interface AttributeValueChange : NotificationCommon
    {

        const string EVENT_TYPE = ET_ATTRIBUTE_VALUE_CHANGE;

        /**
         * Information about modidified attributes for
         * one MO instance.
         * - name defines the name of the attribute
         * - newValue defines the new value of the attribute
         * - oldValue defines the previous value of the attribute
         *    The value is optional, which means that it may contain
         *    an empty any (null inserted in the any).
         *
         */
        struct ModifiedAttribute
        {
            string name;
            any newValue;
            any oldValue;
        };
```

```
    /**
     * This information mapped into the remainder_of_body
     * in the StructuredEvent.
     */
    typedef sequence<ModifiedAttribute> ModifiedAttributeSet;


  };

 /**
  *  Constant definitions for the CM Synchronization Recommended notification
  */
 interface CMSynchronizationRecommended
 {
    const string EVENT_TYPE = ET_CM_SYNCHRONIZATION_RECOMMENDED;


   /**
     * This constant defines a field in the filterable
     * information in a StructuredEvent.
     * This string is mapped to the name part of a
     * Property in the event and the value part will
     * carry the MO class name represented
     * as a string.
     */
    const string MANAGED_OBJECT_CLASS =
      NotificationIRPConstDefs::AttributeNameValue::MANAGED_OBJECT_CLASS;



    /**
     * This constant defines a field in the filterable
     * information in a StructuredEvent.
     * This string is mapped to the name part of a
     * Property in the event and the value part will
     * carry the MO distinguished name represented
     * as a string.
     */
    const string MANAGED_OBJECT_INSTANCE =
NotificationIRPConstDefs::AttributeNameValue::MANAGED_OBJECT_INSTANCE;



    /**
     *  This constant defines the name of the notification
     *  ID property, which is transported in the
     *  filterable_body_fields
     */
    const string NOTIFICATION_ID =
      NotificationIRPConstDefs::AttributeNameValue::NOTIFICATION_ID;



    /**
     *  This constant defines the name of the
     *  event time property, which is transported in the
     *  filterable_body_fields.
     *  The data type for the value of this property
     *  is defined by datatype CommonIRPConstDefs::IRPTime
     */
    const string EVENT_TIME =
      NotificationIRPConstDefs::AttributeNameValue::EVENT_TIME;

    /**
     *  This constant defines the name of the
     *  system name property, which is transported in the
     *  filterable_body_fields
     */
    const string SYSTEM_DN =
      NotificationIRPConstDefs::AttributeNameValue::SYSTEM_DN;


    /**
     *  This constant defines the name of the
     *  additional text property,
     *  which is transported in the filterable_body
     *  fields.
     *  The data type for the value of this property
```

```
         *  is a string.
         */
        const string ADDITIONAL_TEXT =
          KernelCmNotifDefs::AttributeNameValue::ADDITIONAL_TEXT;         /**

         *  This constant defines the name of the
         *  base MO class property,
         *  which is transported in the filterable_body
         *  fields.
         *  The value part of this property will carry
         *  the base MO class name as a string.
         */
        const string BASE_MO_CLASS =
          KernelCmNotifDefs::AttributeNameValue::BASE_MO_CLASS;

        /**
         *  This constant defines the name of the
         *  base MO instance property,
         *  which is transported in the filterable_body
         *  fields.
         *  The value part of this property will carry
         *  the base MO distinguished name as a string.
         */
        const string BASE_MO_INSTANCE =
          KernelCmNotifDefs::AttributeNameValue::BASE_MO_INSTANCE;


        /**
         *  This constant defines the name of the
         *  scope property,
         *  which is transported in the filterable_body
         *  fields.
         *  The data type for the value of this property
         *  is KernelCmNotifDefs::ScopePara.
         */
        const string SCOPE =
          KernelCmNotifDefs::AttributeNameValue::SCOPE;

      };


};

#endif
```

End of Change in Annex B
End of Document

Annex C (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Sep 2002	S_17	SP-020466	--	--	Submitted to TSG SA #17 for Approval	1.0.0	5.0.0
Mar 2003	S_19	SP-030143	001	--	CORBA IDL Compiler Errors	5.0.0	5.1.0
Mar 2003	S_19	SP-030145	002	--	Add IDL definition of notifyCMSynchronizationRecommended notification for KernelCM IRP	5.1.0	6.0.0