DMS Volvo Authorization Message Protocol Technical Specifications

Volvo Financial Services, North America

North American Transaction Services

(NATS)

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8/6/2012	1.0	Bert Wilson	Final document
8/31/12	1.1	Bert Wilson	Updated UAT/Production Gateway URL Minor grammatical edits
12/03/12	1.2	Bert Wilson	Updated UAT/Production Gateway URLs

1.0 Introduction

The MVPreferred system was created to allow NORTH AMERICAN TRANSACTION SERVICES (NATS) and *VOLVO TRUCKS NORTH AMERICA (VOLVO)* to offer customer preferred pricing from within the existing *DEALER MANAGEMENT SYSTEMS (DMS)*.

This document outlines the required specifications to pass messages between the DMS and MVPreferred to obtain in *REAL TIME* both the pricing verification and current credit line (*AUTHORIZATION AND SETTLEMENT*) for a fleet client. The process to allow a DMS to interface with MVPreferred will be via *EXTENSIBLE MARKUP LANGUAGE (XML)* over *HYPERTEXT TRANSFER PROTOCOL SECURE (HTTPS)* via the public Internet using the GATEWAY SERVICE.

This document assumes the reader is well versed in *TCP/IP* communications with various methods and protocols which are readily available via commercial off the shelf products or included with most Operating Systems.

1.1   Summary of Contents of Document

The following conventions are used throughout this document:
- *Capitalized Italics* words (only capitalized the first time) are defined in the Glossary.
- [NOTES: are used to further clarify discussion or offer additional suggestions and/or resources wherever applicable].

1.2   Audience and Scope

This document is intended to discuss at a high level, the technical programming requirements to pass messages (*SALES ORDER INVOICES – SOI* and *REPAIR ORDERS – RO*) between two (2) different Operating Systems. The DMS can be any type of computer and operating system and resides at a Volvo/Mack Truck Dealership. MVPreferred resides within Volvo Financial Services LAN Admin Operations Center. The DMS vendors will interface with MVPreferred through the web based exchange process.

Secondary audiences include, but are not limited to: software implementers, quality assurance personnel, and technical writers.

1.3   Related Documents

- DMS Volvo Gateway Service tech specs
- DMS Volvo Price Verification Message Protocol tech specs
- DMS Volvo Authorization Message Protocol tech specs
- XML DMS Volvo Batch Invoice Settlement tech specs

2.0   System Objectives

The DMS/ MVPreferred messaging system is quite simple in that two (2) different infrastructures (both hardware and Operating Systems) wish to exchange information. The MVPreferred infrastructure is Microsoft Windows 2008 Servers. Client Certificate Authentication certificates will be shared between VFS and the DMS to be added to the web server environment for additional point-to-point security. The transport protocol for messaging will be synchronous messaging over standard HTTPS. The DMS will initiate an HTTPS request <mark>with security token</mark> and wait for the response from the MVPreferred.

- The current DMS *GRAPHICAL USER INTERFACE (GUI)* displays a form for dealer personnel to create an invoice or repair order
- Once all the information has been captured, the dealer personnel will submit the form to MVPreferred for pricing verification
- MVPreferred will interrogate the Volvo database which contains all information required to verify that a client has or does not have preferred pricing for various VOLVO *PART NUMBERS*, and return the information along with status messages
- The DMS GUI will extract any new pricing and adjust the form to reflect the preferred pricing for each of the part numbers.
- A Sales Order Invoice or Repair Order can be presented for Authorization at any time (See SLA for maintenance windows and Authorization and Settlement Technical Specifications for more detail).
- Authorized sales invoices will be batched and sent from the DMS to MVPreferred on a scheduled basis for Settlement and Payment.

3.0 Assumptions

- Use XML over HTTPS –Authorization Requests will be coming over public network (HTTPS) with security token. See Gateway Service specification for details on security layer.
- Client Certificate Authentication certificates loaded in VFS and DMS webserver environments for point-to-point security
- A sales order invoice authorization request assumes that the DMS has performed all Price Verification prior to Authorization and that the dealership has not changed any prices or added any new line items since the last Price Verification Request.

  NOTE: During Settlement, a final Price Verification will be performed and any price discrepancies will cause that invoice to be rejected. The dealer will be notified of the invoice in question via the Acknowledgement File, and the dealer must correct the invoice via the Invoice Management Pro in the MV Preferred Dealer Portal. The Settlement file will once again flow through normal processing for resubmission for payments. **Price Verifications may be invalid if not verified the same day as the authorization code is received.**

- **VFS IT DMS/Dealer network SLA:** the bandwidth and/or availability of the DMS and/or dealers connection from their respective Internet Service Provider is not in scope for VFS IT support
    - VFS IT SLA support covers incoming/outgoing connections to the Gateway Service designated in the specification

4.0 Gateway Service for Authorization

4.1 Gateway Service

Please refer to the document, *DMS Volvo Gateway Service tech specs*, which contain all the details to send an Authorization request through the Gateway Service.

4.2 URL address for the Gateway Service

Production URL:
https://csa.mvpreferred.com/GatewayService/Gatewayservice.asmx

User Acceptance Testing URL:
https://csauat.mvpreferred.com/GatewayService/Gatewayservice.asmx

5.0 Messaging Formats

The information to be exchanged between the DMS and MVPreferred will be XML formatted messages. Only the DMS can initiate a synchronous Message Request. The following pseudo code is intended as an example only:

1. DMS initializes
   1.1. Retry counter to 3
   1.2. Timeout counter to 15 seconds
2. DMS issues HTTPS POST message (XML Request) to MVPreferred
3. **Timeout Check**:
   Wait one (1) second for message
4. If Message Received, go to step 14
5. Decrement timeout counter
6. If Timeout occurred, go to step 9
7. Go wait for message at step 3.
8. **Maximum Retries Check:**
   Decrement # of retries
9. **Timeout Occurred:**
   If retries exceeded, go to step 12
10. Reset timeout counter to 15 seconds
11. Go to step 3
12. **Lost Connection Error Processing:**
    No answer from MVPreferred and assume no connection
    Call MVPreferred Customer service to obtain manual authorization number
13. End of Job
14. **Message Received from MVPreferred**.
    Process the XML received message
15. End of Job

See the attached XML Schemas for formatting of the data (Strings, Monetary data, dates and others).
NOTE: All of the XML tags will be required; however, certain tags are optional and can be empty.
That is, if no data is present, then provide the tags with no data (I.E. <VIN></VIN>). See the following tables for more details on the optional tags.

5.1   XML Authorization Request (DMS to MVPreferred)

Tag Identifier	Description / See XML Schema for formatting	Optional
AuthRequest	Beginning of Message Request	
@App_ID	Attribute of AuthRequest. App ID per DMS (ID provided to DMS)	
@Token	Attribute of AuthRequest. Unique GUID returned from GetSecurityToken	
DealerCode	Dealer Identification as stored at MVPreferred	
AcctNbr	Accounts Receivable Identification as stored at MVPreferred	
Date	Actual date of the transaction in CCYY-MM-DD format	

Tag Identifier	Description / See XML Schema for formatting	Optional
AuthType	Type of Authorization Request – Possible choices are: A – Standard Authorization P – Pre-Authorization Only C – Memo (NOTE: Memo adjustment will not affect a customer's account current OPEN TO BUY amount until settlement.	
InvType	R – Repair Order Invoice P – Parts Invoice	
PreAuthNbr	Authorization # that was previously acquired, but only if InvType =R)	Yes
PONbr	Purchase Order number if supplied. NOTE: If customer's fleet manager has configured PO as required and the PONbr is not supplied, a decline will occur.	Yes
AuthOverride	A maximum of two (2) numeric digits to override the default total number of days for pre-authorizations only. *Not enabled at this time*	Yes
Amt	Total amount to be authorized including any tax , miscellaneous fees, etc…	
UnitNbr	(RO)Vehicle Unit #. NOTE: If customer's fleet manager has configured Unit # as required and the Unit # is not supplied, a decline will occur.	Yes
VIN	(RO)Vehicle Identification #. NOTE: If customer's fleet manager has configured VIN as required and the VIN is not supplied, a decline will occur.	Yes
DriverNbr	Driver #. NOTE: If customer's fleet manager has configured Driver # as required and the Driver # is not supplied, a decline will occur.	Yes
/AuthRequest	End of Message Request	

5.2   XML Authorization Response (MVPreferred to DMS)

Tag Identifier	Description / See XML Schema for formatting	Optional
AuthResponse	Beginning of Message Response	
DealerCode	Dealer Code as stored at MVPreferred	
AcctNbr	Accounts Receivable Identification as stored at MVPreferred	
RetCode	Return Status 0 = Processed Successfully – See returned Authorization Number 1 = STOP – Manual Intervention is required. See the error message for details 2 = REFER. Non-fatal error, manual intervention required	
RetMsg	English error message to be Prompted onto DMS screen	
AuthNbr	The authorization code supplied by MVPreferred that guarantees payment for goods or services sold if re-presented at Settlement. An authorization number will not be returned if any errors were encountered during the authorization process.	
/AuthResponse	End of Message Response	

5.3 Sample XML and Schema Message Authorization Request

5.3.1 Authorization Sample XML

```xml
<?xml version="1.0" encoding="utf-8"?>
<ar:AuthRequest App_ID="99" Token="5464c3dd-2181-4d05-b496-cc88a3df9b2e"
xmlns:ar="http://Volvo.Com/AuthRequest.xsd">
    <ar:DealerCode>D1234</ar:DealerCode>
    <ar:AcctNbr> A12345678912345</ar:AcctNbr>
    <ar:Date>2010-01-25</ar:Date>
    <ar:AuthType>A</ar:AuthType>
    <ar:InvType>R</ar:InvType>
    <ar:PreAuthNbr>E05011012345678</ar:PreAuthNbr>
    <ar:PONbr>123456</ar:PONbr>
    <ar:AuthOverride>30</ar:AuthOverride>
    <ar:Amt>1234.50</ar:Amt>
    <ar:UnitNbr>V123-45</ar:UnitNbr>
    <ar:VIN>12345678901234567</ar:VIN>
    <ar:DriverNbr>12345</ar:DriverNbr>
</ar:AuthRequest>
```

5.3.2 Authorization Request XML Schema

```xml
<?xml version="1.0" encoding="utf-8" ?>
<xs:schema id="AuthDataSet" targetNamespace="http://volvo.com/AuthRequest.xsd"
xmlns:mstns="http://volvo.com/AuthRequest.xsd" xmlns="http://volvo.com/AuthRequest.xsd"
xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:msdata="urn:schemas-microsoft-com:xml-msdata"
attributeFormDefault="qualified" elementFormDefault="qualified">
    <xs:element name="AuthRequest" msdata:Prefix="ar">
        <xs:complexType>
            <xs:sequence>
                <xs:element name="DealerCode" msdata:Prefix="ar" type="xs:string" minOccurs="1"
maxOccurs="1" />
                <xs:element name="AcctNbr" type="xs:string" msdata:Prefix="ar" minOccurs="1"
maxOccurs="1" />
                <xs:element name="Date" type="xs:date" msdata:Prefix="ar" minOccurs="1" maxOccurs="1" />
                <xs:element name="AuthType" type="xs:string" msdata:Prefix="ar" minOccurs="1"
maxOccurs="1" />
                <xs:element name="InvType" type="xs:string" msdata:Prefix="ar" minOccurs="1"
maxOccurs="1" />
                <xs:element name="PreAuthNbr" type="xs:string" msdata:Prefix="ar" minOccurs="0"
maxOccurs="1" />
                <xs:element name="PONbr" type="xs:string" msdata:Prefix="ar" minOccurs="1" maxOccurs="1"
/>
                <xs:element name="AuthOverride" type="xs:positiveInteger" msdata:Prefix="ar"
minOccurs="0" maxOccurs="1" />
                <xs:element name="Amt" type="xs:decimal" msdata:Prefix="ar" minOccurs="1" maxOccurs="1"
/>
                <xs:element name="UnitNbr" type="xs:string" msdata:Prefix="ar" minOccurs="0"
maxOccurs="1" />
                <xs:element name="VIN" type="xs:string" msdata:Prefix="ar" minOccurs="0" maxOccurs="1" />
                <xs:element name="DriverNbr" type="xs:string" msdata:Prefix="ar" minOccurs="0"
maxOccurs="1" />
            </xs:sequence>
            <xs:attribute name="App_ID" form="unqualified" type="xs:string" />
            <xs:attribute name="Token" form="unqualified" type="xs:string" />
        </xs:complexType>
    </xs:element>
    <xs:element name="AuthDataSet" msdata:IsDataSet="true" msdata:Prefix="ar"
msdata:EnforceConstraints="True">
        <xs:complexType>
            <xs:choice maxOccurs="unbounded">
                <xs:element ref="AuthRequest" />
            </xs:choice>
        </xs:complexType>
    </xs:element>
</xs:schema>
```

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5.4 Sample XML and Schema Message Authorization Response

5.4.1 Authorization Response XML (Positive Response)

```xml
 <?xml version="1.0" encoding="utf-8" ?>
<ar:AuthResponse xmlns:ar="http://Volvo.Com/AuthResponse.xsd">
    <ar:DealerCode>D1234</ar:DealerCode>
    <ar:AcctNbr> A12345678912345</ar:AcctNbr>
    <ar:RetCode>0</ar:RetCode>
    <ar:RetMsg>1500 Authorized</ar:RetMsg>
    <ar:AuthNbr>E05011012345678</ar:AuthNbr>
</ar:AuthResponse>
```

5.4.2 Authorization Response XML (Negative Response)

```xml
<?xml version="1.0" encoding="utf-8" ?>
<ar:AuthResponse xmlns:ar="http://Volvo.Com/AuthResponse.xsd">
    <ar:DealerCode> D1234</ar:DealerCode>
    <ar:AcctNbr> A12345678912345</ar:AcctNbr>
    <ar:RetCode>1</ar:RetCode>
    <ar:RetMsg> 1550 Declined. Single purchase limit exceeded.</ar:RetMsg>
    <ar:AuthNbr></ar:AuthNbr>
  </ar:AuthResponse>
```
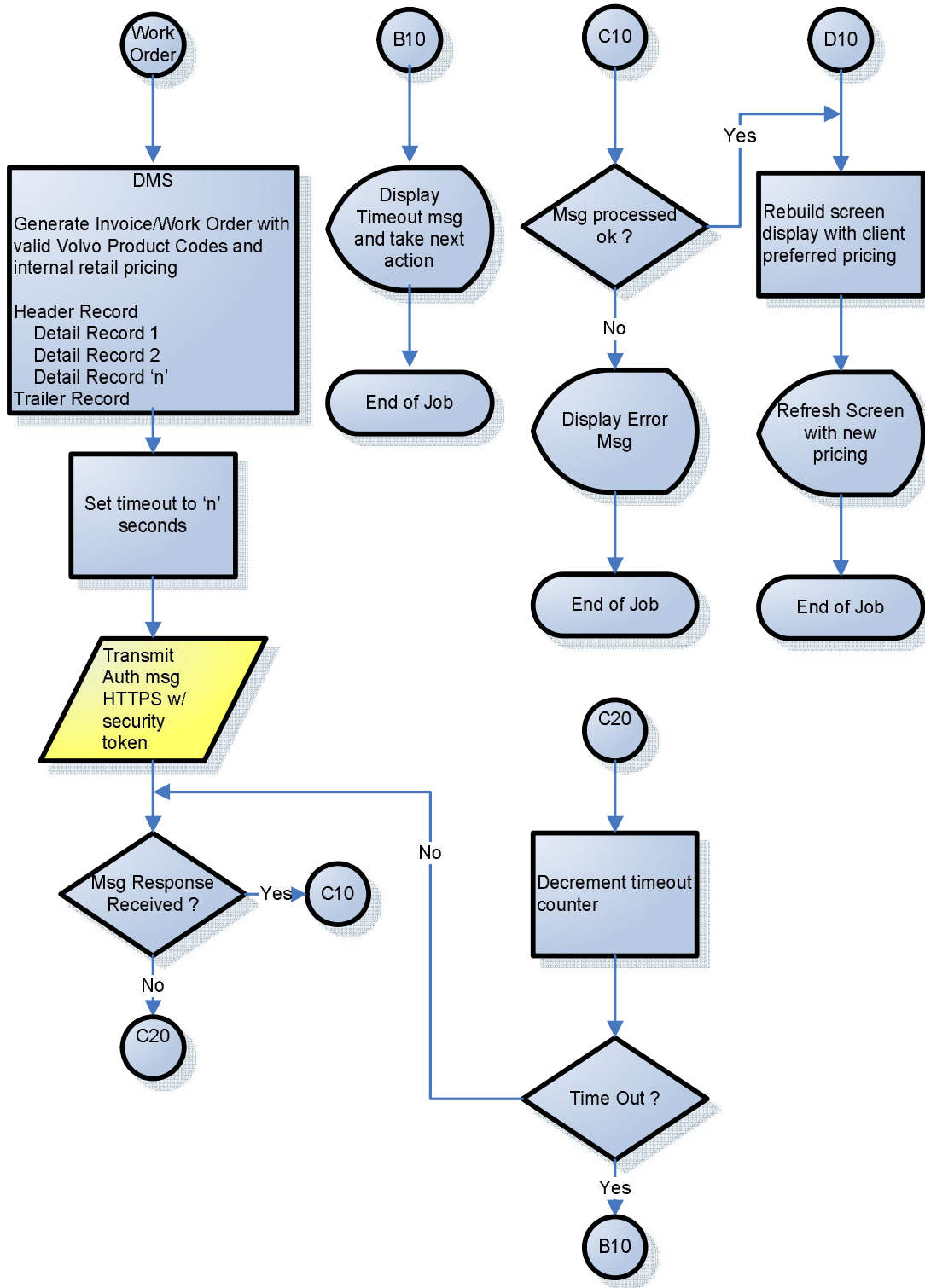
5.4.3 Authorization Response XML Schema
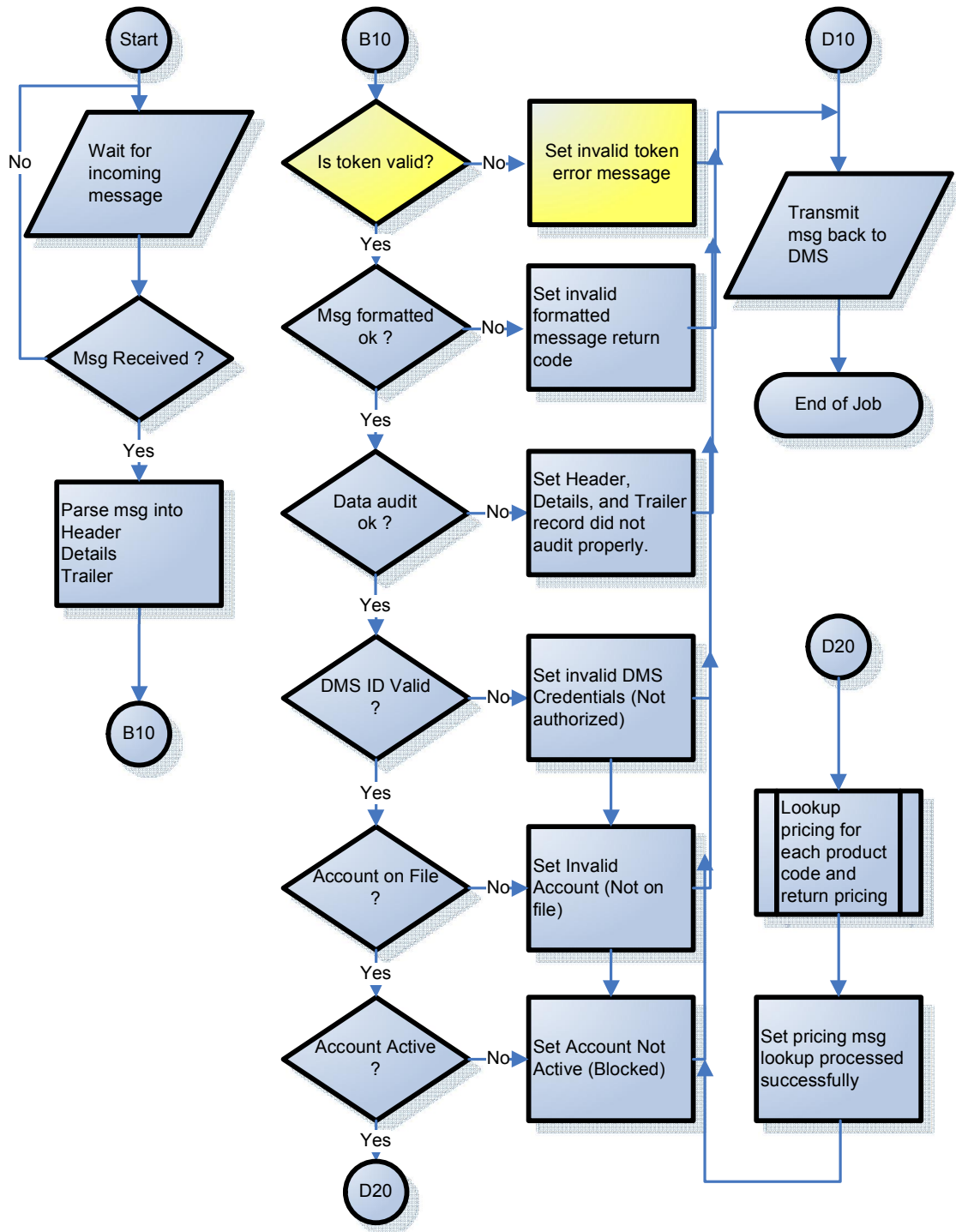
```xml
<?xml version="1.0" encoding="utf-8" ?>
<xs:schema id="AuthResponseDS" targetNamespace="http://Volvo.Com/AuthResponse.xsd"
    xmlns:mstns="http://Volvo.Com/AuthResponse.xsd"
    xmlns:ar="http://Volvo.Com/AuthResponse.xsd"
    xmlns:xs="http://www.w3.org/2001/XMLSchema"
    xmlns:msdata="urn:schemas-microsoft-com:xml-msdata"
    attributeFormDefault="qualified" elementFormDefault="qualified">
    <xs:element name="AuthResponse" msdata:Prefix="ar">
        <xs:complexType>
            <xs:sequence>
                <xs:element name="DealerCode" type="xs:string" minOccurs="1" maxOccurs="1"
msdata:Prefix="ar" />
                <xs:element name="AcctNbr" type="xs:string" minOccurs="1" maxOccurs="1"
msdata:Prefix="ar" />
                <xs:element name="RetCode" type="xs:string" minOccurs="1" maxOccurs="1"
msdata:Prefix="ar" />
                <xs:element name="RetMsg" type="xs:string" minOccurs="1" maxOccurs="1" msdata:Prefix="ar"
/>
                <xs:element name="AuthNbr" type="xs:string" minOccurs="1" maxOccurs="1"
msdata:Prefix="ar" />
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:element name="AuthResponseDS" msdata:IsDataSet="true" msdata:Prefix="ar"
msdata:EnforceConstraints="True">
        <xs:complexType>
            <xs:choice maxOccurs="unbounded">
                <xs:element ref="AuthResponse" />
            </xs:choice>
        </xs:complexType>
    </xs:element>
</xs:schema>
```

6.0   Flowchart

6.1   TMS Send/Receive Message To/From DMS

6.2   MVPreferred Receive/Send Message from/To DMS

7.0   Return Status Codes

See the Authorization/Settlement Technical Specification for a complete set of error codes. The following table describes possible status and return code combinations and their meanings:

Status in MsgHdr	LID RetCode	Rebate	Comments
0 (OK)	0	0.00	A PVRequest will return the 0 status only if all line items are correctly priced AND there are no rebates.
0 (OK)	1	N/A	This condition should never exist. If it does, there is a defect in price verification.
0 (OK)	2	N/A	This condition should never exist. If it does, there is a defect in price verification.
1 (ERR)	3	N/A	Gateway Service Issue – invalid token
1 (ERR)	0	0.00	A line item in the request is priced too high, or there is an error in another line item, but this line item is correct and has no rebate.
1 (ERR)	1	>= 0.00	The line item price was too high, or had some other error. The first such line item in a request causes the Status code to be set to 1. A rebate may exist.
1 (ERR)	2	>= 0.00	The line item price is less than negotiated (a rebate may exist), or the price is correct and there is a rebate. A different line item is in error or is priced too high.
2 (FYI)	0	0.00	This line item is priced correctly and has no rebate, but some other line item has a rebate or is priced too low.
2 (FYI)	1	N/A	This condition should never exist. If it does, there is a defect in price verification.
2 (FYI)	2	>= 0.00	The line item price is less than negotiated (a rebate may exist), or the price is correct and there is a rebate. The first such line item in the request causes the Status to be set to 2.

ERROR NUMBER	ORIGINAL MESSAGE	CUSTOMER MESSAGE	PROBABLE CAUSES	SOLUTIONS
500	500 Internal Server Error	500 System error. Please attempt request in 15-20 mins. If problem still exist, contact MV Preferred Technical Support at 336-931-3820	1. Internal Error.	1. Please call MV Preferred Technical Support at 336-931-3820
1499	1499 Xml Parse Failed, Improper Format	1499 System error. Please contact DMS provider	DMS transmission format error	Please contact your DMS technical support
1500	1500 Authorized		1.Informational	1 No resolution required
1501	1501 Insufficient Funds Available	1501 Error Request:Ask fleet customer to call MV Preferred Customer Service at 866-428-6904	1. Insufficient funds on account.	1. Please call MV Preferred Customer Service at 866-428-6904
1502	1502 Dealer Code or Customer account cannot be validated at this time.	1502 Invalid dlr code or acct nbr. Please contact MV Preferred Customer Service at 866-428-6904	Customer account can not be validated at this time	1. Please call MV Preferred Customer Service at 866-428-6904
1503	1503 Dealer Code or Customer account is on Hold or Inactive at this time.	1503 Invalid dlr code or acct nbr. Please contact MV Preferred Customer Service at 866-428-6904	1. Dealer or Customer is on hold	Please have customer call MV Preferred Customer Service at 866-428-6904
1504	1504 National Level Account Insufficient Funds Available	1504 Error Request: Ask fleet customer to call MV Preferred Customer Service at 866-428-6904	1. National account has insufficient funds.	Please have customer call MV Preferred Customer Service at 866-428-6904
1505	1505 Confirm account configuration and fleet assignment. Authorization request could not be process	1505 Error. Please contact MV Preferred Customer Service at 866-428-6904	Customer account set up issue	1. Please call MV Preferred Customer Service at 866-428-6904
1510	1510 PO number missing	1510 PO number missing or invalid. Please correct and resubmit.	Customer requires a PO number in order to submit an invoice.	Enter a valid PO number and reauthorize the invoice
1511	1511 PO out of range	1511 Invalid PO. Please verify and/or obtain valid PO from fleet customer and resubmit.	PO entered does not conform to the Fleet requirement	Enter a valid PO number and reauthorize the invoice

ERROR NUMBER	ORIGINAL MESSAGE	CUSTOMER MESSAGE	PROBABLE CAUSES	SOLUTIONS
1512	1512 PO Does not exist	1512 PO Does not exist. Please contact fleet customer to correct and resubmit.	PO entered does not conform to the Fleet requirement	Enter a valid PO number and reauthorize the invoice
1513	1513 The entered PO is formatted incorrectly.	1513 PO nbr is formatted incorrectly. Please contact fleet customer to correct and resubmit.	PO entered does not conform to the Fleet requirement	Enter a valid PO number and reauthorize the invoice
1514	1514 Auth date outside PO Start and End dates	1514 Auth date invalid for PO. Please correct and resubmit.	1. PO has expired and/or 2. PO used before start date	Enter a valid PO number and reauthorize the invoice
1515	1515 One Time Use PO Already Used	1515 Single-use PO already used. Please correct and resubmit.	Fleet allows POs to be used only one time, PO entered has already been used.	Enter a valid PO number and reauthorize the invoice
1520	1520 VIN missing	1520 VIN missing. Please add and resubmit.	Fleet requires a valid VIN to submit an invoice	Enter a valid VIN and reauthorize invoice
1521	1521 VIN Does not exist	1521 VIN Does not exist. Please correct and resubmit.	Fleet requires a valid VIN to submit an invoice	Enter a valid VIN and reauthorize invoice
1522	1522 VIN Inactive	1522 VIN Inactive. Please correct and resubmit.	Fleet set VIN as inactive. Active VIN required to submit invoice	Enter a valid VIN and reauthorize invoice
1530	1530 Driver number missing	1530 Driver number missing. Please add and resubmit.	1. Driver number missing	1. Correct Invoice through error correction interface.
1531	1531 DriverNbr does not exist	1531 Driver number does not exist. Please correct and resubmit.	1. DriverNbr does not exist	1. Call Fleet Manager
1532	1532 DriverNbr inactive	1532 Driver number inactive. Please correct and resubmit.	1.DriverNbr inactive	1. Call Fleet Manager
1540	1540 Vehicle number missing	1540 Vehicle number missing. Please add and resubmit.	1. Unit number was not entered when required	Enter a valid Unit Number and reauthorize invoice
1541	1541 UnitNbr does not exist	1541 Vehicle number does not exist. Please correct and resubmit.	1. Invalid unit number entered.	Enter a valid Unit Number and reauthorize invoice
1542	1542 UnitNbr Inactive	1542 Vehicle number inactive. Please correct and resubmit.	1. Fleet set unit number as inactive	Enter a valid Unit Number and reauthorize invoice
1550	1550 Exceeded Single Purchase Limit	1550 Single purchase limit exceeded. Please contact fleet customer for approval.	Purchase limit has been set for either the fleet or the account and this purchase exceeds the set limit.	Request a purchase limit increase from the Fleet Manager.

ERROR NUMBER	ORIGINAL MESSAGE	CUSTOMER MESSAGE	PROBABLE CAUSES	SOLUTIONS
1560	1560 No PreAuthorization record found	1560 System error. Please contact Volvo IT dealer support at 336-393-2425.	1. Invalid Preauthorization	1. Dealer must enter a valid preauthorization
1561	1561 Pre Authorization record already closed	1561 System error. Please contact Volvo IT dealer support at 336-393-2425.	1. Pre authorization status is something other than open and pending.	1. Dealer must enter a valid preauthorization
1562	1562 Pre Authorization insufficient funds	1562 Error Request: Ask fleet customer to call MV Preferred Customer Service at 866-428-6904.	1. Open to buy amount insufficient due to increased purchase amount.	1. Please call MV Preferred Customer Service at 866-428-6904
1563	1563 Cannot authorize for 0.00	1563 Transaction amount cannot be zero.	1. Invoice amount is $0.00	Please resubmit an invoice with with either a negative or positive amount. A $0.00 will not be accepted by MV Preferred.
1564	1564 Dealer currency code has not been set. Call Volvo Customer Service.	1564 System error. Please contact MV Preferred Technical Support at 336-931-3820	1. Dealer currency code has not been set.	1. Please call MV Preferred Technical Support at 336-931-3820
1565	1565 Customer currency code has not been set. Call Volvo Customer Service.	1565 System error. Please contact MV Preferred Customer Service at 866-428-6904.	1. Customer currency code has not been set.	1. Please call MV Preferred Customer Service at 866-428-6904
1566	1566 Wrong account number provided for pre-auth conversion.	1566 System error. Preauthorization does not match authorization request.	1. Account number changed between pre-auth and pre-auth conversion.	1. Correct Invoice through Invoice Management PRO via MVPrerred.com.
1567	1567 Wrong dealer code provided for pre-auth conversion.	1567 System error. Preauthorization does not match authorization request.	1. Dealer Code changed between pre-auth and pre-auth conversion.	1. Correct Invoice through Invoice Management PRO via MVPrerred.com.
1568	1568 Cannot preauth a parts-only order.	1568 Cannot preauth a parts-only order. Please correct and resubmit.	1. Cannot preauthorize a parts-only order.	The invoice may be changed to a Repair order. Parts only invoices are not eligible for preauthorization.
1569	1569 PO does not have sufficient funding.	1569 Error Request: Ask fleet customer to call MV Preferred Customer Service at 866-428-6904.	1. PO does not have sufficient funding.	1. Please call MV Preferred Customer Service at 866-428-6904
1570	1570 PO # for this fleet must be numeric	1570 PO for this fleet must be numeric. Please correct and resubmit.	1. PO for this fleet must be numeric only	Enter a valid PO number and reauthorize the invoice

ERROR NUMBER	ORIGINAL MESSAGE	CUSTOMER MESSAGE	PROBABLE CAUSES	SOLUTIONS
1571	1571 Pre Auth Released and Converted to new Auth	1571 Notification: Pre Auth Released and Converted to new Auth. No action required.	1.Informational	1 No resolution required
1572	1572 Preauth {0} released and converted to auth	1572 Notification: Preauth {0} released and converted to auth. No action required.	1.Informational	1 No resolution required
1573	1573 System error. Please contact dealer support at 336-393-2425	1573 System error. Please contact MV Preferred Customer Service at 866-428-6904	Either the dealer currency or the customer currency is unsupported. Contact MV Preferred Customer Service.	1. Please call MV Preferred Customer Service at 866-428-6904
1574	1574 System error. Please contact dealer support at 336-393-2425	1574 An AR account cannot be used at a non-AR dealer	1.AR account can only be used at a participating dealership	1. Use another account number or payment method **Error Code no longer applicable**
1575	ARFleetCannotBePONV: 1575 System error. Please contact dealer support at 336-393-2425.	1575 System error. Please contact Volvo IT dealer support at 336-393-2425.	1575 System error. Please contact dealer support at 336-393-2425.	1. Ensure flag is disabled for Fleet **Error Code no longer applicable**
1576	1576 Cross Border Transactions are not allowed. Enter only same currency transactions (Dealer and Customer).	1576 Cross border transactions are not supported.	1.US Dealer submits Canadian Customer's authorization. 2. Canadian Dealer submits US Customer's authorization.	Enter only same currency transactions (Dealer and Customer).
1577	Invalid Token			

8.0 Service Level Agreement

Response time for messages MUST be less than 15 seconds. If no response is received by the sender, assume a timeout occurred, and take appropriate action by aborting the request, or retrying.

- VFS IT DMS/Dealer network: the bandwidth and/or availability of the DMS and/or dealers connection from their respective Internet Service Provider is not in scope for VFS IT support
  - o VFS IT SLA support covers incoming/outgoing connections to the gateway service designated in the specification

9.0 Glossary

Term	Description
Authorization and Settlement	Process where DMS send message to MVPreferred to get authorization to reserve line of credit for purchases. Settlement is the process where all authorizations are sent to MVPreferred at the end of the day for payment (NATS sends payments directly to the Dealers).
DMS - Dealer Management System	Software system that allows truck dealers to manage customers and fleet trucks
FTP – File Transfer Protocol	File Transfer Protocol, the protocol used on the Internet for exchanging files.
Gateway Service	Security protocol with Price Verification and Authorization requests
GUI – Graphical User Interface	Screens formatted for easy of reading and data entry.
HTTP - HyperText Transfer Protocol	The protocol for moving hypertext files across the Internet. Requires a HTTP client program on one end (Browser), and an HTTP server program on the other end. HTTP is the most important protocol used in the World Wide Web. See http://www.w3.org/Protocols/ for full specifications.
HTTPS – Hyper Text Transfer Protocol Secure	HTTP layered on top of the Secure Sockets Layer protocol adding security with the HTTP communications.
Line of Credit	Credit limit as authorized by NATS. The LOC will be maintained within Volvo's A/R system
Invoices	A business document that contains the names and addresses of the buyer and the seller, the date and terms of the sale, a description of the goods, the price of the goods, and the mode of transportation used to ship the goods. The seller calls the invoice a sales invoice; the buyer calls it a purchase invoice.
Real Time	Access electronic information immediately on demand
Repair Orders	Much like a sales order invoice (SOI) except final payment amount is not known until the repair is close to completion. Repair Orders can be authorized to set aside an estimate as to the amount needed for the repair.

Term	Description
TCP/IP	A suite of protocols that defines the Internet. Originally designed for the UNIX operating system, TCP/IP software is now available for every major kind of computer operating system.
Part Number	The manufacturer's/maker's number that uniquely identifies the product/resource.
Pull	Terminology commonly used to indicate receiving a computer file.
Push	Terminology commonly used to indicate sending files from a computer to another computer.
SSL – Secure Sockets Layer	Protocol designed to transmit data using key encryption.
VPN – Virtual Private Network	Acronym for Virtual Private Network. A VPN is a way to provide remote access to an organization's network via the Internet. VPNs send data over the public Internet through secure "tunnels."
Volvo Preferred Pricing System (MVPreferred)	Volvo system which provides pre-negotiated customized discount on parts and services.
NATS – North American Transaction Services	Volvo entity issuing credit to corporations to allow truck purchase and maintenance
MVPreferred	New Volvo system to allow DMS to lookup preferred pricing for fleet clients
VOLVO – Volvo Trucks North America	Volvo Trucks North America entity setting parts/product pricing for various fleet clients.
WAN - Wide Area Network	A physical or logical network that provides capabilities for a number of independent devices to communicate with each other over a common transmission-interconnected topology in geographic areas larger than those served by local area networks
XML – Extensible Markup Language	A plain text language designed for large-scale electronic publishing. See http://www.w3.org/XML/Core/#Publications for full specifications