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[Open Access](#)**A symmetric cryptosystem based on nondeterministic finite automata** (Article)Khaleel, G.^a , Turaev, S.^a , Alshakhli, I.^a , Zhukabayeva, T.^b , Tamrin, M.I.M.^a^a Faculty of Information and Communication Technology, International Islamic University Malaysia, Gombak, Selangor, Malaysia^b Faculty of Information Technology, L.N. Gumilyov Eurasian National University, Astana, Kazakhstan[View references \(14\)](#)

Abstract

This paper proposes a new **symmetric cryptosystem based on nondeterministic finite automata**. It is shown that nondeterminism allows to reduce the dependency of key **automata** on a large descriptonal complexity and irreversibility of **automata**. Moreover, it is proven that the introduced **cryptosystem** has higher security and more efficient performance than its deterministic counterparts – Dömösi's **cryptosystem** and its modified version. © 2005 – ongoing JATIT & LLS.

Author keywords

Cryptography; Dömösi's **cryptosystem**; **Nondeterministic finite automata**; Stream cipher

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