

GOVERNMENT OF THE REPUBLIC

REGULATION

The data exchange layer of information systems

Passed on 23.09.2016 no. 105

The Regulation shall be enforced on the basis of clause 43⁹ (1) 5) of the Public Information Act.

Chapter 1

GENERAL PROVISIONS

§ 1. Area of application

- (1) The regulation establishes the requirements for the data exchange layer of information systems, the use and administration thereof.
- (2) The regulation shall not be applicable to information systems containing a state secret or classified foreign information.

§ 2. Definitions

The definitions used in this Regulation have the following meanings:

- 1) **the data exchange layer of information systems** (hereinafter *X-Road*) is a technical infrastructure and instance between the members of X-Road, which enables secure online data exchange, ensuring evidential value;
- 2) **an X-Road member** is an authority or person that has subscribed to X-Road;
- 3) **the Centre** is the Estonian Information System's Authority that is responsible for administration and development of X-Road;
- 4) **a dataservice** is a service provided by an X-Road member, through which the online data exchange is organised;
- 5) **a dataservice provider** is an X-Road member providing a dataservice to other members;
- 6) **a dataservice client** is an X-Road member using a dataservice;
- 7) **a dataservice intermediary** is an X-Road member enabling a natural or legal person outside of their organisation access to a dataservice through their information system;
- 8) **an end user of dataservice** is a natural person using a dataservice through the information system of an X-Road member;
- 9) **a message** is a formatted dataset transmitted between a dataservice provider and a client through X-Road;
- 10) **a subsystem** is a technologically and organisationally defined section of the information system of an X-Road member for providing or using a dataservice;
- 11) **an access right** is enabling the use of a dataservice in the X-Road software;
- 12) **the X-Road base protocol** is a collection of rules, which ensures secure data exchange through a computer network;
- 13) **a security server** is a software solution, which is monitoring the X-Road base protocol;
- 14) **an X-Road message protocol** is a part of the X-Road base protocol, which enables X-road members to process messages;
- 15) **an eSeal** is a set of data in electronic form corresponding to the requirements for an advanced or qualified electronic seal established with Regulation (EU) No. 910/2014 of the European Parliament

and of the Council on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC (ELT L 257, 28.08.2014, pp. 73–114) (hereinafter Regulation No. 910/2014 of the European Parliament and of the Council);

16) a **message log** is a part of a security server based on the X-Road base protocol, where the eSeal-verified messages exchanged through X-Road are saved.

Chapter 2 ADMINISTRATION OF X-ROAD

§ 3. The principles of administration of X-Road

The following main principles shall be observed in administration of X-Road:

- 1) independence from the platform and architecture – X-Road enables an X-Road member on a software platform to communicate with a dataservice provider on a software platform through the information system;
- 2) multilaterality – an X-Road member can apply for access to any dataservices provided through X-Road;
- 3) an open and standardised approach – if possible, international standards and protocols are used in administration and development of X-Road;
- 4) security – data exchange through X-Road shall not alter the integrity, processability, and confidentiality of the data.

§ 4. The duties of the Centre

(1) The Centre shall:

- 1) administer the information of the X-Road members, security servers registered in the X-Road, and in the subsystems subscribed to X-Road in the production as well as test environment, which shall ensure the availability of the information required for generation of a secure X-Road data exchange channel and using the dataservices for the security server of an X-Road member;
- 2) organise processing of membership, subsystem, and security server applications;
- 3) develop the terms and conditions for subscription to X-Road and using thereof, and publish the terms and conditions on the website of the Centre;
- 4) ensure access to using X-Road;
- 5) monitor the use of X-Road and collect usage statistics;
- 6) handle any security incidents;
- 7) restrict the rights of an X-Road member in the cases established in this Regulation;
- 8) advise X-Road members on X-Road-related issues;
- 9) notify X-Road members of any changes in the administration or use of X-Road, and of any circumstances or maintenance works restricting the use of X-Road by sending e-mails to the contact persons of X-Road members specified in the administration system of the state information system (hereinafter *RIHA*);
- 10) administer and organise connection of the Estonian X-Road instance to other data exchange instances;
- 11) ensure free access to standardised security server software for X-Road members;
- 12) ensure the conformity of standardised X-Road solutions designed for end users of the dataservice with the X-Road message protocol and free access to the software for X-Road members;
- 13) prepare and implement development projects of the X-Road infrastructure and ensure the architectural integrity of X-Road;
- 14) in the cases specified in subsection 14 (3) of this Regulation, suspend the availability of the information required for using a dataservice to the security server of an X-Road member;
- 15) administer and develop the solutions required for registration of the members and trust services to ensure operating of the X-Road platform and for functioning of the monitoring.

(2) In fulfilling the notification obligations specified in clause 8) of subsection (1) of this paragraph, the Centre shall observe the following terms for advance notice:

- 1) one month of advance notice shall be given of any changes in the administration or use of X-Road, and of scheduled maintenance works;
- 2) in the event of extraordinary changes in the administration and use of X-Road, and unscheduled maintenance works, the Centre shall have the right to observe shorter notice periods than specified in clause 1) of this subsection;
- 3) 18 months of advance notice shall be given of any changes in the base protocol of X-Road or in the X-Road message protocol, which call for change in the subsystem or dataservice of an X-Road member.

Chapter 3 USE OF X-ROAD

§ 5. Affiliation to X-Road and membership

(1) Applications for affiliation of membership to X-Road shall be filed through RIHA.

(2) Upon affiliation of membership to X-Road, the applicant shall enter into an affiliation agreement with the Centre. The affiliation agreement shall specify the parties' rights, obligations, and liabilities.

(3) X-Road members shall have the right to use X-Road pursuant to the procedure provided for in this Regulation and in the affiliation agreement.

(4) An X-Road member shall:

- 1) ensure the sustainability, administration and development of the X-Road member's information system in the event of affiliation to X-Road, and secure and uninterrupted functioning of the system;
- 2) implement the elements to ensure secure and standardised data exchange specified in § 7 of this Regulation and adjust the X-Road member's information system for working in the X-Road instance;
- 3) implement measures to ensure the integrity, confidentiality, and processability of the data in order to alleviate security risks and ensure independent auditing of the measures applied at least once in every four years;
- 4) fulfil any orders given by the Centre;
- 5) keep the details submitted to RIHA updated;
- 6) immediately notify the Centre of any problems related to using X-Road and any circumstances which may influence the Centre or an X-Road member in performing their obligations;
- 7) immediately notify the Incident Response Department of the Centre of security incidents and of direct risks thereof;
- 8) forward any X-Road related applications and the information specified in clause 6 of this subsection to the Centre through RIHA or, if this is not possible, by e-mail;
- 9) submit any information required to assess the security of the security server, the security rules, and the description of the implementation of the measures implemented, if requested by the Centre.

(5) In managing a national or local government unit's database, an X-Road member shall be guided by the peculiarities provided for in subsection 43⁹ (3) of the Public Information Act in implementing the measures for ensuring integrity, confidentiality, and processability provided for in clause (4) 3) of this paragraph, and in ensuring independent auditing of the applied measures.

§ 6. Refusal of affiliation application

The Centre shall have the right to reject an affiliation application to X-Road if:

- 1) the applicant has no unique identifier for which the Centre could issue an eSeal certificate in compliance with the requirements published on the website of the Centre;
- 2) the applicant has failed to submit the documents required for verification of the right of representation requested by the Centre or the applicant has no right of representation for submitting such application;
- 3) the applicant's details submitted upon affiliation are not registered in RIHA or the details are not up-to-date;
- 4) the applicant or the applicant's information system fail to meet other requirements specified in this Regulation or the principles of functioning of X-Road.

§ 7. The elements of ensuring secure and standardised data exchange

Secure and standardised data exchanged on X-Road shall be ensured in fulfilling all of the following conditions:

- 1) generating a secure data exchange channel pursuant to § 8 of this Regulation;
- 2) ensuring the integrity of data exchange by using an eSeal pursuant to § 9 of this Regulation;
- 3) defining a subsystem pursuant to § 10 of this Regulation;
- 4) harmonised requirements for provision of the dataservice pursuant to § 11 of this Regulation;
- 5) determining of the dataservice client through a contract for using the dataservice and through granting an access right pursuant to § 12 of this Regulation.

§ 8. Generation of a secure data exchange channel

(1) In order to enable establishing a secure X-Road data exchange channel, an X-Road member shall install an info system for the security server software and register the security server authentication certificate (AUTH certificate) at the Centre, which shall correspond to the requirements published on the website of the Centre.

(2) Only security server software following the X-Road base protocol approved by the Centre may be used on X-Road.

(3) In using security servers, X-Road members shall:

- 1) ensure the existence of message logs of the eSeal-verified messages exchanged through X-Road and, in the event of archiving the message log, develop the procedure for archiving the message log, which shall include the frequency of archiving and the list of archived information;
- 2) appoint persons who shall be granted access to the archived message log of the security server in the event of archiving of the message log, and specify the terms and conditions of access;
- 3) upon archiving message logs, ensure following of the same confidentiality requirements in processing of archived messages that are required for using the dataservice;
- 4) host the security servers on the territory under the jurisdiction of the Republic of Estonia.

(4) In using security servers provided by the Centre, X-Road members shall, in addition to following the obligations specified in subsection (3) of this paragraph:

- 1) use the software of the security server pursuant to the instructions published on the website of the Centre;
- 2) update the software of the security server no later than two months after the Centre has made a software update available.

(5) A security server may only be hosted outside of the territory under the jurisdiction of the

Republic of Estonia with the permission of the Centre, if the X-Road member shall:

- 1) ensure the following of the obligations specified in subsection 5 (4) of this Regulation;
- 2) apply measures ensuring the integrity, confidentiality, and processability of data to alleviate security-related risks and ensure independent auditing of the measures applied at least once in two years.

(6) In the event of sharing the security server with another X-Road member, X-Road members shall use encrypted connection and dual authentication for connection of the security server and the subsystem.

§ 9. Ensuring of the integrity of data exchange by eSeals

(1) The integrity of data exchange, and identification of the link between the messages exchanged by X-Road and an X-Road member shall be ensured by eSeals, which shall be created by X-Road members in the security servers by using the following trust services in compliance with the requirements of Regulation (EU) No. 910/2014 of the European Parliament and of the Council:

- 1) a certification service for issuing certificates qualified by the eSeal;
- 2) a service for verification of the validity of the certificate;
- 3) a timestamp service.

(2) An eSeal generated on X-Road shall be valid if the time difference between the verification confirmation and the timestamp does not exceed eight hours.

(3) An X-Road member shall be prohibited to process any data exchanged on X-Road, which cannot be verified by an eSeal specified in subsection 1) of this paragraph.

§ 10. A subsystem interfaced to X-Road

(1) Only subsystems registered at the Centre can use X-Road and provide the service.

(2) In order to register a subsystem on X-Road, the X-Road member shall submit an application to the Centre through RIHA.

(3) Only subsystems in compliance with the following criteria can be registered on X-Road:

- 1) registered at RIHA;
- 2) there is a natural person appointed responsible for functioning of the subsystem and the contacts of the administrator of the security server serving the subsystem have been specified;
- 3) measures are being applied to ensure the integrity, confidentiality, and processability of data and independent auditing of the measures applied is ensured at least once in four years on the basis of the peculiarities specified in subsection 5 (5) of the Regulation.

(4) After registration of a subsystem, the X-Road member shall:

- 1) determine the positions and offices with the right to use the subsystem and thereby the dataservices accessible for the subsystem and only grant internal access to entitled persons;
- 2) ensure secure and uninterrupted functioning of the subsystem attached to X-Road and conformity with the contract for using the dataservice entered into between X-Road members.

(5) The Centre shall have the right to reject applications to register subsystems or delete registered subsystems from the register if a requirement specified in subsections 3-4 of this paragraph have not been met.

§ 11. Requirements for a dataservice

A dataservice shall:

- 1) correspond to the X-Road message protocol established by the Centre;
- 2) be registered in the RIHA with an updated and relevant description meeting the requirements set by the Centre and include information about the security measures required to use the service, taking into consideration the composition of the data included in the dataservice and the nature of the dataservice;
- 3) be usable in the X-Road test environment.

§ 12. Provision and use of a dataservice

(1) Dataservices shall be provided and used pursuant to the contracts for using dataservices entered into by X-Road members. The contracts for using dataservices shall specify:

- 1) the information security measures required for using the dataservice and the organisational, physical, and information technology related security measures, which the dataservice client's subsystem is required to meet, taking into consideration the composition of the data to be processed and the requirements provided for in the legislation;
- 2) the permit for intermediation of the dataservice to third parties pursuant to § 13 of this Regulation;
- 3) the terms and conditions of the service level.

(2) The dataservice provider shall:

- 1) register the dataservice with the technical specification of the dataservice in the security server and ensure that the description of the dataservice in the security server as well as in RIHA is relevant and updated;
- 2) verify prior to entry into a contract with a dataservice client whether the dataservice client is applying sufficient measures to ensure the integrity, confidentiality, and processability of the data to alleviate security risks;
- 3) ensure the conformity of the access right of the X-Road system access right with the contract for using the dataservice entered into by the X-Road members.

(3) Dataservices can be used in the subsystems of X-Road members, for which access rights for using a specific dataservice have been granted.

(4) Dataservice clients and providers shall:

- 1) follow the contract for using the dataservice;
- 2) timestamp the messages received in the security server.

(5) X-Road members shall ensure through their information system authentication and authorisation of the end user participating in the provision or using of a dataservice.

§ 13. Dataservice intermediary

(1) A X-Road member may grant access for using a subsystem for a natural or legal person outside of their organisation only if:

- 1) the X-Road member has drawn up and disclosed a policy of intermediation of dataservices pursuant to section 2 of this paragraph;
- 2) the X-Road member has registered as a dataservice intermediary on X-Road;
- 3) the permission to intermediate a dataservice is specified in the contract with the data service provider.

(2) The policy of intermediation of dataservice shall include:

- 1) the basis for dataservices intermediation;
- 2) the procedure for authentication and authorisation of the party being intermediated;
- 3) the procedure for archiving the authentication and authorisation log of the third parties being intermediated by the subsystem and the period of storing the log;
- 4) the procedure for archiving the X-Road message log and access to the archive, and the retention period.

(3) An X-Road member as a dataservice intermediary shall:

- 1) follow the policy of intermediation of dataservice established by them;
- 2) notify the Centre and the dataservice provider(s) whose data services are being intermediated of any changes in the policy;
- 3) proceed from the rights and obligations established between the parties by the agreements specified in clause (1) 3) of this paragraph and verify the permissibility of dataservice intermediation;
- 4) disclose to the dataservice providers the details of the third parties intermediated by the subsystem pursuant to the X-Road base protocol.

§ 14. Termination of X-Road membership

(1) An X-Road member may terminate the membership at any time by filing a respective written application to the Centre.

(2) In the event the application specified in subsection 1 of this paragraph does not contain the date of termination of the X-Road membership, the membership shall be terminated as of the working day following the date of receipt of the above-mentioned application.

(3) The Centre shall have the right to terminate a membership with immediate effect or restrict the rights arising from the membership or issue a deadline for elimination of a deficiency if:

- 1) an X-Road member violates the terms or conditions specified in this Regulation or in the procedure of dataservice hosting;
- 2) an X-Road member has filed incorrect or incomplete data.

(4) The Centre shall have the right to terminate a membership by notifying the X-Road member thereof by e-mail 30 calendar days in advance in the event of a failure of the X-Road member to respond to repeated inquiries issued by the Centre.

Chapter 4 ADMINISTRATIVE PROVISIONS

§ 15. The peculiarities of ensuring the integrity of data exchange by an eSeal

(1) As of 2 January 2017, dataservice providers shall ensure the integrity of data exchange specified in § 9 (1) of this Regulation by using eSeals.

(2) As of 2 June 2017, dataservice clients shall ensure the integrity of data exchange specified in § 9 (1) of this Regulation by using eSeals.

§ 16. Distributions of the X-Road software

The X-Road software shall be distributed under the terms of MIT license.

§ 17. Repealing of a regulation

Regulation No. 78 of the Government of the Republic of 24.04.2008 “The Data Exchange Layer of Information Systems” shall be repealed.

§ 18. Entry into force of subsections 9 (2) and (3) of the Regulation

Subsections 9 (2) and (3) of this Regulation shall enter into force on 2 June 2017.

Taavi Rõivas
Prime Minister

Kristen Michal
Minister of Economic Affairs and Infrastructure

Heiki Loot
State Secretary