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**Source:** SA5 (Telecom Management)  
**Title:** Rel-6 CR 32.413 (PM IRP CORBA SS)  
**Document for:** Decision  
**Agenda Item:** 7.5.3

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Doc-1st-	Spec	CR	R	Phas	Subject	Cat	Ver	Doc-2nd-	Workitem
SP-040273	32.413	001	-	Rel-6	Correction and enhancement of data type definitions in IDL files	F	6.0.0	S5-046499	OAM-PM

## CHANGE REQUEST

⌘ **32.413 CR 001** ⌘ 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  Core Network

<b>Title:</b>	⌘ Correction and enhancement of data type definitions in IDL files		
<b>Source:</b>	⌘ SA5 (China Mobile, llrui@bupt.edu.cn, liyewen@chinamobile.com)		
<b>Work item code:</b>	⌘ OAM-PM	<b>Date:</b>	⌘ 14/05/2004
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6)

<b>Reason for change:</b>	⌘ Some data type definitions in IDL files need to be corrected or enhanced.		
<b>Summary of change:</b>	⌘ Correction and enhancement of data type definitions in IDL files of PM IRP CORBA SS		
<b>Consequences if not approved:</b>	⌘ Incorrect CORBA IDL.		

<b>Clauses affected:</b>	⌘ A.1, A.3						
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	
Y	N						
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	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
<b>Other comments:</b>	⌘						

## A.1 IDL specification (file name "PMIRPConstDefs.idl")

```

#ifndef PMIRPConstDefs_idl
#define PMIRPConstDefs_idl

#include "TimeBase.idl"

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

/* ## Module: PMIRPConstDefs
This module contains commonly used definitions for PM IRP
=====
*/
module PMIRPConstDefs
{

    enum ResultType {OK, Failure};

    typedef string MOCClassNameType;
    typedef string MOInstanceType;
    typedef sequence<MOInstanceType> MOInstanceListType;
    typedef string MeasurementCategoryType;
    typedef sequence<MeasurementCategoryType> MeasurementCategoryListType;
    typedef unsigned long GranularityPeriodType; //The unit is minute.
    typedef unsigned long ReportingPeriodType; //The unit is minute.
    typedef TimeBase::UtcT UTCTimeType;

    union StartTimeTypeOpt switch(boolean)
    {
        case TRUE: UTCTimeType value;
    };

    union StopTimeTypeOpt switch(boolean)
    {
        case TRUE: UTCTimeType value;
    };

    typedef string IntervalTimeType;
    // the IntervalTimeType with format ab:cd (from 00:00 to 23:59 of one day)
    struct IntervalOfDayType
    {
        IntervalTimeType intervalStartTime;
        IntervalTimeType intervalStopTime;
    };
    typedef sequence<IntervalOfDayType> DailySchedulingType;
    typedef stringunsigned-short DayOfWeekType;
    //The value of DayOfWeekType is a BIT STRING (SIZE(7)) from 0 to 6.
    //{sunday(0),monday(1),tuesday(2),wednesday(3),
    //thursday(4),friday(5),saturday(6)}
    typedef sequence<DayOfWeekType> DaysOfWeekType;
    struct WeeklySchedulingElement
    {
        DaysOfWeekType dayOfWeek;
        DailySchedulingType intervalsOfDay;
    };
    typedef sequence<WeeklySchedulingElement> WeeklySchedulingType;
    enum scheduleTypeChoice { Daily, Weekly };
    union ScheduleType switch (scheduleTypeChoice)
    {
        case Daily: DailySchedulingType dailyScheduling;
        case Weekly: WeeklySchedulingType weeklyScheduling;
    };
    union ScheduleTypeOpt switch(boolean)
    {
        case TRUE: ScheduleType value;
    };

    typedef unsigned long JobIdType;
    typedef sequence<JobIdType> JobIdListType;

```

```

struct JUnsupportedType
{
    MOInstanceType moInstance;
    MeasurementCategoryType measurementCategory;
    string reason;
};
typedef sequence<JUnsupportedType> JUnsupportedListType;

/**
 * Defines the name of an attribute of a Managed Object
 */
typedef string MOAttributeName;

enum JobStatusType {Scheduled, Active, Suspended, Stopped};
struct JobInfoType
{
    JobIdType jobId;
    MOClassNameType moClass;
    MOInstanceListType moInstanceList;
    MeasurementCategoryListType measurementCategoryList;
    GranularityPeriodType granularityPeriod;
    ReportingPeriodType reportingPeriod;
    StartTimeTypeOpt startTime;
    StopTimeTypeOpt stopTime;
    ScheduleTypeOpt schedule;
    JobStatusType jobStatus;
};
typedef sequence<JobInfoType> JobInfoListType;

typedef string MeasurementTypeNameType;
typedef string SubCounterNameType;
typedef string ProbableCauseType;
typedef string SpecificProblemType;
typedef any ThresholdValueType;
enum SeverityType {Warning, Minor, Major, Critical};
union HysteresisType switch(boolea)
{
    case TRUE: long longValue;
    case FALSE: float floatValue;
};
enum DirectionType { Increasing, Decreasing};
struct ThresholdPackElementType
{
    ThresholdValueType thresholdValue;
    SeverityType severity; // the value shall be
    // one of Warning, Minor, Major or Critical.
    HysteresisType hysteresis;
};
typedef sequence<ThresholdPackElementType> ThresholdPackType;
struct ThresholdInfoType
{
    MeasurementTypeNameType measurementTypeName;
    SubCounterNameType subCounterName;
    ProbableCauseType probableCause;
    SpecificProblemType specificProblem;
    DirectionType direction;
    ThresholdPackType thresholdPack;
};
typedef sequence<ThresholdInfoType> ThresholdInfoListType;
typedef GranularityPeriodType MonitorGranularityPeriodType; // time period is based on 5 minutes.
typedef unsigned long MonitorIdType;
struct MUnsupportedType
{
    MOInstanceType moInstance;
    MeasurementTypeNameType measurementTypeName;
    SubCounterNameType subCounterName;
    string reason;
};
typedef sequence<MUnsupportedType> MUnsupportedListType;
enum MonitorStatusType {MSuspended, MActive};

typedef sequence<MonitorIdType> MonitorIdListType;
typedef string EventTypeType; // The value is "Quality of Service Alarm"
struct MonitorInfoType
{
    MonitorIdType monitorId;
    MOClassNameType moClass;

```

```

MOInstanceListType moInstanceList;
MonitorGranularityPeriodType monitorGranularityPeriod;
ThresholdInfoListType thresholdInfoList;
MonitorStatusType thresholdMonitorStatus;
EventTypeType eventType;
};
typedef sequence<MonitorInfoType> MonitorInfoListType;

/**
 * This block identifies attributes which are included as part of the
 * PMIRP. These attribute values should not
 * clash with those defined for the attributes of notification
 * header (see IDL of Notification IRP).
 */
interface AttributeNameValue
{
    const string JOB_ID = "JOB_ID";
    const string JOB_STATUS = "JOB_STATUS";
    const string REASON = "REASON";
    const string MONITOR_ID = "MONITOR_ID";
    const string MONITOR_STATUS = "MONITOR_STATUS";

    const string MONITOR_GRANULARITYPERIOD = "MONITOR_GRANULARITYPERIOD";
    const string THRESHOLD_INFO_LIST = "THRESHOLD_INFO_LIST";
};

};

#endif

```

**End of Change in Annex A.1**

**Change in Annex A.3**

## A.3 IDL specification (file name "PMIRPNotifDefs.idl")

```

#ifndef PMIRPNotifDefs_idl
#define PMIRPNotifDefs_idl

#include "PMIRPConstDefs.idl"
#include "NotificationIRPConstDefs.idl"

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

/* ## Module: PMIRPNotifDefs
This module contains the specification of all notifications of PM IRP Agent.
=====
*/
module PMIRPNotifDefs
{
    const string ET_MEASUREMENT_JOB_STATUS_CHANGED = "notifyMeasurementJobStatusChanged";
    const string ET_THRESHOLD_MONITOR_STATUS_CHANGED = "notifyThresholdMonitorStatusChanged";

    /**
     * Constant definitions for the notifyMeasurementJobStatusChanged notification
     */
    interface notifyMeasurementJobStatusChanged: NotificationIRPConstDefs::AttributeNameValue
    {
        const string EVENT_TYPE = ET_MEASUREMENT_JOB_STATUS_CHANGED;

        /**
         * This constant defines the name of the jobId property,
         * which is transported in the filterable_body fields.
         * The data type for the value of this property
         * is PMIRPConstDefs::JobIdType.
         */
        const string JOB_ID = PMIRPConstDefs::AttributeNameValue::JOB_ID;
    };
};

```

```

/**
 * This constant defines the name of the jobStatus property,
 * which is transported in the filterable_body fields.
 * The data type for the value of this property
 * is PMIRPConstDefs::JobStatusType.
 */
const string JOB_STATUS = PMIRPConstDefs::AttributeNameValue::JOB_STATUS;

/**
 * This constant defines the name of the reason property,
 * which is transported in the filterable_body fields.
 * The data type for the value of this property is string.
 */
const string REASON = PMIRPConstDefs::AttributeNameValue::REASON;
};

/**
 * Constant definitions for the notifyThresholdMonitorStatusChanged notification
 */
interface notifyThresholdMonitorStatusChanged: NotificationIRPConstDefs::AttributeNameValue
{
    const string EVENT_TYPE = ET_THRESHOLD_MONITOR_STATUS_CHANGEDET_MEASUREMENT_JOB_STATUS_CHANGED;

    /**
     * This constant defines the name of the monitorId property,
     * which is transported in the filterable_body fields.
     * The data type for the value of this property
     * is PMIRPConstDefs::MonitorIdType.
     */
    const string MONITOR_ID = PMIRPConstDefs::AttributeNameValue::MONITOR_ID;

    /**
     * This constant defines the name of the monitorStatus property,
     * which is transported in the filterable_body fields.
     * The data type for the value of this property
     * is PMIRPConstDefs::MonitorStatusType.
     */
    const string MONITOR_STATUS = PMIRPConstDefs::AttributeNameValue::MONITOR_STATUS;

    /**
     * This constant defines the name of the reason property,
     * which is transported in the filterable_body fields.
     * The data type for the value of this property is string.
     */
    const string REASON = PMIRPConstDefs::AttributeNameValue::REASON;
};

};

#endif

```

<p><b>End of Change in Annex A.3</b>  <b>End of the document</b></p>
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# Annex B (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
Mar 2004	S_23	SP-040136	--	--	Submitted to TSG SA#23 for Approval	2.0.0	6.0.0