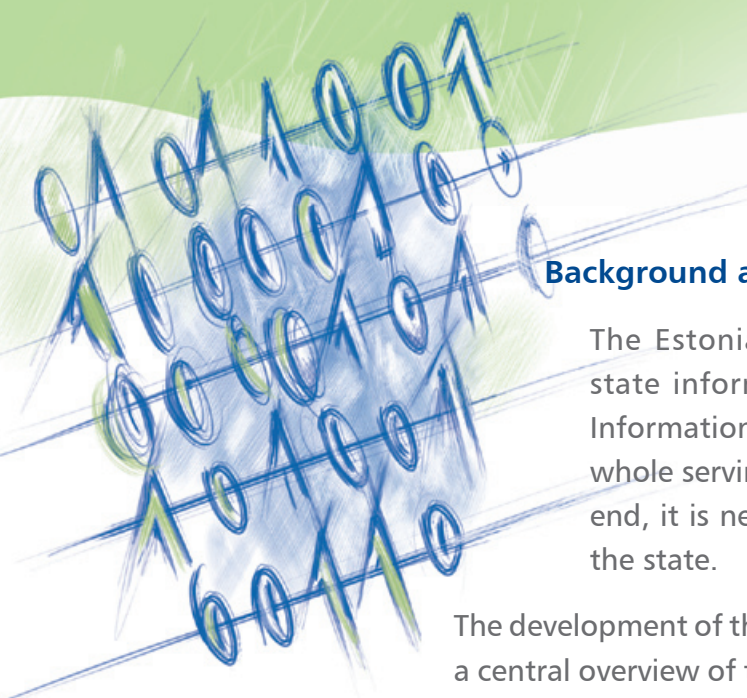


Administration system for the state information system



Background and objective

The Estonian IT Interoperability Framework aims at making state information systems citizen-centred and service-based. Information systems have to be integrated into a single logical whole serving the population and different organisations. To this end, it is necessary to agree upon clear rules and agreements in the state.

The development of the state information system as a logical whole requires a central overview of the existing information systems and databases in the state, i.e. it is important to have metadata about all the state information systems as well as about services they provide. In order to ensure that such an overview could exist, an administration system for the state information system (RIHA) is currently under development. The objective of the system is to collect metadata about all state information systems, their administrators and service providers, services, service users, classifications and administrators of classifications.

In Estonia, the establishment and maintenance of databases is regulated by the Databases Act, according to which it is mandatory for the administrators of information systems to register their databases and information systems in RIHA as well as to ensure updating of the submitted metadata.

The predecessor of RIHA is the State Register of Databases (ARR), established in 1997 with an objective to maintain records of national databases and state registers. By today, ARR has become outdated and, thus, a development process has been launched in order to develop a system (RIHA) with extended functionality that would respond better to user needs.

RIHA's functionality will be extended so that the system would be able to present the state information system as a whole and give an up-to-date overview of the state's IT resources. This is the only way to ensure a central overview of the already existing components of the state information system in various state institutions, components still needed, available resources, and possibilities for their optimal use.

It is important to ensure that RIHA target groups would have a view responding to their roles/responsibilities and guarantee an integral treatment of the system's key objects.

RIHA target groups

RIHA will be a tool both for information system administrators and those responsible for the state IT co-ordination. Information system administrators will be able to obtain information from RIHA about the information systems and services of other agencies as well as about necessary contact persons. This will allow them to propose the creation of a new service or opening up of an already existing one.

The user statistics and data flows of various information systems that can be monitored through RIHA allow those responsible for the co-ordination of the state information system to decide upon the development and financing requirements of specific systems so as to ensure the interoperability of the state information system. In addition, they will be able to check the conformity of specific systems with the state IT requirements and, if necessary, make relevant comments and proposals to information system administrators.

Furthermore, RIHA will be a tool for the following public bodies: the Data Protection Inspectorate in relation to the supervision of information systems processing personal data, the Statistical Office of Estonia in connection with the co-ordination of the system of classifications and specification of statistical surveys, and the National Archives of Estonia for the determination of objects of archival value.

In addition, RIHA will become an important source for service users, who will get an overview of the state information system; see, which services have been opened for them; and make proposals for the creation of new services.

Key objects of RIHA and links between them

The key objects of RIHA include:

- organisations (as information system administrators, service providers, service users or administrators of classifications);
- information systems;
- services;
- classifications.

As regards an **organisation**, RIHA contains its general data and information about its role: as an information system administrator, the organisation is linked with the information systems it administers. In case services are provided via the administered information system, the organisation also has the role of a service provider. Furthermore, if the organisation uses services of other information systems, it has the role of a service user.

If an organisation has established classifications in accordance with the requirements of the system of classifications and made them available for others, an organisation may additionally function as an administrator of a classification.

As regards an **information system**, RIHA contains general data, including its legal basis, domain, composition of data (including the system's basic data), its security class, data concerning the joining of the information system with the X-Road, data about the system's architecture and data acquisition processes.

As to **services**, RIHA contains the following data: service descriptions that in case of X-Road services are given in a WSDL format (descriptions of inputs and outputs); service provision policy (based on which principles, to whom and for what purposes a service is provided); and quality indicators of a service (its availability, reliability, efficiency, security class etc). Through an information system providing it, the service is linked with the service provider and service users.

As regards **classifications**, RIHA contains the metadata of a classification and the classification itself in the form of an XML file. Alternatively, the system may have a link to the environment of the administrator of a classification, where the classification can be downloaded as an XML file.

Semantic descriptions of information systems and services constitute an important component of their general descriptions. The creation of semantic descriptions requires the development of ontologies, i.e. dictionaries defining the terms of a specific domain and showing the taxonomy between them.

The description of terms must be presented both in a human (HTML and XML schemas) and machine readable formats (OWL and XML schemas).

In the process of compiling a semantic description of an information system or a service, every single database/service as well as its components

is described and, if available, reference is made to an entry in the ontology of a respective domain. The description is presented in a natural language (HTML). To this a formal description is added: in case of services, for instance, in WSDL together with SA-WSDL, and in case of information systems in XSDd or SQL DDL format.

Both ontologies and semantic descriptions of information systems and services will be published in RIHA.

In conclusion

The extension of RIHA's functionality is still in process. However, ARR (www.eesti.ee/arr), which provides access to the general data of information systems and, in case an information system has been joined with the X-Road, to X-Road service descriptions in WSDL format, is still rather widely used.

An analysis and design of RIHA are currently under elaboration with first iterations planned to be implemented this year. At the same time, the elaboration and piloting of a methodology for the creation of semantic descriptions and a respective guide has been launched.