trusted security manager (TSM). Payment card issuers have to sign up for such a TSM service and to pay for such services.

There are various technical complexities to make the loading process work smoothly, especially when some part of the loading process fails in the middle of a chain of transmissions from the issuer to the TSM to the Internet, via mobile operators' networks to the phone, to the chip. Furthermore, not all standards have been worked out, and there are multiple competing parties making it more difficult to become ubiquitous.

## SUMMARY

The present disclosure relates to devices, systems, and methods including a magnetic stripe capture, storage and transmission device for use in conjunction with a mobile wallet application to capture, store and transmit magnetic stripe card data to merchants' conventional point of sale (POS) terminals and other devices with magnetic stripe readers (MSRs) or checkout systems, in physical and virtual environments. The system provides a convenient buying experience for consumers, a secure and informative transaction for merchants, and in some cases additional data to be transmitted to the MSR for the purpose of loyalty, identification (ID), or access control.

In one aspect, there is provided a system for a magnetic stripe card capture, storage and transmission device comprising: a mobile communication device; and a magnetic stripe transporter (MST) comprising a microprocessor, a magnetic stripe reader (MSR), a magnetic field transmitter including a driver and an inductor, a battery and recharging circuit, a memory means, an audio jack interface and a communication interface; wherein the MST interfaces with the mobile communication device through the audio jack interface or the communication interface; and wherein the MST is adapted to capture magnetic stripe data and store the magnetic stripe data encrypted into the memory means and to decrypt and transmit the magnetic stripe data to a merchant point of sale (POS) or other MSR device.

In ~~one aspect~~ an embodiment, a system for securely capturing, storing and transmitting magnetic stripe payment card data includes a mobile communication device and mobile application, and a magnetic stripe transporter (MST) dongle. The MST dongle or MST includes a microprocessor, magnetic field transmitter which includes a driver and an inductor that can generate varying magnetic fields, a battery, a charging circuit, a magnetic stripe reader (MSR), a memory means or secure element, an audio jack interface, and a communication interface (for example, a USB interface, a 30pin or 9pin Apple interface, a Bluetooth interface, etc.) working in conjunction with a consumer mobile device and wallet application for capturing magnetic stripe card data, storing the data securely, and transmitting such data to merchants' point of sale (POS) or checkout systems, in the physical and virtual environments.

Aspects and embodiments of the disclosure may include one or more features. The mobile communication device may include a mobile application that initializes the MST for use with a specific wallet account and unlocks the MST for transmission and use. The mobile communication device may be used with a payment checkout application on the mobile communication device or the Internet that interacts with the MST to accept payment card data from the MST and transmit the payment card data to a payment server for processing a transaction either as a merchant POS application or a consumer checkout application. The mobile wallet application may interact with the MST via the audio jack or other communication interface, in various modes of operation including, for example, an Initialize and Reset Mode, a Load Card Delete Card Mode, a Transmit and Use Mode, a Disconnected Transmit Mode, and a POS Card Read Mode.

In ~~one aspect~~ an embodiment, the MST operated in the Initialize and Reset Mode is configured to allow a user to pair and unpair/reset a specific MST with a mobile wallet account and only allow one device per account. The MST operated in the Load Card Delete Card Mode is configured to allow a user to load magnetic stripe card data by swiping the user's existing plastic magnetic stripe card on the

MSR on board the MST and store the card track data in a memory means or secure element. For payment cards, the application loads the primary account number (PAN) data of the card to an online digital wallet via the mobile wallet application. Card information can also be deleted from the memory means and the server using the application. The MST operated in the Transmit and Use Mode is configured to allow a user to select a specific payment card as a top of wallet or default card for use in transmission of the stored track data to the merchant POS system when a button is activated or pressed. In another aspect, if non-payment cards are stored in the MST, one non-payment card can be stored as the default card to transmit without authenticating to the wallet application and selecting such a card. Non-payment cards include hotel keys, door passes, or ID and Loyalty cards that can be loaded to the MST in a separate memory means for transmission later.

The MST operated in the POS Card read Mode is configured to allow a user to swipe a payment card with the MST's MSR and transmit the card data to a POS application on the mobile communication device then to the payment server and processor. The mobile communication device may be a smartphone, a tablet, or a personal computer. The MST further includes a battery and a charging circuit. The microprocessor is configured to provide security and communications with the mobile communication device. The memory means stores payment card data securely. The MST is configured to transmit card track data to a merchant checkout application on the mobile communication device to create a card-present transaction for the merchant. The MST may also be configured to read payment cards and to transmit payment card data to the mobile communication device and associated POS application that in turn then transmits the transaction and card data to the payment servers and processors like a POS.

In another aspect, there is provided a method for a magnetic stripe card capture, storage and transmission device comprising: initializing and unlocking a magnetic stripe transporter (MST) upon receiving a proper authentication of a mobile wallet account; capturing magnetic stripe card data;

storing the magnetic stripe card data encrypted into a memory means of the MST; decrypting the encrypted magnetic stripe card data; and transmitting the decrypted magnetic stripe card data to a merchant point of sale (POS) or other magnetic stripe reader (MSR) device.

In ~~another aspect~~ an embodiment, the disclosure features a method for securely capturing, storing and transmitting magnetic stripe card data. A magnetic stripe transporter (MST) dongle includes a microprocessor, a driver configured to send current and signal to an inductor that creates varying magnetic fields, a battery, a charging circuit, a magnetic stripe card reader, a memory means or secure element, an audio jack interface, and a communication interface (for example, a USB interface, a 30pin or 9pin Apple interface, and a Bluetooth interface, etc.) working in conjunction with a consumer mobile communication device and a wallet application or mobile application for capturing magnetic stripe card data, storing the card data securely, and transmitting such data to merchants' point of sale (POS) terminals, checkout systems, or other MSR devices, in a physical and virtual environment.

The systems and methods disclosed herein provide a number of advantages, for example, the magnetic card track data can be captured and stored in the MST's secure memory means directly by the user or from the server