TSGS#25(04)0568

Source: SA5 (Telecom Management)

Title: 4 Rel-5/6 CR 32.663 Configuration Management (CM); Kernel CM IRP CORBA SS

Document for: Approval

Agenda Item: 7.5.3

Doc-1st-Level	Doc-2nd-Level	Spec	CR	Rev	Phase	Subject	Cat	Ver-Cur	Wi
SP-040568	S5-046837	32.663	006	--	Rel-5	Add missing DN definition	F	5.2.0	OAM-NIM
SP-040568	S5-046838	32.663	007	--	Rel-6	Add missing DN definition	A	6.1.0	OAM-NIM
SP-040568	S5-046695	32.663	008	--	Rel-5	Add missing IDL for get_kernel_CM_IRP_versions	F	5.2.0	OAM-NIM
SP-040568	S5-046696	32.663	009	--	Rel-6	Add missing IDL for get_kernel_CM_IRP_versions	A	6.1.0	OAM-NIM

CR-Form-v7

CHANGE REQUEST

⌘ 32.663 CR 008 ⌘rev - ⌘ Current version: 5.2.0 ⌘

*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 X Core Network X

Title:	⌘	Add missing IDL for get_kernel_CM_IRP_versions
Source:	⌘	**SA5** (clemens.suerbaum@siemens.com)
Work item code:	⌘	OAM-NIM
Date:	⌘	02/07/2004
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 operation is listed in the main body of the TS, but the IDL is missing.
Summary of change:	⌘	Add the missing IDL Additionally the opportunity was taken to correct an editorial error in 6.2 (wrong operation spelling in a table)
Consequences if not approved:	⌘	Incomplete IDL

Clauses affected:	⌘	6.2, Annex A

	Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
		X		O&M Specifications	Rel-6 32.663

Other comments:	⌘	Rel-6 Mirror CR in S5-046696.

How to create CRs using this form:

Change in Clause 6.2

6.2 Operation and Notification mapping

The Kernel CM IRP: IS (see 3GPP TS 32.662 [4]) defines semantics of operation and notification visible across the Kernel Configuration Management IRP. The following table in this subclause indicates mapping of these operations and notifications to their equivalents defined in this SS.

Table 6.2.1: Mapping from IS Notification/Operation to SS equivalents

IS Operation/ notification (3GPP TS 32.662 [4])	SS Method	Qualifier
getNRMIRPVersion	get_NRM_IRP_version	M
notifyObjectCreation (to convey of a new Managed Object created)	See Notification IRP: CORBA SS [9]	O
notifyObjectDeletion (to convey of a Managed Object deleted)	See Notification IRP: CORBA SS [9]	O
notifyAttributeValueChange (to convey of a change of one or several attributes of a Managed Object)	See Notification IRP: CORBA SS [9]	O
getIRPVersion	get_kernel_CM_IRP_versions	M
getOperationProfile	get_~~kernal~~kernel_CM_IRP_-operation_profile	O
getNotificationProfile	get_kernel_CM_IRP_notification_profile	O

End of Change in Clause 6.2

Change in Annex A

Annex A (normative): CORBA IDL, Access Protocol

```
#ifndef KernelCmIRPSystem_idl
#define KernelCmIRPSystem_idl

#include "ManagedGenericIRPConstDefs.idl"
#include "ManagedGenericIRPSystem.idl"

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

module KernelCmIRPSystem
{

    exception GetKernelCMIRPNotificationProfileException { string reason; };
    exception GetKernelCMIRPOperationProfileException { string reason; };
    exception GetNRMIRPVersion { string reason; };
    exception GetKernelCMIRPVersionsException { string reason; };

    /**
     * The KernelCmIrpOperations interface.
     * Supports a number of Resource Model versions.
     */
    interface KernelCmIrpOperations
    {
      /*
      Return the list of all supported Kernel CM IRP versions.
      */
      ManagedGenericIRPConstDefs::VersionNumberSet get_kernel_CM_IRP_versions (
      )
      raises (GetKernelCMIRPVersionsException);

     /**
```

```
      * Get the version(s) of the interface
      *
      * @raises GetNRMIRPVersion when the system for some reason
      *   can not return the supported versions.
      * @returns all supported versions.
      */
      void get_NRM_IRP_version
      (
         out ManagedGenericIRPConstDefs::VersionNumberSet versionNumberList,
         out ManagedGenericIRPConstDefs::VersionNumberSet vSEVersionNumberList
      )
         raises (GetNRMIRPVersion);


      /*
      Return the list of all supported operations and their supported
      parameters for a specific KernelCM IRP version.
      */
      ManagedGenericIRPConstDefs::MethodList get_kernel_CM_IRP_operation_profile (
         in ManagedGenericIRPConstDefs::VersionNumber kernel_CM_IRP_version
      )
      raises (GetKernelCMIRPOperationProfileException,
              ManagedGenericIRPSystem::OperationNotSupported,
              ManagedGenericIRPSystem::InvalidParameter);

      /*
      Return the list of all supported notifications and their supported
      parameters for a specific KernelCM IRP version.
      */
      ManagedGenericIRPConstDefs::MethodList
         get_kernel_CM_IRP_notification_profile
      (
         in ManagedGenericIRPConstDefs::VersionNumber kernel_CM_IRP_version
      )
      raises (GetKernelCMIRPNotificationProfileException,
              ManagedGenericIRPSystem::OperationNotSupported,
              ManagedGenericIRPSystem::InvalidParameter);

   };
};
#endif
```

End of change in Annex A
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
Jun 2004	S_24	SP-040261	003	--	Add Missing CorrelatedNotificationSetType definition	5.1.0	5.2.0

CR-Form-v7

CHANGE REQUEST

⌘ 32.663 CR 009 ⌘rev - ⌘ Current version: 6.1.0 ⌘

*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 IDL for get_kernel_CM_IRP_versions
Source:	⌘	**SA5** (clemens.suerbaum@siemens.com)
Work item code:	⌘	OAM-NIM
Date:	⌘	02/07/2004
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 operation is listed in the main body of the TS, but the IDL is missing.
Summary of change:	⌘	Add the missing IDL Additionally the opportunity was taken to correct an editorial error in 6.2 (wrong operation spelling in a table)
Consequences if not approved:	⌘	Incomplete IDL

Clauses affected:	⌘	6.2, Annex A

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

Other comments:	⌘	Rel-6 Mirror CR of S5-046695.

How to create CRs using this form:

Change in Clause 6.2

6.2 Operation and Notification mapping

The Kernel CM IRP: IS (see 3GPP TS 32.662 [4]) defines semantics of operation and notification visible across the Kernel Configuration Management IRP. The following table in this subclause indicates mapping of these operations and notifications to their equivalents defined in this SS.

Table 6.2.1: Mapping from IS Notification/Operation to SS equivalents

IS Operation/ notification (3GPP TS 32.662 [4])	SS Method	Qualifier
getNRMIRPVersion	get_NRM_IRP_version	M
notifyObjectCreation	See Notification IRP: CORBA SS [9]	O
notifyObjectDeletion	See Notification IRP: CORBA SS [9]	O
notifyAttributeValueChange	See Notification IRP: CORBA SS [9]	O
getIRPVersion	get_kernel_CM_IRP_versions	M
getOperationProfile	get_kernel_CM_IRP_operation_profile	O
getNotificationProfile	get_kernel_CM_IRP_notification_profile	O
notifyCMSynchronizationRecommended	See Notification IRP: CORBA SS [9]	O

End of Change in Clause 6.2

Change in Annex A

Annex A (normative): CORBA IDL, Access Protocol

```
#ifndef KernelCmIRPSystem_idl
#define KernelCmIRPSystem_idl

#include "ManagedGenericIRPConstDefs.idl"
#include "ManagedGenericIRPSystem.idl"

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

module KernelCmIRPSystem
{

    exception GetKernelCMIRPNotificationProfileException { string reason; };
    exception GetKernelCMIRPOperationProfileException { string reason; };
    exception GetNRMIRPVersion { string reason; };
    exception GetKernelCMIRPVersionsException { string reason; };

    /**
     * The KernelCmIrpOperations interface.
     * Supports a number of Resource Model versions.
     */
    interface KernelCmIrpOperations
    {
      /*
      Return the list of all supported Kernel CM IRP versions.
      */
      ManagedGenericIRPConstDefs::VersionNumberSet get_kernel_CM_IRP_versions (
      )
      raises (GetKernelCMIRPVersionsException);


     /**
      * Get the version(s) of the interface
      *
      * @raises GetNRMIRPVersion when the system for some reason
      *   can not return the supported versions.
```

```
      * @returns all supported versions.
      */
      void get_NRM_IRP_version
      (
         out ManagedGenericIRPConstDefs::VersionNumberSet versionNumberList,
         out ManagedGenericIRPConstDefs::VersionNumberSet vSEVersionNumberList
      )
         raises (GetNRMIRPVersion);

      /*
      Return the list of all supported operations and their supported
      parameters for a specific KernelCM IRP version.
      */
      ManagedGenericIRPConstDefs::MethodList get_kernel_CM_IRP_operation_profile (
         in ManagedGenericIRPConstDefs::VersionNumber kernel_CM_IRP_version
      )
      raises (GetKernelCMIRPOperationProfileException,
              ManagedGenericIRPSystem::OperationNotSupported,
              ManagedGenericIRPSystem::InvalidParameter);

      /*
      Return the list of all supported notifications and their supported
      parameters for a specific KernelCM IRP version.
      */
      ManagedGenericIRPConstDefs::MethodList
         get_kernel_CM_IRP_notification_profile
      (
         in ManagedGenericIRPConstDefs::VersionNumber kernel_CM_IRP_version
      )
      raises (GetKernelCMIRPNotificationProfileException,
              ManagedGenericIRPSystem::OperationNotSupported,
              ManagedGenericIRPSystem::InvalidParameter);

   };
};
#endif
```

End of change in Annex A
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
Jun 2004	S_24	SP-040261	004	--	Add Missing CorrelatedNotificationSetType definition	6.0.0	6.1.0

3GPP TSG-SA5 (Telecom Management) **S5-046837**
Meeting #39, Montreal, CANADA, 16 - 20 August 2004

CR-Form-v7

CHANGE REQUEST

⌘ **32.663** **CR** **006** ⌘ **rev** **-** ⌘ Current version: **5.2.0** ⌘

*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 **X** Core Network **X**

Title:	⌘	Add missing DN definition
Source:	⌘	**SA5** (llrui@bupt.edu.cn, liyewen@chinamobile.com)
Work item code:	⌘	OAM-NIM
Date:	⌘	20/08/2004
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 DN in KernelCM IRP CORBA SS is missing.
Summary of change:	⌘	Add missing DN definition.
Consequences if not approved:	⌘	Incorrect CORBA IDL.

Clauses affected:	⌘	Annex B

Other specs affected:	⌘	**Y**	**N**	
			X	Other core specifications ⌘
			X	Test specifications
		X		O&M Specifications Rel-6 32.663

Other comments:	⌘	Rel-6 Mirror CR in S5-046838.

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;
      };


    /* The format of Distinguished Name (DN) is specified in 3GPP TS 32.300
    "Name Conventions for Managed Objects".
    */
    typedef string DN;

   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
     *    KernelCmNotifDefs::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
Jun 2004	S_24	SP-040261	003	--	Add Missing CorrelatedNotificationSetType definition	5.1.0	5.2.0

3GPP TSG-SA5 (Telecom Management) **S5-046838**
Meeting #39, Montreal, CANADA, 16 - 20 August 2004

CR-Form-v7

CHANGE REQUEST

⌘ **32.663** **CR** **007** ⌘ **rev** **-** ⌘ Current version: **6.1.0** ⌘

*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 DN definition
Source:	⌘	**SA5** (llrui@bupt.edu.cn, liyewen@chinamobile.com)
Work item code:	⌘	OAM-NIM
Date:	⌘	20/08/2004
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 DN in KernelCM IRP CORBA SS is missing.
Summary of change:	⌘	Add missing DN definition.
Consequences if not approved:	⌘	Incorrect CORBA IDL.

Clauses affected:	⌘	Annex B

Other specs affected:	⌘	**Y**	**N**	
			X	Other core specifications ⌘
			X	Test specifications
			X	O&M Specifications
Other comments:	⌘	Rel-6 Mirror CR of S5-046837.		

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;
};

/* The format of Distinguished Name (DN) is specified in 3GPP TS 32.300
"Name Conventions for Managed Objects".
*/
typedef string DN;

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
    *    KernelCmNotifDefs::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
Jun 2004	S_24	SP-040261	004	--	Add Missing CorrelatedNotificationSetType definition	6.0.0	6.1.0