



# **ARTS POSLog V6.0**

**Volume 17: Store Operations Technical Specification**  
February 20, 2014 – Last Call Working Draft

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## **1. Abstract**

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### **1.1 Overview**

### **1.2 In Scope**

### **1.3 Out of Scope**

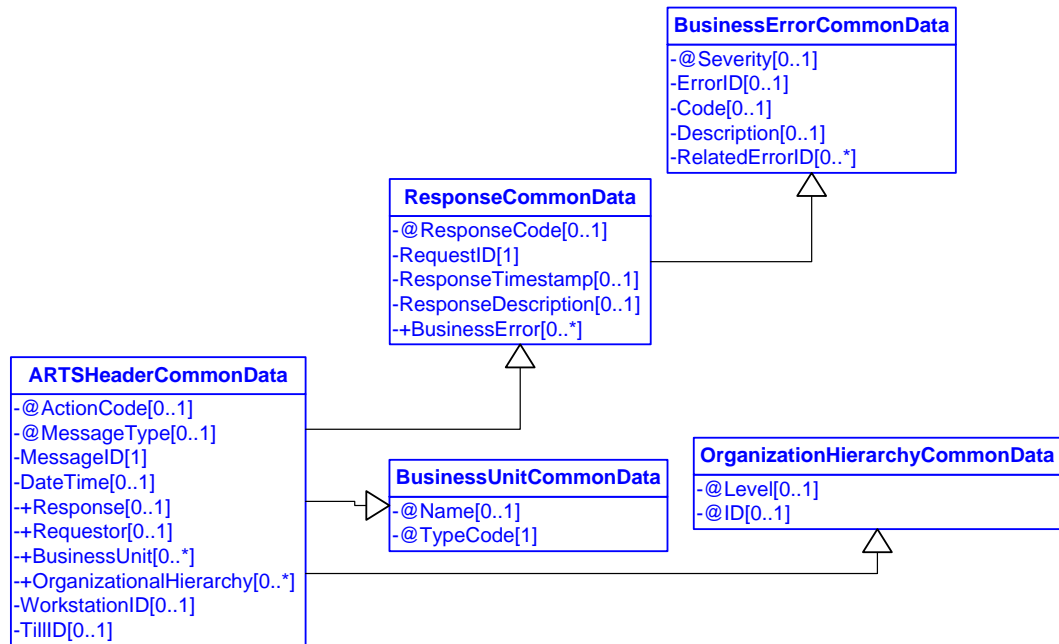
## 2. Referenced Documents

---

- **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 1: 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 2: 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: Print Dispatch Docket (V2.2)

---

### 4.1 Scenario: Print Dispatch Docket

#### Brief Description

A Dispatch Docket is a copy of the original customer receipt, with the addition of the customer's Name and Address, and it is requested immediately after the transaction for which the Dispatch Docket is required. Generically, there is a requirement to be able to print a Dispatch Docket for any previous transaction. It is attached to the goods that will be collected later by the customer from a pickup area at the back of the store and must be matched with the customer's receipt when the customer eventually collects the goods.

#### Pre-Conditions

#### Post-Conditions

#### Data

### 4.1 Conformance XML Instance Document - Print Dispatch Docket

```
<?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 TypeCode="DispatchDocket">
      <LineItem>
        <Sale ItemType="Stock">
          <POSIdentity>
            <POSItemID>01234567890123</POSItemID>
          </POSIdentity>
          <ExtendedAmount>4.89</ExtendedAmount>
        </Sale>
        <SequenceNumber>1</SequenceNumber>
      </LineItem>
      <Customer>
        <Name>
          <MailingName>Fred and Suzy</MailingName>
        </Name>
        <Address>
          <AddressLine>1234 Home Address</AddressLine>
          <City>My Town</City>
```

```
        <Territory>New Mexico</Territory>
        <PostalCode>12345</PostalCode>
    </Address>
</Customer>
</RetailTransaction>
<TillID>22</TillID>
</Transaction>
</POSLog>
```



## 5. USE CASE: Issuing an Official Bill by Customer Request (V2.2)

---

### 5.1 Scenario: Issuing an Official Bill by Customer Request

In Japan, regarding taxation authorities and auditors, businesses use official bills as proof of expenditure for purchased goods and services. Normally, the taxing authority and auditors do not accept receipts, which are judged to be insufficient proof of expenditure, because although the purchased item, purchased date, and store are printed, the company name of the purchaser is not printed. Nonetheless, there are cases where receipts are used and approved. After an official receipt has been printed from the POS, and the POS operator has filled out the necessary information and sealed it with a stamp, it is handed over to the customer. Later, in the case of a tax authority or auditor inquiry regarding the details of an official bill, using the official bill number, the receipt can be retrieved and the details presented. It is for this purpose, that the amount and official bill number are stored in the POSLog. Setting the official bill number to the receipt number makes detailed data retrieval simple.

#### Brief description

An operator scans and registers merchandise, then handles payment processing. If an official bill is requested by the customer at the time of payment processing, the operator prints the official bill from the receipt printer. The POS prints the date, amount and completed official bill, leaving the customer name and summary fields blank. After confirming the transaction amount, using a pen, the operator fills out the business name and any other provisions, then hands the receipt over to the customer. In the case of a cash transaction, exceeding a certain amount requires the addition of a revenue stamp (regarding revenue stamps, refer to 2.3). When a receipt is given, the revenue stamp is attached to the receipt, and when an official bill is given, the revenue stamp is attached to the official bill. Credit card transactions do not require the use of a revenue stamp. Payment classification is stored in the receipt transaction data, so the official document operation which stores the payment classification in the POSLog is not necessary.

#### Data

- BillNo - Stores the official bill's corresponding receipt number as bill number.
- AmountForBill - Stores the amount.

### 5.1 Conformance XML Instance Document - Issuing an Official Bill by Customer Request

```
<?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>
  <OfficialBill>
    <BillNumber>4294967295</BillNumber>
    <AmountOfBill>4.89</AmountOfBill>
  </OfficialBill>
</RetailTransaction>
</Transaction>
</POSLog>
```

## 6. USE CASE: Multiple Operators Operation (V2.2)

---

### 6.1 Scenario: Multiple Operators Operation

In some circumstances, more than one operator attends to a single transaction. In Japan, there are a few kinds of this type of transaction.

One familiar pattern is the two-person operations in grocery store. There are one or two operators attending single transaction to perform checkout operation. They are called a checker and a cashier. The checker scans items in customer's basket and the cashier does tendering. The operations of both of operators are overlapped, namely, while the checker is scanning the items, the cashier is doing tender operation for the previous customer.

We see this type of operation also in other segment, such as, a book store. In this case, a few checkers and one cashier operate single terminal. Each checker initiates transactions by scanning items (books). He or she queues the transaction to the cashier once finished scanning, and gets money from his or her customer. This operation is applicable because most customers purchase only one or two books - it means less time is required to scan items and one cashier can handle many checkers' transactions successfully. In this scenario, there are multiple checkout lines where each customer scans their items. At the end there is one cashier who takes the money from the customer.

In both cases, there are up to two operators attending single transaction. But we assume we should not limit the number of operators to do so. That's because we call it as 'Multiple operators operation'.

NOTE: This is also the standard operation in drive thru operations for foodservice. There we have the order taker, cashier, and expediter.

#### Brief Description

Checker launches a transaction by starting to scan items. Cashier finishes the transaction by tendering operation. Not all transactions are performed by two operators. It depends on the traffic, namely, how many customers are shopping per unit time. In single operator mode, the cashier does both of scanning and tendering.

#### Data

- Transaction header data including:
  - Operator ids for all of operators attending the transaction (change maxOccurs attribute to unbounded).
  - 'OperatorRole' attribute is introduced into 'OperatorID' type.

### 6.1 Conformance XML Instance Document – Multiple Operators Operation

```
<?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 AssociateID="e11111" OperatorName="Taro"
OperatorType="Cashier">100</OperatorID>
  <OperatorID AssociateID="e22222" OperatorName="Hanako"
OperatorType="Checker"
  >101</OperatorID>
  <RetailTransaction>
    <LineItem>
      <Sale ItemType="Stock">
        <POSIdentity>
          <POSItemID>01234567890123</POSItemID>
        </POSIdentity>
        <ExtendedAmount>4.89</ExtendedAmount>
      </Sale>
      <SequenceNumber>1</SequenceNumber>
    </LineItem>
  </RetailTransaction>
</Transaction>
</POSLog>
```

## 7. USE CASE: Multi-Company Environment (V2.2)

---

### 7.1 Scenario: Multi-Company Environment

#### Brief Description

For example, a company group might have many arms in the supply chain world that deal with different parts of the process, such as a retail business, a logistics business and possibly others. Taking this slightly further there can be separate retail businesses that are part of the same group but have their own identity.

For example, XXX Group has four retail businesses: computers, mobile phones, general electrical goods and white goods like fridges, freezers etc. Each has their own separate identity.

As tends to happen, the business expand by acquiring other existing businesses. In this way the business can acquire multiple retail outlets that share the same store numbers as existing stores in other parts of the business (for example White Goods store 001 and Computers store 001).

The existing ARTS XML model seems to identify retail transactions by store code; in our data model this is not sufficient, the code of the company that the store belongs to has to form part of the business key to the data as well.

#### Data

#### 7.1 Conformance XML Instance Document – Multi-Company Environment

```
<?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>001</UnitID>
    </BusinessUnit>
    <OrganizationHierarchy Level="Concept">White
Goods</OrganizationHierarchy>
    <WorkstationID>POS5</WorkstationID>
    <SequenceNumber>4294967295</SequenceNumber>
    <OperatorID>John</OperatorID>
    <RetailTransaction>
      <LineItem>
        <Sale ItemType="Stock">
          <POSIdentity>
            <POSItemID>01234567890123</POSItemID>
          </POSIdentity>
          <ExtendedAmount>4.89</ExtendedAmount>
        </Sale>
      </LineItem>
    </RetailTransaction>
  </Transaction>
</POSLog>
```

```
        </Sale>
        <SequenceNumber>1</SequenceNumber>
      </LineItem>
    </RetailTransaction>
  </Transaction>
</POSLog>
```

## 8. USE CASE: Payment of SPIFF (V2.2)

---

### 8.1 Scenario: Payment of SPIFF

#### Brief Description

Bonus money paid by a vendor or a retailer to sales people for selling specially designated merchandise; sometimes given in the form of prizes, such as vacations or appliances.

#### Data

#### 8.1 Conformance XML Instance Document – Payment of SPIFF

```
<?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>100.00</ExtendedAmount>
          <Associate>
            <AssociateID>1234</AssociateID>
            <Spiff>
              <Amount>10.00</Amount>
            </Spiff>
          </Associate>
        </Sale>
        <SequenceNumber>1</SequenceNumber>
      </LineItem>
    </RetailTransaction>
  </Transaction>
</POSLog>
```

## 9. USE CASE: Sales Entry Including the Non-Merchandise Sales (V2.2)

---

### 9.1 Scenario: Sales Entry Including the Non-Merchandise Sales

The sales total on the receipt is shown in Total class, however, the amount of non - merchandise sales should be consolidated. The non-merchandise sales such as delivery cost and packing cost is the sales of items of which attribute differs from that of ordinary goods.

Also the number of purchased items should be shown on each receipt, which will be used in the application analyzing the sales trend for each receipt.

#### Brief Description

The operator registers non-merchandises such as delivery cost and packing cost. The sales total of these items are calculated as the item of which attribute differs from that of ordinary goods. The data is stored into the POSLog, transferred to the host system, and consolidated as “non-merchandise sales” in the accounting system separated from “item sales”.

#### Data

The entities below require **enumerations** which indicate the non-merchandise sales total and the number of purchased items.

- TOTAL
- RetailTransactionTotalTypeEnumeration: "TransactionNonSalesAmount"
- RetailTransactionTotalTypeEnumeration: "TransactionPurchaseQuantity"

### 9.1 Conformance XML Instance Document – Sales Entry Including the Non-Merchandise Sales

```
<?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>
      </LineItem>
    </RetailTransaction>
  </Transaction>
</POSLog>
```



```
        <Quantity>3</Quantity>
    </Sale>
    <SequenceNumber>1</SequenceNumber>
    <BeginDateTime>2001-09-16T09:04:00</BeginDateTime>
</LineItem>
<LineItem>
    <Sale ItemType="Stock">
        <ItemID>DC0001</ItemID>
        <ExtendedAmount>10.00</ExtendedAmount>
    </Sale>
    <SequenceNumber>2</SequenceNumber>
    <BeginDateTime>2001-09-16T09:04:00</BeginDateTime>
</LineItem>
<LineItem>
    <Tender TenderType="Cash" TypeCode="Sale">
        <Amount>4.89</Amount>
    </Tender>
    <SequenceNumber>3</SequenceNumber>
</LineItem>
<Total TotalType="TransactionGrandAmount">14.89</Total>
<Total TotalType="TransactionNonSalesAmount">10.00</Total>
<Total TotalType="TransactionPurchaseQuantity">2</Total>
</RetailTransaction>
</Transaction>
</POSLog>
```

## 10. USE CASE: Print Receipt Image (V2.2)

---

### 10.1 Scenario: Print Receipt Image

#### Brief Description

Customer initiates a payment transaction by inserting EMV 4.0.1 compliant card into reader. The EMV card is validated and the card holder authenticated using a PIN. A loyalty identification card can (optional) be inserted and validated. The payment transaction (tender) is authorized and a fuelling and tender transaction initiated. Customer selects a fuel grade and fills his vehicle. Fuelling transaction is terminated, retrieved and matched with the associated payment transaction (tender). The completed retail transaction is passed to the Sales/Stock recording system, Sales History and Payment recording systems.

#### Data

*Transaction* header data, including attributes EMVDebugFlag and VATReceiptFlag  
- Identifiers for store, workstation, till, currency code and operator performing sale .. in this case set to "Unattended".

*Retail Transaction* header data including attribute version identification of POSLog

- contains *one and only one* FuelSale Lineltem - which defines the fuelling transaction
- contains *one and only one* Tender Lineltem - which defines the payment transaction
- contains *one and only one* ReceiptImage Lineltem - necessary to reprint **EXACT** copy of local receipt

FuelSale - ServicePointID (Identifier of FuellingPoint) name and type are attributes. In this case type is "FuelDispenser" and Name is "Pump1". This allows for future where a customer operated POS with car valet, lubricant or other vending machines.

FuelSale - NozzleID (identifier of nozzle from where grade was delivered)

FuelSale - TankID (identifier of tank which stored the fuel grade delivered - to enable sales by storage location (tank)

Note if the ItemType=Blend; there are two+ <TankID> elements with BlendRatio, e.g. by default BlendRatio=100

<TankID BlendRatio=40>1</TankID>

<TankID BlendRatio=60>3</TankID>

This would mean the SalesVolume is proportioned 40% to Tank 1 and 60% to Tank 3.

Tender - Additional attributes defined in example provided. Necessary for EMV accreditation

Tender/EMVDebug - Additional Tender Attributes mandated by EMV

Tender/FleetData - Additional data required for Fleet Information.

This is not yet implemented and the example should be considered draft. It is incomplete. Will be matched with ISO8583Oil data fields. It is assumed Fleet data elements VehicleID and DriverID have attribute Type associated.

**10.1 Conformance XML Instance Document - Print Receipt Image**

```
<?xml version="1.0" encoding="UTF-8"?>
<POSLog xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  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 EMVDebugFlag="true" VATReceiptFlag="true">
    <BusinessUnit>
      <UnitID Name="Shell Plumstead Common">100</UnitID>
      <Address PrimaryFlag="true" AddressType="Work">
        <AddressLine TypeCode="Street">160-168 Plumstead Common
Road</AddressLine>
        <City>London</City>
      </Address>
      <Telephone PrimaryFlag="true" TypeCode="Work">
        <AreaCode>020</AreaCode>
        <LocalNumber>8317 6570</LocalNumber>
      </Telephone>
    </BusinessUnit>
    <WorkstationID>pos1</WorkstationID>
    <SequenceNumber>1123412341234123</SequenceNumber>
    <TrailerText>
      <Text>THANK YOU FOR CALLING</Text>
    </TrailerText>
    <VATRegistrationNumber>235 7632 55</VATRegistrationNumber>
    <ReceiptNumber>0215</ReceiptNumber>
    <ReceiptImage>
      <ReceiptLine>Shell Plumstead Common</ReceiptLine>
      <ReceiptLine>160-168 Plumstead Common Road, London</ReceiptLine>
      <ReceiptLine/>
      <ReceiptLine>Sales Receipt</ReceiptLine>
      <ReceiptLine/>
      <ReceiptLine>Trans No: 90215 15:18 16-Jun-2005</ReceiptLine>
      <ReceiptLine/>
      <ReceiptLine>Fill. Pos. Product Litres Value</ReceiptLine>
      <ReceiptLine>3 DIESEL 14.25 £10.00</ReceiptLine>
      <ReceiptLine/>
      <ReceiptLine>Nett Price £8.40</ReceiptLine>
      <ReceiptLine> </ReceiptLine>
      <ReceiptLine>Sale Total £10.00</ReceiptLine>
      <ReceiptLine/>
      <ReceiptLine/>
      <ReceiptLine>Please Retain This Copy For Your Records</ReceiptLine>
      <ReceiptLine/>
      <ReceiptLine>Tear Here For VAT Receipt</ReceiptLine>
      <ReceiptLine/>
      <ReceiptLine>VAT Receipt</ReceiptLine>
      <ReceiptLine/>
      <ReceiptLine>Shell Plumstead Common</ReceiptLine>
```

```
<ReceiptLine>160-168 Plumstead Common Road, London</ReceiptLine>
<ReceiptLine/>
<ReceiptLine>Trans No: 90215 15:18 16-Jun-2005</ReceiptLine>
<ReceiptLine/>
<ReceiptLine>Fill. Pos. Product Litres Value</ReceiptLine>
<ReceiptLine>3 DIESEL 14.25 £10.00</ReceiptLine>
<ReceiptLine/>
<ReceiptLine>Nett Price £8.40</ReceiptLine>
<ReceiptLine> </ReceiptLine>
<ReceiptLine>Sale Total £10.00</ReceiptLine>
<ReceiptLine/>
<ReceiptLine>Vat % Inclusive Exclusive VAT</ReceiptLine>
<ReceiptLine>B 19 £10.00 £8.40 £1.60</ReceiptLine>
<ReceiptLine/>
<ReceiptLine>VAT Reg. No.: 235 7632 55</ReceiptLine>
<ReceiptLine/>
<ReceiptLine>SHELL U.K. LIMITED</ReceiptLine>
<ReceiptLine>SHELL CENTRE, LONDON SE1 7NA</ReceiptLine>
<ReceiptLine>THANK YOU FOR CALLING</ReceiptLine>
</ReceiptImage>
<RetailTransaction>
  <LineItem>
    <FuelSale>
      <POSIdentity>
        <POSItemID>01234567890123</POSItemID>
      </POSIdentity>
      <Description>DIESEL</Description>
      <ExtendedAmount>10.00</ExtendedAmount>
      <ServicePointID Name="Pump1[FP1]">1</ServicePointID>
      <TankID>1</TankID>
    </FuelSale>
    <SequenceNumber>1</SequenceNumber>
  </LineItem>
  <LineItem>
    <Tender TenderType="CreditDebit" TypeCode="Sale">
      <Amount>10.00</Amount>
    </Tender>
    <SequenceNumber>2</SequenceNumber>
  </LineItem>
</RetailTransaction>
</Transaction>
</POSLog>
```

## 11. USE CASE: Item purchase with employee training (V2.1)

---

### 11.1 Scenario: Item purchase with employee training

The store is training a new employee and doesn't want the transactions performed during the training session to have any affect on inventory, financials...etc.

#### Data

- Transaction header data, including:
  - Identifiers for Store, Workstation, & Operator performing the transaction.
  - The date the transaction was performed.
  - A workstation assigned sequence number identifying the transaction.
  - An indication that the transaction is a training or practice transaction.
- Item data, including:
  - An item identifier for the item being sold.
  - The number of multiples of the item being sold.
  - The current unit-price of the item
  - The extended price for the items being sold.

### 11.1 XML Instance Document - Item Purchase With Employee Training

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- UseCase: Item Purchase with Employee Training -->
<!-- Note: Addition of TrainingModeFlag in transaction header -->
<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 TrainingModeFlag="true">
    <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>12.99</ExtendedAmount>
          <Quantity>1</Quantity>
        </Sale>
        <SequenceNumber>1</SequenceNumber>
      </LineItem>
    </RetailTransaction>
  </Transaction>
</POSLog>
```

## 12. USE CASE: Transaction Totals (V6.0)

---

### 12.1 Scenario: Transaction Totals (V6.0)

#### Brief Description

There may be more than one tax type per transaction. For example, each item may have taxes included such as VAT but also for some items there may be an additional tax (or fee) such as the Producer Recycling Fund (PRF) in the Republic of Ireland.

#### Data

- Transaction header data, including:
  - Identifiers for Store, Workstation, & Operator performing the transaction.
  - The date the transaction was performed.
  - A workstation assigned sequence number identifying the transaction.
  - Transaction Tax Total with an enumeration of what type of tax it is for each type of tax in that transaction

### 12.1 Conformance XML Instance Document – Transaction Tax Totals

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- UseCase: Item Purchase timing -->
<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 TrainingModeFlag="true">
    <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>12.99</ExtendedAmount>
          <Quantity>1</Quantity>
        </Sale>
        <SequenceNumber>1</SequenceNumber>
      </LineItem>
      <Total TotalType="TransactionTaxAmount">8.00</Total>
      <Total TotalType="TransactionTaxIncluded">2.00</Total>
    </RetailTransaction>
  </Transaction>
</POSLog>
```

## 12.2 Scenario: Subtotal (V6.0)

### Description

A customer is purchasing items for their friend and wants a subtotal to show up on the receipt in order to get the money from their friend.

The operator enters the friend's purchases and pushes the subtotal button....

The solution is to put the subtotal purchases in a "subtotal Group" located at the retail transaction level.

### Data

- Transaction header data, including:
  - Identifiers for Store, Workstation, & Operator performing the transaction.
  - The date the transaction was performed.
  - A workstation assigned sequence number identifying the transaction.
  - Subtotal group data containing:
    - The items entered before the subtotal
    - The subtotal amount, tax amount and total for the group

### 12.2 Conformance XML Instance Document – Transaction Subtotal

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- UseCase: Item Purchase timing -->
<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 TrainingModeFlag="true">
    <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>12.99</ExtendedAmount>
          <Quantity>1</Quantity>
        </Sale>
        <SequenceNumber>1</SequenceNumber>
      </LineItem>
      <Total TotalType="TransactionSubtotal">12.99</Total>
    </RetailTransaction>
  </Transaction>
</POSLog>
```

## 12.3 Scenario: Total Weight (V6.0)

### Brief Description

In addition to the total count of items in a transaction, sometimes there is a need to get the total weight of all items in a transaction. There may be both a total count of items and a total weight of all weighted items for the transaction.

### Data

- Transaction header data, including:
  - Identifiers for Store, Workstation, & Operator performing the transaction.
  - The date the transaction was performed.
  - A workstation assigned sequence number identifying the transaction.
  - Transaction total lines
  - TransactionPurchaseQuantity with UnitOfMeasureCode of KGM
  - TransactionPurchaseQuantity with UnitOfMeasureCode of EA

### 12.3 Conformance XML Instance Document – Total Weight

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- UseCase: Item Purchase timing -->
<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 TrainingModeFlag="true">
    <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>12.99</ExtendedAmount>
          <Quantity>1</Quantity>
        </Sale>
        <SequenceNumber>1</SequenceNumber>
      </LineItem>
      <Total TotalType="TransactionWeightTotal">12.99</Total>
    </RetailTransaction>
  </Transaction>
</POSLog>
```



## 12.4 Scenario: Operational Mode (V6.0)

### Brief Description

For loss prevention, transactions/line items entered in other than a normal mode of operation (manager or maintenance) need to be tracked

### Scenario Description

#### Data

Add a "Mode" attribute to POSLogTransaction and RetailTransactionLineItem with an enumeration of Normal (Default), Manager, Maintenance

### 12.4 Conformance XML Instance Document – Operational Mode

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- UseCase: Item Purchase timing -->
<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 TrainingModeFlag="true">
    <BusinessUnit>
      <UnitID>Highstreet</UnitID>
    </BusinessUnit>
    <WorkstationID>POS5</WorkstationID>
    <SequenceNumber>4294967295</SequenceNumber>
    <OperatorID>John</OperatorID>
    <RetailTransaction>
      <LineItem EntryMode="Maintenance">
        <Sale ItemType="Stock">
          <POSIdentity>
            <POSItemID>01234567890123</POSItemID>
          </POSIdentity>
          <ExtendedAmount>12.99</ExtendedAmount>
          <Quantity>1</Quantity>
        </Sale>
        <SequenceNumber>1</SequenceNumber>
      </LineItem>
    </RetailTransaction>
  </Transaction>
</POSLog>
```

### 13. USE CASE: Idle Time, Lock Time, Ring Time, Tender Time (V6.0)

---

#### Brief Description

To collect statistics on cashiers, certain types of information are stored about each sales transaction and sign on session.

Ring time –the amount of time that a cashier spends ringing in items

Tender time –the amount of time that the cashier spends during the tendering process

idle time – is the amount of time in between transactions

Lock Time – the time between a workstation lock and unlock

#### 13.1 Scenario: Item Registration Time (V6.0)

##### Brief Description

##### Scenario Description

A central administrator wants to receive for each cashier the accumulated time in which items were scanned at the POS to the productivity extract, so that I can have indication of the cashier performance for further data analysis.

##### Data

Field name: ItemRegistrationTime

Item registration time is calculated according to item begin and end time indication in transaction log, in the following method:

ItemRegTime= previous accumulated sale mode time +  $\sum$ (end of item scan time) – (Start of item scan time)

#### 13.1 Conformance XML Instance Document – Item Registration Time

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- UseCase: Item Purchase timing -->
<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 TrainingModeFlag="true">
    <BusinessUnit>
      <UnitID>Highstreet</UnitID>
    </BusinessUnit>
    <WorkstationID>POS5</WorkstationID>
    <SequenceNumber>4294967295</SequenceNumber>
    <OperatorID>John</OperatorID>
    <RetailTransaction>
      <LineItem>
        <Sale ItemType="Stock">
          <POSIdentity>
            <POSItemID>01234567890123</POSItemID>
          </POSIdentity>
        </Sale>
      </LineItem>
    </RetailTransaction>
  </Transaction>
</POSLog>
```

```
        <ExtendedAmount>12.99</ExtendedAmount>
        <Quantity>1</Quantity>
    </Sale>
    <SequenceNumber>1</SequenceNumber>
</LineItem>
    <Total TotalType="ItemRegistrationTime">08</Total>
</RetailTransaction>
</Transaction>
</POSLog>
```

## 13.2 Scenario: Secure Time (V6.0)

### Brief Description

As a central administrator I want to receive for each cashier the accumulated time, in which the POS is in secure mode, to the productivity extract, so that I can have indication of the cashier performance for further data analysis.

### Scenario Description

#### Data

Field name: SecureTime

Secure time is calculated according to cashier entering and exiting secure mode, and will accumulate the duration during the cashier sign on period.

SecureTime= previous accumulated secure time + [(exit secure mode) – (enter secure mode)]

secure time can be reset to 0 upon cashier sign off and in EOD process.

## 13.2 Conformance XML Instance Document – Secure Time

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- UseCase: Item Purchase timing -->
<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 TrainingModeFlag="true">
    <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>12.99</ExtendedAmount>
          <Quantity>1</Quantity>
        </Sale>
      <SequenceNumber>1</SequenceNumber>
```

```
        </LineItem>
        <Total TotalType="SecureTime">200</Total>
    </RetailTransaction>
</Transaction>
</POSLog>
```

### 13.3 Scenario: Idle Time (V6.0)

#### Brief Description

##### Scenario Description

A central administrator wants to receive for each cashier the accumulated idle time (in which the POS was in between transactions) to the productivity extract, to have an indication of the cashier performance for further data analysis.

##### Data

Field name: IdleTime

Idle time is calculated according to start and end time of the transactions,  
Idle time= previous Idle time + [(new transaction start time) – (previous transaction end time)]

### 13.3 Conformance XML Instance Document – Idle Time

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- UseCase: Item Purchase timing -->
<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 TrainingModeFlag="true">
    <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>12.99</ExtendedAmount>
          <Quantity>1</Quantity>
        </Sale>
        <SequenceNumber>1</SequenceNumber>
      </LineItem>
      <Total TotalType="IdleElapsedTime">200</Total>
    </RetailTransaction>
  </Transaction>
</POSLog>
```

### 13.4 Scenario: Sign On Time (V6.0)

#### Brief Description

##### Scenario Description

A central administrator wants to receive for each cashier the accumulated time during which a cashier is signed into the POS to the productivity extract, to have an indication of the cashier performance for further data analysis.

#### Data

Field name: SignOnTime

Sign on time is calculated according to cashier sign in and out events, and will accumulate the sign in duration of the cashier during the shift.

Sign on time Field will be reset to 0 upon cashier sign off and in EOD process.

### 13.4 Conformance XML Instance Document – Sign On Time

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- UseCase: Item Purchase timing -->
<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 TrainingModeFlag="true">
    <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>12.99</ExtendedAmount>
          <Quantity>1</Quantity>
        </Sale>
        <SequenceNumber>1</SequenceNumber>
      </LineItem>
      <Total TotalType="SignOnTime">08</Total>
    </RetailTransaction>
  </Transaction>
</POSLog>
```

**Scenario: Sign Off Time (V6.0)****Brief Description****Scenario Description**

A central administrator wants to receive for each cashier the time during which a cashier has signed off from the POS to the productivity extract, in order to have an indication of the cashier performance for further data analysis.

**Data**

Field name: SignOffTime

Sign off time will indicate the date and time the cashier signed off.

Sign off flag will be set to null upon EOD process.

**0Conformance XML Instance Document – Sign Off Time**

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- UseCase: Item Purchase timing -->
<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 TrainingModeFlag="true">
    <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>12.99</ExtendedAmount>
          <Quantity>1</Quantity>
        </Sale>
        <SequenceNumber>1</SequenceNumber>
      </LineItem>
      <Total TotalType="SignOffTime">08</Total>
    </RetailTransaction>
  </Transaction>
</POSLog>
```

## **14. Document History**

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## 15. Version History

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### Version 1.0

#### Overview

#### New Features

Sections	Description of Change
	-

#### Minor fixes

#### Deprecation

Sections	Description of Change
	-

#### Compatibility/Dependencies Issues

#### Previous Document



## 16. GLOSSARY

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Term	Definition