



Cardstock Inventory /Distribution Procedures

SCDMV Credential Upgrade Project

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Revision History

Identify document changes.

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Contents

Revision History	2
Cardstock Inventory/Distribution Analysis	5
1.1 Overview	5
1.2 Business Needs	5
1.3 Considerations	6
Controlled Inventory & Distribution Analysis	7
Controlled Inventory.....	7
Unique Card Identifier:.....	7
Cost (Controlled Inventory).....	7
UCI – Positive Aspects	7
UCI – Negative Aspects	8
1.4 Method of Distribution to Field Offices	8
Method One: (Via SCDMV HQ).....	8
Method Two: (Direct Field)	8
Distribution Method Analysis	9
Method One (Via SCDMV HQ) Positive Aspects	9
Invoicing Accuracy:.....	9
Inventory Control:	9
Method One (Via SCDMV HQ) Negative Aspects:.....	9
Method Two (Direct Field) Positive Aspects	10
Method Two (Direct Field) Negative Aspects	10
Inventory Control Requirements.....	12
Ordering, Shipping & Receiving of cards.....	12
Phoenix Inventory Control Application (PICA)	13
New Vendor Order (580)	13
Order Number.....	13
New Vendor Order Screen	14
Receive Vendor Order (582)	15
PICA Data Entry Requirements.....	16
It is feasible that the existing field entry provisions for PICA can support the addition of the DL/ID product with minimal alteration.	16
PICA Database Requirements	17
User Interface Screen Modification	18
Receiving Cardstock Shipments.....	19
Cardstock distribution to Field Offices	19
Cardstock Receiving at Field Offices	19
SCDMV Field Office Operations	20
Storage of Cards.....	20

Daily Operations	20
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Cardstock Inventory/Distribution Analysis

1.1 Overview

In an effort to improve the security of the SCDMV credential issuance process, the SCDMV have issued a solicitation for new improved card stock. The card stock will be pre-printed at the manufacturer with certain security features. The cards may¹ be printed at time of manufacturing with a unique number or linear barcode. This marking would be unique for each card thereby providing a Unique Card Identifier for inventory and card life cycle management purposes. The tender document is identified as follows:

Solicitation Number: 5400001024

Description: Card Stock for DL/ID credentials

Submission Ending Date/Time: 08/17/2009 14:30:00

Within the published tender there exist options for the following goods and services:

1. Method of delivery to SCDMV (directly to individual SCDMV offices or bulk to SCDMV HQ)
2. The inclusion on the card of a Unique Card Identifier

In preparation for the evaluation and award of the tender the SCDMV must consider certain risks, impacts and functional requirements, and decide on how these options, if any, shall be applied to the Credential Upgrade Project. In a parallel effort for the Credential Upgrade Project, the SCDMV Security Plan is recommending that the new cardstock be supported by a secure distribution and inventory control procedure. This document shall provide an analysis of the required changes to support this recommendation.

1.2 Business Needs

The new secure pre-printed card stock requires **controlled distribution** to the 69 SCDMV field offices. This delivery must be confirmed and the receipt of the received cards reconciled against the number of cards shipped.

Contractor, SCDMV personnel and others that may have access to cardstock must recognize these items to be secure **controlled inventory**, which if misappropriated, will be easily identified.

¹ Should the SCDMV opt to forgo the Unique Card Identifier, then certain aspects of the distribution process would differ. For example, storage and distribution would be in a "per box" mode as opposed to a per card mode.

Missing cards at any point in either the Contractor or SCDMV operations shall be quickly identified and established mitigating strategies and contingency plans implemented.

1.3 Considerations

1. The SCDMV must determine whether to request the pending manufacturer of the new secure cardstock to ship direct from their facility to each of the 69 SCDMV locations, or ship bulk to SCDMV HQ in Blythewood and then SCDMV warehouse personnel will ship quantities of cardstock to each location.
2. In either ship method cards should not be “hoarded” at any point of consumption as this increases theft opportunity. SCDMV offices should be shipped cards regularly in batches as determined by historical use and issuance prediction methods. Quantities determined may need updated regularly due to policy and other demographic changes.
3. Cost may impact the preferred method of field office distribution. In addition to cost, SCDMV staffing and facilities resources may impact the method of distribution determined most feasible.
4. Changes necessary to support the addition of the cardstock to the Phoenix inventory control system need development and testing.
5. Procedures for receiving and handling cardstock supplies for SCDMV operations need to be developed and personnel trained.

Controlled Inventory & Distribution Analysis

In this section we will attempt to convey areas of concern that require deliberation in determining the best methods of Controlled Inventory and Controlled Distribution.

Controlled Inventory

Unique Card Identifier:

In order to implement a controlled inventory for the DL/ID cardstock each card must be uniquely marked and identifiable as such. Currently requested as an option in the aforementioned SCDMV Tender #5400001024, the Unique Card Identifier requirement is basically a necessity if any controlled inventory of future cardstock is to be implemented.

Without a Unique Card Identifier this risk is almost impossible to prevent. Similar to current cards, new cards will be easily pilfered with little or no detection means. Cards will not be regarded by employees as articles of value.

Cards may be misappropriated with no evidence and therefore no mitigating or remedial methods will be enacted.

Cards that include an UCI will require a supporting inventory and distribution program. This program will impact operations in additional workload and resources to develop and support the changes necessary.

Cost (Controlled Inventory)

In relation to current costs for card inventory measures this may be regarded as High.

Additional cost will be incurred to place a unique identifier on the card during manufacturing. This amount may be in the range of \$0.02 - \$0.05 per card.

Additional costs will be incurred for all aspects of storage, shipping and distribution that now require the recording of any movement of cards.

Modifications to the existing Phoenix inventory control application will be required to add "cardstock" as a product and defining the input parameters.

SCDMV will spend more time inputting cardstock inventory information and performing reconciliation of cardstock quantities.

UCI – Positive Aspects

There are many positive aspects to uniquely identifying each card:

Inventory Control

Card lifecycle management

Law enforcement recognition

Theft deterrent

Contributing security feature (level 1 & 2)

Customer security (identity theft prevention)

UCI – Negative Aspects

Additional cost for card

Increased workload in all aspects of shipping & handling

Decreased real estate on card

1.4 Method of Distribution to Field Offices

In the SCDMV Tender #5400001024 proponents are requested to provide pricing for shipping finished DL/ID cardstock to the SCDMV via optional methods:

Method One: (Via SCDMV HQ)

1. Initial shipment to SCDMV HQ in Blythewood of 150,000 cards.
2. Continuing quarterly batch shipments of 150,000 to SCDMV HQ in Blythewood, SC for a period of five (5) years.

Method Two: (Direct Field)

1. Initial shipment to each of the 69 field office locations throughout SC. Batch quantities will be 1000, 2000, or 3000 cards. Specific quantities for each location shall be provided to the successful proponent. Addresses for each office are available as a written request.
2. Continuing quarterly shipments to each office for a period of five (5) years.

It is likely that Method Two shall be proposed by the potential contractor at a higher cost than that of Method One due to the additional Contractor requirements for shipping and handling. However

we should consider the differences in determining the best possible method for SCDMV business needs.

Distribution Method Analysis

The following section intends to provide information relating to the primary benefits (positive aspect) and risks (negative aspect) of the two methods of cardstock distribution under current consideration. It is intended to assist the SCDMV to select the option that will determine the development of areas of the Security Plan concerning Controlled Distribution and Controlled Inventory.

Method One (Via SCDMV HQ) Positive Aspects

Invoicing Accuracy: SCDMV will be able to determine exactly the amounts of cards received and shipped by the contractor for consumption. Since the Contractor will be billing on a cost-per-card model, SCDMV can ensure that they are billed only for cards which they actually receive.

Inventory Control: In addition to preventing field offices from overstocking on cards, SCDMV will be able to push cards to field offices in a just-in-time (JIT) method based upon available statistics of cards issued. Over time an accurate JIT matrix can be developed for each field office monthly consumption rates.

Possibly the single biggest positive aspect to this approach is the ability to input a ship-to-field-office record in the Phoenix Inventory Control application. Similar to the current method used to ship vanity plates or titles, where each plate or title becomes a single record entry, utilizing a cardstock distribution push from SCDMV HQ will create this record for each and every card distributed to the field. This is a critical component of the overall secure inventory objective. The alternate method would be to have field office managers enter this information for each shipment received direct from the Contractor or allow the Contractor access via remote to the Phoenix Inventory Control application.

Should a discrepancy occur between the cardstock quantity shipped by the Contractor and the amount actually received, SCDMV HQ warehouse staff can deal with the discrepancy. Similarly, any discrepancy in quantity for a shipment to a field office may be diagnosed using available information from the Phoenix inventory control application.

Method One (Via SCDMV HQ) Negative Aspects:

Increased SCDMV Resources: Having the cardstock shipped to SCDMV HQ for storage prior to distribution shall incur an increase in activity for SCDMV personnel. The additional work will

involve receiving cardstock from the manufacturer and field office shipment preparation. Other tasks such as inputting the cardstock information into the Inventory Control application will be shifted to HQ rather than field office personnel.

Increased SCDMV resources for this option may include the shipping of sensitive items (titles, cardstock, decals etc.) in SCDMV vehicles operated by SCDMV staff. The alternative is the continued use of contracted couriers (i.e. Fed Ex, UPS etc.) which potentially may cost more and provides a higher risk of misappropriation.

Improved Secure Storage: Although this should not be seen as a “negative” impact, the SCDMV may wish to improve the current warehouse facilities used for storing secure items such as titles and decals. It is likely that this same area will be used for storage of the new cardstock. The area chosen for storing the secure cardstock should be climate controlled and safeguarded with alarms, cameras and other theft deterrent provisions. This area should have restricted access and be locked at all times when not occupied.

Method Two (Direct Field) Positive Aspects

Reducing Warehouse Dependency: The main benefit of this approach is the elimination of SCDMV HQ warehousing functions associated with the cardstock. This is primarily a resource reduction benefit.

Reduced shipping from HQ to field offices: Cardstock will come direct from the Contractor. SCDMV may incur less shipping charges (This is offset by increased shipping charges that will be built into the Contractor cost for the provision of the cardstock direct to field offices.)

Less human handling: The elimination of the SCDMV HQ warehousing middleman further reduces the number of human beings having access to cardstock. (However this is offset since the number of transport (courier) personnel handling individual shipments from the Contractor to each field office will have increased to approximately 60 plus persons)

Method Two (Direct Field) Negative Aspects

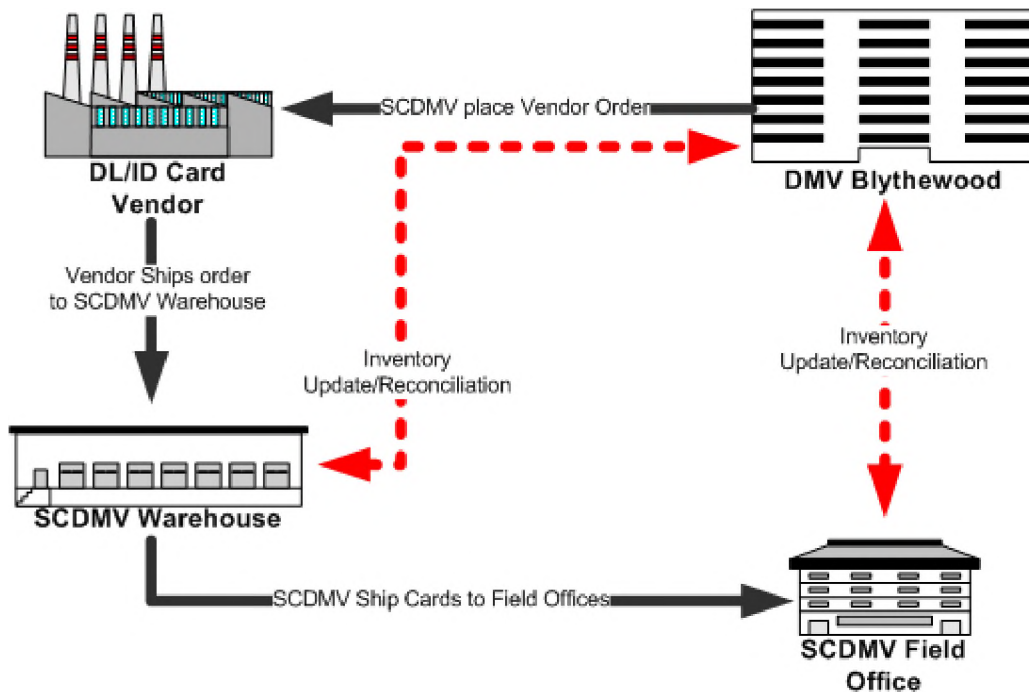
Inventory Control: The ability to input each card as an individual record will need to be performed at the field office by management staff. Field office personnel will need to perform more warehousing (receiving) functions distracting them from other duties.

Should a discrepancy in the shipped amount versus the received amount occur, field staff will need to deal direct with the Contractor shippers with only the receiving paperwork as information.

External Access to SCDMV IT Systems: To fully implement a Contractor direct to field office shipping environment the SCDMV must allow the Contractor access to the Phoenix Inventory Control application such that each field office shipment may be tracked and reconciled. Since the Phoenix inventory control application will be used to identify cards lost/stolen/missing, cards and their UCI must be entered and traceable on the inventory control application system when they are first received by the SCDMV.

Inventory Control Requirements

A secure DL/ID program requires that every aspect of the program provide adequate security of secure components to ensure no weak links are exploited. SCDMV security requirements for the new DL/ID cardstock will extend from the point of ordering until the issuance of the personalized card to the customer.



Ordering, Shipping & Receiving of cards

The following functional requirements within the current Phoenix Inventory Control application are required for the ordering², shipping and receiving of cards either to or from an SCDMV facility:

² Ordering functions by the SCDMV will initially be a predetermined quantity of cardstock. This is due to the contractual obligations that will result from the tender where a regular shipment of a specific quantity of cards was requested. SCDMV however should still enter the order every 3 months for the specified quantity until actual use data permits for accurate adjustment.

Phoenix Inventory Control Application (PICA)

New Vendor Order (580)

Every three (3) months SCDMV shall place a PICA Vendor Order for a shipment of secure cardstock. Currently this amount is estimated at 150,000 cards.

To support this function PICA will require an additional Product ID added to the current menu:

Product Type: ID1 (3 characters) (Preprinted cardstock)

Phoenix Workplace for SHUMPERT, DONNAC at Office 0072 - DMV Whse. and Supply

Order Information

Order Number: [] Order Status: [UND] Sending Office: [0072] Receiving Office: [0001]

Order Line Item List

Line Item Number	Product Type	Start Control Num	End Control Num
<input checked="" type="checkbox"/> 1	ID1	SC00000001	SC00150000

Line Item Information

Line Item Number: 1 Last Control Number: [] Retrieve LCN

Product Type: ID1 Starting Control Number: SC00000001

Plate Class: [] Search Ending Control Number: SC00150000

Product Year: [] Order Quantity: 150,000

Number Of Packages: 300

Requested Delivery Date: 08/30/2009

Comment: []

Clear Add Modify Delete

Status Actions:

☒ Complete

☐ Hold

☒ Print Bill of Lading

NOTE: You need to contact HQ or the Warehouse prior to returning stock to them to ensure that you should not send it to another Branch office instead.

Cancel << Back Next >> Finished New Inventory Office Order

Transaction Menu New Office Order

Once the operator has entered the Vendor Order information the Work Order is created and a unique number assigned by the system.

Phoenix Workplace for SHUMPERT_DONNAC at Office 0072 - DMV Whse and Supply

Workplace View

Close

1/1

Page: 1

Time: 03:20 PM

SOUTH CAROLINA DEPARTMENT OF MOTOR VEHICLES
VOCES-OR-SEET

Destination Office	Order No	Order Status	Estimate Date	Order Type	Requisition No	Vendor Office
0072	32883	ON	2011/03/20/09	UNE	011843	0000

Quantity	Product Type	Product	Product Description	Start Date	End Date	Expiration	Requisition
100	PLATE	1	REGULAR PLATE	2011/01/01	2012/01/01	01	00000000

Transaction Menu New Vendor Order

New Vendor Order Screen

Receive Vendor Order (582)

When cards are received by the SCDMV from the Vendor, SCDMV shall enter this information into PICA. Receive Vendor Order is used to load the product numbers in to the Phoenix Inventory System. If the line item is in excess of 500 items (which will be the case for all DL/ID orders) or the entire shipment is over 1000 items, the process of inserting the rows in the Product table becomes an overnight batch process. If the volume does not exceed those quantities, the process takes place once the user receives the order.

Requisition Number	Order Number	Order Type	Order Status/Description
<input type="checkbox"/> 70109	32830	VND	DND
<input type="checkbox"/> 70109	32831	VND	DND
<input type="checkbox"/> 70109	32832	VND	DND
<input type="checkbox"/> 70109	32834	VND	DND
<input type="checkbox"/> 70109	32835	VND	DND
<input type="checkbox"/> 70109	32836	VND	DND
<input type="checkbox"/> 70109	32837	VND	DND
<input type="checkbox"/> 70209	32872	VND	DND
<input type="checkbox"/> 70209	32874	VND	DND
<input checked="" type="checkbox"/> 121863	32883	VND	DND

Receive Vendor Order Screen 1 of 2

The PICA will need to generate a separate row for each DL/ID card within the order. Therefore the Receive Vendor Order screen shall require the entry of two key fields:

Shipment Starting UCI

Shipment Ending UCI

The existing screens permit the entry of a Starting Control Number and an Ending Control Number. These fields may potentially work to generate an individual record (row) for each DL/ID card by entering the starting UCI and ending UCI in lieu of the control numbers.

Phoenix Workplace for SHUMPERT, DONNAC at Office 0072 - DMV Whse and Supply

Order Information:
Order Number: 32003 Order Status: CND Sending Office: 5555 Receiving Office: 0072

Line Item Information:
Line Item Number: 1 Envelope Required: M
Product Type: PLT Starting Control Number: ZZA101
Plate Class: RP1 Ending Control Number: ZZA200
Product Year: 0 Order Quantity: 100

Receive Item List

Starting Control Number	Ending Control Number	Date Received

Receive Item Information:
Starting Control Number: ZZA101
Ending Control Number: ZZA200
Quantity Received: 100

Buttons: Clear, Add, Another Order Line Item

Navigation: Cancel, << Back, Next >>, Finished

Transaction Menu: Receive Vendor Order

Receive Vendor Order Screen 2 of 2

PICA Data Entry Requirements

It is feasible that the existing field entry provisions for PICA can support the addition of the DL/ID product with minimal alteration.

The addition of the DL/ID as a Product Code will be required.

In the Inv. Control system, and during the Receive Order process, the start and end Control Number field that is entered is an alphanumeric string. The sample examined was ZZA101; ZZA200.

It appears that if the difference in these two values exceeds 500 that individual control numbers (rows) are generated automatically by an overnight batch process? Therefore if the start control number was ZZA101 and the end control number was ZZA502 those individual rows would be

generated for each sequential number (ZZA101, ZZA102, ZZA103.....ZZA502) between the two values.

Therefore we may use this same logic for receiving the DL/ID card shipments. If we received a single order of cards that totaled 50,000 in quantity, we would enter the start card number (start control number) and the ending card number (end control number) and the existing system & processes generate an individual record for all the numbers (cards) in between.

However, if the current Control Number field is masked (AAA###) we may need to create two new dB fields for the Unique Card Identifier (10 digit number) and use the same logic to generate a unique record for each card.

PICA Database Requirements

Minimal modifications to the dB used for current inventory control will be required. The key field that needs to be captured and stored for the DL/ID card inventory is the UCI number, of which the current control number field may suffice.

Field	Field Type	Field Length
Shipment Starting UCI	Alpha numeric	10 characters
Shipment Ending UCI	Alpha numeric	10 characters

Current dB fields used for Order Number, Quantity, and Date etc. may be utilized in their current format.

User Interface Screen Modification

The User Interface Screen used for all stages of Item ordering, receiving and further distribution may be updated to reflect the changes required for the addition of DL/ID cardstock as a product however this is not a necessity. For example, following selection of ID1 as the product code the screen prompts reflect the specifics of the product being processed, secondary fields such as Plate Class and Product Year would then not be applicable to the DL/ID product.

Phoenix Workplace for SHUMPERT_DONNAC at Office 0072 - DMV Whse and Supply

Workplace View

Order Information

Order Number: 32883 Order Status: ONO Sending Office: 5555 Receiving Office: 0072

Line Item Information

Line Item Number: 1 Starting UCI: SC00000001
Product Type: ID1 Ending UCI: SC00050000
Order Quantity: 50,000

Receive Item List

Start Unique Card Ident	End Unique Card Ident	Date Received

Receive Item Information

Starting UCI: SC00000001 Ending UCI: SC00050000 Quantity Received: 50,000

Clear Add ☐ Another Order Line Item

Cancel << Back Next >> Finished Receive Vendor Order

Transaction Menu Receive Vendor Order

Receiving Cardstock Shipments

Provides a data entry line that permits the entry of the starting UCI and ending UCI for the shipment being processed. The application shall then, or later in batch mode, create an individual entry line (record) for each UCI within the starting and ending sequence.

Record should contain:

1. Date of receipt
2. Card UCI entry (Start & ending numbers of cardstock UCI received)
3. SCDMV personnel receiving cards
4. Location of cardstock (l.e. Warehouse Cage, shelf XXX)

Cardstock distribution to Field Offices

Provides a data entry line that permits the entry of the starting UCI and ending UCI for the shipment being processed. The application shall then, or later in batch mode, create an individual entry line (record) for each UCI within the starting and ending sequence.

Record should contain:

1. Date of shipment
2. Destination
3. Start & end of UCI shipped
4. SCDMV personnel verifying ship to count.

Cardstock Receiving at Field Offices

Provides a data entry line that permits the entry of the starting UCI and ending UCI for the shipment being processed. The application shall then, or later in batch mode, create an individual entry line (record) for each UCI within the starting and ending sequence.

Record should contain:

1. Date of receipt
2. Confirmation of cardstock count
3. SCDMV personnel receiving cardstock

SCDMV Field Office Operations

Storage of Cards

1. Cards shall be kept in the secure storage room while not in use.
2. Cards shall be removed for operations using the lowest UCI card and in sequential order.
3. Cards deemed not suitable for production use shall be stored in the secure room separate from other cards pending return to SCDMV HQ (within 15 days).

Daily Operations

1. Cards shall be removed for daily production ONLY by the Manager or other authorized SCDMV designee.
2. The starting UCI and ending UCI of cards removed must be recorded in the field office secure item log (TBD – whether online or a written log)
3. Cards removed for operation must immediately be placed into DLIPC printer input hoppers in lowest sequential order. Cards not placed into input hoppers must be IMMEDIATELY returned to the secure storage room and noted in secure item log.

Vendor Requirements

DL/ID Card Shipping

Batches of DL/ID “blank” cards manufactured for shipment to SCDMV from the Contractor shall be packaged such that the cards within each package are sequentially UCI numbered, with the start and ending numbers visible on the outside of the package. The contents of the package shall be verified via a Contractor-authorized signature or similar method and provided on the outside of the package. All boxes or packages of cards shipped by the Contractor for use by the SCDMV shall be sealed such that any unauthorized opening of a package prior to receiving is easily detectable.

Other Information

Receiving of DL/ID card stock should be a relatively simple task for SCDMV warehouse using existing practices.

We would strongly urge the expanded use of UPC barcode technology to improve efficiency of cardstock handling and to minimize user data entry mistakes that can cause considerable wasted time and resources to reconcile.