ARTS POSLog V6.0

Volume 14: Stored Value Technical Specification

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1. Abstract

1.1 Overview

Stored Value is a used to describe a closed financial system where value is collected by a retailer from a customer, retained as a liability by the retailer, and redeemed by the customer for goods or services. The stored value amount is tracked in an account that is accessed through an instrument such as a card or certificate. The account is managed by a stored value application and accessed through a retail touch point. This definition allows for the following key functions to be attributed to these types of instruments or accounts:

- **Cash/Gift Cards**

Cash and gift cards can have their balance increased (be "charged") with money value and may or may not allow the balance to be increased again (be "recharged"). These cards are used as tender in sales transactions, causing their balance to be decreased.

- **Store Credits**

Value is stored as a credit that can only be redeemed for merchandise within the retailer's store chain. Cash will not be given back. It is identified usually by a unique number associated with the customer, which is used as a key to look up the cash value in the store's database.

- **Gift Certificates**

One shot use and any difference between the value and items purchased is refunded in cash or a new gift certificate is issued with a value equal to the remaining balance.

- **Phone Cards**

Phone cards issued by a retailer can have a dual role in that any monetary value stored on the card be used as tender with them amount of tender being decremented from the value stored.

- **Loyalty Points**

Points accumulation and redemption for customer loyalty programs can be transacted using stored value messages. Stored value systems operate within the larger retail financial domain, potentially touching other key areas of a retailer's organization as depicted below:

1.2 Use Case Overview

The following diagram illustrates the key actors and relationships in a stored value interaction:
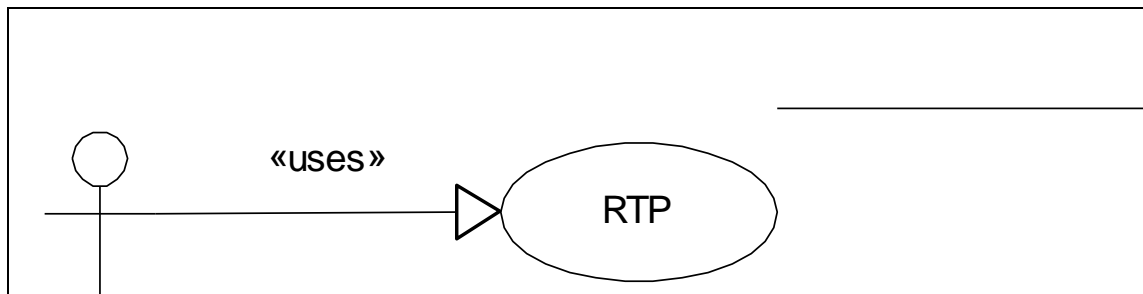
Figure 1: Stored Value Use Case Overview

Stored Value Instrument: This represents the Physical Media containing the identifier for a stored value account maintained by the stored value application. Examples include Cash/Gift Cards, Store Credits, Gift Certificates and Phone Cards. A Stored Value instrument can be associated with one and only one Stored Value Account within the Stored Value Application

Retail Touch Point (RTP): This represents any location used as the source for selling, issuing or enquiring on Stored Value Instruments, examples include but are not limited to Point-of-Sale registers, Kiosks, Web Sites and mobile devices such as Mobile Phones and PDA's as depicted below:
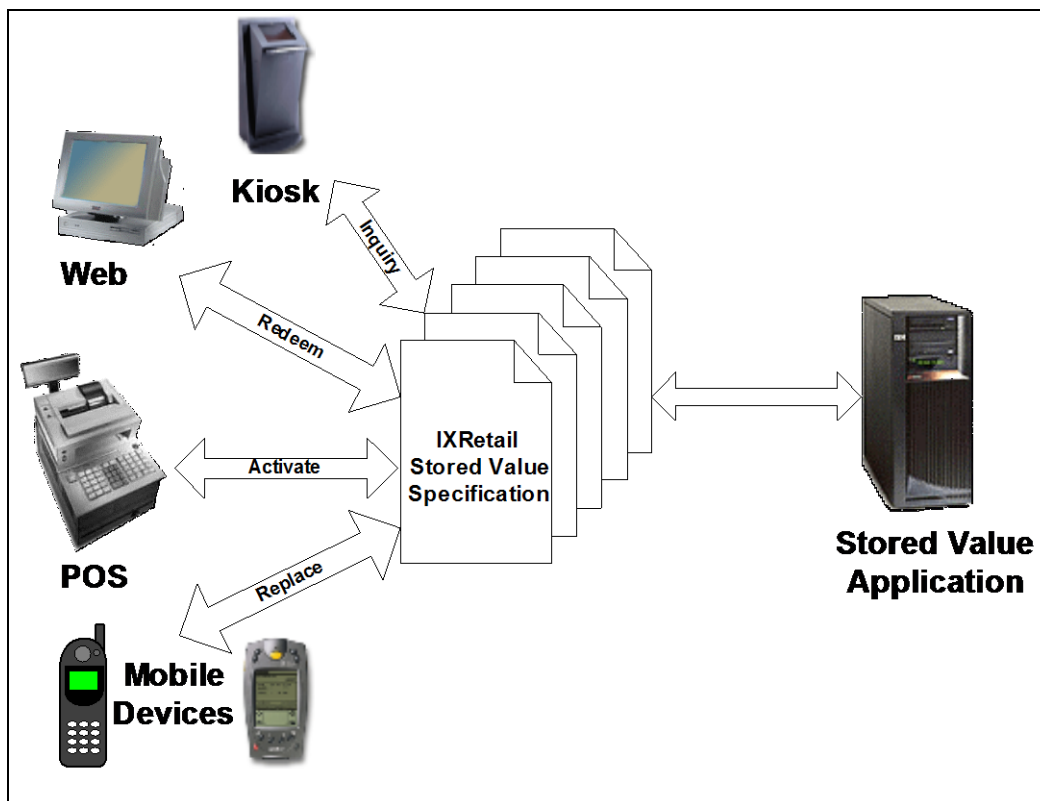
Figure 2: Typical System Interfaces

Stored Value Application (SVA): This represents any application that stores, maintains and controls the information about Stored Value Accounts, and the associations between those accounts and Stored Value Instruments. A Stored Value Account could be associated with one or more Stored Value Instruments, however some

implementations may limit the association to one and only one Stored Value Instrument. The concept of the Account within the Stored Value application is a logical one, and may or may not be implemented by a Stored Value Application. This specification will still apply to such systems, as they will simply use the Instrument ID as the Account ID, and will effectively support a one-to-one relationship between Accounts and Instruments. The stored value application may be contained within the stored value instrument (ex: smart cards).

The Stored Value Application is normally accessed by the Retail Touch Point through an on-line, real-time connection.

1.2.1 Issue Stored Value Instrument

The process (sales transaction) consists of enabling a Stored Value Instrument for use by associating it with an account within the Stored Value Application, and may also involve changing the balance of this Stored Value account.

1.2.2 Tender Stored Value Instrument

As part of the tendering process of a transaction at the Retail touch point, the sales associate enters the Stored Value Instrument ID. The amount to be tendered (account balance decrease) would also be entered. To authorize the completion of this transaction, this information must be passed to the Stored Value Application, and an appropriate response received.

1.2.3 Stored Value Instrument Status Inquiry

This is a separate use case and may be used by the Tender the Card use case or as a special request by a customer to verify the amount that remains on the Stored Value Instrument. It has significance when a query to the Stored Value Application and a valid response is used to determine the value and validity of the card.

1.2.4 Reverse the Transaction

This is the process that can occur after a transaction has been completed and allows for reversing the transaction to enter a correction or to cancel the transaction completely.

1.2.5 Cancel / Deactivate Stored Value Instrument

In this case a customer may wish to cancel their Stored Value Instrument and be issued the outstanding balance of the Stored Value Instrument in cash or any other form of tender the retailer deems acceptable.

1.2.6 Stored Value Account Balance Increase / Recharge

Some Stored Value Applications may allow their account balances to be increased, by accepting tender at the Retail Touch Point.

1.2.7 Cashout / Deactivate Stored Value Account

In this case a customer may wish to cancel their Stored Value Account and be issued the outstanding balance of the Account in cash or any other form of tender the retailer deems acceptable.

1.2.8 Cancel of a Request

This is the process intended to cancel a request and can occur only prior to the completion of a RTP transaction. If the need to void a transaction arises after a

transaction is complete the Reverse a Response request must be used; See the use case for Reverse Request transaction.

1.2.9 Replace an instrument

This is the process intended to replace an instrument. This would generally occur when an instrument is damaged. Some retailers may elect to use this transaction to replace lost cards.

1.2.10 Return Request /Issue Stored Value Instrument

The process consists of enabling a Stored Value Instrument for use by associating it with an account within the Stored Value Application. This is differentiated from the Issue transaction in that the customer does not tender any funds. The account amount used in the creation and issuing of the account is equal to the value of a merchandise (or service) refund.

1.2.11 Preauthorized - Tender Stored Value Instrument

This Use case differs from the "Tender of a stored Value Instrument" use case in that it is specific to the user of a Pre-authorized transaction type. As part of the tendering process of a transaction at the Retail touch point, the sales associate enters the Stored Value Instrument ID. The amount to be tendered (account balance decrease) would also be entered. In this use case the amount of the transaction may be an "estimate' which is later replaced when the Post tender transaction is matched to the pre-Authorization request. To authorize the completion of this transaction, this information must be passed to the Stored Value Application, and an appropriate response received.

1.3 Logical Model

1.3.1 Logical Model Description

Each of these classes is described as follows:
Account: The financial accounting unit for one or more stored value instruments as maintained by the SVA. The base information used to identify an account.

Account State: The account state represents the stored value due the holder of the account. Mandatory attributes include: account ID, account type, account balance and expiration date.

Instrument: The physical media representing a stored value account or a virtual key to a stored value account. The instrument is used by the RTP to identify or activate a stored value account. Mandatory attributes include: instrument ID, and media type.

Instrument State: Information identifying a stored value instrument and the current status of that instrument as maintained by the SVA.

SVA Transaction: The SVA transaction represents an operation executed on a stored value account by the stored value application. Mandatory attributes include: transaction type, transaction ID, and transaction date/time.

RTP Transaction: The RTP transaction represents a financial transaction that affects the state of a stored value account. Mandatory attributes include: transaction type, transaction ID, location ID, device ID, and transaction date/time.

2. Referenced Documents

- **ARTS Technical Committees Development Process V6.0.4 2009/11/30**

- **ARTS XML Best Practices V2.2 2010/11/11**

- **ARTS Best Practice for Process Modeling V1.0.0 2011/01/04**

- **A RTS SOA Best Practices Technical Report V1.2**

- **ARTS XML Interface Conformance Tool Manual V1.0 2005/08/11**

These documents are available for download from http://nrf.com

3. ARTS Common Header
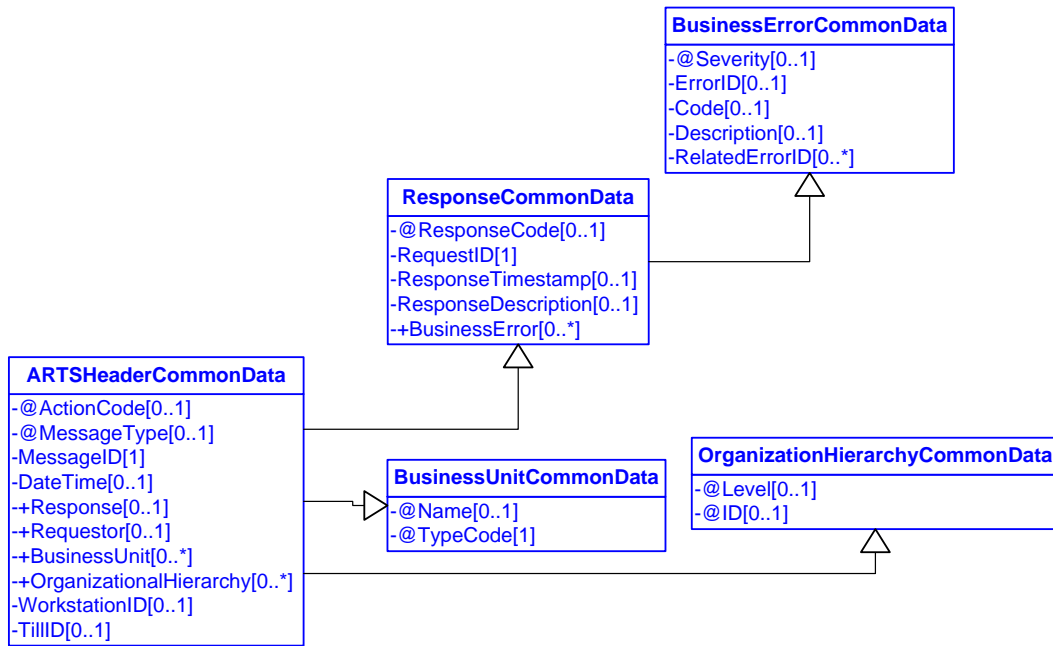
Figure 3: ARTS Common Header Domain View

The ARTS common header is used in all service name schemas. It provides the ability to set session level information and return business error information in one standard format to all SOA implementations.

Figure 4: ARTS Common Header Representation

Since this structure is common to all service name schemas, it will not be replicated below. In place of the details, the attached box will be used to represent this complex type structure.

4. USE CASE: Issue Stored Value Instrument

The process (sales transaction) consists of enabling a Stored Value Instrument for use by associating it with an account within the Stored Value Application, and may also involve changing the balance of this Stored Value account. At this time, the only change that is discussed is increasing the balance of the account ('charging it up'). The transaction is initiated at the retail touch point and may be recorded as a sale when the card is issued or it may be recorded as a liability entry on the books until a sale that uses the stored value occurs. It also may be tracked as inventory item if it has a fixed value (phone card with pre authorized value for instance) or as a no retail item for purposes of automated replenishment.

At some point an account is created with date and time and a value associated which allows for tracking the card's use. This becomes a transaction between the RTP system and a Stored Value Application that may be located anywhere within the enterprise. It might also contain the Customer Name and Address of the party that purchased the card as well as the person to whom the card is issued. There are many options that must be allowed.

4.1 Scenario: Sale of Stored Value Instrument (V2.2)

Brief Description
A sales associate enters the Stored Value Instrument ID of a new Stored Value Instrument within a transaction at the Retail Touch Point (RTP). The Stored Value Instrument ID can be acquired through a retail peripheral like a MSR or Scanner, or by manually keying in an ID which is embossed/printed on the instrument. Other means may be used for instruments like smart cards. The associate may enter a payment amount to increase the balance of the Stored Value Account and accept a corresponding amount as a tender. The stored Value Account may also have a predetermined balance.

The RTP sends the Stored Value Instrument ID(s), Security Code(s) and balance increment amount (this may already be assigned to the Instrument ID) information to the Stored Value Application where it is recorded as an active Stored Value Instrument, and the associated Stored Value Account is updated accordingly. The Stored Value Application responds to the RTP with the account number, the Stored Value Instrument information and status. This flow allows for multiple Stored Value Instruments to be activated in a single Stored Value* transaction, however they will all be associated with the same Stored Value Account, within the Stored Value Application.

Pre-Conditions
Post-Conditions
Data

- Stored Value Instrument ID
- Amount to place on the Instrument
- Account Number

4.1 Conformance XML Instance Document - Sale of Stored Value Instrument

```xml
<?xml version="1.0" encoding="UTF-8"?>
<POSLog xmlns="http://www.nrf-arts.org/IXRetail/namespace/"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/
../POSLogV6.0.0.xsd"
   MajorVersion="6" MinorVersion="0" FixVersion="0">
   <Transaction>
     <BusinessUnit>
        <UnitID>HighStreet</UnitID>
     </BusinessUnit>
     <WorkstationID>POS5</WorkstationID>
     <SequenceNumber>4294967295</SequenceNumber>
     <OperatorID>John</OperatorID>
     <RetailTransaction>
```

```xml
        <LineItem>
            <StoredValueFundSale ItemType="Stock" Action="Activation"
TypeCode="GiftCard">
                <POSIdentity>
                    <POSItemID>01234567890123</POSItemID>
                </POSIdentity>
                <ExtendedAmount>25.00</ExtendedAmount>
                <!-- the account created for this Instrument -->
                <Account>
                    <AccountID>asdbd</AccountID>
                </Account>
                <!-- physical instrument -->
                <Instrument>
                    <SerialNumber>12341234</SerialNumber>
                </Instrument>
            </StoredValueFundSale>
            <SequenceNumber>1</SequenceNumber>
        </LineItem>
    </RetailTransaction>
  </Transaction>
</POSLog>
```

4.2 Scenario: Associate Stored Value Instrument to Existing Account (V2.2)

This flow is used to allow one or more Stored Value Instruments to be associated with a Stored Value Account. The stored value account may have already been established through a previously activated instrument, or through the activation of an account only. The Retail Touch Point must have already acquired the appropriate Stored Value Account ID (by following one of the other use cases, likely a Status enquiry), as this information is required as part of the request.

POSLog would make this information available to systems such as loss prevention through a control transaction.

4.2 Conformance XML Instance Document - Associate Stored Value Instrument to Existing Account

```xml
<?xml version="1.0" encoding="UTF-8"?>
<POSLog xmlns="http://www.nrf-arts.org/IXRetail/namespace/"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/
../POSLogV6.0.0.xsd"
   MajorVersion="6" MinorVersion="0" FixVersion="0">
  <Transaction>
    <BusinessUnit>
        <UnitID>HighStreet</UnitID>
    </BusinessUnit>
    <WorkstationID>POS5</WorkstationID>
    <SequenceNumber>4294967295</SequenceNumber>
    <OperatorID>John</OperatorID>
```

```xml
        <ControlTransaction>
          <StoredValueFund Action="Associate" TypeCode="GiftCard">
            <POSIdentity>
                <POSItemID>01234567890123</POSItemID>
            </POSIdentity>
            <ExtendedAmount>4.89</ExtendedAmount>
            <Account Action="Update">
                <AccountID>12341234</AccountID>
            </Account>
            <Instrument>
                <SerialNumber>asdfasdfasdf</SerialNumber>
            </Instrument>
          </StoredValueFund>
        </ControlTransaction>
    </Transaction>
</POSLog>
```

4.3 Scenario: DateActivated (V6.0)

Brief Description
When a stored value instrument wasn't activated during the purchase, this allows the recording of the activation.

Scenario Description
Customer brings in a $100.00 gift card that they failed to activate when it was purchased.
NOTE: Since only activation occurs, this is a Control Transaction. An event telling everyone the activation occurred.

Pre-Conditions
Post-Conditions
Data
 -   **Card number**
 -   **Amount**

4.3 Conformance XML Instance Document – Date Activated

```xml
<?xml version="1.0" encoding="UTF-8"?>
<POSLog xmlns="http://www.nrf-arts.org/IXRetail/namespace/"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/
../POSLogV6.0.0.xsd"
    MajorVersion="6" MinorVersion="0" FixVersion="0">
    <Transaction>
      <BusinessUnit>
          <UnitID>HighStreet</UnitID>
      </BusinessUnit>
      <WorkstationID>POS5</WorkstationID>
      <SequenceNumber>4294967295</SequenceNumber>
      <OperatorID>John</OperatorID>
      <ControlTransaction>
```

```xml
          <StoredValueFund Action="Activation" TypeCode="GiftCard">
              <ItemID>01234567890123</ItemID>
              <ExtendedAmount>100.00</ExtendedAmount>
              <Instrument DateActivated="2001-08-13T08:05:00">
                  <SerialNumber>asdfasdfasdf</SerialNumber>
              </Instrument>
          </StoredValueFund>
      </ControlTransaction>
  </Transaction>
</POSLog>
```

5. USE CASE: Tender Stored Value Instrument

As part of the tendering process of a transaction at the Retail touch point, the sales associate enters the Stored Value Instrument ID. The Stored Value Instrument ID can be acquired through a retail peripheral like a MSR or Scanner, or by manually keying in an ID, which is embossed/printed on the instrument. Other means may be used for instruments like smart cards. For those instruments, which make use of a Security Code (PIN), the Security Code must be acquired and entered into the transaction. The amount to be tendered (account balance decrease) would also be entered. To authorize the completion of this transaction, this information must be passed to the Stored Value Application, and an appropriate response received.

Possible responses back from the Stored Value Application could include valid for use, stolen card, or it has expired. After the transaction has completed, the balance of the Stored Value Account must be adjusted appropriately (Post and Decrement the value).

In some cases there is a minimum balance threshold set in the Stored Value Application. In these cases, using the instrument as tender in a transaction may cause the balance to fall below this threshold. When this occurs, in addition to authorizing the tender, the response to the tender request will include instructions to return the appropriate amount of cash to the customer, and the instrument will be deactivated.

5.1 Scenario: Tender with Stored Value Instrument (V2.2)

Brief Description
The customer gives a sales associate a Stored Value Instrument as a form of tender for a transaction at the Retail Touch Point. The sales associate enters the Stored Value Instrument ID and the amount to be decrement from the Stored Value account as tender for the sale. For those instruments that make use of a Security Code (PIN), the Security Code must be acquired and entered into the transaction. The RTP sends the Stored Value Instrument ID, the Security Code (PIN) and the Stored Value tender amount to the Stored Value Application. The Stored Value Application responds with a positive or negative authorization response as well as the new Stored Value balance.

Pre-Conditions
Post-Conditions
Data
- Instrument ID

- Tender Amount
- Authorization

5.1 Conformance XML Instance Document - Tender with Stored Value Instrument

```xml
<?xml version="1.0" encoding="UTF-8"?>
<POSLog xmlns="http://www.nrf-arts.org/IXRetail/namespace/"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/
../POSLogV6.0.0.xsd"
    MajorVersion="6" MinorVersion="0" FixVersion="0">
    <Transaction>
        <BusinessUnit>
            <UnitID>HighStreet</UnitID>
        </BusinessUnit>
        <WorkstationID>POS5</WorkstationID>
        <SequenceNumber>4294967295</SequenceNumber>
        <OperatorID>John</OperatorID>
        <RetailTransaction>
            <LineItem>
                <Sale ItemType="Stock">
                    <POSIdentity>
                        <POSItemID>01234567890123</POSItemID>
                    </POSIdentity>
                    <ExtendedAmount>4.89</ExtendedAmount>
                </Sale>
                <SequenceNumber>1</SequenceNumber>
            </LineItem>
            <LineItem>
                <Tender TenderType="StoredValue">
                    <Amount>4.89</Amount>
                    <Authorization>
                        <AuthorizationCode>asdfyesasf</AuthorizationCode>
                    </Authorization>
                    <StoredValueInstrument TypeCode="GiftCard">
                        <SerialNumber>12341234</SerialNumber>
                    </StoredValueInstrument>
                </Tender>
                <SequenceNumber>2</SequenceNumber>
            </LineItem>
        </RetailTransaction>
    </Transaction>
</POSLog>
```

5.2 Scenario: Stored Value Authorization (V6.0)

Brief Description
Gift Card Sales and Top-Ups require an Online Authorization interaction and has to store AuthorizationCode for both the initial transaction and any reversal. Adding Authorization to StoredValueFundSale will cover this requirement for Gift Cards, and also cover the BalanceTransfer situation where a single OLA Transaction covers two Gift Cards.

Scenario Description
Suzy purchased a gift card for $100
Brief Description

Pre-Conditions

Post-Conditions

Data

5.2 Conformance XML Instance Document – Stored Value Sale with Authorization

```xml
<?xml version="1.0" encoding="UTF-8"?>
<POSLog xmlns="http://www.nrf-arts.org/IXRetail/namespace/"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/
../POSLogV6.0.0.xsd"
    MajorVersion="6" MinorVersion="0" FixVersion="0">
    <Transaction>
        <BusinessUnit>
            <UnitID>HighStreet</UnitID>
        </BusinessUnit>
        <WorkstationID>POS5</WorkstationID>
        <SequenceNumber>4294967295</SequenceNumber>
        <OperatorID>John</OperatorID>
        <RetailTransaction>
            <LineItem>
                <StoredValueFundSale Action="Activation">
                    <ItemID>234</ItemID>
                    <ExtendedAmount>100.00</ExtendedAmount>
                    <SerialNumber>123123123123</SerialNumber>
                    <Authorization>
                        <AuthorizationCode>asdfyesasf</AuthorizationCode>
                    </Authorization>
                </StoredValueFundSale>
                <SequenceNumber>2</SequenceNumber>
            </LineItem>
        </RetailTransaction>
    </Transaction>
</POSLog>
```

6. USE CASE: Reverse A Transaction

6.1 Scenario: Cancel Stored Valued Tendered Transaction (pre-close) (V2.2)

This is the process intended to cancel a request and can occur only prior to the completion of a retail transaction. If the need to cancel a transaction arises after a transaction is complete, the void a transaction must be used.

The cancel transaction can occur at any point during the process and will reset the Stored Value Instrument and processes back to where they were before the transaction was started.

Brief Description
The Retail Touch point or its operator determines the need to cancel a transaction that is in process after the stored value instrument has been presented for tender. This may be in relation to a systematic error, in order to ensure that all systems are in synch.

NOTE: a customer order transaction is a retail transaction before it is tendered and fulfilled.

Pre-Conditions
Post-Conditions
Data
- Instrument ID

6.1 Conformance XML Instance Document - Cancel Stored Valued Tendered Transaction

```xml
<?xml version="1.0" encoding="UTF-8"?>
<POSLog xmlns="http://www.nrf-arts.org/IXRetail/namespace/"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/
../POSLogV6.0.0.xsd"
   MajorVersion="6" MinorVersion="0" FixVersion="0">
   <Transaction>
     <BusinessUnit>
        <UnitID>HighStreet</UnitID>
     </BusinessUnit>
     <WorkstationID>POS5</WorkstationID>
     <SequenceNumber>4294967295</SequenceNumber>
     <OperatorID>John</OperatorID>
     <CustomerOrderTransaction TransactionStatus="Canceled">
        <LineItem>
           <StoredValueFundSale Action="Cancel" TypeCode="GiftCard">
              <POSIdentity>
                 <POSItemID>01234567890123</POSItemID>
              </POSIdentity>
              <ExtendedAmount>4.89</ExtendedAmount>
              <Instrument>
                 <SerialNumber>asdfasdf</SerialNumber>
```

```
            </Instrument>
          </StoredValueFundSale>
          <SequenceNumber>1</SequenceNumber>
        </LineItem>
      </CustomerOrderTransaction>
   </Transaction>
</POSLog>
```

6.2 Scenario: Void Stored Value Tendered Transaction (post-closed) (V2.2)

This is the process that can occur after a transaction has been completed and allows for reversing the transaction to enter a correction or to void the transaction completely. In any event, an audit trail, containing the original transaction and the reversing transaction, is always kept for a reverse transaction to insure that a reverse the transaction can be matched up with its corresponding Tender transaction.

Brief Description
The Retail Touch point or its operator determines the need to reverse a transaction that has already been completed with respect to a stored value instrument used as tender.

NOTE: Retail Transaction is reopened and therefore this is a void

Pre-Conditions
Post-Conditions
Data
   - Instrument ID

6.2 Conformance XML Instance Document – Void Stored Value Tendered Transaction

```
<?xml version="1.0" encoding="UTF-8"?>
<POSLog xmlns="http://www.nrf-arts.org/IXRetail/namespace/"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/
../POSLogV6.0.0.xsd"
   MajorVersion="6" MinorVersion="0" FixVersion="0">
   <Transaction>
      <BusinessUnit>
         <UnitID>HighStreet</UnitID>
      </BusinessUnit>
      <WorkstationID>POS5</WorkstationID>
      <SequenceNumber>4294967295</SequenceNumber>
      <OperatorID>John</OperatorID>
      <RetailTransaction TransactionStatus="Voided">
         <LineItem>
            <Sale ItemType="Stock">
               <POSIdentity>
                  <POSItemID>01234567890123</POSItemID>
               </POSIdentity>
               <ExtendedAmount>4.89</ExtendedAmount>
            </Sale>
            <SequenceNumber>1</SequenceNumber>
         </LineItem>
```

```xml
        <LineItem>
          <Tender TenderType="StoredValue" TypeCode="Refund">
            <Amount>4.89</Amount>
            <StoredValueInstrument TypeCode="GiftCard">
              <SerialNumber>asdfasdf</SerialNumber>
            </StoredValueInstrument>
          </Tender>
          <SequenceNumber>2</SequenceNumber>
        </LineItem>
      </RetailTransaction>
    </Transaction>
</POSLog>
```

7. Use Case: Manage Stored Value Instrument

These scenarios concern deactivating a particular stored value instrument, cashing out a stored value account and recharging a stored value account

7.1 Scenario: Deactivate a Specific Stored Value Instrument (V2.2)

In this case a customer may wish to cancel their Stored Value Instrument and be issued the outstanding balance of the Stored Value Instrument in cash or any other form of tender the retailer deems acceptable. Once the Stored Value Instrument has been cancelled it cannot be used as valid form of tender. The Stored Value Application may or may not allow the customer to cash out.

Since Stored Value applications may allow more than one instrument to be associated with a single Stored Value Account, the request message must specify which Store Value Instrument(s) the customer wishes to cancel.

If the customer wishes to cancel all instruments associated with the account the account would be deactivated using the Cash-out request. See use case for Cash-out.

Brief Description
A Stored Value Instrument holder asks a sales associate to Deactivate (cash-out at an instrument level) one or more Stored Value instruments, returning the balance in some other media to the customer. If the customer wishes to cancel all instruments associated with an account, the account cash-out transaction should be use instead of the instrument deactivation transaction. The Stored Value Instrument ID can be acquired through a retail peripheral like a MSR or Scanner, or by manually keying in an ID, which is embossed/printed on the instrument. Other means may be used for instruments like smart cards. For those instruments that make use of a Security Code (PIN), the Security Code must also be acquired and entered into the transaction. The RTP sends the Stored Value Instrument ID and Security Code (PIN) to the Stored Value Application. The Stored Value Application responds with the Stored Value Instrument balance and status.

Pre-Conditions
Post-Conditions
Data
- Instrument ID
- Balance returned to customer

7.1 Conformance XML Instance Document - Deactivate a Specific Stored Value Instrument

```xml
<?xml version="1.0" encoding="UTF-8"?>
<POSLog xmlns="http://www.nrf-arts.org/IXRetail/namespace/"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/
../POSLogV6.0.0.xsd"
    MajorVersion="6" MinorVersion="0" FixVersion="0">
    <Transaction>
        <BusinessUnit>
            <UnitID>HighStreet</UnitID>
        </BusinessUnit>
        <WorkstationID>POS5</WorkstationID>
        <SequenceNumber>4294967295</SequenceNumber>
        <OperatorID>John</OperatorID>
        <TenderControlTransaction>
            <StoredValueTransaction Action="Deactivate">
                <StoredValueFund>
                    <POSIdentity>
                        <POSItemID>01234567890123</POSItemID>
                    </POSIdentity>
                    <ExtendedAmount>4.89</ExtendedAmount>
                    <Instrument TypeCode="GiftCard">
                        <SerialNumber>q2342134</SerialNumber>
                    </Instrument>
                </StoredValueFund>
                <Tender TypeCode="Refund">
                    <Amount>4.89</Amount>
                </Tender>
            </StoredValueTransaction>
        </TenderControlTransaction>
    </Transaction>
</POSLog>
```

7.2 Scenario: Recharge Stored Value Account (V6.0)

Some Stored Value Applications may allow their account balances to be increased, by accepting tender at the Retail Touch Point. The Application may place limits and conditions on balance increases, such as number of times the balance can be increased or minimum/maximum amounts for increases. The Retail Touch point need not be aware of these conditions, as it will submit the balance increase requests and let the Stored Value Application determine whether or not to approve these requests. Reasons for any declines will be communicated through the system error code in the response from the Stored Value Application.

The enumeration StoredValueInstrumentActionCode has been extended with "Recharge" for a Top-up and "Refund" for a refund of previous credits (not the same as Tendering). There is also a North American variation of "BalanceTransfer" where a single interaction transfers all of the balance from one card to another card in a single transaction.

Brief Description

A Stored Value Instrument holder asks a sales associate to recharge an instrument or account. The Stored Value Instrument ID can be acquired through a retail peripheral like a MSR or Scanner, or by manually keying in an ID which is embossed/printed on the instrument. Other means may be used for instruments like smart cards. For those instruments that make use of a Security Code (PIN), the Security Code must also be acquired and entered into the transaction. The RTP sends the Stored Value Instrument ID and Security Code (PIN) to the Stored Value Application and the amount of the Account Increase desired. The Stored Value Application responds with the Stored Value Instruments updated balance and status.

The business rules may prevent certain types of accounts from being recharged or have minimum recharge amounts or time periods for recharging. If any of these business rules are in place and are not met then an exception will be passed by the Stored Value Application.

NOTE: How the UnspentAmount is used. Is that the balance on the card before or after the recharge? It is the unspent amount at the end of the transaction. Therefore if you are doing a balance inquiry, it would be the balance. If you have recharged, then it would be the amount at the end of the recharge.

Scenario Description:
Pre-Conditions
Post-Conditions
Data
- Amount to be added
- Account to be recharged

7.2 Conformance XML Instance Document - Recharge Stored Value Account

```xml
<?xml version="1.0" encoding="UTF-8"?>
<POSLog xmlns="http://www.nrf-arts.org/IXRetail/namespace/"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/
../POSLogV6.0.0.xsd"
   MajorVersion="6" MinorVersion="0" FixVersion="0">
   <Transaction>
     <BusinessUnit>
        <UnitID>HighStreet</UnitID>
     </BusinessUnit>
     <WorkstationID>POS5</WorkstationID>
     <SequenceNumber>4294967295</SequenceNumber>
     <OperatorID>John</OperatorID>
     <RetailTransaction>
        <LineItem>
          <StoredValueFundSale Action="Recharge">
            <POSIdentity>
               <POSItemID>01234567890123</POSItemID>
            </POSIdentity>
            <!-- Amount of money being added to the stored value instrument -->
            <ExtendedAmount>25.00</ExtendedAmount>
            <Account Action="Update">
               <AccountID>asdfasdf</AccountID>
```

```xml
            </Account>
            <Instrument>
                <!-- Amount of money after the recharge -->
                <UnspentAmount>40.00</UnspentAmount>
            </Instrument>
        </StoredValueFundSale>
        <SequenceNumber>1</SequenceNumber>
    </LineItem>
    <LineItem>
        <Tender TenderType="Cash" TypeCode="Sale">
            <Amount>25.00</Amount>
        </Tender>
        <SequenceNumber>2</SequenceNumber>
    </LineItem>
    </RetailTransaction>
  </Transaction>
</POSLog>
```

7.3 Scenario: Cashout Stored Value Account (V2.2)

In this case a customer may wish to cancel their Stored Value Account and be issued the outstanding balance of the Account in cash or any other form of tender the retailer deems acceptable. Once the Stored Value Account has been cancelled all instruments associated with the account cannot be used as valid form of tender. The Stored Value Application, based on business rules, may or may not allow the customer to cash out.

Since Stored Value applications may allow more than one instrument to be associated with a single Stored Value Account, the Business may require that all Authentication Data for an account (PIN) be passed by the RTP. The assumption is that if the PIN is known for any one of the instruments then the entire account may be Cashed-Out. However, the RTP and Stored Value Application could have business rules calling for the entry of a pin for each instrument assigned a PIN. In this case the deactivate instrument transaction may more appropriate.

Brief Description

A Stored Value Instrument holder asks a sales associate to cash out the Stored Value account associated with one or more the instruments, returning the balance in some other tender to the customer. The Stored Value Instrument ID or Account ID can be acquired through a retail peripheral like a MSR or Scanner, or by manually keying in an ID which is embossed, printed on the instrument. Other means may be used for instruments like smart cards. For those instruments and accounts that make use of a Security Code (PIN), the Security Code must also be acquired and entered into the transaction. The RTP sends the Stored Value Instrument ID and Security Code (PIN) to the Stored Value Application. The Stored Value Application responds with the Stored Value account balance and status

 The Stored Value application will sending back the store value instrument ID and balances for all Ids associated with the account if more than one ID is associated with an account.

Pre-Conditions

Post-Conditions
Data

- Account ID
- Amount being refunded

7.3 Conformance XML Instance Document - Cashout Stored Value Account

```xml
<?xml version="1.0" encoding="UTF-8"?>
<POSLog xmlns="http://www.nrf-arts.org/IXRetail/namespace/"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/
../POSLogV6.0.0.xsd"
    MajorVersion="6" MinorVersion="0" FixVersion="0">
    <Transaction>
        <BusinessUnit>
            <UnitID>HighStreet</UnitID>
        </BusinessUnit>
        <WorkstationID>POS5</WorkstationID>
        <SequenceNumber>4294967295</SequenceNumber>
        <OperatorID>John</OperatorID>
        <TenderControlTransaction>
            <StoredValueTransaction Action="Cashout">
                <StoredValueFund>
                    <POSIdentity>
                        <POSItemID>01234567890123</POSItemID>
                    </POSIdentity>
                    <ExtendedAmount>14.75</ExtendedAmount>
                    <Account Action="Close">
                        <AccountID>asdfasdf</AccountID>
                    </Account>
                </StoredValueFund>
                <Tender TenderType="Cash" TypeCode="Refund">
                    <Amount>14.75</Amount>
                </Tender>
            </StoredValueTransaction>
        </TenderControlTransaction>
    </Transaction>
</POSLog>
```

8. USE CASE: Return Request / Issue Stored Value Instrument

Brief Description
The process consists of enabling a Stored Value Instrument for use by associating it with an account within the Stored Value Application. This is differentiated from the Issue transaction in that the customer does not tender any funds. The account amount used in the creation and issuing of the account is equal to the value of a merchandise (or service) refund.

Retailers issue Stored Value instruments instead of returning other media for several reasons. The most common is that the customer has no receipt and this enables the retailer to insure that any refund amount will be redeemed for merchandise or services in their enterprise. A SV instrument may also be issued in order to simplify the logistics of an exchange transaction. In many cases this also allows the retailer to track name and address of non-receipt returns in a single system point of data collection.

At this time, the only change that is discussed is increasing the balance of the account ('charging it up'). The transaction is initiated at the retail touch point and is generally recorded as return or an uneven exchange when the card is issued or it may be recorded as a liability entry on the books until a sale that uses the stored value occurs. It also may be tracked as a no retail item for purposes of automated replenishment.

At some point an account is created with date and time and a value associated which allows for tracking the card's use. This becomes a transaction between the RTP system and a Stored Value Application that may be located anywhere within the enterprise. It might also contain the Customer Name and Address of the party that the card was issued to.

8.1 Scenario: Sales Return on Stored Value Instrument (V2.2)

Brief Description
A sales associate enters the Stored Value Instrument ID of a new Stored Value Instrument within a return transaction at the Retail Touch Point (RTP). The Stored Value Instrument ID can be acquired through a retail peripheral like a MSR or Scanner, or by manually keying in an ID, which is embossed/printed on the instrument. Other means may be used for instruments like smart cards. For those instruments that make use of a Security Code (PIN), the Security code must be acquired for the Instrument and entered into the transaction.

The reason code passed in the request will be important to the retailer as it will most likely be used by the SV Application to set parameters such as not valid for cash out, expiration date, etc.

The RTP sends the Stored Value Instrument ID, Security Code and balance increment amount (Amount of the return transaction)

Generally Stored Value instruments with pre-assigned values will not work well with this transaction because the value of the merchandise returned is highly variable. In almost all cases the retailer would be required to either issue pre-assigned value cards and either cash or a non-pre-assigned value SV Instrument.

The Instrument ID and value of the transaction are passed to the Stored Value Application where it is recorded as an active Stored Value Instrument, and the associated Stored Value Account is created and updated accordingly. The Stored Value Application responds to the RTP with the account number, the Stored Value Instrument information and status. Unlike the issue transaction this flow is intended for a single Stored Value Instruments to be activated in a single Stored Value transaction

Pre-Conditions
Post-Conditions

Data

- Instrument ID
- Amount of the Refund
- Reason for Refund
- Account to which the refund amount was assigned

8.1 Conformance XML Instance Document - Sales Return on Stored Value Instrument

```xml
<?xml version="1.0" encoding="UTF-8"?>
<POSLog xmlns="http://www.nrf-arts.org/IXRetail/namespace/"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/
../POSLogV6.0.0.xsd"
   MajorVersion="6" MinorVersion="0" FixVersion="0">
   <Transaction>
     <BusinessUnit>
        <UnitID>HighStreet</UnitID>
     </BusinessUnit>
     <WorkstationID>POS5</WorkstationID>
     <SequenceNumber>4294967295</SequenceNumber>
     <OperatorID>John</OperatorID>
     <RetailTransaction>
        <LineItem>
           <Return ItemType="Stock">
              <POSIdentity>
                 <POSItemID>01234567890123</POSItemID>
              </POSIdentity>
              <ExtendedAmount>4.89</ExtendedAmount>
           </Return>
           <SequenceNumber>1</SequenceNumber>
        </LineItem>
        <LineItem>
           <Tender TenderType="StoredValue" TypeCode="Refund">
              <Amount>4.89</Amount>
              <StoredValueInstrument TypeCode="GiftCard">
                 <SerialNumber>12341234</SerialNumber>
              </StoredValueInstrument>
           </Tender>
           <SequenceNumber>2</SequenceNumber>
        </LineItem>
     </RetailTransaction>
   </Transaction>
</POSLog>
```

9. USE CASE: Preauthorized - Tender Stored Value Instrument

Brief Description

This Use case differs from the "Tender of a stored Value Instrument" use case in that it is specific to the user of a Preauthorized transaction type. As part of the tendering process of a transaction at the Retail touch point, the sales associate enters the Stored Value Instrument ID. The Stored Value Instrument ID can be acquired through a retail peripheral like a MSR or Scanner, or by manually keying in an ID which is embossed/printed on the instrument. Other means may be used for instruments like smart cards. For those instruments that make use of a Security Code (PIN), the Security Code must be acquired and entered into the transaction. The amount to be tendered (account balance decrease) would also be entered. In this use case the amount of the transaction may be an "estimate' which is later replaced when the Post tender transaction is matched to the pre-Authorization request. To authorize the completion of this transaction, this information must be passed to the Stored Value Application, and an appropriate response received.

The Pre-authorized Tender transaction implies that a Post-Authorization transaction will occur at a later time. The Stored Value Application treats the Pre-Authorized Tender transaction as a "hold", based on the amount of the request transaction, against and existing stored value account. The "hold" is typically later matched to a valid post authorization request. Once this match occurs the "hold" is removed from the account and the amount of the Post –Authorization request is posted to the account.

Based on business rules of the stored value application the "hold" may also be released from the account if a post authorization request is not received within a predefined period of time.

The Post-Authorization Transaction is very similar to the Pre-Authorization request except that is contains the exact amount of the redemption to be applied to the Account.

Typical real life examples of these transactions include hotel transactions and pay at the pump petrol transactions.

Possible responses back from the Stored Value Application could include valid for use, stolen card, or it has expired. After the transaction has completed, the balance of the Stored Value Account must be adjusted appropriately (Post and Decrement the value).

In some cases there is a minimum balance threshold set in the Stored Value Application. In these cases, using the instrument as tender, in a post-Authorization transaction, the transaction may cause the balance to fall below this threshold. When this occurs, in addition to authorizing the tender, the response to the tender request will include instructions to return the appropriate amount of cash to the customer, and the instrument will be deactivated.

9.1 Scenario: Preauthorize Tender Request (V2.2)

Brief Description

In this flow the Retail Touch Point must have already acquired the appropriate Stored Value Account ID (by following one of the other use cases, likely a Status enquiry), as this information is required as part of the request. The Pre-authorized transaction is treated by the Stored Value Application as a "Hold" against the account and instrument balance. At a later time as determined by the business rules a second Post-

Authorization transaction is required by the RTP (or some extension of the RTP application). This Post –Authorization Transaction is matched by the SVA to the Pre-Authorization transaction. When this occurs the amount of the "hold" used during the Pre-authorization is replaced by the amount of the Post-Authorization transaction.

The customer gives a sales associate a Stored Value Instrument as a form of tender for a transaction at the Retail Touch Point. The sales associate enters the Stored Value Instrument ID and the amount to be placed on "hold" from the Stored Value account as tender for the sale. It is important to note that this Pre-authorization Request often differs from the Post –authorization request amount. For those instruments that make use of a Security Code (PIN), the Security Code must be acquired and entered into the transaction. The RTP sends the Stored Value Instrument ID, the Security Code (PIN) and the Stored Value tender amount to the Stored Value Application. The Stored Value Application responds with a positive or negative authorization response as well as the new Stored Value balance.

Pre-Conditions
Post-Conditions
Data
- Amount to be pre-authorized
- Instrument ID
- Authorization

9.1 Conformance XML Instance Document - Preauthorize Tender Request

```xml
<?xml version="1.0" encoding="UTF-8"?>
<POSLog xmlns="http://www.nrf-arts.org/IXRetail/namespace/"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/
../POSLogV6.0.0.xsd"
   MajorVersion="6" MinorVersion="0" FixVersion="0">
   <Transaction>
     <BusinessUnit>
        <UnitID>HighStreet</UnitID>
     </BusinessUnit>
     <WorkstationID>POS5</WorkstationID>
     <SequenceNumber>4294967295</SequenceNumber>
     <OperatorID>John</OperatorID>
     <CustomerOrderTransaction>
        <LineItem>
          <Tender TenderType="StoredValue" TypeCode="PreAuthorize">
             <Amount>4.89</Amount>
             <Authorization>
                <AuthorizationCode>asdfyesasf</AuthorizationCode>
             </Authorization>
             <StoredValueInstrument TypeCode="GiftCard">
                <SerialNumber>12341234</SerialNumber>
             </StoredValueInstrument>
          </Tender>
          <SequenceNumber>1</SequenceNumber>
        </LineItem>
     </CustomerOrderTransaction>
```

```
      </Transaction>
</POSLog>
```

9.2 Scenario: Post-authorization Redemption (V2.2)

Brief Description

This flow is used to complete the second part of a pre-authorized transaction set. In this flow the Retail Touch Point must have already acquired the appropriate Stored Value Account ID (by following one of the other use cases, likely a Status enquiry), as this information is required as part of the request. The Pre-Authorization Stored Value Transaction number is also required as part of the Post-Authorization request.   The Post-authorized transaction is treated by the Stored Value Application Tender / decrement against the account and instrument balance. Based on Business rules this transaction is matched to a pre-authorization request.   When the match to a pre-authorization request occurs, the hold amount placed on the account by the pre-authorization request is offset by the application.

The Retailer determines the "final" amount of the transaction associated with the Pre-authorization process.   The Customer gives a sales associate a Stored Value Instrument as a form of tender for a transaction at the Retail Touch Point. The sales associate enters the Stored Value Instrument ID, the amount to be tendered as the final transaction amount and the Pre-Authorization Stored Value Transaction number. This number may be stored in the RTF application or may be entered from any other tracking system.

It is important to note that often the Pre-authorization Request often differs from the Post–authorization request amount. For those instruments that make use of a Security Code (PIN), the Security Code does not necessarily need to be entered in the post-authorization request if it was entered in the pre-authorization request. The Stored Value Application responds with a positive or negative authorization response as well as the new Stored Value balance.

Pre-Conditions
Post-Conditions
Data
- Amount
- Item purchased
- Authorization
- Instrument ID

9.2 Conformance XML Instance Document - Post-authorization Redemption

```xml
<?xml version="1.0" encoding="UTF-8"?>
<POSLog xmlns="http://www.nrf-arts.org/IXRetail/namespace/"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/
../POSLogV6.0.0.xsd"
   MajorVersion="6" MinorVersion="0" FixVersion="0">
   <Transaction>
     <BusinessUnit>
        <UnitID>HighStreet</UnitID>
```

```
            </BusinessUnit>
            <WorkstationID>POS5</WorkstationID>
            <SequenceNumber>4294967295</SequenceNumber>
            <OperatorID>John</OperatorID>
            <RetailTransaction>
                <LineItem>
                    <Sale ItemType="Stock">
                        <POSIdentity>
                            <POSItemID>01234567890123</POSItemID>
                        </POSIdentity>
                        <ExtendedAmount>4.89</ExtendedAmount>
                    </Sale>
                    <SequenceNumber>1</SequenceNumber>
                </LineItem>
                <LineItem>
                    <Tender TenderType="StoredValue">
                        <Amount>4.89</Amount>
                        <Authorization>
                            <AuthorizationCode>asdfyesasf</AuthorizationCode>
                        </Authorization>
                        <StoredValueInstrument TypeCode="GiftCard">
                            <SerialNumber>12341234</SerialNumber>
                        </StoredValueInstrument>
                    </Tender>
                    <SequenceNumber>2</SequenceNumber>
                </LineItem>
            </RetailTransaction>
        </Transaction>
</POSLog>
```

10. USE CASE: Online Sales

10.1 Scenario: Online Sales of Stored Value

Brief Description
A retailer wants to be able to sell the online purchase of a stored value account (such as e-voucher, e-Topup) where an authorization is required upon item sale and the external identifier is defined in the system per each item. The receipent can then use the store value to purchase items online.

The purchaser can then add money to the stored value account.

Scenario Description

Customer purchased an online stored value account for his son to use in order to purchase items for his college room.

Pre-Conditions
Post-Conditions
Data

10.1 Conformance XML Instance Document - Post-authorization Redemption

```xml
<?xml version="1.0" encoding="UTF-8"?>
<POSLog xmlns="http://www.nrf-arts.org/IXRetail/namespace/"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.nrf-arts.org/IXRetail/namespace/
..//POSLogV6.0.0.xsd"
    MajorVersion="6" MinorVersion="0" FixVersion="0">
    <Transaction>
        <BusinessUnit>
            <UnitID>HighStreet</UnitID>
        </BusinessUnit>
        <WorkstationID>POS5</WorkstationID>
        <SequenceNumber>4294967295</SequenceNumber>
        <OperatorID>John</OperatorID>
        <RetailTransaction>
            <LineItem>
                <!-- Purchase the online stored value voucher -->
                <StoredValueFundSale TypeCode="OnlineVoucher">
                    <ItemID>01234567890123</ItemID>
                    <ExtendedAmount>26.00</ExtendedAmount>
                    <Instrument>
                        <FaceValueAmount>25.00</FaceValueAmount>
                        <SerialNumber>345543345</SerialNumber>
                    </Instrument>
                </StoredValueFundSale>
                <SequenceNumber>1</SequenceNumber>
                <!-- Send it to Joe -->
                <ContactInformation>
                    <Name><OfficialName>Joe Cool</OfficialName></Name>
```

```xml
                    <EMail>
                        <EMailAddress>Joe@Coolville.com</EMailAddress>
                    </EMail>
                </ContactInformation>
            </LineItem>
            <LineItem>
                <Tender TenderType="CreditDebit">
                    <Amount>26</Amount>
                </Tender>
                <SequenceNumber>2</SequenceNumber>
            </LineItem>
        </RetailTransaction>
    </Transaction>
</POSLog>
```

11. Document History

12. Version History

Version 1.0

Overview

New Features

Sections	Description of Change
	-

Minor fixes

Deprecation

Sections	Description of Change
	-

Compatibility/Dependencies Issues

Previous Document

13. GLOSSARY

Term	Definition