CLAIMS

What is claimed is:

1. An apparatus, comprising:

a display device;

a processor circuit, wherein the processor circuit is operable to present a graphical user interface on the display device;

a transceiver coupled to the processor circuit and operable to communicate with external devices;

a card reader circuit coupled to the processor circuit, and be operable to emit and receive signals within a signal field; and

a memory coupled to the processor circuit and operable to store an unlock-lock application having instructions which when executed by the processor circuit, causes the processor circuit to:

receive, via the card reader circuit, encrypted data from a contactless card, wherein the contactless card is locked to prevent use in a card present transaction and the encrypted data is generated based on a cryptographic algorithm and a diversified key;

cause the encrypted data to be forwarded to an authentication server to authenticate and unlock the contactless card;

receive an unlock indication that the contactless card has been unlocked enabling the contactless card for use in a card present transaction, wherein the unlock indication indicates the contactless card has been authenticated;

identify user preferences for uses of the contactless card in payment card transactions when unlocked; and

present a representation of the identified user preferences of the contactless card in the graphical user interface presented on the display device.

2. The apparatus of claim 1, wherein the memory operable to store the instructions which when executed by the processor circuit, cause the processor circuit to:

drive a display device to present a graphical user interface with a plurality of user preferences for setting a limiting use of the contactless card.

3. The apparatus of claim 1, the memory operable to store the instructions which when executed by the processor circuit, cause the processor circuit to:

present, via a graphical user interface, a plurality of limiting uses of the contactless card for a selection of a user preference that sets a limiting use of the contactless card.

4. The apparatus of claim 3, wherein the plurality of limiting uses includes one or more of:

a geographical location, a geo-fenced area, a merchant name, a price threshold, a time threshold, a day of a week, a time range within a day, a zip code, an area code; a merchant category, or a product category.

5. The apparatus of claim 3, the memory operable to store the instructions which when executed by the processor circuit, cause the processor circuit to:

receive, via a graphical user interface, a selection of a user preference that sets the limiting use of the contactless card.

6. The apparatus of claim 1, further comprising:

a location application operable to determine a location of the apparatus, wherein the memory is operable to store a plurality of user preference settings of the unlock-lock application and further instructions which when executed by the processor circuit, cause the processor circuit, to:

obtain a location preference setting from the plurality of user preference settings stored in the memory;

obtain location data from the location application executing on the processor circuit;

send the obtained location preference setting and the obtained location data to an unlock-lock server;

receive a list of merchants satisfying the obtained location preference setting based on the obtained location data; and

present the list of merchants in the graphical user interface on the display device.

7. The apparatus of claim 1, further comprising:

an output device coupled to the processor circuit and operable to generate a sound or a vibration;

a location application operable to determine a location of the apparatus and executable by the processor, wherein the memory is operable to store a plurality of user preference settings of the unlock-lock application and further instructions which when executed by the processor circuit, cause the processor circuit, to:

determine, based on location provided by the location application, a card unlock action is required to meet an imminent a card present transaction; and

generate, via the output device or the display device, a notification indicating the card unlock action is required.

8. The apparatus of claim 1, wherein the memory is operable to store a plurality of user preference settings of the unlock-lock application and further instructions which when executed by the processor circuit, cause the processor circuit, to:

present on the graphical user interface a menu of user preference settings for selection by a user, wherein the user preference settings are permitted uses the contactless card, when unlocked, in card present transactions;

receive an indication of a selection of one or more of the user preference settings presented in the menu; and

provide, to a server operable to manage user preferences of the unlock-lock application, user preference settings indicated as selected for permitted use of the unlocked contactless card in card present transactions.

9. The apparatus of claim 8, wherein the indication of the selection of one or more of the user preference settings includes:

a time range selection, wherein the time range selection identifies a time range during which the contactless card remains unlocked;

a radius selection, wherein the radius selection identifies a distance from a user's location in which the contactless is permitted to be used in a card-present transaction; or

a merchant code selection, wherein the merchant code selection identifies a category of goods or services provided by merchants assign a merchant code selected via the merchant code selection.

10. A system, comprising:

a contactless card, including a processor, a memory, and a communications interface operable to support at least one of near field communication, Bluetooth, or Wi-Fi communication protocol;

wherein the processor is operable to:

generate encrypted data using a cryptographic algorithm and a diversified key; and

emit via the communications interface, a signal containing encrypted data usable to authenticate the contactless card, and

a mobile device including a mobile device processor, a mobile device memory, a transceiver, a display device, and a card reader circuit, wherein:

the card reader circuit is operable to communicate with the contactless card via the communications interface, and

the mobile device memory stores programming code including an instance of an unlock-lock application, wherein the programming code when executed by the mobile device processor causes the mobile device processor to perform functions, including functions to:

receive from the card reader circuit the signal containing encrypted data emitted from contactless card;

forward the encrypted data, via the transceiver, for authentication and unlocking of the contactless card;

receive an unlock indication indicating the contactless card is unlocked;

identify user preferences that allow limited uses of the contactless card when unlocked for use in card-present transactions; and

present a representation of the identified user preferences of the contactless card, when unlocked, in a graphical user interface presented on the display device.

11. The system of claim 10, wherein the processor of the contactless card is further operable to:

generate the diversified key using on a master key and a counter value stored in the memory of the contactless card, wherein the counter value is a count of one of: a number of times the contactless card is used in a card present transaction or a number of times the contactless card is authenticated.

12. The system of claim 10, further comprising:

an authentication server coupled to a memory storing a cryptographic algorithm and the diversified key, the authentication server operable to execute programming code, wherein the server when executing the programming code is operable to:

receive the encrypted data from the mobile device, wherein the mobile device is authorized to communicate with the authentication server;

decrypt the encrypted data;

verify the decrypted data to authenticate the contactless card;

generate, based on a verification of the decrypted data, the unlock indication that the contactless card is unlocked; and

output the unlock indication to the mobile device.

13. The system of claim 10, further comprising:

a unlock-lock server hosting an instance of an unlock-lock application operable to manage user preferences of the unlock-lock application, wherein the user preferences are provided by the instance of the unlock-lock application stored in the memory of the mobile device is executed by the mobile device processor; and

a location application stored in the mobile device memory and operable to determine a location of the mobile device, wherein the mobile device processor is operable to:

determine a location of the mobile device; and

provide the determined location of the mobile device to the unlock-lock server; and

wherein the unlock-lock server is operable to:

receive, from the mobile device, user preference settings indicated as selected for permitted uses of the contactless card in card present transactions, when the contactless card is unlocked;

obtain the determined location of the mobile device from the mobile device;

retrieve a location setting from the user preference settings, wherein the location setting is a radius from a predetermined location;

access a merchant location service based on the user preference settings;

obtain from the merchant location service a list of merchants based on the retrieved location setting and the determined location;

generate a list of merchants based on the retrieved location setting and the determined location of the mobile device; and

forward the generated list of merchants to the mobile device.

14. The system of claim 10, further comprising:

a payment account component operable to authorize purchases involving the contactless card, wherein the payment account component is operable to maintain a maximum transaction amount threshold for use in authorizing or denying purchases involving the contactless card; and

an unlock-lock server operable to manage user preferences of the unlock-lock application executing on the mobile device processor, wherein the unlock-lock server is operable to:

receive, from the mobile device, user preference settings indicated as selected, permitted uses of the unlocked contactless card in card present transactions;

derive a maximum transaction amount threshold from the user preference settings;

forward, to the payment account component, a maximum transaction amount threshold derived from the user preference settings; and

forward the maximum transaction amount threshold to the mobile device for presentation in the graphical user interface.

15. The system of claim 10, wherein the contactless card when unauthenticated is locked which makes the contactless card unusable in a card present transaction and authenticated indicates the contactless card is valid and unlocked which makes that contactless card usable in a card present transaction.

16. A non-transitory computer-readable storage medium having computer-readable program code embodied therewith, wherein the computer-readable program code is executable by a processor circuit to cause the processor circuit to:

receive, via a card reader circuit, encrypted data from a communications interface of a contactless card, wherein the contactless card is locked from being used in a card present transaction and the encrypted data is generated based on a cryptographic algorithm and a diversified key;

forward the encrypted data to an authentication server to enable the contactless card to be unlocked;

receive an unlock indication that the contactless card has been unlocked for use in a card present transaction, wherein the unlock indication is verification of the encrypted data;

identify a permitted contactless card use restriction of a capability of the contactless card to complete a payment card transaction; and

present an unlocked-for-use status indication and a representation of the identified permitted contactless card use restriction in a graphical user interface presented on a display device.

17. The non-transitory computer-readable storage medium of claim 16, further comprising computer-readable program code executable by the processor circuit to cause the processor circuit to:

drive a display device to present a graphical user interface with a plurality of user preferences for setting the limiting use of the contactless card.

18. The non-transitory computer-readable storage medium of claim 16, further comprising computer-readable program code executable by the processor circuit to cause the processor circuit to:

present, via a graphical user interface, a plurality of limiting uses of the contactless card for selection user preferences for the contactless card when unlocked, wherein the

plurality of limiting uses includes one or more of: a geographical location, a geo-fenced area, a merchant name, a price threshold, a time threshold, a day of a week, a time range within a day, a zip code, an area code; a merchant category, or a product category;

receive, via the graphical user interface, a selection of at least one of the plurality of limiting uses; and

store the selection as a user preference of the contactless card, when unlocked.

19. The non-transitory computer-readable storage medium of claim 16, further comprising computer-readable program code executable by the processor circuit to cause the processor circuit to:

obtain a location preference setting from a plurality of user preference settings;

obtain, from a location application, location data, wherein the location data includes a position, a timestamp and a velocity;

send the obtained location preference setting and the obtained location data to an unlock-lock server;

receive a list of merchants satisfying the obtained location preference setting based on the obtained location data; and

present the list of merchants in the graphical user interface on the display device.

20. The non-transitory computer-readable storage medium of claim 19, further comprising computer-readable program code executable by the processor circuit to cause the processor circuit to:

determine, based on the location data provided by the location application, a card unlock action is required to meet an imminent a card present transaction;

generate instructions to produce a notification indicating the card unlock action is required; and

output a notification actuation signal operable to actuate an output device or a display device according to the generated instructions.