



# HELDIN

Heldin vev-tænastur  
Oluf Færø

Verkstova um menning av vevtænastum  
06 juni 2017

# Heldin vev-tænastur

- Heldin tænastr
  - SOAP tænastr á Heldini
- SOAP 1.1
- WSDL-fíllur
  - Contract-First
  - Knýtur vev-tænastr til SOAP protokollina
  - Heldin brúkar “document/literal wrapped” WSDL-fíllur
- Ein vevtænastr á Heldini skal bjóða tvey slög av tænastrum:
  - Data-tænastr
  - Meta-tænastr
- Kravfesting: [http://x-road.ee/docs/eng/x-road\\_service\\_protocol.pdf](http://x-road.ee/docs/eng/x-road_service_protocol.pdf)

# Tænastur

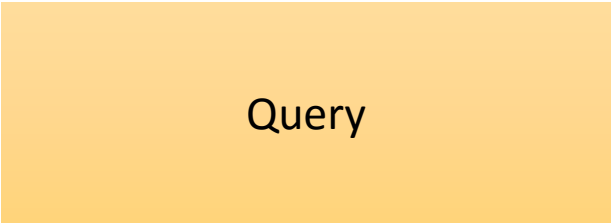
- Data tænastur:
  - Høvuðsendamálið hjá Heldini er at geva atgongd til vevtænastur
  - Data-tænastur eru serstakar fyri hvønn veitara
  - Verða bundnar til xml-namespace: <http://name.x-road.eu/producer>
- Meta tænastur:
  - Hjálpitænastur
  - Veita information sum stuðla data-tænastum
  - Verða bundnar til xml-namespace: <http://x-road.eu/xsd/x-road.xsd>

# XML innihald

- SOAP XML-boð á Heldini eru samansett av trimum þørtum:
  - Header: Verður lagt í “SOAP envelope header”-partin
  - Query: Verður lagt í <request>-partin
  - Reply: Verður lagt í <response>-partin
- Input SOAP-XML: Header + Query
- Output SOAP-XML: Header + Query + Reply

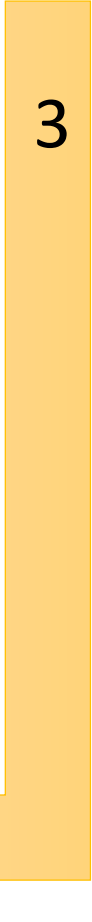
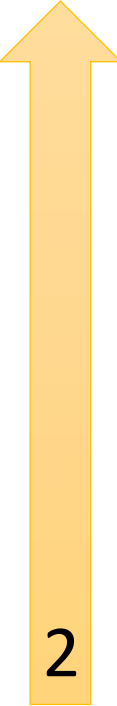
xmlns:s="http://schemas.xmlsoap.org/soap/envelope/"  
xmlns:x="http://x-road.eu/xsd/x-road.xsd"  
xmlns:m="http://name.x-road.eu/producer"

```
<s:Envelope>  
  <s:Header>  
    <x:id>...</x:id>  
    <x:userId>...</x:userId>  
    <x:producer>...</x:producer>  
    <x:consumer>...</x:consumer>  
    <x:service>...</x:service>  
  </s:Header>  
  <Body>  
    <m:Service>  
      <Request>  
      </Request>  
      <Response>  
      </Response>  
    </m:Service>  
  </Body>  
</Envelope>
```



Vevtænastu-brúkari  
SOAP Client

Vevtænastu-veitari  
SOAP service  
http://host:8080/soapservice



```
<s:Header>  
  <x:id>...</x:id>  
  <x:userId>...</x:userId>  
  <x:producer>...</x:producer>  
  <x:consumer>...</x:consumer>  
  <x:service>...</x:service>  
</s:Header>
```

Trygdarambættari  
hjá brúkara



Trygdarambættari  
hjá veitara

Vevtænastu-brúkari

SOAP Client

Vevtænastu-veitari

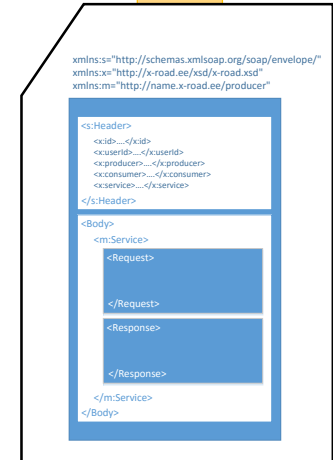
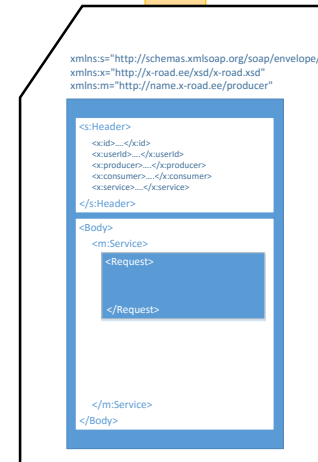
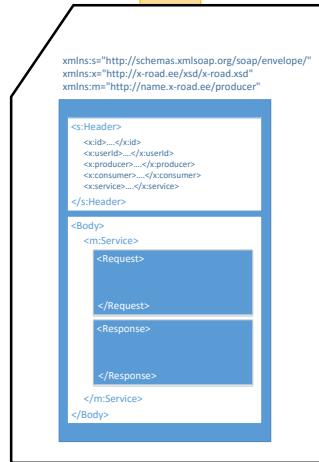
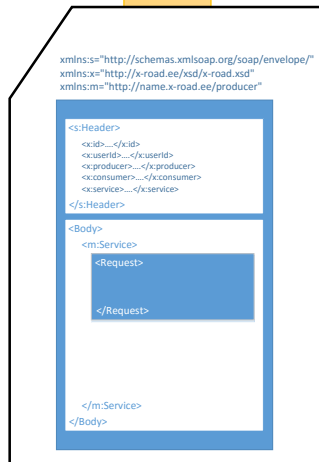
SOAP service  
http://host:8080/soapservice

1

4

2

3



Trygdarambætari  
hjá brúkara

<http://trygdarambætari/cgi-bin/consumer-proxy>

Trygdarambætari  
hjá veitara



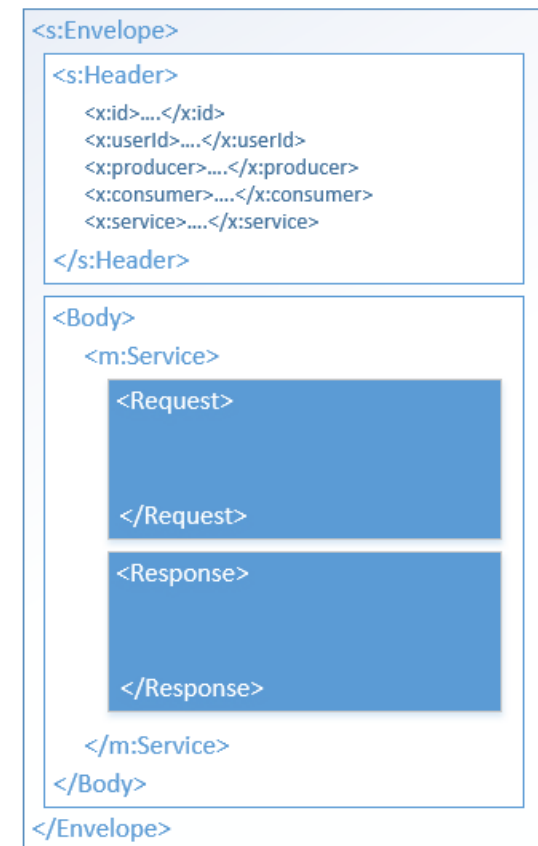
# Input Message

```
xmlns:s="http://schemas.xmlsoap.org/soap/envelope/"  
xmlns:x="http://x-road.eu/xsd/x-road.xsd"  
xmlns:m="http://name.x-road.eu/producer"
```



# Output Message

```
xmlns:s="http://schemas.xmlsoap.org/soap/envelope/"  
xmlns:x="http://x-road.eu/xsd/x-road.xsd"  
xmlns:m="http://name.x-road.eu/producer"
```



Data Service

<http://trygdarambætarei/cgi-bin/consumer-proxy>



# Service Request

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
  <SOAP-ENV:Header>
    Header content
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <m:service xmlns:m="URI">
      <request>
        Request content
      </request>
    </m:service>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

# Service Response

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
  <SOAP-ENV:Header>
    Header content
  </SOAP-ENV:Header>
  <SOAP-ENV:Body>
    <m:serviceResponse xmlns:m="URI">
      <request>
        Request content
      </request>
      <response>
        Response content
      </response>
    </m:serviceResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

# WSDL-fílan

- Allar tænastr skulu verða samlaðar í eina WSDL-fílu
  - Tilvísingar skulu peika á aðrar fílu á internetinum ella sama faldara
- Document/literal wrapped
- <http://x-road.eu/xsd/x-road.xsd> kann innlesast frá lokatiónum  
<http://repository.heldin.fo/xsd/x-road.xsd>
- Data tænastr skulu hoyra til eitt namespace sum er knýtt til navnið á vevtænastruni
  - <http://name.x-road.eu/producer>
- Skal innihalda specification av metatænastrum

Dømi um WSDL fílu

```
<definitions xmlns="http://schemas.xmlsoap.org/wsdl/" xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:tns="http://kli-util-v1.x-road.eu/producer"
xmlns:wSDL="http://www.w3.org/ns/wsdl" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xrd="http://x-road.eu/xsd/x-road.xsd" xmlns:xmime="http://www.w3.org/2005/05/xmlmime"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl" targetNamespace="http://kli-util-v1.x-road.eu/producer">
  <types>
    <schema xmlns="http://www.w3.org/2001/XMLSchema" targetNamespace="http://kli-util-v1.x-road.eu/producer">
      <import namespace="http://x-road.eu/xsd/x-road.xsd" schemaLocation="http://repository.heldin.fo/xsd/x-road.xsd"/>
      <import namespace="http://www.w3.org/2005/05/xmlmime" schemaLocation="http://www.w3.org/2005/05/xmlmime"/>
      <element name="personLookup">...</element>
      <element name="personLookupResponse">...</element>
      <complexType name="Person">...</complexType>
      <complexType name="Address">...</complexType>
    </schema>
  </types>
  <message name="personLookupSoapIn">
    <part name="body" element="tns:personLookup"/>
  </message>
  <message name="personLookupSoapOut">
    <part name="body" element="tns:personLookupResponse"/>
  </message>
  <message name="listMethods">...</message>
  <message name="listMethodsResponse">...</message>
  <message name="testSystem">...</message>
  <message name="testSystemResponse">...</message>
  <message name="standardheader">
    <part name="consumer" element="xrd:consumer"/>
    <part name="producer" element="xrd:producer"/>
    <part name="userId" element="xrd:userId"/>
    <part name="service" element="xrd:service"/>
    <part name="id" element="xrd:id"/>
  </message>
  <portType name="ServiceSoap">
    <operation name="personLookup">...</operation>
    <operation name="listMethods">...</operation>
    <operation name="testSystem">...</operation>
  </portType>
  <binding name="ServiceSoap" type="tns:ServiceSoap">
    <soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
    <operation name="personLookup">...</operation>
    <operation name="listMethods">...</operation>
    <operation name="testSystem">...</operation>
  </binding>
  <service name="Service">
    <port name="ServiceSoap" binding="tns:ServiceSoap">
      <soap:address location="http://securityserver/cgi-bin/consumer_proxy"/>
      <xrd:address producer="kli-util-v1"/>
      <xrd:title>Ein okkurt-webservice hjá Talgildu.fo</xrd:title>
    </port>
  </service>
</definitions>
```

Legg serliga merki til

- Serliga x-road namespace
- Navngjevingina av targetNamespace

Legg serliga merki til hvar skemafílin kann lesast frá.

```
<definitions xmlns="http://schemas.xmlsoap.org/wsdl/" xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:tns="http://kli-util-v1.x-road.eu/producer"
xmlns:wsdl="http://www.w3.org/ns/wsdl" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xrd="http://x-road.eu/xsd/x-road.xsd" xmlns:xmime="http://www.w3.org/2005/05/xmlmime"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl" targetNamespace="http://kli-util-v1.x-road.eu/producer">
  <types>
    <schema xmlns="http://www.w3.org/2001/XMLSchema" targetNamespace="http://kli-util-v1.x-road.eu/producer">
      <import namespace="http://x-road.eu/xsd/x-road.xsd" schemaLocation="http://repository.heldin.fo/xsd/x-road.xsd"/>
      <import namespace="http://www.w3.org/2005/05/xmlmime" schemaLocation="http://www.w3.org/2005/05/xmlmime"/>
      <element name="personLookup">...</element>
      <element name="personLookupResponse">...</element>
      <complexType name="Person">...</complexType>
      <complexType name="Address">...</complexType>
    </schema>
  </types>
  <message name="personLookupSoapIn">
    <part name="body" element="tns:personLookup"/>
  </message>
  <message name="personLookupSoapOut">
    <part name="body" element="tns:personLookupResponse"/>
  </message>
  <message name="listMethods">...</message>
  <message name="listMethodsResponse">...</message>
  <message name="testSystem">...</message>
  <message name="testSystemResponse">...</message>
  <message name="standardheader">
    <part name="consumer" element="xrd:consumer"/>
    <part name="producer" element="xrd:producer"/>
    <part name="userId" element="xrd:userId"/>
    <part name="service" element="xrd:service"/>
    <part name="id" element="xrd:id"/>
  </message>
  <portType name="ServiceSoap">
    <operation name="personLookup">...</operation>
    <operation name="listMethods">...</operation>
    <operation name="testSystem">...</operation>
  </portType>
  <binding name="ServiceSoap" type="tns:ServiceSoap">
    <soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
    <operation name="personLookup">...</operation>
    <operation name="listMethods">...</operation>
    <operation name="testSystem">...</operation>
  </binding>
  <service name="Service">
    <port name="ServiceSoap" binding="tns:ServiceSoap">
      <soap:address location="http://securityserver/cgi-bin/consumer_proxy"/>
      <xrd:address producer="kli-util-v1"/>
      <xrd:title>Ein okkurt-webservice hjá Talgildu.fo</xrd:title>
    </port>
  </service>
</definitions>
```

Her verða typurnar defineraðar

Legg merkið til import av serligu x-road skemanum  
sum liggur á

<http://repository.heldin.fo/xsd/x-road.xsd>

```

▼ <definitions xmlns="http://schemas.xmlsoap.org/wsdl/" xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:tns="http://kli-util-v1.x-road.eu/producer"
  xmlns:w3="http://www.w3.org/ns/wsdl" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xrd="http://x-road.eu/xsd/x-road.xsd" xmlns:xmime="http://www.w3.org/2005/05/xmlmime"
  xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl" targetNamespace="http://kli-util-v1.x-road.eu/producer">
  ▼ <types>
    ▼ <schema xmlns="http://www.w3.org/2001/XMLSchema" targetNamespace="http://kli-util-v1.x-road.eu/producer">
      <import namespace="http://x-road.eu/xsd/x-road.xsd" schemaLocation="http://repository.heldin.fo/xsd/x-road.xsd"/>
      <import namespace="http://www.w3.org/2005/05/xmlmime" schemaLocation="http://www.w3.org/2005/05/xmlmime"/>
      ▶ <element name="personLookup">...</element>
      ▶ <element name="personLookupResponse">...</element>
      ▶ <complexType name="Person">...</complexType>
      ▶ <complexType name="Address">...</complexType>
    </schema>
  </types>
  ▼ <message name="personLookupSoapIn">
    <part name="body" element="tns:personLookup"/>
  </message>
  ▼ <message name="personLookupSoapOut">
    <part name="body" element="tns:personLookupResponse"/>
  </message>
  ▶ <message name="listMethods">...</message>
  ▶ <message name="listMethodsResponse">...</message>
  ▶ <message name="testSystem">...</message>
  ▶ <message name="testSystemResponse">...</message>
  ▼ <message name="standardheader">
    <part name="consumer" element="xrd:consumer"/>
    <part name="producer" element="xrd:producer"/>
    <part name="userId" element="xrd:userId"/>
    <part name="service" element="xrd:service"/>
    <part name="id" element="xrd:id"/>
  </message>
  ▼ <portType name="ServiceSoap">
    ▶ <operation name="personLookup">...</operation>
    ▶ <operation name="listMethods">...</operation>
    ▶ <operation name="testSystem">...</operation>
  </portType>
  ▼ <binding name="ServiceSoap" type="tns:ServiceSoap">
    <soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
    ▶ <operation name="personLookup">...</operation>
    ▶ <operation name="listMethods">...</operation>
    ▶ <operation name="testSystem">...</operation>
  </binding>
  ▼ <service name="Service">
    ▼ <port name="ServiceSoap" binding="tns:ServiceSoap">
      <soap:address location="http://securityserver/cgi-bin/consumer_proxy"/>
      <xrd:address producer="kli-util-v1"/>
      <xrd:title>Ein okkurt-webservice hjá Talgildu.fo</xrd:title>
    </port>
  </service>
</definitions>

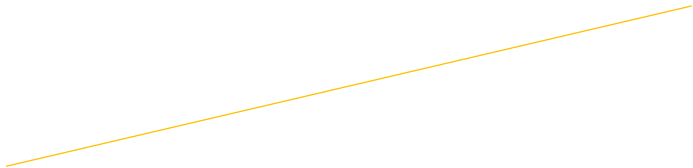
```

Legg merkir til message-elementini fyrri serligu meta-tænasturnar og headarin



```
<definitions xmlns="http://schemas.xmlsoap.org/wsdl/" xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:tns="http://kli-util-v1.x-road.eu/producer"
xmlns:wsdl="http://www.w3.org/ns/wsdl" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xrd="http://x-road.eu/xsd/x-road.xsd" xmlns:xmime="http://www.w3.org/2005/05/xmlmime"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl" targetNamespace="http://kli-util-v1.x-road.eu/producer">
  <types>
    <schema xmlns="http://www.w3.org/2001/XMLSchema" targetNamespace="http://kli-util-v1.x-road.eu/producer">
      <import namespace="http://x-road.eu/xsd/x-road.xsd" schemaLocation="http://repository.heldin.fo/xsd/x-road.xsd"/>
      <import namespace="http://www.w3.org/2005/05/xmlmime" schemaLocation="http://www.w3.org/2005/05/xmlmime"/>
      <element name="personLookup">...</element>
      <element name="personLookupResponse">...</element>
      <complexType name="Person">...</complexType>
      <complexType name="Address">...</complexType>
    </schema>
  </types>
  <message name="personLookupSoapIn">
    <part name="body" element="tns:personLookup"/>
  </message>
  <message name="personLookupSoapOut">
    <part name="body" element="tns:personLookupResponse"/>
  </message>
  <message name="listMethods">...</message>
  <message name="listMethodsResponse">...</message>
  <message name="testSystem">...</message>
  <message name="testSystemResponse">...</message>
  <message name="standardheader">
    <part name="consumer" element="xrd:consumer"/>
    <part name="producer" element="xrd:producer"/>
    <part name="userId" element="xrd:userId"/>
    <part name="service" element="xrd:service"/>
    <part name="id" element="xrd:id"/>
  </message>
  <portType name="ServiceSoap">
    <operation name="personLookup">...</operation>
    <operation name="listMethods">...</operation>
    <operation name="testSystem">...</operation>
  </portType>
  <binding name="ServiceSoap" type="tns:ServiceSoap">
    <soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
    <operation name="personLookup">...</operation>
    <operation name="listMethods">...</operation>
    <operation name="testSystem">...</operation>
  </binding>
  <service name="Service">
    <port name="ServiceSoap" binding="tns:ServiceSoap">
      <soap:address location="http://securityserver/cgi-bin/consumer_proxy"/>
      <xrd:address producer="kli-util-v1"/>
      <xrd:title>Ein okkurt-webservice hjá Talgildu.fo</xrd:title>
    </port>
  </service>
</definitions>
```

Legg merkir til serligu operatióirn fyrri meta-tænasturnar





```

<definitions xmlns="http://schemas.xmlsoap.org/wsdl/" xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:tns="http://kli-util-v1.x-road.eu/producer"
xmlns:wSDL="http://www.w3.org/ns/wsdl" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xrd="http://x-road.eu/xsd/x-road.xsd" xmlns:xmime="http://www.w3.org/2005/05/xmlmime"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl" targetNamespace="http://kli-util-v1.x-road.eu/producer">
  <types>
    <schema xmlns="http://www.w3.org/2001/XMLSchema" targetNamespace="http://kli-util-v1.x-road.eu/producer">
      <import namespace="http://x-road.eu/xsd/x-road.xsd" schemaLocation="http://repository.heldin.fo/xsd/x-road.xsd"/>
      <import namespace="http://www.w3.org/2005/05/xmlmime" schemaLocation="http://www.w3.org/2005/05/xmlmime"/>
      <element name="personLookup">...</element>
      <element name="personLookupResponse">...</element>
      <complexType name="Person">...</complexType>
      <complexType name="Address">...</complexType>
    </schema>
  </types>
  <message name="personLookupSoapIn">
    <part name="body" element="tns:personLookup"/>
  </message>
  <message name="personLookupSoapOut">
    <part name="body" element="tns:personLookupResponse"/>
  </message>
  <message name="listMethods">...</message>
  <message name="listMethodsResponse">...</message>
  <message name="testSystem">...</message>
  <message name="testSystemResponse">...</message>
  <message name="standardheader">
    <part name="consumer" element="xrd:consumer"/>
    <part name="producer" element="xrd:producer"/>
    <part name="userId" element="xrd:userId"/>
    <part name="service" element="xrd:service"/>
    <part name="id" element="xrd:id"/>
  </message>
  <portType name="ServiceSoap">
    <operation name="personLookup">...</operation>
    <operation name="listMethods">...</operation>
    <operation name="testSystem">...</operation>
  </portType>
  <binding name="ServiceSoap" type="tns:ServiceSoap">
    <soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
    <operation name="personLookup">...</operation>
    <operation name="listMethods">...</operation>
    <operation name="testSystem">...</operation>
  </binding>
  <service name="Service">
    <port name="ServiceSoap" binding="tns:ServiceSoap">
      <soap:address location="http://securityserver/cgi-bin/consumer_proxy"/>
      <xrd:address producer="kli-util-v1"/>
      <xrd:title>Ein okkurt-webservice hjá Talgildu.fo</xrd:title>
    </port>
  </service>
</definitions>

```

xrd:address ásetur service-navn til Heldina

# Dokumentation

<https://www.ria.ee/en/development-of-x-road-services.html>



REPUBLIC OF ESTONIA  
INFORMATION SYSTEM AUTHORITY

Coordinating the development and administration of the national information system, to help the state provide the best possible services to citizens.

Enter keyword

Search

[Homepage](#) > [Data Exchange Layer X-Road](#) > [For a member of X-Road](#) > Development of X-Road services



Information System Authority →

Administration System for the State Information System RIHA →

Data Exchange Layer X-Road ↓

- [Introduction of X-Road](#)
  - [Statistics about the X-Road](#)
  - [X-Road cooperation](#)
  - [The trust federation](#)
  - [X-Road community](#)
- For a member of X-Road
  - [X-road environments](#)
  - [How to become an X-Road member](#)
  - [Transition to X-Road version 6](#)
  - [X-Road instructions](#)
  - Development of X-Road services
- [Additional components of the X-Road](#)

Public Key Infrastructure PKI →

Document Exchange Centre DEC →

Data Communication in Public Administration ASO →

IT Infrastructure →

State Portal eesti.ee →

Raising Public Awareness about the Information Society →

Critical Information Infrastructure Protection CIIP →

CERT Estonia →

## Development of X-Road services

- [Documents for the developer in the X-Road v6 environment](#)
- [Documents for the developer in the X-Road v5 environment](#)
- [Additional information sources](#)

## Documents for the developer in the X-Road v6 environment

Protocols and specifications for communicating with the security server:

- [Recommendations for developing services](#) (in Estonian, .pdf, 46 KB)
- [X-Road Message Protocol](#) (.pdf, 226,7 KB) – updated on 10.06.2016
- [X-Road v6 Message Protocol Changes](#) (in Estonian, .pdf, 6 KB)
- [X-Road v6 Message Protocol Versions](#) (in Estonian, .pdf, 6 KB)
- [X-Road Service Metadata Protocol](#) (.pdf, 170,5 KB) – updated on 10.06.2016
- [Third party representation extension of X-Road v6 message protocol](#) (.pdf, 126 KB)

Protocol stack between security servers:

- [X-Road Message Transport Protocol](#) (.pdf, 372 KB) – updated on 10.06.2016
- [Protocol for Downloading Configuration](#) (.pdf, 1,2 MB) – updated on 10.06.2016
- [X-Road Protocol for Management Services](#) (.pdf, 224 KB) – updated on 10.06.2016
- [Freudenthal, M. Profile for High-Performance Digital Signature. T-4-23, 2015](#)

## Documents for the developer in the X-Road v5 environment

- Requirements for information systems and adapter servers (doc/literal)

Added 01.03.2016  
Updated 10.05.2017

# Java-dømi

Kodan er tøk á:

<https://github.com/Klintra/HeldinProducerVerkstova>