X-Road: Protocol for Management Services

Technical Document

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30.10.2015	1.8	Header field *userId* removed from management services WSDL	Kristo Heero

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1 Introduction

Management services are services provided by the X-Road governing organization to manage security servers and security server clients. They are called by security servers to register in central server the configuration changes made by the security server administrator. The management services are the following:

- *clientReg* – registering an X-Road member or a subsystem as a client of the security server;
- *clientDeletion* – removing a client from the security server;
- *authCertReg* – adding an authentication certificate to the security server;
- *authCertDeletion* – removing an authentication certificate from the security server.

The management services are implemented as standard X-Road services (see [PR-MESS] for detailed description of the protocol) that are offered by the X-Road governing authority. The exception is the *authCertReg* service that, for technical reasons, is implemented as HTTPS POST (see below for details).

This protocol builds on existing transport and message encoding mechanisms. Therefore, this specification does not cover the technical details and error conditions related to making HTTPS requests together with processing MIME-encoded messages. These concerns are discussed in detail in their respective standards.

Section 2 as well as Annex Annex B of this specification contain normative information. All the other sections are informative in nature. All the references are normative.

This specification does not include option for partially implementing the protocol – the conformant implementation must implement the entire specification.

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document (in uppercase, as shown) are to be interpreted as described in [REQUIREMENT].

1.1 References

[REQUIREMENT]   Key words for use in RFCs to Indicate Requirement Levels. Request for Comments 2119, Internet Engineering Task Force, March 1997.

[DM-CS]   X-Road: Central Server Data Model. Document ID: DM-CS

[PR-MESS]   X-Road: Message Protocol v4.0. Document ID: PR-MESS

[WSDL]   Web Services Description Language (WSDL) 1.1. World Wide Web Consortium. 15 March 2001.

[DER]   DER encoding. ITU-T X.690. July 2002.

2 Format of the Messages

This section describes the input and output parameters of the management services. The low-level technical details of the services are specified using the WSDL [WSDL] syntax. See Annex B for management services WSDL file.

2.1 *clientReg* – Security Server Client Registration

The client registration service is invoked by the security server when a new client is added to the server. The client can be either a member or a subsystem.

The body of the client registration message (request or response) contains the following fields:

- **client** – identifier of the client to be added to the security server;

- **server** – identifier of the security server where the client is added;

- **requestId** – for responses only, unique identifier of the request that is stored in the central server database.

The XML Schema fragment of the client registration request body is shown below. For clarity, documentation in the schema fragment is omitted.

```
<xsd:complexType name="ClientRequestType">
    <xsd:sequence>
        <xsd:element name="server"
            type="id:XRoadSecurityServerIdentifierType" />
        <xsd:element name="client"
            type="id:XRoadClientIdentifierType" />
        <element name="requestId" type="tns:RequestIdType" minOccurs="0" />
    </xsd:sequence>
</xsd:complexType>
```

The response echoes back the client and the server fields of the request and adds the 'requestId' field.

An example of the client registration request and response is given in Annex A.1.

2.2 *clientDeletion* – Security Server Client Deletion

The *clientDeletion* service is invoked by the security server when a client is unregistered. The client can be either a member or a subsystem.

The body of the client deletion message (request or response) contains following fields:

- **client** – identifier of the client to be removed from the security server;

- **server** – identifier of the security server where the client is removed;

- **requestId** – for responses only, unique identifier of the request that is stored in the central server database.

The XML Schema fragment of the client deletion request body shown below.

```
<xsd:complexType name="ClientRequestType">
    <xsd:sequence>
        <xsd:element name="server"
            type="id:XRoadSecurityServerIdentifierType" />
```

```
            <xsd:element name="client"
                type="id:XRoadClientIdentifierType" />
            <element name="requestId" type="tns:RequestIdType" minOccurs="0" />
        </xsd:sequence>
    </xsd:complexType>
```

The response echoes back the client and the server fields of the request and adds the 'requestId' field.

An example of the client deletion request and response is given in Annex A.2.

2.3 *authCertReg* – Security Server Authentication Certificate Registration

The *authCertReg* service is invoked by the security server when a new authentication certificate is added to the server. The

The body of the authentication certificate registration message (request or response) contains the following fields:

- **server** – identifier of the security server where the authentication certificate is added;

- **address** – DNS address of the security server;

- **authCert** – contents (in DER encoding) of the authentication certificate that will be added to the security server;

- **requestId** – for responses only, unique identifier of the request that is stored in the central server database.

The XML Schema fragment of the authentication certificate registration request body is shown below. For clarity, documentation in the schema fragment is omitted.

```
    <xsd:complexType name="AuthCertRegRequestType">
        <xsd:sequence>
            <xsd:element name="server"
                type="id:XRoadSecurityServerIdentifierType" />
            <xsd:element name="address" type="string" minOccurs="0" />
            <xsd:element name="authCert" type="base64Binary" />
            <element name="requestId" type="tns:RequestIdType" minOccurs="0" />
        </xsd:sequence>
    </xsd:complexType>
```

Unlike the other requests, the authentication certificate registration request cannot be sent as a regular X-Road request. This is caused by a bootstrapping problem – sending an X-Road message requires that the authentication certificate of the security server is registered at the central server. However, the certificate is registered only as a result of invoking this service. Therefore, another mechanism is needed.

The authentication certificate registration request is sent to the central server directly via HTTPS. When making the HTTPS connection the client MUST verify that the server uses the TLS certificate that is given in the global configuration.

If the central server encounters an error, it responds with a SOAP fault message..

The request is sent using HTTP POST method. The content type of the request MUST be *multipart/related* and the request must contain the following MIME parts.

1. X-Road SOAP request message. The message MUST contain the regular X-Road headers and the three data fields (*server*, *address*, *authCert*). The content type of this part MUST be *text/xml*.

2. Proof of possession of the authentication key. The MIME part must contain signature of

the SOAP request message (the body of the first MIME part). The signature MUST be given using the private key corresponding to the **authentication certificate** that is being registered (*authCert* field of the SOAP message). The content type of this part must be *application/octet-stream*. Additionally, the part MUST include header field "s*ignature-algorithm-ID*" that identifies the signature algorithm. Currently the only supported signature algorithm is "*SHA512withRSA*".

3. Signature of the security server's owner. The MIME part must contain signature of the SOAP request message, created with the private key corresponding to a **signing certificate** of the security server's owner. The content type of this part must be *application/octet-stream*. Additionally, the part MUST include header field "s*ignature-algorithm-ID*" that identifies the signature algorithm. Currently the only supported signature algorithm is "*SHA512withRSA*".

4. Authentication certificate that is being registered (*authCert* field of the SOAP message). The content type of this part MUST be *application/octet-stream*.

5. Signing certificate of the security server's owner that was used to create the third MIME part. The content type of this part MUST be *application/octet-stream*.

6. OCSP response certifying that the signing certificate was valid at the time of creation of the request. The content type of this part MUST be *application/octet-stream*.

The central server sends responds with X-Road response message (content type MUST be *text/xml*). The response echoes back the three fields of the SOAP request and adds the 'requestId' field.

An example of the authentication certificate registration request and response is given in Annex A.3.

2.4 *authCertDeletion* – Security Server Authentication Certificate Deletion

The *authCertDeletion* service is invoked by the security server when an authentication certificate is deleted from the server. The body of the authentication certificate deletion message (request or response) contains the following fields:

- **server** – identifier of the security server where the authentication certificate is removed;

- **authCert** – contents (in DER encoding) of the authentication certificate that is removed from the security server;

- **requestId** – for responses only, unique identifier of the request that is stored in the central server database.

The XML Schema fragment of the authentication certificate deletion request body is shown below.

```
<xsd:complexType name="AuthCertDeletionRequestType">
    <xsd:sequence>
        <xsd:element name="server"
            type="id:XRoadSecurityServerIdentifierType" />
        <xsd:element name="authCert" type="base64Binary" />
        <element name="requestId" type="tns:RequestIdType" minOccurs="0" />
    </xsd:sequence>
</xsd:complexType>
```

The response echoes back the client and the server fields of the request and adds the 'requestId' field.

An example of the authentication certificate deletion request and response is given in Annex A.4.

Annex A **Example messages**

A.1   clientReg

Request message

```
<?xml version="1.0" encoding="UTF-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:id="http://x-road.eu/xsd/identifiers" xmlns:xroad="http://x-
road.eu/xsd/xroad.xsd">
    <SOAP-ENV:Header>
        <xroad:client id:objectType="MEMBER">
            <id:xRoadInstance>EE</id:xRoadInstance>
            <id:memberClass>GOV</id:memberClass>
            <id:memberCode>TS1OWNER</id:memberCode>
        </xroad:client>
        <xroad:service id:objectType="SERVICE">
            <id:xRoadInstance>EE</id:xRoadInstance>
            <id:memberClass>GOV</id:memberClass>
            <id:memberCode>TS1OWNER</id:memberCode>
            <id:serviceCode>clientReg</id:serviceCode>
        </xroad:service>
        <xroad:id>8770348d-c5f1-4f23-989e-7dd91fb59eff</xroad:id>
        <xroad:protocolVersion>4.0</xroad:protocolVersion>
    </SOAP-ENV:Header>
    <SOAP-ENV:Body>
        <xroad:clientReg>
            <xroad:server id:objectType="SERVER">
                <id:xRoadInstance>EE</id:xRoadInstance>
                <id:memberClass>GOV</id:memberClass>
                <id:memberCode>TS1OWNER</id:memberCode>
                <id:serverCode>TS1</id:serverCode>
            </xroad:server>
            <xroad:client id:objectType="MEMBER">
                <id:xRoadInstance>EE</id:xRoadInstance>
                <id:memberClass>COM</id:memberClass>
                <id:memberCode>client</id:memberCode>
            </xroad:client>
        </xroad:clientReg>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Response message

```
<?xml version="1.0" encoding="UTF-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:id="http://x-road.eu/xsd/identifiers" xmlns:xroad="http://x-
road.eu/xsd/xroad.xsd">
    <SOAP-ENV:Header>
        <xroad:client id:objectType="MEMBER">
            <id:xRoadInstance>EE</id:xRoadInstance>
            <id:memberClass>GOV</id:memberClass>
            <id:memberCode>TS1OWNER</id:memberCode>
        </xroad:client>
        <xroad:service id:objectType="SERVICE">
            <id:xRoadInstance>EE</id:xRoadInstance>
            <id:memberClass>GOV</id:memberClass>
            <id:memberCode>TS1OWNER</id:memberCode>
            <id:serviceCode>clientReg</id:serviceCode>
```

```
            </xroad:service>
            <xroad:id>8770348d-c5f1-4f23-989e-7dd91fb59eff</xroad:id>
            <xroad:protocolVersion>4.0</xroad:protocolVersion>
            <xroad:requestHash
algorithmId="http://www.w3.org/2001/04/xmlenc#sha512">LGxmFNQhkhehCsbrrBgX4w64N0Z+
knazghehKDYwJzSmVwf8tyVCYHyD8Vp5eSNNMtm0XDBzMOkqQ3uSDfNrLw==</xroad:requestHash>
        </SOAP-ENV:Header>
        <SOAP-ENV:Body>
            <xroad:clientRegResponse>
                <xroad:server id:objectType="SERVER">
                    <id:xRoadInstance>EE</id:xRoadInstance>
                    <id:memberClass>GOV</id:memberClass>
                    <id:memberCode>TS1OWNER</id:memberCode>
                    <id:serverCode>TS1</id:serverCode>
                </xroad:server>
                <xroad:client id:objectType="MEMBER">
                    <id:xRoadInstance>EE</id:xRoadInstance>
                    <id:memberClass>COM</id:memberClass>
                    <id:memberCode>client</id:memberCode>
                </xroad:client>
                <xroad:requestId>394</xroad:requestId>
            </xroad:clientRegResponse>
        </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

A.2   clientDeletion

Request message

```
<?xml version="1.0" encoding="UTF-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:id="http://x-road.eu/xsd/identifiers" xmlns:xroad="http://x-
road.eu/xsd/xroad.xsd">
    <SOAP-ENV:Header>
        <xroad:client id:objectType="MEMBER">
            <id:xRoadInstance>EE</id:xRoadInstance>
            <id:memberClass>GOV</id:memberClass>
            <id:memberCode>TS1OWNER</id:memberCode>
        </xroad:client>
        <xroad:service id:objectType="SERVICE">
            <id:xRoadInstance>EE</id:xRoadInstance>
            <id:memberClass>GOV</id:memberClass>
            <id:memberCode>TS1OWNER</id:memberCode>
            <id:serviceCode>clientDeletion</id:serviceCode>
        </xroad:service>
        <xroad:id>0e0d804a-b4e2-4f56-b5a0-2c32e4288f7d</xroad:id>
        <xroad:protocolVersion>4.0</xroad:protocolVersion>
    </SOAP-ENV:Header>
    <SOAP-ENV:Body>
        <xroad:clientDeletion>
            <xroad:server id:objectType="SERVER">
                <id:xRoadInstance>EE</id:xRoadInstance>
                <id:memberClass>GOV</id:memberClass>
                <id:memberCode>TS1OWNER</id:memberCode>
                <id:serverCode>TS1</id:serverCode>
            </xroad:server>
            <xroad:client id:objectType="MEMBER">
                <id:xRoadInstance>EE</id:xRoadInstance>
                <id:memberClass>COM</id:memberClass>
                <id:memberCode>client</id:memberCode>
            </xroad:client>
        </xroad:clientDeletion>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Response message

```
<?xml version="1.0" encoding="UTF-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:id="http://x-road.eu/xsd/identifiers" xmlns:xroad="http://x-
road.eu/xsd/xroad.xsd">
    <SOAP-ENV:Header>
        <xroad:client id:objectType="MEMBER">
            <id:xRoadInstance>EE</id:xRoadInstance>
            <id:memberClass>GOV</id:memberClass>
            <id:memberCode>TS1OWNER</id:memberCode>
        </xroad:client>
        <xroad:service id:objectType="SERVICE">
            <id:xRoadInstance>EE</id:xRoadInstance>
            <id:memberClass>GOV</id:memberClass>
            <id:memberCode>TS1OWNER</id:memberCode>
            <id:serviceCode>clientDeletion</id:serviceCode>
        </xroad:service>
        <xroad:id>0e0d804a-b4e2-4f56-b5a0-2c32e4288f7d</xroad:id>
        <xroad:protocolVersion>4.0</xroad:protocolVersion>
        <xroad:requestHash
algorithmId="http://www.w3.org/2001/04/xmlenc#sha512">KHe7PMAcYgNzcS7/4KImaYZxpLry
0l+1zkFgzKXVkmzkYXg9IjBgX7CP6wDXwYT0qVON6NiF74LvlSwpPupO5A==</xroad:requestHash>
    </SOAP-ENV:Header>
    <SOAP-ENV:Body>
        <xroad:clientDeletionResponse>
            <xroad:server id:objectType="SERVER">
                <id:xRoadInstance>EE</id:xRoadInstance>
                <id:memberClass>GOV</id:memberClass>
                <id:memberCode>TS1OWNER</id:memberCode>
                <id:serverCode>TS1</id:serverCode>
            </xroad:server>
            <xroad:client id:objectType="MEMBER">
                <id:xRoadInstance>EE</id:xRoadInstance>
                <id:memberClass>COM</id:memberClass>
                <id:memberCode>client</id:memberCode>
            </xroad:client>
            <xroad:requestId>395</xroad:requestId>
        </xroad:clientDeletionResponse>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

A.3   authCertReg

Request message

```
--jetty113950090iemuz6a3
Content-Type: text/xml; charset=UTF-8

<?xml version="1.0" encoding="UTF-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:id="http://x-road.eu/xsd/identifiers" xmlns:xroad="http://x-
road.eu/xsd/xroad.xsd">
    <SOAP-ENV:Header>
        <xroad:client id:objectType="MEMBER">
            <id:xRoadInstance>EE</id:xRoadInstance>
            <id:memberClass>GOV</id:memberClass>
            <id:memberCode>TS1OWNER</id:memberCode>
        </xroad:client>
        <xroad:service id:objectType="SERVICE">
            <id:xRoadInstance>EE</id:xRoadInstance>
            <id:memberClass>GOV</id:memberClass>
            <id:memberCode>TS1OWNER</id:memberCode>
            <id:serviceCode>authCertReg</id:serviceCode>
        </xroad:service>
```

```
        <xroad:id>9a82c2d1-27d6-4053-85a7-f37327c6dba7</xroad:id>
        <xroad:protocolVersion>4.0</xroad:protocolVersion>
    </SOAP-ENV:Header>
    <SOAP-ENV:Body>
        <xroad:authCertReg>
            <xroad:server id:objectType="SERVER">
                <id:xRoadInstance>EE</id:xRoadInstance>
                <id:memberClass>GOV</id:memberClass>
                <id:memberCode>TS1OWNER</id:memberCode>
                <id:serverCode>TS1</id:serverCode>
            </xroad:server>
            <xroad:address>192.168.74.202</xroad:address>
```

```
<xroad:authCert>MIIDtzCCAp+gAwIBAgIIaAPFaI/REfAwDQYJKoZIhvcNAQEFBQAwNzERMA8GA1UEAw
wIQWRtaW5DQTExFTATBgNVBAoMDEVKQkNBIFNhbXBsZTELMAkGA1UEBhMCU0UwHhcNMTUxMDA1MTEyNzQz
WhcNMTcxMDA0MTEyNzQzWjAuMQswCQYDVQQGEwJFRTEMMAoGA1UECgwDR09WMREwDwYDVQQDDAhUUzFPV0
5FUjCCASIwDQYJKoZIhvcNAQEBBQADggEPADCCAQoCggEBAIkX6/b/yUNSIvZatpFDqUDJ4l+igH+z8/ky
Llu92VL6H7hkCL6ggn7qsHOTGaxOupXQBKx/EDMOt+cpbhQlQCSoU2LmXYklv9FEGXTUBt5UVlT1mZXQkf
PVT2ozWQeGEOe7RLApaldgfFgg6AklsuOTe0FgJTfqXrnjVy84MRht56nw0V6SnujGMVxQJR1IJC13I5wR
bVbkyOxX52vqJ7Kh/2GWtNj2AgY9VbZA6/8ES3fMVHWQUbVtFV/2LyjQ0OrwPm0VXsrqRnlh0tln3AtgNO
iPgmg72aWNPwlPx7+rE02t+0O+KieC3IZppY2044tC699ui5/nOZPrlIqC1XcCAwEAAaOBzzCBzDBNBggr
BgEFBQcBAQRBMD8wPQYIKwYBBQUHMAGGMWh0dHA6Ly9sb2NhbGhvc3Q6ODA4MC9lamamJjYS9wdWJsaWN3ZW
Ivc3RhdHVzL29jc3AwHQYDVR0OBBYEFCB7AE2wTs7iLMMxGtilpSg8bShnMAwGA1UdEwEB/wQCMAAwHwYD
VR0jBBgwFoAUdy2JLgO2/fjSZTkxNSLQRhro0gkwDgYDVR0PAQH/BAQDAgO4MB0GA1UdJQQWMBQGCCsGAQ
UFBwMBBggrBgEFBQcDAjANBgkqhkiG9w0BAQUFAAOCAQEATCbKukYbOV5R4I/ivhEXIJAA8azeJNONWg0+
74v9hdInDSDuXreJkkpJNz0pZaaDnbsWFF+LGcB8UDTc6jOGOaH1b2iShqzq/jL+Le9iSi8V26aWmKJipt
5fsU5E/OJAA0KMnNjhtq5FDdP7gCD7+pPVq2FwEWf9nsNtAq8uETc5f9PNGxE6PrDl2Gy2K3m4T/0kvQIi
MFsk1z054/9rW/w+dQSSsxHhYHOPzwbSEsoeSw3UEqeKdaYUspFs+eGD4b3dexwEe5M0oZAwL/
+/56eTcOhnenP9A+8jF1vlXnP/m+tThaftcMZa/NTvpceLx36TDUIwB222ddkyN2Offw==</xroad:auth
Cert>
```

```
        </xroad:authCertReg>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
--jetty113950090iemuz6a3
Content-Type: application/octet-stream
signature-algorithm-id: SHA512withRSA

[AUTHENTICATION CERTIFICATE SIGNATURE BYTES]
--jetty113950090iemuz6a3
Content-Type: application/octet-stream
signature-algorithm-id: SHA512withRSA

[SECURITY SERVER OWNER SIGNATURE BYTES]
--jetty113950090iemuz6a3
Content-Type: application/octet-stream

[AUTHENTICATION CERTIFICATE BYTES]
--jetty113950090iemuz6a3
Content-Type: application/octet-stream

[SECURITY SERVER OWNER CERTIFICATE BYTES]
--jetty113950090iemuz6a3
Content-Type: application/octet-stream

[SECURITY SERVER OWNER CERTIFICATE OCSP RESPONSE BYTES]
--jetty113950090iemuz6a3--
```

Response message

```
<?xml version="1.0" encoding="UTF-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:id="http://x-road.eu/xsd/identifiers" xmlns:xroad="http://x-
road.eu/xsd/xroad.xsd">
    <SOAP-ENV:Header>
        <xroad:client id:objectType="MEMBER">
            <id:xRoadInstance>EE</id:xRoadInstance>
```

```
            <id:memberClass>GOV</id:memberClass>
            <id:memberCode>TS1OWNER</id:memberCode>
        </xroad:client>
        <xroad:service id:objectType="SERVICE">
            <id:xRoadInstance>EE</id:xRoadInstance>
            <id:memberClass>GOV</id:memberClass>
            <id:memberCode>TS1OWNER</id:memberCode>
            <id:serviceCode>authCertReg</id:serviceCode>
        </xroad:service>
        <xroad:id>9a82c2d1-27d6-4053-85a7-f37327c6dba7</xroad:id>
        <xroad:protocolVersion>4.0</xroad:protocolVersion>
    </SOAP-ENV:Header>
    <SOAP-ENV:Body>
        <xroad:authCertRegResponse>
            <xroad:server id:objectType="SERVER">
                <id:xRoadInstance>EE</id:xRoadInstance>
                <id:memberClass>GOV</id:memberClass>
                <id:memberCode>TS1OWNER</id:memberCode>
                <id:serverCode>TS1</id:serverCode>
            </xroad:server>
            <xroad:address>192.168.74.202</xroad:address>

<xroad:authCert>MIIDtzCCAp+gAwIBAgIIaAPFaI/REfAwDQYJKoZIhvcNAQEFBQAwNzERMA8GA1UEAw
wIQWRtaW5DQTExFTATBgNVBAoMDEVKQkNBIFNhbXBsZTELMAkGA1UEBhMCU0UwHhcNMTUxMDA1MTEyNzQz
WhcNMTcxMDA4MTEyNzQzWjAuMQswCQYDVQQGEwJFRTEMMAoGA1UECgwDR09WMREwDwYDVQQDDAhUUzFPV0
5FUjCCASIwDQYJKoZIhvcNAQEBBQADggEPADCCAQoCggEBAIkX6/b/yUNSIvZatpFDqUDJ4l+igH+z8/ky
Llu92VL6H7hkCL6ggn7qsHOTGaxOupXQBKx/EDMOt+cpbhQlQCSoU2LmXYklv9FEGXTUBt5UVlT1mZXQkf
PVT2ozWQeGEOe7RLApaldgfFgg6AklsuOTe0FgJTfqXrnjVy84MRht56nw0V6SnujGMVxQJR1IJC13I5wR
bVbkyOxX52vqJ7Kh/2GWtNj2AgY9VbZA6/8ES3fMVHWQUbVtFV/2LyjQ0OrwPm0VXsrqRnlh0tln3AtgNO
iPgmg72aWNPwlPx7+rE02t+0O+KieC3IZppY2044tC699ui5/nOZPrlIqC1XcCAwEAAaOBzzCBzDBNBggr
BgEFBQcBAQRBMD8wPQYIKwYBBQUHMAGGMWh0dHA6Ly9sb2NhbGhvc3Q6ODA4MC9lamJjYS9wdWJsaWN3ZW
Ivc3RhdHVzL29jc3AwHQYDVR0OBBYEFCB7AE2wTs7iLMMxGtilpSg8bShnMAwGA1UdEwEB/wQCMAAwHwYD
VR0jBBgwFoAUdy2JLgO2/fjSZTkxNSLQRhro0gkwDgYDVR0PAQH/BAQDAgO4MB0GA1UdJQQWMBQGCCsGAQ
UFBwMBBggrBgEFBQcDAjANBgkqhkiG9w0BAQUFAAOCAQEATCbKukYbOV5R4I/ivhEXIJAA8azeJNONWg0+
74v9hdInDSDuXreJkkpJNz0pZaaDnbsWFF+LGcB8UDTc6jOGOaH1b2iShqzq/jL+Le9iSi8V26aWmKJipt
5fsU5E/OJAA0KMnNjhtq5FDdP7gCD7+pPVq2FwEWf9nsNtAq8uETc5f9PNGxE6PrDl2Gy2K3m4T/0kvQIi
MFsk1z054/9rW/w+dQSSsxHhYHOPzwbSEsoeSw3UEqeKdaYUspFs+eGD4b3dexwEe5M0oZAwL/
+/56eTcOhnenP9A+8jF1vlXnP/m+tThaftcMZa/NTvpceLx36TDUIwB222ddkyN2Offw==</xroad:auth
Cert>
            <xroad:requestId>392</xroad:requestId>
        </xroad:authCertRegResponse>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

A.4   authCertDeletion

Request message

```
<?xml version="1.0" encoding="UTF-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:id="http://x-road.eu/xsd/identifiers" xmlns:xroad="http://x-
road.eu/xsd/xroad.xsd">
    <SOAP-ENV:Header>
        <xroad:client id:objectType="MEMBER">
            <id:xRoadInstance>EE</id:xRoadInstance>
            <id:memberClass>GOV</id:memberClass>
            <id:memberCode>TS1OWNER</id:memberCode>
        </xroad:client>
        <xroad:service id:objectType="SERVICE">
            <id:xRoadInstance>EE</id:xRoadInstance>
            <id:memberClass>GOV</id:memberClass>
            <id:memberCode>TS1OWNER</id:memberCode>
            <id:serviceCode>authCertDeletion</id:serviceCode>
        </xroad:service>
        <xroad:id>2c3094ae-3e19-46f7-b26d-e7ecb35dfc63</xroad:id>
```

```
            <xroad:protocolVersion>4.0</xroad:protocolVersion>
        </SOAP-ENV:Header>
        <SOAP-ENV:Body>
            <xroad:authCertDeletion>
                <xroad:server id:objectType="SERVER">
                    <id:xRoadInstance>EE</id:xRoadInstance>
                    <id:memberClass>GOV</id:memberClass>
                    <id:memberCode>TS1OWNER</id:memberCode>
                    <id:serverCode>TS1</id:serverCode>
                </xroad:server>

<xroad:authCert>MIIDtzCCAp+gAwIBAgIIaAPFaI/REfAwDQYJKoZIhvcNAQEFBQAwNzERMA8GA1UEAw
wIQWRtaW5DQTExFTATBgNVBAoMDEVKQkNBIFNhbXBsZTELMAkGA1UEBhMCU0UwHhcNMTUxMDA1MTEyNzQz
WhcNMTcxMDA0MTEyNzQzWjAuMQswCQYDVQQGEwJFRTEMMAoGA1UECgwDR09WMREwDwYDVQQDDAhUUzFPV0
5FUjCCASIwDQYJKoZIhvcNAQEBBQADggEPADCCAQoCggEBAIkX6/b/yUNSIvZatpFDqUDJ4l+igH+z8/ky
Llu92VL6H7hkCL6ggn7qsHOTGaxOupXQBKx/EDMOt+cpbhQlQCSoU2LmXYklv9FEGXTUBt5UVlT1mZXQkf
PVT2ozWQeGEOe7RLApaldgfFgg6AklsuOTe0FgJTfqXrnjVy84MRht56nw0V6SnujGMVxQJR1IJC13I5wR
bVbkyOxX52vqJ7Kh/2GWtNj2AgY9VbZA6/8ES3fMVHWQUbVtFV/2LyjQ0OrwPm0VXsrqRnlh0tln3AtgNO
iPgmg72aWNPwlPx7+rE02t+0O+KieC3IZppY2044tC699ui5/nOZPrlIqC1XcCAwEAAaOBzzCBzDBNBggr
BgEFBQcBAQRBMD8wPQYIKwYBBQUHMAGGMWh0dHA6Ly9sb2NhbGhvc3Q6ODODA4MC9lamJjYS9wdWJsaWN3
Ivc3RhdHVzL29jc3AwHQYDVR0OBBYEFCB7AE2wTs7iLMMxGtilpSg8bShnMAwGA1UdEwEB/wQCMAAwHwYD
VR0jBBgwFoAUdy2JLgO2/fjSZTkxNSLQRhro0gkwDgYDVR0PAQH/BAQDAgO4MB0GA1UdJQQWMBQGCCsGAQ
UFBwMBBggrBgEFBQcDAjANBgkqhkiG9w0BAQUFAAOCAQEATCbKukYbOV5R4I/ivhEXIJAA8azeJNONWg0+
74v9hdInDSDuXreJkkpJNz0pZaaDnbsWFF+LGcB8UDTc6jOGOaH1b2iShqzq/jL+Le9iSi8V26aWmKJipt
5fsU5E/OJAA0KMnNjhtq5FDdP7gCD7+pPVq2FwEWf9nsNtAq8uETc5f9PNGxE6PrDl2Gy2K3m4T/0kvQIi
MFsk1z054/9rW/w+dQSSsxHhYHOPzwbSEsoeSw3UEqeKdaYUspFs+eGD4b3dexwEe5M0oZAwL/
+/56eTcOhnenP9A+8jF1vlXnP/m+tThaftcMZa/NTvpceLx36TDUIwB222ddkyN2Offw==</xroad:auth
Cert>
            </xroad:authCertDeletion>
        </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Response message

```
<?xml version="1.0" encoding="UTF-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:id="http://x-road.eu/xsd/identifiers" xmlns:xroad="http://x-
road.eu/xsd/xroad.xsd">
    <SOAP-ENV:Header>
        <xroad:client id:objectType="MEMBER">
            <id:xRoadInstance>EE</id:xRoadInstance>
            <id:memberClass>GOV</id:memberClass>
            <id:memberCode>TS1OWNER</id:memberCode>
        </xroad:client>
        <xroad:service id:objectType="SERVICE">
            <id:xRoadInstance>EE</id:xRoadInstance>
            <id:memberClass>GOV</id:memberClass>
            <id:memberCode>TS1OWNER</id:memberCode>
            <id:serviceCode>authCertDeletion</id:serviceCode>
        </xroad:service>
        <xroad:id>2c3094ae-3e19-46f7-b26d-e7ecb35dfc63</xroad:id>
        <xroad:protocolVersion>4.0</xroad:protocolVersion>
        <xroad:requestHash
algorithmId="http://www.w3.org/2001/04/xmlenc#sha512">Zvs1uF2GW3zdma1r9K9keOGhNPOj
Cr3TEZNpxfpRCtsqqy3ljiLorMZ3e5iNZtX6Ek60xtV12Gue8Mme1ryZmQ==</xroad:requestHash>
    </SOAP-ENV:Header>
    <SOAP-ENV:Body>
        <xroad:authCertDeletionResponse>
            <xroad:server id:objectType="SERVER">
                <id:xRoadInstance>EE</id:xRoadInstance>
                <id:memberClass>GOV</id:memberClass>
                <id:memberCode>TS1OWNER</id:memberCode>
                <id:serverCode>TS1</id:serverCode>
            </xroad:server>

<xroad:authCert>MIIDtzCCAp+gAwIBAgIIaAPFaI/REfAwDQYJKoZIhvcNAQEFBQAwNzERMA8GA1UEAw
```

wIQWRtaW5DQTExFTATBgNVBAoMDEVKQkNBIFNhbXBsZTELMAkGA1UEBhMCU0UwHhcNMTUxMDA1MTEyNzQz
WhcNMTcxMDA0MTEyNzQzWjAuMQswCQYDVQQGEwJFRTEMMAoGA1UECgwDR09WMREwDwYDVQQDDAhUUzFPV0
5FUjCCASIwDQYJKoZIhvcNAQEBBQADggEPADCCAQoCggEBAIkX6/b/yUNSIvZatpFDqUDJ4l+igH+z8/ky
Llu92VL6H7hkCL6ggn7qsHOTGaxOupXQBKx/EDMOt+cpbhQlQCSoU2LmXYklv9FEGXTUBt5UVlT1mZXQkf
PVT2ozWQeGEOe7RLApaldgfFgg6AklsuOTe0FgJTfqXrnjVy84MRht56nw0V6SnujGMVxQJR1IJC13I5wR
bVbkyOxX52vqJ7Kh/2GWtNj2AgY9VbZA6/8ES3fMVHWQUbVtFV/2LyjQ0OrwPm0VXsrqRnlh0tln3AtgNO
iPgmg72aWNPwlPx7+rE02t+0O+KieC3IZppY2044tC699ui5/nOZPrlIqC1XcCAwEAAaOBzzCBzDBNBggr
BgEFBQcBAQRBMD8wPQYIKwYBBQUHMAGGMWh0dHA6Ly9sb2NhbGhvc3Q6ODA4MC9lamamJjYS9wdWJsaWN3ZW
Ivc3RhdHVzL29jc3AwHQYDVR0OBBYEFCB7AE2wTs7iLMMxGtilpSg8bShnMAwGA1UdEwEB/wQCMAAwHwYD
VR0jBBgwFoAUdy2JLgO2/fjSZTkxNSLQRhro0gkwDgYDVR0PAQH/BAQDAgO4MB0GA1UdJQQWMBQGCCsGAQ
UFBwMBBggrBgEFBQcDAjANBgkqhkiG9w0BAQUFAAOCAQEATCbKukYbOV5R4I/ivhEXIJAA8azeJNONWg0+
74v9hdInDSDuXreJkkpJNz0pZaaDnbsWFF+LGcB8UDTc6jOGOaH1b2iShqzq/jL+Le9iSi8V26aWmKJipt
5fsU5E/OJAA0KMnNjhtq5FDdP7gCD7+pPVq2FwEWf9nsNtAq8uETc5f9PNGxE6PrDl2Gy2K3m4T/0kvQIi
MFsk1z054/9rW/w+dQSSsxHhYHOPzwbSEsoeSw3UEqeKdaYUspFs+eGD4b3dexwEe5M0oZAwL/
+/56eTcOhnenP9A+8jF1vlXnP/m+tThaftcMZa/NTvpceLx36TDUIwB222ddkyN2Offw==</xroad:auth
Cert>
                <xroad:requestId>392</xroad:requestId>
            </xroad:authCertDeletionResponse>
        </SOAP-ENV:Body>
    </SOAP-ENV:Envelope>

Annex B WSDL File for Management Services

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<wsdl:definitions xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:tns="http://x-
road.eu/centralservice/" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/" xmlns:xroad="http://x-
road.eu/xsd/xroad.xsd" xmlns:xsd="http://www.w3.org/2001/XMLSchema" name="centralservice"
targetNamespace="http://x-road.eu/centralservice/">
    <wsdl:types>
        <!-- Schema for identifiers -->
        <xs:schema elementFormDefault="qualified" jxb:version="2.1"
targetNamespace="http://x-road.eu/xsd/identifiers" xmlns="http://x-road.eu/xsd/identifiers"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
            <xs:complexType name="XRoadIdentifierType">
                <xs:annotation>
                    <xs:documentation>Globally unique identifier in the XROAD system.
Identifier consists of object type specifier and list of hierarchical codes (starting with
code that identifiers the XROAD instance).</xs:documentation>
                </xs:annotation>
                <xs:sequence>
                    <xs:element minOccurs="0" ref="xRoadInstance"/>
                    <xs:element minOccurs="0" ref="memberClass"/>
                    <xs:element minOccurs="0" ref="memberCode"/>
                    <xs:element minOccurs="0" ref="subsystemCode"/>
                    <xs:element minOccurs="0" ref="groupCode"/>
                    <xs:element minOccurs="0" ref="serviceCode"/>
                    <xs:element minOccurs="0" ref="serviceVersion"/>
                    <xs:element minOccurs="0" ref="securityCategoryCode"/>
                    <xs:element minOccurs="0" ref="serverCode"/>
                </xs:sequence>
                <xs:attribute ref="objectType" use="required"/>
            </xs:complexType>
            <xs:simpleType name="XRoadObjectType">
                <xs:annotation>
                    <xs:documentation>Enumeration for XROAD identifier
types.</xs:documentation>
                </xs:annotation>
                <xs:restriction base="xs:string">
                    <xs:enumeration value="MEMBER"/>
                    <xs:enumeration value="SUBSYSTEM"/>
                    <xs:enumeration value="SERVER"/>
                    <xs:enumeration value="GLOBALGROUP"/>
                    <xs:enumeration value="LOCALGROUP"/>
                    <xs:enumeration value="SECURITYCATEGORY"/>
                    <xs:enumeration value="SERVICE"/>
                    <xs:enumeration value="CENTRALSERVICE"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:element name="xRoadInstance" type="xs:string">
                <xs:annotation>
                    <xs:documentation>Identifies the XROAD instance. This field is applicable
to all identifier types.</xs:documentation>
                </xs:annotation>
            </xs:element>
            <xs:element name="memberClass" type="xs:string">
                <xs:annotation>
                    <xs:documentation>Type of the member (company, government institution,
private person, etc.)</xs:documentation>
                </xs:annotation>
            </xs:element>
            <xs:element name="memberCode" type="xs:string">
                <xs:annotation>
                    <xs:documentation>Code that uniquely identifies a member of given member
type.</xs:documentation>
                </xs:annotation>
            </xs:element>
            <xs:element name="subsystemCode" type="xs:string">
                <xs:annotation>
                    <xs:documentation>Code that uniquely identifies a subsystem of given
```

```
XROAD member.</xs:documentation>
                </xs:annotation>
            </xs:element>
            <xs:element name="groupCode" type="xs:string">
                <xs:annotation>
                    <xs:documentation>Code that uniquely identifies a global group in given
XROAD instance.</xs:documentation>
                </xs:annotation>
            </xs:element>
            <xs:element name="serviceCode" type="xs:string">
                <xs:annotation>
                    <xs:documentation>Code that uniquely identifies a service offered by
given XROAD member or subsystem.</xs:documentation>
                </xs:annotation>
            </xs:element>
            <xs:element name="serviceVersion" type="xs:string">
                <xs:annotation>
                    <xs:documentation>Version of the service.</xs:documentation>
                </xs:annotation>
            </xs:element>
            <xs:element name="securityCategoryCode" type="xs:string">
                <xs:annotation>
                    <xs:documentation>Code that uniquely identifies security category in a
given XROAD instance.</xs:documentation>
                </xs:annotation>
            </xs:element>
            <xs:element name="serverCode" type="xs:string">
                <xs:annotation>
                    <xs:documentation>Code that uniquely identifies security server offered
by a given XROAD member or subsystem.</xs:documentation>
                </xs:annotation>
            </xs:element>
            <xs:attribute name="objectType" type="XRoadObjectType"/>
            <xs:complexType name="XRoadClientIdentifierType">
                <xs:complexContent>
                    <xs:restriction base="XRoadIdentifierType">
                        <xs:sequence>
                            <xs:element ref="xRoadInstance"/>
                            <xs:element ref="memberClass"/>
                            <xs:element ref="memberCode"/>
                            <xs:element minOccurs="0" ref="subsystemCode"/>
                        </xs:sequence>
                        <xs:attribute ref="objectType" use="required"/>
                    </xs:restriction>
                </xs:complexContent>
            </xs:complexType>
            <xs:complexType name="XRoadServiceIdentifierType">
                <xs:complexContent>
                    <xs:restriction base="XRoadIdentifierType">
                        <xs:sequence>
                            <xs:element ref="xRoadInstance"/>
                            <xs:element ref="memberClass"/>
                            <xs:element ref="memberCode"/>
                            <xs:element minOccurs="0" ref="subsystemCode"/>
                            <xs:element ref="serviceCode"/>
                            <xs:element minOccurs="0" ref="serviceVersion"/>
                        </xs:sequence>
                        <xs:attribute ref="objectType" use="required" fixed="SERVICE"/>
                    </xs:restriction>
                </xs:complexContent>
            </xs:complexType>
            <xs:complexType name="XRoadSecurityCategoryIdentifierType">
                <xs:complexContent>
                    <xs:restriction base="XRoadIdentifierType">
                        <xs:sequence>
                            <xs:element ref="xRoadInstance"/>
                            <xs:element ref="securityCategoryCode"/>
                        </xs:sequence>
                        <xs:attribute ref="objectType" use="required"
fixed="SECURITYCATEGORY"/>
                    </xs:restriction>
                </xs:complexContent>
            </xs:complexType>
            <xs:complexType name="XRoadCentralServiceIdentifierType">
```

```
                <xs:complexContent>
                    <xs:restriction base="XRoadIdentifierType">
                        <xs:sequence>
                            <xs:element ref="xRoadInstance"/>
                            <xs:element ref="serviceCode"/>
                        </xs:sequence>
                        <xs:attribute ref="objectType" use="required"
fixed="CENTRALSERVICE"/>
                    </xs:restriction>
                </xs:complexContent>
            </xs:complexType>
            <xs:complexType name="XRoadSecurityServerIdentifierType">
                <xs:complexContent>
                    <xs:restriction base="XRoadIdentifierType">
                        <xs:sequence>
                            <xs:element ref="xRoadInstance"/>
                            <xs:element ref="memberClass"/>
                            <xs:element ref="memberCode"/>
                            <xs:element ref="serverCode"/>
                        </xs:sequence>
                        <xs:attribute ref="objectType" use="required" fixed="SERVER"/>
                    </xs:restriction>
                </xs:complexContent>
            </xs:complexType>
            <xs:complexType name="XRoadGlobalGroupIdentifierType">
                <xs:complexContent>
                    <xs:restriction base="XRoadIdentifierType">
                        <xs:sequence>
                            <xs:element ref="xRoadInstance"/>
                            <xs:element ref="groupCode"/>
                        </xs:sequence>
                        <xs:attribute ref="objectType" use="required" fixed="GLOBALGROUP"/>
                    </xs:restriction>
                </xs:complexContent>
            </xs:complexType>
            <xs:complexType name="XRoadLocalGroupIdentifierType">
                <xs:complexContent>
                    <xs:restriction base="XRoadIdentifierType">
                        <xs:sequence>
                            <xs:element ref="groupCode"/>
                        </xs:sequence>
                        <xs:attribute ref="objectType" use="required" fixed="LOCALGROUP"/>
                    </xs:restriction>
                </xs:complexContent>
            </xs:complexType>
        </xs:schema>
        <!-- Schema for requests (reduced) -->
        <xsd:schema xmlns="http://www.w3.org/2001/XMLSchema" xmlns:tns="http://x-
road.eu/xsd/xroad.xsd" xmlns:id="http://x-road.eu/xsd/identifiers" targetNamespace="http://x-
road.eu/xsd/xroad.xsd" elementFormDefault="qualified">
            <xsd:import namespace="http://x-road.eu/xsd/identifiers" id="id"/>
            <xsd:element name="clientReg" type="tns:ClientRequestType"/>
            <xsd:element name="clientRegResponse" type="tns:ClientRequestType"/>
            <xsd:element name="clientDeletion" type="tns:ClientRequestType"/>
            <xsd:element name="clientDeletionResponse" type="tns:ClientRequestType"/>
            <xsd:element name="authCertReg" type="tns:AuthCertRegRequestType"/>
            <xsd:element name="authCertRegResponse" type="tns:AuthCertRegRequestType"/>
            <xsd:element name="authCertDeletion" type="tns:AuthCertDeletionRequestType"/>
            <xsd:element name="authCertDeletionResponse"
type="tns:AuthCertDeletionRequestType"/>
            <!-- Header fields -->
            <xsd:element name="client" type="id:XRoadClientIdentifierType"/>
            <xsd:element name="service" type="id:XRoadServiceIdentifierType"/>
            <xsd:element name="id" type="xsd:string"/>
            <xsd:element name="protocolVersion" type="xsd:string"/>
            <xsd:element name="requestHash" type="xsd:string"/>
            <xsd:complexType name="AuthCertRegRequestType">
                <xsd:sequence>
                    <xsd:element name="server" type="id:XRoadSecurityServerIdentifierType">
                        <xsd:annotation>
                            <xsd:documentation>Identity of the security server the
                                authentication certificate will be associated with.
                            </xsd:documentation>
                        </xsd:annotation>
                    </xsd:element>
```

```xsd
            </xsd:element>
            <xsd:element name="address" type="string" minOccurs="0">
                <xsd:annotation>
                    <xsd:documentation>Address of the security server the
                        authentication certificate will be associated with.
                    </xsd:documentation>
                </xsd:annotation>
            </xsd:element>
            <xsd:element name="authCert" type="base64Binary">
                <xsd:annotation>
                    <xsd:documentation>
                      Contents (in DER encoding) of
                      the authentication certificate that will
                      be added to the list of certificates
                      authenticating the security server.
                   </xsd:documentation>
                </xsd:annotation>
            </xsd:element>
            <xsd:element name="requestId" type="tns:RequestIdType" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
    <xsd:complexType name="AuthCertDeletionRequestType">
        <xsd:sequence>
            <xsd:element name="server" type="id:XRoadSecurityServerIdentifierType">
                <xsd:annotation>
                    <xsd:documentation>Identity of the security server the
                        authentication certificate will be deleted from.
                    </xsd:documentation>
                </xsd:annotation>
            </xsd:element>
            <xsd:element name="authCert" type="base64Binary">
                <xsd:annotation>
                    <xsd:documentation>Contents (in DER encoding) of
                        the authentication certificate that will
                        be deleted from the list of certificates
                        authenticating the security server.
                    </xsd:documentation>
                </xsd:annotation>
            </xsd:element>
            <xsd:element name="requestId" type="tns:RequestIdType" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
    <xsd:complexType name="ClientRequestType">
        <xsd:sequence>
            <xsd:element name="server" type="id:XRoadSecurityServerIdentifierType">
                <xsd:annotation>
                    <xsd:documentation>Identifier of the security
                        server where the client is added to or removed
                        from (depending on the request type).
                    </xsd:documentation>
                </xsd:annotation>
            </xsd:element>
            <xsd:element name="client" type="id:XRoadClientIdentifierType">
                <xsd:annotation>
                    <xsd:documentation>Identifier of the client
                        associated with the security server. When the
                        request is for registering client, the client is
                        added to the security server. When the request
                        is for deleting client, the client is removed
                        from the clients' list of the security server.
                    </xsd:documentation>
                </xsd:annotation>
            </xsd:element>
            <xsd:element name="requestId" type="tns:RequestIdType" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
    <xsd:simpleType name="RequestIdType">
        <xsd:annotation>
            <xsd:documentation>For responses only, unique identifier
                of the request that is stored in the central server database.
            </xsd:documentation>
        </xsd:annotation>
        <xsd:restriction base="integer"/>
    </xsd:simpleType>
```

```
            </xsd:schema>
        </wsdl:types>
    <wsdl:message name="requestheader">
        <wsdl:part name="client" element="xroad:client"/>
        <wsdl:part name="service" element="xroad:service"/>
        <wsdl:part name="id" element="xroad:id"/>
        <wsdl:part name="protocolVersion" element="xroad:protocolVersion"/>
        <wsdl:part name="requestHash" element="xroad:requestHash"/>
    </wsdl:message>
    <wsdl:message name="clientReg">
        <wsdl:part element="xroad:clientReg" name="parameters"/>
    </wsdl:message>
    <wsdl:message name="clientRegResponse">
        <wsdl:part element="xroad:clientRegResponse" name="parameters"/>
    </wsdl:message>
    <wsdl:message name="clientDeletion">
        <wsdl:part element="xroad:clientDeletion" name="parameters"/>
    </wsdl:message>
    <wsdl:message name="clientDeletionResponse">
        <wsdl:part element="xroad:clientDeletionResponse" name="parameters"/>
    </wsdl:message>
    <wsdl:message name="authCertReg">
        <wsdl:part element="xroad:authCertReg" name="parameters"/>
    </wsdl:message>
    <wsdl:message name="authCertRegResponse">
        <wsdl:part element="xroad:authCertRegResponse" name="parameters"/>
    </wsdl:message>
    <wsdl:message name="authCertDeletion">
        <wsdl:part element="xroad:authCertDeletion" name="parameters"/>
    </wsdl:message>
    <wsdl:message name="authCertDeletionResponse">
        <wsdl:part element="xroad:authCertDeletionResponse" name="parameters"/>
    </wsdl:message>
    <wsdl:portType name="centralservice">
        <wsdl:operation name="clientReg">
            <wsdl:input message="tns:clientReg"/>
            <wsdl:output message="tns:clientRegResponse"/>
        </wsdl:operation>
        <wsdl:operation name="clientDeletion">
            <wsdl:input message="tns:clientDeletion"/>
            <wsdl:output message="tns:clientDeletionResponse"/>
        </wsdl:operation>
        <wsdl:operation name="authCertDeletion">
            <wsdl:input message="tns:authCertDeletion"/>
            <wsdl:output message="tns:authCertDeletionResponse"/>
        </wsdl:operation>
    </wsdl:portType>
    <wsdl:binding name="centralserviceSOAP" type="tns:centralservice">
        <soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
        <wsdl:operation name="clientReg">
            <soap:operation soapAction=""/>
            <wsdl:input>
                <soap:body use="literal"/>
                <soap:header message="tns:requestheader" part="client" use="literal"/>
                <soap:header message="tns:requestheader" part="service" use="literal"/>
                <soap:header message="tns:requestheader" part="id" use="literal"/>
                <soap:header message="tns:requestheader" part="protocolVersion"
use="literal"/>
            </wsdl:input>
            <wsdl:output>
                <soap:body use="literal"/>
                <soap:header message="tns:requestheader" part="client" use="literal"/>
                <soap:header message="tns:requestheader" part="service" use="literal"/>
                <soap:header message="tns:requestheader" part="id" use="literal"/>
                <soap:header message="tns:requestheader" part="protocolVersion"
use="literal"/>
                <soap:header message="tns:requestheader" part="requestHash" use="literal"/>
            </wsdl:output>
        </wsdl:operation>
        <wsdl:operation name="clientDeletion">
            <soap:operation soapAction=""/>
            <wsdl:input>
                <soap:body use="literal"/>
                <soap:header message="tns:requestheader" part="client" use="literal"/>
```

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                    <soap:header message="tns:requestheader" part="service" use="literal"/>
                    <soap:header message="tns:requestheader" part="id" use="literal"/>
                    <soap:header message="tns:requestheader" part="protocolVersion"
use="literal"/>
                </wsdl:input>
                <wsdl:output>
                    <soap:body use="literal"/>
                    <soap:header message="tns:requestheader" part="client" use="literal"/>
                    <soap:header message="tns:requestheader" part="service" use="literal"/>
                    <soap:header message="tns:requestheader" part="id" use="literal"/>
                    <soap:header message="tns:requestheader" part="protocolVersion"
use="literal"/>
                    <soap:header message="tns:requestheader" part="requestHash" use="literal"/>
                </wsdl:output>
            </wsdl:operation>
            <wsdl:operation name="authCertDeletion">
                <soap:operation soapAction=""/>
                <wsdl:input>
                    <soap:body use="literal"/>
                    <soap:header message="tns:requestheader" part="client" use="literal"/>
                    <soap:header message="tns:requestheader" part="service" use="literal"/>
                    <soap:header message="tns:requestheader" part="id" use="literal"/>
                    <soap:header message="tns:requestheader" part="protocolVersion"
use="literal"/>
                </wsdl:input>
                <wsdl:output>
                    <soap:body use="literal"/>
                    <soap:header message="tns:requestheader" part="client" use="literal"/>
                    <soap:header message="tns:requestheader" part="service" use="literal"/>
                    <soap:header message="tns:requestheader" part="id" use="literal"/>
                    <soap:header message="tns:requestheader" part="protocolVersion"
use="literal"/>
                    <soap:header message="tns:requestheader" part="requestHash" use="literal"/>
                </wsdl:output>
            </wsdl:operation>
        </wsdl:binding>
        <wsdl:service name="centralservice">
            <wsdl:port binding="tns:centralserviceSOAP" name="centralserviceSOAP">
                <soap:address location="http://INSERT_MANAGEMENT_SERVICE_ADDRESS_HERE"/>
            </wsdl:port>
        </wsdl:service>
</wsdl:definitions>
```