

APPLICATION OF RADIO FREQUENCY IDENTIFICATION TECHNOLOGY  
IN THE STATE OF CALIFORNIA IDENTIFICATION CARD SYSTEM AND ITS  
IMPACT ON THE PRIVACY AND SECURITY OF CARD HOLDERS

A Dissertation

Submitted to the  
Faculty of Argosy University / San Francisco Campus  
in partial fulfillment of  
the requirements for the degree of  
Doctor of Business Administration in Information System

by

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December, 2006

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## Abstract

This dissertation concerns the implementation of Radio Frequency Identification Technology (RFID) in California State ID cards and driver's licenses. RFID is an object to object technology that helps improve the efficiency of driver's licenses and other ID cards.

The implementation of this technology in ID cards and driver's licenses would help residents maintain their privacy, as the data is embedded and encrypted on a microchip in the card. Access to the data is not possible unless there is a special device called a 'reader' that scans the RFID card for proper authentication. These special readers would be installed at DMV locations for automatic communication with ID cards.

The implementation of this system would help the State of California save public funds that are being spent on hiring more and more DMV staff to better serve the public. If someone has ever been to the DMV, then the visitor knows there is always a long waiting time. The DMV is solving their queuing problems short term by hiring more people; however, in the long run, monetary problems remain same.

This researcher presented a Dedicated Short Range Response System to elaborate how the actual system would work. DSRS system would be installed on the DMV premises for ID updates and renewal purposes. The public would visit the DMV office at their own convenience; as long as they were within range (approximately 100 feet) of the DSRS and the information would be updated. The card holders would know the update had been successful by two beeps signifying completion. Furthermore, the results from surveys conducted by the researcher show that California residents are in favor of RFID

and totally agree that current ID cards violate their privacy because they aren't secure enough.

To ensure the proper authentication of data, the ID cards would be equipped with Public Key Encryption. The researcher suggested Tag Password and Tag Pseudonyms approach to encrypt the data for privacy and security.

To ensure everybody is accommodated in the RFID ID card system, residents would be given the privilege to kill (disable) the active part of the ID cards should they wish to do so. However, with the help of other researchers from Germany, the researcher concluded that killing the RFID active part would not help to maintain the privacy. On the contrary, disabling RFID functionality would kill all the possibilities of further technological developments in the pervasive computing environment.

RFID is facing fierce opposition from the consumer pressure groups like Electronic Freedom Foundations (EFF) San Francisco, California and CASPIAN, England. The opposition is based on the assumption that the privacy of consumers would be exploited as data in the wireless format is floating all around without any limitations.

The economics of RFID is that it would help eliminate incredible amount of financial burden on the State of California due to automation and expedite the service process. Since, RFID is an object to object technology; the devices would communicate with each other without the need of human interaction, with the exception when a card is damaged or not functioning.