

ABSTRACT

STUDY OF MOBILE TICKETING IMPLEMENTATION ON NEAR FIELD COMMUNICATION (NFC) BASED TECHNOLOGY

By

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Nowdays, tickets that are being used in our transportation system are still paper-based. Using paper: more effort, non-eco friendly, tend to be lost. The Near Field Communication (NFC) feature in smartphones promise more efficient electronic transaction, which can be implemented for mobile ticketing.

This research conducted by using communication data transmission analysis of NFC system which involves “read and write” mode also host card emulation at application layer stage. This is done because mobile ticketing uses these 2 modes. Application modelling of mobile ticketing is also done in order to find out how NFC technology works in the transportation system.

The analysis result shows that in the write mode, NFC needs 11,393 seconds and in the read mode, NFC needs 0,203 seconds, so we can conclude that read mode is faster than write mode. Meanwhile, the HCE mode needs 0,109 seconds in order to transmit information between frame InListPassiveTarget pairs, and it needs no time to do such thing between frame InDataExchange pairs. Modelling this mobile ticketing app is done by using Unified Modelling Leaguage (UML) with use case, activity, and sequence diagram.

Keywords: NFC, mobile ticketing, read/write, HCE, UML.