Abstract
The objective of this thesis is to propose new standard and alternative architecture in Automated Fingerprint Identification System, usually known as AFIS. The architecture proposed in this thesis aims to solve the interoperability problem that is commonly encountered in AFIS operation.

Throughout the paper, the architecture design proposed in this thesis will be called IDAFIS, which stands for Interoperable Distributed Automated Fingerprint Identification System. In order to ensure the architecture adaptability by major platforms, IDAFIS leverages XML Web Service standard in the communication. This paper particularly focuses on the back-end servers called Matching Servers, whose task is to process the request from the client that has been preprocessed by Coordinator Server. Having finished the process, the result will be returned to Coordinator Server, which will then decide how to return the result to the party who initiated the request.

The result of IDAFIS architecture is a prototype system capable of interoperating with other system that complies with the IDAFIS standards, and also scalable. Architectural design of IDAFIS also promotes higher stability against heavy workload.

Key words
AFIS, fingerprint matching, IDAFIS, distributed system, interoperable, Web Service