



DMS Volvo Price Verification Message Protocol Technical Specifications

***Volvo Financial Services, North America
North American Transaction Services
(NATS)***

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Issuer: Wendy Mendenhall and Bert Wilson

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1.0 Introduction

The MVPPreferred 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 MVPPreferred to obtain in *REAL TIME* the pricing verification. The process to allow a DMS to interface with MVPPreferred will be via *EXTENSIBLE MARKUP LANGUAGE (XML)* over *HYPERTEXT TRANSFER PROTOCOL SECURE (HTTPS)* via the public Internet using the *GATEWAY SERVICE*.

This document assumes that the reader is well versed in *TCP/IP* communications using 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 the discussion or to offer additional suggestions and/or resources wherever applicable].

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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 Gateway Service exchange process.** The details of the Gateway Service process is covered in the document ‘DMS Volvo Gateway Service tech specs’.

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 **with the security token** obtained in the initial Gateway Service token request 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

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- 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.

3.0 Assumptions

- Use XML over HTTPS — Price Verification will be transmitted by the DMS systems over the public internet (HTTPS) with the VFS Gateway Service provided security token. See Gateway Service specification for details on security layer (DMS Volvo Gateway Service tech specs)
- 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 the Settlement Process, 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 module 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 (DMS Volvo Gateway Service tech specs)

4.0 Gateway Service for Price Verification

4.1 Gateway Service

Please refer to the document, *DMS Volvo Gateway Service tech specs*, which contain all the details to send a Price Verification 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>

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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 via the Gateway Service
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 Price Verification Request (DMS to MVPreferred)

Tag Identifier	Description / See XML Schema for formatting	Optional
PVRequest	Beginning of Message Request	
@App_ID	Attribute of PVRequest. App ID per DMS (ID provided to DMS)	
@Token	Attribute of PVRequest. Unique GUID returned from GetSecurityToken	

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Tag Identifier	Description / See XML Schema for formatting	Optional
MsgHdr	Beginning of Message Request	
DealerCode	Dealer Code as stored at MVPreferred	
AcctNbr	Accounts Receivable Identification as stored at MVPreferred	
/MsgHdr	End Message Header	
LineItems	Container tag for MsgLID elements. Always present.	
MsgLID	Beginning of Line Item Details. There must exist at least one (1) Line Item Detail	
LIDNbr	Line Item Detail Number (Sequential number beginning with 1 and ending with 'n' total number of line items per the message trailer)	
PartNbr	LID Part Number	
Type	Type of LID – Possible choices are: V – Volvo Manufacturer M – Mack Manufacturer O – Other Manufacturer C - VCE	
AmtEach	Amount as entered by the DMS for single unit pricing	
/MsgLID	End Line Item Detail tag NOTE ₁ : MsgLID can have several occurrences. NOTE ₂	
/LineItems	End of MsgLID collection	
MsgEnd	Start of Message Trailer Information	
NbrItems	Total number of Line Item Details to be price verified	
/MsgEnd	End trailer information	
/PVRequest	End of Message Request	

5.2 XML Price Verification Response (MVPreferred to DMS)

Tag Identifier	Description / See XML Schema for formatting	Optional
PVResponse	Beginning of Message Response	
MsgHdr	Beginning of Message Response	
DealerCode	Dealer Code as stored at MVPreferred	
AcctNbr	Accounts Receivable Identification as stored at MVPreferred	
Status	Status to be returned 0 = Processed successfully with NO Discrepancies 1 = STOP – Manual Intervention is required. See the error message for details 2 = For Your Information - Non-fatal error, see the error message	
Msg	English error message to be Prompted onto DMS screen	
/MsgHdr	End Message Header	
LineItems	Container tag for MsgLID elements. Always present.	
MsgLID	Beginning of Line Item Details (No data if all prices correct)	Yes
LIDNbr	Line Item Detail Number (Unique # within LIDs)	
AmtEach	Amount Returned from Price Verification System	
RebateAmt	Rebate amount to the dealer	
RetCode	NOTE: Only LID with Price Verification discrepancies will be returned	

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Tag Identifier	Description / See XML Schema for formatting	Optional
	The two (2) possible discrepancies are: 1 – Warning----Amt is less than negotiated pricing. 2 - Amount was corrected to reflect discount pricing for this account.	
RetMsg	A text message giving details about why the abovementioned RetCode was given. Maximum length is 80 characters.	
/MsgLID	End Line Item Detail tag NOTE ₁ : MsgLID can have several occurrences. NOTE ₂ : If all LID were priced correctly, No MsgLID will exist. Only MsgHdr and MsgEnd information will be returned.	
/LineItems	End of MsgLID collection.	
MsgEnd	Start of Message Trailer Information	
NbrItems	Total number of LIDs returned if discrepancies occurred, else 0 for no errors found.	
MsgEnd	End trailer information	
/PVResponse	End of Message Response	

5.3 Sample XML and Schema Message Price Verification Request

5.3.1 Price Verification Sample XML

```
<?xml version="1.0" encoding="utf-8" ?>
<pv:PVRequest App_ID="99" Token="5464c3dd-2181-4d05-b496-cc88a3df9b2e"
xmlns:pv="http://Volvo.Com/PVRequest.xsd">
  <pv:MsgHdr>
    <pv:DealerCode>D1234</pv:DealerCode>
    <pv:AcctNbr>A12345678901234</pv:AcctNbr>
  </pv:MsgHdr>
  <pv:LineItems>
    <pv:MsgLID>
      <pv:LIDNbr>1</pv:LIDNbr>
      <pv:PartNbr>CBD-999993</pv:PartNbr>
      <pv:Type>V</pv:Type>
      <pv:AmtEach>1.00</pv:AmtEach>
    </pv:MsgLID>
    <pv:MsgLID>
      <pv:LIDNbr>2</pv:LIDNbr>
      <pv:PartNbr>CBD-123456</pv:PartNbr>
      <pv:Type>O</pv:Type>
      <pv:AmtEach>2.00</pv:AmtEach>
    </pv:MsgLID>
    <pv:MsgLID>
      <pv:LIDNbr>3</pv:LIDNbr>
      <pv:PartNbr>XYZ-123456</pv:PartNbr>
      <pv:Type>M</pv:Type>
      <pv:AmtEach>3.00</pv:AmtEach>
    </pv:MsgLID>
    <pv:MsgLID>
      <pv:LIDNbr>4</pv:LIDNbr>
      <pv:PartNbr>CBD-CRAdj</pv:PartNbr>
      <pv:Type>O</pv:Type>
      <pv:AmtEach>-.50</pv:AmtEach>
    </pv:MsgLID>
  </pv:LineItems>
  <pv:MsgEnd>
    <pv:NbrItems>4</pv:NbrItems>
  </pv:MsgEnd>
</pv:PVRequest>
```


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5.3.2 Price Verification Request XML Schema

```

<?xml version="1.0" encoding="utf-8"?>
<xs:schema id="PVRequest" targetNamespace="http://Volvo.Com/PVRequest.xsd"
xmlns:mstns="http://Volvo.Com/PVRequest.xsd" xmlns="http://Volvo.Com/PVRequest.xsd"
xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:msdata="urn:schemas-microsoft-com:xml-msdata"
attributeFormDefault="qualified" elementFormDefault="qualified">
  <xs:element name="PVRequest" msdata:Prefix="pv">
    <xs:complexType>
      <xs:choice maxOccurs="unbounded">
        <xs:element name="MsgHdr" msdata:Prefix="pv" minOccurs="1" maxOccurs="1">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="DealerCode" msdata:Prefix="pv" type="xs:string" minOccurs="1"
maxOccurs="1"/>
              <xs:element name="AcctNbr" msdata:Prefix="pv" type="xs:string" minOccurs="1"
maxOccurs="1"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
        <xs:element name="LineItems" msdata:Prefix="pv" minOccurs="1" maxOccurs="1">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="MsgLID" msdata:Prefix="pv" minOccurs="1" maxOccurs="unbounded">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="LIDNbr" msdata:Prefix="pv" type="xs:positiveInteger" minOccurs="0"
/>
                    <xs:element name="PartNbr" msdata:Prefix="pv" type="xs:string" minOccurs="0" />
                    <xs:element name="Type" msdata:Prefix="pv" type="xs:string" minOccurs="0" />
                    <xs:element name="AmtEach" msdata:Prefix="pv" type="xs:decimal" minOccurs="0" />
                  </xs:sequence>
                </xs:complexType>
              </xs:element>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
        <xs:element name="MsgEnd" msdata:Prefix="pv" minOccurs="1" maxOccurs="1">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="NbrItems" msdata:Prefix="pv" type="xs:positiveInteger" minOccurs="1"
maxOccurs="1"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:choice>
      <xs:attribute name="App_ID" form="unqualified" type="xs:string" />
      <xs:attribute name="Token" form="unqualified" type="xs:string" />
    </xs:complexType>
  </xs:element>
</xs:schema>

```


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5.4 Sample XML and Schema Message Price Verification Response

5.4.1 Price Verification Response XML (Price Higher than verified price)

```
<?xml version="1.0" encoding="utf-8" ?>
<string xmlns="http://Volvo.Com/PVRequest.xsd"><?xml version="1.0" encoding="utf-8"?><pv:PVResponse
xmlns:pv="http://Volvo.Com/PVResponse.xsd">
  <pv:MsgHdr>
    <pv:DealerCode>D1234</pv:DealerCode>
    <pv:AcctNbr> A12345678912345</pv:AcctNbr>
    <pv:Status>1</pv:Status>
    <pv:Msg>1418 The submitted price higher than suggested price. Price adjusted.</pv:Msg>
  </pv:MsgHdr>
  <pv:LineItems>
    <pv:MsgLID>
      <pv:LIDNbr>1</pv:LIDNbr>
      <pv:AmtEach>78.83</pv:AmtEach>
      <pv:RebateAmt>0.00</pv:RebateAmt>
      <pv:RetCode>2</pv:RetCode>
      <pv:RetMsg>1418 The submitted price higher than suggested price. Price
        adjusted.</pv:RetMsg>
    </pv:MsgLID>
    <pv:MsgLID>
      <pv:LIDNbr>2</pv:LIDNbr>
      <pv:AmtEach>458.57</pv:AmtEach>
      <pv:RebateAmt>0.00</pv:RebateAmt>
      <pv:RetCode>2</pv:RetCode>
      <pv:RetMsg>1418 The submitted price higher than suggested price. Price
        adjusted.</pv:RetMsg>
    </pv:MsgLID>
  </pv:LineItems>
  <pv:MsgEnd>
    <pv:NbrItems>2</pv:NbrItems>
  </pv:MsgEnd>
</pv:PVResponse></string>
```

5.4.2 Price Verification Response XML (Price Lower than verified price or price equal to verified price – with rebate)

```
<?xml version="1.0" encoding="utf-8" ?>
<string xmlns="http://Volvo.Com/PVRequest.xsd"><?xml version="1.0" encoding="utf-8"?><pv:PVResponse
xmlns:pv="http://Volvo.Com/PVResponse.xsd">
  <pv:MsgHdr>
    <pv:DealerCode>D1234</pv:DealerCode>
    <pv:AcctNbr>A12345678912345</pv:AcctNbr>
    <pv:Status>2</pv:Status>
    <pv:Msg>1422 Submitted price is less than the suggested price.</pv:Msg>
  </pv:MsgHdr>
  <pv:LineItems>
    <pv:MsgLID>
      <pv:LIDNbr>1</pv:LIDNbr>
      <pv:AmtEach>78.83</pv:AmtEach>
      <pv:RebateAmt>0.00</pv:RebateAmt>
      <pv:RetCode>1</pv:RetCode>
      <pv:RetMsg>1422 Submitted price is less than the suggested price.</pv:RetMsg>
    </pv:MsgLID>
    <pv:MsgLID>
      <pv:LIDNbr>2</pv:LIDNbr>
      <pv:AmtEach>458.57</pv:AmtEach>
      <pv:RebateAmt>0.00</pv:RebateAmt>
      <pv:RetCode>1</pv:RetCode>
      <pv:RetMsg>1422 Submitted price is less than the suggested price.</pv:RetMsg>
    </pv:MsgLID>
  </pv:LineItems>
  <pv:MsgEnd>
    <pv:NbrItems>2</pv:NbrItems>
  </pv:MsgEnd>
</pv:PVResponse></string>
```

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```

    </pv:LineItems>
    <pv:MsgEnd>
    <pv:NbrItems>2</pv:NbrItems>
    </pv:MsgEnd>
  </pv:PVResponse></string>

```

5.4.3 Price Verification Response XML (Price equal to verified price – no rebate)

```

<?xml version="1.0" encoding="utf-8" ?>
<string xmlns="http://Volvo.Com/PVRequest.xsd"><?xml version="1.0" encoding="utf-8"?><pv:PVResponse
xmlns:pv="http://Volvo.Com/PVResponse.xsd">
  <pv:MsgHdr>
    <pv:DealerCode>D1234</pv:DealerCode>
    <pv:AcctNbr>A12345678912345</pv:AcctNbr>
    <pv:Status>0</pv:Status>
    <pv:Msg>1400 Success</pv:Msg>
  </pv:MsgHdr>
  <pv:LineItems />
  <pv:MsgEnd>
  <pv:NbrItems>0</pv:NbrItems>
  </pv:MsgEnd>
</pv:PVResponse></string>

```

5.4.4 Price Verification Response XML Schema

```

<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:mstns="http://Volvo.Com/PVResponse.xsd" xmlns="http://Volvo.Com/PVResponse.xsd"
xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:msdata="urn:schemas-microsoft-com:xml-msdata"
targetNamespace="http://Volvo.Com/PVResponse.xsd" elementFormDefault="qualified"
attributeFormDefault="qualified" id="PVResponse">
  <xs:element name="PVResponse" msdata:Prefix="pv">
    <xs:complexType>
      <xs:choice maxOccurs="unbounded">
        <xs:element name="MsgHdr" msdata:Prefix="pv">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="DealerCode" type="xs:string"
msdata:Prefix="pv"/>
              <xs:element name="AcctNbr" type="xs:string"
msdata:Prefix="pv"/>
              <xs:element name="Status" type="xs:string"
msdata:Prefix="pv"/>
              <xs:element name="Msg" type="xs:string"
msdata:Prefix="pv"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
        <xs:element name="LineItems" msdata:Prefix="pv">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="MsgLID" minOccurs="0"
maxOccurs="unbounded" msdata:Prefix="pv">
                <xs:complexType>
                  <xs:sequence>
                    <xs:element name="LIDNbr"
type="xs:positiveInteger" msdata:Prefix="pv"/>
                    <xs:element name="AmtEach"
type="xs:decimal" msdata:Prefix="pv"/>
                    <xs:element name="RebateAmt"
type="xs:decimal" msdata:Prefix="pv"/>
                    <xs:element name="RetCode"
type="xs:integer" msdata:Prefix="pv"/>

```

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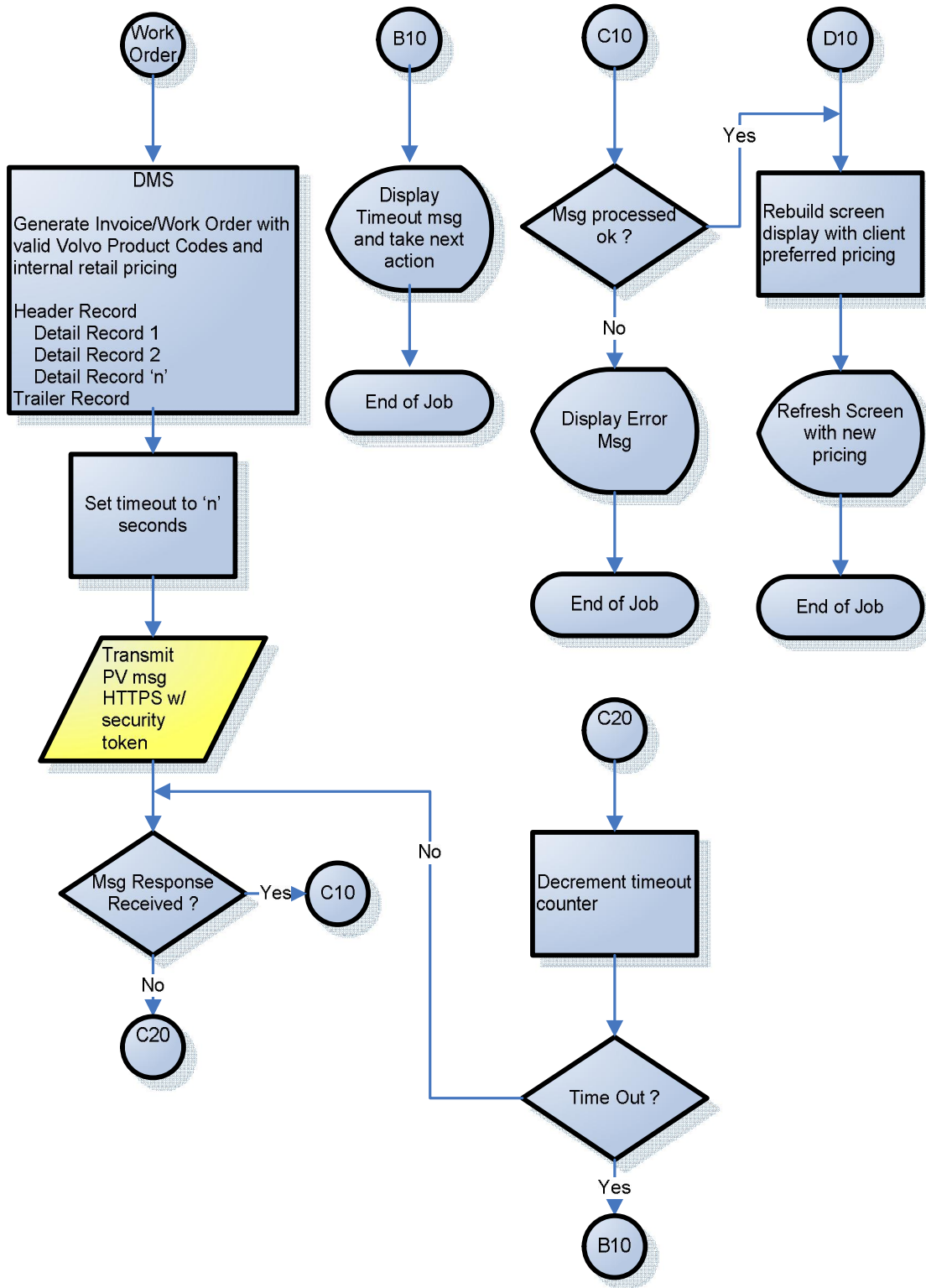
```

type="xs:string" msdata:Prefix="pv"/>
<xs:element name="RetMsg"
  </xs:sequence>
  </xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="MsgEnd" msdata:Prefix="pv">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="NbrItems"
type="xs:positiveInteger" msdata:Prefix="pv"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:choice>
</xs:complexType>
</xs:element>
</xs:schema>

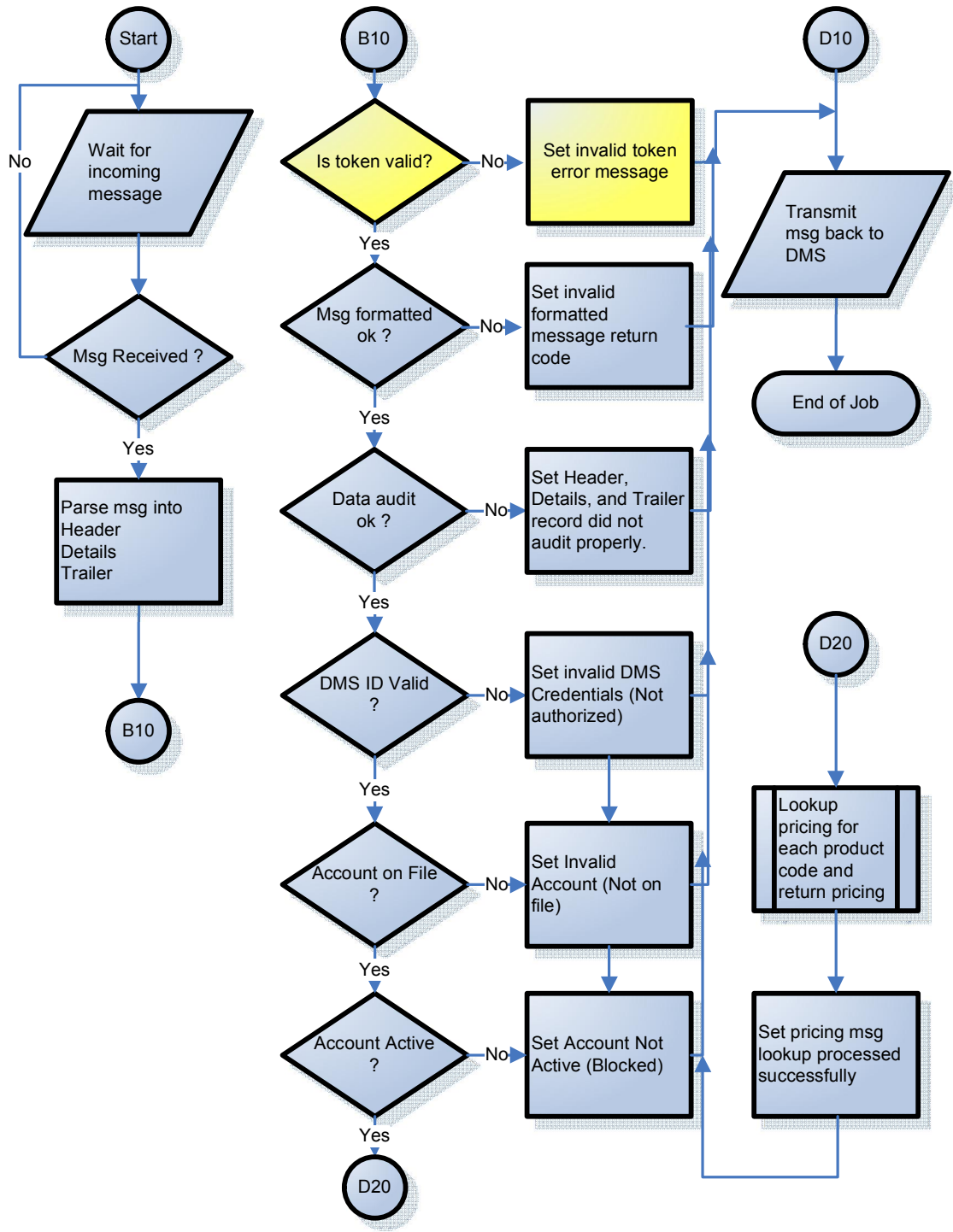
```

6.0 Flowchart

6.1 TMS Send/Receive Message To/From DMS



6.2 MVPREFERRED Receive/Send Message from/To DMS



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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.

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ERROR NUMBER	ORIGINAL MESSAGE	CUSTOMER MESSAGE	PROBABLE CAUSES	SOLUTIONS
1400	1400 Success	1400 Success	1. Completed correctly	1. Completed
1402	1402 Account {0} has no fleet. Please notify Volvo Customer Service.	1402 System error. Please contact MV Preferred Customer Service at 866-428-6904	1. Incomplete account setup.	1. Please call MV Preferred Customer Service at 866-428-6904
1403	1403 Account is blocked. Please notify Volvo Customer Service.	1403 Invalid acct number. Please contact MV Preferred Customer Service at 866-428-6904	Account is unavailable for invoicing	Please have customer call MV Preferred Customer Service at 866-428-6904
1404	1404 Account not found. Please notify Volvo Customer Service.	1404 Invalid acct number. Please contact MV Preferred Customer Service at 866-428-6904	1. Account number not found in NATS system	1. Please call MV Preferred Customer Service at 866-428-6904
1405	1405 An exception occurred while validating the customer account.	1405 System error. Please contact MV Preferred Technical Support at 336-931-3820	1. Database error/ loss of connectivity	Please call MV Preferred Technical Support at 366-931-3820
1406	1406 Could not retrieve a resource string.	1406 Request failed. Please MV Preferred Technical Support at 336-931-3820	1. Internal Error. Contact NATS.	Please call MV Preferred Technical Support at 366-931-3820
1407	1407 Customer outside country of origin. No price verification performed.	1407 Customer outside country of origin. No price verification performed. Ask fleet customer to contact MV Preferred Customer Service at 866-428-6904	1. Customer is outside country of origin.	Refer customer to MV Preferred Customer Service to set up crossborder account or ask customer to provide appropriate account to use
1408	1408 Dealer is blocked.	1408 Invalid dealer code. Please contact Volvo IT dealer support at 336-393-2425.	1.MV Preferred not allowing transactions from Dealer. 2. Dealer invoicing account missing information	1. Please call VIT Dealer Support at 336 393-2425 to determine issue with access
1409	1409 Dealer not found.	1409 Invalid dealer code. Please contact Volvo IT dealer support at 336-393-2425.	1. Dealer Number not in NATS System.	1. Volvo IT to research reason or provide dealer enrollment
1410	1410 Exception occurred while building PV response.	1410 Request failed. Please MV Preferred Customer Service at 866-428-6904	1. Internal Error. Contact NATS 2.Fleet Not Complete Setup	1. Please call MV Preferred Customer Service at 866-428-6904
1412	1412 Fleet {0} disabled for price verification. Please notify Volvo Customer Service.	1412 System error. Please contact MV Preferred Customer Service at 866-428-6904	1. Fleet not set up completely. 2. NATS turned off Price Verification	1. Please call MV Preferred Customer Service at 866-428-6904

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ERROR NUMBER	ORIGINAL MESSAGE	CUSTOMER MESSAGE	PROBABLE CAUSES	SOLUTIONS
1413	1413 Invalid base price level '{0}' in part or class '{1}'.	1413 System error. Please contact MV Preferred Technical Support at 336-931-3820	1. Internal error. Contact NATS. 2. Data in Pricing Profile table is corrupt.	1. Please call MV Preferred Technical Support at 336-931-3820
1414	1414 Invalid part type {0} in part {1}	1414 System error. Please contact MV Preferred Technical Support at 336-931-3820	1. DMS error. 2. Database corruption.	1. Please call MV Preferred Technical Support at 336-931-3820
1415	1415 Invalid pricing profile class; expected 'P' or 'S', found {0}.	1415 System error. Please contact MV Preferred Technical Support at 336-931-3820	1. Internal error. Contact NATS. 2. Data in Pricing Profile table is corrupt.	1. Please call MV Preferred Technical Support at 336-931-3820
1416	1416 Pricing table for this customer is either not set, expired or missing.	1416 System error. Please contact MV Preferred Technical Support at 336-931-3820	1. Internal Error. Contact NATS	1. Please call MV Preferred Technical Support at 336-931-3820
1417	1417 PVRequest message does not have an AmtEach element.	1417 System error. Please contact DMS provider	1. No price submitted by DMS	Please contact your DMS technical support
1418	1418 The submitted price higher than negotiated price. Price corrected.	1418 Notification: Submitted price higher than suggested price. Price adjusted - No action required.	1. Submit price is too high.	The submitted price is higher than the agreed upon MV Preferred Price. Please adjust accordingly
1419	1419 This customer is not configured for price verification.	1419 Request failed. Please contact MV Preferred Customer Service at 866-428-6904	1. Between purchase and Settlement PV is turned off.	1. Please call MV Preferred Customer Service at 866-428-6904
1420	1420 This part carries a rebate.	1420 This part carries a rebate.	1. Informational	Informational message only. You may proceed with Authorization
1421	1421 Unknown part type '{0}' found in part {1}.	1421 System error. Please contact MV Preferred Technical Support at 336-931-3820	1. DMS error. 2. Database corruption.	1. Please call MV Preferred Technical Support at 336-931-3820
1422	1422 WARNING - Submitted price is less than the negotiated price.	1422 Notification: Submitted price lower than suggested price. Option to re-enter correct price or disregard notice.	1. Price is less than Negotiated price.	No resolution required. You may adjust the price to the MV Preferred price or proceed with Authorization

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ERROR NUMBER	ORIGINAL MESSAGE	CUSTOMER MESSAGE	PROBABLE CAUSES	SOLUTIONS
1423	1423 System error. Please contact dealer support at 336-393-2425.	1423 System error. Please contact Volvo IT dealer support at 336-393-2425	Pricing issue	1. The correction is to examine the MGPT table, identify the current tape for the country, and set the Crnt column to 1 on that tape. If one country displays the problem, probably all countries will need the correction, so the process should be performed
1424	1424 System error. Please contact dealer support at 336-393-2425.	1424 System error. Please contact Volvo IT dealer support at 336-393-2425.	Customer pricing has not been assigned	1. Please call MV Preferred Customer Service at 866-428-6904
1425	1425 System error. Please contact dealer support at 336-393-2425.	1425 System error. Please DMS provider	1.Manufacturer submitted by DMS to Price Verification is not in the set M, V, S, O (Mack, Volvo, Shared, Other)	Please contact your DMS technical support
1499	1499 XML received from DMS client was invalid.	1499 Request failed. Please contact DMS provider	1.Bug in DMS Code	Please contact your DMS technical support
1426	Invalid Token			

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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
 - 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

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Term	Description
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.
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

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Term	Description
MVPpreferred	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