



Trimble Navigation Limited XML Integration Interface

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Revision History

Date	Version	Made by	Comments
11/24/2003	1.0	Trent Hone	Initial Document
4/26/2004	1.1	Trent Hone	Formatted for Trimble
2/21/2005	2.0	Trent Hone	Numerous Improvements
3/16/2005	2.1	Trent Hone	Addition of Ready to Load
3/23/2005	2.2	Trent Hone	Additional Examples
3/25/2005	2.3	Trent Hone	Added Ticket Time Zone
4/15/2005	2.4	Trent Hone	Units for Cement Qty Corrected
5/24/2005	2.5	Sanjay R. Patel	Vehicle/Driver ACK corrected Message_String in Ticket message GPS Coordinates Inbound message
7/13/05	2.6	Sanjay R. Patel	Various Changes
8/25/05	2.7	Sanjay R. Patel	Corrected Trans_cat for Canned messages Added optional DATE field for an order.
11/29/05	2.8	Sanjay R. Patel	Added TXT sub category for Text messages to dispatch. The description of the DATE_TIME_OFFSET field was corrected to be in minutes.
1/23/06	2.9	Sanjay R. Patel	Added Order Number to transport Added JobSite identifier to Ticket message. Added Pass Through Messages. Added new ReadySlump Parameters. Various other changes.
7/19/2006	2.10	Sanjay R. Patel	Added Slump information to Status messages. Added Mix Method and Mix UnitSystem to the ticket message. Removed the trans_action and trans_value nodes Removed outdated XSD's. PLANT and DRIVER nodes are optional in the TICK message. Modified Pass Through message types so they conform to the same convention as all other message types.
9/5/2006	2.10a	Sanjay R. Patel	Updated the EIN and EOUT message formats to include port.
2/22/2007	2.11	Sanjay R. Patel	Added the ticket id and order id fields to the transport. Added the DLI (Driver Log in) message.
7/9/2007	2.12	Sanjay R. Patel	Corrected trans_date_time and tkt_date_time format. Clarified support of CHG ticket and AGG and BLK truck. Added utc_date_time field to messages. Added DSIT/JOB & SIT/JOB messages. Added Site Identifier and Site Name to status messages.

			Added support for responses to TOUT messages. Added site update message. Added Priority to text messages to dispatch.
10/19/2007	2.13	Sanjay R. Patel	Updated Ticket message documentation to show required fields. Updated references to TrimExchange. Included Weather information with Begin Pour status.
06/10/2008	2.14	Chris King	Updated spec to include the emergency message and break messages as well as Runtime and Mileage messages
09/03/2009 – 04/02/2010	2.15	Sanjay R. Patel	Update Ticket message. Add fields and size limits. Add Ticket Acknowledge/Finalize messages. Add message code to text message. Added Batch Record message.
06/29/2011	2.16	Terry Lanier	Added Order Back Message sent as Text Message
12-12-2013	2.17	Danielle Leines	Revised formatting/style Updated copyright & trademark information

Introduction and Definitions

Architecture Description

The Trimble XML Integration Interface is designed to eliminate the interdependencies that exist between Trimble's Auto-Status messaging solution and the Dispatch Systems with which it integrates. The dependencies are eliminated by the use of XML messages placed in a Microsoft Message Queue.

Trimble's TrimExchange application places incoming messages into an inbound queue, to be read by the Dispatch System. Status updates, and other messages related to the dispatching of vehicles will be placed in this queue for the Dispatch System to act upon. Once the Dispatch System has processed the messages, it is the responsibility of the Dispatch System to remove the messages from the inbound queue.

Outbound messaging, from the Dispatch System to TrimExchange, works similarly. The Dispatch System places outbound messages, including new tickets, cancelled tickets, batch records, requests for positions, and messages to vehicle operators, in an outbound queue. TrimExchange will read from this queue and process the messages appropriately. Once a message has been processed, it will be removed from the queue by TrimExchange.

This architecture will eliminate the dependencies that currently exist between the Dispatch Systems and Trimble Software. This will enhance the quality of integrations by reducing redundant support efforts and the difficulty customers and customer service providers have when attempting to identify why their vehicles are not displaying the correct status.

Definitions

Transaction – a transaction is defined as any well-formed data packet either inbound from TrimExchange or outbound from a Dispatch System that triggers an action. Some examples of transactions will be: vehicle status change, sending a text message to a vehicle, JBUS Message Event, Water Added Event and many more. Transaction data will be sent back and forth in an XML formatted transport via Microsoft's MSMQ.

XML Transport Definition

The primary purpose of the tms_msg will be to transport messages to/from Trimble's TrimExchange to/from the Dispatch System.

The header section of the message enables the Dispatch System to add trace information in order to track errors or transactions. The values in this section will be constant for a particular transaction.

The transaction data section contains the relevant data for the event that is occurring. This section will change with each message.

Transport Structure:

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

    <trans_id>String(38)</trans_id>

    <veh_fleet_code>String(4)</veh_fleet_code>

    <veh_radio_code>String(10)</veh_radio_code>

    <protocol_version>String(2)</protocol_version>

    <packet_code>String(3)</packet_code>

    <transaction>

        <trans_date_time>DateTime (yyyy/mm/ddThh:nn:ss)</trans_date_time>

        <date_time_offset>Integer(4)</date_time_offset>

        <tkc_code>String(12)</tkc_code>

        <order_code>String(12)</order_code>

        <dispatch_tkc_id>String(12)</dispatch_tkc_id>

        <dispatch_order_id>String(12)</dispatch_order_id>

        <tkc_date_time>DateTime (yyyy/mm/ddThh:nn:ss)</tkc_date_time>

        <truck_code>String(10)</truck_code>

        <employee_code>String(12)</employee_code>

        <message_string>String (5000)</message_string>

        < message_code>integer(2)</ message_code>

        <message>String (5000)</message>

        <port>integer(4)</port>

        <trans_cat>String(4)</trans_cat>

        <trans_type>String(3)</trans_type>
```

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```
<trans_sub_type>String(3)</trans_sub_type>

<trans_origin>String(3)</trans_origin>

<trans_origin_IPAddr>String(15)</trans_origin_IPAddr>

<trans_origin_machname>String(32)</trans_origin_machname>

<trans_origin_username>String(25)</trans_origin_username>

<time_to_live>Integer(4)</time_to_live>

</transaction>

</tms_msg>
```

XML Message Description

Purpose

The primary purpose of the tms_msg is to transport transaction data between TMS Software and the Dispatch Systems with which it integrates. The design is intended to provide an efficient data transport mechanism into and out of the TMS architecture.

Section usage

The XML message is sub-divided into two main blocks.

Header

The header contains constant pieces of data that will be part of every message.

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema"xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

    <trans_id>String(38)</trans_ID>

    <veh_fleet_code>String(4)</veh_fleet_code>

    <veh_radio_code>String(10)</veh_radio_code>

    <protocol_version>String(2)</protocol_version>

    <packet_code>String(3)</packet_code>

</tms_msg>
```

Transaction data

The transaction data will contain specific information describing the business event that is occurring. The transaction section is composed of the following information.

```
<transaction>

    <trans_date_time>DateTime (yyyy/mm/ddThh:nn:ss)</trans_date_time>

    <date_time_offset>Integer(4)</date_time_offset>

    <tkc_code>String(12)</tkc_code>

    <order_code>String(50)</order_code>

    <dispatch_tkc_id>String(12)</dispatch_tkc_id>

    <dispatch_order_id>String(12)</dispatch_order_id>

    <tkc_date_time>DateTime (yyyy/mm/ddThh:nn:ss)</tkc_date_time>

    <truck_code>String(10)</truck_code>

    <employee_code>String(12)</employee_code>

    <message_string>String (5000)</message_string>
```

```
<message>String (5000)</message>

<port>integer(4)</port>

<trans_cat>String(4)</trans_cat>

<trans_type>String(3)</trans_type>

<trans_sub_type>String(3)</trans_sub_type>

<trans_origin>String(3)</trans_origin>

<trans_origin_IPAddr>String(15)</trans_origin_IPAddr>

<trans_origin_machname>String(32)</trans_origin_machname>

<trans_origin_username>String(25)</trans_origin_username>

<time_to_live>Integer(4)</time_to_live>

</transaction>
```

Field Requirements and Descriptions

The following table, Table 1, illustrates the data elements that are expected for inbound and outbound messages sent in between TrimExchange and the Dispatch System. For the sake of consistency, a message is considered “inbound” if it is sent from TrimExchange to the Dispatch System and “outbound” if it is sent from the Dispatch System to TrimExchange.

Table 1 uses a series of conventions. “E” indicates that the field is expected. “C” means that the field will be created and provided in the message. “O” indicates that the field is optional and “X” means that the field is not used.

An example will serve to illustrate how to use the table. The “Trans_ID” field is expected (“E”) by TrimExchange when an outbound message is sent from the Dispatch System. When TrimExchange is sending an inbound message to the Dispatch System, TrimExchange is expected to create (“C”) the “Trans_ID” field and populate it. Similarly, from the Dispatch System’s perspective, the “Trans_ID” field is expected (“E”) for inbound messages and created (“C”) for outbound messages.

Table 1: XML Transport Field Requirements and Descriptions

Field/Data type	TrimExchange		Dispatch System		Description/Comments
	Outbound From Dispatch	Inbound to Dispatch	Inbound From TMS	Outbound to TMS	
trans_ID Datatype: String(38)	E	C	E	C	Description: ID number. Unique GUID generated by TMS or Dispatch System. The application initiating the transaction will generate the ID. Comment: If trans_ID doesn’t exist create it.
veh_fleet_code Datatype: String(4)	O	O	O	O	Description: – Group code this unit is assigned
veh_radio_code Datatype: String(10)	E	C	E	C	Description: Unique identifier of the vehicle This value should be the same as the truck_code field.
protocol_version Datatype: String(2)	E	C	E	C	Description: version number of the protocol between TMS and Dispatch System
packet_code Datatype: String(3)	O	O	O	O	Description: Counter value that increments with each message to or from the vehicle. Any responses to the message should embed this value to

					indicate which message is being referenced when sending data to the vehicle. Comment: Used for transaction control.
trans_date_time Datatype: DateTime (yyyy/mm/ddThh:nn:ss)	O	O	O	O	Description: date and time when the transaction occurred Comment: Time and date the transaction occurred. Offset should have already been applied
date_time_offset Datatype: Integer(4)	X	C	E	X	Description: offset associated with this message, it is the difference in minutes between when the event occurred and when the transaction was generated.
tkr_code Datatype: String(12)	O	O	O	O	Description: Ticket code or number associated with this transaction Comment: If the Truck is assigned to a ticket, the Dispatch system will include this node with all messages. If the truck is not ticketed, then the node can be left out of the message. If TMS has received a ticket for the truck then this field will be included until the ticket is cancelled or has been completed.
order_code Datatype: String(50)	O	O	O	O	Description: Order code or number associated with this transaction If the Truck is assigned to a ticket, the Dispatch system will include this node with all messages. If the truck is not ticketed, then the node can be left out of the message. If TMS has received a ticket for the truck then this field will be included until the ticket is cancelled or has been completed.
tkr_date_time Datatype: DateTime (yyyy/mm/ddThh:nn:ss)	O	O	O	O	Description: Ticket date and time associated with this transaction If the Truck is assigned to a ticket, the Dispatch system should include this node with all messages. If the truck is not ticketed, then the node can be left out of the message.

					If TMS has received a ticket for the truck then this field will be included until the ticket is cancelled or has been completed.
dispatch_tkt_id Datatype: String(12)	O	O	O	O	Description: Unique Ticket ID associated with this transaction. It is provided by the dispatch system when a new ticket is generated. If it is not provided with a new ticket message; TMS will not include this node in messages to the dispatch system. Comment: If the Truck is assigned to a ticket, the Dispatch system will include this node with all messages. If the truck is not ticketed, then the node can be left out of the message. If TMS has received a ticket for the truck then this field will be included until the ticket is cancelled or has been completed.
dispatch_order_id Datatype: String(12)	O	O	O	O	Description: Unique Order ID associated with this transaction. It is provided by the dispatch system when a new ticket is generated. If it is not provided with a new ticket message; TMS will not include this node in messages to the dispatch system. If the Truck is assigned to a ticket, the Dispatch system will include this node with all messages. If the truck is not ticketed, then the node can be left out of the message. If TMS has received a ticket for the truck then this field will be included until the ticket is cancelled or has been completed.
truck_code Datatype: String(10)	X	C	E	X	Description: Unique Identifier of the vehicle This value should be the same as the veh_radio_code field. This field is present only for backward compatibility. veh_radio_code will be used in its place in the future.
employee_code	O	O	O	O	Description: Employee code associated

Datatype: String(12)					with the Vehicle. If the Dispatch system provides the employee code, then subsequent messages from TMS will include the same code.
priority Value list: NORMAL URGENT	X	O	O	X	Description: The priority of the text message being sent to the Dispatch system from the vehicle. Currently there are 2 possible values for priority: "URGENT" and "NORMAL".
message Datatype: String(5000)	O	O	O	O	Description: Data string specific to the transaction type. This node is required with the following message types: XIN EIN EOUT TICK For EOUT messages, this node should contain the binary base 64 representation of the encoded message that needs to be sent to the unit. For EIN messages, the unit sends a binary base 64 message and this node will contain exactly what is sent from the unit.
message_string Datatype: String(5000)	O	O	O	O	Description: Data string specific to the transaction type. This node is required with the following message types: TOUT PIN SIN STA LIN Startup Shutdown
message_code Datatype: Integer(2)	X	O	O	X	Description: Numeric code associated with a text message. This code is configurable on the Trimble side. Will be sent only with Text Messages.s
utc_date_time Datatype: DateTime	O	X	X	O	Description: GMT (Greenwich Mean Time or UTC time of position fix for position messages, the event time for status messages)

responses parent node	O	X	X	O	Description: response and responses are used with the TOUT message. They contain up to 4 possible responses that the driver can send back to Dispatch in response to a text message to the vehicle.
response Datatype: String(20)	O	X	X	O	
trans_cat Datatype: String(4)	E	O	O	C	Description: See Table 2 below Comment: The four character Trans_Cat will be constructed using the type of message <MSGCODE> from the vehicle message protocol (S, M, T, P..) as the first character plus the directional movement of this message relative to the server application. For example an Inbound (SIN) message will be inbound from a vehicle with a destination of the Dispatch System. An OUTbound (SOUT) message will be outbound from the Dispatch System to a vehicle
trans_type Datatype: String(3)	E	O	O	C	Description: See Table 2 below Comment: Three character description of the type of message this is: a text message, a status, a Jbus event etc
trans_sub_type Datatype: String(3)	E	O	O	C	Description: See Table 2 below Comment: Three character description as to the sub-type of message this is, it will further describe and refine the type of message.
port Datatype: Integer(4)	O	O	O	O	This field is required only for Encoded messages received or sent. No other messages require this node. Comment: This field requires an integer value from 1024 to 65535. Encoded messages with port values outside that range will be ignored.
trans_origin Datatype: String(3)	E	C	E	C	Description: the origination of a message, this field could contain one of the following four types: DSP – origin is a Dispatch Workstation DRV – Driver VSC – Vehicle Computer (EG: Autostatus) TMS –TrimExchange
trans_origin_IPAddr Datatype: String(15)	E	C	E	C	Description: IP address of transaction originator if applicable
Trans_origin_machname	E	C	E	C	Description: machine name of

Datatype: String(32)					transaction originator Comment: Messages from the TrimExchange will include the system machine name.
trans_origin_username Datatype: String(25)	E	C	E	C	Description: login username or transaction originator Comment: Messages from the TrimExchange will include the system username.
time_to_live Datatype: Integer(4)	X	X	X	X	Description: Length of time the message is valid. Comment: Not currently implemented

Transaction Types

Transactions are divided into three levels, a category, a type and a subtype. Each type of transaction can be uniquely identified by using these three levels of categorization. Additional messages and additional categories can easily be added to the system using this model.

The following table, Table 2, describes the transaction categories, types and subtypes supported today.

Table 2: Transaction Trans_Cat, Trans_type and Trans_sub_type

Trans_cat (Description)	Trans_type (Description)	Trans_sub_type & Description
TOUT Example (Free Text Outbound)	TEX Example (Text)	FRE Example Free formatted text
MOUT Example (Message Outbound)	POL Example	POL Example Request GPS coordinates
DSIT (Dispatch Job sites)	JOB	JOB
SIT (Site message)	JOB	MOD Site modified message ERR Error processing a site dispatch message.
PIN Example (GPS Coordinates Inbound)	GPL Example (GPS Poll)	GPL Example
SIN Example (Status and ACK's Inbound)	STA Example (Status)	Examples DLI Driver Login ISV In-service RTL Ready to Load LDS Start Load LDC Complete Load

		SLM Slump or wash rack TJB To Job AJB Arrive Job POU Pouring EPR End Pour WSH Begin Wash EWS End Wash TPL To Plant IYD In yard PIT Washout pit SHP Shop BRK Break Area OSV Out of Service
SIN	VEH	STR Vehicle Start STP Vehicle Stop MRT Example Vehicle Mileage and Runtime
SIN	MSG	EMG Example Vehicle Emergency Message
SIN	BRK	Examples

		STR Driver Start Break Message STP Driver Stop Break Message
STA	ACK Example	DRV Example Vehicle ACK VEH Example Driver ACK
STA	MSG Example	CAN Example Canned mobile messages
STA	MSG Example	TXT Example Text Messages RSP Response to Text Message
XIN (Extension Inbound)	DRM (Drum Event)	DRO Drum Rotation DRV Drum Reverse DCL Drum Count Load DCT Drum Count Truck
XIN Example (Extension Inbound)	WAT Example (Water Added)	Examples ISV In-service LDS Loading Started LDC Loading Complete SLM Slump or wash rack TJB To Job AJB Arrive Job POU Pouring

		WSH Washing TPL To Plant IYD In yard PIT Washout pit SHP Shop BRK Break Area OSV Out of Service
XIN Example (Extension Inbound)	JBE Example (JBus)	Always "000" Example
EIN (encoded pass through message) EOUT	ENC	ENC The message node will have a hex string that represents the encoded message.
TICK Example (Ticket)	CON Example (concrete) AGG (Aggregate) BLK (Block)	NEW Example New ticket has been generated CHG Change to a ticket has occurred CAN Ticket has been canceled
TICK (Ticket)	ACK (Acknowledge)	VEH (Vehicle) DRV (Driver)
TICK (Ticket)	FIN (Finalize)	FIN (Finalize)
TICK (Ticket)	CON (concrete)	BRL New batch record for a concrete load.
LIN Example (Leftover Inbound)	LEF Example (Leftover)	LEF Example

Specific Example Messages

Free Formatted Text Message

Outbound from Dispatch System to TrimExchange

Trans_cat ([From Table 2](#)): TOUT

Trans_type ([From Table 2](#)): TEX

Trans_sub_type ([From Table 2](#)): FRE

Responses Expected: Vehicle and Driver Acknowledgements, Driver Response

The outbound text to be sent to the unit is contained in the “message_string” node of the “transaction.” The dispatch system can send up to 4 pre-defined responses for the driver to select. If more than 4 responses are included, TMS will take the first 4 in the list and ignore the rest.

XML Transport from Dispatch System to TrimExchange (example message with no responses):

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{130EB69E-CE15-406E-8DF7-D22B945EF438}</trans_id>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <transaction>

    <trans_date_time>2004/07/27T16:21:02</trans_date_time>

    <tkk_code>353328</tkk_code>

    <order_code>1234</order_code>

    <dispatch_tkk_id>456341</dispatch_tkk_id>

    <dispatch_order_id>567432</dispatch_order_id>

    <tkk_date_time>2004/07/27T00:00:00</tkk_date_time>
```

Trimble XML Integration Interface

```

<employee_code>723</employee_code>

<message_string>Call Dispatch Manager</message_string>

<trans_cat>TOUT</trans_cat>

<trans_type>TEX</trans_type>

<trans_sub_type>FRE</trans_sub_type>

<trans_origin>DSP</trans_origin>

<trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>SYSTEM</trans_origin_username>

<time_to_live>0</time_to_live>

</transaction>

</tms_msg>

```

XML Transport from Dispatch System to TrimExchange (example message with responses):

```

<?xml version="1.0" ?>

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{130EB69E-CE15-406E-8DF7-D22B945EF438}</trans_id>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <transaction>

    <trans_date_time>2004/07/27T16:20:02</trans_date_time>

    <tkk_code>353328</tkk_code>

    <order_code>1234</order_code>

    <dispatch_tkk_id>456341</dispatch_tkk_id>

    <dispatch_order_id>567432</dispatch_order_id>

    <tkk_date_time>2004/07/27T00:00:00</tkk_date_time>

    <employee_code>807</employee_code>

    <message_string>Are you stopping for lunch?</message_string>
  
```

```
<responses>

  <response>yes</response>

  <response>no</response>

  <response>not sure</response>

  <response>will stop later</response>

</responses>

<trans_cat>TOUT</trans_cat>

<trans_type>TEX</trans_type>

<trans_sub_type>FRE</trans_sub_type>

<trans_origin>DSP</trans_origin>

<trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>SYSTEM</trans_origin_username>

<time_to_live>0</time_to_live>

</transaction>

</tms_msg>
```

GPS Coordinate Poll

Outbound GPS Coordinate Request to TrimExchange

Trans_cat ([From Table 2](#)): MOUT

Trans_type ([From Table 2](#)): POL

Trans_sub_type valid values ([From Table 2](#)): POL

Expected Responses: GPS Coordinates message

(Trans_cat PIN, Trans_type GPL, Trans_sub_type GPL).

See next page.

XML Transport from Dispatch System to TrimExchange (example):

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{130EB69E-CE15-406E-8DF7-D22B945EF438}</trans_id>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <transaction>

    <trans_date_time>2004/07/27T16:21:02</trans_date_time>

    <tkc_code> 353328</tkc_code>

    <order_code>1234</order_code>

    <dispatch_tkc_id>456341</dispatch_tkc_id>

    <dispatch_order_id>567432</dispatch_order_id>

    <tkc_date_time>2004/07/27T00:00:00</tkc_date_time>

    <employee_code>723</employee_code>

    <trans_cat>MOUT</trans_cat>

    <trans_type>POL</trans_type>

    <trans_sub_type>POL</trans_sub_type>
```

Trimble XML Integration Interface

```
<trans_origin>DSP</trans_origin>

<trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>SYSTEM</trans_origin_username>

<time_to_live>0</time_to_live>

</transaction>

</tms_msg>
```

Dispatch Job Sites

Dispatch Job Sites Request to TrimExchange

Trans_cat ([From Table 2](#)): DSIT

Trans_type ([From Table 2](#)): JOB

Trans_sub_type valid values ([From Table 2](#)): JOB

Expected Responses: None. If an address cannot be geocoded, then an error message will be returned to the dispatch system.

XML Transport from Dispatch System to TrimExchange (example):

```
<?xml version="1.0"?>
<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <trans_id>{130EB69E-CE15-406E-8DF7-D22B945EF438}</trans_id>
  <veh_radio_code>100</veh_radio_code>
  <protocol_version>2</protocol_version>
  <transaction>
    <trans_date_time>2004/07/27T16:21:02</trans_date_time>
    <message>
      <jobsite>
        <jobsitename>Order 123(7/20/2007)</jobsitename>
        <jobsiteidentifier>12345678</jobsiteidentifier>
        <address>3650 Concorde Pkwy</address>
        <city>Chantilly</city>
        <state>VA</state>
        <zip>20151</zip>
        <country>USA</country>
        <lat>38.910319</lat>
        <lon>-77.449028</lon>
```

Trimble XML Integration Interface

```

    <radius units="Meters">200</ radius >

</jobsite>

<jobsite>

  <jobsitename>Order 125(7/20/2007)</ jobsitename>

  <jobsiteidentifier>12245675</jobsiteidentifier>

  <address>3650 Avion Pkwy</address>

  <city>Chantilly</city>

  <state>VA</state>

  <zip>20151</zip>

  <country>USA</country>

  <lat>38.91224</lat>

  <lon>-76.45028</lon>

  < radius units="Meters">200</ radius >

</jobsite>

</message>

<trans_cat>DSIT</trans_cat>

<trans_type>JOB</trans_type>

<trans_sub_type>JOB</trans_sub_type>

<trans_origin>DSP</trans_origin>

<trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>SYSTEM</trans_origin_username>

<time_to_live>0</time_to_live>

</transaction>

</tms_msg>

```

XML Transport from TrimExchange to Dispatch System (example):

```

<?xml version="1.0"?>

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{130EB69E-CE15-406E-8DF7-D22B945EF438}</trans_id>

```

Trimble XML Integration Interface

```

<veh_radio_code>100</veh_radio_code>

<protocol_version>2</protocol_version>

<transaction>

  <trans_date_time>2004/07/27T16:21:02</trans_date_time>

  <message_string error="Unable to Geocode">

    <jobsite>

      <jobsitename>Order 123(7/20/2007)</ jobsitename>

      <jobsiteidentifier>12345678</jobsiteidentifier>

    </jobsite>

    <jobsite>

      <jobsitename>Order 125(7/20/2007)</ jobsitename>

      <jobsiteidentifier>12245675</jobsiteidentifier>

    </jobsite>

  </message>

  <trans_cat>SIT</trans_cat>

  <trans_type>JOB</trans_type>

  <trans_sub_type>ERR</trans_sub_type>

  <trans_origin>TMS</trans_origin>

  <trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

  <trans_origin_machname>WIN03</trans_origin_machname>

  <trans_origin_username>SYSTEM</trans_origin_username>

  <time_to_live>0</time_to_live>

</transaction>

</tms_msg>

```

Site Updated message

TrimExchange to Dispatch System

Trans_cat ([From Table 2](#)): SIT

Trans_type ([From Table 2](#)): JOB

Trans_sub_type valid values ([From Table 2](#)): MOD

Expected Responses: None.

When a job site (geofence) is updated in the TMS solution; this message will be sent to the Dispatch System. If a siteidentifier was included when the site was created, then it will be sent back. Otherwise, the siteidentifier field will be omitted. Order code and Dispatch Order ID will be included only if the job site has been associated with an order. Otherwise, the order_code field and dispatch_order_id field will be omitted.

XML Transport from TrimExchange to Dispatch System (example):

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{1973006B-88C0-480D-B9E4-3504A496208E}</trans_id>

  <veh_fleet_code>0000</veh_fleet_code>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <packet_code>1</packet_code>

  <transaction>

    <trans_date_time>2004/07/28T16:41:42</trans_date_time>

    <utc_date_time>2004-07-28T21:41:42</utc_date_time>

    <order_code>1234</order_code>

    <dispatch_order_id>567432</dispatch_order_id>

    <message>

      <site>
```

Trimble XML Integration Interface

```
<sitename>Order 123(7/20/2007)</sitename>

<siteidentifier>12345678</ siteidentifier >

<northlatitude>38.90</northlatitude>

<southlatitude>38.91</southlatitude>

<westlongitude>-77.85</westlongitude>

<eastlongitude>-77.90</eastlongitude>

</site>

</message>

<trans_cat>SIT</trans_cat>

<trans_type>JOB</trans_type>

<trans_sub_type>MOD</trans_sub_type>

<trans_origin>TMS</trans_origin>

<trans_origin_ipaddr>65.76.98.52</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>Administrator</trans_origin_username>

</transaction>

</tms_msg>
```

GPS Coordinates Inbound Message

Inbound from TrimExchange to Dispatch System in response to GPS poll request

Trans_cat ([From Table 2](#)): PIN

Trans_type ([From Table 2](#)): GPL

Trans_sub_type valid values ([From Table 2](#)): GPL

Expected Responses: None

Message format (contents of message_string element in transport):

Component	Length	Valid Value	Description
<utctime>	6	"HHMMSS"	GMT (Greenwich Mean Time or UTC time of position Fix) This field will be deprecated in an upcoming release in favor of the utc_date_time field.
<utc_date_time>	19	yyyy-mm-ddThh:nn:ss	GMT (Greenwich Mean Time or UTC time of position fix for position messages, the event time for status messages)
<latitude>	9	DDMM.MMMM	Latitude / Leading Zeros D: Degrees M : Minutes
<latitude_hemi>	1	"N"/"S"	Latitude Hemisphere North/South
<longitude>	10	DDDMM.MMMM	Longitude / Leading Zeros D: Degrees M : Minutes
<longitude_hemi>	1	"W"/"E"	Longitude Hemisphere East/West
<speed>	5	000.0- 999.0	Velocity (Knots)

<heading>	3	0-359	Heading (Degrees)
-----------	---	-------	-------------------

XML Transport from TrimExchange to Dispatch System (example):

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{57F5F1D1-5792-4DE5-BAB6-686C7308EB3A}</trans_id>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <transaction>

    <trans_date_time>2004/07/27T16:21:07</trans_date_time>

    <date_time_offset>0</date_time_offset>

    <tkk_code/>

    <order_code/>

    <dispatch_tkt_id>456341</dispatch_tkt_id>

    <dispatch_order_id>567432</dispatch_order_id>

    <tkk_date_time />

    <message_string>

      <utctime>101042</utctime>

      <utc_date_time>2004-07-27T10:10:42</utc_date_time>

      <latitude>3320.8090</latitude>

      <latitude_hemi>N</latitude_hemi>

      <longitude>09551.3102</longitude>

      <longitude_hemi>E</longitude_hemi>

      <speed>034.0</speed>

      <heading>045</heading>

    </message_string>

    <trans_cat>PIN</trans_cat>

    <trans_type>GPL</trans_type>

    <trans_sub_type>GPL</trans_sub_type>
```

Trimble XML Integration Interface

```
<trans_origin>VSC</trans_origin>

<trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>SYSTEM</trans_origin_username>

<time_to_live>0</time_to_live>

</transaction>

</tms_msg>
```

Vehicle Status Packet Message

Inbound from TrimExchange to Dispatch System

Trans_cat ([From Table 2](#)): SIN

Trans_type ([From Table 2](#)): STA

Trans_sub_type valid values ([From Table 2](#)):

DLI (Driver Login), ISV (In Service), RTL (Ready to Load), LDS (Start Load), LDC (Complete Load), SLM (Slump or Wash Rack), TJB (To Job), AJB (Arrive Job), POU (Pouring), EPR (End Pour), WSH (Washing), EWS (End Wash), TPL (To Plant), IYD (In Yard), PIT, (Washout Pit), OSV (Out of Service), SHP (Shop), BRK (Break Area)

The employee_code field in the transport will contain the code entered by the driver when a DLI (Driver Login) message is sent.

Expected Responses: None

Component	Data Type	Valid Values	Field Requirement	Description
<waterqty>	Numeric	0.0-999.0	O	Cumulative amount of water added to the mixture. "type" attribute: will be either "manual" or "auto" "units" attribute: "Gallon" or "Liter" This node can appear multiple times with different values for the "type" attribute.
<addmixture>	Numeric	0.0-999.0	O	The cumulative amount of add mixture (SP). "units" attribute: "ounce"
<slump>	Numeric	0.0-10.0	O	The current Slump of the load. "units" attribute: "inch"
<drumrotation>	Numeric	0-65535	O	Cumulative number of drum rotations.
<sitename>	String		O	The site name of the geofence that the event occurred within. If the event occurred within a site (defined geofence), then this node will be included with a status message.
<siteidentifier>	String (20)		O	The site identifier of the geofence

Trimble XML Integration Interface

				that the event occurred within. If the event occurred within a site and the dispatch system had defined a site identifier for the site, then this node will be included with a status message.
temperature	Numeric		O	Temperature at time of Begin Pour. Unit attribute: fahrenheit. Sent only with first Begin Pour status of a ticket. This field will not be included for any other statuses.
humidity	Numeric	0.0 – 100.0	O	Percent humidity at time of Begin Pour. Sent only with first Begin Pour status of a ticket. This field will not be included for any other statuses.
windspeed	Numeric	0.0 – 999.9	O	Wind Speed at time of Begin Pour. unit attribute: mph. Sent only with first Begin Pour status of a ticket. This field will not be included for any other statuses.
observationtime	Date Time	YYYY-MM-DDThh:mm:ss	O	Time of the weather observation. Sent only with first Begin Pour status of a ticket. This field will not be included for any other statuses.

XML Transport from TrimExchange to Dispatch System (example):

```

<?xml version="1.0"?>

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{6FD7B293-AC0C-4907-9663-8B2D841CE370}</trans_id>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <transaction>

    <trans_date_time>2004/07/28T16:43:29</trans_date_time>

    <date_time_offset>0</date_time_offset>

    <tkc_code>353330</tkc_code>

    <order_code>1234</order_code>

    <dispatch_tkc_id>456341</dispatch_tkc_id>
  
```

Trimble XML Integration Interface

```

<dispatch_order_id>567432</dispatch_order_id>

<tkr_date_time>2004/07/28T00:00:00</tkr_date_time>

<employee_code>807</employee_code>

<message_string>

    <utctime>101042</utctime>

    <utc_date_time>2004-07-27T10:10:42</utc_date_time>

    <latitude>3320.8090</latitude>

    <latitude_hemi>N</latitude_hemi>

    <longitude>09551.3102</longitude>

    <longitude_hemi>E</longitude_hemi>

    <speed>034.0</speed>

    <heading>045</heading>

    <waterqty type="manual" units="gallon">12</waterqty>

    <waterqty type="auto" units="gallon">15</waterqty>

    <addmixture units="ounce">1</addmixture>

    <slump units="inch">6</slump>

    <drumrotation>15</drumrotation>

    <siteidname>0720(7/20/2007)</siteidname>

    <siteidentifier>1238</siteidentifier>

    <temperature units="fahrenheit">85.0</temperature>

    <humidity>10.0</humidity>

    <windspeed units="mph">10.0</windspeed>

    <observationtime>2004-07-27T10:05:32<observationtime />

</message_string>

<trans_cat>SIN</trans_cat>

<trans_type>STA</trans_type>

<trans_sub_type>POU</trans_sub_type>

<trans_origin>DRV</trans_origin>

<trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

```

Trimble XML Integration Interface

<trans_origin_username>Administrator</trans_origin_username>

<time_to_live>0</time_to_live>

</transaction>

</tms_msg>

Vehicle Start/Stop Message

Inbound from TrimExchange to Dispatch System

Trans_cat ([From Table 2](#)): SIN

Trans_type ([From Table 2](#)): VEH

Trans_sub_type valid values ([From Table 2](#)):

STR (Vehicle Start), STP (Vehicle Stop)

Expected Responses: None

XML Transport from TrimExchange to Dispatch System (Start Message example):

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

```
<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
```

```
  <trans_id>{6FD7B293-AC0C-4907-9663-8B2D841CE370}</trans_id>
```

```
  <veh_radio_code>100</veh_radio_code>
```

```
  <protocol_version>2</protocol_version>
```

```
  <transaction>
```

```
    <trans_date_time>2004/07/28T16:43:29</trans_date_time>
```

```
    <date_time_offset>0</date_time_offset>
```

```
    <tkc_code>353330</tkc_code>
```

```
    <order_code>1234</order_code>
```

```
    <dispatch_tkc_id>456341</dispatch_tkc_id>
```

```
    <dispatch_order_id>567432</dispatch_order_id>
```

```
    <tkc_date_time>2004/07/28T00:00:00</tkc_date_time>
```

```
    <employee_code>807</employee_code>
```

```
    <message_string>
```

```
      <utc_date_time>2004-07-27T10:10:42</utc_date_time>
```

```
      <latitude>3320.8090</latitude>
```

Trimble XML Integration Interface

```

        <latitude_hemi>N</latitude_hemi>

        <longitude>09551.3102</longitude>

        <longitude_hemi>E</longitude_hemi>

        <speed>034.0</speed>

        <heading>045</heading>

        <sitename>0720(7/20/2007)</sitename>

        <siteidentifier>1238</siteidentifier>

    </message_string>

    <trans_cat>SIN</trans_cat>

    <trans_type>VEH</trans_type>

    <trans_sub_type>STR</trans_sub_type>

    <trans_origin>VSC</trans_origin>

    <trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

    <trans_origin_machname>WIN03</trans_origin_machname>

    <trans_origin_username>Administrator</trans_origin_username>

    <time_to_live>0</time_to_live>

</transaction>

</tms_msg>

```

XML Transport from TrimExchange to Dispatch System (Stop Message example):

```

<?xml version="1.0"?>

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

    <trans_id>{6FD7B293-AC0C-4907-9663-8B2D841CE370}</trans_id>

    <veh_radio_code>100</veh_radio_code>

    <protocol_version>2</protocol_version>

    <transaction>

        <trans_date_time>2004/07/28T16:43:29</trans_date_time>
    
```

```

<date_time_offset>0</date_time_offset>

<tkc_code>353330</tkc_code>

<order_code>1234</order_code>

<dispatch_tkc_id>456341</dispatch_tkc_id>

<dispatch_order_id>567432</dispatch_order_id>

<tkc_date_time>2004/07/28T00:00:00</tkc_date_time>

<employee_code>807</employee_code>

<message_string>

    <utc_date_time>2004-07-27T10:10:42</utc_date_time>

    <latitude>3320.8090</latitude>

    <latitude_hemi>N</latitude_hemi>

    <longitude>09551.3102</longitude>

    <longitude_hemi>E</longitude_hemi>

    <speed>0</speed>

    <heading>045</heading>

    <site_name>0720(7/20/2007)</site_name>

    <site_identifier>1238</site_identifier>

</message_string>

<trans_cat>SIN</trans_cat>

<trans_type>VEH</trans_type>

<trans_sub_type>STP</trans_sub_type>

<trans_origin>VSC</trans_origin>

<trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>Administrator</trans_origin_username>

<time_to_live>0</time_to_live>

</transaction>

</tms_msg>

```

Vehicle Mileage and Runtime

Inbound from TrimExchange to Dispatch System

Trans_cat ([From Table 2](#)): SIN

Trans_type ([From Table 2](#)): VEH

Trans_sub_type ([From Table 2](#)): MRT

Expected Responses: None

XML Transport from TrimExchange to Dispatch System (Mileage and Runtime Message example):

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

```
<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
```

```
  <trans_id>{6FD7B293-AC0C-4907-9663-8B2D841CE370}</trans_id>
```

```
  <veh_radio_code>100</veh_radio_code>
```

```
  <protocol_version>2</protocol_version>
```

```
  <transaction>
```

```
    <trans_date_time>2004/07/28T16:43:29</trans_date_time>
```

```
    <date_time_offset>0</date_time_offset>
```

```
    <order_code>1234</order_code>
```

```
    <tkc_code>T559</tkc_code>
```

```
    <tkc_date_time>2004/07/28T12:43:29</tkc_date_time>
```

```
    <employee_code>807</employee_code>
```

```
    <message_string>
```

```
      <utc_time>23423</utc_time>
```

```
      <latitude>3320.8090</latitude>
```

```
      <latitude_hemi>N</latitude_hemi>
```

```
      <longitude>09551.3102</longitude>
```

```
      <longitude_hemi>E</longitude_hemi>
```

Trimble XML Integration Interface

```
        <speed>034.0</speed>

        <heading>045</heading>

        <mileage>654.123</mileage>

        <runtime>1238</runtime>

        <sitename>Home Site 5</sitename>

    </message_string>

    <trans_cat>SIN</trans_cat>

    <trans_type>VEH</trans_type>

    <trans_sub_type>MRT</trans_sub_type>

    <trans_origin>DRV</trans_origin>

    <trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

    <trans_origin_machname>WIN03</trans_origin_machname>

    <trans_origin_username>Administrator</trans_origin_username>

    <time_to_live>0</time_to_live>

</transaction>

</tms_msg>
```

Emergency Message

Inbound from TrimExchange to Dispatch System

Trans_cat ([From Table 2](#)): SIN

Trans_type ([From Table 2](#)): VEH

Trans_sub_type valid values ([From Table 2](#)): EMG

Expected Responses: None

XML Transport from TrimExchange to Dispatch System (Start Message example):

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{6FD7B293-AC0C-4907-9663-8B2D841CE370}</trans_id>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <transaction>

    <trans_date_time>2004/07/28T16:43:29</trans_date_time>

    <date_time_offset>0</date_time_offset>

    <tkc_code>353330</tkc_code>

    <order_code>1234</order_code>

    <dispatch_tkc_id>456341</dispatch_tkc_id>

    <dispatch_order_id>567432</dispatch_order_id>

    <tkc_date_time>2004/07/28T00:00:00</tkc_date_time>

    <employee_code>807</employee_code>

    <message_string>

      <utc_time>23423</utc_time>

      <latitude>3320.8090</latitude>

      <latitude_hemi>N</latitude_hemi>
```

Trimble XML Integration Interface

```
<longitude>09551.3102</longitude>

<longitude_hemi>E</longitude_hemi>

<speed>034.0</speed>

<heading>045</heading>

</message_string>

<trans_cat>SIN</trans_cat>

<trans_type>MSG</trans_type>

<trans_sub_type>EMG</trans_sub_type>

<trans_origin>VSC</trans_origin>

<trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>Administrator</trans_origin_username>

<time_to_live>0</time_to_live>

</transaction>

</tms_msg>
```

Driver Begin/End Break Message

Inbound from TrimExchange to Dispatch System

Trans_cat ([From Table 2](#)): SIN

Trans_type ([From Table 2](#)): BRK

Trans_sub_type valid values ([From Table 2](#)):

STR (Vehicle Start), STP (Vehicle Stop)

Expected Responses: None

XML Transport from TrimExchange to Dispatch System (Start Message example):

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

```
<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
```

```
  <trans_id>{6FD7B293-AC0C-4907-9663-8B2D841CE370}</trans_id>
```

```
  <veh_radio_code>100</veh_radio_code>
```

```
  <protocol_version>2</protocol_version>
```

```
  <transaction>
```

```
    <trans_date_time>2004/07/28T16:43:29</trans_date_time>
```

```
    <date_time_offset>0</date_time_offset>
```

```
    <tkc_code>353330</tkc_code>
```

```
    <order_code>1234</order_code>
```

```
    <dispatch_tkc_id>456341</dispatch_tkc_id>
```

```
    <dispatch_order_id>567432</dispatch_order_id>
```

```
    <tkc_date_time>2004/07/28T00:00:00</tkc_date_time>
```

```
    <employee_code>807</employee_code>
```

```
    <message_string>
```

```
      <utc_time>232232</utc_time>
```

```
      <latitude>3320.8090</latitude>
```

Trimble XML Integration Interface

```

        <latitude_hemi>N</latitude_hemi>

        <longitude>09551.3102</longitude>

        <longitude_hemi>E</longitude_hemi>

        <speed>034.0</speed>

        <heading>045</heading>

        <break>TRUE</break>

        <break_message>Start Break</break_message>

    </message_string>

    <trans_cat>SIN</trans_cat>

    <trans_type>BRK</trans_type>

    <trans_sub_type>STR</trans_sub_type>

    <trans_origin>DRV</trans_origin>

    <trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

    <trans_origin_machname>WIN03</trans_origin_machname>

    <trans_origin_username>Administrator</trans_origin_username>

    <time_to_live>0</time_to_live>

</transaction>

</tms_msg>

<?xml version="1.0"?>

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

    <trans_id>{6FD7B293-AC0C-4907-9663-8B2D841CE370}</trans_id>

    <veh_radio_code>100</veh_radio_code>

    <protocol_version>2</protocol_version>

    <transaction>

        <trans_date_time>2004/07/28T16:43:29</trans_date_time>

        <date_time_offset>0</date_time_offset>

        <tkc_code>353330</tkc_code>

        <order_code>1234</order_code>

```

Trimble XML Integration Interface

```

<dispatch_tkt_id>456341</dispatch_tkt_id>

<dispatch_order_id>567432</dispatch_order_id>

<tkt_date_time>2004/07/28T00:00:00</tkt_date_time>

<employee_code>807</employee_code>

<message_string>

    <utc_date_time>2004-07-27T10:10:42</utc_date_time>

    <latitude>3320.8090</latitude>

    <latitude_hemi>N</latitude_hemi>

    <longitude>09551.3102</longitude>

    <longitude_hemi>E</longitude_hemi>

    <speed>034.0</speed>

    <heading>045</heading>

    <break>TRUEbreak>

    <breakMessage>End Break</breakMessage>

</message_string>

<trans_cat>SIN</trans_cat>

<trans_type>BRK</trans_type>

<trans_sub_type>STR</trans_sub_type>

<trans_origin>DRV</trans_origin>

<trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>Administrator</trans_origin_username>

<time_to_live>0</time_to_live>

</transaction>

</tms_msg>

```

Vehicle Status - Driver/Vehicle ACK

Inbound from TrimExchange to Dispatch System

Trans_cat ([From Table 2](#)): STA

Trans_type ([From Table 2](#)): ACK

Trans_sub_type valid values ([From Table 2](#)): DRV, VEH

Expected Responses: None

XML Transport from TrimExchange to Dispatch System (example):

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{6FD7B293-AC0C-4907-9663-8B2D841CE370}</trans_id>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <transaction>

    <trans_date_time>2004/07/27T16:20:47</trans_date_time>

    <date_time_offset>0</date_time_offset>

    <tkk_code>353330</tkk_code>

    <order_code>1234</order_code>

    <dispatch_tkk_id>456341</dispatch_tkk_id>

    <dispatch_order_id>567432</dispatch_order_id>

    <tkk_date_time>2004/07/28T00:00:00</tkk_date_time>

    <employee_code>807</employee_code>

    <message_string>

      <utctime>101042</utctime>

      <utc_date_time>2004-07-27T10:10:42</utc_date_time>

      <latitude>3320.8090</latitude>
```

Trimble XML Integration Interface

```
<latitude_hemi>N</latitude_hemi>

<longitude>09551.3102</longitude>

<longitude_hemi>E</longitude_hemi>

<speed>034.0</speed>

<heading>045</heading>

</message_string>

<trans_cat>STA</trans_cat>

<trans_type>ACK</trans_type>

<trans_sub_type>DRV</trans_sub_type>

<trans_origin>DRV</trans_origin>

<trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>Administrator</trans_origin_username>

</transaction>

</tms_msg>
```

Vehicle Status - Inbound Text Messages

Inbound from TrimExchange to Dispatch System

Trans_cat ([From Table 2](#)): STA

Trans_type ([From Table 2](#)): MSG

Trans_sub_type valid values ([From Table 2](#)): TXT

Expected Responses: None

The message text is contained in the “message_string” node of the “transaction.”

XML Transport from TrimExchange to Dispatch System (example):

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{6FD7B293-AC0C-4907-9663-8B2D841CE370}</trans_id>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <transaction>

    <trans_date_time>2004/07/27T16:20:47</trans_date_time>

    <date_time_offset>0</date_time_offset>

    <tkk_code> 353330</tkk_code>

    <order_code>1234</order_code>

    <dispatch_tkt_id>456341</dispatch_tkt_id>

    <dispatch_order_id>567432</dispatch_order_id>

    <tkk_date_time>2004/07/28T00:00:00</tkk_date_time>

    <employee_code>807</employee_code>

    <message_string>CUSTOMER NOT READY</message_string>

    <message_code>8</message_code>

  </transaction>

</tms_msg>
```

Trimble XML Integration Interface

```
<utc_date_time>2004-07-28T21:19:30</utc_date_time>

<priority>NORMAL</priority>

<trans_cat>STA</trans_cat>

<trans_type>MSG</trans_type>

<trans_sub_type>TXT</trans_sub_type>

<trans_origin>DRV</trans_origin>

<trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>Administrator</trans_origin_username>

</transaction>

</tms_msg>
```

Vehicle Status - Inbound Response Messages

Inbound from TrimExchange to Dispatch System

Trans_cat ([From Table 2](#)): STA

Trans_type ([From Table 2](#)): MSG

Trans_sub_type valid values ([From Table 2](#)): RSP

Expected Responses: None

The message text is contained in the “message_string” node of the “transaction.”

The trans_id of the RSP message will match the trans_id of the TOUT message that this message is in response to.

XML Transport from TrimExchange to Dispatch System (example):

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{130EB69E-CE15-406E-8DF7-D22B945EF438}</trans_id>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <transaction>

    <trans_date_time>2004/07/27T16:20:47</trans_date_time>

    <date_time_offset>0</date_time_offset>

    <tkk_code> 353330</tkk_code>

    <order_code>1234</order_code>

    <dispatch_tkk_id>456341</dispatch_tkk_id>

    <dispatch_order_id>567432</dispatch_order_id>

    <tkk_date_time>2004/07/28T00:00:00</tkk_date_time>
```

Trimble XML Integration Interface

```
<employee_code>807</employee_code>

<message_string>YES</message_string>

<utc_date_time>2004-07-27T21:19:47</utc_date_time>

<trans_cat>STA</trans_cat>

<trans_type>MSG</trans_type>

<trans_sub_type>RSP</trans_sub_type>

<trans_origin>DRV</trans_origin>

<trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>Administrator</trans_origin_username>

</transaction>

</tms_msg>
```

Leftover Message

Inbound from TrimExchange to Dispatch System

Trans_cat ([From Table 2](#)): LIN

Trans_type ([From Table 2](#)): LEF

Trans_sub_type valid values ([From Table 2](#)): LEF

Expected Responses: None

Message format (contents of message_string element in transport):

Component	Length	Valid Value	Description
<qtyleft>	3	"000-999"	decimal point is assumed to be 2 places to the right of the 1st digit. Ex: 5.5 units = 055
<uom>		"YARDS", "METERS"	The unit of measure for the qtyleft field

XML Transport from TrimExchange to Dispatch System (example):

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{B2D3723B-D16A-41DA-B2E8-34B575C31AC4}</trans_id>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <transaction>

    <trans_date_time>2004/07/28T16:45:54</trans_date_time>

    <date_time_offset>0</date_time_offset>

    <tkc_code>353330</tkc_code>

    <order_code>1234</order_code>
```

Trimble XML Integration Interface

```
<dispatch_tkt_id>456341</dispatch_tkt_id>

<dispatch_order_id>567432</dispatch_order_id>

<tkt_date_time>2004/07/28T00:00:00</tkt_date_time>

<message_string>

    <utc_date_time>2004-07-27T21:19:47</utc_date_time>

    <qtyleft>020</qtyleft>

    <uom>YARDS</uom>

</message_string>

<trans_cat>LIN</trans_cat>

<trans_type>LEF</trans_type>

<trans_sub_type>LEF</trans_sub_type>

<trans_origin>VSC</trans_origin>

<trans_origin_ipaddr>65.76.98.52</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>Administrator</trans_origin_username>

</transaction>

</tms_msg>
```

JBUS Event Message

From TrimExchange to Dispatch System

Trans_cat ([From Table 2](#)): XIN

Trans_type ([From Table 2](#)): JBE

Trans_sub_type valid values: Always "000"

Expected Responses: None

XML Transport from TrimExchange to Dispatch System (example):

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{1973006B-88C0-480D-B9E4-3504A496208E}</trans_id>

  <veh_fleet_code>0000</veh_fleet_code>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <packet_code>6</packet_code>

  <transaction>

    <trans_date_time>2004/07/28T16:41:42</trans_date_time>

    <date_time_offset>0</date_time_offset>

    <tkc_code> 353329</tkc_code>

    <order_code>1234</order_code>

    <dispatch_tkc_id>456341</dispatch_tkc_id>

    <dispatch_order_id>567432</dispatch_order_id>

    <tkc_date_time>2004/07/28T00:00:00</tkc_date_time>

    <message>

      <time_offset>123</time_offset>

      <pid>190</pid>
```

Trimble XML Integration Interface

```

    <mid>128</mid>

    <value>700.0</value>

    <valueUom>RPM</valueUom>

    <gps version="1.0">

        <utctime>123456</utctime>

        <utc_date_time>2004-07-27T12:34:56</utc_date_time>

        <latitude>1234.1234</latitude>

        <latitude_hemi>N</latitude_hemi>

        <longitude>12345.1234</longitude>

        <longitude_hemi>E</longitude_hemi>

        <satellites>12</satellites>

        <speed>034.0</speed>

        <heading>123</heading>

        <antenna>1</antenna>

    </gps>

</message>

<trans_cat>XIN</trans_cat>

<trans_type>JBE</trans_type>

<trans_sub_type>000</trans_sub_type>

<trans_origin>VSC</trans_origin>

<trans_origin_ipaddr>65.76.98.52</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>Administrator</trans_origin_username>

<time_to_live>0</time_to_live>

</transaction>

</tms_msg>

```

Water Added Event Message

From TrimExchange to Dispatch System

Trans_cat ([From Table 2](#)): XIN

Trans_type ([From Table 2](#)): WAT

Trans_sub_type valid values ([From Table 2](#)): Status the vehicle was in when water was added

Expected Responses: None

XML Transport from TrimExchange to Dispatch System (example):

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{FAE2A8E7-6457-4286-8974-A657EB84C6A9}</trans_id>

  <veh_fleet_code>0000</veh_fleet_code>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <packet_code>7</packet_code>

  <transaction>

    <trans_date_time>2004/07/28T16:41:57</trans_date_time>

    <date_time_offset>0</date_time_offset>

    <tkc_code> 353329</tkc_code>

    <order_code>1234</order_code>

    <dispatch_tkc_id>456341</dispatch_tkc_id>

    <dispatch_order_id>567432</dispatch_order_id>

    <tkc_date_time>2004/07/28T00:00:00</tkc_date_time>

    <message>

      <time_offset>008</time_offset>

      <type>HOSE</type>
```

Trimble XML Integration Interface

```

    <value>10</value>

    <value_uom>GALLON</value_uom>

    <gps version="1.0">

        <utctime>123456</utctime>

        <utc_date_time>2004-07-27T12:34:56</utc_date_time>

        <latitude>1234.1234</latitude>

        <latitude_hemi>N</latitude_hemi>

        <longitude>12345.1234</longitude>

        <longitude_hemi>E</longitude_hemi>

        <satellites>12</satellites>

        <speed>001.0</speed>

        <heading>123</heading>

        <antenna>1</antenna>

    </gps>

</message>

<trans_cat>XIN</trans_cat>

<trans_type>WAT</trans_type>

<trans_sub_type>IYD</trans_sub_type>

<trans_origin>VSC</trans_origin>

<trans_origin_ipaddr>65.76.98.52</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>Administrator</trans_origin_username>

<time_to_live>0</time_to_live>

</transaction>

</tms_msg>

```

Encoded Pass Through Message

From TrimExchange to Dispatch System

Trans_cat ([From Table 2](#)): EIN

Trans_type ([From Table 2](#)): ENC

Trans_sub_type valid values ([From Table 2](#)): ENC

Expected Responses: None

The unit sends a binary base 64 message and the message node will contain exactly what is sent from the unit.

The port field will be an integer field in the range from 1024 to 65535. Messages received from the unit outside this range will not be forwarded.

XML Transport from TrimExchange to Dispatch System (example):

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

<tm_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{FAE2A8E7-6457-4286-8974-A657EB84C6A9}</trans_id>

  <veh_fleet_code>0000</veh_fleet_code>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <packet_code>2</packet_code>

  <transaction>

    <trans_date_time>2004/07/28T16:41:57</trans_date_time>

    <date_time_offset>0</date_time_offset>

    <tkc_code> 353329</tkc_code>

    <order_code>1234</order_code>

    <dispatch_tkc_id>456341</dispatch_tkc_id>

  </transaction>

</tm_msg>
```

Trimble XML Integration Interface

```

<dispatch_order_id>567432</dispatch_order_id>

<tkr_date_time>2004/07/28T00:00:00</tkr_date_time>

<message> AywwMDAwMTesMDE5LAAAAA==</message>

<port>9999</port>

<utc_date_time>2004-07-27T21:19:47</utc_date_time>

<trans_cat>EIN</trans_cat>

<trans_type>ENC</trans_type>

<trans_sub_type>ENC</trans_sub_type>

<trans_origin>VSC</trans_origin>

<trans_origin_ipaddr>65.76.98.52</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>Administrator</trans_origin_username>

<time_to_live>0</time_to_live>

</transaction>

</tms_msg>

```

From Dispatch System to TrimExchange

Trans_cat ([From Table 2](#)): EOUI

Trans_type ([From Table 2](#)): ENC

Trans_sub_type valid values ([From Table 2](#)): ENC

Expected Responses: None

The message node should contain the binary base 64 representation of the encoded message that needs to be sent to the unit.

The port field requires an integer value from 1024 to 65535. Encoded messages with port values outside that range will be ignored.

Trimble XML Integration Interface

XML Transport from Dispatch System to TrimExchange (example):

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{FAE2A8E7-6457-4286-8974-A657EB84C6A9}</trans_id>

  <veh_fleet_code>0000</veh_fleet_code>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <packet_code>7</packet_code>

  <transaction>

    <trans_date_time>2004/07/28T16:41:57</trans_date_time>

    <tkc_code> 353329</tkc_code>

    <order_code>1234</order_code>

    <dispatch_tkc_id>456341</dispatch_tkc_id>

    <dispatch_order_id>567432</dispatch_order_id>

    <tkc_date_time>2004/07/28T00:00:00</tkc_date_time>

    <message> AywwMDAwMTesMDE5LAAAAA==</message>

    <port>9999</port>

    <trans_cat>EOU</trans_cat>

    <trans_type>ENC</trans_type>

    <trans_sub_type>ENC</trans_sub_type>

    <trans_origin>DSP</trans_origin>

    <trans_origin_ipaddr>65.76.98.52</trans_origin_ipaddr>

    <trans_origin_machname>WIN03</trans_origin_machname>

    <trans_origin_username>Administrator</trans_origin_username>

    <time_to_live>0</time_to_live>

  </transaction>

</tms_msg>
```

Ticket Information

From Dispatch System to TrimExchange

This message is used to send ticket information (New, Changed or Canceled) to TrimExchange. When a ticket is generated or modified, a new message of this form should be transmitted. The trans_sub_type in the transport determines whether the ticket is new or canceled. The ticket number and order number are required for TrimExchange to process the ticket message.

Trans_cat ([From Table 2](#)): TICK

Trans_type ([From Table 2](#)): CON, AGG, BLK

Trans_sub_type valid values ([From Table 2](#)): NEW, CAN, CHG

Expected Responses: None

A Ticket Information Message will be generated in the following instances:

1. Ticket Event
2. New Ticket
3. Cancel Ticket
4. Change Truck Return Plant Event
5. Deadhead Event
6. Change Job Location Event

The Ticket Message contains a large number of additional fields. In the current version (5 and prior) of TrimExchange, AGG and BLK tickets are not supported. The description of these fields is provided below. Message format (contents of message element in transport):

<TRUCKTYPE>String(10)</TRUCKTYPE>

<MAXDRUM>Numeric(Integer)</MAXDRUM>

Trimble XML Integration Interface

```

<PLANT>

    <CURRENT>String(10)</CURRENT>

    <RETURN>String(10)</RETURN>

    <HOME>String(10)</HOME>

</PLANT>

<DRIVER>

    <NUMBER>String(12)</NUMBER>

    <NAME>String(32)</NAME>

</DRIVER>

<TICKET>

    <PRETICKET>true/false</PRETICKET >

    <PROJECT>String(12)</PROJECT>

    <ORDER>String(12)</ORDER>

    <DATE>DateTime(yyyy-mm-ddThh:nn:ss)</DATE>

    <QUOTE>String(15)</QUOTE>

    <PONUMBER>String(15)</PONUMBER>

    <LOADNUMBER>Numeric(Integer)</LOADNUMBER>

    <TERMCODE>String(5)</TERMCODE>

    <CURRENCYCODE>String(3)</CURRENCYCODE>

    <TAX TYPE='LOCAL'>Numeric</TAX>

    <TAX TYPE='STATE'>Numeric</TAX>

    <SURCHARGE TYPE='FUEL'>Numeric</SURCHARGE>

    <BALANCE TYPE='SUB'>Numeric</BALANCE>

    <BALANCE TYPE='TICKET'>Numeric</BALANCE>

    <BALANCE TYPE='PREVIOUS'>Numeric</BALANCE>

    <TOTALDUE>Numeric</TOTALDUE>

    <DESCRIPTION>String(64)</DESCRIPTION>

    <DELIVERY>

        <ADDRESS>String(50)</ADDRESS>

        <CITY>String(25)</CITY>

```

```

    <STATE>String(2)</STATE>

    <ZIP>String(10)</ZIP>

    <COUNTRY>String(32)</COUNTRY>

    <INSTRUCTIONS>String(300)</INSTRUCTIONS>

</DELIVERY>

<TRUCKQUANTITY UNITS='String'>Numeric(float)</TRUCKQUANTITY>

<TOTALQUANTITY UNITS='String'>Numeric(float)</TOTALQUANTITY>

<CUMQUANTITY UNITS='String'>Numeric(float)</CUMQUANTITY>

<SLUMP UNITS='String'>Numeric(float)</SLUMP>

<JOBSITEIDENTIFIER>String(20)</ JOBSITEIDENTIFIER>

<LAT>Numeric(float)</LAT>

<LON>Numeric(float)</LON>

<RADIUS UNITS='String'>Numeric(integer)</RADIUS>

<TICKETTIME>DateTime(yyyy-mm-ddThh:nn:ss)</TICKETTIME>

<TICKETTIMEZONEOFFSET>Numeric(integer)</TICKETTIMEZONEOFFSET>

<CUSTOMER>

    <NUMBER>String(10)</NUMBER>

    <NAME>String(50)</NAME>

    <ADDRESS>String(50)</ADDRESS>

    <CITY>String(25)</CITY>

    <STATE>String(2)</STATE>

    <ZIP>String(10)</ZIP>

    <COUNTRY>String(32)</COUNTRY>

</CUSTOMER>

<POURMETHOD>String(15)</POURMETHOD>

<WASHTIME>Numeric(?)</WASHTIME>

<SCHEDULEDONJOBTIME>DateTime(yyyy-mm-ddThh:nn:ss)</SCHEDULEDONJOBTIME>

<TIMETOJOB>Numeric(integer)</TIMETOJOB>

<TIMETOPLANT>Numeric(integer)</TIMETOPLANT>

<UNLOADMINUTES>Numeric(integer)</UNLOADMINUTES>

```

```

<WEIGHT UNITS='String'>

    <GROSS>Numeric(float)</GROSS>

    <TARE>Numeric(float)</TARE>

    <NET>Numeric(float)</NET>

</WEIGHT>

<MIX>

    <CODE>String(15)</CODE>

    <METHOD>String(15)</METHOD>

    <UNITSYSTEM>Numeric(integer)</UNITSYSTEM>

    <ADDMIXQTY UNITS='String' TYPE='String'>Numeric(float)</ ADDMIXQTY>

    <AGGREGATEQTY UNITS='String' TYPE='String'>Numeric(float)</AGGREGATEQTY>

    <CEMENTQTY UNITS='String' TYPE='String'>Numeric(float)</CEMENTQTY>

    <WATERQTY UNITS='String'>Numeric(float)</WATERQTY>

    <WATERADJUSTMENTCURVE>Numeric(float)</ WATERADJUSTMENTCURVE >

    <SLUMPCURVE>String(2)</SLUMPCURVE>

    <MAXWATERQTY UNITS='String'>Numeric(integer)</MAXWATERQTY>

    <DESCRIPTION>String(64)</DESCRIPTION>

    <PRICE>Numeric(float)</PRICE>

    <PRICEPERUNIT>Numeric(float)</PRICEPERUNIT>

</MIX>

<ORDEREDPRODUCTS>

    <PRODUCT>

        <CODE>String(10)</CODE>

        <QUANTITY>Numeric(float)</QUANTITY>

        <ACTUALQUANTITY>Numeric(float)</ ACTUALQUANTITY>

        <DESCRIPTION>String(64)</DESCRIPTION>

        <PRICEPERUNIT>Numeric(float)</ PRICEPERUNIT >

        <UOMCODE>String(5)</UOMCODE>

        <TOTALPRICE>Numeric(float)</ TOTALPRICE >

    </PRODUCT>

```

```

        <SUBTOTAL>Numeric(float)</SUBTOTAL>

    </ORDEREDPRODUCTS>

    <ADDITIVES>

        <PRODUCT>

            <CODE>String(10)</CODE>

            <QUANTITY>Numeric(float)</QUANTITY>

            <ACTUALQUANTITY>Numeric(float)</ ACTUALQUANTITY>

            <TOTALQUANTITY>Numeric(float)</TOTALQUANTITY>

            <CUMQUANTITY>Numeric(float)</CUMQUANTITY>

            <DESCRIPTION>String(64)</DESCRIPTION>

            <PRICEPERUNIT>Numeric(float)</ PRICEPERUNIT >

            <UOMCODE>String(5)</UOMCODE>

            <TOTALPRICE>Numeric(float)</ TOTALPRICE >

        </PRODUCT>

        <SUBTOTAL>Numeric(float)</SUBTOTAL>

    </ADDITIVES>

</TICKET>

```

Field Names and Descriptions

Component	Data Type	Required			Description
		New Ticket	Change Ticket	Cancel Ticket	
TRUCKTYPE	String(10)	N	N	N	Variable length truck type descriptor. Examples: "Mixer-Front", "Flatbed", "Dump"
MAXDRUM	Numeric (Integer)	N	N	N	Maximum Number of Drum Rotations for Ticket

Plant Node

Component	Data Type	Required			Description
		New Ticket	Change Ticket	Cancel Ticket	
CURRENT	String(10)	N	N	N	Unique Identifier of Ticketing Plant
RETURN	String(10)	N	N	N	Unique Identifier of Plant to Return To
HOME	String(10)	N	N	N	Unique Identifier of Home Plant

Driver Node

NUMBER	String	N	N	N	Driver Number
NAME	String	N	N	N	Driver Name

Ticket Node

Trimble XML Integration Interface

Component	Data Type	Required			Description
		New Ticket	Change Ticket	Cancel Ticket	
PROJECT	String(12)	N	N	N	Project Number for the ticket.
ORDER	String(12)	Y	Y	Y	Order Number of Ticket Note: Order number is not required when sending a deadhead change plant message for a truck.
PRETICKET	Boolean Valid values: true, false	N	N	N	This denotes whether the ticket being pass over is a preticket. Only one preticket per vehicle will be retained. Pretickets can be changed and cancelled. Note: If a preticket is received after the vehicle has been ticketed, the existing ticket will not be replaced. Instead TrimExchange will associate this preticket with the vehicle and assign it to the truck once the vehicle returns to the plant or if the existing ticket is cancelled.
DATE	DateTime (yyyy-mm-ddThh:mm:ss)	N	N	N	Date and Time the order was created. If no date is populated, then TrimExchange will use the current system date as the
QUOTE	String(15)	N	N	N	Quote Number of Ticket
PONUMBER	String(15)	N	N	N	PO Number of Ticket

LOADNUMBER	Numeric (Integer)	N	N	N	The sequence number of the current ticket. The first ticket for an order will be 1 and then each subsequent ticket will increment this field.
TERMCODE	String(5)	N	N	N	Code for the terms of a delivery: ??? ??? ???
CURRENCYCODE	String(3)	N	N	N	Code that specifies the type currency to use for all currency values in the ticket. Valid Values are specified in Appendix C. If empty or an invalid value is specified, then US dollars will be the default currency.
TAX	Numeric	N	N	N	Amount of tax charged for the current ticket. The “TYPE” attribute specifies the type of tax. The “TYPE” attribute is required or else the node will be ignored. Valid values are “STATE”, “LOCAL”
BALANCE	Numeric	N	N	N	Balances on the current ticket. The “TYPE” attribute specifies the type of balance. The “TYPE” attribute is required or else the node will be ignored. Valid values are “SUB”, “TICKET”, “PREVIOUS”
TOTALDUE	Numeric	N	N	N	The total amount due for the current Ticket.
DESCRIPTION	String(64)	N	N	N	Description of Ticket

DELIVERY/ADDRESS	String(50)	N	N	N	Delivery Street Address of Ticket
DELIVERY/CITY	String(25)	N	N	N	Delivery City of Ticket
DELIVERY/STATE	String(2)	N	N	N	Delivery State of Ticket
DELIVERY/ZIP	String(10)	N	N	N	Delivery Zip of Ticket
DELIVERY/COUNTRY	String(32)	N	N	N	Delivery Country of Ticket
DELIVERY/INSTRUCTIONS	String(300)	N	N	N	Delivery Instructions for Ticket
TRUCKQUANTITY	Numeric	N	N	N	Quantity of Material for Ticket. UNITS attribute specifies "Yards" or "Meters". If units are not specified then Yards are assumed.
TOTALQUANTITY	Numeric	N	N	N	Quantity of total Material for Order. UNITS attribute specifies "Yards" or "Meters". If units are not specified then Yards are assumed.
CUMQUANTITY	Numeric	N	N	N	Cumulative quantity counting this Ticket. UNITS attribute specifies "Yards" or "Meters". If units are not specified then Yards are assumed.
SLUMP	Numeric	N	N	N	Slump of ticket. UNITS attribute specifies "Inches" or "Centimeters"
JOBSITEIDENTIFIER	String(20)	N	N	N	The job site id in the dispatch system.
LAT	Numeric	N	N	N	Latitude of the delivery location
LON	Numeric	N	N	N	Longitude of the delivery location
RADIUS	Numeric	N	N	N	Radius of the delivery area. UNITS attribute specifies "Yards" or "Meters"

TICKETTIME	DateTime (yyyy-mm-ddThh:nn:ss)	N	N	N	Date and Time Ticket was Generated
TICKETTIMEZONEOFFSET	Numeric	N	N	N	Offset from GMT time in Hours for the time zone of the ticket. EST would be -5.
CUSTOMER/NUMBER	String(10)	N	N	N	Customer Number associated with Ticket
CUSTOMER/NAME	String(50)	N	N	N	Customer Name associated with Ticket
CUSTOMER/ADDRESS	String(50)	N	N	N	Customer Address associated with Ticket
CUSTOMER/CITY	String(25)	N	N	N	Customer City associated with Ticket
CUSTOMER/STATE	String(2)	N	N	N	Customer State associated with Ticket
CUSTOMER/ZIP	String(10)	N	N	N	Customer Zip Associated with Ticket
CUSTOMER/COUNTRY	String(32)	N	N	N	Customer Country Associated with Ticket
POURMETHOD	String(15)	N	N	N	Pour Method associated with Ticket
WASHTIME	Numeric	N	N	N	Wash Time in Minutes for Ticket
SCHEDULEDONJOBTIME	DateTime (yyyy-mm-ddThh:nn:ss)	N	N	N	Scheduled On Job Time for Ticket
TIMETOJOB	Numeric	N	N	N	Number of Minutes to Arrive On Job after Leaving Plant
TIMETOPLANT	Numeric	N	N	N	Number of Minutes to Arrive At Plant after Leaving Job
UNLOADMINUTES	Numeric	N	N	N	Number of Minutes to Unload
WEIGHT					Provides UNITS attribute. UNITS will be "Pounds" or "Kilos"

Trimble XML Integration Interface

WEIGHT/GROSS	Numeric	N	N	N	Gross Weight of Vehicle
WEIGHT/TARE	Numeric	N	N	N	Tare Weight of Vehicle
WEIGHT/NET	Numeric	N	N	N	Net Weight of Vehicle
MIX/CODE	String(15)	N	N	N	Product code of Mix
MIX/METHOD	String(15)	N	N	N	Method for the Mix
MIX/UNITSYSTEM	Numeric	N	N	N	Units System associated with the load. Valid values are 1 for English and 2 for Metric.
MIX/AGGREGATEQTY	Numeric	N	N	N	Quantity of Aggregate on Ticket. UNITS attribute specifies "Pounds" or "Kilos"
MIX/CEMENTQTY	Numeric	N	N	N	Quantity of Cement on Ticket. UNITS attribute specifies "Pounds" or "Kilos"
MIX/ACTUALAGGREGATEQTY	Numeric	N	N	N	The actual Quantity of Aggregate on Ticket. UNITS attribute specifies "Pounds" or "Kilos" This is usually available only after a vehicle has been loaded.
MIX/ACTUALCEMENTQTY	Numeric	N	N	N	The actual Quantity of Cement on Ticket. UNITS attribute specifies "Pounds" or "Kilos" This is usually available only after a vehicle has been loaded.
MIX/WATERQTY	Numeric	N	N	N	Quantity of Water on Ticket. UNITS attribute specifies "Gallons" or "Liters"
MIX/WATERADJUSTMENTCURVE	Numeric	N	N	N	Water Adjustment Curve
MIX/SLUMPCURVE	String(2)	N	N	N	Slump Curve
MIX/MAXWATERQTY	Numeric	N	N	N	Maximum amount of water allowed in mix

MIX/DESCRIPTION	String(64)	N	N	N	Mix Description
MIX/PRICE	Numeric	N	N	N	Price of Mix.
ORDEREDPRODUCTS					Listing of Ordered Products. 0 to N
ORDEREDPRODUCTS/ PRODUCT/CODE	String(10)	N	N	N	Product Code of Product
ORDEREDPRODUCTS/ PRODUCT/QUANTITY	Numeric	N	N	N	Quantity of Product
ORDEREDPRODUCTS/ PRODUCT/ACTUALQUANTITY	Numeric	N	N	N	The actual Quantity of Product. This is usually available only after a vehicle has been loaded.
ORDEREDPRODUCTS/ PRODUCT/DESCRIPTION	String(64)	N	N	N	Description of Product
ORDEREDPRODUCTS/ PRODUCT/PRICEPERUNIT	Numeric	N	N	N	Price of Product per unit as described in the DESCRIPTION.
ORDEREDPRODUCTS/ PRODUCT/UOMCODE	String(5)	N	N	N	Unit of Measure code as specified in the dispatch system. This string will be displayed with the product same as it is sent from dispatch. No conversions will be made for different unit systems. The quantity fields and the UOMCODE field will be displayed as the dispatch system sends it.
ORDEREDPRODUCTS/ PRODUCT/TOTALPRICE	Numeric	N	N	N	Total Price of Product.
ADDITIVES					Listing of Additives. 0 to N

ADDITIVES/ PRODUCT/CODE	String(10)	N	N	N	Product Code of Additive
ADDITIVES/ PRODUCT/QUANTITY	Numeric	N	N	N	Quantity of Additive.
ADDITIVES/ PRODUCT/ACTUALQUANTITY	Numeric	N	N	N	The actual Quantity of Additive. This is usually available only after a vehicle has been loaded.
ADDITIVES/ PRODUCT/DESCRIPTION	String(64)	N	N	N	Description of Additive
ADDITIVES/ PRODUCT/PRICEPERUNIT	Numeric	N	N	N	Price per unit of Additive.
ADDITIVES/ PRODUCT/UOMCODE	String(5)	N	N	N	Unit of Measure code as specified in the dispatch system. This string will be displayed with the additive same as it is sent from dispatch. No conversions will be made for different unit systems. The quantity fields and the UOMCODE field will be displayed as the dispatch system sends it.
TOTALQUANTITY	Numeric	N	N	N	Quantity of additive for the Order.
CUMQUANTITY	Numeric	N	N	N	Cumulative quantity of the additive counting this Ticket.
ADDITIVES/ PRODUCT/TOTALPRICE	Numeric	N	N	N	Total Price of Additive.

XML Transport from Dispatch System to TrimExchange (New Concrete Ticket - Different Return Plant example):

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{B767BAAC-A082-43D1-B42C-9061533710F0}</trans_id>

  <veh_fleet_code>0000</veh_fleet_code>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <packet_code>0</packet_code>

  <transaction>

    <trans_date_time>2004/07/27T16:21:07</trans_date_time>

    <tkc_code>353329</tkc_code>

    <order_code>1234</order_code>

    <dispatch_tkc_id>456341</dispatch_tkc_id>

    <dispatch_order_id>567432</dispatch_order_id>

    <tkc_date_time>2004/07/27T16:16:04:07</tkc_date_time>

    <trans_cat>TICK</trans_cat>

    <trans_type>CON</trans_type>

    <trans_sub_type>NEW</trans_sub_type>

    <trans_origin>DSP</trans_origin>

    <trans_origin_ipaddr>12.16.172.47</trans_origin_ipaddr>

    <trans_origin_machname>WIN03</trans_origin_machname>

    <trans_origin_username>Administrator</trans_origin_username>

    <message>

      <TRUCKTYPE>Mixer</TRUCKTYPE>

      <PLANT>

        <CURRENT>P01</CURRENT>

        <RETURN>P02</RETURN>

        <HOME>P01</HOME>

      </PLANT>

    </message>

  </transaction>

</tms_msg>
```

Trimble XML Integration Interface

```

<DRIVER>

    <NUMBER>D450</NUMBER>

    <NAME>Bill Sampson</NAME>

</DRIVER>

<TICKET>

    <DESCRIPTION>House Foundation</DESCRIPTION>

    <DELIVERY>

        <ADDRESS>2341 W. Mountain Way</ADDRESS>

        <CITY>Las Vegas</CITY>

        <STATE>NV</STATE>

        <INSTRUCTIONS>End of Street</INSTRUCTIONS>

    </DELIVERY>

    <ORDER>1234</ORDER>

    <JOBSITEIDENTIFIER>12345678</ JOBSITEIDENTIFIER>

    <TRUCKQUANTITY UNITS='Yards'>8</TRUCKQUANTITY>

    <TOTALQUANTITY UNITS='Yards'>32</TOTALQUANTITY>

    <CUMQUANTITY UNITS='Yards'>24</CUMQUANTITY>

    <SLUMP UNITS='Inches'>3</SLUMP>

    <TICKETTIME>2004-07-27T16:21:07</TICKETTIME>

    <TICKETTIMEZONEOFFSET>-5</TICKETTIMEZONEOFFSET>

</TICKET>

</message>

</transaction>

</tms_msg>

```

XML Transport from Dispatch System to TrimExchange (Concrete Cancel Ticket example):

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{1973006B-88C0-480D-B9E4-3504A496208E}</trans_id>

  <veh_fleet_code>0000</veh_fleet_code>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <packet_code>1</packet_code>

  <transaction>

    <trans_date_time>2004/07/28T16:41:42</trans_date_time>

    <tkc_code>353329</tkc_code>

    <order_code>1234</order_code>

    <dispatch_tkc_id>456341</dispatch_tkc_id>

    <dispatch_order_id>567432</dispatch_order_id>

    <tkc_date_time>2004/07/28T00:00:00</tkc_date_time>

    <message>

      <PLANT>

        <CURRENT>P01</CURRENT>

        <RETURN>P01</RETURN>

        <HOME>P01</HOME>

      </PLANT>

      <DRIVER>

        <NUMBER>D450</NUMBER>

        <NAME>Bill Sampson</NAME>

      </DRIVER>

      <ORDER>1234</ORDER>

    </message>

    <trans_cat>TICK</trans_cat>

    <trans_type>CON</trans_type>

    <trans_sub_type>CAN</trans_sub_type>
```

Trimble XML Integration Interface

```
<trans_origin>DSP</trans_origin>

<trans_origin_ipaddr>65.76.98.52</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>Administrator</trans_origin_username>

</transaction>

</tms_msg>
```

XML Transport from Dispatch System to TrimExchange (Deadhead Change Plant Ticket example). This is a special case of the Cancel ticket message. It occurs when no ticket is assigned and the truck is sent to a different plant:

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{1973006B-88C0-480D-B9E4-3504A496208E}</trans_id>

  <veh_fleet_code>0000</veh_fleet_code>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <packet_code>1</packet_code>

  <transaction>

    <trans_date_time>2004/07/28T16:41:42</trans_date_time>

    <message>

      <PLANT>

        <CURRENT>P01</CURRENT>

        <RETURN>P05</RETURN>

        <HOME>P01</HOME>

      </PLANT>

      <DRIVER>

        <NUMBER>D450</NUMBER>

        <NAME>Bill Sampson</NAME>

      </DRIVER>

    </message>

    <trans_cat>TICK</trans_cat>

    <trans_type>CON</trans_type>

    <trans_sub_type>CAN</trans_sub_type>

    <trans_origin>DSP</trans_origin>

    <trans_origin_ipaddr>65.76.98.52</trans_origin_ipaddr>

    <trans_origin_machname>WIN03</trans_origin_machname>

    <trans_origin_username>Administrator</trans_origin_username>

  </transaction>
```

Trimble XML Integration Interface

</tms_msg>

XML Transport from Dispatch System to TrimExchange (Change Return Plant Ticket after a ticket has been assigned example):

<?xml version="1.0"?>

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<trans_id>{1973006B-88C0-480D-B9E4-3504A496208E}</trans_id>

<veh_fleet_code>0000</veh_fleet_code>

<veh_radio_code>100</veh_radio_code>

<protocol_version>2</protocol_version>

<packet_code>1</packet_code>

<transaction>

<trans_date_time>2004/07/28T16:41:42</trans_date_time>

<tkk_code>353329</tkk_code>

<order_code>1234</order_code>

<dispatch_tkt_id>456341</dispatch_tkt_id>

<dispatch_order_id>567432</dispatch_order_id>

<tkt_date_time>2004/07/28T00:00:00</tkt_date_time>

<message>

<PLANT>

<CURRENT>P01</CURRENT>

<RETURN>P05</RETURN>

<HOME>P01</HOME>

</PLANT>

<DRIVER>

<NUMBER>D450</NUMBER>

<NAME>Bill Sampson</NAME>

</DRIVER>

<ORDER>1234</ORDER>

</message>

Trimble XML Integration Interface

```

<trans_cat>TICK</trans_cat>

<trans_type>CON</trans_type>

<trans_sub_type>CHG</trans_sub_type>

<trans_origin>DSP</trans_origin>

<trans_origin_ipaddr>65.76.98.52</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>Administrator</trans_origin_username>

</transaction>

</tms_msg>

```

Batch Record List

From Dispatch System to TrimExchange

This message is used to send batch information to TrimExchange. When a batch record is received from a batch panel, this message should be generated and sent to TrimExchange. The ticket number and order number are required for TrimExchange to process the batch record message.

Trans_cat ([From Table 2](#)): TICK

Trans_type ([From Table 2](#)): CON

Trans_sub_type valid values ([From Table 2](#)): BRL

BatchRecord Node

Component	Data Type	Required	Description
Id	String(12)	Y	
Code	String(15)	N	
Number	String(12)	N	
TimestampUTC	DateTime	N	
SplitType	String(7)	Y	Valid values: Partial Summed

Cement Node

Trimble XML Integration Interface

Component	Data Type	Required	Description
[Attribute] Units	String	N	Valid values: See Appendix B Default value: Pound
Id	String(12)	N	
Name	String(12)	N	
Target	Numeric	N	
Actual	Numeric	N	
Deviation	Numeric	N	
Tare	Numeric	N	
Tolerance	Numeric	N	
WithinTolerance	Boolean	N	Valid values: true false

Aggregate Node

Component	Data Type	Required	Description
[Attribute] Units	String	N	Valid values: See Appendix B Default value: Pound
Id	String(12)	N	
Name	String(12)	N	
Target	Numeric	N	
Actual	Numeric	N	
Deviation	Numeric	N	
Tare	Numeric	N	
Tolerance	Numeric	N	
WithinTolerance	Boolean	N	Valid values: true false
MoistureContent	Numeric	N	

Water Node

Component	Data Type	Required	Description
[Attribute] Units	String	N	Valid values: See Appendix B Default value: Gallon
Id	String(12)	N	
Name	String(12)	N	
Target	Numeric	N	
Actual	Numeric	N	
Deviation	Numeric	N	
Tare	Numeric	N	
Tolerance	Numeric	N	
WithinTolerance	Boolean	N	Valid values: true false

AdMix Node

Component	Data Type	Required	Description
[Attribute] Units	String	N	Valid values: See Appendix B Default value: Fluid ounce
Id	String(12)	N	
Name	String(12)	N	
Target	Numeric	N	
Actual	Numeric	N	
Deviation	Numeric	N	
Tare	Numeric	N	
Tolerance	Numeric	N	
WithinTolerance	Boolean	N	Valid values: true false

Example

```

<?xml version='1.0' ?>

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>8c28bd33-b271-4fb5-8bc3-6b47c31b3558</trans_id>

  <veh_fleet_code />

  <veh_radio_code>Truck 123b</veh_radio_code>

  <protocol_version>2</protocol_version>

  <transaction>

    <trans_date_time>2010/01/06T12:00:00</trans_date_time>

    <tkc_code>T873</tkc_code>

    <tkc_date_time>2010/01/06T12:00:00</tkc_date_time>

    <order_code>7</order_code>

    <dispatch_tkc_id>TicketID98</dispatch_tkc_id>

    <dispatch_order_id>OrderID830</dispatch_order_id>

    <truck_code>Truck 123b</truck_code>

    <employee_code>Emp1038</employee_code>

    <message>

      <BatchRecordList>

        <BatchRecord>

```

Trimble XML Integration Interface

```

<Id>Id01612</Id>

<Code>C1029</Code>

<Number>Num102947</Number>

<TimestampUTC>2010-02-22T12:32:38</TimestampUTC>

<SplitType>Summed</SplitType>

<AggregateData>

    <Aggregate>

        <Id>Ida091</Id>

        <Name>ExAg1</Name>

        <Target>1</Target>

        <Actual>2</Actual>

        <Deviation>11</Deviation>

        <Tare>4</Tare>

        <Tolerance>5.1</Tolerance>

        <WithinTolerance>true</WithinTolerance>

        <MoistureContent>123.4</MoistureContent>

    </Aggregate>

    <Aggregate>

        <Id>Ida091b</Id>

        <Name>ExAg1b</Name>

        <Target>11</Target>

        <Actual>21</Actual>

        <Deviation>111</Deviation>

        <Tare>41</Tare>

        <Tolerance>5.11</Tolerance>

        <WithinTolerance>false</WithinTolerance>

        <MoistureContent>123.41</MoistureContent>

    </Aggregate>

    <Aggregate>

        <Id>Ida091c</Id>

```

```

        <Name>ExAg1c</Name>

        <Target>12</Target>

        <Actual>22</Actual>

        <Deviation>112</Deviation>

        <Tare>42</Tare>

        <Tolerance>5.12</Tolerance>

        <WithinTolerance>true</WithinTolerance>

        <MoistureContent>123.42</MoistureContent>

    </Aggregate>
</AggregateData>

<CementData>

    <Cement>

        <Id>Ida092</Id>

        <Name>ExCe1</Name>

        <Target>10</Target>

        <Actual>20</Actual>

        <Deviation>12</Deviation>

        <Tare>40</Tare>

        <Tolerance>5.2</Tolerance>

        <WithinTolerance>false</WithinTolerance>

    </Cement>

</CementData>

<WaterData>

    <Water>

        <Id>Ida093</Id>

        <Name>ExWa1</Name>

        <Target>100</Target>

        <Actual>200</Actual>

        <Deviation>13</Deviation>

        <Tare>300</Tare>

```

```

        <Tolerance>5.3</Tolerance>

        <WithinTolerance>true</WithinTolerance>

    </Water>

</WaterData>

<AdMixData>

    <AdMix>

        <Id>Ida094</Id>

        <Name>ExAg1</Name>

        <Target>1000</Target>

        <Actual>2000</Actual>

        <Deviation>14</Deviation>

        <Tare>3000</Tare>

        <Tolerance>5.4</Tolerance>

        <WithinTolerance>false</WithinTolerance>

        <MeasurementType>Weight</MeasurementType>

        <MetricDisplayUnit>P</MetricDisplayUnit>

    </AdMix>

</AdMixData>

</BatchRecord>

<BatchRecord>

    <Id>1234567890</Id>

    <Code>BR</Code>

    <Number>0934</Number>

    <TimestampUTC>2010-04-30T20:36:31.2822076Z</TimestampUTC>

    <SplitType>Summed</SplitType>

    <AggregateData>

        <Aggregate>

            <Id>Q10928</Id>

            <Name>Agg1</Name>

            <Target>4.5</Target>

```

```

        <Actual>5</Actual>

        <Deviation>38.1</Deviation>

        <Tare>19</Tare>

        <Tolerance>35.1</Tolerance>

        <WithinTolerance>false</WithinTolerance>

        <MoistureContent>123.45</MoistureContent>

    </Aggregate>

</AggregateData>

<CementData />

<WaterData />

<AdMixData />

</BatchRecord>

</BatchRecordList>

</message>

<trans_cat>TICK</trans_cat>

<trans_type>CON</trans_type>

<trans_sub_type>BRL</trans_sub_type>

<trans_origin>DSP</trans_origin>

<trans_origin_ipaddr>127.0.0.1</trans_origin_ipaddr>

<trans_origin_machname>Example</trans_origin_machname>

<trans_origin_username>exDemo</trans_origin_username>

</transaction>

</tms_msg>

```

Ticket Acknowledgement

From TrimExchange to Dispatch System

This message is the acknowledgment that the ticket (New, Changed or Canceled) was received by the Vehicle and the Driver.

Trans_cat ([From Table 2](#)): TICK

Trans_type ([From Table 2](#)): ACK

Trans_sub_type valid values ([From Table 2](#)): VEH, DRV

Expected Responses: None

XML Transport from TrimExchange to Dispatch System (examples):

Vehicle Acknowledgment:

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{FAE2A8E7-6457-4286-8974-A657EB84C6A9}</trans_id>

  <veh_fleet_code>0000</veh_fleet_code>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <packet_code>7</packet_code>

  <transaction>

    <trans_date_time>2004/07/28T16:41:57</trans_date_time>

    <date_time_offset>0</date_time_offset>

    <tkc_code> 353329</tkc_code>

    <order_code>1234</order_code>
```

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```

<dispatch_tkt_id>456341</dispatch_tkt_id>

<dispatch_order_id>567432</dispatch_order_id>

<tkt_date_time>2004/07/28T00:00:00</tkt_date_time>

<trans_cat>TICK</trans_cat>

<trans_type>ACK</trans_type>

<trans_sub_type>VEH</trans_sub_type>

<trans_origin>VSC</trans_origin>

<trans_origin_ipaddr>65.76.98.52</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>Administrator</trans_origin_username>

<time_to_live>0</time_to_live>

</transaction>

</tms_msg>

```

Driver Acknowledgement:

```

<?xml version="1.0"?>

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{FAE2A8E7-6457-4286-8974-A657EB84C6A9}</trans_id>

  <veh_fleet_code>0000</veh_fleet_code>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <packet_code>7</packet_code>

  <transaction>

    <trans_date_time>2004/07/28T16:41:57</trans_date_time>

    <date_time_offset>0</date_time_offset>

    <tkt_code> 353329</tkt_code>

    <order_code>1234</order_code>

    <dispatch_tkt_id>456341</dispatch_tkt_id>
  
```

```

<dispatch_order_id>567432</dispatch_order_id>

<tkr_date_time>2004/07/28T00:00:00</tkr_date_time>

<trans_cat>TICK</trans_cat>

<trans_type>ACK</trans_type>

<trans_sub_type>DRV</trans_sub_type>

<trans_origin>VSC</trans_origin>

<trans_origin_ipaddr>65.76.98.52</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>Administrator</trans_origin_username>

<time_to_live>0</time_to_live>

</transaction>

</tms_msg>

```

Ticket Finalize

From TrimExchange to Dispatch System

This message is the acknowledgment that the ticket has been delivered to the customer. There may be multiple messages for the same ticket. If the receipt_id is not known at the time of the original Ticket Finalization message, a second message will be sent when it is known.

Trans_cat ([From Table 2](#)): TICK

Trans_type ([From Table 2](#)): FIN

Trans_sub_type valid values ([From Table 2](#)): FIN

Expected Responses: None

Component	Length	Valid Value	Description
<ticket_notes>	300		Notes typed by the driver about the

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			delivery
<receipt_id>	GUID (string – 38)		The receipt id in the Trimble database. If the node is not included, then no receipt was received.
<signaturedeclined>	string(32)		Text stating why the customer declined to sign the ticket.

XML Transport from TrimExchange to Dispatch System (example):

```

<?xml version="1.0"?>

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{FAE2A8E7-6457-4286-8974-A657EB84C6A9}</trans_id>

  <veh_fleet_code>0000</veh_fleet_code>

  <veh_radio_code>100</veh_radio_code>

  <protocol_version>2</protocol_version>

  <packet_code>7</packet_code>

  <transaction>

    <trans_date_time>2004/07/28T16:41:57</trans_date_time>

    <date_time_offset>0</date_time_offset>

    <tkc_code> 353329</tkc_code>

    <order_code>1234</order_code>

    <dispatch_tkc_id>456341</dispatch_tkc_id>

    <dispatch_order_id>567432</dispatch_order_id>

    <tkc_date_time>2004/07/28T00:00:00</tkc_date_time>

    <message>

      <ticket_notes>Delivered the load and added fiber at customer request </ ticket_notes >

      <receipt_id>{FEE2A8E7-6457-4386-8974-B657EB84C6A2}</ receipt_id >

      <signaturedeclined/>customer did not want to sign </ signaturedeclined >

    </message>

    <trans_cat>TICK</trans_cat>

```

```

<trans_type>FIN</trans_type>

<trans_sub_type>FIN</trans_sub_type>

<trans_origin>VSC</trans_origin>

<trans_origin_ipaddr>65.76.98.52</trans_origin_ipaddr>

<trans_origin_machname>WIN03</trans_origin_machname>

<trans_origin_username>Administrator</trans_origin_username>

<time_to_live>0</time_to_live>

</transaction>

</tms_msg>

```

Order Back Message sent as Text Message

From TrimExchange to Dispatch System

Trans_cat ([From Table 2](#)): STA

Trans_type ([From Table 2](#)): MSG

Trans_sub_type valid values ([From Table 2](#)): TXT

Expected Responses: None

The Order Back message text is contained in the “message_string” node of the “transaction.” The default message code corresponds to the stack event code [130].

```

<?xml version='1.0' ?>
<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <trans_id>5084411a-d003-4703-bbda-e7575b5a0765</trans_id>
  <veh_fleet_code />
  <veh_radio_code>Jefe150</veh_radio_code>
  <protocol_version>2</protocol_version>
  <packet_code />
  <transaction>
    <trans_date_time>2011/06/28T14:20:37</trans_date_time>
    <date_time_offset>0</date_time_offset>
    <tkc_code>T555</tkc_code>
    <tkc_date_time>2011/06/28T10:11:26</tkc_date_time>
    <order_code>1</order_code>
  </transaction>
</tms_msg>

```

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```

    <dispatch_order_id>SystechOrderID</dispatch_order_id>
    <dispatch_tkt_id>SystechTicketID</dispatch_tkt_id>
    <truck_code>Jefe150</truck_code>
    <employee_code>ABC1234</employee_code>
    <priority>NORMAL</priority>
    <message_string>Order Back - 4.5 YARDS</message_string>
    <message_code>130</message_code>
    <utc_date_time>2011-06-28T18:20:14</utc_date_time>
    <trans_cat>STA</trans_cat>
    <trans_type>MSG</trans_type>
    <trans_sub_type>TXT</trans_sub_type>
    <trans_origin>DRV</trans_origin>
    <trans_origin_ipaddr>fe80::44dc:d7b9:9036:ab79%11</trans_origin_ipaddr>
    <trans_origin_machname>TERRY-6-15</trans_origin_machname>
    <trans_origin_username>tlanier</trans_origin_username>
    <time_to_live>0</time_to_live>
  </transaction>
</tms_msg>

```

Application Startup & Shutdown:

Informational messages can be logged for the startup and shutdown of applications. The following are examples of the transport used to accomplish this:

XML Transport from TrimExchange to Dispatch System (Startup Message):

```

<?xml version="1.0"?>

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{35f3614f-a674-4977-83a5-79780ee4d0e6}</trans_id>

  <protocol_version>2</protocol_version>

  <transaction>

    <trans_date_time>2004/07/28T16:41:42</trans_date_time>

    <trans_origin>TMS</trans_origin>

    <trans_origin_ipaddr>65.76.98.52</trans_origin_ipaddr>

    <trans_origin_machname>WIN03</trans_origin_machname>

    <trans_origin_username>Administrator</trans_origin_username>

    <message_string>TMS Startup</message_string>

    <time_to_live>0</time_to_live>

  </transaction>

</tms_msg>

```

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XML Transport from TrimExchange to Dispatch System (Shutdown Message):

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

<tms_msg xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

  <trans_id>{685a5112-2289-4518-a686-512583663a10}</trans_id>

  <protocol_version>2</protocol_version>

  <transaction>

    <trans_date_time>2004/07/28T16:41:42</trans_date_time>

    <trans_origin>TMS</trans_origin>

    <trans_origin_ipaddr>65.76.98.52</trans_origin_ipaddr>

    <trans_origin_machname>WIN03</trans_origin_machname>

    <trans_origin_username>Administrator</trans_origin_username>

    <message_string>TMS Shutdown</message_string>

    <time_to_live>0</time_to_live>

  </transaction>

</tms_msg>
```

A. Messages and Expected Responses

Message	Expected Response	Response Originator
Text	Vehicle & Driver Acknowledgement	IS/Vehicle
GPS Poll	GPS Coordinates	IS/Vehicle
Delivery Status	None	N/A
Leftover	None	N/A
JBUS	None	N/A
Water Added	None	N/A
Ticket (New/Canceled)	None	N/A

B. Formatting of expected values for units of measure

Measure	Tags
Distance	MILLIMETER,MILLIMETERS CENTIMETER,CENTIMETERS METER,METERS,meters INCH,INCHES YARDS,YARD MILE
Volume	MILLIMETER,MILLIMETERS CENTIMETER,CENTIMETERS METER,METERS YARDS,YARD LITER,LITERS GALLON, GALLONS FLUIDOUNCE, FLUIDOUNCES
Weight	KG,KILO,KILOS TON,TONS GRAM,GRAMS OZ,OUNCE,OUNCES POUNDS, POUND

C. Valid Currency Codes

Country & Currency	Currency Code
Albania, Leke	ALL
America (United States of America), Dollars	USD

Afghanistan, Afghanis	AFN
Argentina, Pesos	ARS
Aruba, Guilders (also called Florins)	AWG
Australia, Dollars	AUD
Azerbaijan, New Manats	AZN
Bahamas, Dollars	BSD
Barbados, Dollars	BBD
Belarus, Rubles	BYR
Belgium, Euro	EUR
Belize, Dollars	BZD
Bermuda, Dollars	BMD
Bolivia, Bolivianos	BOB
Bosnia and Herzegovina, Convertible Marka	BAM
Botswana, Pulas	BWP
Bulgaria, Leva	BGN
Brazil, Reais	BRL
Britain (United Kingdom), Pounds	GBP
Brunei Darussalam, Dollars	BND
Cambodia, Riels	KHR
Canada, Dollars	CAD
Cayman Islands, Dollars	KYD
Chile, Pesos	CLP
China, Yuan Renminbi	CNY
Colombia, Pesos	COP
Costa Rica, Colón	CRC
Croatia, Kuna	HRK
Cuba, Pesos	CUP
Cyprus, Euro	EUR
Czech Republic, Koruny	CZK
Denmark, Kroner	DKK
Dominican Republic, Pesos	DOP

East Caribbean, Dollars	XCD
Egypt, Pounds	EGP
El Salvador, Colones	SVC
England (United Kingdom), Pounds	GBP
Estonia, Krooni	EEK
Euro	EUR
Falkland Islands, Pounds	FKP
Fiji, Dollars	FJD
France, Euro	EUR
Ghana, Cedis	GHC
Gibraltar, Pounds	GIP
Greece, Euro	EUR
Guatemala, Quetzales	GTQ
Guernsey, Pounds	GGP
Guyana, Dollars	GYD
Holland (Netherlands), Euro	EUR
Honduras, Lempiras	HNL
Hong Kong, Dollars	HKD
Hungary, Forint	HUF
Iceland, Kronur	ISK
India, Rupees	INR
Indonesia, Rupiahs	IDR
Iran, Rials	IRR
Ireland, Euro	EUR
Isle of Man, Pounds	IMP
Israel, New Shekels	ILS
Italy, Euro	EUR
Jamaica, Dollars	JMD
Japan, Yen	JPY
Jersey, Pounds	JEP
Kazakhstan, Tenge	KZT
Korea (North), Won	KPW
Korea (South), Won	KRW
Kyrgyzstan, Soms	KGS
Laos, Kips	LAK
Latvia, Lati	LVL

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Lebanon, Pounds	LBP
Liberia, Dollars	LRD
Liechtenstein, Switzerland Francs	CHF
Lithuania, Litai	LTL
Luxembourg, Euro	EUR
Macedonia, Denars	MKD
Malaysia, Ringgits	MYR
Malta, Euro	EUR
Mauritius, Rupees	MUR
Mexico, Pesos	MXN
Mongolia, Tugriks	MNT
Mozambique, Meticaïs	MZN
Namibia, Dollars	NAD
Nepal, Rupees	NPR
Netherlands Antilles, Guilders (also called Florins)	ANG
Netherlands, Euro	EUR
New Zealand, Dollars	NZD
Nicaragua, Cordobas	NIO
Nigeria, Nairas	NGN
North Korea, Won	KPW
Norway, Krone	NOK
Oman, Rials	OMR
Pakistan, Rupees	PKR
Panama, Balboa	PAB
Paraguay, Guarani	PYG
Peru, Nuevos Soles	PEN
Philippines, Pesos	PHP
Poland, Zlotych	PLN
Qatar, Rials	QAR
Romania, New Lei	RON
Russia, Rubles	RUB
Saint Helena, Pounds	SHP
Saudi Arabia, Riyals	SAR
Serbia, Dinars	RSD
Seychelles, Rupees	SCR
Singapore, Dollars	SGD

Slovenia, Euro	EUR
Solomon Islands, Dollars	SBD
Somalia, Shillings	SOS
South Africa, Rand	ZAR
South Korea, Won	KRW
Spain, Euro	EUR
Sri Lanka, Rupees	LKR
Sweden, Kronor	SEK
Switzerland, Francs	CHF
Suriname, Dollars	SRD
Syria, Pounds	SYP
Taiwan, New Dollars	TWD
Thailand, Baht	THB
Trinidad and Tobago, Dollars	TTD
Turkey, Lira	TRY
Turkey, Liras	TRL
Tuvalu, Dollars	TVD
Ukraine, Hryvnia	UAH
United Kingdom, Pounds	GBP
United States of America, Dollars	USD
Uruguay, Pesos	UYU
Uzbekistan, Sums	UZS
Vatican City, Euro	EUR
Venezuela, Bolivares Fuertes	VEF
Vietnam, Dong	VND
Yemen, Rials	YER
Zimbabwe, Zimbabwe Dollars	ZWD