

Use of NFC Technology In Electronic Ticket System For Public Transport

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Abstract : For conducting day to day collaboration, contacts and business transactions, the use of mobile devices are growing. In order to manage their various business and personnel activities, many users are switching on mobile devices. Since the early 1990s, mobile devices have been in use and their wide acceptance may lead them to decrease in use of personal computers everywhere. Powerful new handsets are attracting new customers, that's why companies and government services are busy in developing seemingly endless mobile applications in the mobile environment. This innovation will significantly affect the direction and growth of mobile commerce like Near Field Communication, or NFC, a radio frequency (RF) communication technology that permit data to be exchanged between electronic devices . In payments, coupons, mobile wallet, mobile banking and ticket generation, NFC is expected to be used for.

Keyword- NFC, NFC Mobile device, NFC enabled Screen.

INTRODUCTION:

Project is based on implementing a ticketing system for trains in electronic ticket management using the concept of near field communication (NFC)[1]. It can radically change existing system of isolated interoperable fare management system. In this paper a scenario for the design of an electronic ticketing system into an existing public transport system based on NFC is introduced. Electronic fare management system consists of sophisticated structures and processes.

I What is NFC?

NFC is a technology based on short-range wireless connectivity that enables simple two-way interactions between electronic devices [2]. NFC technology allows users to perform connectionless transactions, use digital content and connect to NFC-enabled devices with a single touch. Unlike Bluetooth and Wi-Fi, NFC makes it easy to setup of some longer-range wireless technologies. It is also

consistent with the global contactless standards (ISO 14443 and/or ISO 18092)[3]. Contactless devices which are already developed can also interact with NFC enabled devices and their services.

NFC compares in speed and range with other wireless technologies such as Wireless USB, Wi-Fi, WiMax, GSM, ZigBee, Bluetooth, 3G that can be used in mobile phones.

II How it works:

NFC is integrated within senders mobile device as well as in receivers mobile device. This will allow both the device to communicate. Communication occurs within two NFC enabled devices when these two devices within the range of twenty centimeters of each other. As NFC can be placed in many consumer devices such as mobile phones, readers, smart posters, PDAs, PCs, readers, the focus of this paper is firstly on use of NFC. Although NFC is also used for security, the main focus of use of NFC is on electronic transactions.

SYSTEM DESIGN OVERVIEW:

Disadvantages of existing ticketing system:

- 1) For taking a ticket we have to wait in long queue.
- 2) Ticketing process is time consuming.
- 3) paper based ticketing system affects nature.
- 4) We have to carry change for fare amount.

By overcoming drawbacks of existing system NFC ticketing system provides following features:

- 1) Ticketing on go
 - 2) Online payment
 - 3) Paperless ticketing
- 1) Firstly passenger does the scanning process by using NFC enabled phone towards the NFC tag which contain data of particular train according to passenger destination. And this tag will be located within each station.

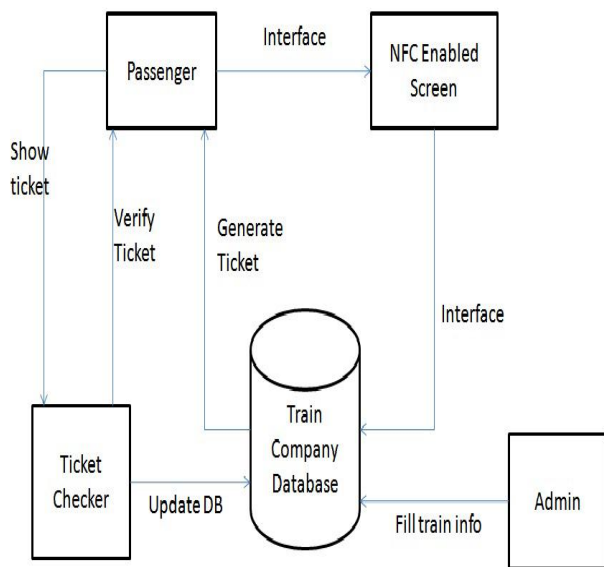


Fig 1 Block Diagram for NFC Ticket Generating

- 2) When a passenger scan the tag filled with train data, the passenger will directly make payment transaction using bank account no or credit. If the passenger account balance is less than the fare amount then the passenger will not be able to do transaction before the credit got a amount loaded. When the passenger successfully made train ticket, then the electronic ticket will be storage within passenger mobile phone.
- 3) That electronic ticket can also be shown to waiting rooms gate guard.
- 4) When the ticket checker approach the passenger at the train, the passenger can show his/her electronic ticket and send the ticket to ticket checker mobile phone.
- 5) When the ticket checker receive ticket data, then the ticketing process will end.

CONCLUSION

NFC E-Ticketing is not extensively used in India, but used in countries such as Australia, America etc will be the most popularly used in the future as they are much more user friendly hope this technology will soon be used in India as well. system is as simple as possible so the layman have to benefit from it. The system is successfully used in developed countries. With more functionality system can be made, throughout the development of the project we learned abundance of new skills (like as a commercial product).

ACKNOWLEDGMENTS

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