Near Field Communication (NFC) and Transit: Applications, Technology and Implementation Considerations

A Smart Card Alliance Transportation Council White Paper

Publication Date: February 2012
Publication Number: TC-12001

Smart Card Alliance
191 Clarksville Rd.
Princeton Junction, NJ 08550
www.smartcardalliance.org

About the Smart Card Alliance

The Smart Card Alliance is a not-for-profit, multi-industry association working to stimulate the understanding, adoption, use and widespread application of smart card technology. Through specific projects such as education programs, market research, advocacy, industry relations and open forums, the Alliance keeps its members connected to industry leaders and innovative thought. The Alliance is the single industry voice for smart cards, leading industry discussion on the impact and value of smart cards in the U.S. and Latin America. For more information please visit http://www.smartcardalliance.org.

TABLE OF CONTENTS

1 Introduction

Mobile devices and phones have been in use since the early 1990s, and their rapid acceptance may lead them to eclipse the use of personal computers everywhere. Powerful new handsets are attracting new customers, while mobile operators are upgrading networks to accommodate seemingly endless mobile applications; private companies and government agencies in turn are developing IT strategies to adapt and thrive in the mobile environment. Added to this is an innovation that will significantly influence the direction and growth of mobile commerce: Near Field Communication, or NFC, a radio frequency (RF) communication technology that allows data to be exchanged between electronic devices in close proximity. NFC is expected to be used for a wide variety of applications, including: payments, coupons and merchant promotions, and transit ticketing.

As a short range or proximity technology, NFC differs significantly from more common forms of mobile communication. Mobile payment implementations, in particular, typically require a back-end server and transmit data using mobile channels, such as short message service (SMS), mobile applications (apps), or a browser. Mobile payment alternatives currently include the use of contactless stickers, microSD cards, and 2-D bar codes.

In contrast, mobile payment with NFC technology relies on a handset provisioned with a payment application, which may be provided by one of the major card brands and personalized with a payment account from the consumer's financial institution. Mobile NFC payment and settlement processes are identical to the processes executed when a contactless or magnetic-stripe credit or debit card is used for payment. The difference is that NFC-enabled devices offer two-way functionality; that is, an NFC-enabled device may act as both a contactless card and a contactless reader. This supports interactive processes whereby the consumer may collect information on the NFC-enabled device in the form of coupons, directions, web site/app store links, or buyer incentives from electronic boards, posters, or maps. Based on this information, the consumer can then choose to make a purchase. The actual payment transaction may be the final step in a series of data exchanges between the NFC-enabled device and a contactless point-of-sale (POS) reader. In short, an NFC-enabled device offers additional options for obtaining information to make purchase decisions, as well as a convenient way to make contactless purchases.

This white paper presents a high level perspective on different NFC applications that can be used in the public transit industry. The Smart Card Alliance Transportation Council has prepared this white paper to foster greater understanding of NFC technology, explain its role in the transit industry, and shed light on key issues facing the transit industry in developing a mobile strategy. It builds on the knowledge base developed in earlier white papers, including those from the NFC Forum and Smart Card Alliance Payments Council. In particular, this white paper explores the use of NFC for payment, transit ticketing and transit information applications. The Transportation Council believes NFC can help transit agencies overcome challenges faced by all transit riders, including selecting the correct route, obtaining real-time schedule information, acquiring fare media, purchasing fare product, paying the best fare, and viewing the status of fare products, all by way of an NFC-enabled handset.

DOCKET ALARM

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS
Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS
Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.