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Technical Specification

3rd Generation Partnership Project;
Technical Specification Group Services and System Aspects;
Telecommunication management;
Alarm Integration Reference Point (IRP):
SOAP Solution Set (SS)
(Release 9)

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Contents

Foreword

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Introduction

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

32.111-1	Fault Management; Part 1: 3G fault management requirements.
32.111-2	Fault Management; Part 2: Alarm Integration Reference Point (IRP): Information Service (IS).
32.111-3	Fault Management; Part 3: Alarm Integration Reference Point (IRP): Common Object Request Broker Architecture (CORBA) Solution Set (SS).
32.111-5	Alarm Integration Reference Point (IRP): eXtensible Markup Language (XML) definitions.
32.111-7	**Alarm Integration Reference Point (IRP): SOAP Solution Set (SS).**

1 Scope

The present document specifies the SOAP Solution Set for the IRP whose semantics are specified in Alarm IRP: Information Service (3GPP TS 32.111-2 [4]).

This Solution Set specification is related to 3GPP TS 32.111-2 V9.0.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".

[3] 3GPP TS 32.111-1: "Telecommunication management; Fault Management; Part 1: 3G fault management requirements".

[4] 3GPP TS 32.111-2: "Telecommunication management; Fault Management; Part 2: Alarm Integration Reference Point (IRP): Information Service (IS)".

[5] 3GPP TS 32.111-5: "Telecommunication management; Alarm Integration Reference Point (IRP): eXtensible Markup Language (XML) definitions".

[6] 3GPP TS 32.311: "Telecommunication management; Generic Integration Reference Point (IRP) management; Requirements".

[7] 3GPP TS 32.312: "Telecommunication management; Generic Integration Reference Point (IRP) management; Information Service (IS)".

[8] 3GPP TS 32.317: "Telecommunication management; Generic Integration Reference Point (IRP) 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".

[11] W3C SOAP 1.1 specification (http://www.w3.org/TR/2000/NOTE-SOAP-20000508/)

[12] W3C XPath 1.0 specification (http://www.w3.org/TR/1999/REC-xpath-19991116)

[13] W3C WSDL 1.1 specification (http://www.w3.org/TR/2001/NOTE-wsdl-20010315)

[14] W3C SOAP 1.2 specification (http://www.w3.org/TR/soap12-part1/)

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 32.111-1 [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 Alarm IRP is specified in 3GPP TS 32.111-2 [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 Alarm 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 alarm 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 Alarm IRP XML definitions of 3GPP TS 32.111-5 [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/
alarmIRPSystem	http://www.3gpp.org/ftp/Specs/archive/32_series/32.111-7#AlarmIRPSystem
alarmIRPData	http://www.3gpp.org/ftp/Specs/archive/32_series/32.111-7#AlarmIRPData
xai	http://www.3gpp.org/ftp/specs/archive/32_series/32.111-5#alarmIRPIOCs
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.

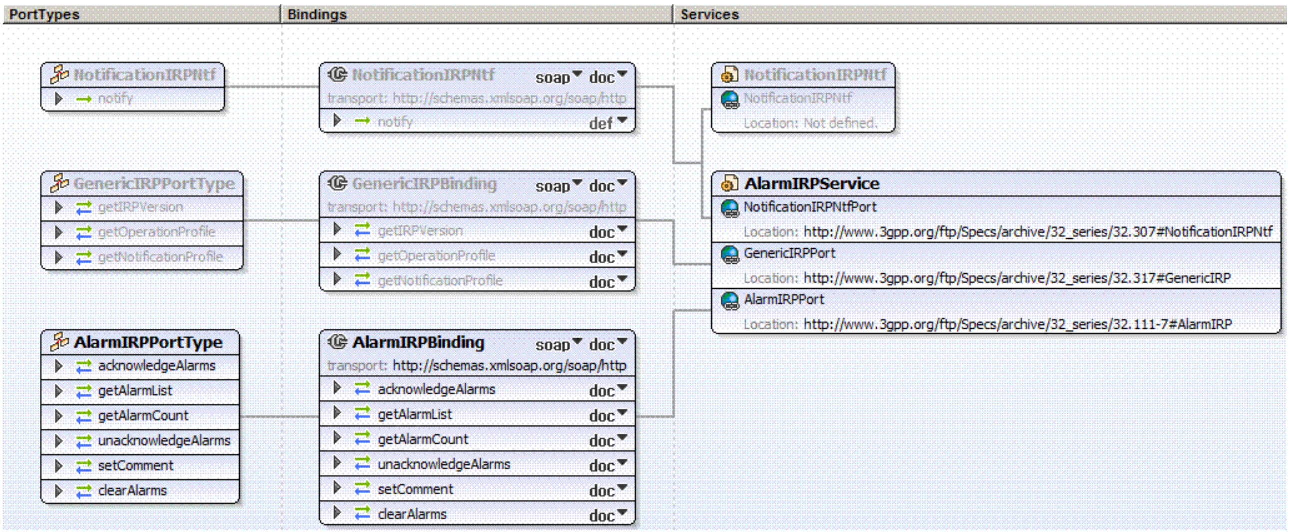

Figure 4.1: Alarm IRP SOAP Solution Set WSDL structure

5 Mapping

5.1 Operation and notification mapping

The Alarm IRP IS (3GPP TS 32.111-2 [4]) defines the operations and their semantics.

Table 5.1 maps the operations defined in the Alarm IRP IS to their equivalent types, messages, port type operation, and binding operation in this Solution Set (SS).

Table 5.1 also maps the notifications of the Alarm 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 32.111-2 [4]	SS: Operation of WSDL port type and WSDL binding	SS: Port of AlarmIRPService	Qualifier
acknowledgeAlarms	acknowledgeAlarms (note 1)	AlarmIRPPort	M
getAlarmList	getAlarmList (note 1)	AlarmIRPPort	M
getAlarmCount	getAlarmCount (note 1)	AlarmIRPPort	O
unacknowledgeAlarms	unacknowledgeAlarms (note 1)	AlarmIRPPort	O
setComment	setComment (note 1)	AlarmIRPPort	O
clearAlarms	clearAlarms (note 1)	AlarmIRPPort	O
notifyNewAlarm	notify (note 2)	NotificationIRPNtfPort	M
notifyAckStateChanged	notify (note 2)	NotificationIRPNtfPort	M
notifyClearedAlarm	notify (note 2)	NotificationIRPNtfPort	M
notifyAlarmListRebuilt	notify (note 2)	NotificationIRPNtfPort	M
notifyChangedAlarm	notify (note 2)	NotificationIRPNtfPort	O
notifyComments	notify (note 2)	NotificationIRPNtfPort	O
notifyPotentialFaultyAlarmList	notify (note 2)	NotificationIRPNtfPort	O
getIRPVersion (note 3)	See TS 32.317 [8]	GenericIRPPort	M
getOperationProfile (note 3)	See TS 32.317 [8]	GenericIRPPort	O
getNotificationProfile (note 3)	See TS 32.317 [8]	GenericIRPPort	O
NOTE 1: The operation is under the port type alarmIRPSystem:AlarmIRPPortType and under the binding alarmIRPSystem:AlarmIRPBinding.			
NOTE 2: The IS equivalent maps to an XML definition specified in 3GPP TS 32.111-5 [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 AlarmIRPService as indicated in the table above.			
NOTE 3: The IS operation is inherited from the ManagedGenericIRP IOC specified in 3GPP TS 32.312 [7]. This inheritance is by the AlarmIRP IOC of 3GPP TS 32.111-2 [4] inheriting from the ManagedGenericIRP IOC. The corresponding binding is linked to a port of the AlarmIRPService as indicated in the table above.			

5.2 Operation parameter mapping

The Alarm IRP IS (3GPP TS 32.111-2 [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.

5.2.1 Operation `acknowledgeAlarms`

5.2.1.1 Input parameters

Table 5.2.1.1: Mapping from IS `acknowledgeAlarms` 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
alarmInformationAndSeverityReferenceList	alarmInformationAndSeverityReferenceList	M
ackUserId	ackUserId	M
ackSystemId	ackSystemId	O

5.2.1.2 Output parameters

Table 5.2.1.2: Mapping from IS `acknowledgeAlarms` 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
badAlarmInformationReferenceList	badAlarmInformationReferenceList	M
status	status	M

5.2.1.3 Fault definition

Table 5.2.1.3: Mapping from IS `acknowledgeAlarms` 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
operation_failed	OperationFailed	M

5.2.2 Operation `getAlarmList`

5.2.2.1 Input parameters

Table 5.2.1.1: Mapping from IS `getAlarmList` 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
alarmAckState	alarmAckState	O
baseObjectClass	baseObjectClass	O
baseObjectInstance	baseObjectInstance	O
filter	filter	O

5.2.2.2 Output parameters

Table 5.2.2.2: Mapping from IS `getAlarmList` 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
alarmInformationList	alarmInformationList	M
status	status	M

5.2.2.3 Fault definition

Table 5.2.2.3: Mapping from IS `getAlarmList` 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
operation_failed	OperationFailed	M
filter_complexity_limit	FilterComplexityLimit	M

5.2.3 Operation `getAlarmCount`

5.2.3.1 Input parameters

Table 5.2.3.1: Mapping from IS `getAlarmCount` 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
filter	filter	O
alarmAckState	alarmAckState	O

5.2.3.2 Output parameters

Table 5.2.3.2: Mapping from IS `getAlarmCount` 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
criticalCount	criticalCount	M
majorCount	majorCount	M
minorCount	minorCount	M
warningCount	warningCount	M
indeterminateCount	indeterminateCount	M
clearedCount	clearedCount	M
status	status	M

5.2.3.3 Fault definition

Table 5.2.3.3: Mapping from IS `getAlarmCount` 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
operation_failed	OperationFailed	M
filter_complexity_limit	FilterComplexityLimit	M

5.2.4 Operation `unacknowledgeAlarms`

5.2.4.1 Input parameters

Table 5.2.4.1: Mapping from IS `unacknowledgeAlarms` 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
alarmInformationReferenceList	alarmInformationReferenceList	M
ackUserId	ackUserId	M
ackSystemId	ackSystemId	O

5.2.4.2 Output parameters

Table 5.2.4.2: Mapping from IS `unacknowledgeAlarms` 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
badAlarmInformationReferenceList	badAlarmInformationReferenceList	M
status	status	M

5.2.4.3 Fault definition

Table 5.2.4.3: Mapping from IS `unacknowledgeAlarms` 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
operation_failed	OperationFailed	M

5.2.5 Operation setComment

5.2.5.1 Input parameters

Table 5.2.5.1: Mapping from IS setComment 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
alarmInformationReferenceList	alarmInformationReferenceList	M
commentUserId	commentUserId	M
commentSystemId	commentSystemId	O
commentText	commentText	M

5.2.5.2 Output parameters

Table 5.2.5.2: Mapping from IS setComment 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
badAlarmInformationReferenceList	badAlarmInformationReferenceList	M
status	status	M

5.2.5.3 Fault definition

Table 5.2.5.3: Mapping from IS setComment 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
operation_failed	OperationFailed	M

5.2.6 Operation clearAlarms

5.2.6.1 Input parameters

Table 5.2.6.1: Mapping from IS clearAlarms 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
alarmInformationReferenceList	alarmInformationReferenceList	M
clearUserId	clearUserId	M
clearSystemId	clearSystemId	O

5.2.6.2 Output parameters

Table 5.2.6.2: Mapping from IS `clearAlarms` 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
badAlarmInformationReferenceList	badAlarmInformationReferenceList	M
status	status	M

5.2.6.3 Fault definition

Table 5.2.6.3: Mapping from IS `clearAlarms` 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
operation_failed	OperationFailed	M

Annex A (normative): WSDL specifications

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
    3GPP TS 32.111-7 Alarm IRP SOAP Solution Set
-->
<definitions xmlns="http://schemas.xmlsoap.org/wsdl/"
xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:alarmIRPSystem="http://www.3gpp.org/ftp/Specs/archive/32_series/32.111-7#AlarmIRPSystem"
xmlns:alarmIRPData="http://www.3gpp.org/ftp/Specs/archive/32_series/32.111-7#AlarmIRPData"
xmlns:xai="http://www.3gpp.org/ftp/specs/archive/32_series/32.111-5#alarmIRPIOCs"
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"
targetNamespace="http://www.3gpp.org/ftp/Specs/archive/32_series/32.111-7#AlarmIRPSystem">
    <import namespace="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"/>
    <import namespace="http://www.3gpp.org/ftp/Specs/archive/32_series/32.317/schema/32317-
810/GenericIRPSystem" location="http://www.3gpp.org/ftp/Specs/archive/32_series/32.317/schema/32317-
810-wsdl.zip"/>
    <types>
        <schema targetNamespace="http://www.3gpp.org/ftp/Specs/archive/32_series/32.111-
7#AlarmIRPData" xmlns="http://www.w3.org/2001/XMLSchema">
            <import namespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.111-
5#alarmIRPIOCs"/>
            <import namespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm"/>
            <!-- The following types are defined for the Alarm IRP operations -->
            <simpleType name="AlarmAckState">
                <restriction base="string">
                    <enumeration value="AllAlarms"/>
                    <enumeration value="AllActiveAlarms"/>
                    <enumeration value="AllActiveAndAcknowledgedAlarms"/>
                    <enumeration value="AllActiveAndUnacknowledgedAlarms"/>
                    <enumeration value="AllClearedAndUnacknowledgedAlarms"/>
                    <enumeration value="AllUnacknowledgedAlarms"/>
                </restriction>
            </simpleType>
            <complexType name="AlarmIdAndSeverityElement">
                <sequence>
                    <element ref="xai:alarmId"/>
                    <element ref="xai:perceivedSeverity" minOccurs="0"/>
                </sequence>
            </complexType>
            <complexType name="AlarmIdAndSeverityList">
                <sequence minOccurs="1" maxOccurs="unbounded">
                    <element name="listElement" type="alarmIRPData:AlarmIdAndSeverityElement"/>
                </sequence>
            </complexType>
            <complexType name="AlarmIdList">
                <sequence minOccurs="1" maxOccurs="unbounded">
                    <element ref="xai:alarmId"/>
                </sequence>
            </complexType>
            <complexType name="AlarmInformationList">
                <choice minOccurs="0" maxOccurs="unbounded">
                    <element name="nonSecurityAlarm" type="xai:NonSecurityAlarm"/>
                    <element name="securityAlarm" type="xai:SecurityAlarm"/>
                </choice>
            </complexType>
            <complexType name="BadAcknowledgeAlarmInfoRefElement">
                <sequence>
                    <element ref="xai:alarmId"/>
                    <element name="failureReason" type="alarmIRPData:FailureReasonBadAck"/>
                    <element name="additionalFailureReason" type="string"/>
                </sequence>
            </complexType>
            <complexType name="BadAcknowledgeAlarmInfoRefList">
                <sequence minOccurs="0" maxOccurs="unbounded">
                    <element name="listElement"
type="alarmIRPData:BadAcknowledgeAlarmInfoRefElement"/>
```

```
                </sequence>
            </complexType>
            <complexType name="BadClearAlarmInfoRefElement">
                <sequence>
                    <element ref="xai:alarmId"/>
                    <element name="failureReason" type="string"/>
                </sequence>
            </complexType>
            <complexType name="BadClearAlarmInfoRefList">
                <sequence minOccurs="0" maxOccurs="unbounded">
                    <element name="listElement" type="alarmIRPData:BadClearAlarmInfoRefElement"/>
                </sequence>
            </complexType>
            <complexType name="BadCommentAlarmInfoRefElement">
                <sequence>
                    <element ref="xai:alarmId"/>
                    <element name="failureReason" type="string"/>
                </sequence>
            </complexType>
            <complexType name="BadCommentAlarmInfoRefList">
                <sequence minOccurs="0" maxOccurs="unbounded">
                    <element name="listElement" type="alarmIRPData:BadCommentAlarmInfoRefElement"/>
                </sequence>
            </complexType>
            <complexType name="BadUnacknowledgeAlarmInfoRefElement">
                <sequence>
                    <element ref="xai:alarmId"/>
                    <element name="failureReason" type="string"/>
                </sequence>
            </complexType>
            <complexType name="BadUnacknowledgeAlarmInfoRefList">
                <sequence minOccurs="0" maxOccurs="unbounded">
                    <element name="listElement"
type="alarmIRPData:BadUnacknowledgeAlarmInfoRefElement"/>
                </sequence>
            </complexType>
            <simpleType name="FailureReasonBadAck">
                <restriction base="string">
                    <enumeration value="UnknownAlarmId"/>
                    <enumeration value="AcknowledgmentFailed"/>
                    <enumeration value="WrongPerceivedSeverity"/>
                </restriction>
            </simpleType>
            <simpleType name="OperationStatusTwo">
                <restriction base="string">
                    <enumeration value="OperationSucceeded"/>
                    <enumeration value="OperationFailed"/>
                </restriction>
            </simpleType>
            <simpleType name="OperationStatusThree">
                <restriction base="string">
                    <enumeration value="OperationSucceeded"/>
                    <enumeration value="OperationFailed"/>
                    <enumeration value="OperationPartiallySucceeded"/>
                </restriction>
            </simpleType>
            <!-- acknowledgeAlarms Request-->
            <element name="acknowledgeAlarms">
                <complexType>
                    <sequence>
                        <element name="alarmInformationAndSeverityReferenceList"
type="alarmIRPData:AlarmIdAndSeverityList"/>
                        <element ref="xai:ackUserId"/>
                        <element ref="xai:ackSystemId" minOccurs="0"/>
                    </sequence>
                </complexType>
            </element>
            <!-- acknowledgeAlarms Response -->
            <element name="acknowledgeAlarmsResponse">
                <complexType>
                    <sequence>
                        <element name="badAlarmInformationReferenceList"
type="alarmIRPData:BadAcknowledgeAlarmInfoRefList"/>
                        <element name="status" type="alarmIRPData:OperationStatusThree"/>
                    </sequence>
                </complexType>
            </element>
            <!-- acknowledgeAlarms Fault -->
            <element name="acknowledgeAlarmsFault">
                <simpleType>
                    <restriction base="string">
                        <enumeration value="OperationFailed"/>
                    </restriction>
                </simpleType>
            </element>
            <!-- getAlarmList Request -->
            <element name="getAlarmList">
                <complexType>
                    <sequence>
                        <element name="alarmAckState" type="alarmIRPData:AlarmAckState"
minOccurs="0"/>
                        <element name="baseObjectClass" type="string" minOccurs="0"/>
                        <element name="baseObjectInstance" type="xn:dn" minOccurs="0"/>
                        <element name="filter" type="string" minOccurs="0"/>
                    </sequence>
                </complexType>
            </element>
            <!-- getAlarmList Response -->
            <element name="getAlarmListResponse">
                <complexType>
                    <sequence>
                        <element name="alarmInformationList"
type="alarmIRPData:AlarmInformationList"/>
                        <element name="status" type="alarmIRPData:OperationStatusTwo"/>
                    </sequence>
                </complexType>
            </element>
            <!-- getAlarmList Fault -->
            <element name="getAlarmListFault">
                <simpleType>
                    <restriction base="string">
                        <enumeration value="OperationFailed"/>
                        <enumeration value="FilterComplexityLimit"/>
                    </restriction>
                </simpleType>
            </element>
            <!-- getAlarmCount Request -->
            <element name="getAlarmCount">
                <complexType>
                    <sequence>
                        <element name="filter" type="string" minOccurs="0"/>
                        <element name="alarmAckState" type="alarmIRPData:AlarmAckState"
minOccurs="0"/>
                    </sequence>
                </complexType>
            </element>
            <!-- getAlarmCount Response -->
            <element name="getAlarmCountResponse">
                <complexType>
                    <sequence>
                        <element name="criticalCount" type="nonNegativeInteger"/>
                        <element name="majorCount" type="nonNegativeInteger"/>
                        <element name="minorCount" type="nonNegativeInteger"/>
                        <element name="warningCount" type="nonNegativeInteger"/>
                        <element name="indeterminateCount" type="nonNegativeInteger"/>
                        <element name="clearedCount" type="nonNegativeInteger"/>
                        <element name="status" type="alarmIRPData:OperationStatusTwo"/>
                    </sequence>
                </complexType>
            </element>
            <!-- getAlarmCount Fault -->
            <element name="getAlarmCountFault">
                <simpleType>
                    <restriction base="string">
                        <enumeration value="OperationFailed"/>
                        <enumeration value="FilterComplexityLimit"/>
                    </restriction>
                </simpleType>
            </element>
            <!-- unacknowledgeAlarms Request -->
            <element name="unacknowledgeAlarms">
                <complexType>
                    <sequence>
                        <element name="alarmInformationReferenceList"
type="alarmIRPData:AlarmIdList"/>
                        <element ref="xai:ackUserId"/>
                        <element ref="xai:ackSystemId" minOccurs="0"/>
                    </sequence>
                </complexType>
            </element>
            <!-- unacknowledgeAlarms Response -->
            <element name="unacknowledgeAlarmsResponse">
                <complexType>
                    <sequence>
                        <element name="badAlarmInformationReferenceList"
type="alarmIRPData:BadUnacknowledgeAlarmInfoRefList"/>
                        <element name="status" type="alarmIRPData:OperationStatusThree"/>
                    </sequence>
                </complexType>
            </element>
            <!-- unacknowledgeAlarms Fault -->
            <element name="unacknowledgeAlarmsFault">
                <simpleType>
                    <restriction base="string">
                        <enumeration value="OperationFailed"/>
                    </restriction>
                </simpleType>
            </element>
            <!-- setComment Request -->
            <element name="setComment">
                <complexType>
                    <sequence>
                        <element name="alarmInformationReferenceList"
type="alarmIRPData:AlarmIdList"/>
                        <element ref="xai:commentUserId"/>
                        <element ref="xai:commentSystemId" minOccurs="0"/>
                        <element ref="xai:commentText"/>
                    </sequence>
                </complexType>
            </element>
            <!-- setComment Response -->
            <element name="setCommentResponse">
                <complexType>
                    <sequence>
                        <element name="badAlarmInformationReferenceList"
type="alarmIRPData:BadCommentAlarmInfoRefList"/>
                        <element name="status" type="alarmIRPData:OperationStatusThree"/>
                    </sequence>
                </complexType>
            </element>
            <!-- setComment Fault -->
            <element name="setCommentFault">
                <simpleType>
                    <restriction base="string">
                        <enumeration value="OperationFailed"/>
                    </restriction>
                </simpleType>
            </element>
            <!-- clearAlarms Request-->
            <element name="clearAlarms">
                <complexType>
                    <sequence>
                        <element name="alarmInformationReferenceList"
type="alarmIRPData:AlarmIdList"/>
                        <element ref="xai:clearUserId"/>
                        <element ref="xai:clearSystemId" minOccurs="0"/>
                    </sequence>
                </complexType>
            </element>
            <!-- clearAlarms Response-->
            <element name="clearAlarmsResponse">
                <complexType>
                    <sequence>
                        <element name="badAlarmInformationReferenceList"
type="alarmIRPData:BadClearAlarmInfoRefList"/>
                        <element name="status" type="alarmIRPData:OperationStatusThree"/>
                    </sequence>
                </complexType>
            </element>
            <!-- clearAlarms Fault-->
            <element name="clearAlarmsFault">
                <simpleType>
                    <restriction base="string">
                        <enumeration value="OperationFailed"/>
                    </restriction>
                </simpleType>
            </element>
        </schema>
    </types>
    <message name="acknowledgeAlarms">
        <part name="parameter" element="alarmIRPData:acknowledgeAlarms"/>
    </message>
    <message name="acknowledgeAlarmsResponse">
        <part name="parameter" element="alarmIRPData:acknowledgeAlarmsResponse"/>
    </message>
    <message name="acknowledgeAlarmsFault">
        <part name="parameter" element="alarmIRPData:acknowledgeAlarmsFault"/>
    </message>
    <message name="getAlarmList">
        <part name="parameter" element="alarmIRPData:getAlarmList"/>
    </message>
    <message name="getAlarmListResponse">
        <part name="parameter" element="alarmIRPData:getAlarmListResponse"/>
    </message>
    <message name="getAlarmListFault">
        <part name="parameter" element="alarmIRPData:getAlarmListFault"/>
    </message>
    <message name="getAlarmCount">
        <part name="parameter" element="alarmIRPData:getAlarmCount"/>
    </message>
    <message name="getAlarmCountResponse">
        <part name="parameter" element="alarmIRPData:getAlarmCountResponse"/>
    </message>
    <message name="getAlarmCountFault">
        <part name="parameter" element="alarmIRPData:getAlarmCountFault"/>
    </message>
    <message name="unacknowledgeAlarms">
        <part name="parameter" element="alarmIRPData:unacknowledgeAlarms"/>
    </message>
    <message name="unacknowledgeAlarmsResponse">
        <part name="parameter" element="alarmIRPData:unacknowledgeAlarmsResponse"/>
    </message>
    <message name="unacknowledgeAlarmsFault">
        <part name="parameter" element="alarmIRPData:unacknowledgeAlarmsFault"/>
    </message>
    <message name="setComment">
        <part name="parameter" element="alarmIRPData:setComment"/>
    </message>
    <message name="setCommentResponse">
        <part name="parameter" element="alarmIRPData:setCommentResponse"/>
    </message>
    <message name="setCommentFault">
        <part name="parameter" element="alarmIRPData:setCommentFault"/>
    </message>
    <message name="clearAlarms">
        <part name="parameter" element="alarmIRPData:clearAlarms"/>
    </message>
    <message name="clearAlarmsResponse">
        <part name="parameter" element="alarmIRPData:clearAlarmsResponse"/>
    </message>
    <message name="clearAlarmsFault">
        <part name="parameter" element="alarmIRPData:clearAlarmsFault"/>
    </message>
    <portType name="AlarmIRPPortType">
        <operation name="acknowledgeAlarms">
            <input message="alarmIRPSystem:acknowledgeAlarms"/>
            <output message="alarmIRPSystem:acknowledgeAlarmsResponse"/>
            <fault name="acknowledgeAlarmsFault" message="alarmIRPSystem:acknowledgeAlarmsFault"/>
        </operation>
        <operation name="getAlarmList">
            <input message="alarmIRPSystem:getAlarmList"/>
            <output message="alarmIRPSystem:getAlarmListResponse"/>
            <fault name="getAlarmListFault" message="alarmIRPSystem:getAlarmListFault"/>
        </operation>
        <operation name="getAlarmCount">
            <input message="alarmIRPSystem:getAlarmCount"/>
            <output message="alarmIRPSystem:getAlarmCountResponse"/>
            <fault name="getAlarmCountFault" message="alarmIRPSystem:getAlarmCountFault"/>
        </operation>
        <operation name="unacknowledgeAlarms">
            <input message="alarmIRPSystem:unacknowledgeAlarms"/>
            <output message="alarmIRPSystem:unacknowledgeAlarmsResponse"/>
            <fault name="unacknowledgeAlarmsFault"
message="alarmIRPSystem:unacknowledgeAlarmsFault"/>
        </operation>
        <operation name="setComment">
            <input message="alarmIRPSystem:setComment"/>
            <output message="alarmIRPSystem:setCommentResponse"/>
            <fault name="setCommentFault" message="alarmIRPSystem:setCommentFault"/>
        </operation>
        <operation name="clearAlarms">
            <input message="alarmIRPSystem:clearAlarms"/>
            <output message="alarmIRPSystem:clearAlarmsResponse"/>
            <fault name="clearAlarmsFault" message="alarmIRPSystem:clearAlarmsFault"/>
        </operation>
    </portType>
    <binding name="AlarmIRPBinding" type="alarmIRPSystem:AlarmIRPPortType">
        <soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
        <operation name="acknowledgeAlarms">
            <soap:operation soapAction="http://www.3gpp.org/ftp/Specs/archive/32_series/32.111-
7#acknowledgeAlarms" style="document"/>
            <input>
                <soap:body use="literal"/>
            </input>
            <output>
                <soap:body use="literal"/>
            </output>
            <fault name="acknowledgeAlarmsFault">
                <soap:fault name="acknowledgeAlarmsFault" use="literal"/>
            </fault>
        </operation>
        <operation name="getAlarmList">
            <soap:operation soapAction="http://www.3gpp.org/ftp/Specs/archive/32_series/32.111-
7#getAlarmList" style="document"/>
            <input>
                <soap:body use="literal"/>
            </input>
            <output>
                <soap:body use="literal"/>
            </output>
            <fault name="getAlarmListFault">
                <soap:fault name="getAlarmListFault" use="literal"/>
            </fault>
        </operation>
        <operation name="getAlarmCount">
            <soap:operation soapAction="http://www.3gpp.org/ftp/Specs/archive/32_series/32.111-
7#getAlarmCount" style="document"/>
            <input>
                <soap:body use="literal"/>
            </input>
            <output>
                <soap:body use="literal"/>
            </output>
            <fault name="getAlarmCountFault">
                <soap:fault name="getAlarmCountFault" use="literal"/>
            </fault>
        </operation>
        <operation name="unacknowledgeAlarms">
            <soap:operation soapAction="http://www.3gpp.org/ftp/Specs/archive/32_series/32.111-
7#unacknowledgeAlarms" style="document"/>
            <input>
                <soap:body use="literal"/>
            </input>
            <output>
                <soap:body use="literal"/>
            </output>
            <fault name="unacknowledgeAlarmsFault">
                <soap:fault name="unacknowledgeAlarmsFault" use="literal"/>
            </fault>
        </operation>
        <operation name="setComment">
            <soap:operation soapAction="http://www.3gpp.org/ftp/Specs/archive/32_series/32.111-
7#setComment" style="document"/>
            <input>
                <soap:body use="literal"/>
            </input>
            <output>
                <soap:body use="literal"/>
            </output>
            <fault name="setCommentFault">
```

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                <soap:fault name="setCommentFault" use="literal"/>
            </fault>
        </operation>
        <operation name="clearAlarms">
            <soap:operation soapAction="http://www.3gpp.org/ftp/Specs/archive/32_series/32.111-
7#clearAlarms" style="document"/>
            <input>
                <soap:body use="literal"/>
            </input>
            <output>
                <soap:body use="literal"/>
            </output>
            <fault name="clearAlarmsFault">
                <soap:fault name="clearAlarmsFault" use="literal"/>
            </fault>
        </operation>
    </binding>
    <service name="AlarmIRPService">
        <port name="AlarmIRPPort" binding="alarmIRPSystem:AlarmIRPBinding">
            <soap:address location="http://www.3gpp.org/ftp/Specs/archive/32_series/32.111-
7#AlarmIRP"/>
        </port>
        <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**
Mar 2009	SA-43	SP-090056	--	--	Presentation to SA for information and approval	--	1.0.0	8.0.0
Jun 2009		SP-090289	001	--	Correction of Port Mapping of AlarmIRPService	F	8.0.0	8.1.0
Dec 2009	SA-46	SP-090719	002	--	Discontinuation of the maintenance of WSDL/XML schema folders	F	8.1.0	9.0.0