

Abstract

The aim of the research is to develop a knowledge sharing and reusing system ontology prototype based on the Estonian version of X-Road. In the modern world the appearance of the X-Road and its e-service has changed everything it is developing and evolving by making itself the most wanted product for the whole world. The countries are implementing it in their ICT to make easy and convenient life for their citizens and everything easy accessible via internet. But not all the people know the usage of e-services and it is the big problem, because it is new and there is not enough information. The ontology prototype can assist people to learn about it and the prototype will give directions when person is searching any kind of electronic service the internet gave a lots of useless information, the prototype will show to person the information needed directly.

The prototype is designed by the tool called protégé 2000 and its OWL utility, the language for development is DAML + OIL, and the condition of its working process is validated via the utility integrated in the design tool HermiT reasoner. The prototype can be implemented in another countries X-Road system if the authorities want to do it by adjusting and updating the system on the basis of different X-Road.

The research showed that there are a lots of ways to develop the ontology with different tools, utility's, and language. But for the creation of the specific X-Road ontology is only one way because there are some instances that only is supported by one tools.

This thesis is written in English and is 73 pages long, including 7 chapters, 7 figures and 3 tables.