



3650 Concorde Parkway
Suite 150
Chantilly, VA 20151

February 13, 2009

Division of Highways Planning Division
Building 5, Room A848
1900 Kanawha Boulevard East
Charleston, WV 25305

Dear West Virginia Department of Transportation (WVDOT),

Many thanks for considering Trimble Mobile Resource Management (MRM) with the opportunity to be your GPS tracking provider. We believe that our solution will help build the infrastructure needed to develop a safe environment for the employees of WVDOT.

Trimble MRM provides a solution that meets ALL of WVDOT's AVL, fleet productivity reporting, integration, hardware, and service requirements as outlined in the RFQ.

Enclosed you will find a proposal for one hundred (100) GPS tracking devices with all of the associated hardware, service, installation, integration prices and options. Please do not hesitate to contact me should you have any further questions.

Sincerely,

Michael Sobhi
Sales Representative

Trimble Mobile Resource Management
3650 Concorde Parkway
Suite 150
Chantilly, VA 20151
Tel: 703- 502- 5655
Cell: 703- 973- 7555
Fax: 703- 502- 8165
Michael.Sobhi@Trimble.com
www.Trimblems.com

RECEIVED

2009 FEB 17 PM 1:52

WV PURCHASING
DIVISION



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
639000029

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF
MICHAEL AUSTIN 304-558-2402

RFQ COPY

MICHAEL SOBHI
 TRIMBLE MOBILE SOLUTIONS
 3650 CONCORD PKWY SUITE 150
 CHANTILLY VA 20151

SHIP TO

DIVISION OF HIGHWAYS
 PLANNING DIVISION
 BUILDING 5, ROOM A848
 1900 KANAWHA BOULEVARD EAST
 CHARLESTON, WV
 25305-0430

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
02/08/2009				

BID OPENING DATE: **02/18/09** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	EA		TRACK		
				GPS VEHICLE TRACKING SYSTEM, COVERT TRI-BAND ANTENNA		
				ADDENDUM NO. 2		
				BID OPENING DATE AND TIME CHANGED		
				FROM: 02/11/2009 AT 1:30 P.M.		
				TO: 02/18/2009 AT 1:30 P.M.		
				NO OTHER CHANGES		

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE

TITLE <i>Vice President</i>	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

**GENERAL TERMS & CONDITIONS
REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)**

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. All quotations are governed by the *West Virginia Code* and the *Legislative Rules* of the Purchasing Division.
4. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
5. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods, this Purchase Order/Contract becomes void and of no effect after June 30.
6. Payment may only be made after the delivery and acceptance of goods or services.
7. Interest may be paid for late payment in accordance with the *West Virginia Code*.
8. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
9. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
10. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
11. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.
12. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
13. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, this Contract may be deemed null and void, and terminated without further order.
14. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, and available online at the Purchasing Division's web site (<http://www.state.wv.us/admin/purchase/vrc/hipaa.htm>) is hereby made part of the agreement. Provided that, the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
15. **WEST VIRGINIA ALCOHOL & DRUG-FREE WORKPLACE ACT:** If this Contract constitutes a public improvement construction contract as set forth in Article 1D, Chapter 21 of the West Virginia Code ("The West Virginia Alcohol and Drug-Free Workplace Act"), then the following language shall hereby become part of this Contract: "The contractor and its subcontractors shall implement and maintain a written drug-free workplace policy in compliance with the West Virginia Alcohol and Drug-Free Workplace Act, as set forth in Article 1D, Chapter 21 of the West Virginia Code. The contractor and its subcontractors shall provide a sworn statement in writing, under the penalties of perjury, that they maintain a valid drug-free work place policy in compliance with the West Virginia and Drug-Free Workplace Act. It is understood and agreed that this Contract shall be cancelled by the awarding authority if the Contractor: 1) Fails to implement its drug-free workplace policy; 2) Fails to provide information regarding implementation of the contractor's drug-free workplace policy at the request of the public authority; or 3) Provides to the public authority false information regarding the contractor's drug-free workplace policy."

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division.
2. **SPECIFICATIONS:** Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Complete all sections of the quotation form.
4. Unit prices shall prevail in case of discrepancy.
5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
6. **BID SUBMISSION:** All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130



State of West Virginia
 Department of Administration
 Purchasing Division
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 304-558-2402**

RFQ COPY

**MICHAEL SOBHI
 TRIMBLE MOBILE SOLUTIONS
 3650 CONCORD PKWY SUTIE 150
 CHANTILLY VA 20151**

**DIVISION OF HIGHWAYS
 PLANNING DIVISION
 BUILDING 5, ROOM A848
 1900 KANAWHA BOULEVARD EAST
 CHARLESTON, WV
 25305-0430**

VENDOR

SHIP TO

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
01/22/2009				

BID OPENING DATE: **02/04/2009** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	EA		TRACK		
GPS VEHICLE TRACKING SYSTEM, COVERT TRI-BAND ANTENNA						
OPEN END CONTRACT						
TO PROVIDE GPS VEHICLE TRACKING SYSTEMS, COVERT TRI-BAND ANTENNAS, MONTHLY SERVICE PLAN AND ALL SOFTWARE NEEDED FOR WEB-BASED APPLICATION FOR THE PROGRAM PLANNING AND ADMINISTRATION DIVISION OF THE WEST VIRGINIA DIVISION OF HIGHWAYS. PER THE ATTACHED SPECIFICATIONS.						
PURCHASING CARD ACCEPTANCE: THE STATE OF WEST VIRGINIA CURRENTLY UTILIZES A VISA PURCHASING CARD PROGRAM WHICH IS ISSUED THROUGH A BANK. THE SUCCESSFUL VENDOR MUST ACCEPT THE STATE OF WEST VIRGINIA VISA PURCHASING CARD FOR PAYMENT OF ALL ORDERS PLACED BY ANY STATE AGENCY AS A CONDITION OF AWARD.						
EXHIBIT 3						
LIFE OF CONTRACT: THIS CONTRACT BECOMES EFFECTIVE ON AND EXTENDS FOR A PERIOD OF ONE (1) YEAR OR UNTIL SUCH "REASONABLE TIME" THEREAFTER AS IS NECESSARY TO OBTAIN A NEW CONTRACT OR RENEW THE ORIGINAL CONTRACT. THE "REASONABLE TIME" PERIOD SHALL NOT EXCEED TWELVE (12) MONTHS. DURING THIS "REASONABLE TIME" THE VENDOR MAY TERMINATE THIS CONTRACT FOR ANY						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



State of West Virginia
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LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>REASON UPON GIVING THE DIRECTOR OF PURCHASING 30 DAYS WRITTEN NOTICE.</p> <p>UNLESS SPECIFIC PROVISIONS ARE STIPULATED ELSEWHERE IN THIS CONTRACT DOCUMENT, THE TERMS, CONDITIONS AND PRICING SET HEREIN ARE FIRM FOR THE LIFE OF THE CONTRACT.</p> <p>RENEWAL: THIS CONTRACT MAY BE RENEWED UPON THE MUTUAL WRITTEN CONSENT OF THE SPENDING UNIT AND VENDOR, SUBMITTED TO THE DIRECTOR OF PURCHASING THIRTY (30) DAYS PRIOR TO THE EXPIRATION DATE. SUCH RENEWAL SHALL BE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE ORIGINAL CONTRACT AND SHALL BE LIMITED TO TWO (2) ONE (1) YEAR PERIODS.</p> <p>CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE COMMODITIES AND/OR SERVICES SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM TO THE SPECIFICATIONS OF THE BID AND CONTRACT HEREIN.</p> <p>OPEN MARKET CLAUSE: THE DIRECTOR OF PURCHASING MAY AUTHORIZE A SPENDING UNIT TO PURCHASE ON THE OPEN MARKET, WITHOUT THE FILING OF A REQUISITION OR COST ESTIMATE, ITEMS SPECIFIED ON THIS CONTRACT FOR IMMEDIATE DELIVERY IN EMERGENCIES DUE TO UNFORESEEN CAUSES (INCLUDING BUT NOT LIMITED TO DELAYS IN TRANSPORTATION OR AN UNANTICIPATED INCREASE IN THE VOLUME OF WORK.)</p> <p>QUANTITIES: QUANTITIES LISTED IN THE REQUISITION ARE APPROXIMATIONS ONLY, BASED ON ESTIMATES SUPPLIED BY THE STATE SPENDING UNIT. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACT SHALL COVER THE QUANTITIES ACTUALLY ORDERED FOR DELIVERY DURING THE TERM OF THE CONTRACT,</p>						

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LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>WHETHER MORE OR LESS THAN THE QUANTITIES SHOWN.</p> <p>ORDERING PROCEDURE: SPENDING UNIT(S) SHALL ISSUE A WRITTEN STATE CONTRACT ORDER (FORM NUMBER WV-39) TO THE VENDOR FOR COMMODITIES COVERED BY THIS CONTRACT. THE ORIGINAL COPY OF THE WV-39 SHALL BE MAILED TO THE VENDOR AS AUTHORIZATION FOR SHIPMENT, A SECOND COPY MAILED TO THE PURCHASING DIVISION, AND A THIRD COPY RETAINED BY THE SPENDING UNIT.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THIS CONTRACT IS AUTOMATICALLY NULL AND VOID, AND IS TERMINATED WITHOUT FURTHER ORDER.</p> <p>THE TERMS AND CONDITIONS CONTAINED IN THIS CONTRACT SHALL SUPERSEDE ANY AND ALL SUBSEQUENT TERMS AND CONDITIONS WHICH MAY APPEAR ON ANY ATTACHED PRINTED DOCUMENTS SUCH AS PRICE LISTS, ORDER FORMS, SALES AGREEMENTS OR MAINTENANCE AGREEMENTS, INCLUDING ANY ELECTRONIC MEDIUM SUCH AS CD-ROM.</p> <p>REV. 04/11/2001</p> <p>EXHIBIT 10</p> <p>REQUISITION NO.:</p> <p>ADDENDUM ACKNOWLEDGEMENT</p> <p>I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.</p> <p>ADDENDUM NO.'S:</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS			
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------	----------	-----	--------	-------------	------------	--------

- NO. 1
- NO. 2
- NO. 3
- NO. 4
- NO. 5

I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF TH
 ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS.

VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL
 REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY
 ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES
 AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE
 INFORMATION ISSUED IN WRITING AND ADDED TO THE
 SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.

.....
 SIGNATURE

...Tomble... Navigator... L.R.T.
 COMPANY

..... 2/13/09
 DATE

REV. 11/96

NOTICE

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BID OPENING DATE: 02/04/2009 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>A SIGNED BID MUST BE SUBMITTED TO:</p> <p>DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130</p> <p>THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:</p> <p>SEALED BID</p> <p>BUYER: 33</p> <p>RFQ. NO.: 639000029</p> <p>BID OPENING DATE: -----</p> <p>BID OPENING TIME: -----</p> <p>PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:</p> <p>-----</p> <p>CONTACT PERSON (PLEASE PRINT CLEARLY):</p> <p>-----</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

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LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
***** THIS IS THE END OF RFQ 639000029 ***** TOTAL:						_____

SEE REVERSE SIDE FOR TERMS AND CONDITIONS			
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West Virginia Department of Transportation

Project

Fleet Management:

This is a project for Fleet Management at WVDOT. The goal of this project is to build the infrastructure needed for developing a safe environment for employees of WVDOT.

Infrastructures are essential for enabling economic productivity, growth, and development. The infrastructure we are building would provide real-time capabilities for the Department to manage all moving and non-moving assets.

This RFQ is for an initial one hundred GPS vehicle tracking systems; covert Tri-band antennas; monthly service plan; and all software needed for web based application. Additional systems may be required.

Delivery must be made to West Virginia Department of Transportation, Program Planning and Administration Division-GTI Section, located at Building 5, Room 851, 1900 Kanawha Boulevard, East, Charleston, West Virginia 25305. Quotation will include F.O.B. destination.

AVL Application Requirements:

- TW-TV - Web & Client based application accessible through the Internet
- TW-TV - Unlimited and secure user access
- TW-TV - Quarterly map updates
- T - Links to aerial imagery for vehicle events
- TV - Ability to display current weather conditions including Doppler Radar
- TWTV - Two-way messaging
- T - Thousands of locations entered, organized, and mapped
- Alerts through email, pagers, and text-phones
- Ability to utilize multiple cell carriers (Verizon, AT&T & Sprint)
- Minimum of one minute breadcrumb trail for asset movement
- Route Playback
- On Demand asset polling (no extra chargers for pinging)
- Unlimited users
- Ability to create geographical sites and geo-fencing
- Geo-fence area for Home Sites
- Ability to download asset positions and events into Excel
- Job site import – assign jobsite by vehicle / Group & Fleet
- Configurable Speeding and Stop thresholds
- Ability to create asset groups and sub-organizations
- Ability to search for assets based on proximity to (Other assets, Job Sites, Home Sites, or Addresses)
- Ability to display and report on Asset Congregation
- Data Logging, supports message and event storage for up to one week while out of network coverage
- In-Vehicle hardware must store / forward positions and events data when outside of wireless coverage
- Real-time speeding alerts
- Real-time off hour usage alerts
- Ability to support driver identification as well as vehicle identification
- All data must be stored at the vendor's data center for a period of 12 months
- Vendor must utilize at least one redundant data center for back-up processing and data security
- Option to download data in MS SQL Database
- Driver initiated emergency button, must trigger e-mail alerts to multiple recipients

Fleet Productivity Reporting Requirements including:

- Run ranking report for safety, measuring acceleration exerted on the vehicle during various maneuvers such as turns, starts, stops and speeds
- Report driver safety scores for each individual driver as a composite score based on factors including turns, speed, stops and starts.
- Stop reports with speed and duration thresholds
- Idle Time reporting
- Capture duration time to detect entry and exit of sites
- Track mileage on engine and run time hours
- All inclusive activity reporting
- Run reports for multiple drivers simultaneously
- Speeding reports containing speed and duration thresholds
- Visitation reports
- Event reporting including ignition on, ignition off, enter geo-site, exit geo-site, start moving, stop moving and speeding information
- Non-work hour asset activity reporting
- User defined upcoming vehicle maintenance reporting
- Drivers hours and mileage reporting
- Work/Home Sites by site and by vehicle

Integration:

- SQL Data feed from Vendor's Data Center allowing for customized reporting including trend analysis
- MSMQ messaging capabilities

Hardware Components

GENERAL SPECIFICATIONS for In Vehicle Display (IVD) and On Board Black Box (OBBB) Input Voltage. 9.0 – 32.0 VDC GPRS. TNC (receptacle) 50 Ω

Current Consumption (Typical)

Transmitting with IVD.	340 mA (1.6 A peak) at 12 VDC
Transmitting without IVD.	270 mA (1.5 A peak) at 12 VDC
Not transmitting with IVD.	160 mA at 12 VDC
Not transmitting without IVD.	90 mA at 12 VDC
Not transmitting sleep mode.	<10 mA at 12 VDC

Inputs & Outputs

Discrete Inputs.	(4) switch closures
Ignition Sense Off.	<0.8 V
Ignition Sense On.	>2.4 V
Pulse Counting Inputs.	(3) minimum pulse width: 500 μs
Discrete Outputs.	(3) 200 mA low-side drivers
Sensor Power Output.	(1) 150 mA at 11.8 V ± 1.0 V

Message Formats

Status LEDs .	MSMQ GPS (green), GPRS (amber)
---------------	-----------------------------------

PHYSICAL SPECIFICATIONS

Assembly . Top: Injection molded plastic with integrated shield

Base: Aluminum

Size. 228 mm x 121 mm x 36 mm (W x D x H)

(8.97" W x 4.76" D x 1.42" H)

Weight . 485 g (1 lb, 1.1 oz.)

Connectors

IVD Port. DB-9 (receptacle)

Serial Port. EIA-232 RJ-45 (receptacle)

Power & Discrete I/O Molex Micro-Fit 3.0 16-pin dual row locking receptacle SIM

Carrier. Antennas GPS.SMA (receptacle) 50 Ω

GPRS Quad Band. TNC (receptacle) 50 Ω

GPS SPECIFICATIONS

Receiver . L1 frequency, C/A code (SPS)

8-channel continuous tracking receiver

Update Rate . Once per second maximum

Accuracy,

Position. < 10 meters (50 % CEP)

Velocity. < 0.5 meter/second

First acquisition

Cold start . < 180 seconds (90 %)

Warm start. < 45 seconds (90 %)

Reacquisition after signal loss . <2 seconds (90 %)

Datum . WGS-84

GPRS SPECIFICATIONS

Global. Internal GSM/GPRS Module, Multislot Class 12

Quad Band GSM 850/900/1800/1900MHz

SIM . 3V

Regulatory Approvals . FCC, PTCRB

ENVIRONMENTAL SPECIFICATIONS

Temperature

Normal Operation. -30 °C to 60 °C (-22 °F to 149 °F)

Non Operating. -40 °C to 85 °C (-40 °F to 185 °F)

Humidity. 5% to 95% RH, non-condensing at +40 °C

Vibration

0.008 g²/Hz . 5 Hz

+3 dB/Octave . 5 Hz to 20 Hz

0.05 g²/Hz . 20 Hz to 100 Hz

-3 dB/Octave . 100 Hz to 800 Hz

0.001 g²/Hz . 800 Hz to 1000 Hz

Shock

Operational. 40 g for 11 ms

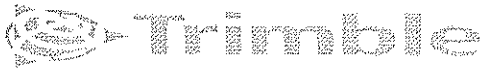
Non-Operational. 75 g for 6 ms

Vehicle transients. ETS 301 489-1; section 9.6

Cost Sheet

Item	Estimated Quantity	Description	Unit Price	Amount
1.	100	GPS Vehicle Tracking System	_____	_____
			Month	Year
2.		Monthly Service Plan	_____	_____

Trimble



3650 Concorde Pkwy, Suite 150 • Chantilly, VA 20151
 Phone: 877-883-4367 • Fax: 703-502-8165

P.O. No.	
Date	02-06-09
Dealer Co. Name	Direct Sale
Regional Sales Mgr.	Michael Sobhi

Company	West VA Dot - Division of Highways Planning Division	Company	West VA Dot - Division of Highways Planning Division
Attention	Purchasing Division	Attention	Michael Austin
Address	2019 Washington Street East PO Box 50130 Charleston WV 25305-0130	Address	1900 Kanawha Boulevard East BLDG 5 Room A848 Charleston WV 25305
Email		Email	
Phone	3045582402	Phone	3045582402
Fax		Fax	
Stock Order	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Comments	

Choice of TrimWeb Cross Check Mobile Device - Please Choose Part number (Option to Mix and Match)	Cross Check -Verizon CDMA (RECOMMENDED)- OR	62558-11			
	Cross Check - Sprint - OR	62559-11	100	\$412.50	\$41,250.00
	Cross Check -AT&T	72720-21			

Hardware Specs for Crosscheck - Required for AVL Service

GENERAL SPECIFICATIONS for In Vehicle Display (IVD) and On Board Black Box (OBBB)
 Input Voltage. 9.0 – 32.0 VDC
 GPRS. OR CDMA TNC (receptacle) 50 Ω

Current Consumption (Typical)

Transmitting with IVD. 340 mA (1.6 A peak) at 12 VDC
 Transmitting without IVD. 270 mA (1.5 A peak) at 12 VDC
 Not transmitting with IVD. 160 mA at 12 VDC
 Not transmitting without IVD. 90 mA at 12 VDC
 Not transmitting sleep mode. <10 mA at 12 VDC

Inputs & Outputs

Discrete Inputs. (4) switch closures
 Ignition Sense Off. <0.8 V
 Ignition Sense On. >2.4 V
 Pulse Counting Inputs. (3) minimum pulse width: 500 μs
 Discrete Outputs. (3) 200 mA low-side drivers
 Sensor Power Output. (1) 150 mA at 11.8 V ± 1.0 V

Message Formats MSMQ

Status LEDs. GPS (green), GPRS OR CDMA (amber)

Trimble

PHYSICAL SPECIFICATIONS for Cross Check

Assembly . Top: Injection molded plastic with integrated shield
Base: Aluminum
Size. 228 mm x 121 mm x 36 mm (W x D x H)
(8.97" W x 4.76" D x 1.42" H)
Weight . 485 g (1 lb, 1.1 oz.)

Connectors

IVD Port. DB-9 (receptacle)
Serial Port. EIA-232 RJ-45 (receptacle)
Power & Discrete I/O Molex Micro-Fit 3.0 16-pin dual row locking
receptacle SIM Carrier. Antennas GPS.SMA (receptacle) 50 Ω
GPRS or CDMA Quad Band. TNC (receptacle) 50 Ω

GPS SPECIFICATIONS for Crosscheck

Receiver . L1 frequency, C/A code (SPS)
8-channel continuous tracking receiver
Update Rate . Once per second maximum
Accuracy,
Position. < 10 meters (50 % CEP)
Velocity. < 0.5 meter/second
First acquisition
Cold start . < 180 seconds (90 %)
Warm start. < 45 seconds (90 %)
Reacquisition after signal loss . <2 seconds (90 %)
Datum . WGS-84

GPRS SPECIFICATIONS

Global. Internal GSM/GPRS Module, Multislot Class 12
Quad Band GSM 850/900/1800/1900MHz
SIM . 3V
Regulatory Approvals . FCC, PTCRB

CDMA SPECIFICATIONS

CDMA 1xRTT: Internal Kyocera M200 Module Dual Band CDMA
800/1900MHz
Regulatory Approvals: FCC Part 15/22/24
Network Approvals: Verizon, Sprint

Trimble

ENVIRONMENTAL SPECIFICATIONS for Cross Check

Temperature

Normal Operation. -30 °C to 60 °C (-22 °F to 149 °F)
 Non Operating. -40 °C to 85 °C (-40 °F to 185 °F)
 Humidity. 5% to 95% RH, non-condensing at +40 °C

Vibration

0.008 g2/Hz . 5 Hz
 +3 dB/Octave . 5 Hz to 20 Hz
 0.05 g2/Hz . 20 Hz to 100 Hz
 -3 dB/Octave . 100 Hz to 800 Hz
 0.001 g2/Hz . 800 Hz to 1000 Hz

Shock

Operational. 40 g for 11 ms
 Non-Operational. 75 g for 6 ms
 Vehicle transients. ETS 301 489-1; section 9.6

Power & I/O Cable	46598	100	Included	N/C
Optional Add - ons / Available if and when messaging and Driver Identification is purchased				
ECHOLDX Message Terminal (aka MDT) - Required for 2 way messaging and driver identification	46722-00	100	\$187.00	\$18,700.00
Includes (1) each: Message Terminal, Power/Data Cable & Pedestal 6" Mounting Kit				
ECHOLDX Message Terminal User Guide	46845-01-ENG	100	Included	N/C
Covert Antenna	Covert Tri-band Antenna	58320	100	Included
				N/C

	\$59,950.00
--	--------------------

Ground Air

(Extra charge applies for Air shipments - please specify type of overnight service required)

Customer Signature _____

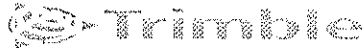
Date _____

INTERNAL TMRM USE ONLY

Customer: _____

Recvd. _____

To OE _____



3650 Concorde Pkwy, Suite 150 • Chantilly, VA 20151
Phone 877-883-4367 • Fax 703-502-8165

P.O. No.
Date 02-06-09
Dealer Co. Name Direct Sale
Dealer Sales Mgr. Michael Sobhi

Company West VA Dot - Division of Highways Planning Division
 Attention Purchasing Division
 Address 2019 Washington Street East PO Box 50130
 Charleston WV 25305-0130
 Email Yes No
 Phone 3045582402 New Upgrade
 Fax Add-on Demo
 Yes No If Yes, Who? Self install

Professional Plan - 12 months 48322-21 100 \$34.95 \$3,495.00
 Trim Web Service

Trim Web Services includes:

- Web Based application accessible through the internet
- Unlimited and secure user access
- Quarterly map updates
- One minute breadcrumb trail for asset movement
- Route Playback
- On Demand asset polling (no extra charges for pinging)
- Unlimited users
- Able to create geographical sites and geo-fencing
 - Geo-fence area for Home Sites
- Downloads asset positions and events into excel
- Job site import - assign jobsite by vehicle / Group & Fleet
- Configurable Speeding and Stop thresholds
- Creates asset groups and sub-organizations
- Searches for assets based on proximity to (Other assets, Job Sites, Home Sites, or Addresses)
- Displays and report on Asset Congregation
- Data Logs, support messages and event storage for up to one week while out of network coverage
 - In-Vehicle hardware will store / forward positions and events data when outside of wireless coverage
- All data is stored at Trimble's data center for a period of 12 months
- utilizes at least redundant data center for back-up processing and data security (Trimble owns Two)

Basic Reporting Capabilities for Trim Web includes:

Drive Safe will Report will run ranking report for safety, measuring acceleration exerted on the vehicle during various maneuvers such as turns, starts, stops and speeds and will also Report driver safety scores for each individual driver as a composite score based on factors including turns, speed, stops and starts. 48322-45 100 \$0.00 \$0.00

- Stop reports with speed and duration thresholds
- Idle Time reports
- Captures duration time to detect entry and exit of sites
- Tracks mileage on engine and run time hours
- All inclusive activity reporting
 - Runs reports for multiple drivers simultaneously
- Speeding reports contain speed and duration thresholds
- Visitation reports
- Event reports include ignition on, ignition off, enter geo-site, exit geo-site, start moving, stop moving and speeding information
- Reports Drivers hours and mileage
- Work/Home Sites by site and by vehicle

Trim View Services and Reporting Specs (Client Based)	48323-70	100	\$2.95	\$295.00
Client based application accessible through the internet Links to aerial imagery for vehicle events Displays current weather conditions including Doppler Radar at back office map (Weather)				
	48323-40	100	\$1.95	\$195.00
Trivister Specs (3rd Party Application, Trimble Certified as reseller) includes...	48322-81	100	\$4.95	\$495.00
Links to aerial imagery for vehicle events Real-time speeding alerts Real-time off hour usage alerts Thousands of locations can be entered, organized, and mapped Alerts through email, pagers, and text-phones Non-work hour asset activity reporting User can define upcoming vehicle maintenance reporting				
Messaging (Requires Display Terminal Hardware)				
ECHO MESSAGING allows Two-way messaging	48323-00	100	\$4.95	\$495.00
DRIVER ID - Driver initiated emergency button, triggers e-mail alerts to multiple recipients - Supports driver identification as well as vehicle identification	48322-80	100	\$1.95	\$195.00
Integration:Specs				
SQL Data feed from Vendor's Data Center allowing for customized reporting including trend analysis MSMQ messaging capabilities download data in MS SQL Database - TrimExchange				
TrimView Local Data Storage (LDS)	48323-80	100	\$1.95	\$195.00
Software Implementation 3 days (T&E Not included)		3	\$1,750.00	\$5,250.00
Installation and Training				
1 Day On-Site Installation Training (Does Not Include T&E) Trimble traveling will be based on actuals, based on Government standards, only flight, hotel, car rentals, and meal expenses				
Installation Kit (MDT)	46722-00	1	\$187.00	\$187.00
Set-up Fee				
Custom DIM List Set-Up Fee (per unit) - To customize up to 30 canned messages inside display screen (One Time Setup Fee)	48323-30	100	\$50.00	\$5,000.00
Service Platform Set-up One time fee (required per unit)	48323-99	100	\$20.00	\$2,000.00
Customer Name	One Time Service Platform Set-up			\$2,000.00
User Name	Total Monthly Service Fee			\$5,660.00
Password	Total Custom DIM List Set-up Fee			\$5,000.00
	Installation Training (T&E Not included) and Demo Kit			\$1,186.95
	Software Implementation 3 days (T&E Not included)			\$5,250.00

SOFTWARE

Trimble is not responsible for the supply or payment of any 3rd party licenses to the customer to run the software in their environment. This will include, but is not limited to, any Oracle or Microsoft SQL Server licenses.

DELIVERY

Trimble will ship the Hardware to Customer within 30 days of signed Product Schedule. Installation thereafter will be performed on a mutually agreeable schedule between Customer and Trimble.

PAYMENT

All amounts listed are in US Dollars and customer shall pay all charges and fees for Equipment and/or Service purchased by customer pursuant to each applicable Product Schedule in U.S. dollars. Trimble shall invoice amounts due under each Product Schedule to the billing address as is provided in such Product Schedule. All payments to Trimble are due net thirty (30) from date of invoice, with the exception of the Service fees which are outlined in the Service fee section of this agreement. Monthly solution fees start upon activation of units. Units are activated upon installation or thirty (30) days following shipment, whichever transpires first. Monthly solution fees are invoiced as services are rendered and are payable upon receipt. Customer is responsible for all federal, state, local taxes, duties, tariffs, and shipping costs. Any late payments will be subject to late fees and interest at 2.0% monthly. If customer fails to make payments in accordance with these terms the customer will be in default and customer will agree to pay all cost end expenses of collection, including attorney fees and cost incurred by Trimble in collecting or attempting to colle

CUSTOMER RESPONSIBILITIES

Customer is responsible for any driver tampering and database integrity of its current dispatch system. If parts are damaged or product does not work as a result of customer negligence, driver negligence, or inadequate customer installation, Trimble will bill Customer for time, materials, and travel expense required to rectify the problem.

EXPIRATION

The pricing offered in this Product Schedule will expire on 08/01/09.

TERMS AND CONDITIONS

Customer hereby agrees to the terms and conditions of the Product Schedule and to Trimble's General Terms and Conditions Regarding Trimble Equipment, Software and Services - attached.

Unless stated elsewhere, prices quoted herein are valid for one year from date of Product Schedule acceptance by Trimble. Trimble reserves the right to adjust pricing on an annual basis, unless otherwise noted.

Customer acceptance of ordered Products shall be deemed to occur at delivery to the FOB point. It is Customer's responsibility to give prompt written notice of identified damage or nonconformance of goods. Upon receipt, Customer shall inspect the condition of the packaging and the Products and indicate any damage to the carrier on the delivery note, have the carrier's agent sign the document and, within two (2) days thereof, send all documents by e-mail or fax to the Trimble facility from which shipment took place, together with the carrier's references. Trimble must be notified within seven (7) days of delivery of incorrect materials, and concealed loss or damage claims must be made by Customer to the carrier by requesting an inspection and filing a claim with the carrier, with written notice, which shall also be given to Trimble within seven (7) days of delivery. If Customer retains the Product without giving notice within the designated period, Customer will be deemed to have waived its right to reject the order.

IN WITNESS WHEREOF, the parties hereto have signed this Product Schedule by their duly authorized representative.

CUSTOMER	
By (signature):	_____
By (print name):	_____
Title:	_____
Date:	_____
TRIMBLE NAVIGATION LIMITED	
By (signature):	_____
By (print name):	_____
Title:	_____
Date:	_____

EXHIBIT A

Trimble Navigation Limited

General Terms and Conditions Regarding Trimble Equipment, Software and Services

Last updated January 2009

IMPORTANT. PLEASE READ THIS CAREFULLY.

These General Terms and Conditions, together with the applicable product schedule(s), create a legally binding agreement ("Agreement") between you/your organization ("you" or "customer") and Trimble Navigation Limited ("Trimble"). This Agreement sets forth the terms and conditions for use of:

- ("Equipment"), shall mean those items of hardware or equipment specified on an applicable Product Schedule to be purchased by customer and sold by Trimble.
- ("Software"); shall mean Trimble software.
- ("Service") shall mean the specific Trimble service offerings specified on an applicable Product Schedule to be provided by Trimble to customer under this Agreement, along with certain enhancements thereto, to the extent specified on such Product Schedule
- ("Product Schedule") shall be that document submitted by customer, by which customer offers to purchase Equipment and/or Service from Trimble and, upon acceptance thereof by Trimble, by which Trimble agrees to provide Equipment and/or Service to customer in accordance with this Agreement.

Among other things, this Agreement describes your and our legal rights regarding payments, warranties, limitations of liability and other important topics.

YOU ACKNOWLEDGE THAT YOU HAVE READ THIS AGREEMENT, UNDERSTAND IT, AND AGREE, ON BEHALF OF YOUR ORGANIZATION, TO BE BOUND BY IT. YOU ALSO ACKNOWLEDGE THAT YOU HAVE THE AUTHORITY TO ENTER INTO THIS AGREEMENT ON BEHALF OF YOUR ORGANIZATION. THIS AGREEMENT IS ENFORCEABLE LIKE ANY WRITTEN AGREEMENT. IF YOU DO NOT AGREE TO ANY OF THE TERMS HEREIN, YOU MAY NOT USE THE HARDWARE, SOFTWARE OR SERVICE AND SHOULD IMMEDIATELY RETURN TO YOUR AUTHORIZED DEALER OR TRIMBLE SALES REPRESENTATIVE FOR THE APPLICABLE REFUND.

Payment Terms

All amounts listed are in US Dollars and customer shall pay all charges and fees for Equipment and/or Service purchased by customer pursuant to each applicable Product Schedule in U.S. dollars. Trimble shall invoice amounts due under each Product Schedule to the billing address as is provided in such Product Schedule. All payments to Trimble are due net thirty (30) from date of invoice, with the exception of the Service fees which are outlined in the Service fee section of this agreement. Monthly solution fees start upon activation of units. Units are activated upon installation or thirty (30) days following shipment, whichever transpires first. Monthly solution fees are invoiced as services are rendered and are payable upon receipt. Customer is responsible for all federal, state, local taxes, duties, tariffs, and shipping costs. Any late payments will be subject to late fees and interest at 2.0% monthly. If customer fails to make payments in accordance with these terms the customer will be in default and customer will agree to pay all cost and expenses of collection, including attorney fees and cost incurred by Trimble in collecting or attempting to collect any amounts due.

Taxes

All prices and charges are exclusive of, and customer is responsible for, all sales, use and like taxes.

Exceptions to Equipment and Software Warranties

The express warranties provided by Trimble regarding Equipment and/or Software shall not apply to the extent Equipment and/or Software (1) have been altered or modified in any way without Trimble's authorization; (2) have problems resulting from interaction with software or hardware not supplied or supported by Trimble; (3) have problems caused by misuse or accident, or improper or inadequate, installation, maintenance or storage by you or any other third party; or (4) are operated under specifications or other environmental conditions other than Trimble's published specifications for such Equipment and/or Software.

Disclaimer

Except for the expressed warranties stated herein, Trimble and its suppliers disclaim to the fullest extent permitted by law all warranties, expressed or implied, on products furnished hereunder and any supplements, including, without limitation, all implied warranties of merchantability, fitness for a particular purpose, non-infringement, or any warranties arising by statute or otherwise in law or from a course of dealing or usage in the trade, as to any operation or use of the products, any results to be obtained from any operation or use of the products or information derived therefrom, or any support services rendered with respect thereto. Trimble does not warrant that the functions contained in the product will meet the customer's requirements or that the operation of the product will be uninterrupted or error-free. The express warranties set forth herein are in lieu of all other liabilities on the part of Trimble arising out of or in connection with the delivery, use or performance of the products.

These General Terms and Conditions may be updated by Trimble from time to time, and will become binding on you [10] days after publication of update. Please check back regularly to review these General Terms and Conditions.

Equipment

In the event customer purchases Equipment from Trimble, pursuant to this Agreement, customer shall use the Equipment for customer's internal business use only and solely in connection with customer's use of or access to the Service.

Shipping Terms

All Equipment shipments shall be FCA Shipping Point. Customer is responsible for all shipping charges.

Equipment Warranty

The following Equipment is warranted to be free from defects in materials and workmanship for a one (1) year period: on board computers, GPS wireless modem, driver display, and antennas. Extended warranties are available on such Equipment for a fee. Please contact your authorized dealer or Trimble sales representative for information.

All other Equipment (including but not limited to sensors, water meters, and cables) is warranted to be free from defects in materials and workmanship for three (3) months. There is no extended warranty available for these items.

All warranty periods begin thirty (30) days from the date of shipment to the customer.

Limited Equipment Warranty

Equipment will substantially conform to Trimble's specifications for such Equipment (the "Limited Warranty"). This Limited Warranty does not extend to: (1) any failure in the Equipment due to accident, abuse, misuse or negligent use of the Equipment; (2) any failure resulting from use in other than a normal and customary manner under normal environmental conditions and conforming to the Equipment's instructions; (3) any failure in the Equipment caused by failing to follow prescribed operating maintenance procedures; (4) any failure in the Equipment due to modifications, alterations, additions or changes to the Equipment not made or authorized to be made by Trimble; or (5) damage caused by force of nature, external causes, or act of any third party (other than Trimble's or its duly-authorized representative). This Limited Warranty shall be void and of no force or effect if any Equipment is installed or serviced by any party other than Trimble or third-party (including customer) authorized and certified by Trimble to perform such services, without prior written consent from Trimble.

Installation of Equipment

The installation of Equipment must be done by either a certified third party installer or by the customer with certified personnel or Trimble.

Remedy

Trimble's sole responsibility under these Equipment warranties shall be to either repair or replace at Trimble's discretion any Equipment item which does not conform to warranty and which customer notices Trimble about

during the warranty period. Trimble will not be responsible for any product that is damaged due to customer tampering, misuse, abuse, accident, or is damaged outside of normal wear and tear.

Should Trimble decide to exchange new or rebuilt equipment for failed equipment, customer will be issued an authorized RMA number from their client manager. It is the customer's responsibility to return the failed parts or unit to Trimble within 15 business days. Should the customer fail to return these parts or unit within the allotted time the customer will be responsible and liable for an amount equal to the standard list price of the new units or equipment sent to the customer as replacements.

Warranty coverage does not cover any cost of de-installing or re-installing the Equipment.

Software

Software License Grant

Subject to payment of applicable subscription fees, as outlined in the Product Schedule(s) and the terms of the Agreement, Trimble grants you a non-exclusive, non-transferable license, without right of sublicense, to install, use and display the Software in a machine-readable form solely for your internal purposes, and solely in connection with your use of the Service. You may reasonably copy the Software to the extent necessary to enable your permitted internal use of the Software, but you may not copy or distribute the Software to any third parties. All Software, including any patches or subsequent updates, are licensed only for the use on the number of CPU's which are purchased by the customer. No copying or reproduction of the Software is permitted.

All software licenses are for Trimble Software only. Customer understands that any third party licenses necessary to run the Trimble Service are the responsibility of customer. This includes, but is not limited to Oracle and SQL licenses.

Other Rights and Restrictions

(1) The Software contains valuable trade secrets proprietary to Trimble and its suppliers. To the extent permitted by relevant law, you shall not, nor allow any third party to copy, decompile, disassemble or otherwise reverse engineer the Software, or attempt to do so, provided, however, that to the extent any applicable mandatory laws give you the right to perform any of the aforementioned activities without Trimble's consent in order to gain certain information about the Software for purposes specified in the respective statutes (*i.e.*, interoperability), you hereby agree that, before exercising any such rights, you shall first request such information from Trimble in writing detailing the purpose for which you need the information. Only if and after Trimble, at its sole discretion, partly or completely denies your request, may you exercise such statutory rights. (2) This Software is licensed as a single product. You may not separate its component parts for use on more than one computer. (3) You may not rent, lease, or lend, the Software. (4) You may not modify or make derivative works of the Software. (5) No service bureau work, multiple-user license or time-sharing arrangement is permitted. For purposes of this Agreement "service bureau work" shall be deemed to include, without limitation, use of the Software to process or to generate output data for the benefit of, or for purposes of rendering services to any third party over the Internet or other communications network.

Ownership; Notices

All right, title and interest (including but not limited to copyright, patent, trade secret and all other intellectual property and proprietary rights worldwide) in and to the Software (including but not limited to any images, photographs, animations, video, audio, music, and text incorporated into the Software), the accompanying printed materials, and any copies of the Software are owned by Trimble and its suppliers. You shall not remove, cover or alter any of Trimble's (or its designated suppliers') copyright, trademark or other proprietary notices placed upon, embedded in or displayed by the Software or on its packaging and related materials.

Limited Software Warranty

Trimble warrants that the Software will perform substantially in accordance with the accompanying written materials (*i.e.*, applicable user's guide or product manual) for a period of one (1) year from the date of purchase of the Software. This limited warranty gives you specific legal rights; you may have others, which vary from state/jurisdiction to state/jurisdiction. The above limited warranty does not apply to error corrections, updates or upgrades of the Software after expiration of the limited warranty period, which are provided "AS IS" and without warranty unless otherwise specified in writing by Trimble. Because the Software is inherently complex and may not be completely free of nonconformities, defects or errors, you are advised to verify your work. Trimble does not warrant that the Software will operate error free or uninterrupted, will meet your needs or expectations, or that all nonconformities can or will be corrected.

Remedy

Trimble's and its suppliers' entire liability, and your sole remedy, with respect to the Software shall be either, at Trimble's option, (a) repair or replacement of the Software, or (b) return of the license fee paid for any Software that does not meet Trimble's limited warranty. The foregoing limited warranty is void if failure of the Software has resulted from (1) accident, misuse, abuse, or misapplication; (2) alteration or modification of the Software without Trimble's authorization; (3) interaction with software or hardware not supplied or supported by Trimble; (4) your improper, inadequate or unauthorized installation, maintenance or storage; or (f) if you violate the terms of this Agreement. Any replacement Software will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer.

No Other Warranties

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, TRIMBLE AND ITS SUPPLIERS DISCLAIM ALL OTHER WARRANTIES, TERMS, AND CONDITIONS, EITHER EXPRESS OR IMPLIED, BY STATUTE, COMMON LAW OR OTHERWISE, INCLUDING BUT NOT LIMITED TO, IMPLIED WARRANTIES, TERMS, AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND NONINFRINGEMENT WITH REGARD TO THE SOFTWARE, ITS SATISFACTORY QUALITY, AND THE PROVISION OF OR FAILURE TO PROVIDE SUPPORT SERVICES.

Limitation of Liability

YOU ASSUME THE ENTIRE RISK AS TO RESULTS AND PERFORMANCE OF THE SOFTWARE. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT SHALL TRIMBLE OR ITS SUPPLIERS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL OR PUNITIVE DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION, REPLACEMENT COSTS OR ANY OTHER PECUNIARY LOSS), ARISING OUT OF THE USE OR INABILITY TO USE THE SOFTWARE, EVEN IF TRIMBLE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, AND NOTWITHSTANDING ANY FAILURE OF ESSENTIAL PURPOSE OF ANY EXCLUSIVE REMEDY PROVIDED IN THIS AGREEMENT.

Support Services

Customer may be eligible for Software support services, provided that the customer is in good standing, that either maintenance fees or service charges are paid to date and provided that serviceability, equipment configuration, and site environmental conditions are met.

Service Responsibility of Trimble

Trimble will maintain the Software product in good operating condition and will service call for customers during normal business hours.

Service Limitations

Services that, in Trimble's opinion are required due to misuse or outside the scope of the solution as defined in the specification provided by Trimble are not included in this agreement.

Service Responsibility of customer

- 1.) Notify Trimble immediately of a product malfunction
- 2.) Allow Trimble unrestricted access to all systems and facility necessary to resolve the malfunction.
- 3.) Make customer personnel available as need to work with Trimble representative to resolve malfunction

Service

In order to use this Service, you must purchase the necessary in-vehicle Equipment [which will include the applicable Software]. Monthly service billings for usage will begin at the earlier of: (a) activation of the service, or (b) thirty (30) days after customer receipt of hardware required to access and operate the service. Trimble shall provide the Service to customer, solely for customer's internal business use, for the Services purchased, as specified on the Product Schedule, for the term specified on the Product Schedule.

Service Fees

In order to use the Service (which includes the Trimble website and all materials contained therein (the "Site"), you must be in good standing which includes being current with the amounts owed for the Service, Equipment, maintenance, support or other fees, in relation to the Service, including any applicable taxes or duties. You also

agree to pay charges that result directly or indirectly from government regulations or mandates. Trimble will endeavor to give you reasonable prior written notice if any such costs and/or charges are implemented after your Service activation date. Service charges are billed monthly, in advance, and are due and payable on the first of the month. In the event that you fail to make timely Service payments, Trimble will be entitled to impose late charges of 2% of the unpaid amount for each month that the amount is unpaid, terminate your License and/or suspend your Service. Trimble may suspend or restrict Service, without liability, if (i) customer materially breaches its obligations hereunder (provided, however, Trimble shall provide customer with prior written notice of suspension by reason of the foregoing provision); (ii) Trimble determines in its sole discretion that the delivery of the Service or customer's use of the Service or Equipment is a threat to the normal operation of or otherwise compromises the Trimble network or any network used to provide the Service; or (iii) Trimble has reason to believe that customer, any of its agents or any third party is abusing the Service or Equipment or using the Service or Equipment fraudulently or unlawfully. In the event Service is suspended (which suspension may be granted, conditioned or denied in Trimble's sole discretion), you will be billed a fee of one hundred fifty dollars (\$150.00) per unit upon restoration of Service. Trimble shall have the continuing right to approve your credit and change your credit terms. Trimble reserves the right to require a security deposit from you in its sole discretion. No off-sets by you in paying the fees set forth herein are allowed without Trimble's prior written approval in its sole discretion.

Your Representations and Warranties to Trimble

You represent and warrant, to Trimble, and Trimble relies on the fact that a) you have the authority to agree to the Agreement, b) you assume all responsibility for your use of this Site and the Service and ensure compliance with the Agreement; and c) you will observe and abide by all applicable statutes, laws, ordinances, rules and regulations. In addition, you acknowledge and agree that applicable FCC rules and regulations are subject to change and Trimble, at its sole discretion, may modify these General Terms and Conditions, to comply with any such changes without liability to you or any third party.

Misuse of Service

Service to you may be restricted or cancelled if there is a reasonable suspicion of misuse or fraudulent use. In the event of misuse or fraudulent use of the Service, which includes, but is not limited to, (i) Attempting or assisting another to access, alter, or interfere with the communications and/or information about another wireless customer; (ii) Tampering with or making an unauthorized connection to the network; (iii) Installing any amplifiers, enhancers, repeaters, or other devices that modify the radio frequencies used to provide the Service; (iv) Subscription fraud; (v) Using the Service in such a manner so as to interfere unreasonably with the use of Service by one or more other wireless customers or end users or to interfere unreasonably with the underlying carrier's ability to provide Service; (vi) Using the Service to convey obscene, salacious, or unlawful information; (vii) Using the Service without permission on a stolen or lost device; (viii) unauthorized access; (ix) Taking any action that imposes an unreasonable or disproportionately large load on the Service infrastructure; (x) Using the Service in such a manner that it is not used in compliance with FCC rules, Trimble may, without notice, take any necessary action, including interrupting, or even terminating your Service. You will be responsible to Trimble for any costs incurred (including attorneys fees) as a result of misuse or fraudulent use of the Service. You agree not to resell or re-bill the Service provided to you to any other individual or entity.

Network Coverage

You acknowledge that Trimble's Service and network access are subject to transmission limitations caused by a variety of factors such as system availability and capacity, system and equipment upgrades, repairs, maintenance, modifications and relocation, customer's equipment, terrain, signal strength, structural conditions, weather, atmospheric conditions, topographical obstructions, governmental regulations, suspected fraudulent activities, limitations or lack of coverage of the underlying carrier service and other natural or manmade conditions. In addition, motor and ignition noise, metal shielding, interference by users of the same or adjacent radio channels and other conditions beyond Trimble's reasonable control may limit or interfere with coverage.

Interruption of Service

Trimble shall not be held liable by you or any third party for any loss or damage arising from Service, or its interruption, transmission errors, defects or any other cause, including, but not limited to, interruption caused by the underlying carrier. Trimble does not assume and shall not have any liability for events beyond Trimble's control or the control of Trimble's subcontractors, or licensors, including, but not limited to, acts of God, acts of any governmental entity, acts of public enemy, strikes or weather conditions. In the event of a total Service outage ("Outage") which is not caused by you or your end users, and which lasts for a period of forty-eight (48) hours or more, a credit allowance will be made at your request in the form of a pro rata adjustment of the fixed charges billed by Trimble to you. Periods of discontinuous Outage may not be accumulated in determining if an Outage has continued for at least forty-eight (48) hours. In order to receive such credit, you must submit a written request to Trimble, stating the date and location of the Outage, the account(s) affected, and such other information as Trimble

may reasonably require. Such notice must be received by Trimble within ten (10) business days following the last date of the period of Outage. Except as provided herein, Trimble shall incur no liability for Outages.

Product Schedules

Submission of Product Schedule(s). From time to time during the term of this Agreement, customer may submit one or more Product Schedules. Unless otherwise specified herein, each Product Schedule shall be independent from, and have no impact on, any other Product Schedule(s). Upon execution by both parties hereto, each such Product Schedule shall be incorporated herein. In the event any of the terms and conditions of a Product Schedule conflict with any term or condition hereof, the terms of this Agreement shall control and take precedence. Customers submitting a Product Schedule to Trimble shall constitute customer's binding and irrevocable offer to purchase the Equipment and/or Service specified thereon.

Acceptance of a Product Schedule. A Product Schedule shall not become effective unless or until it has been "accepted" by Trimble. A Product Schedule shall be deemed "accepted" by Trimble only upon the earlier of (i) the date Trimble ships any Equipment or makes available any Product Schedule under such Product Schedule; or (ii) the date a duly-authorized President or Vice President of Trimble executes the applicable Product Schedule, thereby accepting in writing the terms thereof.

Term and Termination

Term: The term of the Agreement will be specifically outlined in the Product Schedule(s).

Termination for Cause: Either party may terminate this agreement or any Product Schedule in the event of a material breach, which remains uncured after thirty (30) days written notice thereof. Termination for breach shall not absolve either party from their obligations prior to the breach.

General

User Communications.

Trimble does not wish to receive confidential or proprietary information from you through our Site, except as may be necessary to enable us to provide products or services requested by you. Please note that other than personal identifying information, use of which is governed by Trimble's online Privacy Statement, any information or communication you transmit or post to this Site, and any data, images, sounds, text, and other material embodied therein ("User Communication(s)") will be considered non-confidential and non-proprietary. By submitting User Communications to this Site you: (i) agree that Trimble and its designees may disclose, reproduce, display, perform, adapt, modify, distribute, have distributed, and otherwise use such User Communications in any form, anywhere and for any purpose, unless Trimble has by another writing agreed to limit its use thereof; (ii) agree that Trimble is free to use any ideas, concepts, know-how or techniques that you send us for any purpose; and (iii) warrant and represent that the public posting and use of your User Communications by Trimble will not infringe or violate the rights of any third party.

General Disclaimer and Limitation of Liability.

Although Trimble has attempted to provide accurate information on the Site, Trimble assumes no responsibility for the accuracy of the information or materials; nor does Trimble warrant that the information or materials are up to date; that this Site will be available at any particular time or location; that any defects or errors will be corrected; or that materials are free of viruses or other harmful components. Your use of this Site is at your sole risk. Trimble may change the materials or products mentioned at any time without notice. Mention of non-Trimble products or services is for information purposes only and constitutes neither an endorsement nor a recommendation.

TRIMBLE FURNISHES AND YOU ACCEPT THE SERVICE AND THIS SITE (INCLUDING INFORMATION AND MATERIALS THEREIN) ON AN "AS-IS, AS AVAILABLE" BASIS WITH NO

OTHER REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, EXPLICITLY DISCLAIMING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, WARRANTIES OF SECURITY, AND INFRINGEMENT, REGARDING THE SERVICE TO YOU, OR ANY THIRD PARTY. TO THE EXTENT TRIMBLE PROVIDES ACCESS TO INFORMATION PROVIDED BY OTHER SOURCES, TRIMBLE ACCEPTS NO LIABILITY FOR AND MAKES NO WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE CONTENT THEREOF. YOU HAVE NOT RELIED ON AND WILL NOT CLAIM THAT IT IS ENTITLED TO THE BENEFITS OF ANY REPRESENTATIONS, PROMISES, DESCRIPTION OF SERVICES OR OTHER STATEMENT NOT SPECIFICALLY SET FORTH IN THESE TERMS OF USE. The parties agree that this is a contract for services, not goods and therefore the Uniform Commercial Code does not apply. Trimble is not responsible for problems caused by changes made by you or a third party, problems with your computer hardware, operating systems, or operating characteristics, or for problems in the interaction of the hardware or software with non-Trimble software components.

THE ENTIRE LIABILITY OF TRIMBLE AND THIRD PARTIES WHO CONTRIBUTE TO THE SERVICE AND YOUR EXCLUSIVE REMEDY UNDER OR FOR BREACH OF THESE TERMS OF USE SHALL BE REFUND OF THE SERVICE FEES PAID FOR THE TWO MONTH PERIOD PRECEDING THE DATE THE CLAIM AROSE, REGARDLESS OF ANY DEFECT IN THE SERVICE, SOFTWARE, COMMUNICATIONS NETWORKS, OR NEGLIGENCE ON TRIMBLE'S PART, OR TRIMBLE'S SUBCONTRACTOR'S PART AND REGARDLESS OF THE CLAIM OR FORM OF ACTION. IN NO EVENT WILL TRIMBLE AND THIRD-PARTIES WHO CONTRIBUTE TO THE, SERVICE BE LIABLE TO YOU OR TO ANY THIRD PARTY FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION, COST OF PROCUREMENT OF SUBSTITUTE GOODS, OR ANY OTHER PECUNIARY LOSS) THAT YOU OR ANY THIRD PARTY MIGHT INCUR DUE TO YOUR USE OR INABILITY TO USE THE TRIMBLE SERVICE OR TRIMBLE'S FAILURE TO PROVIDE SUPPORT SERVICES, EVEN IF TRIMBLE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

YOU ASSUME ALL RISK OF USE OF THE SERVICE, INCLUDING, BUT NOT LIMITED TO, THE RISK OF TRAFFIC ACCIDENTS WHILE USING THE SERVICE. THE SERVICE IS NOT GUARANTEED AGAINST EAVESDROPPERS OR INTERCEPTORS. YOU AGREE THAT TRIMBLE SHALL NOT BE LIABLE TO YOU OR ANY THIRD PARTY FOR LACK OF PRIVACY OR SECURITY. YOU AGREE TO DEFEND, INDEMNIFY AND HOLD HARMLESS TRIMBLE AND THIRD PARTIES WHO CONTRIBUTE TO THE SERVICE FROM ANY LOSS, LIABILITY OR DAMAGE, CONSEQUENTIAL OR OTHERWISE, OCCASIONED BY, GROWING OUT OF, OR ARISING FROM YOUR BREACH OF THESE TERMS OF USE, USE OR MISUSE OF THE SERVICE OR ANY OTHER ACT OR FAILURE TO ACT BY YOU, YOUR AGENTS OR EMPLOYEES BECAUSE SOME JURISDICTIONS PROHIBIT THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

Links to Third Party Sites.

The Site may contain links to third party sites. Access to any other Internet site linked to the Site is at the user's own risk. Trimble does not control, and is not responsible for the accuracy or reliability of any information, materials, data, opinions, advice or statements made on those sites, or about any products found at those sites, or about any search results that may be obtained from using them. Trimble provides these links merely as a convenience and the inclusion of such links does not imply an endorsement.

Carrier Required Disclosures.

Customers using the GeoManager Service on @Road iLM Devices

For Carrier Services on the AT&T Wireless GSM/GPRS Network, Purchased by You from Trimble as Part of the Service:

YOU HAVE NO CONTRACTUAL RELATIONSHIP WITH CARRIER AND YOU ARE NOT A THIRD PARTY BENEFICIARY OF ANY AGREEMENT BETWEEN TRIMBLE AND CARRIER. YOU UNDERSTAND AND AGREE THAT CARRIER SHALL HAVE NO LEGAL, EQUITABLE, OR OTHER LIABILITY OF ANY KIND TO YOU. IN ANY EVENT, REGARDLESS OF THE FORM OF THE ACTION, WHETHER FOR BREACH OF CONTRACT, WARRANTY, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, YOUR

EXCLUSIVE REMEDY FOR CLAIMS ARISING IN ANY WAY IN CONNECTION WITH TRIMBLE'S RESALE OF THE CARRIER SERVICES, FOR ANY CAUSE WHATSOEVER, INCLUDING BUT NOT LIMITED TO ANY FAILURE OR DISRUPTION OF CARRIER SERVICES, IS LIMITED TO PAYMENT OF DAMAGES IN AN AMOUNT NOT TO EXCEED THE AMOUNT PAID BY YOU FOR THE CARRIER SERVICES DURING THE TWO (2) MONTH PERIOD PRECEDING THE DATE THE CLAIM AROSE.

CUSTOMER INDEMNIFICATION. YOU SHALL INDEMNIFY AND HOLD HARMLESS CARRIER AND ITS OFFICERS, EMPLOYEES, AND AGENTS AGAINST ANY AND ALL CLAIMS, INCLUDING WITHOUT LIMITATION CLAIMS FOR LIBEL, SLANDER, OR ANY PROPERTY DAMAGE, PERSONAL INJURY OR DEATH, ARISING IN ANY WAY, DIRECTLY OR INDIRECTLY, IN CONNECTION WITH YOUR AGREEMENT WITHOR THE USE, FAILURE TO USE, OR INABILITY TO USE THE TELEPHONE, DATA AND/OR MESSAGING NUMBER ASSIGNED FOR YOU TO OBTAIN ACCESS TO THE CARRIER SERVICE (HEREINAFTER, THE "NUMBER"), EXCEPT WHERE THE CLAIMS RESULT FROM CARRIER'S GROSS NEGLIGENCE OR WILLFUL MISCONDUCT. THIS INDEMNITY SHALL SURVIVE THE TERMINATION OF YOUR AGREEMENT WITH TRIMBLE. PROPRIETARY RIGHTS. YOU HAVE NO PROPERTY RIGHT IN ANY NUMBER ASSIGNED TO IT, AND UNDERSTAND THAT ANY SUCH NUMBER CAN BE CHANGED FROM TIME TO TIME. YOU UNDERSTAND THAT TRIMBLE AND CARRIER CANNOT GUARANTY THE SECURITY OF WIRELESS TRANSMISSIONS, AND WILL NOT BE LIABLE FOR ANY LACK OF SECURITY RELATING TO THE USE OF THE CARRIER SERVICES. YOU ACKNOWLEDGE THAT CARRIER SERVICES ARE MADE AVAILABLE ONLY WITHIN THE OPERATING RANGE OF CARRIER'S GSM/GPRS WIRELESS NETWORK. THE CARRIER SERVICES MAY BE TEMPORARILY REFUSED, INTERRUPTED, OR LIMITED BECAUSE OF: (A) FACILITIES LIMITATIONS; (B) TRANSMISSION LIMITATIONS CAUSED BY ATMOSPHERIC, TERRAIN, OTHER NATURAL OR ARTIFICIAL CONDITIONS ADVERSELY AFFECTING TRANSMISSION, AND OTHER CAUSES REASONABLY OUTSIDE OF CARRIER'S CONTROL; OR (C) EQUIPMENT MODIFICATIONS, UPGRADES, RELOCATIONS, REPAIRS, AND OTHER SIMILAR ACTIVITIES NECESSARY FOR THE PROPER OR IMPROVED OPERATION OF THE CARRIER SERVICES. CONNECTIONS MAY BE "DROPPED" (I.E., INVOLUNTARILY DISCONNECTED) FOR A VARIETY OF REASONS, INCLUDING, WITHOUT LIMITATION, ATMOSPHERIC CONDITIONS, TOPOGRAPHY, WEAK BATTERIES, SYSTEM OVERCAPACITY, MOVEMENT OUTSIDE A SERVICE AREA OR GAPS IN COVERAGE WITHIN A SERVICE AREA. NEITHER CARRIER NOR TRIMBLE SHALL INCUR LIABILITY FOR ITS INABILITY TO PROVIDE ADEQUATE CARRIER SERVICES IF SUCH INABILITY IS DUE TO THE ABOVE LIMITATIONS OR TO CAUSES BEYOND THE REASONABLE CONTROL OF CARRIER. CARRIER WILL PROVIDE THE SAME ACCESS TO ROAMING CAPABILITIES (INCLUDING "IN-AREA" ROAMING WHERE AVAILABLE) THAT IT MAKES AVAILABLE TO OTHER SIMILARLY SITUATED USERS OF CARRIER SERVICES, PROVIDED THAT EQUIPMENT WITH SIMILAR TECHNICAL CAPABILITIES AND PROGRAMMING IS USED BY SUCH OTHER USERS. THE AVAILABILITY OF ROAMING SERVICES, AND THE CHARGES FOR THOSE SERVICES, IS DEPENDENT IN PART ON THE TYPE OF EQUIPMENT USED BY THE END USER AND THE PROGRAMMING OF THAT EQUIPMENT. CARRIER AND TRIMBLE MAKE NO WARRANTIES OR REPRESENTATIONS AS TO THE AVAILABILITY OR QUALITY OF ROAMING SERVICE PROVIDED BY OTHER WIRELESS CARRIERS, AND CARRIER AND TRIMBLE SHALL HAVE NO LIABILITY WHATSOEVER FOR ANY ERRORS, OUTAGES, OR FAILURES OF ROAMING SERVICES PROVIDED BY OTHER WIRELESS CARRIERS. NEITHER CARRIER NOR TRIMBLE SHALL HAVE ANY LIABILITY TO YOU REGARDING THE UNAVAILABILITY OR SUSPENSION OF ROAMING SERVICE BY OTHER WIRELESS CARRIERS. Carrier and Trimble reserve the right to deny Carrier Services at the point of activation to any the equipment used by you to originate or receive wireless transmissions if such items of equipment appear on Carrier's service deny lists. Carrier and Trimble shall have no liability to you for denial of Carrier Services for numbers appearing on Carrier's service deny lists, and, further, shall have no liability for failing to make a requested modification to a number appearing on Carrier's service deny lists. You will comply with such policies and procedures reasonably established by Carrier for obtaining numbers and for activating or deactivating Carrier Services, any of which may be modified by Carrier from time to time. You shall not commit any act of abuse or fraud in connection with its use or access to the Carrier Services. Such an act of abuse or fraud may include any of the acts set forth herein. You acknowledge that Trimble and/or Carrier may terminate the Carrier Services in the event you commit any such act of abuse or fraud in its use or access to the Carrier Services. Acts of abuse or fraud may include: (i) Attempting or assisting another to access, alter, or interfere with the communications of and/or information about another wireless customer; (ii) Tampering with or making an unauthorized connection to the Carrier Network; (iii) Installing any amplifiers, enhancers, repeaters, or other devices that modify the radio frequencies used to provide the Carrier Service; (iv) Subscription fraud; (v) Using service in such a manner so as to interfere unreasonably with the use of services by one or more other wireless customers or to interfere unreasonably with Carrier's ability to provide service; (vi)

Using Carrier Services to convey obscene, salacious, or unlawful information; or (vii) Allowing or facilitating a third party's unauthorized access to the Carrier Services.

For Carrier Services on the Sprint PCS 1xRTT Network, Purchased by You from Trimble as Part of the Service:

You acknowledge and agree that (a) the Carrier Services are available to compatible and Carrier-certified devices only, within the operating range of the Carrier Network; and (b) the Carrier Services may be temporarily refused, interrupted, curtailed or otherwise limited because of transmission limitations caused by any factor, including atmospheric, environmental or topographical conditions, facilities limitations or constraints, or facilities changes, modifications, updates, relocations, repairs, maintenance or other similar activities necessary for the proper or improved operation of the Carrier Network. Carrier's obligation to provide the Carrier Services is conditioned on Carrier's ability to obtain, retain and maintain suitable facilities and licenses. If Trimble or you creates situations that cause highly concentrated usage in limited areas on the Carrier Network, you may encounter temporary capacity constraint related symptoms, such as excessive call blocking or call dropping. Carrier shall not be liable to you with respect to any claim or damage related to or arising out of or in connection with any such temporary capacity constraint, any coverage gap, or any temporary Carrier Service refusal, interruption, curtailment, or other limitation, to the extent any of the foregoing is the result of Trimble's or your excessive usage hereunder. Carrier is not responsible to you for any content, including information, opinions, advice, statement, or services that are provided by third parties and accessible through the Carrier Services, or any damages resulting therefrom. Carrier does not guarantee the accuracy, completeness, or usefulness of information that is obtained through the Carrier Services, and makes no representation or warranty regarding the provider, scope or nature of the content of services that we be available by default to you. You will only use devices in connection with the Carrier Services that (a) are compatible with the Carrier Services and Carrier Network; (b) comply with Carrier's requirements for compatibility of devices, including the successful completion of Carrier's certification process; and (c) comply with all applicable FCC or state or local legal requirements for compatibility with the Carrier Services and Carrier Network. Your failure to comply with the foregoing provision may result in immediate termination of the Carrier Service. Carrier will not be responsible for the operation, testing, or maintenance of any devices. Carrier may terminate the Carrier Service immediately if Carrier ceases to be licensed by the appropriate federal, state or local governmental authorities to provide the Carrier Services in the geographic area in which the Carrier Services had been provided for your use.

For Carrier Services on the Nextel iDEN Network, Purchased by You directly from Carrier:

You and Carrier shall enter into separate agreement(s) for the Carrier Services. In no event shall Trimble be liable for any term, condition, obligation, or breach thereof or thereunder. Trimble is not a third party beneficiary of any agreement between you and Carrier, and you understand and agree that Trimble shall have no legal, equitable, or other liability of any kind to you in connection with the Carrier Services or the agreement(s) pertaining thereto. Carrier reserves the right to deny access to and use of Carrier Services and Carrier Network in the event Carrier determines, in its sole discretion, that continued use of the Service is causing or likely to cause disruption or interference with the Carrier Network or Carrier Services, or their use by other third parties. You agree that Carrier shall have no liability for denying such access or use of the Carrier Services or Carrier Network. You agree that it shall not use, copy, alter, or reproduce any trademark, trade name, or service mark (registered or unregistered) of Carrier without first obtaining both Carrier's prior written consent. Further, you shall not intentionally engage in conduct that degrades or misrepresents Carrier's trade name(s) or service (including but not limited to the Carrier Services) in any way.

For Carrier Services on the TELUS Mobility iDEN Network, Purchased by You directly from Carrier:

You and Carrier shall enter into separate agreement(s) for the Carrier Services. In no event shall Trimble be liable for any term, condition, obligation, or breach thereof or thereunder. Trimble is not a third party beneficiary of any agreement between you and Carrier, and you understand and agree that Trimble shall have no legal, equitable, or other liability of any kind to you in connection with the Carrier Services or the agreement(s) pertaining thereto. The Carrier Services on the Carrier Network are provided on an "as is" and "as available" basis. Use of the Carrier Services is at your sole risk. Carrier does not guarantee timely, secure, error-free or uninterrupted service or receipt of material or message transmitted over or through Carrier Network or the networks of other companies or in respect of the Internet. The Carrier Services on the Carrier Network may fail or be interrupted for reasons including, but not limited to, environmental conditions, technical limitations, defects or failures, limitations or the systems of other telecommunications companies, emergency or public safety requirements, or causes beyond Carrier's reasonable control. Carrier disclaims all liabilities, warranties and conditions (express, implied, or statutory) relating to the Carrier Services on the Carrier Network, and any phone. Your use of the Carrier Services and access to the Carrier

Network shall conform to the standards, terms, and conditions set forth in Carrier's privacy policy, which can be found at www.telusmobility.com.

YOU HAVE NO CONTRACTUAL RELATIONSHIP WITH THE UNDERLYING WIRELESS SERVICE CARRIER AND YOU ARE NOT A THIRD PARTY BENEFICIARY OF ANY AGREEMENT BETWEEN TRIMBLE AND THE UNDERLYING CARRIER. YOU UNDERSTAND AND AGREE THAT THE UNDERLYING CARRIER SHALL HAVE NO LEGAL, EQUITABLE, OR OTHER LIABILITY OF ANY KIND TO YOU. IN ANY EVENT, REGARDLESS OF THE FORM OF THE ACTION, WHETHER FOR BREACH OF CONTRACT, WARRANTY, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, YOUR EXCLUSIVE REMEDY FOR CLAIMS ARISING IN ANY WAY IN CONNECTION WITH THESE TERMS OF USE, FOR ANY CAUSE WHATSOEVER, INCLUDING BUT NOT LIMITED TO ANY FAILURE OR DISRUPTION OF SERVICE PROVIDED HEREUNDER, IS LIMITED TO PAYMENT OF DAMAGES IN AN AMOUNT NOT TO EXCEED THE AMOUNT PAID BY YOU FOR THE SERVICES DURING THE TWO (2) MONTH PERIOD PRECEDING THE DATE THE CLAIM AROSE. YOU SHALL INDEMNIFY AND HOLD HARMLESS THE UNDERLYING WIRELESS SERVICE CARRIER AND ITS OFFICERS, EMPLOYEES, AND AGENTS AGAINST ANY AND ALL CLAIMS, INCLUDING, WITHOUT LIMITATION, CLAIMS FOR LIBEL, SLANDER, OR ANY PROPERTY DAMAGE, PERSONAL INJURY OR DEATH, ARISING IN ANY WAY, DIRECTLY OR INDIRECTLY, IN CONNECTION WITH THESE TERMS OF USE OR THE USE, FAILURE TO USE, OR INABILITY TO USE THE NUMBER EXCEPT WHERE THE CLAIMS RESULT FROM THE UNDERLYING CARRIER'S GROSS NEGLIGENCE OR WILLFUL MISCONDUCT. THIS INDEMNITY SHALL SURVIVE THE TERMINATION OF THE AGREEMENT. YOU HAVE NO PROPRIETARY RIGHT IN ANY NUMBER ASSIGNED TO IT AND UNDERSTANDS THAT ANY SUCH NUMBER CAN BE CHANGED FROM TIME TO TIME. YOU UNDERSTAND THAT TRIMBLE AND THE UNDERLYING CARRIER CANNOT GUARANTEE THE SECURITY OF WIRELESS TRANSMISSIONS, AND WILL NOT BE LIABLE FOR ANY LACK OF SECURITY RELATING TO THE USE OF THE SERVICES.

Confidentiality.

"Confidential Information" of a party shall mean any information disclosed by that party to the other pursuant to this Agreement or pursuant to any Product Schedule hereunder which is in written, graphic, machine readable or other tangible form and is marked "Confidential," "Proprietary" or in some other manner to indicate its confidential nature. Confidential Information may also include oral information disclosed by one party to the other pursuant to this Agreement or any Product Schedule hereunder, provided that such information is designated as confidential at the time of disclosure and is reduced to writing by the disclosing party within a reasonable time (not to exceed thirty (30) days) after its oral disclosure, and such writing is marked in a manner to indicate its confidential nature and delivered to the receiving party. The terms and conditions of this Agreement and of each applicable Product Schedule shall be considered Confidential Information of Trimble.

Nondisclosure. Each party shall treat as confidential all Confidential Information of the other party, shall not use such Confidential Information except as set forth herein, and shall not disclose such Confidential Information to any third party. Without limiting the foregoing, each of the parties shall use at least the same degree of care that it uses to prevent the disclosure of its own confidential information of like importance to prevent the disclosure of Confidential Information disclosed to it by the other party under this Agreement, which shall in no event be less than reasonable care. Each party shall promptly notify the other party of any actual or suspected misuse or unauthorized disclosure of the other party's Confidential Information.

Exceptions. Notwithstanding the above, neither party shall have liability to the other with regard to any Confidential Information of the other which the receiving party can prove: (i) was in the public domain at the time it was disclosed or has entered the public domain through no fault of the receiving party; (ii) was known to the receiving party, without restriction, at the time of disclosure; (iii) is disclosed with the prior written approval of the disclosing party; or (iv) is disclosed pursuant to the order or requirement of a court, administrative agency, or other governmental body; provided, however, that the receiving party shall provide prompt notice thereof to the disclosing party to enable the disclosing party to seek a protective order or otherwise prevent or restrict such disclosure. Notwithstanding anything in this Agreement or any applicable Product Schedule to the contrary, Trimble may disclose to customer any Confidential Information of any customer affiliate under any applicable Product Schedule between Trimble and such customer affiliate, without liability or obligation hereunder.

Intellectual Property.

All right to the intellectual property whether relating to the Equipment, Software, or the Service provided are the sole property of Trimble and are protected by worldwide copyright laws and international copyright treaties, as well as other intellectual property laws and treaties. All rights not expressly granted under this Agreement are reserved and retained by Trimble and its suppliers.

Indemnification. Trimble, at its own expense, shall indemnify and hold customer harmless from and against any finally adjudicated loss, damage, liability or expense on account of any claim(s), and shall defend any suit and dispose of any claim(s) or other proceedings, arising from an allegation that customer's use of Equipment and/or Service in accordance with this Agreement infringes any United States patent, copyright, or other proprietary right. In the event that the Equipment or Service is, or in Trimble's opinion is likely to be, enjoined due to the type of infringement described in this Section 12(a), Trimble, at its option and expense, may: (i) procure for customer the right under such patent or copyright to use the infringing Equipment or Service; (ii) modify the infringing Equipment or Service so that they become non-infringing; (iii) replace the infringing Equipment or Service with functionally equivalent non-infringing products or services; or (iv) if Trimble determines that the foregoing alternatives are not reasonably available, accept return of the infringing Equipment or cancellation of the infringing Service, or applicable part thereof, and refund the aggregate payments paid for such Equipment less an amount equal to the total purchase price for such Equipment multiplied by the percentage of the Subscription Term relating to the returned Equipment that had elapsed as of the date of return of such Equipment. Trimble shall not be liable for any costs or expenses incurred without its prior written authorization.

Exceptions. Notwithstanding the provisions of Section 12(a) above, Trimble shall have no liability to the extent that any claim or action would have been avoided but for: (i) the combination, operation or use of the Equipment or Service with any other product(s) or service(s) not provided by Trimble, (ii) modification of the Equipment or Service after delivery by Trimble, unless such modification is performed by Trimble or a duly-authorized Trimbleagent and authorized in advance in writing by Trimble, or (iii) incorporation of the Equipment or Service into any of Customer's own product(s) or service(s).

Entire Liability. THE FOREGOING PROVISIONS OF THIS SECTION STATE THE ENTIRE LIABILITY AND OBLIGATIONS OF TRIMBLE AND THE EXCLUSIVE REMEDY OF CUSTOMER WITH RESPECT TO ANY ALLEGED INFRINGEMENT OF ANY PATENTS, COPYRIGHTS, TRADEMARKS OR OTHER INTELLECTUAL PROPERTY RIGHTS BY THE EQUIPMENT OR SERVICE, OR ANY PART THEREOF.

Procedure. Trimble's indemnification obligations under the Intellectual Property section shall be subject to and conditioned upon customer: (i) giving Trimble sole control of any such claim, suit or proceeding or settlement negotiations; (ii) notifying Trimble promptly in writing of such claim, suit or proceeding and giving Trimble authority to proceed as contemplated herein; (iii) at Trimble's reasonable expense, giving proper and full information and assistance to settle and/or defend any such claim, suit or proceeding; and (iv) agreeing not to enter into any settlement of such claim, suit or proceeding.

Copyright and Trademark Information. Copyright information and a list of United States trademarks owned by Trimble are set forth at <http://www.trimble.com/copyrights.html>. Any questions concerning their use, or whether a trademark that does not appear on this list is a trademark of Trimble should be referred to Trimble's Intellectual Property department at U.S. 1-408-481-8000.

U.S. Government Restricted Rights. Use, duplication, or disclosure by the United States Government is subject to restrictions as set forth in these General Terms and Conditions, and as provided in DFARS 227.7202-1(a) and 227.7202-3(a) (1995), DFARS 252.227-7013(c)(1)(ii) (OCT 1988), FAR 12.212(a) (1995), FAR 52.227-19, or FAR 52.227-14(ALT III), as applicable. Use of the Service and any materials related thereto by the Government constitutes acknowledgment of Trimble's proprietary rights in them.

Assignment

The Agreement may not be assigned in whole or in any part by you to any other entity without Trimble's written consent, which may be withheld in Trimble's sole discretion. Trimble reserves the right to assign, delegate, or subcontract any of its rights and/or obligations hereunder to a third party.

Export

You shall not export, directly or indirectly, any item covered by the Agreement to any country in violation of any law or regulation, including without limitation any law or regulation of the U.S. Government or any agency. You are solely responsible for complying with all applicable export and import regulations and obtaining all necessary export and import licenses or permits -for the direct or indirect export or import of any item covered by the Agreement. You will defend, indemnify and hold Trimble harmless against any liability (including attorneys' fees) arising out of your failure to comply with the terms of this paragraph.

General Provisions

These General Terms and Conditions, along with any relevant product schedules and end user license agreement(s), constitute the entire agreement between you and Trimble, and supersede any and all prior agreements, negotiations and communications (whether written, oral or electronic) between you and Trimble with respect to the Service. No change, modification, or waiver of the terms and conditions of the Agreement, shall be binding on Trimble unless made in writing, with Trimble's approval. The Agreement shall be governed by and construed in accordance with the laws of the state of California and applicable United States federal law, without reference to "conflict of laws" provisions or principles. The United Nations Convention on Contracts for International Sale of Goods will not apply to the Agreement. Jurisdiction and venue of any dispute or legal action brought by either party arising out of or relating to the Agreement, the items or services provided under the Agreement, or the commercial relationship of the parties, shall lie exclusively in, or be transferred to, the courts of the County of Santa Clara and/or the Northern District of California. You hereby submit, consent to, and agree not to contest such jurisdiction and venue. You agree that regardless of any statute or law to the contrary, any claim or cause of action arising out of or related to use of the Service must be filed within one (1) year after such claim or cause of action arose or be forever barred. The prevailing party in any dispute or legal action shall recover from the other party its reasonable attorneys' fees and costs of suit in addition to any other relief granted. The failure or delay of Trimble to insist upon strict performance of any of these General Terms and Conditions or to exercise any rights or remedies hereunder shall not be construed as a waiver of its rights to assert any of the same or to rely on any such Terms or Conditions at any time thereafter. These General Terms and Conditions may be severable and the invalidity, illegality or unenforceability in whole or in part of any provision shall not affect the validity of other provisions hereof. To the extent of any such invalidity, illegality or unenforceability the court shall have authority and jurisdiction to sever such provision and to add to these Terms and Conditions a provision similar in terms and intended effect as may be possible and be legal, valid and enforceable.

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FEB. 19. 2009 10:53AM

West WV DIV OF PURCHASE



Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER NO. 5738 P. 1/7
639000029

ADDRESS CORRESPONDENCE TO ATTENTION OF
MICHAEL AUSTIN
304-558-2402

RFQ COPY

TYPE NAME/ADDRESS HERE

RFQ COPY

DIVISION OF HIGHWAYS
PLANNING DIVISION
BUILDING 5, ROOM A848
1900 KANAWHA BOULEVARD EAST
CHARLESTON, WV
25305-0430

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
02/16/09				
BID OPENING DATE: 02/25/09		BID OPENING TIME 01:30PM		

LINE	QUANTITY	UOP	QTY NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	EA		TRACK GPS VEHICLE TRACKING SYSTEM, COVERT TRI-BAND ANTENNA ADDENDUM NO. 3 THE ATTACHED PAGES 9, 10, 11, AND 12 REPLACES THE ORIGINAL PAGES 9, 10, 11, AND 12 IN ITS ENTIRETY. ANSWERS TO QUESTIONS ATTACHED. BID OPENING DATE AND TIME CHANGED FROM: 02/18/09 AT 1:30 P.M. TO: 02/25/09 AT 1:30 P.M. NO OTHER CHANGES.		

RECEIVED

2009 FEB 25 P 12: 31

PURCHASING DIVISION
STATE OF WV

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE TELEPHONE 703-822-8602 DATE 2/20/09

TITLE VP FERN ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

GENERAL TERMS & CONDITIONS
REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. All quotations are governed by the *West Virginia Code* and the *Legislative Rules* of the Purchasing Division.
4. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
5. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods, this Purchase Order/Contract becomes void and of no effect after June 30.
6. Payment may only be made after the delivery and acceptance of goods or services.
7. Interest may be paid for late payment in accordance with the *West Virginia Code*.
8. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
9. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
10. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
11. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.
12. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
13. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, this Contract may be deemed null and void, and terminated without further order.
14. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, and available online at the Purchasing Division's web site (<http://www.state.wv.us/admin/purchase/vrc/hipaa.htm>) is hereby made part of the agreement. Provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
15. **WEST VIRGINIA ALCOHOL & DRUG-FREE WORKPLACE ACT:** If this Contract constitutes a public improvement construction contract as set forth in Article 1D, Chapter 21 of the West Virginia Code ("The West Virginia Alcohol and Drug-Free Workplace Act"), then the following language shall hereby become part of this Contract: "The contractor and its subcontractors shall implement and maintain a written drug-free workplace policy in compliance with the West Virginia Alcohol and Drug-Free Workplace Act, as set forth in Article 1D, Chapter 21 of the West Virginia Code. The contractor and its subcontractors shall provide a sworn statement in writing, under the penalties of perjury, that they maintain a valid drug-free work place policy in compliance with the West Virginia Alcohol and Drug-Free Workplace Act. It is understood and agreed that this Contract shall be cancelled by the awarding authority if the Contractor: 1) Fails to implement its drug-free workplace policy; 2) Fails to provide information regarding implementation of the contractor's drug-free workplace policy at the request of the public authority; or 3) Provides to the public authority false information regarding the contractor's drug-free workplace policy."

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division.
2. **SPECIFICATIONS:** Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as EQUAL to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Complete all sections of the quotation form.
4. Unit prices shall prevail in case of discrepancy.
5. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
6. **BID SUBMISSION:** All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130

ADDENDUM NO. 3

9

Fleet Productivity Reporting Mandatory Requirements including:

- Run ranking report for safety, measuring acceleration exerted on the vehicle during various maneuvers such as turns, starts, stops and speeds
- Report driver safety scores for each individual driver as a composite score based on factors including turns, speed, stops and starts.
- Stop reports with speed and duration thresholds
- Idle Time reporting
- Capture duration time to detect entry and exit of sites
- Track mileage on engine and run time hours
- All inclusive activity reporting
- Run reports for multiple drivers simultaneously
- Speeding reports containing speed and duration thresholds
- Visitation reports
- Event reporting including ignition on, ignition off, enter geo-site, exit geo-site, start moving, stop moving and speeding information
- Non-work hour asset activity reporting
- User defined upcoming vehicle maintenance reporting
- Drivers hours and mileage reporting
- Work/Home Sites by site and by vehicle

Integration:

- ✓ - SQL Data feed from Vendor's Data Center allowing for customized reporting including trend analysis
- ✓ - MSMQ messaging capabilities

Hardware Components

- ✓ GENERAL SPECIFICATIONS for In Vehicle Display (IVD) and On Board Black Box (OBBB)

- ✓ Input Voltage: 9.0 – 32.0 VDC GPRS or CDMA TNC (receptacle) 50 Ω
- Status LEDs: GPS (green), GPRS OR CDMA (amber)

Current Consumption (Typical)

- ✓ Transmitting with IVD. 340 mA (1.6 A peak) at 12 VDC
- Transmitting without IVD. 270 mA (1.5 A peak) at 12 VDC
- Not transmitting with IVD. 160 mA at 12 VDC
- Not transmitting without IVD. 90 mA at 12 VDC
- Not transmitting sleep mode. <10 mA at 12 VDC

- Inputs & Outputs
- Discrete Inputs. (4) switch closures
- Ignition Sense Off. <0.8 V
- Ignition Sense On. >2.4 V
- Pulse Counting Inputs. (3) minimum pulse width: 500 μ s
- Discrete Outputs. (3) 200 mA low-side drivers
- Sensor Power Output. (1) 150 mA at 11.8 V \pm 1.0 V

- ✓ Message Formats MSMQ
- Status LEDs . GPS (green), GPRS or CMDA (amber)

PHYSICAL SPECIFICATIONS

✓ Assembly . Top: Injection molded plastic with integrated shield
Base: Aluminum
Size. 228 mm x 121 mm x 36 mm (W x D x H)
(8.97" W x 4.76" D x 1.42" H)
Weight . 485 g (1 lb, 1.1 oz.)

Connectors

✓ IVD Port. DB-9 (receptacle)
Serial Port. EIA-232 RJ-45 (receptacle)
Power & Discrete I/O Molex Micro-Fit 3.0 16-pin dual row locking receptacle SIM
Carrier. Antennas GPS.SMA (receptacle) 50 Ω
GPRS or CDMA Quad Band. TNC (receptacle) 50 Ω

GPS SPECIFICATIONS

✓ Receiver . L1 frequency, C/A code (SPS)
8-channel continuous tracking receiver
Update Rate . Once per second maximum
Accuracy,
Position. < 10 meters (50 % CEP)
Velocity. < 0.5 meter/second
First acquisition
Cold start . < 180 seconds (90 %)
Warm start. < 45 seconds (90 %)
Reacquisition after signal loss . <2 seconds (90 %)
Datum . WGS-84

GPRS or CMDA SPECIFICATIONS

✓ Global. Internal GSM/GPRS Module, Multislot Class 12
Quad Band GSM 850/900/1800/1900MHz
SIM . 3V
Regulatory Approvals . FCC, PTCRB

CDMA Specifications

✓ **CMDA 1xRTT: Internal Kyocera M200 Module 1xRTT:
Dual Band CDMA 800/1900 MHz**

✓ **Regulatory Approvals: FCC Part 15/22/24
Network Approvals: Verizon, Sprint**

ENVIRONMENTAL SPECIFICATIONS**Temperature**

✓ **Normal Operation. -30 °C to 60 °C (-22 °F to 149 °F)
Non Operating. -40 °C to 85 °C (-40 °F to 185 °F)
Humidity. 5% to 95% RH, non-condensing at +40 °C**

Vibration

✓ **0.008 g²/Hz . 5 Hz
+3 dB/Octave . 5 Hz to 20 Hz
0.05 g²/Hz . 20 Hz to 100 Hz
-3 dB/Octave . 100 Hz to 800 Hz
0.001 g²/Hz . 800 Hz to 1000 Hz**

Shock

✓ **Operational. 40 g for 11 ms
Non-Operational. 75 g for 6 ms
Vehicle transients. ETS 301 489-1; section 9.6**

Installation

✓ **Vendor must visit on-site and provide certified training service and related equipment to train WV DOT on self install and diagnostics.**

✓ **Acknowledged - Please see proposal**

Answers to GPS North America/SignalTrac Questions

✓ 1. Do you need this information to display over the standard Google Map that displays vehicle location?

- *Ability to display current weather conditions including Doppler radar at back office System mapping*

✓ 2. Running ranking reports for safety, measuring acceleration exerted on the vehicle during various maneuvers such as turns, etc. What are you looking to accomplish from this data?

- *WV DOT needs to address aggressive driving and the accidents that result are significant contributors to the cost of operation. I want to be able to measure the average vehicle speed via high resolution GPS positioning, while **measuring G Forces exerted on right and left turns**. Measuring acceleration exerted on the vehicle during various starts, and stops and turns will help the safety of my fleet.*

1. *I need to calculate a score for each maneuver. (start, stop, right and left hand turns)*
2. *Reports scores for individual drivers as well as a composite score*
3. *Compares individual scores to the average scores or the fleet.*

✓ 3. Ability to utilize multiple cell carriers... Verizon and Sprint to not utilize GPRS. You cannot have some vehicles with Verizon SIMs and some vehicles using AT&T SIMS. Please briefly explain your need to use multiple carriers.

- *We might Mix and Match Carriers due to different geography based vehicles*

Acknowledged- Please see proposal sent.

Trimble is able to meet all of the requirements.

Michael Sobhi

WHITE PAPER



The DriveSafe Driver Safety Scorecard: Measuring and Monitoring for Safety

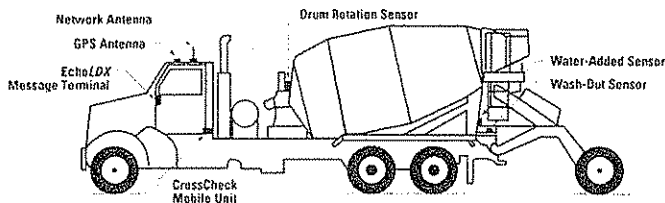
Trimble Mobile Solutions, 3650 Concorde Parkway, Suite 150, Chantilly, VA 20121, USA
(Toll Free) 877-883-4367—Phone 703-502-5600—Fax 1-703-502-8165

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Last updated September, 2006.

www.trimblems.com

THE CHALLENGE

Driver safety and truck rollovers are inherent issues in the ready mixed concrete industry. Concrete producers and truck drivers have critical concerns and responsibilities regarding profits, equipment operating costs and safety. In addition to the lost productivity that results from an accident, there are high direct repair and potential liability costs. Other cost factors attributable to unsafe driving behaviors that can lead to accidents are higher insurance rates and increased fuel, tire and maintenance costs.



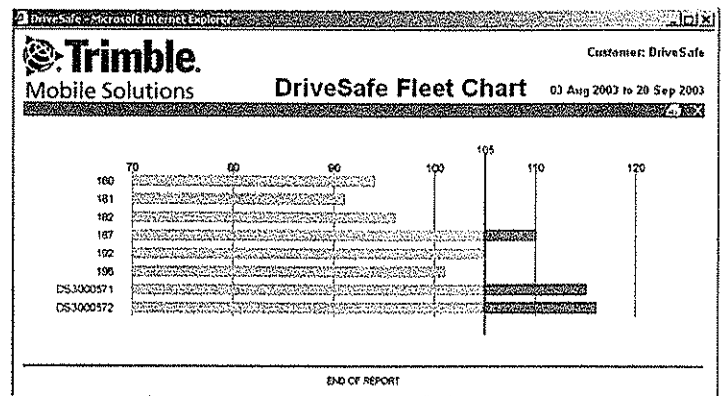
To meet these concerns, Trimble introduced the DriveSafe™ Driver Safety Scorecard, a product that exposes unsafe driving habits through detection of accelerations exerted on the truck during various driving maneuvers such as turns, starts, and other, less-noticeable forms of aggressive driving. The product, originally commissioned by the McNeilus Companies in 2002, is simple to install and maintain and has a low acquisition and operating cost. With driver safety being an industry-wide concern, the National Ready Mixed Concrete Association (NRMCA) has linked the Trimble product through its Web site.

THE DRIVESAFE SOLUTION

DriveSafe is a complete system solution that provides reports to vehicle owners and fleet managers detailing how their drivers operate their vehicles. The system includes:

- a truck-based mobile unit containing a computer processor, a GPS receiver, and a wireless modem
- web-accessed data analysis
- report generation software
- a secure database.

DriveSafe measures the accelerations exerted on the truck during various driving maneuvers (turns, starts, stops, etc.) and compares these measurements to the average for the customer's fleet or to the industry as a whole. Scores are calculated for several categories of maneuvers and the individual scores—plus a composite Driver Score—are reported. Mixer drum speed (if the truck is equipped with a drum-speed sensor) and vehicle speed are also considered.



Speed during maneuvers that exceeds the benchmark speed by 10% is represented in red in the bar chart report.

How to Use the Scores

DriveSafe provides visibility into individual driver behavior beyond just driving speed by providing indicators of other, less obvious forms of aggressive driving. Supervisors can use this tool to conduct specifically targeted driver training and counseling programs. In many cases, otherwise good drivers simply need to be reminded about certain elements of their driving behavior, such as better preparing to stop when the truck is loaded. In other cases, drivers need to be trained to significantly alter their driving style when the truck is loaded in order to avoid potential rollover situations. The driver scores are accumulated over a long period of time, allowing visibility into trends in driving behavior.

DriveSafe is not a direct, near-accident-event indicator. The Scorecard is intended to assist in training and monitoring and should not be used to unfairly penalize a driver for one or two hard maneuvers that may have been necessary due to poor

driving of others on the road. For this reason the reports should always be run using a one-week or longer reporting period.

DriveSafe Reports

DriveSafe reports contain individual scores for each driving maneuver, plus a weighted composite score for the vehicle. These data can be presented and printed in a tabular Fleet Report and an easy-to-read Fleet Chart. The data can also be exported in a format compatible with standard data analysis tools such as Microsoft Excel.

Vehicle	Loaded Left Turn	Loaded Right Turn	Loaded Stop	Loaded Start	Unloaded Turn	Unloaded Step	Unloaded Start	Speed	Overall Score
100	96	95	92	94	94	94	93	89	94
101	94	87	92	92	91	94	95	99	91
102	101	91	94	99	96	99	95	102	96
107	117	100	113	93	113	113	103	104	110
197	98	87	110	126	104	125	147	100	105
198	100	102	98	113	87	95	114	103	101
05300951	111	94	122	156	100	130	180	-	115
05300952	133	97	117	183	96	126	148	-	130
Weighting	3	3	2	1	3	2	1	1	

DriveSafe Fleet Reports give drivers a score, based on a series of variables. Speed during maneuvers that exceed benchmarks by 10% is represented by yellow in the appropriate fields of a tabular report. The optimal score for each maneuver is 100.

Scoring Standards

The vehicle's performance can be scored against the performance standard for the fleet or against the performance standard for the industry as a whole. The selection of the performance standard is made when the report is run.

Standards Calculation

The fleet standards are calculated based on all available data for the customer's fleet and data from all available fleets are used for the national standard. There is a standard calculated for each driving maneuver. The standard itself is merely a mean and a standard deviation for the acceleration values comprising the calculation.

Score Calculation

Vehicle scores are calculated by comparing the vehicle data to the standard used for the report.

If the vehicle's acceleration data matches the standard, the score is set to 100. One standard deviation in the standard's data is assigned the value of 10 points, so if the vehicle's acceleration is higher than the standard's average by one standard deviation, the score is 110. For data two standard deviations below the standard, the score is 80. The data are assumed to follow a statistical "normal distribution," so 98% of all scores will be between 70 and 130.

Running a Report

Several settings must be made before running a report. Refer to the DriveSafe Report Options screen below. The report type can be Fleet Report or Fleet Chart. First, the date range over which the report is run, the vehicles to be included in the report, and the standard against which the vehicles are scored (Fleet or National) must be chosen. The Quick Time Range helps in quickly selecting the date range, and Vehicle Lists may be defined to select groups of vehicles. The report or chart is displayed on the screen after clicking the Generate Report button. The report can then be printed using the printer icon, or exported to a file on the local computer using the disk icon.

DriveSafe Report Options

Report: Fleet Report Standard National

Quick Time Range:

Start Date: End Date:

Vehicle List:

Vehicle for Report:

- 100
- 101
- 102
- 107
- 108
- 198
- 05300951
- 05300952

Score Configuration

Score Configuration		
Score Type	Score Weighting	Highlight Threshold
LoadedLeftTurn	3	110
LoadedRightTurn	5	110
LoadedStop	2	110
LoadedStart	1	110
UnloadedTurn	3	110
UnloadedStop	2	110
UnloadedStart	1	110
Speed	1	110
DriverScore		110

There are two configuration items that can be set using the Score Configuration button on the Report Options screen (shown below). The first is the Score Weighting value. This defines the contribution of each of the maneuver types to the composite driver score. If, for example, loaded right turns are considered to be five times as important as unloaded starts, the Loaded Right Turn value should be set to 5 and the Unloaded Start value to 1. The weights can be set to any value, including zero, and do not need to add up to any particular sum. Since changing these values can change the relative positions of different vehicles, the weights used are printed on the report itself.

It is expected that once a set of weights is defined, it should not be changed arbitrarily. However, different set of weights can be used for different purposes. A report that is intended for driver safety may have one set of weights; a different set might be defined if a more equipment-oriented report that places a higher weight on those maneuvers that cause excessive tire wear or engine over-revving is desired.

The second configuration item is the Highlight Threshold. Scores that are greater than or equal to these settings are highlighted in yellow on the reports and appear in red on the charts.

How DriveSafe Works

Raw Data Collection

The firmware in the mobile unit collects data in several categories. The basic data value is an acceleration derived from a change in velocity measured by GPS. Acceleration values are measured for different maneuvers under different vehicle conditions in the following categories:

Maneuver	Vehicle Loaded	Vehicle Unloaded
Start	X	X
Stop	X	X
Right turn	X	X
Left turn	X	

When a maneuver has been detected and has completed, the maximum acceleration reached in that maneuver is saved for processing. The vehicle is determined to be loaded between the time the mobile unit detects loading at a home site, and the time that a pour is detected at a job site. The unloaded condition is between the pour and the next loading. The DriveSafe firmware in the mobile unit also gathers vehicle speed data. The speed is sampled once per second and the maximum speed over the past minute is determined. A counter in the speed category corresponding to this maximum speed is incremented.

As with all DriveSafe data, it is assumed that over a broad reporting period of time all drivers will encounter similar jobs and driving conditions, and that an average vehicle speed for all driving will be relevant. The data collection algorithm also corrects for missing data due to short GPS dropouts and errors that may occur during satellite constellation changes. Wireless communication fades do not affect the system, as data are retained and reliably sent when the vehicle returns to a better coverage area.

Data Processing in the Vehicle

For each category of data, a set of data “bins” is reserved. Each bin contains a count of the occurrences of an acceleration value in a particular range. After the maximum acceleration for a maneuver has been calculated, the count in the bin in which the acceleration falls is incremented.

DriveSafe also considers the effect of the mixer drum speed on truck stability during right turns.

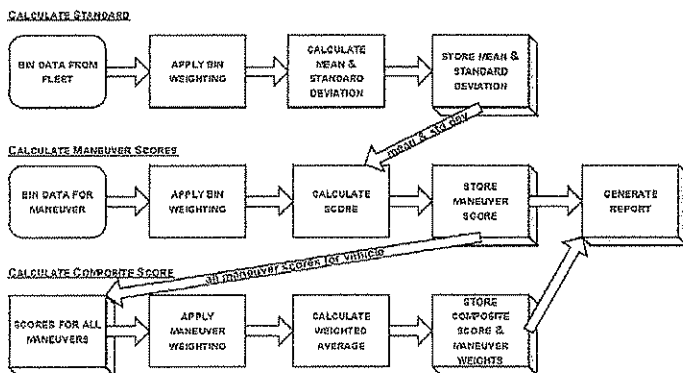
Because of the dynamics of the concrete in the drum, a higher drum speed makes right turns more prone to safety issues. This is factored into the data by incrementing the bin for a higher acceleration than that which is actually measured. Above a maximum acceptable drum speed, the measured acceleration is increased proportionally to the excess drum speed, causing the driver’s right turn to be recorded as having a higher acceleration.

Data Transmission

The counts in the acceleration bins are transmitted to the database when the truck’s ignition is turned off. This is done automatically using reliable wireless communications without operator intervention and without any manual data gathering procedures. After transmitting the data to the database, the bin counts are cleared.

Application Processing

The overall processing of bin data to determine a vehicle score is shown below.



Bin weighting is applied to the counts in each bin before further processing is done. This is done on a maneuver-by-maneuver basis. The value in each bin is converted from a count to a weighted acceleration. Once the bins are weighted, the accelerations in all bins for that maneuver type are added together to determine a single average acceleration value for that maneuver type for that vehicle for that time period. The number of data points and the weighting are stored and carried along with the average, for analytical and historical documentation purposes.

Secure Database

DriveSafe data is stored in Trimble’s database. The database is hosted in a secure data center for a high level of reliability and data access control. Each customer can see only their own vehicles’ data, and access to the DriveSafe portion of the database is controlled on a user-by- user basis within the customer’s staff.

How DriveSafe is Deployed

Deployment of the DriveSafe system is a simple process. The hardware is installed in the vehicle, Trimble configures the hardware over the air, data are collected for at least two weeks, and the Web reports are run. The reports can be accessed either from a standalone Web site for DriveSafe-only customers, or as a Reporting menu option for Trimble’s AutoStatus customers.

Companies with an eye on efficiency and Safety are increasingly using the power of information to take not only their operations to the next level but an entire industry as well.

For More Information

E-mail us at: info@trimblems.com or visit our website at <http://www.trimblems.com>.

CrossCheck GPRS PRODUCT BRIEF

KEY FEATURES

Network connectivity via GPRS

Quad Band GSM/GPRS for worldwide operation: 850/1900 MHz, 900/1800 MHz

Provides accurate GPS-based position information

Enables real-time mobile resource management to improve security and efficiency

Over the Air configurable parameters

Easy to use

Operates without driver intervention

Works with Trimble Mobile Resource Management Platform



TRIMBLE MOBILE SOLUTIONS

MOBILE UNIT FOR MOBILE RESOURCE MANAGEMENT SYSTEM

The CrossCheck GPRS Mobile Unit is a powerful, versatile and proven tool for mobile asset management solutions. The unit is the field component of Trimble's Mobile Resource Management System, which provides users with real-time mapping, messaging, reporting, and workforce management.

The unit integrates a GPS receiver, an embedded quad band GPRS modem, and computing power in a low profile compact enclosure that simplifies installation and provides greater reliability.

The unit uses IP (internet protocol), allowing simple, fast and efficient two-way transfer of information across the wireless GSM/GPRS network.

The CrossCheck GPRS supports all GSM and GPRS Cellular bands worldwide.

The CrossCheck GPRS unit can be used as a standalone solution to communicate current vehicle status including position, speed and direction from the vehicle to the TrimFleet Mobile Resource Management Platform. It can also be interfaced with external accessories and sensors to make it function as part of an on-board system to monitor real-time status of business events such as load delivery and driver availability.

Asset Management

CrossCheck GPRS is the ideal tool for mobile resource management and security. The unit can automatically report arrival or departure from a defined Job Site or Home Site area.

It also allows various asset utilization calculations such as time spent and distance traveled on jobs for accounts payable systems.

User-configurable power management modes can minimize power consumption.

For messaging purposes Trimble offers the EchoLDX™ Message Terminal, which provides the vehicle operator with a quick and easy method to display, store, and reply to text and dispatch messages without voice communication.

CrossCheck GPRS also provides discrete inputs which monitor vehicle status through a variety of on-board sensors.

Route Management

CrossCheck GPRS can be used to improve efficiency by detecting unauthorized vehicle stops or off-route activities. You can also improve customer service by alerting delivery delays and by identifying unauthorized use of equipment.

Telematics Applications

CrossCheck GPRS provides a foundation for telematics services such as dispatching, stolen vehicle recovery, and maintenance monitoring.

Service

Trimble Mobile Resource Management Service provides web-based applications and wireless connectivity, allowing you to efficiently manage your mobile resources. The applications allow you to view the location of your CrossCheck GPRS equipped assets, to exchange messages with your mobile units and to run sophisticated reports summarizing position information and events.

WEB ADMINISTRATION TOOLS

DriverID also provides a simple set of web-based administration tools for managing drivers and driver groups. The 'Drivers' function allows the administrator to set up and manage drivers. This information is used in reports that show which drivers operated specific vehicles. The 'Driver Groups' function enables the administrator to create groups of drivers. Driver grouping provides a way to gather a selection of drivers and create a report based specifically upon them.

OPERATING SYSTEM SUPPORT

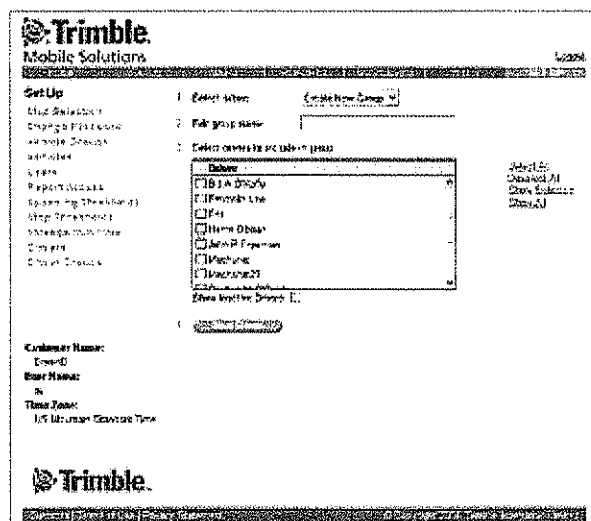
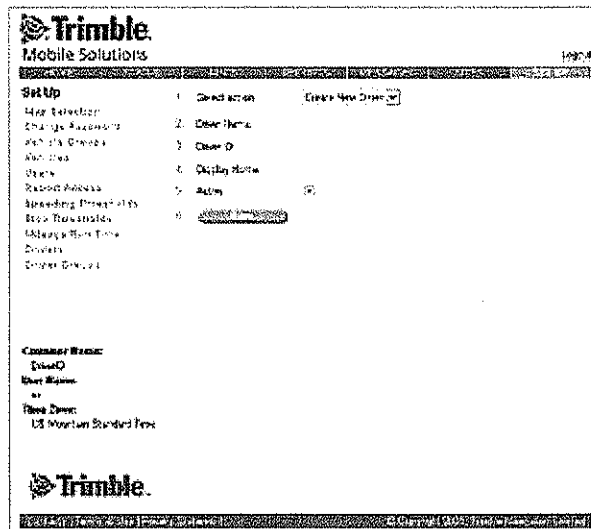
The recommended operating system is Microsoft® Windows® 2000 or Microsoft XP operating systems with Internet Explorer version 5.5 or greater.

REQUIREMENTS

The Driver ID functionality requires the TrimFleet Mobile Data Terminal display. In addition, the DriverID configuration worksheet must be completed for each in-vehicle device or set of devices.

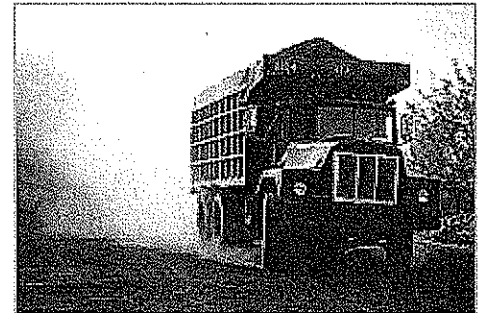
For more information

For more information on how you can better manage the drivers within your fleet using DriverID, call 1-800-525-3045 or visit our website at www.trimblems.com.



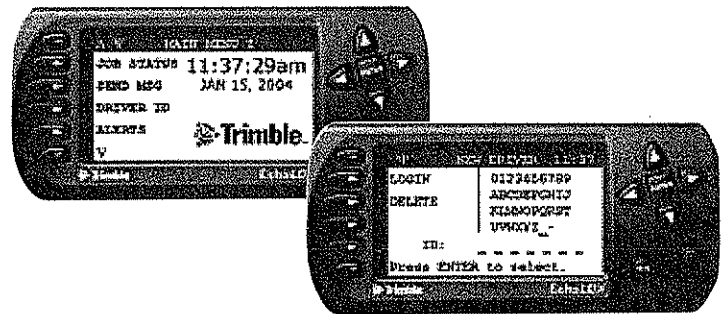
DriverID

With the DriverID feature and the TrimFleet™ mobile resource management solution, fleet managers can easily and accurately identify drivers individually versus by the vehicle they are driving. Your vehicle operators can use the TrimFleet Mobile Data Terminal (MDT) to log in and out each time they operate the vehicle. Management can then generate web reports detailing vehicle and driver activity and utilize web-based administration tools for managing drivers.



WHAT IS DriverID?

Trimble Mobile Solutions' DriverID is composed of additional software within the TrimFleet Mobile Data Unit (MDU) and within the TrimFleet Mobile Data Terminal (MDT). When a driver enters the vehicle and turns on the ignition they are presented with an option to enter their DriverID on the MDT, as shown to the right. DriverID can be optionally configured to continually beep the MDT until the driver's ID is entered.



MANAGEMENT REPORTS

Driver ID provides management with two reports that assist them in managing their workforce. The Driver Activity Report provides a listing, by driver, of the vehicle(s) they operate, times of operation, and cumulative usage. The Vehicle Usage Report provides a listing, by driver, of all vehicle activity including summarized daily hours and daily mileage.

Trimble Mobile Solutions		Vehicle Usage Report		US Operator Standard Time		
Report Period: 09-Jul-2004 05:15:15 PM to 12-Jul-2004 05:15:15 PM						
Larry Fox						
Device	Operator	Vehicle	Hours	Mileage	Days	
7102004	Larry Fox	7102004 08:10 AM	11:52:0	48	1	
Date	Driver	Start Time	End Time	Hours	Daily Hours	Daily Mileage
7/9/2004	Unassigned	05:35 PM	05:35 PM	00:00	00:00	0.0
7/9/2004	Larry Fox	06:58 PM	06:58 PM	00:00	00:00	0.0
7/9/2004	Larry Fox	06:58 PM	06:58 PM	00:00	00:00	0.0
7/9/2004	Larry Fox	06:58 PM	06:58 PM	00:00	00:00	0.0
7/11/2004	Unassigned	01:11 PM	01:11 PM	00:00	00:00	0.0
7/11/2004	Unassigned	01:24 PM	01:30 PM	00:06	00:06	0.0
7/11/2004	Unassigned	01:42 PM	01:48 PM	00:06	00:06	0.0
7/11/2004	Unassigned	02:18 PM	02:33 PM	00:15	00:15	0.0
7/11/2004	Unassigned	06:58 PM	06:58 PM	00:00	00:00	0.0
7/11/2004	Larry Fox	06:57 PM	07:23 PM	00:26	00:26	0.0
7/11/2004	Unassigned	07:39 PM	10:05 PM	00:27	00:27	0.0
7/15/2004	Unassigned	07:52 AM	07:52 AM	00:00	00:00	0.0
7/15/2004	Larry Fox	07:52 AM	08:10 AM	00:20	00:20	0.0

Trimble Mobile Solutions		Driver Activity		US Operator Standard Time	
Report Period: 09-Jul-2004 05:15:15 PM to 12-Jul-2004 05:15:15 PM					
Larry Fox					
Date	Vehicle	Start Time	End Time	Hours	Daily Mileage
7/9/2004	Larry Fox	06:58 PM	06:58 PM	00:00	00:00
7/11/2004	Larry Fox	06:57 PM	07:23 PM	00:26	00:26
7/12/2004	Larry Fox	07:52 AM	08:10 AM	00:20	00:20
Totals					



managing your mobile resources

TRIMWEB BENEFITS

More Stops Per Day

TrimWeb provides a measurable ROI. Just do the math: Add one additional customer stop per day, per vehicle and see how your business can grow exponentially. Achieving better productivity is possible through improving fleet routes, decreasing driver down-time, and minimizing the impact of traffic and weather delays. But it can only be done cost-effectively with a fleet management tool like TrimWeb.

Reduced Overtime

When your drivers are performing at less than peak efficiency and you can't manage their hours, you surely will be paying overtime. TrimWeb turns the vehicle's ignition into a virtual time clock, automatically logging when it's turned on and off as well as tracking arrival and departure times at job sites so you can see time "en-route" versus "on the job."

Reduced Mileage and Related Costs

Reductions in mileage—and related fuel and maintenance costs—can be achieved when your drivers are driving at fuel-efficient speeds and using the most direct routes possible. By monitoring routes and evaluating historical data on routes used over time, you can plan ahead to ensure route optimization.

Elimination of Unauthorized Use

Unauthorized use of vehicles is a problem for many fleet managers. Because TrimWeb monitors the location of your vehicles, any time, anywhere, you can manage the use of your vehicles and eliminate unauthorized access. You can also minimize the loss through theft and asset abuse.

Customer Satisfaction

Providing your customers with accurate, reliable delivery status and faster response to service requests leads to more satisfied customers. And satisfied customers lead to more repeat business.

It Works 24/7

TrimWeb consists of a small in-vehicle computer called the Mobile Data Unit (MDU) and an optional in-vehicle display unit called the Mobile Data Terminal (MDT) for bi-directional messaging between your drivers and dispatch.

The MDU communicates with the TrimWeb platform via a wireless data network. All reported location and status data is stored on a secure server at the Trimble Mobile Solutions Data Center. The stored data is easily accessible via the Internet.

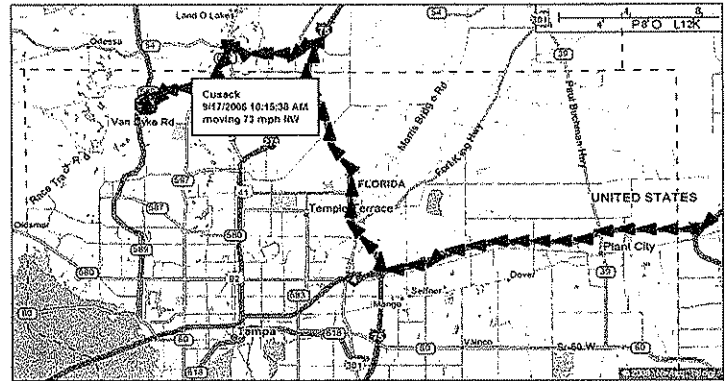
FOR MORE INFORMATION

For more information on what TrimWeb can do to improve your bottom line, call 1-877-988-4743 or visit us on the web at www.trimblems.com.

TRIMBLE MOBILE SOLUTIONS

Trimble Mobile Solutions provides mobile resource management solutions for enterprise organizations that want to increase the productivity of their mobile workforce. Trimble Mobile Solutions provides an integrated, common platform that converges mobile workforce productivity with fleet management, combining connectivity and enterprise intelligence throughout the mobile enterprise. Trimble Mobile Solutions in-vehicle fleet management solutions feature GPS tracking, DOT and fuel tax reporting

Companies around the world rely on Trimble's powerful cross-functional applications that outperform all other mobile resource solutions and trust in the financial stability of a billion dollar public corporation.



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 **Trimble.**
Mobile Solutions

KEY FEATURES

Web-based client—for a real-time view of your fleet from any Internet connection

Vehicle polling (ping or pull)—provides timely information about your fleet and driver whereabouts to improve customer satisfaction

Position playback—lets you see minute-by-minute breadcrumb trail of each vehicle

Geofences around job work site or home base—for exact delivery status and better allocation of mobile resources

Vehicle search by site, address or grouping—allows rapid response to service requests

Optional 2-way messaging and email alerts—improves communication between driver and dispatch

Driver activity logs and configurable speed thresholds—flags potential driver safety issues

Unlimited user login for multiple dispatchers—scales as your business grows

Quarterly map updates—for ongoing route optimization

Reporting Capabilities—Easy, powerful reporting capabilities are available for operations analysis and management:

Driver Activity

- Start/Moving/Stop alerts
- Last known position
- Proximity to a pre-defined job site (ingress and egress)
- Delivery status
- Sites Visited (Site)
- Sites Visited (Vehicle)
- Speeding

Vehicle Activity Summary

- Ignition status (on or off) Engine Idle
- Vehicle Usage Engine hours
- Vehicle Congregation
- Mileage and much more

TRIMBLE MOBILE SOLUTIONS

MANAGING YOUR MOBILE RESOURCES

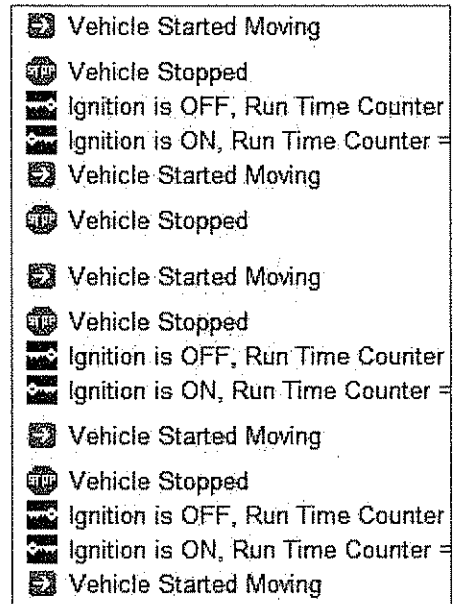
If your business depends on a fleet of vehicles to provide products or services, then driver productivity and vehicle routing are key to your bottom line growth. Escalating fuel prices, unexpected repairs and high maintenance costs and overtime pay creep due to traffic delays and scheduling issues all impact your business' profits. To stay profitable and competitive, you need accurate and timely information about your fleet and driver whereabouts, so you can avoid the situations that compromise customer satisfaction and eat away at efficiency and margins.

Managing your vehicles and drivers with an eye to costs, safety and risk doesn't have to be a balancing act. Now there's an easy way to focus your efforts on improving your business' overall productivity—with TrimWeb™.

The TrimWeb solution gives you complete control of your fleet so your work force can meet or exceed customer expectations—as if you were in the passenger seat of each vehicle on the road.

The TrimWeb Solution

The TrimWeb solution is a low-cost, web-based application that gives you a real-time view of your fleet by providing vehicle location and status, activity reports and tools that are easy to use and flexible to meet your specific needs. The system pays for itself quickly in fuel savings, better allocation of mobile resources, and faster response to customer requests and emergencies.



GENERAL SPECIFICATIONS

Input Voltage 9.0 – 32.0 VDC
 GPRS TNC (receptacle) 50 Ω

Current Consumption (Typical)
 Transmitting with MDT 340 mA (1.6 A peak) at 12 VDC
 Transmitting without MDT 270 mA (1.5 A peak) at 12 VDC
 Not transmitting with MDT 160 mA at 12 VDC
 Not transmitting without MDT 90 mA at 12 VDC
 Not transmitting sleep mode <10 mA at 12 VDC

Inputs & Outputs
 Discrete Inputs (4) switch closures
 Ignition Sense Off <0.8 V
 Ignition Sense On >2.4 V
 Pulse Counting Inputs (3) minimum pulse width: 500 μs
 Discrete Outputs (3) 200 mA low-side drivers
 Sensor Power Output (1) 150 mA at 11.8 V ± 1.0 V

Message Formats Trimble Proprietary
 Status LEDs GPS (green), GPRS (amber)

FIRMWARE SPECIFICATIONS SUMMARY

Configurable parameters
 Geo-fence area for Job Sites Geo-fence area for Home Sites
 Entry Speed Limit for Site Dispatch
 Exit Speed Limit for Site Dispatch
 Minimum duration time to detect entry and exit regions
 Speeding Reports Enable, speed and duration thresholds
 Stop Reports Enable, speed and duration thresholds
 Mileage and Run Time Set the initial odometer value and
 engine run time counter
 Data Logging .. Supports message and event storage for up to one week
 while out of network coverage

Messaging Available through Trimble's EchoLDX Message Terminal

PHYSICAL SPECIFICATIONS

Assembly Top: Injection molded plastic with integrated shield
 Base: Aluminum

Size 228 mm x 121 mm x 36 mm (W x D x H)
 (8.97" W x 4.76" D x 1.42" H)

Weight 485 g (1 lb, 1.1 oz.)

Connectors
 MDT Port DB-9 (receptacle)
 Serial Port EIA-232 RJ-45 (receptacle)
 Power & Discrete I/O Molex Micro-Fit 3.0 16-pin dual row locking receptacle
 SIM Carrier Part Number 39816

Antennas
 GPS SMA (receptacle) 50 Ω
 GPRS Quad Band TNC (receptacle) 50 Ω

GPS SPECIFICATIONS

Receiver L1 frequency, C/A code (SPS)
 8-channel continuous tracking receiver

Update Rate Once per second maximum

Accuracy, no S/A
 Position < 10 meters (50 % CEP)
 Velocity < 0.5 meter/second

First acquisition
 Cold start < 180 seconds (90 %)
 Warm start < 45 seconds (90 %)

Reacquisition after signal loss <2 seconds (90 %)

Datum WGS-84

GPRS SPECIFICATIONS

CrossCheck GPRS Internal GSM/GPRS Module, Multislot Class 12
 Quad Band GSM 850/900/1800/1900MHz

SIM 3V

Regulatory Approvals FCC, PTCRB
 Network Approvals AT&T

ENVIRONMENTAL SPECIFICATIONS

Temperature
 Normal Operation -30 °C to 60 °C (-22 °F to 140 °F)
 Non Operating -40 °C to 85 °C (-40 °F to 185 °F)

Humidity5% to 95% RH, non-condensing at +40 °C

Vibration
 0.008 g²/Hz 5 Hz
 +3 dB/Octave5 Hz to 20 Hz
 0.05 g²/Hz20 Hz to 100 Hz
 -3 dB/Octave 100 Hz to 800 Hz
 0.001 g²/Hz 800 Hz to 1000 Hz

Shock
 Operational 40 g for 11 ms
 Non-Operational 75 g for 6 ms

Vehicle transients ETS 301 489-1; section 9.6
 Safety N/A

TRIMBLE PRODUCTS AND ACCESSORIES

- CrossCheck GPRS Mobile Unit P/N 72720-XX*
 - EchoLDX Message Terminal P/N 46722-00
- GPS Antennas permanent and magnetic mount available
 GPRS Antennas permanent mount available
 Combination GSM and GPS Antennas permanent mount available

FOR MORE INFORMATION

E-mail us at:
info@trimble.com or visit our website at <http://www.trimblems.com>.

* The part number of the CrossCheck GPRS unit depends on the carrier and coverage for certain areas. To order the correct part number for your areas contact your Trimble representative.

Specifications subject to change without notice.

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GENERAL SPECIFICATIONS

Screen characters 160 x 80 pixels, LCD...
Display 3.77" W x 2.2" H (96 mm x 56 mm)

ELECTRICAL SPECIFICATIONS

Voltage +8 to 16.5 VDC. Supplied by CrossCheck unit.
Power Consumption50 mA @ 12 VDC typical
200 mA @ 12 VDC max. (with backlight on)
Power/Data Cable 9.5 feet (2.90 meters) 10-conductor
RJ45 for power and data and one DB9M connector
Interfaces Power/data cable for connection to the CrossCheck
mobile communicator unit for vehicle power and data

PHYSICAL SPECIFICATIONS

Size 7.28" W x 3.34" H x 1.25" D
(185.0 mm x 85.0 mm x 32.0 mm)
Weight <0.80 kg (1.7637 lbs)

ENVIRONMENTAL SPECIFICATIONS

Temperature
Operating Temperature -25 °C to +60 °C (-13 °F to +140 °F)
Note: When operating below 0 °C,
the display reaction time will be slower.
Storage Temperature -40 °C to +85 °C (-40 °F to 185 °F)
Humidity <95%
Vibration
0.008g2/Hz5 Hz
+3dB/Octave 5 Hz to 20 Hz
0.05g2/Hz20 Hz to 100 Hz
-3dB/Octave 100 Hz to 800 Hz
0.001g2/Hz 800 Hz to 1000 Hz
Shock
Operational40g for 11 milliseconds
Non-operational75g for 6 milliseconds

ECHOLDX PRODUCTS AND ACCESSORIES

EchoLDX Message Terminal Kit P/N 46722-00
EchoLDX Power/Data Cable P/N 46755
EchoLDX Quick Reference Guide P/N 46845-00-ENG
Pedestal Mounting Kit (6") P/N 46950

FOR MORE INFORMATION

E-mail us at:
info@trimblems.com or visit our website at <http://www.trimblems.com>.

Specifications subject to change without notice.

KEY FEATURES

- Large, high-contrast display
- Displays free-form text messages
- Allows vehicle operator to send pre-defined text messages
- Configurable time zone
- Easy to use

TRIMBLE MOBILE SOLUTIONS

MESSAGE TERMINAL FOR THE TRIMBLE MOBILE RESOURCE MANAGEMENT SYSTEM

The EchoLDX[™] Message Terminal is the messaging and dispatching component of the Trimble Mobile Resource Management system. It is the key element for keeping your fleet in touch and up-to-date with vital information anytime, anywhere. It provides the vehicle operator with a quick and easy means of displaying, storing and replying to text and dispatch messages without voice communication.

Sending Messages

With EchoLDX, the operator is able to send predefined text messages to keep the dispatcher informed of the vehicle's status on the road. Every message sent includes a time and position stamp. As the driver pushes a key, the EchoLDX confirms the activation by sounding a volume configurable beep.

A message sent from the EchoLDX terminal is passed to the CrossCheck unit. This unit stores the message and passes it on to the web-based Messaging application at the Trimble Mobile Resource Management Gateway.

Receiving Messages

The EchoLDX terminal generates an audible beep to alert the operator when a new message is received. The beep does not stop until the operator reads the message and presses a key.

The terminal features a large screen that displays clear, easy-to-read messages. A backlight option is available to ensure easy reading at night or in dark locations.

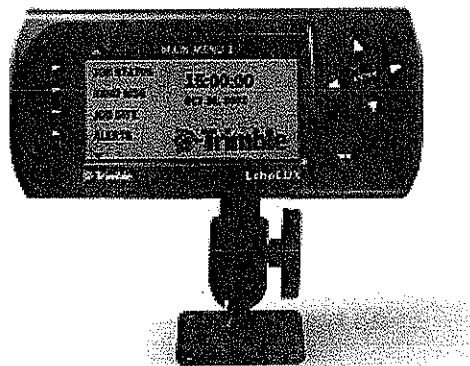
Convenient Installation

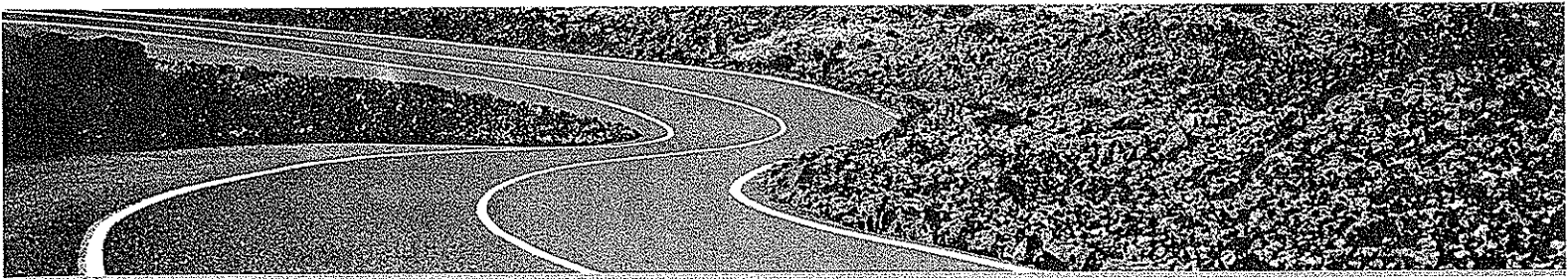
Packaged in a lightweight, rugged, high-impact plastic housing, the EchoLDX terminal is durable and able to withstand the wear and tear typical in commercial vehicle applications.

Its design reduces vibration effects and increases readability. The terminal can be permanently mounted in virtually any type of vehicle. A 6-inch pedestal installation kit enables the driver to position the unit for most convenient operation.

The EchoLDX terminal connects to the CrossCheck unit with a power/data cable. The CrossCheck unit controls the power to the EchoLDX.

The EchoLDX Message Terminal Kit contains the terminal, power/data cable, mounting pedestal, and a Quick Reference Guide for the vehicle operator.





REAL-TIME WEATHER

While no one can change the weather, the TrimView software does the next best thing by tracking it via seamless integration with WeatherBug®, the leading provider of weather information services. Dispatchers are able to superimpose the current local radar, satellite, and temperature on their live TrimView maps giving them the ability to see the driver's location and the weather conditions they are operating under.

For businesses which function only under specific weather conditions, the weather function of the TrimView software can display predicted radar views up to four hours in advance. WeatherBug's more than eight thousand professional grade weather stations generate live local reports which are updated in the TrimView software every fifteen minutes ensuring the most accurate forecast is always displayed to make the day as productive as possible.

FEATURES:

Current Local radar and satellite overlaid on TrimView road maps.

Radar predicts weather patterns up to four hours in advance.

Displays current local temperature.

Weather is updated by WeatherBug® every fifteen minutes ensuring that the weather is always current.

Through 6 Pm	Friday	Saturday	Sunday	Monday	Tuesday
48°F / 56°F	52°F / 59°F	44°F / 56°F	42°F / 51°F	45°F / 63°F	44°F / 67°F
80% chance		50% chance			

For More Information

For more information about what the TrimView Software Add-ons can do to improve your bottom line, visit us on the web at www.trimblems.com

TAKING GPS TRACKING BEYOND JUST A DOT ON THE MAP

TRIMVIEW SOFTWARE ADD-ONS

The productivity of the company fleet continues to remain a critical component to its financial success regardless of the industry. The TrimView™ software has a proven track record for being a powerful and reliable application on the market for tracking commercial vehicles in real-time.

The TrimView software's accurate mapping, messaging, and enhanced reporting have helped thousands of companies worldwide to effectively manage their mobile assets and increase productivity. Now, the TrimView software takes tracking vehicles to the next level with the addition of:

- Real-time Weather
- Comprehensive Traffic Updates

TrimView eradicates the frustrations of dispatching by removing the guesswork leaving the fleet running accurately and efficiently.

TRAFFIC UPDATES

Debilitating traffic will cease to stall the work day with the TrimView software's comprehensive traffic updates. Dispatchers can overlay current traffic information, such as accidents, construction, and delays, onto their live maps to see whether or not their drivers are steering into major delays.

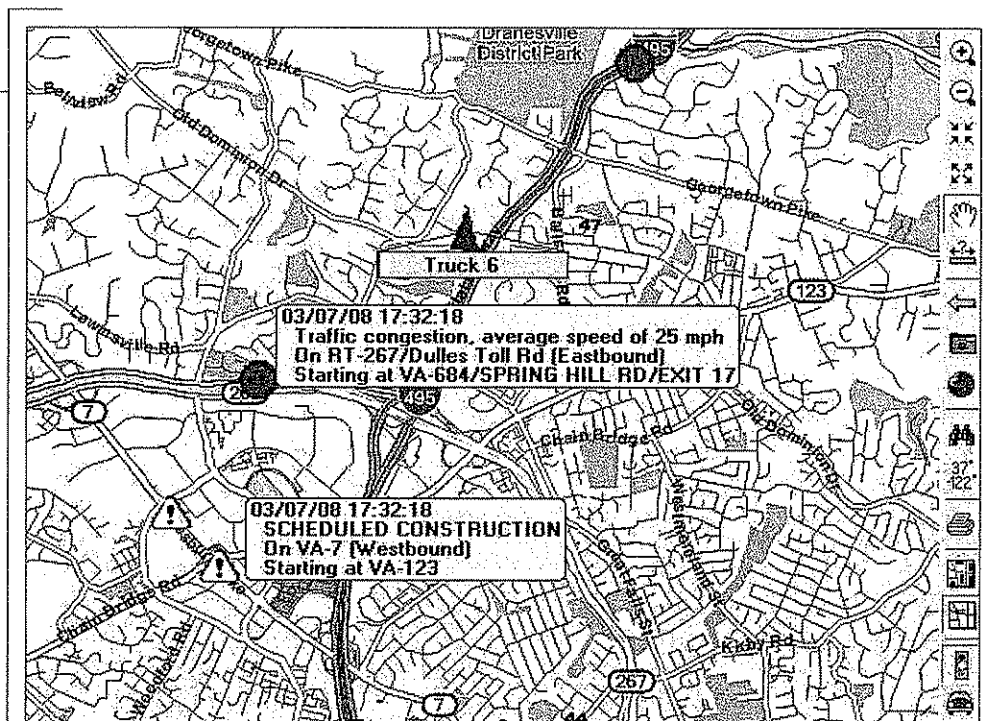
Each traffic event is accompanied by the average speed of vehicles travelling through the problem area. Dispatchers can direct drivers away from obstacles and along economically satisfying routes which reduce fuel costs by avoiding start-and-stop traffic. Live Traffic updates are available in most metropolitan areas within the United States and Canada.

FEATURES:

Displays scheduled construction, accidents, and other temporary road delays.

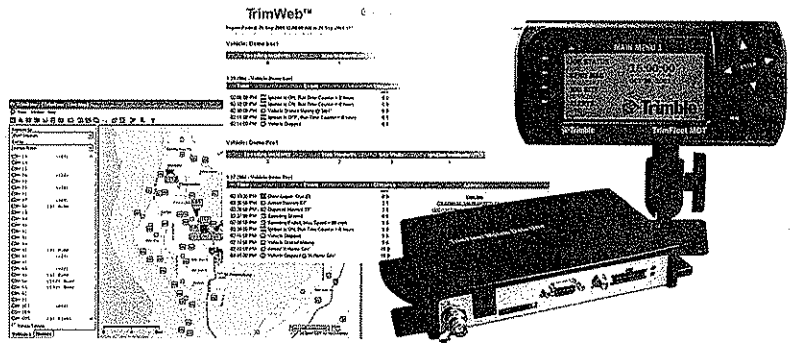
Highlights average speed of vehicles travelling through areas where traffic delays are reported.

Real-time traffic updates every five minutes for most major metropolitan cities within the United States and Canada.



A 360° SOLUTION FOR YOUR MOBILE RESOURCES

The Trimble Mobile Solutions family of products and solutions offers a complete, cost-effective solution for your growing business. From monitoring a fleet of vehicles on the road to improving productivity of sales people in the field, our leading vehicle tracking, measurement, mapping, planning, and communication solutions work for you around the clock to provide greater visibility into fleet activity and help you and your team make better business decisions. With industry-specific solutions for every industry—from Ready Mix to CPG—Trimble Mobile Solutions integrates mobile resources with back office operations allowing companies to address their mobile resources challenges without compromise. Trimble Mobile Solutions customers experience rapid return on investment through fuel savings, better allocation of resources, faster response to customers, more productive direct store deliveries and/or increased stops per day.



BENEFITS

TO YOUR BUSINESS

- Improve return on investment (ROI) due to lower costs and increased productivity.
- Reduce operating costs by improving delivery schedules.
- Reduce theft and asset abuse by monitoring vehicle location and status.
- Improve overall business management decisions with historical and trend reporting.

TO YOUR WORKFORCE AND FLEET

- Reduce vehicle and driver idle time.
- Lower operational cost by increasing productivity.
- Lower administration costs and improve records accuracy by automating customer and driver paperwork.

TO YOUR DISPATCH OFFICE

- Improve overall efficiency and control of your assets through just-in-time scheduling.
- Improve work order management.
- Multi-office monitoring of assets.

TO YOUR CUSTOMERS

- Accurate, reliable delivery times.
- Faster response to service requests.
- Improved satisfaction with your service.