West Pomeranian University of Technology in Szczecin
Faculty of Computer Science and Information Technology

Abstract of the dissertation entitled:

THE USE OF BLOCKCHAINS INTEGRATED WITH ELECTRONIC FORMS IN THE EXECUTION OF SECURE TRANSACTIONS

by Gerard Wawrzyniak, M.Sc.Eng.
promotor: Supervisor: Dr. Imed El Fray, Prof. ZUT

The history of transactions dates back thousands of years. Their implementation, understood as an agreed exchange of goods, is always accompanied by the exchange of information. From the beginning, it was noted that an important element of transaction security is the need to document the course of the transaction. The development of civilization, ways of conducting transactions and information techniques has made information techniques a tool to support the implementation of transactions in the sphere of resource management and management of the execution of transactions, in particular, this applies to the electronic exchange of data, information and documents.

An electronic form is an electronic document that has all the features of a traditional paper form. In addition, as is evident from its electronic form, it has a three-layered nature containing layers: data, presentation and logic. They allow not only the collection, storage, trarsfer and presentation of data, but also the dynamic graphical presentation of the form according to the state of the transaction in progress, the recording of the document's rules of validity and the exchange of data with various network services and systems. The electronic form, thanks to the logic layer, makes it possible to control the execution of transactions involving humans and machines. The transaction supported by the electronic form can be carried out with or without server services implemented in various technologies in an extremely distributed, serverless environment, when only humans are parties to the transaction.

The „Actions" embedded in the logic layer provide the possibility to integrate the form with various services, protocols and blockchains, as well as with other developing technologies such as the Internet of things, multimedia systems.

The electronic form guarantees the security of the stored data through the system of electronic signatures used, covering, among other things, the structure of the form together with the logic and presentation layer, as well as the data related to the execution of the various stages of the transaction. The features of the form made it possible to achieve the goal of the work, which is *development of a model of distributed transactions controlled by electronic forms* and positive verification of the hypothesis according to which *application of an electronic form with its own logic will make it possible to implement distributed transactions in a heterogeneous environment without using server infrastructure and participation of a centralized PKI infrastructure.*

Key words

electronic form, transaction, blockchain, electronic signature, interoperability

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G. Wawrzyniak