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dsiPDCX

Programming Interface Specification

V01.00

Intended Use Notice

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Revision History

00.01	06 Dec 2010	• Preliminary Draft Release
00.02	09 Dec 2010	• Incorporated <TranType> and <PadType> tags for 'SecureDeviceInit' Admin transaction.
00.03	10 Dec 2010	• Incorporated advice on Check and EBT transaction capability
01.00	26 May 2011	• Formal Release • Added configuration and data flow information for VFI Vx810 support • Added new values for <PadType> and <SecureDevice>

Table Of Contents

1.0 Introduction

dsiPDCX is a Windows ActiveX control that provides POS applications with the ability to process an extensive assortment of electronic payments in a multi-tiered client-server architecture without handling sensitive cardholder data (i.e. account number, expiration date, CVV/CID, PIN). Applications integrated with dsiPDCX act as a client to any of Datacap's NETePay payment servers to process payments.

dsiPDCX can directly control either a Datacap PDC (Peripheral Device Controller) or a VeriFone Vx810 PIN pad (with XPI firmware) attached to a PC serial port for magnetic stripe entry of cardholder data otside of a POS application.

The PDC incorporates a magnetic stripe reader (MSR) and expansion port(s) for other payment devices such as a VeriFone 1000SE PIN pad. dsiPDCX manages all interaction with the PDC to get card stripe or PIN input so the POS application is relieved from handling any sensitive cardholder data. If MSR input from the PDC is not possible (damaged stripe, etc), then dsiPDCX can directly manage PC keyboard input of cardholder data outside of the POS application utilizing its own modal input window.

The VeriFone Vx810 PIN pad (running XPI firmware) can alternatively be connected to a PC serial port and controlled directly by dsiPDCX for MSR input of cardholder data. When a Vx810 is utilized, a PDC is not used. If MSR input from the Vx810 MSR is not possible (damaged stripe, etc.), the Vx810 will be used to prompt for manual input of cardholder data.

dsiPDCX provides a mode of operation that can facilitate an 'out of scope' position from a PCI-DSC (Payment Card Industry Data Security Council) PA-DSS (Payment Application – Data Security Standard) perspective for a POS application. To be completely out of scope, a POS application must not handle cardholder data in any manner that might subject the application to PA-DSS compliance.

The dsiPDCX software is designed to communicate exclusively with Datacap's NETePay server products using Internet Protocol (IP). Messages exchanged between the dsiPDCX and a NETePay server are encrypted for secure transmission over open networks (such as the Internet). This secure communications architecture provides the flexibility to configure systems using LAN and/or WAN networks.

Datacap servers are available for in-store or enterprise configurations and are designed to communicate with specific payment systems providers. Servers are available with a range of communications to the payment systems processor, including Internet, Frame Relay, Wireless, and Dial. A single dsiPDCX integration allows a systems vendor to offer a variety of payment processing access methods that most suit their client's performance and budget needs.

dsiPDCX incorporates automatic failover support for up to 10 Datacap NETePay payment servers assuring high availability. Servers can provide redundant connections utilizing different connection methods to the processing host transparently. Multiple Datacap payment servers can be simultaneously supported by dsiPDCX for different payment processing hosts; for example, one server using processor for credit cards and another server using a different processor for check processing.

dsiPDCX does not use any storage on the client machine; the Datacap NETePay server software provides consolidated transaction data storage, logging and data management functions. All Datacap NETePay products have been assessed and are compliant with PA-DSS 1.2 requirements.

The dsiPDCX control uses XML formatted requests and responses for transaction processing requests.

This dsiPDCX interface document must be used in conjunction with Datacap's DSIClientX Programming Interface Specification.

DSIClientX is another version of the ActiveX control for NETePay access that allows the POS application to manage cardholder data input directly and supplying that data to the ActiveX control to be sent securely to NETePay for processing. dsiPDCX manages all cardholder data input so that it is never exposed to the POS application. The basic transaction definitions and capabilities used by dsiPDCX are presented in the document DSIClientX Programming Interface Specification V4.24 (or later) and a POS developer should employ that document for basic development planning. dsiPDCX performs all the transaction functions that are available in the standard DSIClientX but has extensions and process flow differences to manage cardholder input independently of the POS application.

1.1 System Diagrams and Card Data Flow Using dsiPDCX

The dsiPDCX component is typically installed on the PC-POS workstation along with the POS application. The POS application issues payment processing requests in XML format to dsiPDCX. If the payment processing request requires cardholder information, such as a magnetic stripe entry, dsiPDCX will activate the MSR on the PDC or Vx810 and wait for stripe input with no further intervention from the POS application. If a stripe is not successfully read within 20 seconds, dsiPDCX returns a timeout error code to the POS application which should issue the payment request again.

If the stripe on the card is damaged or otherwise unreadable by the MSR on the PDC or Vx810, the POS application can request that dsiPDCX get the account input manually.

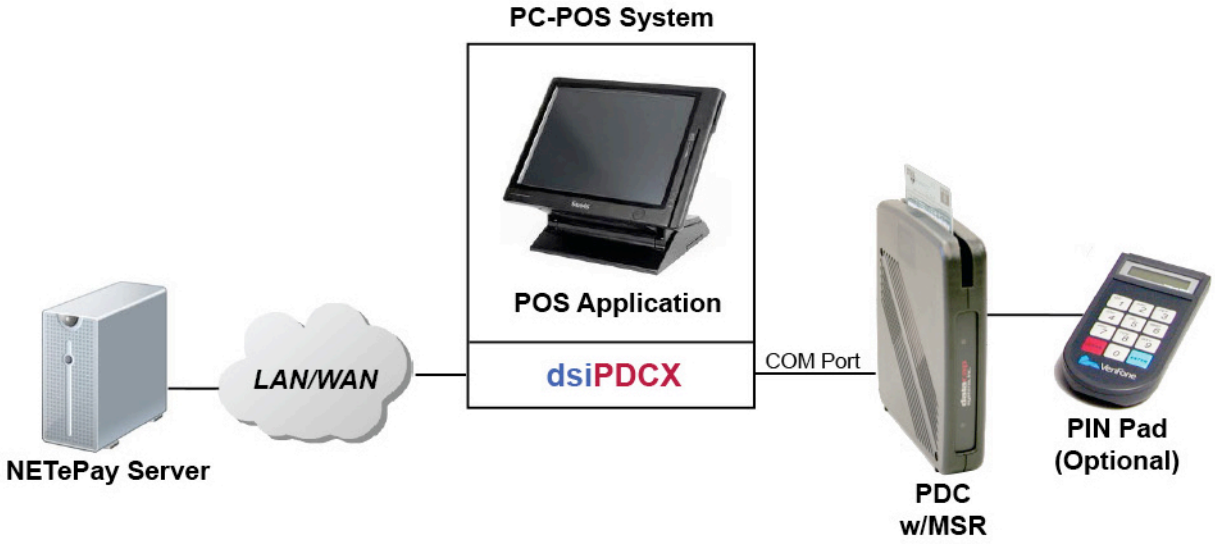
When the POS instructs dsiPDCX to get manual input and a PDC is being used, dsiPDCX will present an on-screen modal dialog box to the POS operator to enter the card account number, expiration date, CVV/CVD, address and zip code.

When the POS instructs dsiPDCX to get manual input and a Vx810 is being used, dsiPDCX will issues commands to the Vx810 so that it will prompt the operator to enter the card account number, expiration date, CVV/CVD, address and zip code on the pin pad.

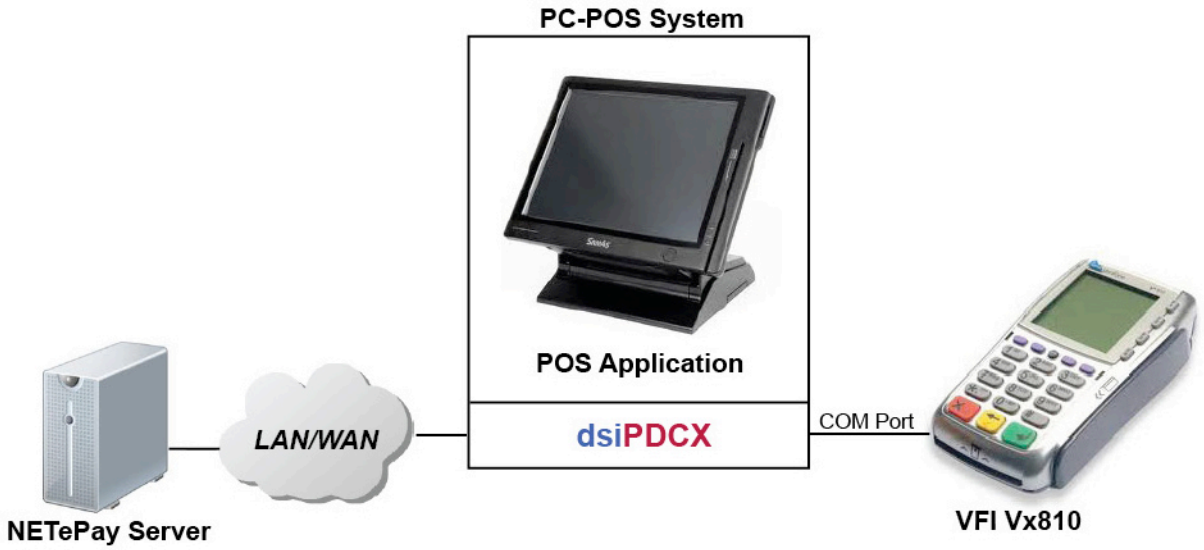
After card information is obtained, dsiPDCX encrypts and transmits the entire request to NETePay using TCP/IP. NETePay will then communicate with the processing host for authorization. NETePay will return the results of the authorization attempt to dsiPDCX which will then pass the results to the POS application.

For transactions that require the entry of a PIN (Personal Identification Number), such as debit transactions, dsiPDCX will activate an optionally attached PIN pad on the PDC or the Vx810 after magnetic stripe entry has completed. dsiPDCX maintains timeout control for each input operation and will return a timeout error to the POS application if input has not been successfully accomplished within the timeout period; the POS application should decide whether to try again or use manual input instead.

dsiPDCX Configuration with PDC



dsiPDCX Configuration with VeriFone Vx810



2.0 Integration of dsiPDCX

dsiPDCX is integrated with a POS application in the same manner as the standard DSIClientX. The following explains any different integration considerations for dsiPDCX. Refer to the "DSIClientX Progrmming Interface Specification" document for the integration guidelines.

2.1 Initialization

In addition to the initialization commands required for DSIClientX, dsiPDCX requires an additional Admin command to initialize the attached PDC or Vx810. This command should be performed during startup of the POS system with the optional PIN pad attached. It should not be performed prior to every transaction as it takes several seconds to complete with an attached PIN pad. The command named 'SecureDeviceInit' is as follows:

XML Template: **SecureDeviceInit Request**

```
<?xml version="1.0"?>
<TStream>
  <Admin>
    <IpAddress>999.999.999.999</IpAddress>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <TranCode>SecureDeviceInit</TranCode>
    <TranType>TranType</TranType>
    <PadType>PadType</PadType>
    <SecureDevice>SecureDevice</SecureDevice>
    <ComPort>ComPort</ComPort>
    <SequenceNo>SequenceNo</SequenceNo>
    <TerminalName>TerminalName</TerminalName>
    <ShiftID>ShiftID</ShiftID>
    <Signature>Signature</Signature>
  </Admin>
</TStream>
```

Element	Req	Min	Max	Type	Description
IpAddress	O	7	15	AN	IP address of server to use for this transaction. This address will override the addresses obtained via ServerIPConfig.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	Y	1	24	AN	Merchant identification assigned by processor.
TerminalID	O	1	24	AN	***For general use*** Terminal ID data must be supplied in this tag only if provided by the processor or merchant service provider; otherwise this tag should not be included. ***For reversal support with selected processors*** Use a unique POS workstation number (exactly 3 digits 000-999) for multi-workstation locations. See 1.3.7 in the DSIClientX documentation.

OperatorID	O	1	10	N	Operator (clerk, server, etc.) associated with the inquiry.
TranCode	Y	1	40	A	Use value “SecureDeviceInit”
TranType	Y	1	40	A	Use value “Setup”
PadType	Y	1	24	A	PIN Pad Type: “VFI1000” - if VeriFone 1000SE PIN pad attached to PDC. ‘None’ - if no PIN pad is attached to the PDC (credit only). “VX810” - if a VeriFone Vx810 pin pad is attached to a PC serial port; PDC is not used.
SecureDevice	Y	1	40	AN	Secure device type: “PDC” - when using a PDC with or without an attached VFI1000 pad. If using the latest version of the PDC firmware, blowfish encryption will be used. “PDC2” - when using a PDC with or without an attached VFI1000 pad. The latest version of the PDC firmware is required and blowfish encryption will be used. “VX810XPI” - when using a VeriFone Vx810 pin pad attached to a PC serial port; PDC is not used.
ComPort	Y	1	3	N	COM (Serial) port number to which PDC or Vx810 is attached (1-255).
SequenceNo	O	1	20	AN	***For reversal support with selected processors*** Use value ‘00000000’
TerminalName	O	1	20		Terminal name
ShiftID	O	1	20		Shift identification
Signature	O	1	2048		Digitized signature

2.2 Processing Transaction Requests

dsiPDCX supports all the methods and events made available by the standard DSIClientX. dsiPDCX however only supports the following values for the ProcessControl argument:

0 Process using visible dialog boxes
1 Process without using visible dialog boxes

The value of 2 (to process asynchronously without visible dialog boxes and fire an event) is not supported in dsiPDCX.

2.3 dsiPDCX Transaction Limitations

dsiPDCX does not support the Canadian Debit, Check or EBT transactions available in the standard DSIClientX.

3.0 XML Transaction Requests

The XML transaction definitions supported in the standard DSIClientX are also available in dsiPDCX. In order to support the input of cardholder information via the PDC, dsiPDCX requires two additional tags and a different use of an existing tag.

The new tags to be added to the standard DSIClientX XML definitions are:

<SecureDevice>	Indicates which type of secure input device will process cardholder data
<ComPort>	Indicates to which PC COM port the Secure Device (i.e. PDC or Vx810) is attached

In order to support both automatic (via PDC) or manual (via dialog box and keybord) of cardholder data, the <Account:AcctNo> tag will only accept two arguments:

SecureDevice	Indicates that the secure input device (PDC or Vx810) should be used to process MSR cardholder data.
Prompt	Indicates that a PC dialog box or Vx810 keyboard should be presented to the POS operator for key entry of cardholder data as follows:

Account Number	Required
Expiration Date	Required
CVV/CVD	Optional
Zip Code (AVS)	Optional

For SecureDevice entry, the POS application can supply optional values for <AVS:Address>, <AVS:Zip> and <CVVData>; for manual entry, values supplied in those tags by the POS application will be overridden by the manually input values, if any.

Both SecureDevice and Manual entry routines will expire if no useable input is processed with a timeout period. When SecureDevice input times out, the POS application should consider manual input; since manual input results in a higher processing charge to the merchant, it should be used only when automatic input is not possible.

The following is the XML template for a Credit Sale with the dsiPDCX tag extensions and changes. The tag extensions and changes should be incorporated into every XML request when using dsiPDCX.

XML Template: **Credit Sale**

```
<?xml version="1.0"?>
<TStream>
  <Transaction>
    <IpAddress>999.999.999.999</IpAddress>
    <IpPort>99999</IpPort>
    <MerchantID>MerchantID</MerchantID>
    <TerminalID>TerminalID</TerminalID>
    <OperatorID>OperatorID</OperatorID>
    <TranType>Credit</TranType>
    <Duplicate>Override</Duplicate>
    <CardType>CardType</CardType>
    <TranCode>Sale</TranCode>
    <SecureDevice>SecureDevice</SecureDevice>
    <ComPort>ComPort</ComPort>
    <InvoiceNo>InvoiceNo</InvoiceNo>
    <RefNo>RefNo</RefNo>
    <PartialAuth>PartialAuth</PartialAuth>
    <Account>
```

```
    <AcctNo>SecureDevice</AcctNo>
  </Account>
  <Amount>
    <Purchase>Purchase</Purchase>
    <Tax>Tax</Tax>
  </Amount>
  <SequenceNo>SequenceNo</SequenceNo>
  <AVS>
    <Address>Address</Address>
    <Zip>Zip</Zip>
  </AVS>
  <CVVData>CVVData</CVVData>
  <SequenceNo>SequenceNo</SequenceNo>
  <TerminalName>TerminalName</TerminalName>
  <ShiftID>ShiftID</ShiftID>
  <Signature>Signature</Signature>
  <TranInfo>
    <CustomerCode>CustomerCode</CustomerCode>
  </TranInfo>
 </Transaction>
</TStream>
```

Element	Req	Min	Max	Type	Description
IpAddress	O	7	15	AN	IP address of server to use for this transaction. This address will override the addresses obtained via ServerIPConfig.
IpPort	O	1	5	N	IP port number on server to use for this transaction. If omitted, default port is 9000.
MerchantID	Y	1	24	AN	Merchant identification assigned by processor.
TerminalID	O	1	24	AN	***For general use*** Terminal ID data must be supplied in this tag only if provided by the processor or merchant service provider; otherwise this tag should not be included. ***For reversal support with selected processors*** Use a unique POS workstation number (exactly 3 digits 000-999) for multi-workstation locations. See 1.3.7 in the DSIClientX documentation.
OperatorID	Y	1	10	N	Operator (clerk, server, etc.) associated with the Transaction.
TranType	Y	1	20	A	"Credit"
Duplicate	O	1	20	AN	"Override" - To force approval of a transaction that was previously rejected as a duplicate by the processor.
CardType	O	3	20	AN	"VISA", "M/C", "AMEX", "DCLB", "DCVR", "JCB", "OTHER"
TranCode	Y	1	40	A	"Sale"
SecureDevice	Y	1	40	AN	Secure device type: "PDC" - when using a PDC with or without an attached VFI1000 pad. If using the latest version of the PDC firmware, blowfish encryption will be used. "PDC2" - when using a PDC with or without an attached VFI1000 pad. The latest version of the PDC firmware is required and blowfish

					encryption will be used. "VX810XPI" - when using a VeriFone Vx810 pin pad attached to a PC serial port; PDC is not used.
ComPort	Y	1	3	N	COM (Serial) port number to which a PDC or Vx 810 is attached (1-255).
InvoiceNo	Y	1	16	AN	Invoice number – sequential receipt number, check number, or other unique transaction identifier.
RefNo	Y	1	16	AN	Use the same data as InvoiceNo
PartialAuth	O	1	16	AN	If value equals "Allow", then transaction may be authorized for an amount different than supplied in **<Amount>:<Purchase>** tag. See the **<Authorize>** tag in the response to determine how much was actually authorized. Note: The ability to support Partial Authoization will be mandated by the processors in the near future.
Account:AcctNo	Y	1	19	AN	To use PDC or Vx810 for MSR input of cardholder data input, use value 'SecureDevice' To use the PC keyboard or Vx810 for manual input of cardholder data, use value 'Prompt'
Amount:Purchase	Y	1	8	N	Purchase price (with 2 place decimal – eg. 29.95)
Amount:Tax	O	1	8	N	***For Purchase Card Level II transactions*** – Sales Tax amount (with 2 place decimal – eg. 29.95)
SequenceNo	O	1	20	AN	***For reversal support with selected processors*** Use '00000000' for first transaction in new installations. For all subsequent transactions, use the SequenceNo value returned in the previous transaction response. See 1.3.7 in the DSIClientX documentation.
AVS:Address	O	1	8	N	***For manually entered (hand-keyed) account numbers*** Address (building street) number. Supply this data whenever using a manually entered account number to ensure best transaction qualification.
AVS:Zip	O	1	9	N	***For manually entered (hand-keyed) account numbers*** Zip code. Supply this data whenever using a manually entered account number to ensure best transaction qualification.
CVVData	O	3	4	N	***For manually entered (hand-keyed) account numbers*** Three or four CVV card digits or "None" or "Illegible". Supply this data whenever using a manually entered account number to ensure best transaction qualification.
TerminalName	O	1	20	AN	Terminal name
ShiftID	O	1	20	AN	Shift identification
Signature	O	1	2048	AN	Digitized signature
TranInfo:CustomerCode	O	1	17	AN	***For Purchase Card Level II transactions*** – customer's identifying information; such as PO number.

4.0 XML Document Type Definitions (DTDs)

4.01 TStream

```
<?xml version="1.0"?>

<!DOCTYPE TStream [

<!-- TStream is the document request message template
-->

<!ELEMENT TStream (Transaction | Admin)*>

<!ELEMENT   Transaction  (

            IpAddress?,
            IpPort?,
            MerchantID,
            TerminalID?,
            OperatorID?,
            DateTime?,
            TranType,
            PadType?,
            Format?,
            CardType?,
            TranCode,
            SecureDevice?,
            ComPort?,
            Duplicate?,
            InvoiceNo,
            Memo?,
            RefNo,
            PartialAuth?,
            Account,
            Amount,
            Points?,
            AVS?,
            CVVData?,
            PIN?,
            SequenceNo?,
            TerminalName?,
            ShiftID?,
            Signature?,
            TranInfo?,
            DemographicInfo?

)>


<!ELEMENT   Admin  (

            IpAddress?,
            IpPort?,
            MerchantID,
            TerminalID?,
            OperatorID?,
```

```
            TranType?,
            TranCode,
            SecureDevice?,
            ComPort?,
            InvoiceNo?,
            RefNo?,
            Account?,
            Amount?,
            TerminalName?,
            ShiftID?,
            Signature?,
            TranInfo?,
            BatchInfo?
)>

<!ELEMENT   IpAddress               (#PCDATA)>

<!ELEMENT   IpPort                  (#PCDATA)>

<!ELEMENT   MerchantID              (#PCDATA)>

<!ELEMENT   TerminalID              (#PCDATA)>

<!ELEMENT   DateTime                (Date, Time)>
<!ELEMENT   Date                    (#PCDATA)>
<!ELEMENT   Time                    (#PCDATA)>

<!ELEMENT   TranType                (#PCDATA)>

<!ELEMENT   PadType                 (#PCDATA)>

<!ELEMENT   Format                  (#PCDATA)>

<!ELEMENT   CardType                (#PCDATA)>

<!ELEMENT   TranCode                (#PCDATA)>

<!ELEMENT   SecureDevice            (#PCDATA)>

<!ELEMENT   ComPort                 (#PCDATA)>

<!ELEMENT   Duplicate               (#PCDATA)>

<!ELEMENT   InvoiceNo               (#PCDATA)>

<!ELEMENT   OperatorID              (#PCDATA)>

<!ELEMENT   Memo                    (#PCDATA)>

<!ELEMENT   RefNo                   (#PCDATA)>

<!ELEMENT   Account           ((Name?, Track2) | (Name?,AcctNo, ExpDate))>
<!ELEMENT   Name                    (#PCDATA)>
<!ELEMENT   Track2                  (#PCDATA)>
<!ELEMENT   AcctNo                  (#PCDATA)>
<!ELEMENT   ExpDate                 (#PCDATA)>

<!ELEMENT   Amount                  (
            Purchase,
```

```
            CashBack?,
            Authorize?,
            Gratuiity?,
            Tax?,
            FSAPrescription?,
            FSAVision?,
            FSAClinical?,
            FSADental?
)>

<!ELEMENT   Purchase                (#PCDATA)>
<!ELEMENT   CashBack                (#PCDATA)>
<!ELEMENT   Authorize               (#PCDATA)>
<!ELEMENT   Gratuity                (#PCDATA)>
<!ELEMENT   Tax                     (#PCDATA)>

<!ELEMENT   Points                  (#PCDATA)>

<!ELEMENT   Items                   (

            Points,
            Units,
            Price,
            PromoID,
            Desc?,

            Points2?,
            Units2?,
            Price2?,
            PromoID2?,
            Desc2?,

            Points3?,
            Units3?,
            Price3?,
            PromoID3?,
            Desc3?,

            Points4?,
            Units4?,
            Price4?,
            PromoID4?,
            Desc4?,

            Points5?,
            Units5?,
            Price5?,
            PromoID5?,
            Desc5?,

            Points6?,
            Units6?,
            Price6?,
            PromoID6?,
            Desc6?,

            Points7?,
            Units7?,
            Price7?,
```

```
            PromoID7?,
            Desc7?,

            Points8?,
            Units8?,
            Price8?,
            PromoID8?,
            Desc8?
)>


<!ELEMENT   Points          #PCDATA)
<!ELEMENT   Units           #PCDATA)
<!ELEMENT   Price           #PCDATA)
<!ELEMENT   PromoID         #PCDATA)
<!ELEMENT   Desc            #PCDATA)

<!ELEMENT   Points2         #PCDATA)
<!ELEMENT   Units2          #PCDATA)
<!ELEMENT   Price2          #PCDATA)
<!ELEMENT   PromoID2        #PCDATA)
<!ELEMENT   Desc2           #PCDATA)

<!ELEMENT   Points3         #PCDATA)
<!ELEMENT   Units3          #PCDATA)
<!ELEMENT   Price3          #PCDATA)
<!ELEMENT   PromoID3        #PCDATA)
<!ELEMENT   Desc3           #PCDATA)

<!ELEMENT   Points4         #PCDATA)
<!ELEMENT   Units4          #PCDATA)
<!ELEMENT   Price4          #PCDATA)
<!ELEMENT   PromoID4        #PCDATA)
<!ELEMENT   Desc4           #PCDATA)

<!ELEMENT   Points5         #PCDATA)
<!ELEMENT   Units5          #PCDATA)
<!ELEMENT   Price5          #PCDATA)
<!ELEMENT   PromoID5        #PCDATA)
<!ELEMENT   Desc5           #PCDATA)

<!ELEMENT   Points6         #PCDATA)
<!ELEMENT   Units6          #PCDATA)
<!ELEMENT   Price6          #PCDATA)
<!ELEMENT   PromoID6        #PCDATA)
<!ELEMENT   Desc6           #PCDATA)

<!ELEMENT   Points7         #PCDATA)
<!ELEMENT   Units7          #PCDATA)
<!ELEMENT   Price7          #PCDATA)
<!ELEMENT   PromoID7        #PCDATA)
<!ELEMENT   Desc7           #PCDATA)

<!ELEMENT   Points8         #PCDATA)
<!ELEMENT   Units8          #PCDATA)
<!ELEMENT   Price8          #PCDATA)
<!ELEMENT   PromoID8        #PCDATA)
<!ELEMENT   Desc8           #PCDATA)
```

```
<!ELEMENT   AVS                     (
            Address,
            Zip)
>
<!ELEMENT   Address                 (#PCDATA)>
<!ELEMENT   Zip                     (#PCDATA)>

<!ELEMENT   CVVData                 (#PCDATA)>

<!ELEMENT   SequenceNo              (#PCDATA)>

<!ELEMENT   PIN                     (
            PINBlock,
            DervdKey
)>

<!ELEMENT   PINBlock                (#PCDATA)>
<!ELEMENT   DervdKey                (#PCDATA)>

<!ELEMENT   TranInfo                (
            AuthCode?,
            AcqRefData?,
            CVVResult?,
            AVSResult?,
            CustomerCode?
)>

<!ELEMENT   AuthCode                (#PCDATA)>
<!ELEMENT   Memo                    (#PCDATA)>
<!ELEMENT   AcqRefData              (#PCDATA)>
<!ELEMENT   RecordNo                (#PCDATA)>
<!ELEMENT   CVVResult               (#PCDATA)>
<!ELEMENT   AVSResult               (#PCDATA)>
<!ELEMENT   CustomerCode            (#PCDATA)>

<!ELEMENT   DemographicInfo         (
            CustEmail?,
            CustName?,
            CustPhone?,
            CustAddr1?,
            CustAddr2?,
            CustCity?,
            CustState?,
            CustZip?,
            CustLanguage?
)>

<!ELEMENT   CustEmail               (#PCDATA)>
<!ELEMENT   CustName                (#PCDATA)>
<!ELEMENT   CustPhone               (#PCDATA)>
<!ELEMENT   CustAddr1               (#PCDATA)>
<!ELEMENT   CustAddr2               (#PCDATA)>
<!ELEMENT   CustState               (#PCDATA)>
<!ELEMENT   CustZip                 (#PCDATA)>
<!ELEMENT   CustLanguage            (#PCDATA)>

<!ELEMENT   Purchase                (#PCDATA)>
```

```
<!ELEMENT   TerminalName            (#PCDATA)>
<!ELEMENT   ShiftID                 (#PCDATA)>
<!ELEMENT   Signature               (#PCDATA)>

<!ELEMENT   BatchNo                 (#PCDATA)>
<!ELEMENT   BatchItemCount          (#PCDATA)>
<!ELEMENT   NetBatchTotal           (#PCDATA)>
<!ELEMENT   CreditPurchaseCount     (#PCDATA)>
<!ELEMENT   CreditPurchaseAmount    (#PCDATA)>
<!ELEMENT   CreditReturnCount       (#PCDATA)>
<!ELEMENT   CreditReturnAmount      (#PCDATA)>
<!ELEMENT   DebitPurchaseCount      (#PCDATA)>
<!ELEMENT   DebitPurchaseAmount     (#PCDATA)>
<!ELEMENT   DebitReturnCount        (#PCDATA)>
<!ELEMENT   DebitReturnAmount       (#PCDATA)>

]>

<TStream>
</TStream>
```

4.02 RStream

```
<?xml version="1.0"?>

<!-- RStream is the document response message template
-->

<!DOCTYPE   RStream [

<!ELEMENT   RStream (

CmdResponse |
(CmdResponse, TranResponse) |
(CmdResponse, TranResponse, PrintData) |
(CmdResponse, TranResponse, ItemBalances, PrintData) |
(CmdResponse, BatchClose) |
(CmdResponse, BatchSummary) |
(CmdResponse, ItemDetail) |
(CmdResponse, BatchClear) |
(CmdResponse, ServerVersion)

)*>



<!-- CmdResponse Element -->

<!ELEMENT   CmdResponse  (

            ResponseOrigin,
            DSIXReturnCode,
            CmdStatus,
            TextResponse,
            IpAddress?,
            UserTraceData?,
            SequenceNo?
)>


<!-- TranResponse Element -->

<!ELEMENT   TranResponse  (

            MerchantID,
            TerminalID?,
            AcctNo,
            ExpDate?,
            CardType,
            Selection?,
            TranCode,
            AuthCode?,
            CaptureStatus?,
            RefNo,
            InvoiceNo?,
            OperatorID?,
            Memo?,
            Amount,
```

```
            AVSResult?,
            CVVResult?,
            AcqRefData?,
            PrePaidExp?,
            BankRespCode?,
            ISORespCode?,
            TranDate?,
            TranTime?,
)>


<!-- ItemBalances Element -->

<!ELEMENT   ItemBalances (

            TotalPoints,
            TotalUnits,
            TotalPrice,
            TotalPoints2?,
            TotalUnits2?,
            TotaiPrice2?,
            TotalPoints3?,
            TotalUnits3?,
            TotaiPrice3?,
            TotalPoints4?,
            TotalUnits4?,
            TotaiPrice4?,
            TotalPoints5?,
            TotalUnits5?,
            TotaiPrice5?,
            TotalPoints6?,
            TotalUnits6?,
            TotaiPrice6?,
            TotalPoints7?,
            TotalUnits7?,
            TotaiPrice7?,
            TotalPoints8?,
            TotalUnits8?,
            TotaiPrice8?

)>


<!-- PrintData Element -->

<!ELEMENT   PrintData  (

            Line1,
            Line2,
            Line3,
            Line4,
            Line5,
            Line6,
            Line7,
            Line8,
            Line9,
            Line10,
            Line11,
            Line12,
```

```
            Line13
)>


<!-- BatchClose Element -->

<!ELEMENT   BatchClose  (

            MerchantID,
            TerminalID?,
            BatchNo,
            BatchNumber?,
            BatchItemCount,
            NetBatchTotal,
            CreditPurchaseCount?,
            CreditPurchaseAmount?,
            CreditReturnCount?,
            CreditReturnAmount?,
            DebitPurchaseCount?,
            DebitPurchaseAmount?,
            DebitReturnCount?,
            DebitReturnAmount?,
            ControlNo?
)>

<!-- BatchSummary Element -->

<!ELEMENT   BatchSummary  (

            MerchantID,
            TerminalID?,
            BatchNo,
            BatchNumber?,
            BatchItemCount,
            NetBatchTotal,
            CreditPurchaseCount?,
            CreditPurchaseAmount?,
            CreditReturnCount?,
            CreditReturnAmount?,
            DebitPurchaseCount?,
            DebitPurchaseAmount?,
            DebitReturnCount?,
            DebitReturnAmount?
)>


<!-- BatchClear Element -->

<!ELEMENT   BatchClear  (

            MerchantID,
            TerminalID?,
            BatchNo,
            BatchNumber?,
            BatchItemCount,
            ControlNo?
)>
```

```
<!-- ServerVersion Element -->

<!ELEMENT   ServerVersion     (

            ProductName,
            ProductClass,
            Provider,
            ProductVersion
)>


<!-- ItemDetail Element -->

<!ELEMENT   ItemDetail  (

            MerchantID,
            TerminalID?,
            BatchNo,
            TranDate?,
            TranTime?,
            AcctNo,
            ExpDate?,
            ItemAmount1,
            ItemAmount2?,
            AuthCode?,
            RefNo?
)>

<!ELEMENT   Amount            (
            Purchase,
            Purchase1?,
            Purchase2?,
            Purchase3?,
            Purchase4?,
            Purchase5?,
            Purchase6?,
            Purchase7?,
            Purchase8?,
            CashBack?,
            Authorize?,
            Gratuity?,
            Tax?,
            FSAPrescription?,
            FSAVision?,
            FSAClinical?,
            FSADental?
)>

<!ELEMENT   Value             (
            Points1,
            Points2?,
            Points3?,
            Points4?,
            Points5?,
            Points6?,
            Points7?,
            Points8?,
)>
```

```
<!ELEMENT      ResponseOrigin          (#PCDATA)>
<!ELEMENT      DSIXReturnCode          (#PCDATA)>
<!ELEMENT      TextResponse            (#PCDATA)>
<!ELEMENT      IpAddress               (#PCDATA)>
<!ELEMENT      MerchantID              (#PCDATA)>
<!ELEMENT      TerminalID              (#PCDATA)>
<!ELEMENT      SequenceNo              (#PCDATA)>
<!ELEMENT      AcctNo                  (#PCDATA)>
<!ELEMENT      ExpDate                 (#PCDATA)>
<!ELEMENT      CardType                (#PCDATA)>
<!ELEMENT      Selection               (#PCDATA)>
<!ELEMENT      TranCode                (#PCDATA)>
<!ELEMENT      AuthCode                (#PCDATA)>
<!ELEMENT      CaptureStatus           (#PCDATA)>
<!ELEMENT      RefNo                   (#PCDATA)>
<!ELEMENT      InvoiceNo               (#PCDATA)>
<!ELEMENT      OperatorID              (#PCDATA)>
<!ELEMENT      Memo                    (#PCDATA)>
<!ELEMENT      Purchase                (#PCDATA)>
<!ELEMENT      CashBack                (#PCDATA)>
<!ELEMENT      Authorize               (#PCDATA)>
<!ELEMENT      Gratuity                (#PCDATA)>
<!ELEMENT      Balance                 (#PCDATA)>
<!ELEMENT      UserTraceData           (#PCDATA)>
<!ELEMENT      AVSResult               (#PCDATA)>
<!ELEMENT      CVVResult               (#PCDATA)>
<!ELEMENT      AcqRefData              (#PCDATA)>
<!ELEMENT      RecordNo                (#PCDATA)>
<!ELEMENT      PrePaidExp              (#PCDATA)>
<!ELEMENT      BankRespCode            (#PCDATA)>
<!ELEMENT      ISORespCode             (#PCDATA)>
<!ELEMENT      ControlNo               (#PCDATA)>
<!ELEMENT      TranDate                (#PCDATA)>
<!ELEMENT      TranTime                (#PCDATA)>
<!ELEMENT      ItemAmount1             (#PCDATA)>
<!ELEMENT      ItemAmount2             (#PCDATA)>
<!ELEMENT      BatchItemCount          (#PCDATA)>
<!ELEMENT      NetBatchTotal           (#PCDATA)>
<!ELEMENT      CreditPurchaseCount     (#PCDATA)>
<!ELEMENT      CreditPurchaseAmount    (#PCDATA)>
<!ELEMENT      CreditReturnCount       (#PCDATA)>
<!ELEMENT      CreditReturnAmount      (#PCDATA)>
<!ELEMENT      DebitPurchaseCount      (#PCDATA)>
<!ELEMENT      DebitPurchaseAmount     (#PCDATA)>
<!ELEMENT      DebitReturnCount        (#PCDATA)>
<!ELEMENT      DebitReturnAmount       (#PCDATA)>
<!ELEMENT      BatchNo                 (#PCDATA)>
<!ELEMENT      ProductName             (#PCDATA)>
<!ELEMENT      ProductClass            (#PCDATA)>
<!ELEMENT      Provider                (#PCDATA)>
<!ELEMENT      ProductVersion          (#PCDATA)>

]>

<RStream>
</RStream>
```