# ETSI TS 132 417 V9.0.0 (2010-01)

Technical Specification

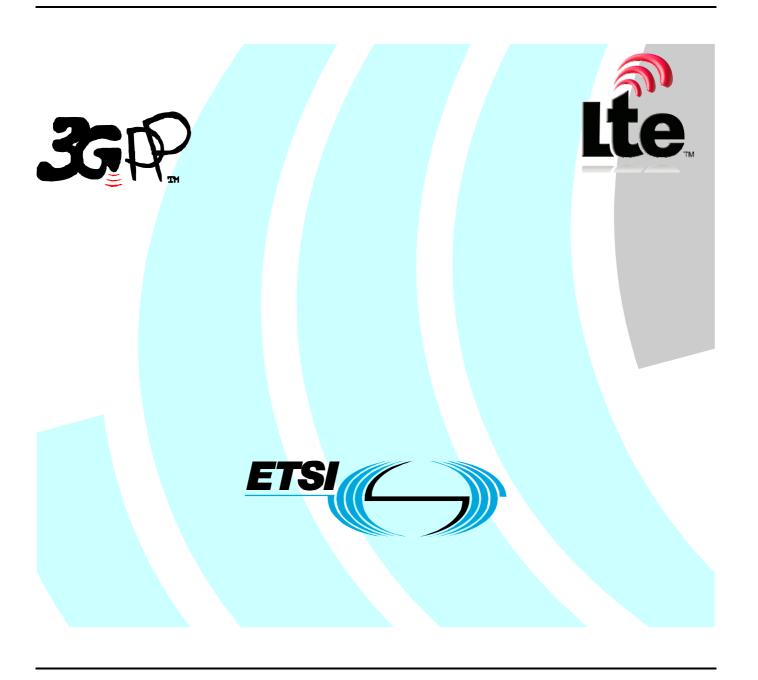
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## Introduction

The present document is part of a TS-family covering the 3<sup>rd</sup> Generation Partnership Project: Technical Specification Group Services and System Aspects; Telecommunication management, as identified below:

32.417	"Performance Management (PM) Integration Reference Point (IRP): SOAP Solution Set (SS)"
32.415	"Performance Management (PM) Integration Reference Point (IRP): eXtensible Markup Language (XML) definitions"
32.413:	"Performance Management (PM) Integration Reference Point (IRP): Common Object Request Broker Architecture (CORBA) Solution Set (SS)"
32.412:	"Performance Management (PM) Integration Reference Point (IRP): Information Service (IS)"
32.411:	"Performance Management (PM) Integration Reference Point (IRP): Requirements"

#### 1 Scope

The present document specifies the SOAP Solution Set for the IRP whose semantics are specified in Performance Management IRP: Information Service (3GPP TS 32.412 [4]).

This Solution Set specification is related to 3GPP TS 32.412 V8.0.X.

#### 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) 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". 3GPP TS 32.411: "Technical Specification Group Services and System Aspects; [3] Telecommunication management; Performance Management (PM) Integration Reference Point (IRP): Requirements ". [4] 3GPP TS 32.412: "Technical Specification Group Services and System Aspects; Telecommunication management; Performance Management (PM) Integration Reference Point (IRP): Information Service (IS)". [5] 3GPP TS 32.415: "Telecommunication management; Performance Management (PM) Integration Reference Point (IRP): eXtensible Markup Language (XML) definitions". 3GPP TS 32.311: "Telecommunication management; Generic Integration Reference Point (IRP) [6] management; Requirements". [7] 3GPP TS 32.312: "Telecommunication management; Generic Integration Reference Point (IRP) management; Information Service (IS)". 3GPP TS 32.317: "Telecommunication management: Generic Integration Reference Point (IRP) [8] management; SOAP solution set".
- [9] 3GPP TS 32.150: "Telecommunication management; Integration Reference Point (IRP) Concept and definitions".
- [10] 3GPP TS 32.307: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP): SOAP solution set".
- W3C SOAP 1.1 specification (http://www.w3.org/TR/2000/NOTE-SOAP-20000508/) [11]
- W3C XPath 1.0 specification (http://www.w3.org/TR/1999/REC-xpath-19991116) [12]
- W3C WSDL 1.1 specification (http://www.w3.org/TR/2001/NOTE-wsdl-20010315) [13]
- W3C SOAP 1.2 specification (http://www.w3.org/TR/soap12-part1/) [14]

## 3 Definitions and abbreviations

#### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TS 32.101 [1], 3GPP TS 32.102 [2], 3GPP TS 32.150 [9] and 3GPP TS 32.411 [3] and the following apply:

IRP document version number string (or "IRPVersion"): See 3GPP TS 32.311 [6].

#### 3.2 Abbreviations

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

IS Information Service SS Solution Set

WSDL Web Service Description Language

### 4 Architectural features

#### 4.1 General

The overall architectural feature of the Performance Management (PM) IRP is specified in 3GPP TS 32.412 [4]. This clause specifies features that are specific to the SOAP solution set.

The SOAP 1.1 specification [11] and WSDL 1.1 specification [13] are supported.

The SOAP 1.2 specification [14] is supported optionally.

This specification uses "document" style in WSDL file.

This specification uses "literal" encoding style in WSDL file.

The filter language used in the SS is the XPath Language (see W3C XPath 1.0 specification [12]). IRPAgents may throw a FilterComplexityLimit fault when a given filter is too complex.

The PM IRP SOAP SS uses the Notification IRP SOAP SS of 3GPP TS 32.307 [10]. The IRPAgent shall support the push interface model, which means that the IRPAgent sends PM notifications to the IRPManager as soon as new events occur. The IRPManager does not need to check ("pull") for events.

Relevant definitions are imported from the PM IRP XML definitions of 3GPP TS 32.415 [5].

This specification uses a number of namespace prefixes throughout that are listed in Table 4.1.

Table 4.1: Prefixes and Namespaces used in this specification

PREFIX	NAMESPACE
(no prefix)	http://schemas.xmlsoap.org/wsdl/
soap	http://schemas.xmlsoap.org/wsdl/soap/
pMIRPSystem	http://www.3gpp.org/ftp/Specs/archive/32_series/32.417#PMIRPSystem
pMIRPData	http://www.3gpp.org/ftp/Specs/archive/32_series/32.417#PMIRPData
хрі	http://www.3gpp.org/ftp/specs/archive/32_series/32.415#pMIRPIOCs
xn	http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm
genericIRPSystem	http://www.3gpp.org/ftp/Specs/archive/32_series/32.317/schema/32317-810/GenericIRPSystem
ntfIRPNtfSystem	http://www.3gpp.org/ftp/Specs/archive/32_series/32.307/schema/32307-
	810/notification/NotificationIRPNtfSystem

The WSDL structure is depicted in Figure 4.1 below, depicting port type, binding and service. The port type contains port type operations, which again contains input, output and fault messages. The binding contains binding operations, which have the same name as the port type operations. The binding connects to a port inside the service.

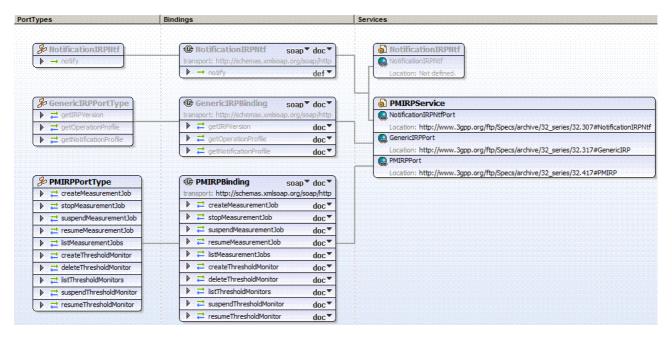


Figure 4.1: Performance Management IRP SOAP Solution Set WSDL structure

## 5 Mapping

## 5.1 Operation and notification mapping

The PM IRP IS (3GPP TS 32.412 [4]) defines the operations and their semantics.

Table 5.1 maps the operations defined in the PM IRP IS to their equivalent port type and binding operations in this Solution Set (SS).

Table 5.1 also maps the notifications of the PM IRP IS, as well as inherited operations.

Table 5.1 also qualifies if an operation is Mandatory (M) or Optional (O).

Table 5.1: Mapping from IS Operation to SS Equivalents

IS Operation in 3GPP TS 32.412 [4]	SS: Operation for WSDL port type and WSDL binding	SS: Port of PMIRPService	Qualifier
createMeasurementJob	createMeasurementJob (note 1)	PMIRPPort	М
stopMeasurementJob	stopMeasurementJob (note 1)	PMIRPPort	М
suspendMeasurementJob	suspendMeasurementJob (note 1)	PMIRPPort	0
resumeMeasurementJob	resumeMeasurementJob (note 1)	PMIRPPort	0
listMeasurementJobs	listMeasurementJobs (note 1)	PMIRPPort	M
createThresholdMonitor	createThresholdMonitor (note 1)	PMIRPPort	M (note 4 a)
deleteThresholdMonitor	deleteThresholdMonitor (note 1)	PMIRPPort	M (note 4 a)
listThresholdMonitors	listThresholdMonitors (note 1)	PMIRPPort	M (note 4 a)
suspendThresholdMonitor	suspendThresholdMonitor (note 1)	PMIRPPort	M (note 4 b)
resumeThresholdMonitor	resumeThresholdMonitor (note 1)	PMIRPPort	M (note 4 b)
notifyMeasurementJobStatusChanged	notify (note 2)	NotificationIRPNtfPort	М
notifyThresholdMonitorObjectCreation	notify (note 2)	NotificationIRPNtfPort	M (note 4 c)
notifyThresholdMonitorObjectDeletion	notify (note 2)	NotificationIRPNtfPort	M (note 4 c)
notifyThresholdMonitorStatusChanged	notify (note 2)	NotificationIRPNtfPort	0
getIRPVersion (note 3)	See TS 32.317 [8]	GenericIRPPort	M
getOperationProfile (note 3)	See TS 32.317 [8]	GenericIRPPort	0
getNotificationProfile (note 3)	See TS 32.317 [8]	GenericIRPPort	0
NOTE 1: The operation is under the port type pMIRPSystem:PMIRPPortType and under the binding pMIRPSystem:PMIRPBinding.			
NOTE 2: The IS equivalent maps to an XML definition specified in 3GPP TS 32.415 [5], and this being an input parameter to the operation notify under the port type ntfIRPNtfSystem:NotificationIRPNtf and under the binding ntfIRPNtfSystem:NotificationIRPNtf of 3GPP TS 32.307 [10]. This binding is linked to a port of the PMIRPService as indicated in the table above.			
This inheritance is by the PN The corresponding binding is	<ul> <li>NOTE 3: The IS operation is inherited from the ManagedGenericIRP IOC specified in 3GPP TS 32.312 [7].         This inheritance is by the PMIRP IOC of 3GPP TS 32.412 [4] inheriting from the ManagedGenericIRP IOC.         The corresponding binding is linked to a port of the PMIRPService as indicated in the table above.     </li> <li>NOTE 4: a) Mandatory if the optional PMIRPOperations_2 interface (see the PM IRP IS clause 7.4) is supported.</li> </ul>		
INO 1 = 4. a) Manuatory II the optional	riviikropeialions_2 intenace (see t	He Fivi IRF 13 Clause 7.4) I	s supported.

## 5.2 Operation parameter mapping

The PM IRP IS (3GPP TS 32.412 [4]) defines semantics of parameters carried in the operations. The tables below show the mapping of these parameters, as per operation, to their equivalents defined in this SS.

b) Mandatory if the optional PMIRPOperations\_3 interface (see the PM IRP IS clause 7.5) is supported. c) Mandatory if the optional PMIRPNotification\_2 interface (see the PM IRP IS clause 7.7) is supported.

## 5.2.1 Operation createMeasurementJob

#### 5.2.1.1 Input parameters

Table 5.2.1.1: Mapping from IS createMeasurementJob input parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding input message under corresponding port type operation as indicated in Table 5.1	Qualifier
iOCName	iOCName	M
iOCInstanceList	iOCInstanceList	M
measurementCategoryList	measurementCategoryList	М
granularityPeriod	granularityPeriod	M
reportingPeriod	reportingPeriod	М
startTime	startTime	0
stopTime	stopTime	0
schedule	schedule	0
priority	priority	0

#### 5.2.1.2 Output parameters

Table 5.2.1.2: Mapping from IS createMeasurementJob output parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding output message under corresponding port type operation as indicated in Table 5.1	Qualifier
jobId	jobId	M
unsupportedList	unsupportedList	М
status	status	M

#### 5.2.1.3 Fault definition

Table 5.2.1.3: Mapping from IS createMeasurementJob exceptions to SS equivalents

Assertion name	SS WSDL type enumeration value used in corresponding fault message under corresponding port type operation as indicated in Table 5.1	Qualifier
invalidStartTime	InvalidStartTime	M
invalidStopTime	InvalidStopTime	М
invalidSchedule	InvalidSchedule	М
invalidGranularityPeriod	InvalidGranularityPeriod	М
invalidReportingPeriod	InvalidReportingPeriod	М
highWorkLoad	HighWorkLoad	М
invalidPriority	InvalidPriority	М

## 5.2.2 Operation stopMeasurementJob

#### 5.2.2.1 Input parameters

Table 5.2.2.1: Mapping from IS stopMeasurementJob input parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding input message under corresponding port type operation as indicated in Table 5.1	Qualifier
JobId	jobId	M

#### 5.2.2.2 Output parameters

Table 5.2.2.2: Mapping from IS stopMeasurementJob output parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding output message under corresponding port type operation as indicated in Table 5.1	Qualifier
Status	status	M

#### 5.2.2.3 Fault definition

Table 5.2.2.3: Mapping from IS stopMeasurementJob exceptions to SS equivalents

Assertion name	SS WSDL type enumeration value used in corresponding fault message under corresponding port type operation as indicated in Table 5.1	Qualifier
unknownJob	UnknownJob	M
jobCannotBeStopped	JobCannotBeStopped	М

## 5.2.3 Operation suspendMeasurementJob

#### 5.2.3.1 Input parameters

Table 5.2.3.1: Mapping from IS suspendMeasurementJob input parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding input message under corresponding port type operation as indicated in Table 5.1	Qualifier
jobId	jobId	М

#### 5.2.3.2 Output parameters

Table 5.2.3.2: Mapping from IS suspendMeasurementJob output parameters to SS equivalents

IS Opera	tion parameter	SS WSDL type sub-element used in corresponding output message under corresponding port type operation as indicated in Table 5.1	Qualifier
status		status	М

#### 5.2.3.3 Fault definition

Table 5.2.3.3: Mapping from IS suspendMeasurementJob exceptions to SS equivalents

Assertion name	SS WSDL type enumeration value used in corresponding fault message under corresponding port type operation as indicated in Table 5.1	Qualifier
unknownJob	UnknownJob	M
jobAlreadySuspended	JobAlreadySuspended	M

## 5.2.4 Operation resumeMeasurementJob

#### 5.2.4.1 Input parameters

Table 5.2.4.1: Mapping from IS resumeMeasurementJob input parameters to SS equivalents

IS Operation paramete	SS WSDL type sub-element used in corresponding input message under corresponding port type operation as indicated in Table 5.1	Qualifier
jobId	jobId	М

#### 5.2.4.2 Output parameters

Table 5.2.4.2: Mapping from IS resumeMeasurementJob output parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding output message under corresponding port type operation as indicated in Table 5.1	Qualifier
status	status	М

#### 5.2.4.3 Fault definition

Table 5.2.4.3: Mapping from IS resumeMeasurementJob exceptions to SS equivalents

Assertion name	SS WSDL type enumeration value used in corresponding fault message under corresponding port type operation as indicated in Table 5.1	Qualifier
unknownJob	UnknownJob	М
jobIsNotSuspended	JobIsNotSuspended	М
highWorkLoad	HighWorkLoad	М

## 5.2.5 Operation listMeasurementJobs

#### 5.2.5.1 Input parameters

Table 5.2.5.1: Mapping from IS listMeasurementJobs input parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding input message under corresponding port type operation as indicated in Table 5.1	Qualifier
jobIdList	jobIdList	М

#### 5.2.5.2 Output parameters

Table 5.2.5.2: Mapping from IS listMeasurementJobs output parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding output message under corresponding port type operation as indicated in Table 5.1	Qualifier
jobInfoList	jobInfoList	M
status	status	М

#### 5.2.5.3 Fault definition

Table 5.2.5.3: Mapping from IS listMeasurementJobs exceptions to SS equivalents

Asse	rtion name	SS WSDL type enumeration value used in corresponding fault message under corresponding port type operation as indicated in Table 5.1	Qualifier
invali	dJobIdList	InvalidJobIdList	М

## 5.2.6 Operation createThresholdMonitor

#### 5.2.6.1 Input parameters

Table 5.2.6.1: Mapping from IS createThresholdMonitor input parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding input message under corresponding port type operation as indicated in Table 5.1	Qualifier
iOCName	iOCName	M
iOCInstanceList	iOCInstanceList	M
thresholdInfoList	thresholdInfoList	M
monitorGranularityPeriod	monitorGranularityPeriod	M

#### 5.2.6.2 Output parameters

Table 5.2.6.2: Mapping from IS createThresholdMonitor output parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding output message under corresponding port type operation as indicated in Table 5.1	Qualifier
monitorId	monitorId	M
unsupportedList	unsupportedList	М
status	status	M

#### 5.2.6.3 Fault definition

Table 5.2.6.3: Mapping from IS createThresholdMonitor exceptions to SS equivalents

Assertion name	SS WSDL type enumeration value used in corresponding fault message under corresponding port type operation as indicated in Table 5.1	Qualifier
invalidClassOrInstances	InvalidClassOrInstances	M
invalidGranularityPeriod	InvalidGranularityPeriod	M
noValidMeasurementType	NoValidMeasurementType	М
invalidNumberOfThresholdPackElements	${\tt InvalidNumberOfThresholdPackElements}$	М
invalidOrderOfThresholdPackElements	InvalidOrderOfThresholdPackElements	М
invalidDirection	InvalidDirection	М

## 5.2.7 Operation deleteThresholdMonitor

#### 5.2.7.1 Input parameters

Table 5.2.7.1: Mapping from IS deleteThresholdMonitor input parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding input message under corresponding port type operation as indicated in Table 5.1	Qualifier
monitorId	monitorId	М

#### 5.2.7.2 Output parameters

Table 5.2.7.2: Mapping from IS deleteThresholdMonitor output parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding output message under corresponding port type operation as indicated in Table 5.1	Qualifier
status	status	М

#### 5.2.7.3 Fault definition

Table 5.2.7.3: Mapping from IS deleteThresholdMonitor exceptions to SS equivalents

Assertion name	SS WSDL type enumeration value used in corresponding fault message under corresponding port type operation as indicated in Table 5.1	Qualifier
unknownThresholdMonitor	UnknownThresholdMonitor	M

## 5.2.8 Operation listThresholdMonitors

#### 5.2.8.1 Input parameters

Table 5.2.8.1: Mapping from IS listThresholdMonitors input parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding input message under corresponding port type operation as indicated in Table 5.1	Qualifier
monitorIdList	monitorIdList	М

#### 5.2.8.2 Output parameters

Table 5.2.8.2: Mapping from IS listThresholdMonitors output parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding output message under corresponding port type operation as indicated in Table 5.1	Qualifier
status	status	M

#### 5.2.8.3 Fault definition

Table 5.2.8.3: Mapping from IS listThresholdMonitors exceptions to SS equivalents

Assertion name	SS WSDL type enumeration value used in corresponding fault message under corresponding port type operation as indicated in Table 5.1	Qualifier
${\tt invalidMonitorIdList}$	InvalidMonitorIdList	M

## 5.2.9 Operation suspendThresholdMonitor

#### 5.2.9.1 Input parameters

Table 5.2.9.1: Mapping from IS suspendThresholdMonitor input parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding input message under corresponding port type operation as indicated in Table 5.1	Qualifier
monitorIdList	monitorIdList	M

#### 5.2.9.2 Output parameters

Table 5.2.9.2: Mapping from IS suspendThresholdMonitor output parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding output message under corresponding port type operation as indicated in Table 5.1	Qualifier
status	status	М

#### 5.2.9.3 Fault definition

Table 5.2.9.3: Mapping from IS suspendThresholdMonitor exceptions to SS equivalents

Assertion name	SS WSDL type enumeration value used in corresponding fault message under corresponding port type operation as indicated in Table 5.1	Qualifier
unknownThresholdMonitor	UnknownThresholdMonitor	M
thresholdMonitorAlreadySuspended	ThresholdMonitorAlreadySuspended	М

## 5.2.9 Operation resumeThresholdMonitor

#### 5.2.9.1 Input parameters

Table 5.2.9.1: Mapping from IS resumeThresholdMonitor input parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding input message under corresponding port type operation as indicated in Table 5.1	Qualifier
monitorId	monitorId	М

#### 5.2.9.2 Output parameters

Table 5.2.9.2: Mapping from IS resumeThresholdMonitor output parameters to SS equivalents

IS Operation parameter	SS WSDL type sub-element used in corresponding output message under corresponding port type operation as indicated in Table 5.1	Qualifier
status	status	M

#### 5.2.9.3 Fault definition

Table 5.2.9.3: Mapping from IS resumeThresholdMonitor exceptions to SS equivalents

Assertion name	SS WSDL type enumeration value used in corresponding fault message under corresponding port type operation as indicated in Table 5.1	Qualifier
unknownThresholdMonitor	UnknownThresholdMonitor	M
thresholdMonitorIsNotSuspended	ThresholdMonitorIsNotSuspended	М

# Annex A (normative): WSDL specifications

```
<?xml version="1.0" encoding="UTF-8"?>
   3GPP TS 32.417 Performance Management (PM) IRP SOAP Solution Set
<definitions xmlns="http://schemas.xmlsoap.org/wsdl/"</pre>
xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:pMIRPSystem="http://www.3gpp.org/ftp/Specs/archive/32_series/32.417#PMIRPSystem"
xmlns:pMIRPData="http://www.3gpp.org/ftp/Specs/archive/32_series/32.417#PMIRPData"
xmlns:xpi="http://www.3gpp.org/ftp/specs/archive/32_series/32.415#pMIRPIOCs"
xmlns:xn="http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm" xmlns:genericIRPSystem="http://www.3gpp.org/ftp/Specs/archive/32_series/32.317/schema/32317-
810/GenericIRPSystem"
xmlns:ntfIRPNtfSystem="http://www.3gpp.org/ftp/Specs/archive/32_series/32.307/schema/32307-
810/notification/NotificationIRPNtfSystem"
location="http://www.3gpp.org/ftp/Specs/archive/32_series/32.307/schema/32307-810-wsdl.zip"/>
810-wsdl.zip"/>
    <types>
         <schema targetNamespace="http://www.3gpp.org/ftp/Specs/archive/32_series/32.417#PMIRPData"</pre>
xmlns="http://www.w3.org/2001/XMLSchema">
             <import namespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.415#pMIRPIOCs"/>
<import namespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm"/>
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                       <enumeration value="Failure"/>
                  </restriction>
              </simpleType>
              <enumeration value="Success"/>
                       <enumeration value="Failure"/>
                       <enumeration value="PartialSuccess"/>
                  </restriction>
              </simpleType>
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                  <sequence>
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                  </sequence>
              </complexType>
              <complexType name="JobInfoElement">
                   <sequence>
                       <element ref="xpi:jobId"/>
<element ref="xpi:jobGranularityPeriod"/>
<element ref="xpi:jobReportingPeriod"/>
<element ref="xpi:jobStatus"/>

                       <element ref="xpi:jobStatus"/>
<element ref="xpi:jobPriority"/>
<element ref="xpi:jobStartTime"/>
<element ref="xpi:jobStopTime"/>
<element ref="xpi:jobSchedule"/>
<element name="ioCName" type="string"/>
<element name="ioCInstanceList" type="xn:dnList"/>
                       <element name="measurementCategoryList"</pre>
type="pMIRPData:MeasurementCategoryList"/>
                  </sequence>
              </complexType>
              <complexType name="JobInfoList">
                  <sequence>
                       <element name="jobInfoElement" type="pMIRPData:JobInfoElement" minOccurs="0"</pre>
maxOccurs="unbounded"/>
                  </sequence>
              </complexType>
              <complexType name="MeasurementCategoryList">
                  <sequence>
                       -
element ref="xpi:measurementTypeName" minOccurs="1" maxOccurs="unbounded"/>
                  </sequence>
              </complexType>
              <complexType name="MonitorIdList">
                  <sequence>
                       <element ref="xpi:monitorId" minOccurs="0" maxOccurs="unbounded"/>
              </sequence>
</complexType>
              <complexType name="MonitorInfoElement">
                  <sequence>
                       <element ref="xpi:monitorId"/>
```

```
<element ref="xpi:monitorGranularityPeriod"/>
<element ref="xpi:thresholdMonitorStatus"/>
<element name="iOCName" type="string"/>
<element name="iOCInstanceList" type="xn:dnList"/>
<element name="thresholdInfoList" type="pMIRPData:ThresholdInfoList"/>
                     </sequence>
                </complexType>
                <complexType name="MonitorInfoList">
                     <sequence>
                           <element name="monitorInfoElement" type="pMIRPData:MonitorInfoElement"</pre>
minOccurs="0" maxOccurs="unbounded"/>
                     </sequence>
                </complexType>
                <complexType name="ThresholdLevel">
                     <sequence>
                           <element ref="xpi:thresholdValue"/>
                           <element ref="xpi:thresholdSeverity"/>
                           <element ref="xpi:hysteresis"/>
                     </sequence>
                </complexType>
                <complexType name="ThresholdLevelList">
                     <sequence>
                          <element name="thresholdPackElement" type="pMIRPData:ThresholdLevel"</pre>
minOccurs="1" maxOccurs="4"/>
                     </sequence>
                </complexType>
                <complexType name="ThresholdInfoElement">
                     <sequence>
                          <element ref="xpi:measurementTypeName"/>
<element ref="xpi:probableCause"/>
<element ref="xpi:specificProblem"/>
                           <element ref="xpi:direction"/>
                           <element name="thresholdPack" type="pMIRPData:ThresholdLevelList"/>
                     </sequence>
                </complexType>
                <complexType name="ThresholdInfoList">
                     <sequence>
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                     </sequence>
                </complexType>
                <complexType name="UnsupportedMeasurement1">
                     <sequence>
                           <element name="objectInstance" type="xn:dn"/>
                          <element ref="xpi:measurementTypeName"/>
<element name="reason" type="string"/>
                     </sequence>
                </complexType>
                <complexType name="UnsupportedList1">
                     <sequence>
                           <element name="unsupportedMeasurement" type="pMIRPData:UnsupportedMeasurement1"</pre>
minOccurs="0" maxOccurs="unbounded"/>
                     </sequence>
                </complexType>
                <complexType name="UnsupportedMeasurement2">
                     <sequence>
                          <element name="objectClass" type="string"/>
<element name="objectInstance" type="xn:dn"/>
<element ref="xpi:measurementTypeName"/>
                          <element name="reason" type="string"/>
                     </sequence>
                </complexType>
                <complexType name="UnsupportedList2">
                     <sequence>
                           <element name="unsupportedMeasurement" type="pMIRPData:UnsupportedMeasurement2"</pre>
minOccurs="0" maxOccurs="unbounded"/>
                     </sequence>
                </complexType>
                <!-- createMeasurementJob Request-->
                <element name="createMeasurementJob">
                     <complexType>
                          <sequence>
                                <element name="iOCName" type="xn:dn"/>
                                <element name="iOCInstanceList" type="xn:dnList"/>
                                <element name="measurementCategoryList"</pre>

<element name="granularityPeriod" type="xp1:JobReportingPeriod"/>
<element name="reportingPeriod" type="xp1:JobReportingPeriod"/>
<element name="startTime" type="xp1:JobStartTime" minOccurs="0"/>
<element name="stopTime" type="xp1:JobStopTime" minOccurs="0"/>
<element name="schedule" type="xp1:JobSchedule" minOccurs="0"/>
<element name="priority" type="xp1:JobPriority" minOccurs="0"/>
<element name="priority" type="xp1:JobPriority" minOccurs="0"/>

                           </sequence>
                     </complexType>
                </element>
                <!-- createMeasurementJob Response -->
                <element name="createMeasurementJobResponse">
                     <complexType>
                           <sequence>
                                <element ref="xpi:jobId"/>
```

```
<element name="unsupportedList" type="pMIRPData:UnsupportedList1"/>
             <element name="status" type="pMIRPData:OperationStatusThree"/>
        </sequence>
    </complexType>
</element>
<!-- createMeasurementJob Fault -->
<element name="createMeasurementJobFault">
    <simpleType>
         <restriction base="string">
             <enumeration value="InvalidStartTime"/>
<enumeration value="InvalidStopTime"/>
             <enumeration value="InvalidSchedule"/>
<enumeration value="InvalidGranularityPeriod"/>
             <enumeration value="InvalidReportingPeriod"/>
<enumeration value="HighWorkLoad"/>
<enumeration value="InvalidPriority"/>
         </restriction>
    </simpleType>
</element>
<!-- stopMeasurementJob Request -->
<element name="stopMeasurementJob">
    <complexType>
        <sequence>
             <element ref="xpi:jobId"/>
        </sequence>
    </complexType>
</element>
<!-- stopMeasurementJob Response -->
<element name="stopMeasurementJobResponse">
    <complexType>
        <sequence>
            <element name="status" type="pMIRPData:OperationStatusTwo"/>
         </sequence>
    </complexType>
</element>
<!-- stopMeasurementJob Fault -->
<element name="stopMeasurementJobFault">
    <simpleType>
        <restriction base="string">
             <enumeration value="UnknownJob"/>
             <enumeration value="JobCannotBeStopped"/>
        </restriction>
    </simpleType>
</element>
     suspendMeasurementJob Request
<element name="suspendMeasurementJob">
    <complexType>
        <sequence>
             <element ref="xpi:jobId"/>
        </sequence>
    </complexType>
</element>
     suspendMeasurementJob Response -->
<element name="suspendMeasurementJobResponse">
    <complexType>
        <sequence>
             <element name="status" type="pMIRPData:OperationStatusTwo"/>
        </sequence>
    </complexType>
</element>
     suspendMeasurementJob Fault -->
<element name="suspendMeasurementJobFault">
    <simpleType>
         <restriction base="string">
             <enumeration value="UnknownJob"/>
             <enumeration value="JobAlreadySuspended"/>
         </restriction>
    </simpleType>
</element>
<!-- resumeMeasurementJob Request -->
<element name="resumeMeasurementJob">
    <complexType>
         <sequence>
             <element ref="xpi:jobId"/>
        </sequence>
    </complexType>
</element>
     resumeMeasurementJob Response -->
<element name="resumeMeasurementJobResponse">
    <complexType>
         <sequence>
             <element name="status" type="pMIRPData:OperationStatusTwo"/>
        </sequence>
    </complexType>
</element>
     resumeMeasurementJob Fault -->
<element name="resumeMeasurementJobFault">
    <simpleType>
         <restriction base="string">
```

```
<enumeration value="UnknownJob"/>
<enumeration value="JobIsNotSuspended"/>
              <enumeration value="HighWorkLoad"/>
         </restriction>
     </simpleType>
</element>
<!-- listMeasurementJobs Request -->
<element name="listMeasurementJobs">
    <complexType>
         <sequence>
             <element name="jobIdList" type="pMIRPData:JobIdList"/>
         </sequence>
     </complexType>
</element>
<!-- listMeasurementJobs Response --> <element name="listMeasurementJobsResponse">
    <complexType>
         <sequence>
              <element name="jobInfoList" type="pMIRPData:JobInfoList"/>
              <element name="status" type="pMIRPData:OperationStatusTwo"/>
         </sequence>
     </complexType>
</element>
      listMeasurementJobs Fault -->
<element name="listMeasurementJobsFault">
     <simpleType>
         <restriction base="string">
             <enumeration value="InvalidJobIdList"/>
         </restriction>
     </simpleType>
</element>
<!-- createThresholdMonitor Request -->
<element name="createThresholdMonitor">
     <complexType>
         <sequence>
              celement name="iOCName" type="string"/>
<element name="iOCInstanceList" type="xn:dnList"/>
<element name="thresholdInfoList" type="pMIRPData:ThresholdInfoList"/>
              <element ref="xpi:monitorGranularityPeriod"/>
         </sequence>
     </complexType>
</element>
<!-- createThresholdMonitor Response -->
<element name="createThresholdMonitorResponse">
    <complexType>
         <sequence>
              <element ref="xpi:monitorId"/>
    <element name="unsupportedList" type="pMIRPData:UnsupportedList2"/>
    <element name="status" type="pMIRPData:OperationStatusThree"/>
         </sequence>
     </complexType>
</element>
<!-- createThresholdMonitor Fault -->
<element name="createThresholdMonitorFault">
    <simpleType>
         <restriction base="string">
              <enumeration value="InvalidClassOrInstances"/>
<enumeration value="InvalidGranularityPeriod"/>
              <enumeration value="NoValidMeasurementType"/>
              <enumeration value="InvalidNumberOfThresholdPackElements"/>
<enumeration value="InvalidOrderOfThresholdPackElements"/>
              <enumeration value="InvalidDirection"/>
         </restriction>
     </simpleType>
</element>
<!-- deleteThresholdMonitor Request -->
<element name="deleteThresholdMonitor">
    <complexType>
         <sequence>
             <element ref="xpi:monitorId"/>
         </sequence>
     </complexType>
</element>
<!-- deleteThresholdMonitor Response -->
<element name="deleteThresholdMonitorResponse">
     <complexType>
         <sequence>
              <element name="status" type="pMIRPData:OperationStatusTwo"/>
         </sequence>
     </complexType>
</element>
<!-- deleteThresholdMonitor Fault -->
<element name="deleteThresholdMonitorFault">
     <simpleType>
         <restriction base="string">
              <enumeration value="UnknownThresholdMonitor"/>
         </restriction>
     </simpleType>
</element>
```

<!-- listThresholdMonitors Request -->

```
<element name="listThresholdMonitors">
            <complexType>
                <sequence>
                     <element name="monitorIdList" type="pMIRPData:MonitorIdList"/>
                </sequence>
            </complexType>
        </element>
        <!-- listThresholdMonitors Response -->
<element name="listThresholdMonitorsResponse">
            <complexType>
                <sequence>
                     <element name="monitorInfoList" type="pMIRPData:MonitorInfoList"/>
                    <element name="status" type="pMIRPData:OperationStatusTwo"/>
                </sequence>
            </complexType>
        </element>
        <!-- listThresholdMonitors Fault -->
        <element name="listThresholdMonitorsFault">
            <simpleType>
                <restriction base="string">
                    <enumeration value="InvalidMonitorIdList"/>
                </restriction>
            </simpleType>
        </element>
        <!-- suspendThresholdMonitor Request -->
        <element name="suspendThresholdMonitor">
            <complexType>
                <sequence>
                     <element ref="xpi:monitorId"/>
                </sequence>
            </complexType>
        <!-- suspendThresholdMonitor Response -->
        <element name="suspendThresholdMonitorResponse">
            <complexType>
                <sequence>
                    <element name="status" type="pMIRPData:OperationStatusTwo"/>
                </sequence>
            </complexType>
        </element>
        <!-- suspendThresholdMonitor Fault --> <element name="suspendThresholdMonitorFault">
            <simpleType>
                <restriction base="string">
                    <enumeration value="UnknownThresholdMonitor"/>
                     <enumeration value="ThresholdMonitorAlreadySuspended"/>
                </restriction>
            </simpleType>
        </element>
        <!-- resumeThresholdMonitor Request -->
        <element name="resumeThresholdMonitor">
            <complexType>
                <sequence>
                     <element ref="xpi:monitorId"/>
                </sequence>
            </complexType>
        </element>
        <!-- resumeThresholdMonitor Response -->
        <element name="resumeThresholdMonitorResponse">
            <complexType>
                <sequence>
                    <element name="status" type="pMIRPData:OperationStatusTwo"/>
                </sequence>
            </complexType>
        </element>
        <!-- resumeThresholdMonitor Fault -->
        <element name="resumeThresholdMonitorFault">
            <simpleType>
                <restriction base="string">
                    <enumeration value="UnknownThresholdMonitor"/>
<enumeration value="ThresholdMonitorIsNotSuspended"/>
                </restriction>
            </simpleType>
        </element>
    </schema>
</types>
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    <part name="parameter" element="pMIRPData:createMeasurementJob"/>
</message>
<message name="createMeasurementJobFault">
    <part name="parameter" element="pMIRPData:createMeasurementJobFault"/>
</message>
<message name="stopMeasurementJob">
    <part name="parameter" element="pMIRPData:stopMeasurementJob"/>
</message>
```

```
</message>
   <message name="stopMeasurementJobFault">
        <part name="parameter" element="pMIRPData:stopMeasurementJobFault"/>
    </message>
    <message name="suspendMeasurementJob">
       <part name="parameter" element="pMIRPData:suspendMeasurementJob"/>
    </message>
   <message name="suspendMeasurementJobResponse">
       <part name="parameter" element="pMIRPData:suspendMeasurementJobResponse"/>
    </message>
    <message name="suspendMeasurementJobFault">
       <part name="parameter" element="pMIRPData:suspendMeasurementJobFault"/>
    </message>
   <message name="resumeMeasurementJob">
       <part name="parameter" element="pMIRPData:resumeMeasurementJob"/>
    </message>
    <message name="resumeMeasurementJobResponse">
       <part name="parameter" element="pMIRPData:resumeMeasurementJobResponse"/>
    </message>
   <message name="resumeMeasurementJobFault">
       <part name="parameter" element="pMIRPData:resumeMeasurementJobFault"/>
    </message>
    <message name="listMeasurementJobs">
        <part name="parameter" element="pMIRPData:listMeasurementJobs"/>
   <message name="listMeasurementJobsResponse">
       <part name="parameter" element="pMIRPData:listMeasurementJobsResponse"/>
    </message>
    <message name="listMeasurementJobsFault">
       <part name="parameter" element="pMIRPData:listMeasurementJobsFault"/>
    <message name="createThresholdMonitor">
       <part name="parameter" element="pMIRPData:createThresholdMonitor"/>
    </message>
   <message name="createThresholdMonitorResponse">
       <part name="parameter" element="pMIRPData:createThresholdMonitorResponse"/>
    </message>
    <message name="createThresholdMonitorFault">
       <part name="parameter" element="pMIRPData:createThresholdMonitorFault"/>
    </message>
   <message name="deleteThresholdMonitor">
       <part name="parameter" element="pMIRPData:createThresholdMonitorFault"/>
    </message>
    <message name="deleteThresholdMonitorResponse">
        <part name="parameter" element="pMIRPData:deleteThresholdMonitorResponse"/>
    </message>
    <message name="deleteThresholdMonitorFault">
       <part name="parameter" element="pMIRPData:deleteThresholdMonitorFault"/>
    </message>
    <message name="listThresholdMonitors">
       <part name="parameter" element="pMIRPData:listThresholdMonitors"/>
   </message>
   <message name="listThresholdMonitorsFault">
       <part name="parameter" element="pMIRPData:listThresholdMonitorsFault"/>
   <message name="suspendThresholdMonitor">
       <part name="parameter" element="pMIRPData:suspendThresholdMonitor"/>
    </message>
   <message name="suspendThresholdMonitorResponse">
       <part name="parameter" element="pMIRPData:suspendThresholdMonitorResponse"/>
    </message>
    <message name="suspendThresholdMonitorFault">
       <part name="parameter" element="pMIRPData:suspendThresholdMonitorFault"/>
    </message>
   <message name="resumeThresholdMonitor">
       <part name="parameter" element="pMIRPData:resumeThresholdMonitor"/>
    </message>
    <message name="resumeThresholdMonitorResponse">
        <part name="parameter" element="pMIRPData:resumeThresholdMonitorResponse"/>
    </message>
   <message name="resumeThresholdMonitorFault">
       <part name="parameter" element="pMIRPData:resumeThresholdMonitorFault"/>
   </message>
    <portType name="PMIRPPortType">
        <operation name="createMeasurementJob">
           <input message="pMIRPSystem:createMeasurementJob"/>
<output message="pMIRPSystem:createMeasurementJobResponse"/>
            <fault name="createMeasurementJobFault"
message="pMIRPSystem:createMeasurementJobFault"/>
        </operation>
        <operation name="stopMeasurementJob">
           <input message="pMIRPSystem:stopMeasurementJob"/>
           coutput message="pMIRPSystem:stopMeasurementJobResponse"/>
cfault name="stopMeasurementJobFault" message="pMIRPSystem:stopMeasurementJobFault"/>
```

```
</operation>
         <operation name="suspendMeasurementJob">
             <input message="pMIRPSystem:suspendMeasurementJob"/>
<output message="pMIRPSystem:suspendMeasurementJobResponse"/>
             <fault name="suspendMeasurementJobFault"</pre>
message="pMIRPSystem:suspendMeasurementJobFault"/>
         </operation>
         <operation name="resumeMeasurementJob">
             <input message="pMIRPSystem:resumeMeasurementJob"/>
<output message="pMIRPSystem:resumeMeasurementJobResponse"/>
<fault name="resumeMeasurementJobFault"</pre>
message="pMIRPSystem:resumeMeasurementJobFault"/>
         /operation>
         <operation name="listMeasurementJobs">
             <input message="pMIRPSystem:listMeasurementJobs"/>
<output message="pMIRPSystem:listMeasurementJobsResponse"/>
<fault name="listMeasurementJobsFault" message="pMIRPSystem:listMeasurementJobsFault"/>
         </operation>
         <operation name="createThresholdMonitor">
             <input message="pMIRPSystem:createThresholdMonitor"/>
             <output message="pMIRPSystem:createThresholdMonitorResponse"/>
             <fault name="createThresholdMonitorFault"
message="pMIRPSystem:createThresholdMonitorFault"/>
         </operation>
         <operation name="deleteThresholdMonitor">
             <input message="pMIRPSystem:deleteThresholdMonitor"/>
             <output message="pMIRPSystem:deleteThresholdMonitorResponse"/>
             <fault name="deleteThresholdMonitorFault"
message="pMIRPSystem:deleteThresholdMonitorFault"/>
         </operation>
         <operation name="listThresholdMonitors">
             <input message="pMIRPSystem:listThresholdMonitors"/>
             <output message="pMTRPSystem:listThresholdMonitorsResponse"/>
<fault name="listThresholdMonitorsFault"</pre>
message="pMIRPSystem:listThresholdMonitorsFault"/>
         </operation>
         <operation name="suspendThresholdMonitor">
             <input message="pMIRPSystem:suspendThresholdMonitor"/>
<output message="pMIRPSystem:suspendThresholdMonitorResponse"/>
             <fault name="suspendThresholdMonitorFault"</pre>
message="pMIRPSystem:suspendThresholdMonitorFault"/>
         </operation>
         <operation name="resumeThresholdMonitor">
             <input message="pMIRPSystem:resumeThresholdMonitor"/>
             <output message="pMIRPSystem:resumeThresholdMonitorResponse"/>
             <fault name="resumeThresholdMonitorFault"
message="pMIRPSystem:resumeThresholdMonitorFault"/>
         </operation>
    </portType>
    <soap:operation</pre>
soapAction="http://www.3gpp.org/ftp/Specs/archive/32_series/32.417#createMeasurementJob"
style="document"/>
             <input>
                  <soap:body use="literal"/>
             </input>
             <output>
                  <soap:body use="literal"/>
             </output>
             <fault name="createMeasurementJobFault">
                  <soap:fault name="createMeasurementJobFault" use="literal"/>
             </fault>
         </operation>
         <operation name="stopMeasurementJob">
             <soap:operation</pre>
soapAction="http://www.3gpp.org/ftp/Specs/archive/32_series/32.417#stopMeasurementJob"
style="document"/>
             <input>
                  <soap:body use="literal"/>
             </input>
             <output>
                  <soap:body use="literal"/>
             </output>
             <fault name="stopMeasurementJobFault">
                  <soap:fault name="stopMeasurementJobFault" use="literal"/>
             </fault>
         </operation>
         <operation name="suspendMeasurementJob">
             <soap:operation</pre>
soapAction="http://www.3gpp.org/ftp/Specs/archive/32_series/32.417#suspendMeasurementJob"
style="document"/>
             <input>
                  <soap:body use="literal"/>
             </input>
             <output>
                  <soap:body use="literal"/>
             </output>
```

```
<fault name="suspendMeasurementJobFault">
                <soap:fault name="suspendMeasurementJobFault" use="literal"/>
            </fault>
        </operation>
        <operation name="resumeMeasurementJob">
            <soap:operation</pre>
soapAction="http://www.3gpp.org/ftp/Specs/archive/32_series/32.417#resumeMeasurementJob"
style="document"/>
            <input>
                <soap:body use="literal"/>
            </input>
            <output>
                <soap:body use="literal"/>
            </output>
            </fault>
        </operation>
        <operation name="listMeasurementJobs">
            <soap:operation</pre>
\verb|soapAction="http://\overline{w}ww.3gpp.org/ftp/Specs/archive/32\_series/32.417 \#listMeasurementJobs"|
style="document"/>
            <input>
                <soap:body use="literal"/>
            </input>
            <output>
                <soap:body use="literal"/>
            </output>
            </fault>
        </operation>
        <operation name="createThresholdMonitor">
            <soap:operation</pre>
soapAction="http://www.3gpp.org/ftp/Specs/archive/32_series/32.417#createThresholdMonitor"
style="document"/>
            <input>
                <soap:body use="literal"/>
            </input>
            <output>
                <soap:body use="literal"/>
            </output>
            <fault name="createThresholdMonitorFault">
                <soap:fault name="createThresholdMonitorFault" use="literal"/>
            </fault>
        </operation>
        <operation name="deleteThresholdMonitor">
            <soap:operation</pre>
soapAction="http://www.3gpp.org/ftp/Specs/archive/32_series/32.417#deleteThresholdMonitor"
style="document"/>
            <input>
                <soap:body use="literal"/>
            </input>
            <output>
                <soap:body use="literal"/>
            </output>
            <fault name="deleteThresholdMonitorFault">
                <soap:fault name="deleteThresholdMonitorFault" use="literal"/>
            </fault>
        </operation>
        <operation name="listThresholdMonitors">
            <soap:operation</pre>
soapAction="http://www.3gpp.org/ftp/Specs/archive/32_series/32.417#listThresholdMonitors" style="document"/>
            <input>
                <soap:body use="literal"/>
            </input>
            <output>
                <soap:body use="literal"/>
            </output>
            <fault name="listThresholdMonitorsFault">
                <soap:fault name="listThresholdMonitorsFault" use="literal"/>
            </fault>
        </operation>
        <operation name="suspendThresholdMonitor">
            <soap:operation</pre>
soapAction="http://www.3gpp.org/ftp/Specs/archive/32_series/32.417#suspendThresholdMonitor"
style="document"/>
            <input>
                <soap:body use="literal"/>
            </input>
            <output>
                <soap:body use="literal"/>
            </output>
            <fault name="suspendThresholdMonitorFault">
                <soap:fault name="suspendThresholdMonitorFault" use="literal"/>
            </fault>
        </operation>
        <operation name="resumeThresholdMonitor">
```

```
<soap:operation</pre>
soapAction="http://www.3gpp.org/ftp/Specs/archive/32_series/32.417#resumeThresholdMonitor"
style="document"/>
           <input>
               <soap:body use="literal"/>
           </input>
           <output>
               <soap:body use="literal"/>
           </output>
           <fault name="resumeThresholdMonitorFault">
              <soap:fault name="resumeThresholdMonitorFault" use="literal"/>
           </fault>
       </operation>
   </binding>
   <soap:address location="http://www.3gpp.org/ftp/Specs/archive/32_series/32.417#PMIRP"/>
       <port name="GenericIRPPort" binding="genericIRPSystem:GenericIRPBinding">
          <soap:address
location="http://www.3gpp.org/ftp/Specs/archive/32_series/32.317#GenericIRP"/>
       </port>
       <port name="NotificationIRPNtfPort" binding="ntfIRPNtfSystem:NotificationIRPNtf">
           <soap:address
location="http://www.3gpp.org/ftp/Specs/archive/32_series/32.307#NotificationIRPNtf"/>
       </port>
    </service>
</definitions>
```

Annex B (informative): Void

# Annex C (informative): Change history

	Change history							
Date	TSG #	TSG Doc.	CR	R	Subject/Comment	Cat	Old	New
March 2009	SA-43	SP-090063			Presentation to SA for information and approval		1.0.0	8.0.0
Dec 2009	SA_46	SP-090719	0001		Discontinuation of the maintenance of WSDL/XML schema folders	F	8.0.0	9.0.0

# History

Document history		
V9.0.0	January 2010	Publication