# Ontology-oriented information system for verification of formalized documents

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**Abstract.** The paper raises the problem of improving the efficiency of processing documents submitted to the tax authority during the state registration of entrepreneurial activity by reducing the time of document processing through the automation of the verification process. The relevance of the study is due to a significant number of routine operations performed manually by specialists of the tax authority, as well as a large volume of income documents. The article considers the process of processing documents submitted to the tax authority when registering various forms for business activities. On the basis of the conducted research the expediency of development of software tools for automated verification of documents is substantiated. The peculiarities of this task requiring the use of ontological approach to data representation are highlighted. The ontology of a formalized document and the rules of its verification are described. An algorithm of document verification within the framework of the constructed ontological model is proposed. The architecture of information system including metadata, application server and user application is described. The metadata layer is represented by a set of ontologies built on the basis of the developed ontology model. An information system providing support for ontologies as well as automated document verification is developed. The results of automated document processing using the developed system are presented, confirming the reduction of time costs for verification of documents.

*Keywords:* verification, ontology, semantic data integration, document processing

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