



SINCH CONTACT PRO

Quality Monitoring Interface (QMI)

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1 Introduction

This document describes Quality Monitoring Interface (QMI) of the Sinch Contact Pro software. This information is directed to system integrators and third-party software vendors who wish to interact with the telephony functions in an Sinch Contact Pro system and capture the RTP of individual calls for quality monitoring purposes. The QMI interface, designed as web service interface based on SOAP standard, can be used by external third-party software to receive telephony-related events and generate requests related to quality monitoring for individual calls.

This document and the interface are subject to change without prior notice. The basic principles of the interface (such as the use of SOAP over HTTP) are not subject to change.

1.1 Security

The interface provides near real-time call information data in the Sinch Contact Pro system and allows access to the RTP stream of any call. Therefore, the interface should be protected carefully from malicious use. Since the interface does not contain any authentication or authorization features, security is implemented at the transport layer (TLS = transport layer security).

1.2 SOAP

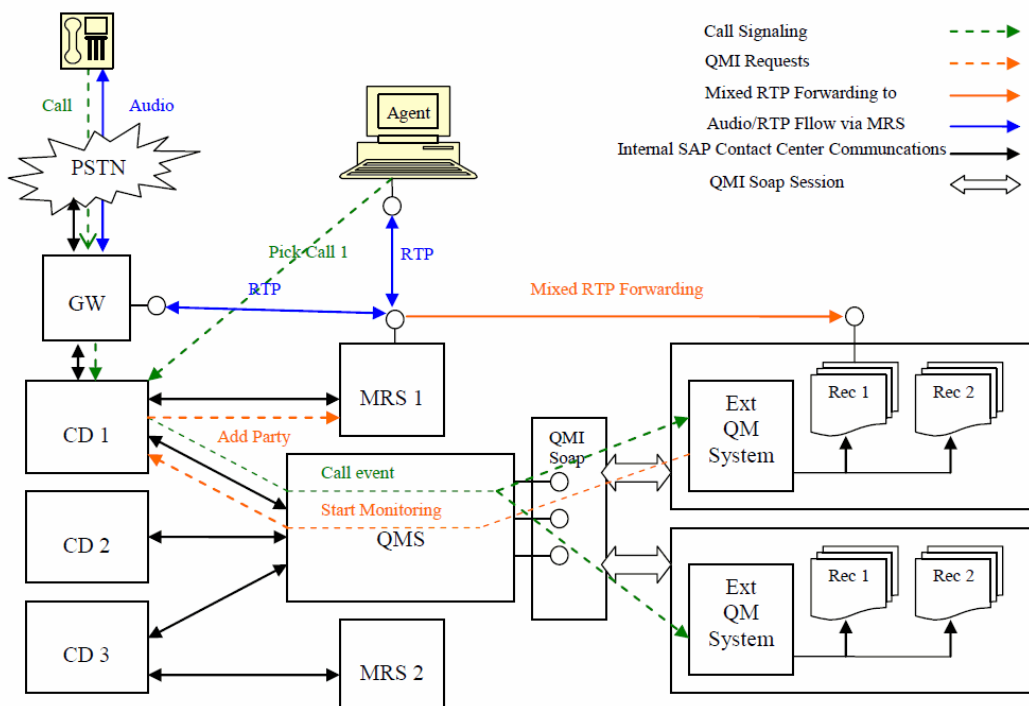
SOAP is a simple XML-based protocol to let applications exchange information over HTTP. Or, to put it more simply, SOAP is a protocol for accessing a web service.

The Quality Monitoring Interface is based on the SOAP version 1.1. The interface uses the HTTP protocol to carry SOAP messages between a SOAP client and itself. If an operation fails for some reason, a standard SOAP 1.1 fault message element is included in the response message.

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Success>0</qmi:Success>
    </qmi:Response>
  </soapenv:Body>
  <soapenv:Fault>
    <faultcode>Client</faultcode>
    <faultstring>Parsing error</faultstring>
  </soapenv:Fault>
</soapenv:Envelope>
```

2 Architecture Overview

The Quality Monitoring Interface (QMI) is implemented by a server-side component Quality Monitoring Server (QMS) that connects on the Sinch Contact Pro side to the Call Dispatcher (CD) server via TCP/IP. The interface is exposed to third-party software tools as a web service via SOAP over HTTP.



QMS serves as an interface for the third-party quality monitoring systems and performs quality monitoring for calls and transactions. QMS, through the web-based SOAP interface QMI, provides the near real-time merged call information events about the initiated calls in the Sinch Contact Pro system to the external systems. The call information includes events such as new call, call updated, call on hold, call resumed, and so on. Based on the call information, the external quality monitoring systems can request QMS to provide the RTP stream of the active calls. QMS does not generate the RTP for external system by itself. Instead, it forwards the request to Call Dispatcher. CD selects the correct MRS dealing with the call that is requested for the monitoring purpose and instructs MRS to forward the stream to the external monitoring system. In addition to this, external quality monitoring system can also request QMS to manage Sinch Contact Pro call recording of an individual call.

The external monitoring systems establish the QMI session with QMS in order to subscribe and identify themselves to the system and start receiving the call information events.

A single QMS is capable of handling multiple external quality monitoring tools through its QMI interface and multiple CD components connected to one QMS. The QMS multicasts the call information events to all

subscribed QMI sessions, and the configuration offers possibilities to handle different network topologies, multiple CD connections and multiple QMI connections.

As the QMI interface offers the functionality of the Sinch Contact Pro system to the external systems the interface is designed to be secure, and security is implemented at certificate level – that is TLS or transport level security.

QMS is built as an executable (not installed as a Windows service) file, which runs independently and interacts with CD using the TCP/IP communication channel. Initially QMS is designed as single point-of-failure (non-business critical component) and designed so that the third-party monitoring system should not affect the performance of Sinch Contact Pro despite that there can be multiple monitoring interface sessions.

3 Functionality Overview

QMI defines the events, requests and their possible responses that are exchanged between the external quality monitoring system and QMS. The external system must register or subscribe itself to QMS and initialize a session. During the session, QMS can send events to external system and receives the responses. Based on the events sent by the QMS, the external quality monitoring system can request monitoring or the Sinch Contact Pro recording. There are basically two classifications of messages between QMS and the external system.

- Request/Response
- Events/Response

3.1 Quality Monitoring Interface

The following QMI SOAP functions are supported:

Type	Functions	Notes
Session Request (QMI to QMS)	QMISubscribeSession	Initialize or uninitialized the QMI session between the external monitoring system and QMS
Monitoring Request (QMI to QMS)	QMIQueryCallInfo QMICallMonitoringStart QMICallMonitoringStartEx QMICallMonitoringStop QMICallMonitoringPause QMICallMonitoringResume	The set of requests that an external monitoring system can send to QMS to manipulate call monitoring
Sinch Contact Pro Recording Requests (QMI to QMS)	QMIBCMRecordingStart QMIBCMRecordingStop QMIBCMRecordingPause QMIBCMRecordingResume	The set of requests that an external monitoring system can send to QMS to manipulate Sinch Contact Pro recording
Events (QMS to QMI)	QMICallInfo QMICallInfoNewcall QMICallInfoCallupdated QMICallInfoCallended QMICallInfoCallonhold QMICallInfoCallresumed QMICallInfoCallstate QMIRequestResponse	Call information events about the current calls in the Sinch Contact Pro system reported to all registered QMI sessions by QMS

The following is the SOAP action that is used to access QMI web service:

SOAP Action	Web Service
"http://sap.com/BCM/QMIInterface"	http://localhost/bcm/QMIInterface.asmx

3.2 System Behavior

There are four different use cases that define the system behavior and how the external monitoring system can interact with the Sinch Contact Pro Quality Monitoring Interface. The external quality monitoring has to register itself to QMI by initializing a session and sending the SOAP request `QMISubscribeSession`. Once the QMI session is initialized, QMS subscribes to the external quality monitoring system as the event receiver and whenever there is a call-related event, QMS forwards it to the subscribed QMI sessions.

3.2.1 Subscribing and Unsubscribing QMI Sessions with QMS

The external monitoring system should subscribe itself to QMI, interface based on web service, before accessing any functionality from the Sinch Contact Pro Quality Monitoring Service and once the subscription is done, the client must start its web service to start receiving event notifications. Soon after subscribing to QMI, the client becomes eligible for the event notifications as they occur unless the session is unsubscribed. In case the client fails to receive the notifications, the subscription is automatically cancelled. The subscription is done by sending the SOAP request `QMISubscribeSession` (for more information, see [Content Description](#)) which includes session GUID that has to be a UUID, and `CallBackUrl` that points to the URL where the web service sends the SOAP-based call information event messages. The subscription parameter in `QMISubscribeSession` SOAP request defines whether the session is being initialized or uninitialized depending on its value (0 or 1, respectively). If the subscription parameter is 0 then the `CallBackUrl` parameter is ignored. The following is an example of the `QMISubscribeSession` SOAP request. When the external monitoring system sends an initialization request to the system, the QMI session is closed and QMS does not send any notification messages to it and does not service any requests either.

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMISubscribeSessionRequest>
      <qmi:SessionParams>
        <qmi:CallBackUrl>http://soap.abc.com/abc/blahblahblah</qmi:CallBackUrl>
      </qmi:SessionParams>
    </qmi:QMISubscribeSessionRequest>
  </soapenv:Body>
</soapenv:Envelope>
```

```

    <qmi:Subscribe>1</qmi:Subscribe>
  </qmi:SessionParams>
</qmi:QMISubscribeSessionRequest>
</soapenv:Body>
</soapenv:Envelope>

```

After subscribing to the session with Sinch Contact Pro Quality Monitoring Service, the external monitoring system can ensure the availability of a session by re-subscribing the session in an iterative manner (for example every 10–60 seconds). Session re-subscription is done by sending the `QMISubscribeSession` SOAP request with all the same parameters as with the original subscription request. For the successive `QMISubscribeSession` requests to the original request, QMS identifies them as re-subscriptions and refreshes the existing session.

By implementing session re-subscription, the external monitoring system receives the following benefits:

- Automatic recovery of a lost session due to network or process failures
- Session keep-alive for external systems to ensure the QMS service availability
- Error recovery from existing sessions

3.2.2 Receiving Call Information Events

Once the QMI session is established between QMS and the external monitoring system, QMS reports the call information events of the currently initiated/active calls in the Sinch Contact Pro system to all its registered QMI sessions. Note that QMS does not send any historic events. The following is the list of the call information events.

Index	Event Name/Type	Description
1	<code>QMICallInfo</code>	Provides the call information of a call to a QMI session. This event is most likely a response to the <code>QMIQueryCallInfo</code> request
2	<code>QMICallInfoNewcall</code>	Informs the QMI session that a new call is established
3	<code>QMICallInfoCallupdated</code>	Informs the QMI session that a call identified by the call ID is updated
4	<code>QMICallInfoCallended</code>	Informs the QMI session that the call identified by the call ID has ended
5	<code>QMICallInfoCallonhold</code>	Informs the QMI session that the call identified by the call ID is put on hold
6	<code>QMICallInfoCallresumed</code>	Informs the QMI session that the call identified by call ID is retrieved from hold.
7	<code>QMICallInfoCallstate</code>	Informs the QMI session that the call identified by the call ID has changed its state
8	<code>QMIRequestResponse</code>	Provides the information about the success or failure of a request sent by the QMI session

The following is an example of the `QMICallInfoCallonhold` event. For more information, see [Content Description](#).

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMICallInfoCallonholdEvent>
      <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
    </qmi:QMICallInfoCallonholdEvent>
  </soapenv:Body>
</soapenv:Envelope>
```

3.2.3 Managing Call Monitoring

Once the QMI session is established between QMS and the external monitoring system and QMS reports the call information events of certain initiated/active calls in the Sinch Contact Pro system, the external monitoring system can send a request related to call monitoring to manipulate the monitoring of a particular call; for example, to request to start monitoring of a call of which the system tells the IP and the port where the stream should be forwarded. Note that QMS rejects the call monitoring manipulation requests about the calls that do not exist or have already ended. Only requests for the existing calls are served. The following is the list of calls related to call monitoring.

Index	Event Name/Type	Description
1	<code>QMICallMonitoringStart</code>	Informs QMS that the external quality monitoring system requested the monitoring of the call identified by the call ID in parameters, a request and RTP should be sent to the IP and the port mentioned in the parameters
2	<code>QMICallMonitoringStartEx</code>	Informs QMS that the external quality monitoring system requested the monitoring of the call identified by the call ID in parameters, a request and RTP should be sent either mixed or separate to the IP addresses and the ports mentioned in the parameters
2	<code>QMICallMonitoringStop</code>	Informs QMS that the external quality monitoring system requested to end the monitoring of the call identified by the call ID in parameters
3	<code>QMICallMonitoringPause</code>	Informs QMS that the external quality monitoring system requested to pause the monitoring of the call identified by the call ID in parameters
4	<code>QMICallMonitoringResume</code>	Informs QMS that the external quality monitoring system requested to resume the monitoring of the call identified by the call ID in parameters
6	<code>QMIQueryCallInfo</code>	Informs QMS that the external quality monitoring system requested the information of the call identified by the call ID in parameters

The following is an example of the `QMICallMonitoringStart` request. For more information, see [Content Description](#).

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMICallMonitoringStartRequest>
      <qmi:MonitoringParams>
        <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
        <qmi:IP>192.168.0.1</qmi:IP>
        <qmi:Port>6400</qmi:Port>
      </qmi:MonitoringParams>
    </qmi:QMICallMonitoringStartRequest>
  </soapenv:Body>
</soapenv:Envelope>
```

3.2.4 Managing Sinch Contact Pro Recording

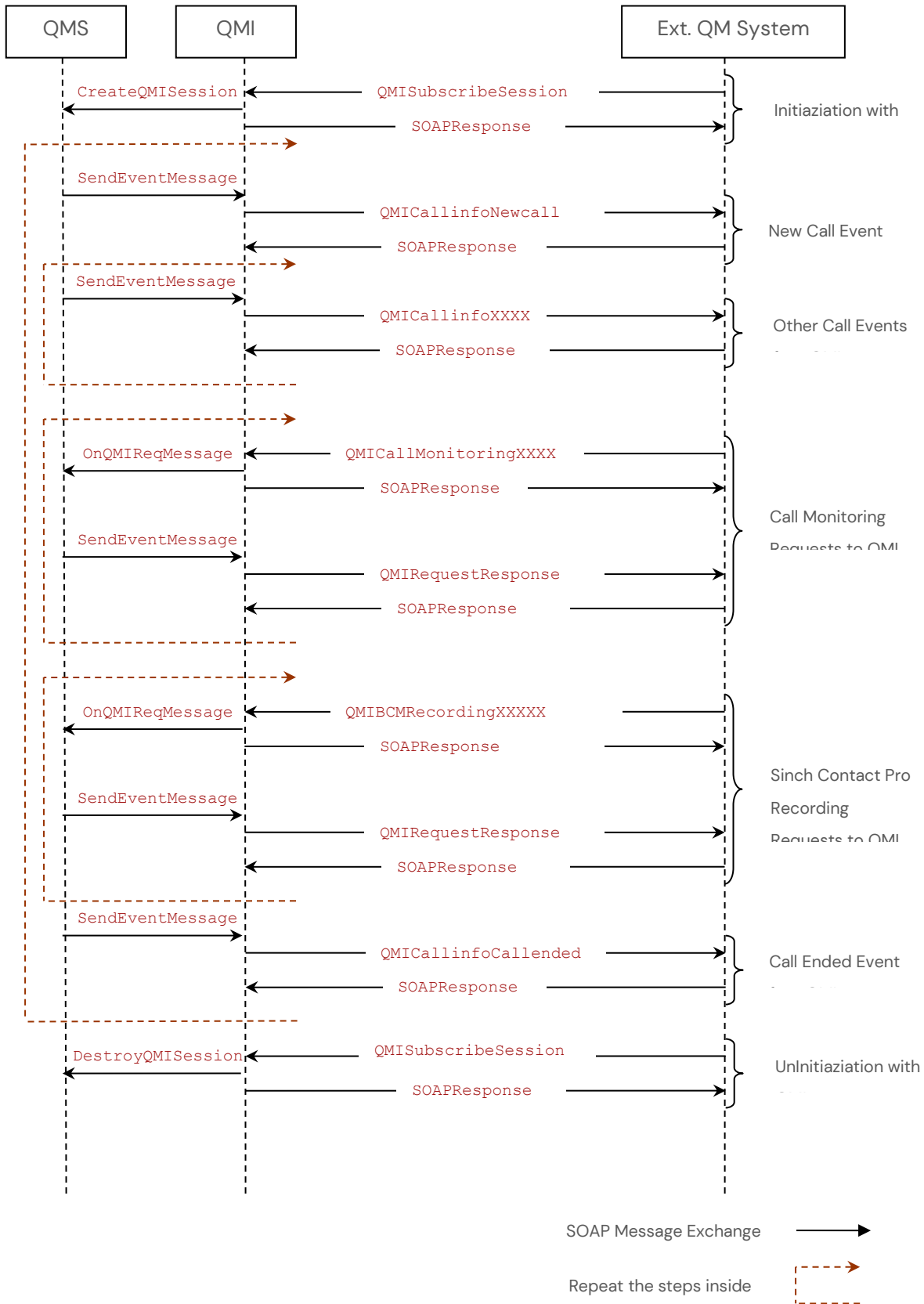
Once the QMI session is established between QMS and the external monitoring system and QMS reports the call information events about certain initiated/active calls in the Sinch Contact Pro system, the external monitoring system can send requests related to Sinch Contact Pro recording to manipulate the server-side (Sinch Contact Pro) recording of a particular call. Note that QMS rejects the call recording manipulation requests of the calls that do not exist or have already ended. Only the requests for the existing calls are served. The following is the list of the requests related to the Sinch Contact Pro recording.

Index	Event Name/Type	Description
1	<code>QMIBCMRecordingStart</code>	Informs QMS that the external quality monitoring system requested the Sinch Contact Pro -level recording of the call identified by the call ID in parameters
2	<code>QMIBCMRecordingStop</code>	Informs QMS that the external quality monitoring system requested to stop the Sinch Contact Pro -level recording of the call identified by the call ID in parameters
3	<code>QMIBCMRecordingPause</code>	Informs QMS that the external quality monitoring system requested to pause the Sinch Contact Pro -level recording of the call identified by the call ID in parameters
4	<code>QMIBCMRecordingResume</code>	Informs QMS that the external quality monitoring system requested to resume the Sinch Contact Pro -level recording of the call identified by the call ID in parameters

The following is an example of the `QMIBCMRecordingStart` request. For more information, see [Content Description](#).

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMIBCMRecordingStartRequest>
      <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
    </qmi:QMIBCMRecordingStartRequest>
  </soapenv:Body>
</soapenv:Envelope>
```

3.3 Sequence Diagram



4 Interface Specification

As already mentioned, the QMI is a SOAP-based web service interface that uses HTTP as transport. Each operation (call information events or QMI requests) consists of two messages, the SOAP request and the SOAP response. The SOAP request is wrapped in an HTTP post request and a SOAP response is wrapped in HTTP 200OK response, if the message is delivered, received, and handled properly.

4.1 Subscribing and Unsubscribing QMI

Sessions with QMS

4.1.1 QMISubscribeSession

4.1.1.1 Definition

Purpose	The request is sent to establish/initialize the session with QMS.
Request name	QMISubscribeSession
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	String < CallbackUrl > : The URL where the QMI events are sent int < Subscribe > : 0 = Unsubscribe the session, 1 = Subscribe the session For more information, see SessionParams Element . int < Success > : 0 = Error, there is a fault element, 1 = Request submitted successfully. QMIRequestResponseEvent is sent for the final response of the request.
Response elements	int < Success > : 0 = Error, there is a fault element, 1 = Request submitted successfully. QMIRequestResponseEvent is sent for the final response of the request.

4.1.1.2 Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMISubscribeSessionRequest>
      <qmi:SessionParams>
        <qmi:CallbackUrl>http://soap.abc.com/abc/blahblahblah</qmi:CallbackUrl>
        <qmi:Subscribe>1</qmi:Subscribe>
      </qmi:SessionParams>
    </qmi:QMISubscribeSessionRequest>
  </soapenv:Body>
</soapenv:Envelope>
```



```

    </qmi:SessionParams>
  </qmi:QMISubscribeSessionRequest>
</soapenv:Body>
</soapenv:Envelope>

```

4.1.1.3 Response Message

```

<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Successs>1</qmi:Successs>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>

```

4.2 Call Information Events

4.2.1 QMICallInfo

4.2.1.1 Definition

Purpose	Provides the call information of a call to the QMI session. This event is most likely a response to QMIQueryCallInfo request
Request name	QMICallInfo
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	For more information, see CallInfoParams Element
Response elements	int < Successs > : 0 = Error, there is a fault element, 1 = Event received successfully.

4.2.1.2 Message

```

<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMICallInfoEvent>
      <qmi:CallInfoParams>
        <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
        <qmi:SIPCallID>a84b4c76e66710@example.com CSeq:314159</qmi:SIPCallID>
        <qmi:ANumber>1001</qmi:ANumber>
        <qmi:BNumber>1002</qmi:BNumber>
        <qmi:AgentNumber>1002</qmi:AgentNumber>
        <qmi:AUserName>User1</qmi:AUserName>
      </qmi:CallInfoParams>
    </qmi:QMICallInfoEvent>
  </soapenv:Body>
</soapenv:Envelope>

```

```

    <qmi:BUUserName>User2</qmi:BUUserName>
    <qmi:AgentUserName>User2</qmi:AgentUserName>
    <qmi:AgentIP>192.168.0.1</qmi:AgentIP>
    <qmi:AgentPort>10012</qmi:AgentPort>
    <qmi:GateWayIP>192.168.0.2</qmi:GateWayIP>
    <qmi:GateWayPort>10013</qmi:GateWayPort>
    <qmi:MRSIP>192.168.0.3</qmi:MRSIP>
    <qmi:MRSPort>10013</qmi:MRSPort>
    <qmi:Codec>G711</qmi:Codec>
    <qmi:TimeStamp>2009-03-31T12:59:59.9999</qmi:TimeStamp>
    <qmi:BcmRecordingEn>1</qmi:BcmRecordingEn>
  </qmi:CallInfoParams>
</qmi:QMICallInfoEvent>
</soapenv:Body>
</soapenv:Envelope>

```

4.2.1.3 Response Message

```

<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Success>1</qmi:Success>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>

```

4.2.2 QMICallInfoNewcall

4.2.2.1 Definition

Purpose	Informs the QMI session that a new call established
Request name	QMICallInfoNewcall
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	For more information, see CallInfoParams Element .
Response elements	int < Success > : 0 = Error, there is a fault element, 1 = Event received successfully.

4.2.2.2 Message

```

<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMICallInfoNewcallEvent>
      <qmi:CallInfoParams>

```

```

    <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
    <qmi:SIPCallID>a84b4c76e66710@example.com CSeq:314159</qmi:SIPCallID>
    <qmi:ANumber>1001</qmi:ANumber>
    <qmi:BNumber>1002</qmi:BNumber>
    <qmi:AgentNumber>1002</qmi:AgentNumber>
    <qmi:AUserName>User1</qmi:AUserName>
    <qmi:BUserName>User2</qmi:BUserName>
    <qmi:AgentUserName>User2</qmi:AgentUserName>
    <qmi:AgentIP>192.168.0.1</qmi:AgentIP>
    <qmi:AgentPort>10012</qmi:AgentPort>
    <qmi:GateWayIP>192.168.0.2</qmi:GateWayIP>
    <qmi:GateWayPort>10013</qmi:GateWayPort>
    <qmi:MRSIP>192.168.0.3</qmi:MRSIP>
    <qmi:MRSPort>10013</qmi:MRSPort>
    <qmi:Codec>G711</qmi:Codec>
    <qmi:TimeStamp>2009-03-31T12:59:59.9999</qmi:TimeStamp>
    <qmi:BcmRecordingEn>1</qmi:BcmRecordingEn>
  </qmi:CallInfoParams>
</qmi:QMICallInfoNewcallEvent>
</soapenv:Body>
</soapenv:Envelope>

```

4.2.2.3 Response Message

```

<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Success>1</qmi:Success>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>

```

4.2.3 QMICallInfoCallUpdated

4.2.3.1 Definition

Purpose	Informs the QMI session that the call identified by the call ID has been updated
Request name	QMICallInfoCallUpdated
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	For more information, see CallInfoParams Element .
Response elements	int < Success > : 0 = Error, there is a fault element, 1 = Event received successfully.

4.2.3.2 Message

```

<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"

```

```

xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMICallinfoCallupdatedEvent>
      <qmi:CallinfoParams>
        <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
        <qmi:SIPCallID>a84b4c76e66710@example.com CSeq:314159</qmi:SIPCallID>
        <qmi:ANumber>1001</qmi:ANumber>
        <qmi:BNumber>1002</qmi:BNumber>
        <qmi:AgentNumber>1002</qmi:AgentNumber>
        <qmi:AUserName>User1</qmi:AUserName>
        <qmi:BUserName>User2</qmi:BUserName>
        <qmi:AgentUserName>User2</qmi:AgentUserName>
        <qmi:AgentIP>192.168.0.1</qmi:AgentIP>
        <qmi:AgentPort>10012</qmi:AgentPort>
        <qmi:GateWayIP>192.168.0.2</qmi:GateWayIP>
        <qmi:GateWayPort>10013</qmi:GateWayPort>
        <qmi:MRSIP>192.168.0.3</qmi:MRSIP>
        <qmi:MRSIPPort>10013</qmi:MRSIPPort>
        <qmi:Codec>G711</qmi:Codec>
        <qmi:TimeStamp>2009-03-31T12:59:59.9999</qmi:TimeStamp>
        <qmi:BcmRecordingEn>1</qmi:BcmRecordingEn>
      </qmi:CallinfoParams>
    </qmi:QMICallinfoCallupdatedEvent>
  </soapenv:Body>
</soapenv:Envelope>

```

4.2.3.3 Response Message

```

<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Success>1</qmi:Success>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>

```

4.2.4 QMICallinfoCallended

4.2.4.1 Definition

Purpose	Informs the QMI session that the call identified by the call ID has ended
Request name	QMICallinfoCallended
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	String < CallID > : The Call ID of the call that has ended
Response elements	int < Success > : 0 = Error, there is a fault element, 1 = Event received successfully.

4.2.4.2 Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMICallinfoCallendedEvent>
      <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
    </qmi:QMICallinfoCallendedEvent>
  </soapenv:Body>
</soapenv:Envelope>
```

4.2.4.3 Response Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Success>1</qmi:Success>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>
```

4.2.5 QMICallinfoCallonhold

4.2.5.1 Definition

Purpose	Informs the QMI session that the call identified by the call ID has been put on hold
Request name	QMICallinfoCallonhold
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	String < CallID > : The call ID of the call that has been put on hold
Response elements	int < Success > : 0 = Error, there is a fault element, 1 = Event received successfully.

4.2.5.2 Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMICallinfoCallonholdEvent>
      <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
    </qmi:QMICallinfoCallonholdEvent>
  </soapenv:Body>
</soapenv:Envelope>
```

```

    </qmi:QMICallinfoCallonholdEvent>
  </soapenv:Body>
</soapenv:Envelope>

```

4.2.5.3 Response Message

```

<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Success>1</qmi:Success>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>

```

4.2.6 QMICallinfoCallresumed

4.2.6.1 Definition

Purpose	Informs the QMI session that the call identified by the call ID has been retrieved from hold
Request name	QMICallinfoCallresumed
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	String < CallID > : The call ID of the call that is retrieved from hold
Response elements	int < Success > : 0 = Error, there is a fault element, 1 = Event received successfully.

4.2.6.2 Message

```

<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMICallinfoCallresumedEvent>
      <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
    </qmi:QMICallinfoCallresumedEvent>
  </soapenv:Body>
</soapenv:Envelope>

```

4.2.6.3 Response Message

```

<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">

```

```

<soapenv:Body>
  <qmi:Response>
    <qmi:Success>1</qmi:Success>
  </qmi:Response>
</soapenv:Body>
</soapenv:Envelope>

```

4.2.7 QMICallinfoCallstate

4.2.7.1 Definition

Purpose	Informs the QMI session that the call identified by the call ID has changed its state
Request name	QMICallinfoCallstate
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	For more information, see CallStateParams Element .
Response elements	int < Success > : 0 = Error, there is a fault element, 1 = Event received successfully.

4.2.7.2 Message

```

<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMICallinfoCallstateEvent>
      <qmi:CallStateParams>
        <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
        <qmi:CallState>1</qmi:CallState>
        <qmi:ExtraParameter>1005</qmi:ExtraParameter>
      </qmi:CallStateParams>
    </qmi:QMICallinfoCallstateEvent>
  </soapenv:Body>
</soapenv:Envelope>

```

4.2.7.3 Response Message

```

<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Success>1</qmi:Success>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>

```

4.2.8 QMIRequestResponse

4.2.8.1 Definition

Purpose	Provides the information about the success or failure of a request sent by the QMI session
Request name	QMIRequestResponse
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	For more information, see ReqResponseParams Element .
Response elements	int < Success > : 0 = Error, there is a fault element, 1 = Event received successfully.

4.2.8.2 Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMIRequestResponseEvent>
      <qmi:ReqResponseParams>
        <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
        <qmi:Request>QMIQueryCallInfo</qmi:Request>
        <qmi:Success>1</qmi:Success>
        <qmi:ErrorCode>1005</qmi:ErrorCode>
        <qmi:ErrorPhrase>Internal server error</qmi:ErrorPhrase>
      </qmi:ReqResponseParams>
    </qmi:QMIRequestResponseEvent>
  </soapenv:Body>
</soapenv:Envelope>
```

4.2.8.3 Response Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Success>1</qmi:Success>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>
```


4.3 Call Monitoring

4.3.1 QMICallMonitoringStart

4.3.1.1 Definition

Purpose	Informs QMS that the external quality monitoring system requested the monitoring of the call identified by call ID in parameters, a request and RTP should be sent to the IP and the port mentioned in the parameters
Request name	QMICallMonitoringStart
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	String < CallID > : The call ID of the call that is requested for monitoring String < IP > : The IP address where the RTP should be sent int < Port > : The port number where the RTP should be sent For more information, see MonitoringParams Element .
Response elements	int < Success > : 0 = Error, there is a fault element, 1 = Request submitted successfully. QMIRequestResponseEvent is sent for the final response of the request

4.3.1.2 Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMICallMonitoringStartRequest>
      <qmi:MonitoringParams>
        <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
        <qmi:IP>192.168.0.1</qmi:IP>
        <qmi:Port>6400</qmi:Port>
      </qmi:MonitoringParams>
    </qmi:QMICallMonitoringStartRequest>
  </soapenv:Body>
</soapenv:Envelope>
```

4.3.1.3 Response Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Success>1</qmi:Success>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>
```

```
</soapenv:Body>
</soapenv:Envelope>
```

4.3.2 QMICallMonitoringStartEx

4.3.2.1 Definition

Purpose	Informs QMS that the external quality monitoring system requested the monitoring of the call identified by the call ID in parameters, a request and RTP should be sent either mixed or separate to the IP addresses and the ports mentioned in the parameters
Request name	QMICallMonitoringStartEx
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	String < CallID > : The call ID of the call that is requested for monitoring Int < SeparateStreams >: (Optional) Stream should be sent as separate or mixed. 0 = Mixed, 1 = Separate, If this parameter does not exist or its value is "0 = Mixed" then the BPartyIP and BPartyPort parameters are ignored and MonitoringParamsEx are same as MonitoringParams. String < IP > : The IP address where the RTP should be sent int < Port > : The port number where the RTP should be sent String < BPartyIP > : (Optional) The IP address where the RTP should be sent int < BPartyPort > : (Optional) The port number where the RTP should be sent For more information, see MonitoringParamsEx Element
Response elements	int < Success > : 0 = Error, there is a fault element, 1 = Request submitted successfully. QMIRequestResponseEvent is sent for the final response of the request.

4.3.2.2 Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMICallMonitoringStartRequestEx>
      <qmi:MonitoringParamsEx>
        <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
        <qmi:SeparateStreams>1</qmi:SeparateStreams>
        <qmi:IP>192.168.0.1</qmi:IP>
        <qmi:Port>6400</qmi:Port>
        <qmi:BPartyIP>192.168.0.2</qmi:BPartyIP>
        <qmi:BPartyPort>6401</qmi:BPartyPort>
      </qmi:MonitoringParamsEx>
    </qmi:QMICallMonitoringStartRequestEx>
  </soapenv:Body>
</soapenv:Envelope>
```

4.3.2.3 Response Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Success>1</qmi:Success>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>
```

4.3.3 QMICallMonitoringStop

4.3.3.1 Definition

Purpose	Informs QMS that the external quality monitoring system requested to end the monitoring of the call identified by the call ID in parameters
Request name	QMICallMonitoringStop
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	String < CallID > : The call ID of the call that is requested to stop the monitoring
Response elements	int < Success > : 0 = Error, there is a fault element, 1 = Request submitted successfully. QMIRequestResponseEvent is sent for the final response of the request.

4.3.3.2 Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMICallMonitoringStopRequest>
      <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
    </qmi:QMICallMonitoringStopRequest>
  </soapenv:Body>
</soapenv:Envelope>
```

4.3.3.3 Response Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
```

```

<qmi:Response>
  <qmi:Success>1</qmi:Success>
</qmi:Response>
</soapenv:Body>
</soapenv:Envelope>

```

4.3.4 QMICallMonitoringPause

4.3.4.1 Definition

Purpose	Informs QMS that the external quality monitoring system requested to pause the monitoring of the call identified by the call ID in parameters
Request name	QMICallMonitoringPause
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	String < CallID > : The call ID of the call whose monitoring is requested to pause
Response elements	int < Success > : 0 = Error, there is a fault element, 1 = Request submitted successfully. QMIRequestResponseEvent is sent for the final response of the request.

4.3.4.2 Message

```

<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMICallMonitoringPauseRequest>
      <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
    </qmi:QMICallMonitoringPauseRequest>
  </soapenv:Body>
</soapenv:Envelope>

```

4.3.4.3 Response Message

```

<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Success>1</qmi:Success>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>

```

4.3.5 QMICallMonitoringResume

4.3.5.1 Definition

Purpose	Informs QMS that the external quality monitoring system requested to resume the monitoring of the call identified by the call ID in parameters
Request name	QMICallMonitoringResume
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	String < CallID > : The call ID of the call whose monitoring is resumed
Response elements	int < Successs > : 0 = Error, there is a fault element, 1 = Request submitted successfully. QMIRequestResponseEvent is sent for the final response of the request.

4.3.5.2 Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMICallMonitoringResumeRequest>
      <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
    </qmi:QMICallMonitoringResumeRequest>
  </soapenv:Body>
</soapenv:Envelope>
```

4.3.5.3 Response Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Successs>1</qmi:Successs>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>
```

4.3.6 QMIQueryCallInfo

4.3.6.1 Definition

Purpose	Informs QMS that the external quality monitoring system requested the information of the call identified by the call ID in parameters
Request name	QMIQueryCallInfo

Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	String < CallID > : The call ID of the call whose information is queried
Response elements	int < Success > : 0 = Error, there is a fault element, 1 = Request submitted successfully. QMIRequestResponseEvent is sent for the final response of the request.

4.3.6.2 Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMIQueryCallInfoRequest>
      <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
    </qmi:QMIQueryCallInfoRequest>
  </soapenv:Body>
</soapenv:Envelope>
```

4.3.6.3 Response Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Success>1</qmi:Success>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>
```

4.4 Managing Sinch Contact Pro Recording

4.4.1 QMIBCMRecordingStart

4.4.1.1 Definition

Purpose	Informs QMS that the external quality monitoring system requested the Sinch Contact Pro -level recording of the call identified by the call ID in parameters
Request name	QMIBCMRecordingStart
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	String < CallID > : The call ID of the call that is requested for recording

Response elements	int < Successs > : 0 = Error, there is a fault element, 1 = Request submitted successfully. QMIRequestResponseEvent is sent for the final response of the request.
-------------------	--

4.4.1.2 Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMIBCMRecordingStartRequest>
      <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
    </qmi:QMIBCMRecordingStartRequest>
  </soapenv:Body>
</soapenv:Envelope>
```

4.4.1.3 Response Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Successs>1</qmi:Successs>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>
```

4.4.2 QMIBCMRecordingStop

4.4.2.1 Definition

Purpose	Informs QMS that the external quality monitoring system requested to stop the Sinch Contact Pro -level recording of the call identified by the call ID in parameters
Request name	QMIBCMRecordingStop
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	String < CallID > : The call ID of the call whose recording is requested to stop
Response elements	int < Successs > : 0 = Error, there is a fault element, 1 = Request submitted successfully. QMIRequestResponseEvent is sent for the final response of the request.

4.4.2.2 Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMIBCMRecordingStopRequest>
      <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
    </qmi:QMIBCMRecordingStopRequest>
  </soapenv:Body>
</soapenv:Envelope>
```

4.4.2.3 Response Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Success>1</qmi:Success>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>
```

4.4.3 QMIBCMRecordingPause

4.4.3.1 Definition

Purpose	Informs QMS that the external quality monitoring system requested to pause the Sinch Contact Pro -level recording of the call identified by the call ID in parameters
Request name	QMIBCMRecordingPause
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	String < CallID > : The call ID of the call whose recording is requested to pause
Response elements	int < Success > : 0 = Error, there is a fault element, 1 = Request submitted successfully. QMIRequestResponseEvent is sent for the final response of the request.

4.4.3.2 Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
```



```

<soapenv:Body>
  <qmi:QMIBCMRecordingPauseRequest>
    <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
  </qmi:QMIBCMRecordingPauseRequest>
</soapenv:Body>
</soapenv:Envelope>

```

4.4.3.3 Response Message

```

<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Success>1</qmi:Success>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>

```

4.4.4 QMIBCMRecordingResume

4.4.4.1 Definition

Purpose	Informs QMS that the external quality monitoring system requested to resume the Sinch Contact Pro -level recording of the call identified by the call ID in parameters
Request name	QMIBCMRecordingResume
Request header	String < QMISessID > : The GUID representing the unique identity of a session
Request elements	String < CallID > : The call ID of the call whose recording is requested to resume
Response elements	int < Success > : 0 = Error, there is a fault element, 1 = Request submitted successfully. QMIRequestResponseEvent is sent for the final response of the request.

4.4.4.2 Message

```

<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Header>
    <qmi:QMISessID>1cb65470-a2c1-11da-aa97-01143dc2e6e</qmi:QMISessID>
  </soapenv:Header>
  <soapenv:Body>
    <qmi:QMIBCMRecordingResumeRequest>
      <qmi:CallID>cd80d000-0e2a-11de-8c30-0800200c9a66</qmi:CallID>
    </qmi:QMIBCMRecordingResumeRequest>
  </soapenv:Body>
</soapenv:Envelope>

```

4.4.4.3 Response Message

```
<soapenv:Envelope
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:qmi="http://sap.com/bcm/qmi/qmi_schema">
  <soapenv:Body>
    <qmi:Response>
      <qmi:Successs>1</qmi:Successs>
    </qmi:Response>
  </soapenv:Body>
</soapenv:Envelope>
```

5 Content Description

This section describes the contents of the XML elements that carry task information from a Sinch Contact Pro system via the interface.

5.1 SessionParams Element

5.1.1 Definition

Purpose	The element describes the SessionParams structure that is used in the QMISubscribeSession request message. It contains a CallbackUrl and a Boolean subscription.
Element name	SessionParams
Scope	QMISubscribeSession request message
Sub-elements	String <CallbackUrl> : The URL where the QMS sends notifications. Int <Subscribe> : Subscribe or Unsubscribe 1 = Subscribe 0 = Unsubscribe

5.1.2 XML Schema Description

```
<xs:complexType name="qmi.SessionParams">
  <xs:all>
    <xs:element name="CallbackUrl" type="xs:string" nillable="false"
minOccurs="1"/>
    <xs:element name="Subscribe" type="xs:int" nillable="false" minOccurs="1"/>
  </xs:all>
</xs:complexType>
```

5.2 CallInfoParams Element

5.2.1 Definition

Purpose	The element describes the call information structure.
Element name	CallInfoParams
Scope	QMICallinfo event message QMICallinfoNewCall event message QMICallinfoCallUpdated event message
Sub-elements	String <CallID> : The unique ID of the call String <SIPCallID> : The SIP call ID of the call String <ANumber> : The caller's number

String <BNumber> : The caller's number that can be a direct number or a queue
 String <AgentNumber> : The agent's number who picked the call
 String <AUserName> : The caller's user name, NULL if the call is from outside Sinch Contact Pro
 String <BUserName> : The caller's user name that can be a direct number or a queue
 String <AgentUserName> : The agent's user name who picked the call
 String <AgentIP> : The agent's IP who picked the call
 Int <AgentPort> : The agent port who picked the call
 String <GateWayIP> : The gateway IP from where the call comes in to or goes out from the Sinch Contact Pro system
 Int <GateWayPort> : The gateway Port from where the call comes in to or out from the Sinch Contact Pro system
 String <GateWayIP> : The gateway IP from where the call comes in to or out from the Sinch Contact Pro system
 Int <GateWayPort> : The gateway port from where the call comes in to or out from the Sinch Contact Pro system
 String <MRSIP> : The MRS IP that handles the media routing of the call
 Int <MRSPort> : The gateway port that handles the media routing of the call
 String <Codec> : The codec that is used for audio encoding/decoding
 String <TimeStamp> : The time stamp of the notification
 Int <BcmRecordingEn> : Sinch Contact Pro recording enabled or disabled. 0 = disabled 1 = enabled

5.2.2 XML Schema Description

```
<xs:complexType name="qmi.CallInfoParams">
  <xs:all>
    <xs:element name="CallID" type="xs:string" nillable="false" minOccurs="1"/>
    <xs:element name="SIPCallID" type="xs:string" nillable="false" minOccurs="0"/>
    <xs:element name="ANumber" type="xs:string" nillable="true" minOccurs="0"/>
    <xs:element name="BNumber" type="xs:string" nillable="true" minOccurs="0"/>
    <xs:element name="AgentNumber" type="xs:string" nillable="true" minOccurs="0"/>
    <xs:element name="AUserName" type="xs:string" nillable="true" minOccurs="0"/>
    <xs:element name="BUserName" type="xs:string" nillable="true" minOccurs="0"/>
    <xs:element name="AgentUserName" type="xs:string" nillable="true"
minOccurs="0"/>
    <xs:element name="AgentIP" type="xs:string" nillable="true" minOccurs="0"/>
    <xs:element name="AgentPort" type="xs:int" nillable="true" minOccurs="0"/>
    <xs:element name="GateWayIP" type="xs:string" nillable="true" minOccurs="0"/>
    <xs:element name="GateWayPort" type="xs:int" nillable="true" minOccurs="0"/>
    <xs:element name="MRSIP" type="xs:string" nillable="true" minOccurs="0"/>
    <xs:element name="MRSPort" type="xs:int" nillable="true" minOccurs="0"/>
    <xs:element name="Codec" type="xs:string" nillable="true" minOccurs="0"/>
    <xs:element name="TimeStamp" type="xs:string" nillable="true" minOccurs="0"/>
    <xs:element name="BcmRecordingEn" type="xs:int" nillable="true" minOccurs="0"/>
  </xs:all>
</xs:complexType>
```

5.3 CallStateParams Element

5.3.1 Definition

Purpose	The element describes the call state structure.																		
Element name	CallStateParams																		
Scope	QMICallinfoCallState event message																		
Sub-elements	<p>String <CallID> : The unique ID of the call Int<CallState> : The new state of the call String <ExtraParameter> : Extra information related to the new call The following table explains the values of CallState and ExtraParameter in different states for the calls</p> <table border="1"> <thead> <tr> <th>State Description</th> <th>Call State</th> <th>Extra Parameter</th> </tr> </thead> <tbody> <tr> <td>Call Transfer</td> <td>0</td> <td>C Number to which the call is transferred</td> </tr> <tr> <td>Call Join</td> <td>1</td> <td>NULL</td> </tr> <tr> <td>Conference</td> <td>2</td> <td>NULL</td> </tr> <tr> <td>Supervising</td> <td>3</td> <td>Supervisor number</td> </tr> <tr> <td>Playing Prompt</td> <td>4</td> <td>Prompt name</td> </tr> </tbody> </table>	State Description	Call State	Extra Parameter	Call Transfer	0	C Number to which the call is transferred	Call Join	1	NULL	Conference	2	NULL	Supervising	3	Supervisor number	Playing Prompt	4	Prompt name
State Description	Call State	Extra Parameter																	
Call Transfer	0	C Number to which the call is transferred																	
Call Join	1	NULL																	
Conference	2	NULL																	
Supervising	3	Supervisor number																	
Playing Prompt	4	Prompt name																	

5.3.2 XML Schema Description

```
<xs:complexType name="qmi.CallStateParams">
  <xs:all>
    <xs:element name="CallID" type="xs:string" nillable="false" minOccurs="1"/>
    <xs:element name="CallState" type="xs:int" nillable="false" minOccurs="1"/>
    <xs:element name="ExtraParameter" type="xs:string" nillable="true"
minOccurs="0"/>
  </xs:all>
</xs:complexType>
```

5.4 ReqResponseParams Element

5.4.1 Definition

Purpose	The element describes the ReqResponse structure that is used in the QMIRequestResponse event message.
Element name	ReqResponseParams
Scope	QMIRequestResponse request message
Sub-elements	String <CallID> : The unique ID of the call

String <Request> : The name of the request whose response is this

Int <Success> : Successful or unsuccessful, 1 = Successful 0 = Unsuccessful

Int <ErrorCode> : If success is 0, the error code tells the reason for the failure.

String < ErrorPhrase > : If success is 0, then ErrorPhrase contains the clear statement of the error

5.4.2 XML Schema Description

```
<xs:complexType name="qmi.ReqResponseParams">
  <xs:all>
    <xs:element name="CallID" type="xs:string" nillable="false" minOccurs="1"/>
    <xs:element name="Request" type="xs:string" nillable="false" minOccurs="1"/>
    <xs:element name="Success" type="xs:int" nillable="false" minOccurs="1"/>
    <xs:element name="ErrorCode" type="xs:int" nillable="true" minOccurs="0"/>
    <xs:element name="ErrorPhrase" type="xs:string" nillable="true" minOccurs="0"/>
  </xs:all>
</xs:complexType>
```

5.5 MonitoringParams Element

5.5.1 Definition

Purpose	The element describes the MonitoringParams structure that is used in the QMCallMonitoringStart request message.
Element name	MonitoringParams
Scope	QMCallMonitoringStart request message
Sub-elements	String <CallID> : The unique ID of the call String <IP> : The IP address where the RTP should be sent Int <Port> : The port number where the RTP should be sent

5.5.2 XML Schema Description

```
<xs:complexType name="qmi.MonitoringParams">
  <xs:all>
    <xs:element name="CallID" type="xs:string" nillable="false" minOccurs="1"/>
    <xs:element name="IP" type="xs:string" nillable="false" minOccurs="1"/>
    <xs:element name="Port" type="xs:int" nillable="false" minOccurs="1"/>
  </xs:all>
</xs:complexType>
```

5.6 MonitoringParamsEx Element

5.6.1 Definition

Purpose	The element describes the MonitoringParamsEx structure that is used in the QMICallMonitoringStartEx request message.
Element name	MonitoringParamsEx
Scope	QMICallMonitoringStartEx request message
Sub-elements	<p>String <CallID> : The unique ID of the call</p> <p>Int <SeparateStreams> : Stream should be sent as separate or mixed. 0 = Mixed 1 = Separate. If this parameter does not exist or its value is "0 = Mixed" then the BPartyIP and BpartyPort parameters are ignored and MonitoringParamsEx are same as MonitoringParams.</p> <p>String <IP> : The IP address where the RTP should be sent</p> <p>Int <Port> : The port number where the RTP should be sent</p> <p>String <BpartyIP> : The IP address where the B party RTP should be sent</p> <p>Int <BpartyPort> : The port number where the B party RTP should be sent</p>

5.6.2 XML Schema Description

```
<xs:complexType name="qmi.MonitoringParams">
  <xs:all>
    <xs:element name="CallID" type="xs:string" nillable="false" minOccurs="1"/>
    <xs:element name="IP" type="xs:string" nillable="false" minOccurs="1"/>
    <xs:element name="Port" type="xs:int" nillable="false" minOccurs="1"/>
    <xs:element name="BpartyIP" type="xs:string" nillable="true" minOccurs="0"/>
    <xs:element name="BpartyPort" type="xs:int" nillable=" true " minOccurs="0"/>
  </xs:all>
</xs:complexType>
```

6 Web Service Description Language (WSDL) Description

The WSDL (<http://www.w3.org/TR/wsdl>) description of the interface is available upon request.

7 Example Call Flow Scenarios

7.1 Call with Consultation Transfer

Step-1 External number calls Agent A

Event-1: The new call event triggered, with CallID C_1, with ANumber = External Number, BNumber = Agent A number and AgentNumber = Agent A number

Step-2 Agent A puts the call on hold

Event- 2: The call-on-hold event triggered with CallID C_1

Step-3 Agent A calls Agent B

Event-3: The new call event triggered, with CallID C_2, with ANumber = Agent A number, BNumber = Agent B number and AgentNumber = Agent B number

Event-4: The new-call event triggered, with CallID C_3, with ANumber = Agent A number, AgentNumber = Agent A number, BNumber = Agent B number

Step-4 Agent A transfers the call C_1 to agent _B

Event-5: The call ended event triggered, with CallID C_2

Event-6: The call ended event triggered, with CallID C_3

Event-7: The call updated event triggered, with CallID C_1, with ANumber = External Number, BNumber = Agent B number and AgentNumber = Agent B number

Note: The call C_2 is a local outbound call and C_3 is a local inbound call. An agent-to-agent call is always treated as two different calls in the Sinch Contact Pro system.

7.2 Blind Transfer

(For the blind transfer, the events from 3 to 6 are skipped from the consultation call transfer)

Step-1 External number calls agent A

Event-1: The new call event triggered, with CallID C_1, with ANumber = External Number, BNumber = Agent A number and AgentNumber = Agent A number

Step-2 Agent A transfers the call C_1 to agent _B

Event-2: The call-on-hold event triggered with CallID C_1 (because the call is put on hold it is ringing for Agent B who accepts the call)

Event-3: The call updated event triggered, with CallID C_1, with ANumber = External Number, BNumber = Agent B number and AgentNumber = Agent B number

7.3 Consultation Conference

Step-1 External number calls agent A

Event-1: The new call event triggered, with CallID C_1, with ANumber = External Number, BNumber = Agent A number and AgentNumber = Agent A number

Step-2 Agent A puts the call on hold

Event-2: The call-on-hold event triggered with CallID C_1

Step-3 Agent A calls agent B

Event-3: The new call event triggered, with CallID C_2, with ANumber = Agent A number, BNumber = Agent B number and AgentNumber = Agent B number

Event-4: The new call event triggered, with CallID C_3, with ANumber = Agent A number, AgentNumber = Agent A number, BNumber = Agent B number

Step-4 Agent A presses the conference button

Event-5: The call resumed event triggered, with CallID C_1

Event-6 The call state event triggered with the call state value "2" according to the following table:

State Description	Call State	Extra Parameter
Call Transfer	0	C number to which the call is transferred
Call Join	1	NULL
Conference	2	NULL
Supervising	3	Supervisor number
Playing Prompt	4	Prompt name

Note: C_1, C_2 and C_3 calls joined diagonally make a conference call.

8 Glossary

Term	Description
QMI	Sinch Contact Pro Quality Monitoring Interface
CEM	Sinch Contact Pro service that handles phone calls and e-mail tasks
CD	Call Dispatcher: Sinch Contact Pro service that handles the switching of the phone calls
MRS	Media Routing Server: Sinch Contact Pro service that handles the media routing of the phone calls
CDT	Sinch Contact Pro Communication Desktop application running on client workstations
RTP	Real-time transport protocol that is used to transport voice streams
IIS	Microsoft Internet Information Services
SOAP	Simple Object Access Protocol
IPC	Sinch Contact Pro network protocol for TCP/IP messages