Telematics Africa Ltd

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COMPANY PROFILE

TELEMATICS AFRICA LTD is a private company, owned by its executive Directors with its headquarters in Nairobi, Kenya.

Our business objective is to achieve total customer satisfaction through the provision of software products and services that meet our customers' requirements and substantially add value to their business.

SUPPORT

With our team of highly qualified personnel with vast experience in Fleet Management, We offer fleet management solutions which come as a package consisting of fuel automation and management, vehicle utilization and driver management using online GPRS/GPS systems, fleet repairs and maintenance systems which is a core fleet operations' costing system.

This team constitutes our core support department and GUARANTEES our customers 24-hour support.

OUR SPECIALITY

FLEET MANAGEMENT

OUR MISSION

COST REDUCTION ON FLEET MANAGEMENT OPERATIONS

TELEMATICS AFRICA LIMITED are the DEALERS of Fleet Management products namely SMARTLOG and FUELLOG from E-Drive Technology in ISREAL and FLEETWAVE (Workshop Software) from CHEVIN COMPUTER SYSTEMS LTD in UNITED KINGDOM within Eastern and Central Africa.

We are pleased to INTRODUCE and PROPOSE our Fleet Management System PRODUCTS and SERVICES to your company so that you can also benefit from the 60% cost REDUCTION on Fleet Management operations, which is now a reality in some of the key organizations that are already using our Products and Services.

WITH our FLEET MANAGEMENT products and services mentioned below, we now offer TOTAL FLEET SOLUTION that addresses all the requirements of FLEET MANAGEMENT.

Our Products and Services are as below:

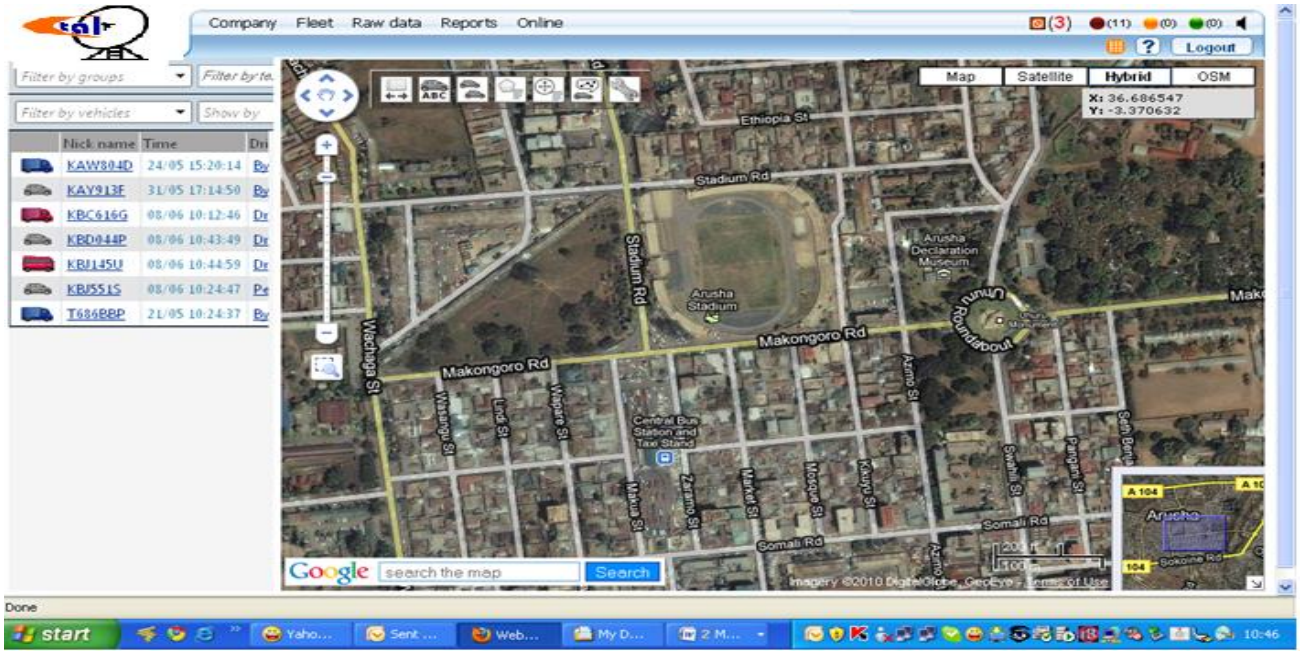
1.) ONLINE / REAL TIME GPRS TRACKING

This is a Microcomputer which is installed on a Vehicle / Machine and it automatically becomes a "FLEET MANAGERS EYE" by logging every single event that happens on the Vehicle / Machine.

These events include;

- Driver identification

- Vehicle start and stop time
- Time taken between each trip
- The speed of the vehicle
- RPM (Revolutions Per Minute)
- Acceleration and deceleration
- Vehicle destinations and positions
- Routes followed by the vehicle (use of GPS)
- Trip distance
- Trip costs
- Violations on over speeding, over revving, over acceleration / deceleration, idling with engine running etc
- Last five-minute data before the accident
- Business / private mileage covered by each driver/vehicle
- Closing and opening of doors
- Fuel siphoning (fuel theft)
- Driver performance
- And much more with customization being possible.



2.) FUEL MANAGEMENT SYSTEM – FUELLOG / ATG FUEL

This is a microcomputer that is installed on a FUEL PUMP and it automatically becomes the FUEL Manager. UNAUTHORIZED fuelling from the pump then becomes impossible. On AUTHORIZED fuelling, it logs and reports the below details:

- Identity of the vehicle taking fuel
- Date of fuelling
- Time of fuelling
- Identity of the pump attendant fuelling the vehicle
- Pump identity
- Odometer/hr meter at the time of fuelling
- Number of liters issued
- Amount charged
- Volume delivered into the tank by suppliers

- Vehicle consumption from previous refueling in terms of kilometer per liter or liters per hr
- Average consumption in terms of kilometer per liter, liters per 100km and liters per hour for machines that uses hour meter
- AND MUCH MORE with customization being possible.

3.) FLEETWAVE software System

This is a fleet management system software package that will:

- Computerize your workshop (Repairs & Maintenance)
- Computerize and manage your stores (Full Inventory Control)
- Capture drivers and accidents data
- Monitor usage of pool vehicles
- Computerize renting of vehicles
- Computerize vehicle diary i.e. Statutory Management (Road-Tax, Insurance, Inspection, TLB Etc)
- Capture and report on fuel usage
- Capture and report on vehicle costings / expenses
- Compare vehicle expenses against set budgets and flag them
- Monitor usage of spares and warranty on spares
- Report on vehicle performance i.e. kilometer per liter/hr, cost per kilometer
- Compare vehicle performance against set targets and flag them
- Monitor usage of tyres
- Use of traffic lights to indicate performance above expectation, within range & below expectations.
- And much more flexibility and customization being possible

FLEET MANAGEMENT MADE SIMPLE

Fleet management made simple is a product, which has proved to be the most ideal PACKAGE all over the WORLD in managing and controlling costs associated with running a fleet. The system has been packaged to address all problems in fleet operations, which includes: -

- Fuel theft & fuel management
- Workshop management
- Stores control
- Accident management & control
- Statutory management (Key Events) i.e. Road License, Inspections, Insurance, TLB, etc
- Vehicle costings / expenses
- Route tracking and mileage tracking
- Tracking warranty on spares and on vehicles
- Driver control
- Vehicle usage & abuse
- Private mileages at company expenses

FLEET MANAGEMENT ANALYSIS

Focus briefly on what you undergo as a Fleet Manager / Owner in Controlling and Managing NECCESSARY and UNNECESSARY costs associated with RUNNING and managing your fleet.

We are sure that you are interested in running your fleet operations effectively and efficiently with the minimum expenses possible.
With our Fleet Management Systems implemented your organization will be able to realize how much they were losing averagely on a daily basis on the following areas of Fleet Operations: -

- Uncontrolled fuel management and fuel theft
- Vehicle abuse caused by reckless driving

- Unnecessary and unauthorized mileage
- Bad driving habits
- Under-utilization and over-utilization of the fleet
- Workshop inefficiency
- Unnecessary expenses in the workshops i.e. repeat jobs,
  Over issuing of vehicle spares, misuse of spares, stealing of spares, etc.
- Improper and uncontrolled management of warranty on spares
- Uncontrolled usage of your spares / stocks (inventory control)
- Late renewal and management of road-licenses, TLB,
  scheduled service, insurance, warranty on vehicles and spares.
- Unnecessary accidents and costs associated with accidents
- Uncontrolled usage of tyres and tubes
- Late servicing of vehicles and related costs
- Unauthorized and unscheduled routing
- Incorrect, unrealistic and untimely analysis reports based on fuel
  expenditure, spares, fixed costs, and consolidated costs.

HOW YOU WILL BENEFIT BY INVESTING ON OUR FLEET MANAGEMENT SYSTEM.

The system will: -

- Improve management and cut down on fuel theft by almost 60%
- Reduce vehicle abuse and control reckless driving through computerized driver monitoring and offline / online reporting.
- Cut down and control unnecessary and unauthorized mileage
- You will be able to set budgets and guidelines on the system and then rate fleet performances against them thus enabling them to effectively run their fleet without under-utilization or over-utilization
- The system will be able to regulate man-hour with the workshop output and enhance their workshop efficiency by almost 60%
- Eliminate unnecessary expenses in the workshops i.e. Repeat jobs, over issuing of vehicle spares
  Stealing of spares etc will be controlled
- Proper management of warranty on spares and claims on them too will be necessitated by the system
- Improved control of spare parts / stock (inventory control)
- Provide proper management of road-licenses, TLB, scheduled service,
- Insurance etc, warranty on vehicles and spares
- Improve accident management and control
- Control usage of tyres and tubes
- Ensure servicing of vehicles in-time without delay
- Give correct, realistic and timely analysis reports based on fuel expenditure, spares, fixed costs, varying costs and consolidated costs.
- Give proper analysis reports based on vehicle history, book-of life, CPK / KPL over lifetime, YTD consolidated running cost analysis, and VMRS reports. These reports are handy when it comes to making decisions on replacing your fleet

Our product increases the lifespan of the vehicle and reduces associated operating costs by managing driver behavior.

AS a Company and a Business Partner, we assure YOU that by investing in our Fleet Management Products and Services, WE GUARANTEE the company savings of 40 – 60% ON their net unnecessary expenses on Fleet operations.

We also assure YOU that your investment on our products and services will not exceed 40% of the company's Net Savings.

With our **FLEET MANAGEMENT** products and services mentioned below in details, we offer **TOTAL FLEET SOLUTION** that addresses all the requirements of **FLEET MANAGEMENT**

1. GSM/GPRS BASE TRACKING SYSTEM

Automotive Telematics

Automotive Telematics system is a state-of-the-art, on board, computerized systems allowing full control of vehicle fleets.

It is a Powerful GPS/GSM/GPRS Automotive Telematics with fuel level monitoring. It has advanced, integrated management capabilities, with an ideal automotive Telematics solution for vehicle and driver monitoring, security and maintenance scheduling.

Automotive Telematics system has the following features:

- **Speed Camera Warnings** - The support team can implement customized speed and traffic light camera warnings with audible beep alerts when approaching a camera
- **Stealth Call Support** – Stealth calls from recognized phone numbers are possible
- **RFID Support** – used for driver identification
- **Key Pad Parameters**: KP order/ length/ position – Key pad support now includes configurable parameters

- **Decimal point in fuel calibration** – The system supports measured analog values with two decimal places for increased sensitivity and accuracy
- **External immobilizer control** – The system supports additional external disconnection points, as well as the system on-board relay
- **Seat Belt and Headlight Alerts** – System supports features required by stringent HSE specifications for increased safety and verification requirements

With advanced, integrated management capabilities, including support for Fuel Level monitoring, it is an ideal automotive Telematics solution for vehicle, driver and security monitoring, and maintenance scheduling.

Automotive Telematics system can also be used as a vehicle tracking system, utilizing Geographic Information System (GIS), Global Positioning System (GPS) and wireless data technologies.

The system integrates 5 major functions that are essential to control a fleet as follows:

• Security of the vehicle (Driver ID and immobilizers)

• Data & Events measuring, recording & controlling

• Vehicle location at each event (by GPS)

• Black Box for accident analysis.

• Service due control

The system operates completely automatically and is supplied with a real time data management (using built in cellular modem).

The impact of the Automotive Telematics system on increasing the operating efficiencies of large vehicle fleets by 10 to 30% has already been proven in over 50,000 vehicles.

ii) VEHICLE SECURITY

Automotive Telematics system provides access security to the vehicle through driver identification by using a personalized ID card. Without this ID the vehicle is locked against starting by several immobilizing circuits with an alarm to indicate intrusion. This feature also enables controlling and dividing drivers to groups allowing them to drive only specified vehicles as of their permission and license type.

iii) DATA & EVENTS MANAGEMENT

The following data and events can be monitored for example:

TRIP DATA

• Date of each trip

• Driver name & ID

• Start & Finish time of the trip

• Start & Finish mileage of the trip

• Job number & Charging

• Vehicle's idling times / stop times & locations (if GPS is installed)

• Over speeding, acceleration / deceleration values and other driver performance measures

• Gasoline consumption (economy of driving)

b) VEHICLE LOCATION

The Automotive Telematics system has an included GPS system with which the vehicle's locations can be defined at any time as long as the system is GPRS communication enabled. When a vehicle location is possible, then the location and even trajectory of a vehicle can be displayed on the WebFleetLog application.

c) BLACK BOX

The Automotive Telematics system device records 5 minutes of information. This information is Over-written by the following minutes of the drive information recorded, unless there is an accident. In such a case the system logs the last five minutes prior to the accident and automatically sends them to the back office for analysis. In any case the system sends the array of last speeds to the back office at the end of each drive.

d) SERVICE DUE CONTROL

The Automotive Telematics system has a parameter called 'Next Maintenance'. If the current odometer surpasses the value set in the 'Next Maintenance' parameter, the systems gives off a warning sound at the beginning of the drive when the ignition is turned on.

2. DATA LOGGING, TIMING & REPORTING

All data, is measured and logged, together with the vehicle's location, as obtained via the GPS and related on a map. This is relayed immediately via the built in cellular modem to the PC in the control center of the fleet for immediate analysis and reaction. The information collected, is displayed both on the PC screen and by printed reports at any cross section specified by the fleet manager.

The logging of data is done in either of the following instances:

• Beginning of the trip

• End of each trip

• Any idle time event or stopping

• Whenever an accident detected

• Each time a sensor is activated (for any function as mentioned above)

• At any pre-defined periods of time

• At any pre-defined mileage

All these are set by the fleet operator at his option and can be easily changed from time to time to adapt to changing conditions and needs of the fleet operator.

3. NAVIGATION & SYNCRONIZATION WITH OFFICE

Adding a PDA or a data terminal allows complete day reporting or messages sending to / from the office, while presenting route and other relevant mapping data on the PDA's screen.

4. SYSTEM AND SOFTWARE FEATURES

Effective Management System – Tracks current location, speed, route history, number of stops made, total duration of stops from a specific drive and many other telemetry data.

Automatic vehicle location (AVL) – Supports Graphical Visualization of vehicle position data within a digital street map via: on site or web software installation

Geo-fencing (Digital fencing) – By marking a polygon shape on the map, the moment the vehicle enters or exit the "locked area, or road/s) an automatic alert is created.

Multilingual support – When connected to the WebFleetLog system, multiple languages can be set up in accordance with the preferences and necessities of the back office.

Reports are divided into several groups:

- Vehicle Management
- Driver Management
- Trip Management
- Order and arrival to customer Management
- Driver Trip Analysis
- Driver performance
- Fleet operation and comparison
- Route deviation alert
- Export data at any format to other data bases or spread sheets already in use.

5. COMPONENTS

General

The Automotive Telematics system consists of the system device itself, the Key Reader (ID reader), and several connection cables. They are all depicted below:

The Automotive Telematics system device includes GPS, GPS antenna, GPRS and GPRS antenna. The GPS and GPRS modems are included within the box.

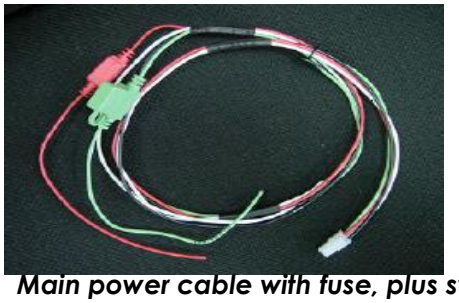
GPRS Antenna

GPS Antenna

The Dallas Key Reader is used to read the driver's ID enabling a person to switch on a vehicle.

Dallas Reader

b) Cables



The system derives its power from the vehicle's battery via the unit's main power cable depicted below. It must also be connected to the vehicle's switch, to enable the car to be turned on only after a corresponding identification via the Key depicted in the previous section.

Main power cable with fuse, plus switch connection

The immobilizer cable needs to be connected to the vehicle's switch, so that when the back office sends a message to immobilize the vehicle, this command can be transferred via switch inside the unit's box to the vehicle's ignition.

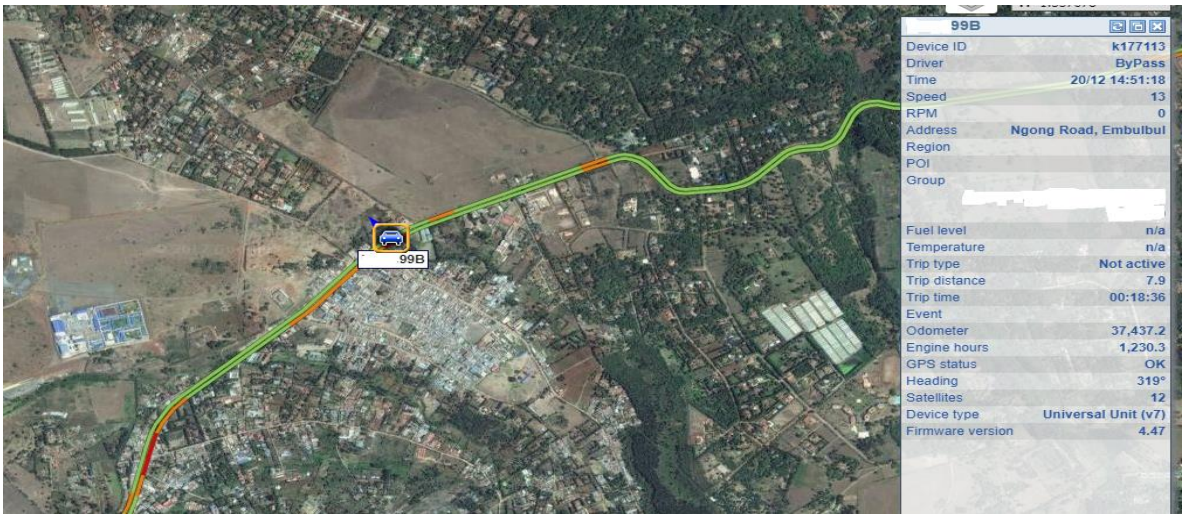
Immobilizer cable

The unit can be connected with or without pulsar. When the pulsar is connected, then the unit receives its odometer and speed data from the pulsar, when it is not connected to the pulsar, this information is taken from the GPS installed within the unit's box. GPS may appear at times simpler due to the installation of the system to the pulsar, it also results in less accurate measurements of odometer and speed. The use of the pulsar results in less drift between the odometer and the unit data.

Pulsar Cables

SAMPLE REPORTS

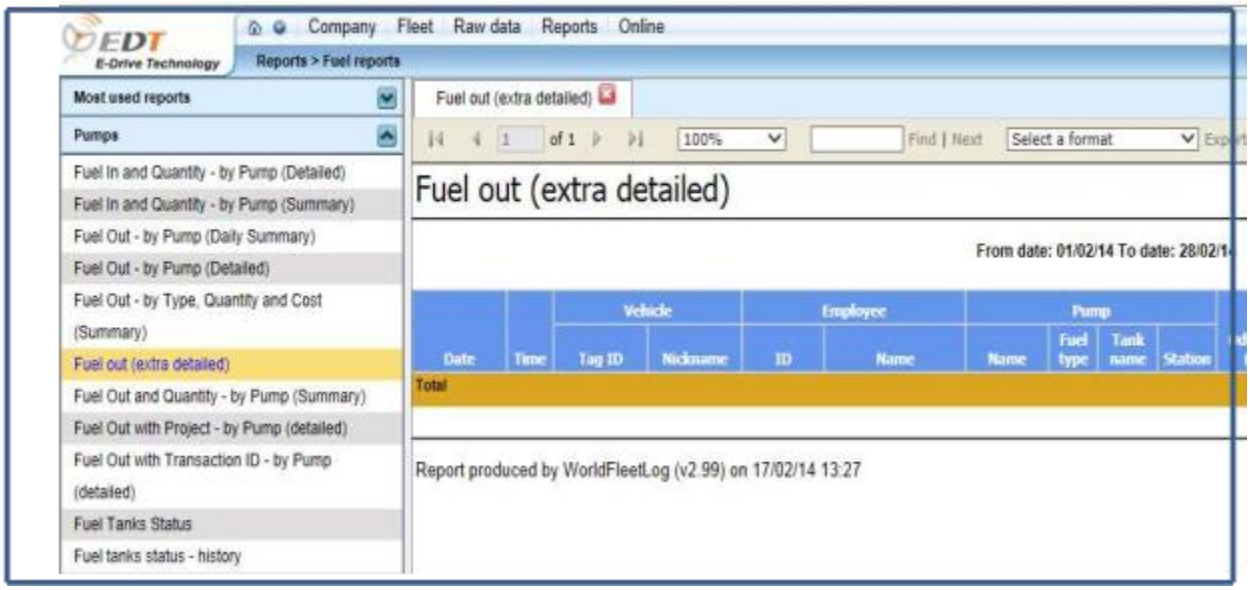
View your fleet assets using secure login with configuration policies from anywhere in the world



View vehicle location and events in real-time

FUEL

The system also has the capacity to monitor the fuel usage and siphoning. This is one sure way that the organization will be in a position to monitor cases of drivers stealing fuel from their fleet. At every instance of such event, you will be in a position to know the exact location from the map, the driver, the time and amount of fuel drawn. Below is an example of a report captured from one of our client's vehicle.



Detailed fuel reports provide deep analysis of fuel costs by vehicle, pump, job, or driver for any defined time-frame

The Dashboard view provides fleet managers with important driver, vehicle, sensor state and fuel management information at a glance

DRIVER PERFORMANCE REPORT

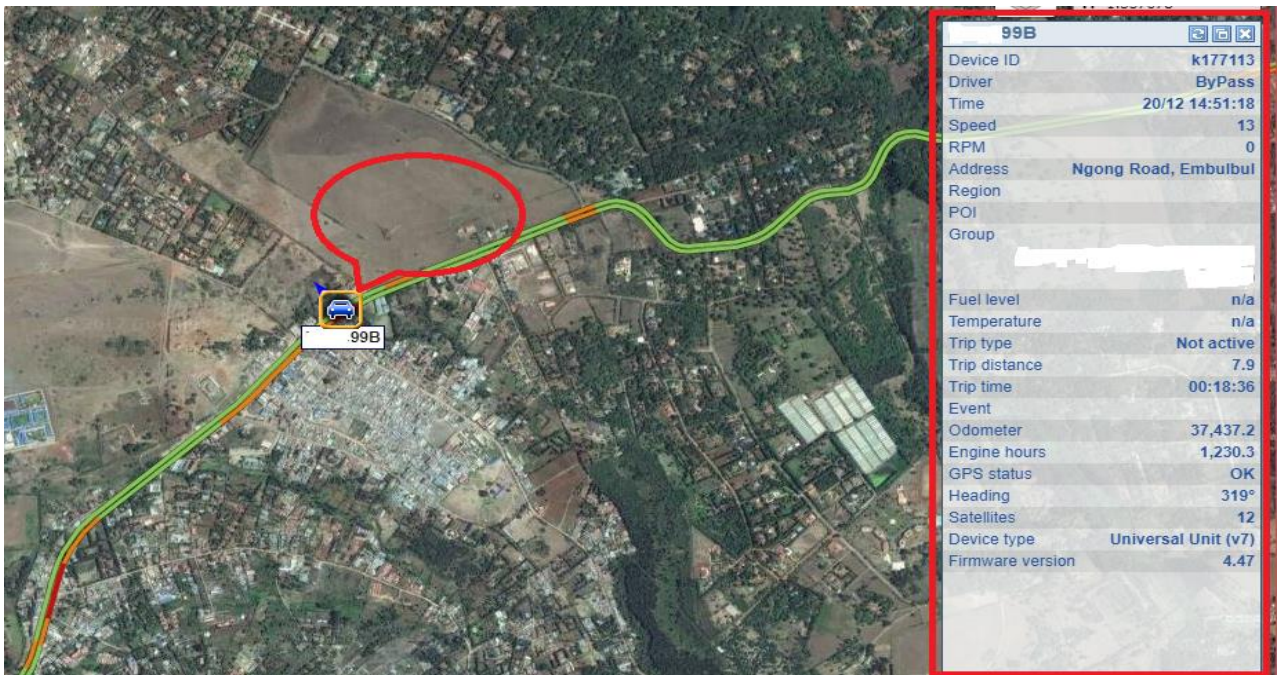
From date: 01/10/19 To date: 31/10/19

Driver performance breakdown by score

Score	%	Drivers	Distance	Duration
80-100	98.4	63	279,761.5	14182:38
60-79	1.6	1	702.2	18:46
0-59	0.0	0	0.0	00:00
Total		64	280,463.7	14201:24

Driver				Avg. score per driver with factor consideration (0-100)								
ID	Name	Distance (Km)	Duration (hh:mm)	Over speeding	Over RPM	Idle time	Acc.	Dec.	Curve acceleration	Legal speed exceed	Total	Ranking
2030000016	2030000016	22.8	00:51	100	100	100	100	100	0	0	100	1
2030000800	Benson Mutisya	6,864.4	289:04	100	100	100	100	100	0	0	100	1
2030000103	Dennis Kimotho	5,621.3	267:37	99	100	100	100	100	0	0	100	1
2030000014	Driver0172	9.3	01:53	100	100	100	100	100	0	0	100	1
0000140000	Driver0267	0.0	00:01	100	100	100	100	100	0	0	100	1
0000010000	Driver072	0.0	00:00	100	100	100	100	100	0	0	100	1
0002070000	Driver096	0.0	00:02	100	100	100	100	100	0	0	100	1
0001030000	Driver097	47.4	00:15	100	100	100	100	100	0	0	100	1
2030000285	Festus Kirui	5,340.5	275:19	100	100	100	100	100	0	0	100	1
0001880000	HARON MATOKE	0.0	00:01	100	100	100	100	100	0	0	100	1
2030000576	Juash Abuya	3,281.9	162:40	100	100	100	99	100	0	0	100	1
2030000188	Moses Kirachi	24.1	02:25	100	100	100	100	100	0	0	100	1
2030000019	Moses Ngunje	500.0	27:23	100	100	100	99	99	0	0	100	1
2030000419	RUKUNGU MANASEEH	78.3	03:53	100	100	100	100	100	0	0	100	1
2030000805	Zachary Mutahi	622.1	48:21	100	100	100	100	100	0	0	100	1
2030000022	Caleb Oyanda	7,016.5	285:30	100	100	100	97	97	0	0	99	16
2030000801	Driver0131	1,685.0	74:18	99	100	100	97	97	0	0	99	16
2030000227	Driver076	260.5	14:49	99	100	100	100	99	0	0	99	16
2030000445	DUNCAN NJENGA	98.9	07:20	100	100	100	97	100	0	0	99	16
2030000432	Fred Namai	3,093.7	162:42	100	100	100	96	97	0	0	99	16
2030000226	James Njihia	6,280.1	294:19	100	100	100	97	96	0	0	99	16
2030000207	Morrison Mwenda	7,360.7	308:40	99	100	100	98	98	0	0	99	16
2030000150	Mwamanzi Syombua	4,698.0	232:48	100	100	100	100	98	0	0	99	16
2030000093	Toma Wambua	1,175.0	60:47	100	100	100	100	97	0	0	99	16
2030000082	Zabron Ogeto	1,010.4	50:54	100	100	100	98	98	0	0	99	16
2030000149	DAVID IRUNGU NYINGI	727.6	214:57	100	100	100	90	100	0	0	98	26
2030000211	Geofrey Mutua	7,354.7	332:29	98	100	100	97	99	0	0	98	26
2030000216	Juach Abuya	1,778.5	93:47	99	100	93	99	99	0	0	98	26
2030000015	Julius Anyembe	2,599.7	141:24	99	100	97	97	99	0	0	98	26
2030000200	Moses Munenge	4,607.0	203:32	99	100	100	96	98	0	0	98	26
2030000017	Patrick Mwashi	4,428.3	195:26	99	100	98	96	99	0	0	98	26
2030000218	Erickson Musyoka	3,359.3	171:12	94	100	97	97	100	0	0	97	32
2030000433	Ken Otieno	1,156.8	64:43	95	100	92	99	100	0	0	97	32
2030000012	Benson Maina	4,016.8	204:28	100	100	78	98	99	0	0	96	34
2030000011	John Salat	3,702.4	206:53	89	100	100	100	100	0	0	96	34
2030000191	Moses Munenge	278.3	11:25	90	100	100	100	95	0	0	96	34
0000000000	ByPass	118,864.6	5828:00	92	100	94	96	98	0	0	95	37
2030000217	Pool Safaricom	1,209.6	58:50	95	100	78	100	100	0	0	95	37
2030000013	Driver0169	1,577.3	78:33	95	100	79	96	98	0	0	94	39
2030000283	Jackson Asiaya	6,100.5	267:06	100	100	73	96	98	0	0	94	39
2030000753	John Ngugi	7,465.4	313:01	84	100	99	100	98	0	0	94	39
2030000439	Evans Kisanya	6,972.8	274:49	100	100	75	91	97	0	0	93	42
2030004444	Pool Agra	2,453.9	112:08	100	100	63	97	97	0	0	93	42
2030000809	Samuel Mwaura	3,416.4	158:06	92	100	83	95	97	0	0	93	42
2030000224	Caleb Oyanda	760.6	41:31	99	100	54	100	100	0	0	92	45
2030000018	Driver0171	642.6	30:42	89	100	81	96	98	0	0	92	45
0004320000	Driver0268	0.0	00:24	100	100	51	100	100	0	0	92	45
2030000215	Elijah Muraya	7,511.8	838:26	95	100	62	100	100	0	0	92	45
2030000789	Vincent Korir	162.9	09:33	79	100	96	100	100	0	0	92	45
2030000267	Driver0148	4,128.1	252:51	100	100	44	100	100	0	0	90	50
2030000001	Nichorus Musyoka	6,825.5	280:52	91	100	74	92	97	0	0	90	50
2030000212	Daniel Maina	2,689.8	115:39	84	100	74	95	97	0	0	89	52
0000610000	Driver0106	213.6	09:02	100	100	45	96	98	0	0	89	52
2030000145	Evans Odeki	3,576.4	143:07	94	100	50	96	99	0	0	89	52
2030000214	Jerad Gathumbi	5,327.3	264:29	82	100	56	97	99	0	0	86	55
2030000162	Benedict Njuguna	1,422.5	86:20	94	100	18	98	100	0	0	84	56
2030000120	CHARLES MWANGI	84.2	85:48	100	100	5	99	100	0	0	84	56
2030000004	Moses Musau	1,972.0	106:31	84	100	43	98	99	0	0	84	56
0002150000	Driver0141	0.0	06:59	100	100	2	100	100	0	0	83	59
2030000003	Evans Nzaka	1,453.7	104:11	96	100	52	72	84	0	0	83	59
2030000201	Peter Ngatia	2,535.5	130:12	89	100	23	98	99	0	0	82	61
2030000222	Samuel Mwaura	3,209.4	159:34	84	100	26	99	100	0	0	82	61
0002270000	Henry Karanja	74.8	13:46	88	100	4	100	100	0	0	80	63
2030000010	CHARLES NGIGI	702.2	18:46	51	100	65	97	84	0	0	74	64
Avg. score		280,463.7	14201:24	96	100	80	98	98	0	0	94	

IDLLING AND STOP TIME REPORT



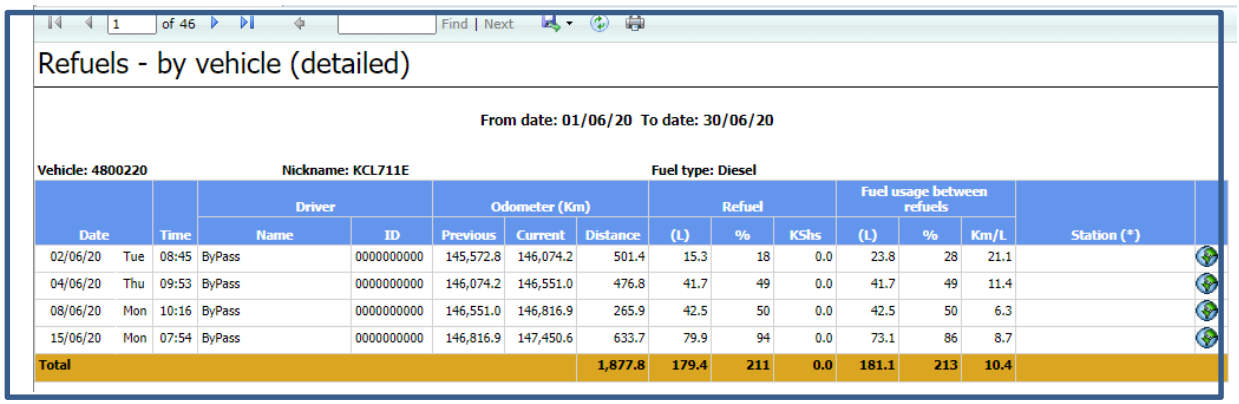
OVER-SPEEDING

Distance (Km)	Duration (HH:mm)	Over speeding	Over RPM	Idle time	Acc.	Dec.	Curve acceleration	Legal speed exceed	Total
644.9	31:44	97	100	93	100	98	0	0	98
2,406.2	82:32	90	100	94	100	99	0	0	95
1,484.0	65:08	91	100	82	100	99	0	0	94
1,385.3	68:33	91	100	86	100	99	0	0	94
1,162.5	54:21	81	100	72	100	100	0	0	89
1,373.3	55:43	83	100	65	100	100	0	0	88
883.7	39:53	80	100	66	100	94	0	0	86
365.9	16:44	63	100	75	100	99	0	0	83
2,527.7	76:19	61	100	83	100	96	0	0	83
916.4	52:00	70	100	60	100	99	0	0	83
2,021.9	82:21	74	100	49	100	99	0	0	82
1,787.3	81:24	65	100	64	100	98	0	0	82
1,753.3	72:51	62	100	64	100	98	0	0	81
8,016.2	300:32	65	100	80	86	90	0	0	81
1,958.3	83:44	65	100	61	100	99	0	0	81
2,591.9	94:23	53	100	81	100	99	0	0	80
3,101.2	102:52	54	100	66	100	98	0	0	79
2,459.7	84:13	55	100	63	100	97	0	0	78
2,134.6	80:09	55	100	62	100	97	0	0	78
2,640.2	95:38	54	100	67	100	90	0	0	77
1,087.7	47:32	53	100	68	100	92	0	0	77
1,813.3	67:51	44	100	75	100	93	0	0	76
4,120.2	108:40	37	100	81	100	87	0	0	73
606.9	22:12	37	100	62	100	96	0	0	72
2,645.6	83:44	33	100	63	100	75	0	0	67

Geo Tracking of vehicle and real time tracking

Vehicle Fuel Tracking

current fuel level is displayed in the dashboard. This vehicle has 73.5 Litres out of a capacity of 75 Litres.



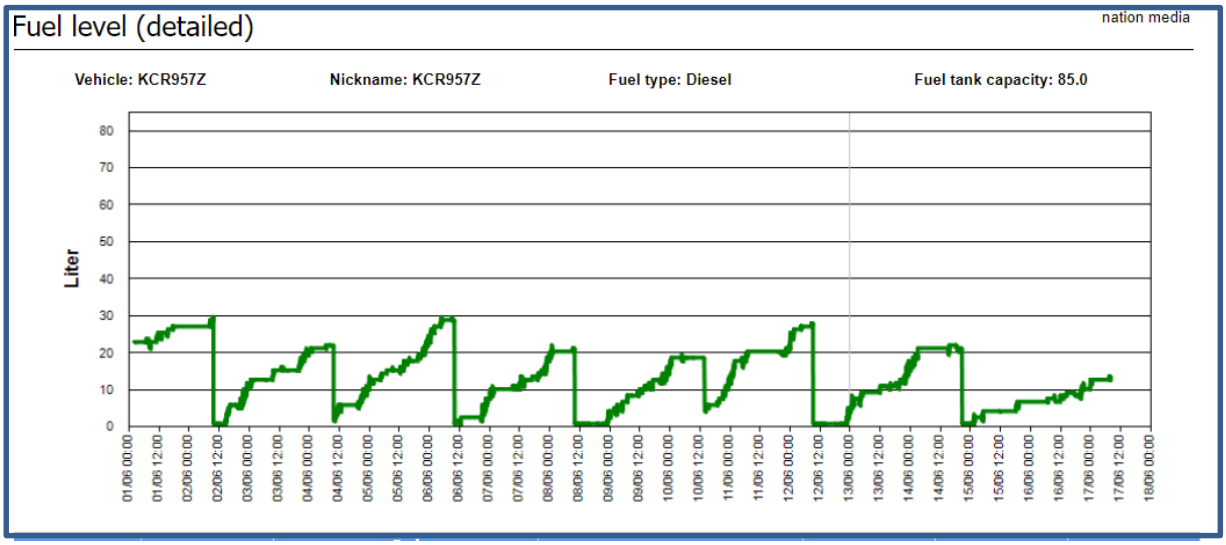
Refuels - by vehicle (detailed)

From date: 01/06/20 To date: 30/06/20

Vehicle: 4800220 Nickname: KCL711E Fuel type: Diesel

Date		Time	Driver		Odometer (Km)			Refuel			Fuel usage between refuels			Station (*)
			Name	ID	Previous	Current	Distance	(L)	%	KShs	(L)	%	Km/L	
02/06/20	Tue	08:45	ByPass	0000000000	145,572.8	146,074.2	501.4	15.3	18	0.0	23.8	28	21.1	
04/06/20	Thu	09:53	ByPass	0000000000	146,074.2	146,551.0	476.8	41.7	49	0.0	41.7	49	11.4	
08/06/20	Mon	10:16	ByPass	0000000000	146,551.0	146,816.9	265.9	42.5	50	0.0	42.5	50	6.3	
15/06/20	Mon	07:54	ByPass	0000000000	146,816.9	147,450.6	633.7	79.9	94	0.0	73.1	86	8.7	
Total							1,877.8	179.4	211	0.0	181.1	213	10.4	

Refuel by vehicle details report show all refuel to vehicles



Fuel level report indicating the level of fuel in the tank over a period

Alerts Report in terms of speed

Over speed by driver with two thresholds (detailed)

From date: 01/06/20 To date: 30/06/20

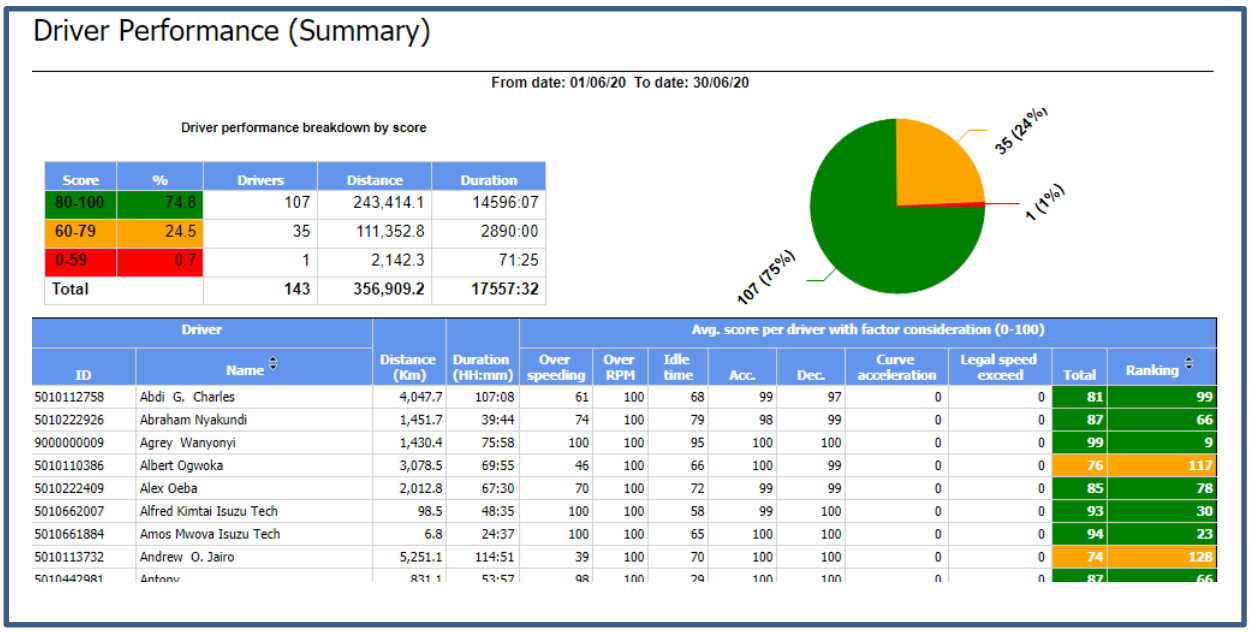
Driver: 5010112758 Name: Abdi G. Charles

Date	Vehicle ID	Vehicle Nickname	Time Start	Time End	Time Duration	Top speed	Over speed counter	First speed Threshold	First speed Over speed time	(*) Second speed Threshold	(*) Second speed Over speed time	Distance (Km)
02/06/20 Tue	KCL263P	KCL263P	23:06	04:29	05:23	124	15		00:00	100	00:15	339.5
03/06/20 Wed	KCL263P	KCL263P	09:25	10:37	01:11	105	1		00:00	100	00:00	67.2
03/06/20 Wed	KCL263P	KCL263P	11:02	11:57	00:55	104	1		00:00	100	00:00	19.3
03/06/20 Wed	KCL263P	KCL263P	12:02	12:14	00:12	110	1		00:00	100	00:00	9.9
03/06/20 Wed	KCL263P	KCL263P	12:24	13:23	00:58	134	2		00:00	100	00:04	60.3
04/06/20 Thu	KCP798Z	KCP798Z	21:18	21:28	00:10	138	3		00:00	90	00:02	9.4
05/06/20 Fri	KCP798Z	KCP798Z	01:25	02:17	00:52	136	12		00:00	90	00:13	41.2
05/06/20 Fri	KCP798Z	KCP798Z	02:30	02:46	00:16	130	2		00:00	90	00:01	9.7
05/06/20 Fri	KCP798Z	KCP798Z	02:53	04:22	01:29	115	13		00:00	90	00:04	56.0
05/06/20 Fri	KCP798Z	KCP798Z	04:30	05:34	01:04	104	7		00:00	90	00:01	53.1

Alerts from the system indicating over speed, the vehicle and the driver name

	17/06 08:08:14	End drive	KCP797Z	Wycliffe Okwemba
	17/06 08:08:01	Start drive	KCP798Z	Geofrey G. Zephania
	17/06 08:07:53	Entering region - Nation Centre	KMDA697P	ByPass
	17/06 08:07:53	End drive	KMDA697P	ByPass
	17/06 08:07:32	Idle time end	KCG059R	Antony Mugo
	17/06 08:07:15	Fuel sensor connected	KCG059R	Antony Mugo
	17/06 08:07:13	Speed - High	KCH076H	Eric Mwanzia
	17/06 08:06:51	Start drive	KBP932Q	Businel Jeremiah
	17/06 08:05:39	Start drive	KMDG288G	Javan O. Opande
	17/06 08:05:39	Start drive	KCL263P	Tarsicio Gikunda
	17/06 08:05:39	End drive	KCG898R	Joseph Mwaura
	17/06 08:05:25	Entering region - MT KENYA - Nkubu Bulk	KCG898R	Joseph Mwaura
	17/06 08:03:48	Idle time end	KBS025K	Antony
	17/06 08:03:48	End drive	KBS025K	Antony
	17/06 08:03:44	Speed - High	KCH076H	Eric Mwanzia
	17/06 08:03:21	Start drive	KCW640E	Joseph Ngugi
	17/06 08:03:10	Theft - GPS antenna	KCL714E	Patrick Tanui
	17/06 08:03:10	Vehicle battery - Low	KMEL706K	Agrey Wanyonyi
	17/06 08:03:05	Start drive	KCL711E	ByPass
	17/06 08:02:46	End drive	KMDG288G	Javan O. Opande
	17/06 08:01:59	RPM - Low	KBE636P	Titus Mutie
	17/06 08:01:57	Start drive	KBE636P	Titus Mutie
	17/06 08:01:36	Start drive	KCL161Y	ByPass

Drivers and their performance



Driver Performance (Summary)

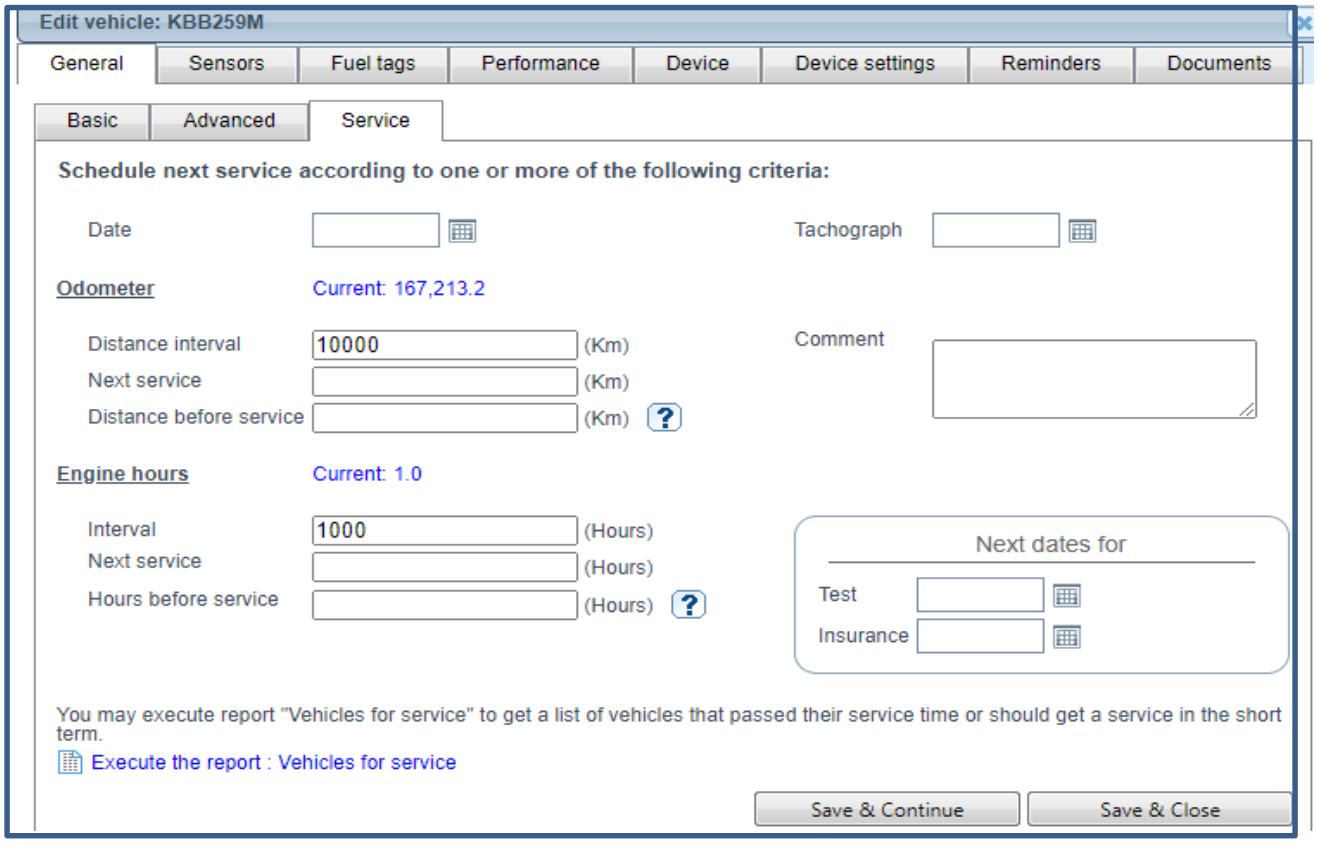
From date: 01/06/20 To date: 30/06/20

Driver performance breakdown by score

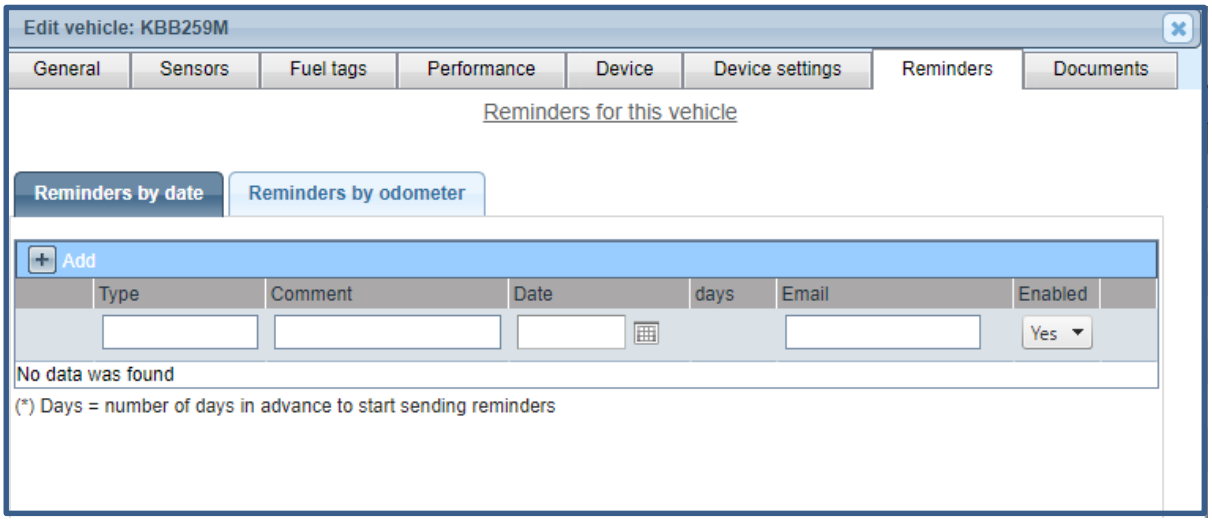
Score	%	Drivers	Distance	Duration
80-100	74.8	107	243,414.1	14596:07
60-79	24.5	35	111,352.8	2890:00
0-59	0.7	1	2,142.3	71:25
Total		143	356,909.2	17557:32

Driver				Avg. score per driver with factor consideration (0-100)								
ID	Name	Distance (Km)	Duration (HH:mm)	Over speeding	Over RPM	Idle time	Acc.	Dec.	Curve acceleration	Legal speed exceed	Total	Ranking
5010112758	Abdi G. Charles	4,047.7	107:08	61	100	68	99	97	0	0	81	99
5010222926	Abraham Nyakundi	1,451.7	39:44	74	100	79	98	99	0	0	87	66
9000000009	Agrey Wanyonyi	1,430.4	75:58	100	100	95	100	100	0	0	99	9
5010110386	Albert Ogwoka	3,078.5	69:55	46	100	66	100	99	0	0	76	117
5010222409	Alex Oeba	2,012.8	67:30	70	100	72	99	99	0	0	85	78
5010662007	Alfred Kimtai Isuzu Tech	98.5	48:35	100	100	58	99	100	0	0	93	30
5010661884	Amos Mwova Isuzu Tech	6.8	24:37	100	100	65	100	100	0	0	94	23
5010113732	Andrew O. Jairo	5,251.1	114:51	39	100	70	100	100	0	0	74	128
5010442981	Antony	831.1	53:57	98	100	29	100	100	0	0	87	66

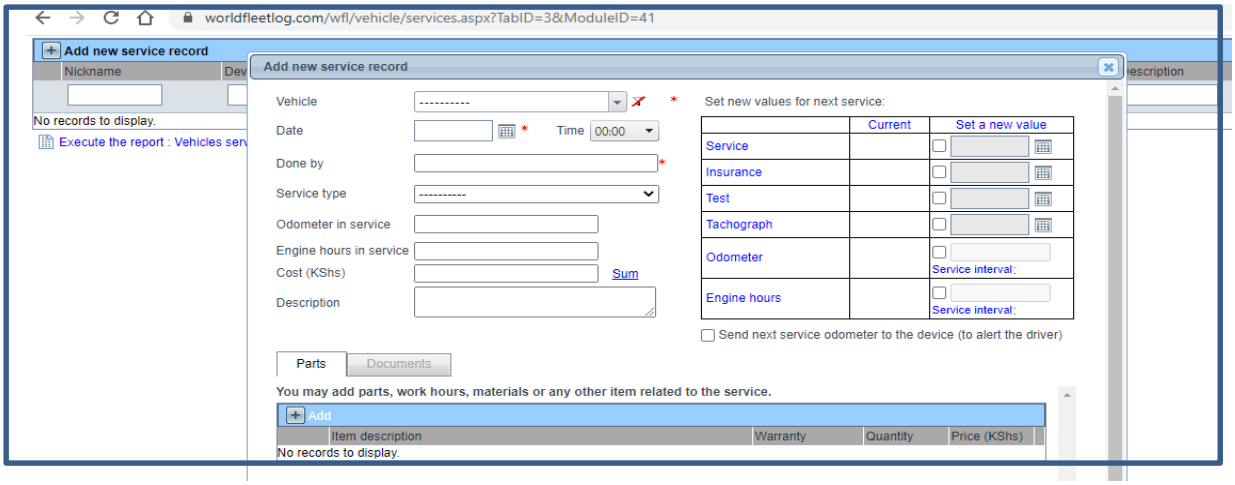
A Report showing set schedule dates for the vehicles



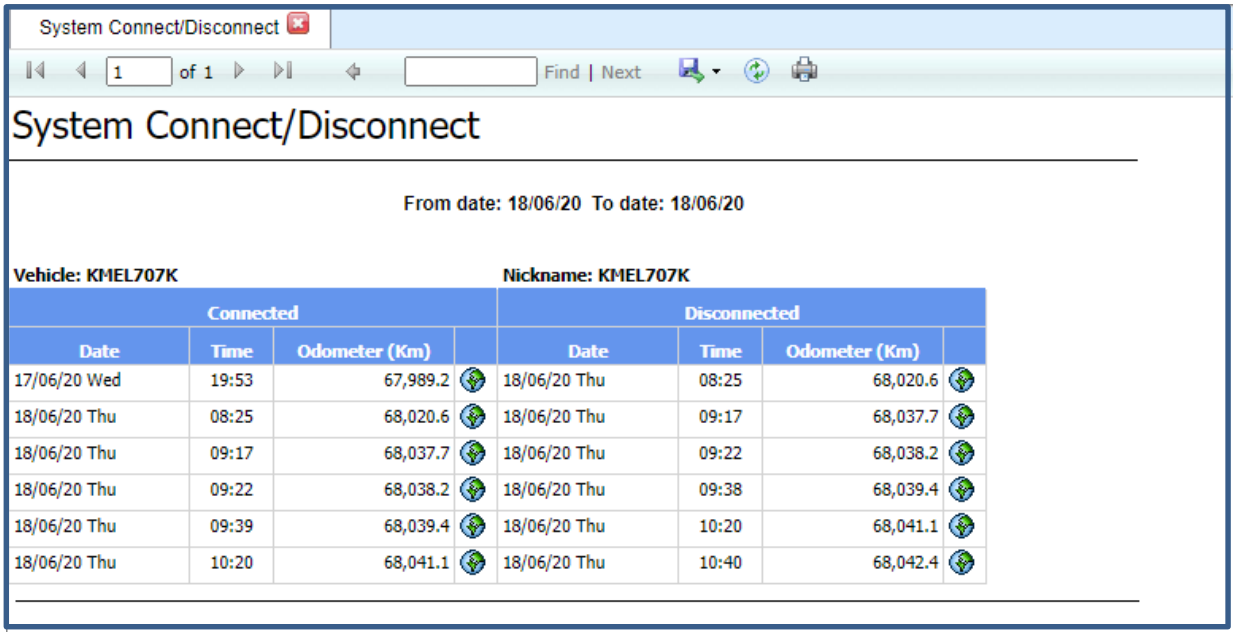
Reminders of other key events of a vehicle



Capture maintenance records of the vehicle.



System Connect/Disconnect when in distress



This screenshot shows that the System has ability to provide support in recovery of vehicle if stolen

2. Fuel Management Solutions –

(i) RETAIL FUEL MANAGEMENT SYSTEMS – FUELLOG

Fuel management solutions with real-time reports is a must in today's competitive economy

Fuel management solutions includes FuelLog2 systems that provide advanced management tools for what is clearly one of any company's biggest operating expenses – fuel. Fleet managers constantly seek greater control over fuel supplies to improve overall fuel economy and to eliminate loss due to pilferage and theft.

FuelLog2 provides cost-effective control over unattended fueling operations for increased security and accountability. What's more, installing FuelLog2 systems is fast, easy and affordable. In most cases, a FuelLog2 installation takes less than a day because no excavations or trenching are required.

With automatic data retrieval, FuelLog2 gives fleet managers effortless data access and management. Fleet managers have a number of reporting options to choose from, and include:

- Multiple download options include GPRS, GSM, WiFi or RF
- Export fuel data via a locally installed fuel management program that supports creating reports based on user-defined parameters.
- Access data via WorldFleetLog – EDT's Web-based application to display and manage data compiled from EDT's fleet and fuel management products.

FuelLog2 seamlessly integrates with EDT's SmartMile software to provide customer ID, multiple vehicle ID and odometer readings to track mileage and fuel consumption.

Fuel Management System

FuelLog is an independent fuel management system to control private or internal fuel stations and tankers. With FuelLog, fleet managers can effectively track fuel dispensing and fuel consumption. Based on locally available vehicle and driver identification data, this computerized system controls the refueling of vehicles via GPRS, GSM, WiFi, or RF communications.

The FuelLog2 fuel management system offers two refueling scenarios based on the order of driver and vehicle identification. Available options include manually recording odometer, engine hour and project number. It is also possible to automatically record odometer and engine hour data using EDT's SmartMile device. Additional options include fuel depot delivery and management.

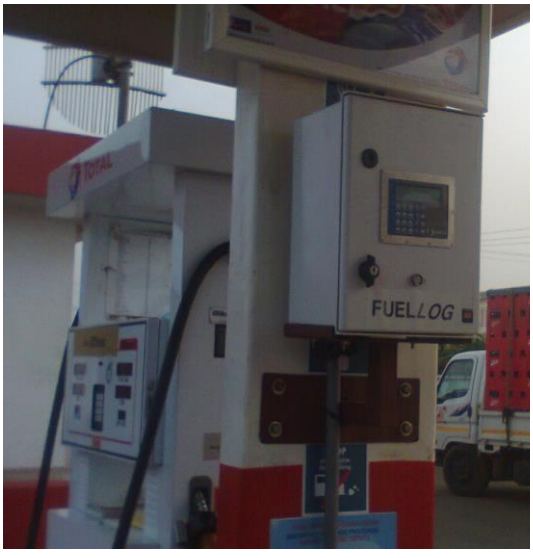
FuelLog is fully integrated with the following EDT products:

- SmartMile – to automatically record odometer and engine hour data
- WorldFleetLog – a Web-based Fleet Management application with integrated analysis of FuelLog data based on user-defined parameters

The System logs the following data for each refueling process:

- Date and time
- Operator and vehicle identification number
- Vehicle license number and description
- Cost center
- Vehicle odometer
- Fuel type, pump number and description
- Fuel pump counter start and end with resolution of 0.1 gallons/ litter.
- The dollar value of each transaction,
- And much more…

The automated Fuel Management System provides total control, monitoring and recording of all fuel dispensed into vehicles at all facilities where the Fuel Management System is installed.



The Vehicle Identification Unit is a device that is designed for installation on each vehicle. It is a compact, weather and fuel resistant device built to withstand any environmental condition common to petroleum handling equipment.

The Vehicle Identification Unit identifies the vehicle fuel inlet by a chip located within the unit. It has a pre-programmed chip with a unique number, eliminating the need for a costly programming unit.

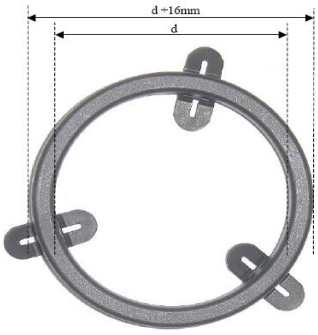


Figure 4:RFID Coil mechanical dimension

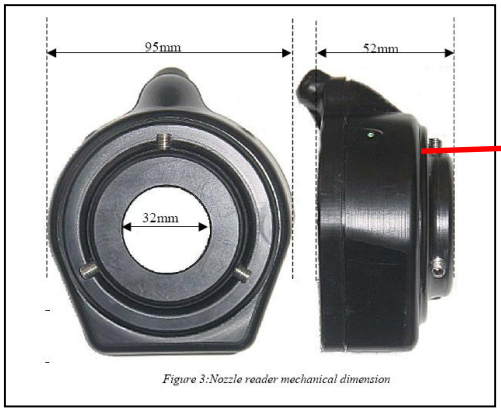


Figure 3:Nozzle reader mechanical dimension

A Vehicle Identification Unit installed in each vehicle fuel tank stores the required identity of the vehicle. Data is then automatically transferred to the Fuel Management System via a wireless communication media. This mode of operation eliminates the need for expensive communication cables between the pump and the Fuel Management Computer.

INFORMATION AND REPORTS

The Fuel Management System:

- Generates daily reports for each Pump Control Unit showing the number of transactions occurring via the Pump Control Unit.
- Reports tank levels and automatically alert personnel to reorder fuel.
- Generates any report according to range of date and time.
- Generates a daily report according to different criteria (for example, vehicle, pump, pump

location, group, fuel type, vehicle number, vehicle type, vehicle group, attendant, attendant group, cost centers and many more).

- Exports refueling data to other software that will be defined by the customer.
- Prints on demand a daily report of each individual transaction by location, pump, fuel type, cost, group, vehicle group and many more. Reports can be printed in various fonts and can be converted from English to other languages.
- Provides for total hands-free extraction of all transaction data from the Pump Control Unit via wireless communication media.
- Allows the change, entry, creation or elimination of information pertaining to vehicle data.
- Accommodates the addition, deletion or lock out of vehicles via the wireless network at the Pump Control Unit.
- Includes information backup and restore, and a repair backup database.
- Permits the export of any report to MS Word or Excel by the click of a button.
- Provides easy access to the PC's calendar and calculator.

The transaction information recorded includes:

- Location
- Transaction date and time
- Transaction dollar value
- Operator number
- Vehicle Identification Unit number
- Equipment number
- Odometer or hour meter reading
- Pump name
- Pump number
- Hose number
- Fuel type
- Quantity of fuel into storage tank(s)
- Quantity of fuel out of fuel pump(s)
- Fuel out by pump/ vehicle/ driver
- Service time table per vehicle
- Accountability for fuel per cost center
- Much More……

The Fuel Management System:

a.) Provides adequate safeguards to ensure that only authorized vehicles have access to refuel. Automatically identifies a vehicle when the nozzle is inserted into the vehicle's fuel inlet and turns on the fuel dispenser only if the vehicle and operator are authorized and it is the appropriate fuel type.
b.) Restricts the types of fuel authorized for dispensing.
c.) Programs each Pump Control Unit module to request additional information from the driver such as P.I.N. and odometer reading, if desired.
d.) Automatically suspends an authorized transaction when the nozzle is removed from the vehicle fuel inlet.

e.) Programs a time-out feature to terminate an authorized transaction for which no fuel was dispensed within one minute, or a transaction in which fuel was dispensed but activity has terminated.
f.) Has a manual override system in the event that a Pump Control Unit module malfunctions.
g.) Has individual user passwords and usernames for each user of the Fuel Management
h.) Software. Has multi-level security for users allowing complete or restricted access.

A customer's decision to implement technology to better manage their fuel resources is very important to us. It is always our intention to serve our customers in a manner that far exceeds their expectations and requirements. This has been and will continue to be our trademark in service.

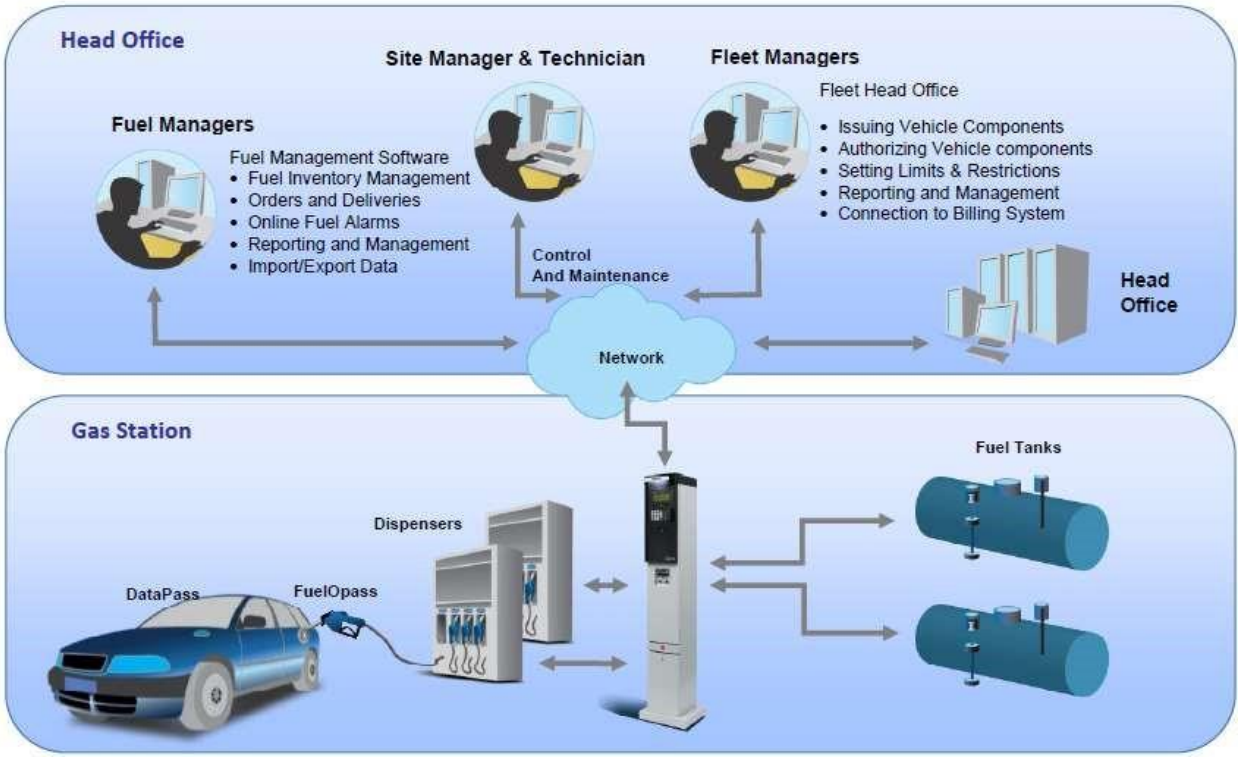
Figure 1: FuelLog2 Models

Single Nozzle


Dual Nozzle

TECHNICAL PROPOSAL ON INSTALLATION OF FUEL MANAGEMENT SYSTEM

MANAGEMENT SYSTEM



1 Introduction

We are pleased to offer a proposal for Home Base Solution which provides Manufacturing, Processing, Construction & Logistics companies with full visibility and tight control over the fleet's fuel consumption and usage.

The immediate effect of implementing HomeBase Fuel Management solution, results in significantly increased fleet efficiency, reduction of unnecessary fuel expenses and effectively prevention of fuel fraud and theft

For most Manufacturing, Processing, Construction & Transport companies fuel represents the highest budget line. It's a heavy investment for any size of a company. And that makes effective fuel management systems crucial to the business success.

In light of this, we have partnered with Orpak from Israel to offer a reliable Fuel Management solution to the Transport & Logistics Companies.

For the successful implementation of this project, we will undertake the full scope of the project and be responsible for the completion of the project and after sale support.

Our solutions incorporate the business as well as operational aspects on both the individual station (Fueling site) and the network level, including fuel inventory and deliveries (Fuel stock), pump automation, pricing management as well as shift/attended management, and much more...

Once deployed, the Fuel Management solution delivers significant operational efficiency, fuel loss reduction, and prevention of fuel fraud as well as theft. Furthermore, the solution enables initiating and monitoring fleet activities, grow market

Industry Challenges

Most of Logistics & Manufacturing companies face the following challenges:

Fueling of unauthorized vehicles/units.

- Inaccurate manual data entry processes.
- Fuel is the biggest expenditure in the transport industry.
- Increased manpower and operational costs due to Micromanagement.
- Selecting fuel efficient trucks & machinery.
- Financing constraints.
- Lack of proper route planning.
- Guaranteeing timely deliveries to the customers.
- Lack of inventory management system.
- Lack of driver behavior management systems.

- Volatile fuel costs.
- Lack of fuel usage monitoring system.
- Remote network service station management.
- Losses in fuel due to inventory shortages and fraudulent activities (e.g. dumping, theft, etc.)
- Full reliance on manual records where probability of human error occurring is very high.

1.2 Global Trends

The following details presents the current global trend in the petroleum industry:

- Manufacturing & Transport Companies are moving towards unmanned sites by deploying Fuel Automation System.
- Monitoring of fuel consumption by System Authorized company fleet.
- Fully and semi-automated programs that eliminate the need for human intervention.
- Improved accuracy of bill entry process
- Immediate and long-term cost containment
- Increased profitability by employing technology to manage and reconcile the fuel dispensed and the tanks stock.
- Employment of automation system which can capture and store daily and historical consumption record for their fleet.
- Consistent aggressive fuel pricing management to help in monitoring fleet consumptions.
- Enhancing driver experience.
- Proactive management strategies to increase profit margins.
- Increased efficiency on the Fleet/Fuel Management Department.
- Enhanced speedy deliveries.
- Efficient route planning.

2. Home Base Solution Description

Home Base solution is an efficient modular and scalable system that enables fleet managers to fully manage & control fleet's fuel consumption and the fuel station's operation.

The solution consists of "ForeHB" and "ForeFuel" systems which is scalable and modular, enables to be used as a complete solution or partially according to specific requirements.

Orpak's ForeHB solution provides end-to-end coverage of HomeBase (commercial fleet) fuel sites. It extends from the station or tanker truck to the head office and gives fleet managers the power and flexibility to manage their sites, control distribution and monitor fuel levels. ForeHB can manage, from one central point, multiple sites and fleets, maximizing fleet efficiency and minimizing fuel expenses.

ForeHB Features

Selection of robust controllers for site automation and fueling authorization with online or offline capabilities

- Fully scalable – from a single site with a dozen vehicles to hundreds of sites with 50,000 vehicles
- Versatile fueling authorization methods: cards, tags, MiFare, user codes, employee cards and RFID vehicle identification
- Supports fleet and third-party issued payment means, with two-stage authorization option
- Flexible deployment – any fixed or mobile site architecture, type of dispensers, TLGs, and other equipment
- Generates customized periodic reports for accounting, budgeting and operations management
- Field-proven in severe weather and harsh environments such as mines, airports and extreme climates

ForeHB Description

Any Transport Company with its own fueling stations requires tight management on the pump Orpak's ForeHB offers full site automation for both attended and unattended sites. It controls dispensers, tanks and fueling trucks using advanced controllers and Fuel Management software.

ForeHB includes the Fleet Head Office (FHO), a powerful management tool and portal that allows fleet managers to control and authorize fueling for any vehicle, set limits and restrictions, receive alerts and generate reports. Additionally, FHO acts as a payment authorization server.

ForeHB manages fuel inventory at the station and also provides critical alerts on fuel levels, leaks, overfills and other events. The system stores each tank's history, provides a forecast for future deliveries and reconciliation between the stocks and fuel dispensed.

SYSTEM ARCHITECTURE

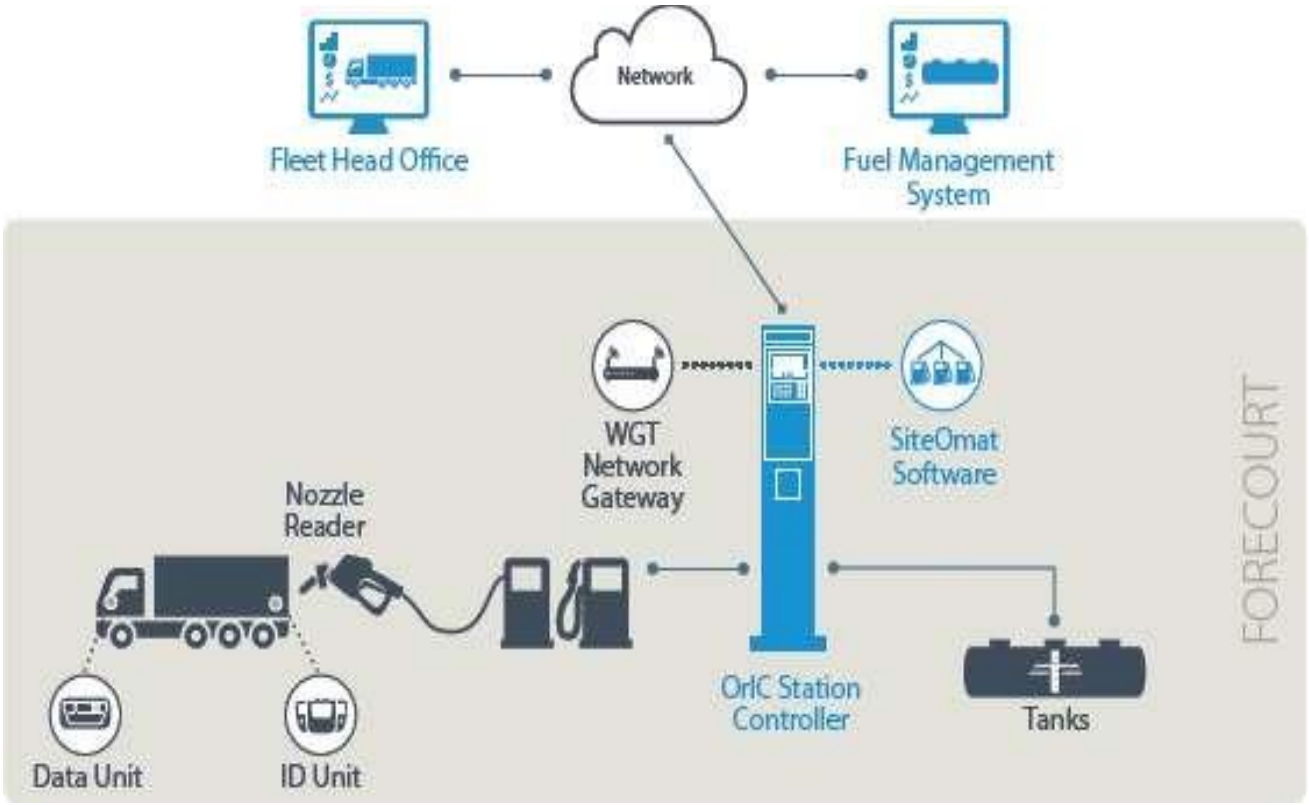


Figure 1: ForeHB Diagram

ForeHB Components

The ForeHB solution includes the following field proven and worldwide integrated components:

SiteOmat Station Controller

The SiteOmat Station Controller is available in a variety of hardware enclosures to suit various environments. It utilizes a solid-state FLASH disk and battery backup and the rugged hardware design enables it to withstand the harsh service station environment and extreme temperature range. All SiteOmat Controller products are certified by UL, CE and FCC.

The SiteOmat Controller is connected to the pump with a serial cable and interface with it according to the pump's protocol. In case of mechanical pump, an

Electronic Valve is installed to lock the pump and a Pulser is used in the fueling line to measure the fuel quantity.

Orpak Controller Unit

The Orpak Controller Unit (OrCU 3000) is an independent site controller with complete site automation, mounted in a sealed metal box. This rugged box is wall mounted for either internal or external installations. The OrCU 3000 interfaces with the forecourt devices, such as dispensers, TLG, payment terminals and vehicle identification devices.

Orpak Island Controller

Orpak's Island Controller (OrIC) is an independent site controller having complete site control automation. It supports automatic vehicle identification and manual authorization devices. It includes the SiteOmat forecourt controller, OrPT (Orpak Payment Terminal) and optional printer, all mounted in a pedestal. The OrPT accepts a variety of authorization devices, such as cards, RFID tags, fleet keys and HID cards. The OrIC interfaces with the forecourt devices, such as dispensers, TLG, payment terminals and vehicle identification devices.

Head Office

The Head Office system is a centralized management tool which consolidates the data from multiple sites and generates reports, alarms and on-line status of fuel station sites and fleets.

The Head Office software could be installed either on standard PCs, high end servers or be hosted on Orpak premises:

- PC based for small organizations (Up to 20 stations or 5000 vehicles)
- Server based for large organizations
  - Database based on Microsoft MS-SQL application.

The Head Office includes two main applications:

Fleet Head Office

The Fleet Head Office (FHO) application administers the issuing of vehicle identification units and manages and controls the on-line refueling process in multiple sites. It allows on-line refueling authorization including limits and restrictions per each vehicle or group of vehicles.

The FHO enables the following:

- Issuing and authorizing vehicle components

Setting limits and restrictions - –ncluding: maximum amount per day / week / month, restricted days of the week, restricted stations (zone of activity), fuel type etc.

- Reporting and management - –ncluding: exception reports, high consumption vehicles, refueling exciding tank capacity, vehicles not in use and more.

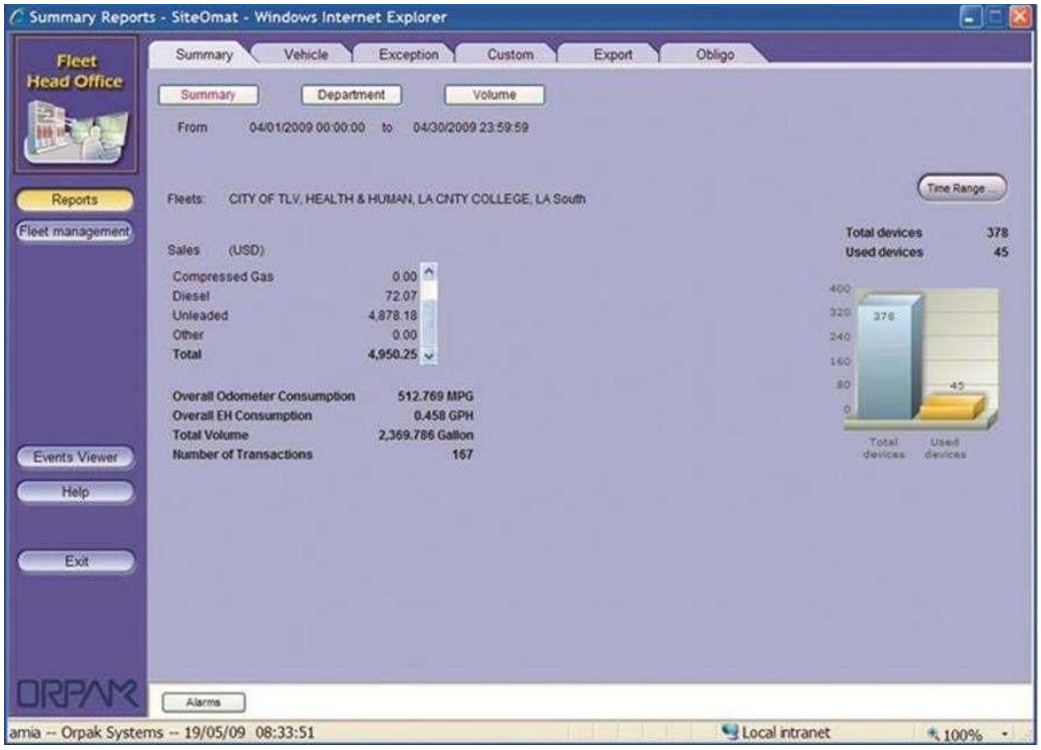


Figure 2: Fleet Head Office Main Screen

Fuel Management System

The Fuel Management System (FMS) enables the management to see a complete overview of the fuel status and levels at the station for each fuel tank separately.

The main features of the FMS are:

- Fuel Inventory Management -The FMS regularly obtains updates from the fuel tanks, displays fuel level, water level, temperature and tank density per each individual tank. The application stores each tank's'history and provides forecast for future deliveries.

- Orders and Deliveries - –MS connects orders to fuel deliveries and reconciles the relevant amounts (order vs. ATG vs. Bill of Loading Vs. total fuel dispensed), enables tight data tracking designed to minimize loses and maximize the service stations efficiency.

- On-line Fuel Alarms - –MS manages alerts for tanks with critical fuel levels, leaks, overfills and other events. All alerts can be sent to a single user group/s via email or SMS. Fuel order forms can be produced directly via the alarm screen, in cases where low fuel level alarms were activated.

- Reporting and Management - –MS enables the user to generate several sales, stock and reconciliation reports at company level including daily or historical fleet fuel consumption

Optional ForeHB Components

Tag / Card Readers

Utilizing Orpak's Tag / Card Readers, the customer is identified with a personal device to initiate transaction. The system presents the necessary instructions on screen which makes it easy to operate.

Orpak Tag Reader

The Orpak Tag Reader (OrTR) is a compact contactless Tag / Card Reader, installed directly onto the dispenser for both attended and unattended activities.

The OrTR unit supports MiFare Tags. It includes a Security Application Module (SAM) used to handle encrypted contactless cards and tags. The user interface consists of a 2 x 16 character, illuminated LCD, two red and green LEDs and a strong buzzer. OrTR has a swipe Magnetic card reader option and Keyboard option (OrTR KB model) with full alphanumeric keyboard. The device uses RS-485 serial communication to the station controller with a simple protocol.

AUTOMATIC TANK GAUGING SYSTEM

The Automatic Tank Gauging (ATG) system consists of two components which integrated to the SiteOmat Station

Controller or installed independently.

Tank Level Probe

The probe is installed in the station's fuel tank and collects the fuel level, water level and temperature data and communicates with the station controller. An optional density gauge is also supported.

The probes in a station are analyzed by the Console and station controller and the data is displayed in a graphical view.

Automatic Tank Gauging Console-TLG

The ATG system is provided with a TFT Console that collects data from all station's probes analyzes the data and presents the tank data with graphical image on a high-quality wall mount LCD monitor.

For cost efficient solution, an optional direct connection of the Tank Level Probe to the SiteOmat Forecourt Controller is available.

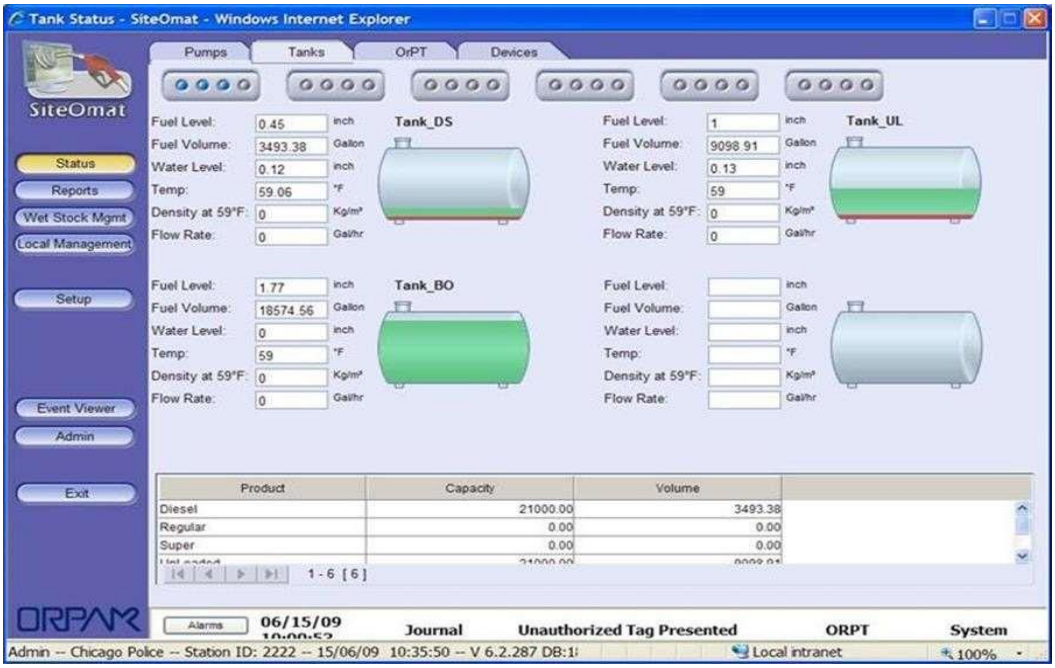


Figure 3: SiteOmat's Tank Status Screen

3. ForeFuel

AUTOMATED VEHICLE IDENTIFICATION FOR FUELLING

Orpak's ForeFuel automated vehicle identification (AVI) system powers simple and secure refueling of millions of vehicles worldwide, with clear and measurable value to commercial fleets. A small and easy to install RFID unit next to the fuel inlet acts to identify the vehicle and authorize payment; Fueling can only be activated when the nozzle is inserted into the inlet.

- World's first: Orpak is the first company to offer AVI fueling and today continues to lead the market in number of deployments and expertise. Its patented RFID vehicle identification technology continues to define the market in terms of functionality and value.
- Simple and seamless: quickly add ForeFuel to any forecourt, with seamless integration with existing software and hardware.
- Next to none loyalty for oil companies, through value-add services for your fleet customers – and the tie-in to RFID refueling.
- Significant savings for fleets, through a significant reduction of fuel expenses, through better management of fueling and the reduction of misuse.

ForeFuel Benefits

Fleets use ForeFuel to reduce costs associated with fraud and unnecessary fueling regardless of whether fueling occurs at their own sites or in retail stations. Using AVI controls the distribution of fuel and significantly increases fleet efficiency.

- Saves fuel expenses and reduces fraud by fueling only authorized vehicles
- Easily controls, tracks and manages fleet consumption and refueling activity with alerts on irregular fueling or abnormal consumption patterns
- Obtains Odometer and engine hour readings and additional vehicle information for effective fleet maintenance and safety
- Fully integrates with Orpak's ForeHB HomeBase management solutions and fleet management solutions

ForeFuel Description

ForeFuel is an automated vehicle identification (AVI) solution where the vehicle itself is the means of payment, recognized through an RFID unit installed next to the inlet, identifying the vehicle an authorizing payment. The result is fast refueling with no need for cash, card or coupon payment.

ForeFuel ensures that fuel only goes to the authorized vehicle whose account should be charged.

Removing the nozzle and trying to fuel another vehicle immediately suspends fueling activity.

Deployment is simple, as the vehicle elements are designed to take minutes to install, with simple station installation.

ForeFuel is superior to fleet card / fuel card payment as it creates clear value to the fleet managers, by creating a tie-in to the station and a superior service experience.

Orpak customers report significant savings using ForeFuel, which is suitable for any type of vehicle, cars, vans, buses and trucks, as well as locomotives, boats, generators, construction and other heavy equipment.

- Advanced management and reporting: ForeFuel is combined with advanced management and reporting capabilities
- Simple Issuing: the system enables on the spot issuing of the vehicle units, using a handheld programmer. Together with the short and effortless installation, ForeFuel enables quick mass deployment and minimal investment.

- Flexible business model: ForeFuel is offered in various models, such as equipment sale, ForeFuel as a Service, equipment lease and pay per transaction.

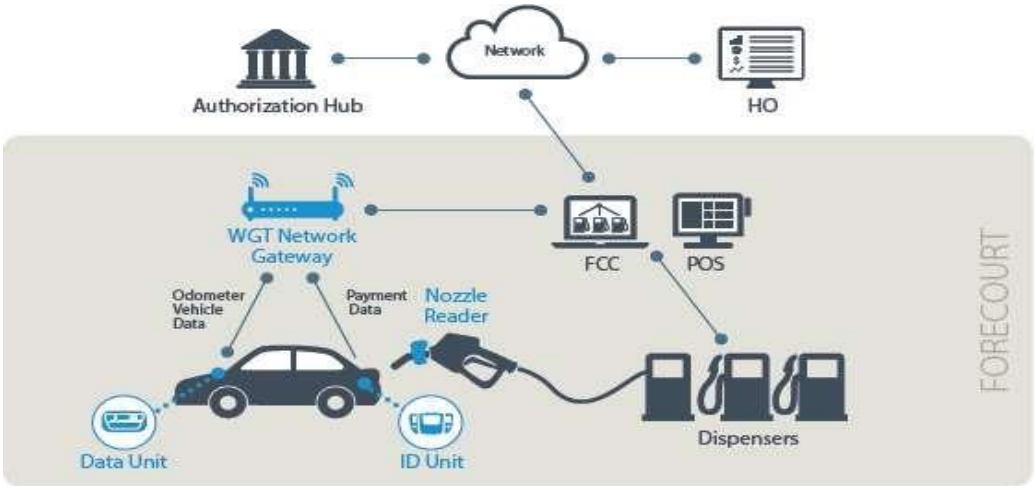


Figure 4: ForeFuel Diagram

ForeFuel Components

The ForeFuel consists of components that are installed both on the station as well as in the vehicle.

Vehicle Units

FuelOpass

Orpak's FuelOpass unit is a passive and secured vehicle identification tag for refueling that carries the account number for refueling charges purposes. The account number is protected by a high-level encryption and its patented removal protection mechanism eliminates risk of theft.

NanoPass

The NanoPass is a FuelOpass in a 'Cube' form factor, designed to simplify and reduce the costs of the installation process for light duty vehicles. It has a destruction mechanism when removed to prevent unauthorized removal or use.

DataPass

Orpak's DataPass is a miniature unit that connects to the vehicle BUS and captures Odometer and Engine Hours information from the vehicle CPU/BUS or from analog input (like vehicle switch). The data is uploaded to the nearest Wireless Gateway Terminal (WGT) in the station site. Enhanced protection is achieved by correlating the FuelOpass / NanoPass and DataPass of the same vehicle.

Two types of DataPass units are available:

- DataPass/DataPass+ is connected directly to the vehicle BUS and is used in heavy vehicles and trucks.
- µDataPass/ µDataPass+ (Micro DataPass) is plugged into the vehicle diagnostic connector (OBD) and is intended for light and commercial vehicles.

Station Site Components

Wireless Gateway Terminal

The Wireless Gateway Terminal (WGT) receives both DataPass (Active Recording unit) and FuelOpass (Passive ID unit) vehicle data, decrypts the information and transmits it to the station automation system in a secure encrypted manner.

The WGT uses 2.4GHz, IEEE 802.15.4 technology and is successfully deployed in thousands of stations worldwide, providing >99.9% availability to cope with wide range of interferences and other transmitters in the station environment.

The WGT network main highlights:

- Mesh, modular, scalable, redundant & flexible wireless network
  - Co-exist with any IEEE802.xx network (like Wi-Fi)
- Secure network, communication encrypted with AES128 key

Nozzle Reader

The Nozzle Reader (NR) is a self-contained unit installed on the nozzle which reads the FuelOpass unit using contactless technology. It transmits the encrypted FuelOpass data to the nearest WGT using short range, spread spectrum wireless communication.

Orpak's Nozzle Reader fits to onto existing fueling nozzles and nozzle cradles of many different brands globally.

The Nozzle Reader has a robust plastic structure enabling it to survive both the harsh fuel environment and mechanical impacts, while maintains an appealing industrial design for a clean look along the curves of the nozzles. Advanced power management ensures over 2 years of operation in high traffic stations in addition to field replaceable batteries.

FuelOmat Installation Tool

Portable Wireless Programmer

The Orpak portable Wireless Programmer (WP) is an installation tool which used for "on-the-spot" account issuing of the FuelOmat vehicle units. It accelerates time to market from ordering the vehicle units up until its installation and activation - –ithout reducing the security level.

- Utilizing the WP: An authorized installer installs and programs the FuelOpass and DataPass at customer's premises.

The following section includes a description of Fuel management solution as proposed by Telematics Africa Ltd to Kenya Ports Authority.

We have engineered the solution based on an understanding that logistics forms parts of your daily operations and you have your own fueling station. We are confident that the Automated fuel management system proposed will provide many advantages such as automated operations with real-time station status, tight control on fuel usage, real time tank stock visibility and a comprehensive fuel management.

4.1 SYSTEM ARCHITECTURE

PUMP CONNECTION

The fuel pumps/dispensers will be connected to a Controller mounted inside the control room using communication data cables. A universal pump communication will be used to establish communication between the pumps and the controller.

A nozzle reader will be installed on the nozzle on each pump, for ease of identifying the details of the RFID Coil/FuelOpass ring installed on the fuel inlet of the vehicle.

TANK AUTOMATION

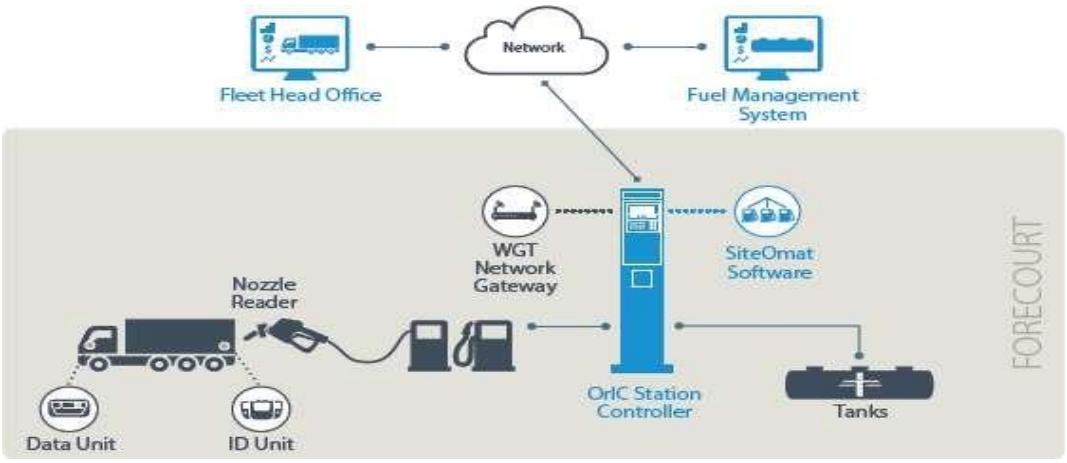
A level probe/sensor will be installed in each of the underground/aboveground tanks and connected to a Tank Gauging console mounted adjacent to the Controller. The ATG console will display the tank product levels, deliveries & alarms in real time on an LCD screen.

The ATG Console will be connected to the Controller for reconciliation between the fuel dispensed and the tank stock data.

VEHICLE/MACHINERY IDENTIFICATION

Each Vehicle/Machinery will be fitted with a programmable RFID Coil which will be installed on the fuel inlet on the fuel tank.

The RFID coils will be programmed using the details of the vehicle/machinery for purposes of identification during fueling by the RFID Reader installed on the pump nozzle



SYSTEM ARCHITECTURE

Fueling Process Description

Following are some examples of an operational workflow at the fueling station.

Fueling process using FuelOpass devices

The entire Fleet will be fitted with a FuelOpass a vehicle identification tag on the fuel tank.

The following steps will occur during fueling;

Nozzle inserted in vehicle's fuel inlet.

1. Nozzle Reader reads the FuelOpass and sends the vehicle account number to WGT (Wireless Gateway Terminal).
2. DataPass sends odometer, Engine Hours, and vehicle bus data to WGT.
3. WGT forwards the combined data to Forecourt Controller (FCC)
4. FCC send pre-authorization request to System server for approval, including predefined set of limits and restrictions.
5. Upon transaction approvals, FCC opens the pump and allows fueling.

- f nozzle is removed from the vehicle fuel inlet, the pump fueling immediately stops. This prevents refueling of another vehicle or to a jerrycan.
    - Full transaction information, is sent to the centralized Fuel and Fleet Management Software.
    - All these reports can be easily accessed on a Web Browser at any given time or place.

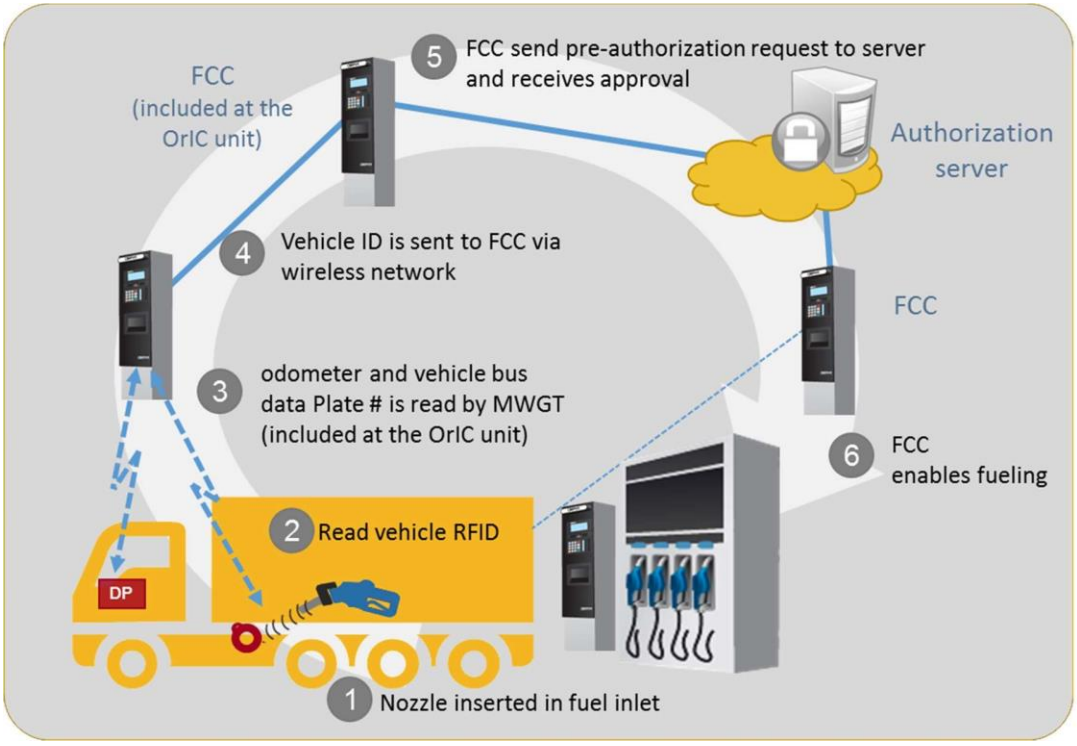


Figure 5: Fueling process description using FuelOpass

Fueling process using Mifare tag devices

1. The driver stops for fuel at the station.
2. Authorization device for the fueling transaction is a Driver Mifare card. The driver presents his/her Mifare tag to the tag reader on the Tag reader.
3. Mifare tag information is read and sent to the FCC for authentication and approval.
4. The driver lifts the nozzle and inserts it in the car/truck fuel inlet.
5. Upon approval, the fueling transaction starts, at the end of which the transaction data is kept internally and accessible on the Web.
6. Once the refueling is completed, the motorist replaces the nozzle to pump.
7. The data is transferred to the Fuel Head Office (FHO)

Technical Proposal

The solution consists of modules and features that are based on "ForeHB" and "ForeFuel" systems which is scalable and modular, enables to be used as a complete solution or partially according to specific requirements.

The proposal includes:

- Home Base Forecourt Communication controller with accessories.
- FuelOpass/RFID Coils for vehicles based on ForeFuel module. Nozzle Readers installed on the pumps for RFID Coil identification Level Sensors for product level measurements.
- Tank Gauging for real time and historical tank inventory data.

4.2 BENEFITS OF FUEL MANAGEMENT SYSTEM

The combination of "ForeHB" and "ForeFuel" systems will provide you with the following main benefits:

- Savings on fuel expenses and reduced fraud by ensuring fueling of only authorized vehicles.
- Setting fuel limits and restrictions - including: maximum amount per day / week / month, restricted days of the week, maximum visits per day/week/month, fuel type etc.
- Full visibility on the fuel consumed by generators (if applicable) and other machinery
- Full Visibility of the tank stock data.
- Reconciliation between the fuel dispensed and the tank stocks data.
- Two Head Office applications (FHO) hosting options:
- In a dedicated server at company's premises (server not included in this proposal)
- Hosted in Orpak's'servers accessing to it remotely.
- Remote Web-based capabilities for fuel monitoring & management.
- Full and easy consumption control per vehicle/p e r u n i t.
- Full visibility on daily and historical fuel delivery data.
- Minimal paper work & time wastage.
- Safe and secure data storage.
- Alarms & Notification on tank product level.

6. **Forecourt System Features Summary**

Features	ForeHB / ForeFuel System
Fuel stock Inventory Management: - Online Tank Status (e.g. inventory, temperature, level, delivery data) - Association between fuel invoices and deliveries - Reconciliation between tanks stocks and fuel dispensing on the forecourt - Site Reports (e.g. fuel inventory management, sales, reconciliation, fueling transactions, etc.)	√
Online Pump Status	√
Alarms and Notifications	√
Pump Control (e.g. fueling authorization) management for Wet stock	√
Report generating engine (custom + default)	√
Shift Management	√
Driver Authorization (identification device card/tag for fueling authorization)	√
Network Customized Reports (per pump, per tank & per truck)	√
Quick and simple access to each tank/pump for online status view - –eb based	√
Local Data Storage – for off-line mode	√
Alarms and Notifications at the network level	√
OrIC Pump Controller with BOS (SiteOmat 360 SW App')	√
Automatic Tank Gauging (ATG) System	√
Receipt Printer (Optional)	√
Automatic Vehicle Identification System (VIS)	√

3. Fleet Management Software System

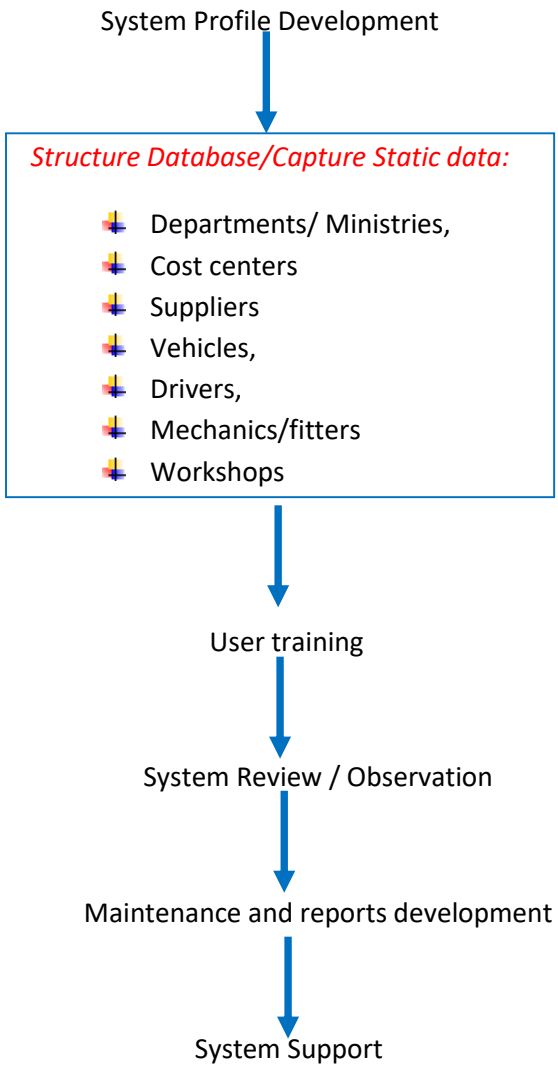
FleetWave® - Web-Based Enterprise Fleet Management Solution

FLEETWAVE SYSTEM IMPLEMENTATION STRUCTURE

We structure the profile as per the client's needs and administration hierarchy as follows;

- Sets and codes database tables and modules i.e. vehicles table, drivers table, Fitters/mechanics table, Departments/Ministries, Cost centers, suppliers etc.
- Develops templates for batch import of static data.
- Set user log in details as per authorization levels in the system.
- Development or coding of reports for users.

Implementation Structure



Below is detailed Fleetwave system Features and implementation;

FleetWave® Fleet Management Software System

Web-Based Enterprise Fleet Management Solution

When we are asked "*What is it that makes Fleetwave special?*" the answer is a very simple one - **–FLEXIBILITY**

With the added flexibility of user definable reports and screen layouts, it lets you use your own terminology and adapt the system to your specific requirements.

FleetWave is world's'first commercially available web-based fleet management information system.

FleetWave utilizes the very latest technologies to provide comprehensive fleet management capabilities for all sizes of fleet operations, using an Internet or Intranet platform.

FleetWave is a true **'web-based application'** rather than a compromised 'web enabled' 'system which can slow down when dealing with substantial traffic. This means that the software can be accessed from anywhere in the world and the only requirement to view the system is an internet connection.

This Fleet Management software:

- Quickly **identifies warranty claims** (for work that might otherwise be paid for)
- has a **fleet status tool** that instantly highlights tasks that are overdue, due or need to be carried out shortly
- **highlights rogue vehicles and drivers**
- has **Accident, Contract, Workshop, Pool Vehicle Management modules** available
- can **view stock levels at other depots** and carry out inter-depot queries
- stores full **vehicle details for all types and specifications of vehicles** regardless of whether they are cars, vans, HGVs, plant, hire or specialized vehicles
- schedules diary dates and events
- warns of **statutory requirements** in advance
- **Sends reminders automatically** via mail, email or text.

FleetWave is database independent and a truly scalable solution, ideal for larger fleets, multi-location, multi-national, multi-company operations that require comprehensive enterprise fleet management capabilities

- World's first web-based enterprise fleet management system
- Flexible high-end management solution
- Developed using the latest web technologies

- Multiple location and multi-national operations
- Used by major blue-chip organisations across the globe
- The most powerful and versatile fleet management system available
- Powerful additional functionality including:
    - Driver expenses and authorization system; Vehicle selector tool for configuring replacement cars; **Maintenance Control Center** module; **Manager Approval** portal; Vehicle sales and auction tool; plus many more
    - Purchase or 'Software as a Service' 'SaaS) License options

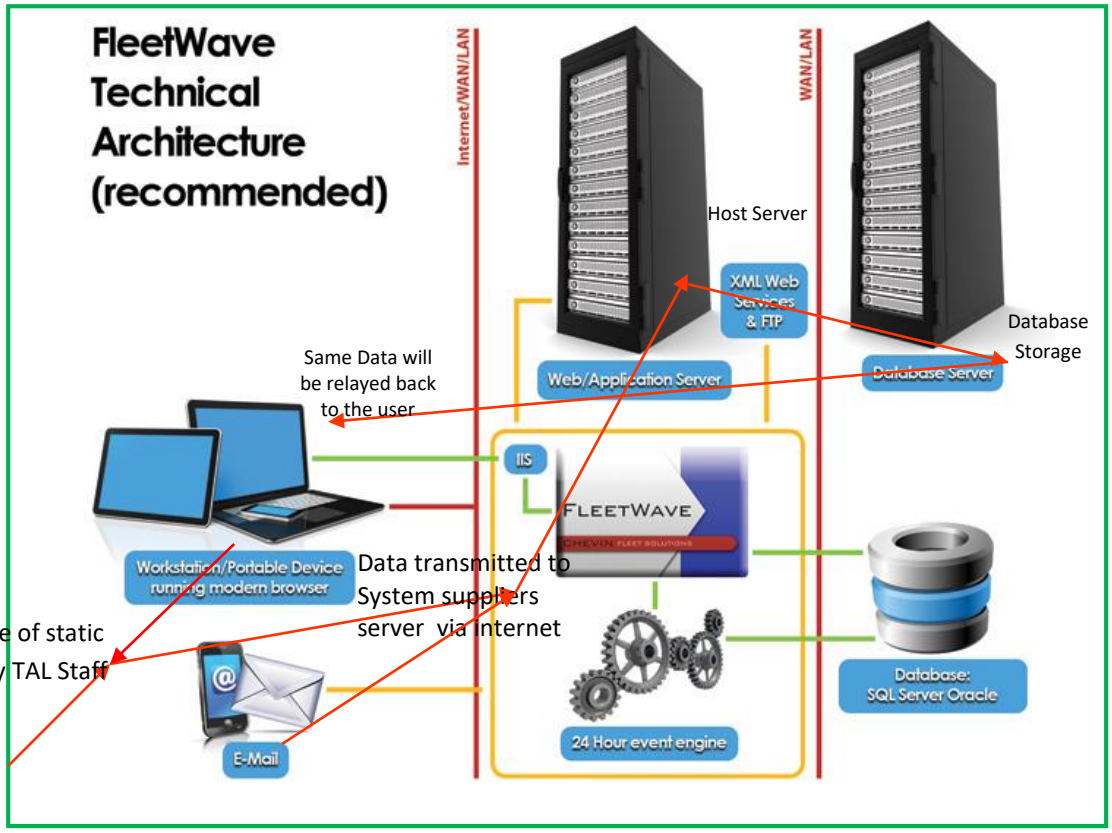
User login Interface: ***System users are allocated username and passwords to access the system.***

When it comes to fleet management software, we understand the need for intelligent integration with third party systems already in use by other departments within the organization That's why FleetWave has been developed to seamlessly integrate with a range of widely used applications to not only feed and receive data, but intuitively process it too. With FleetWave, you won't have to worry about updating multiple silo applications with the same information, or access data in several places. FleetWave has a large number of interfaces to third-party applications and systems.

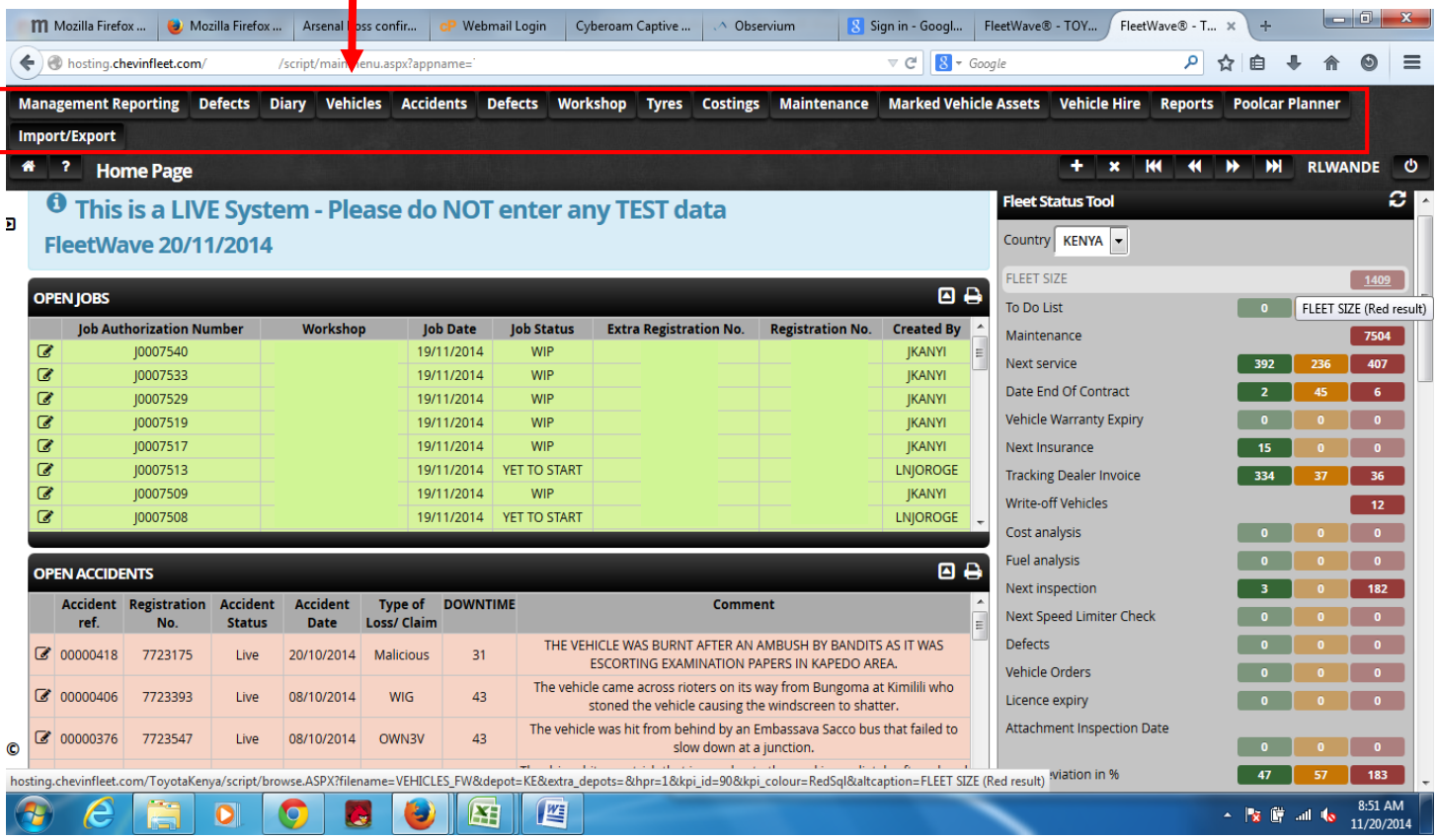
A selection of these is listed below.

Just some of the systems we integrate with include:

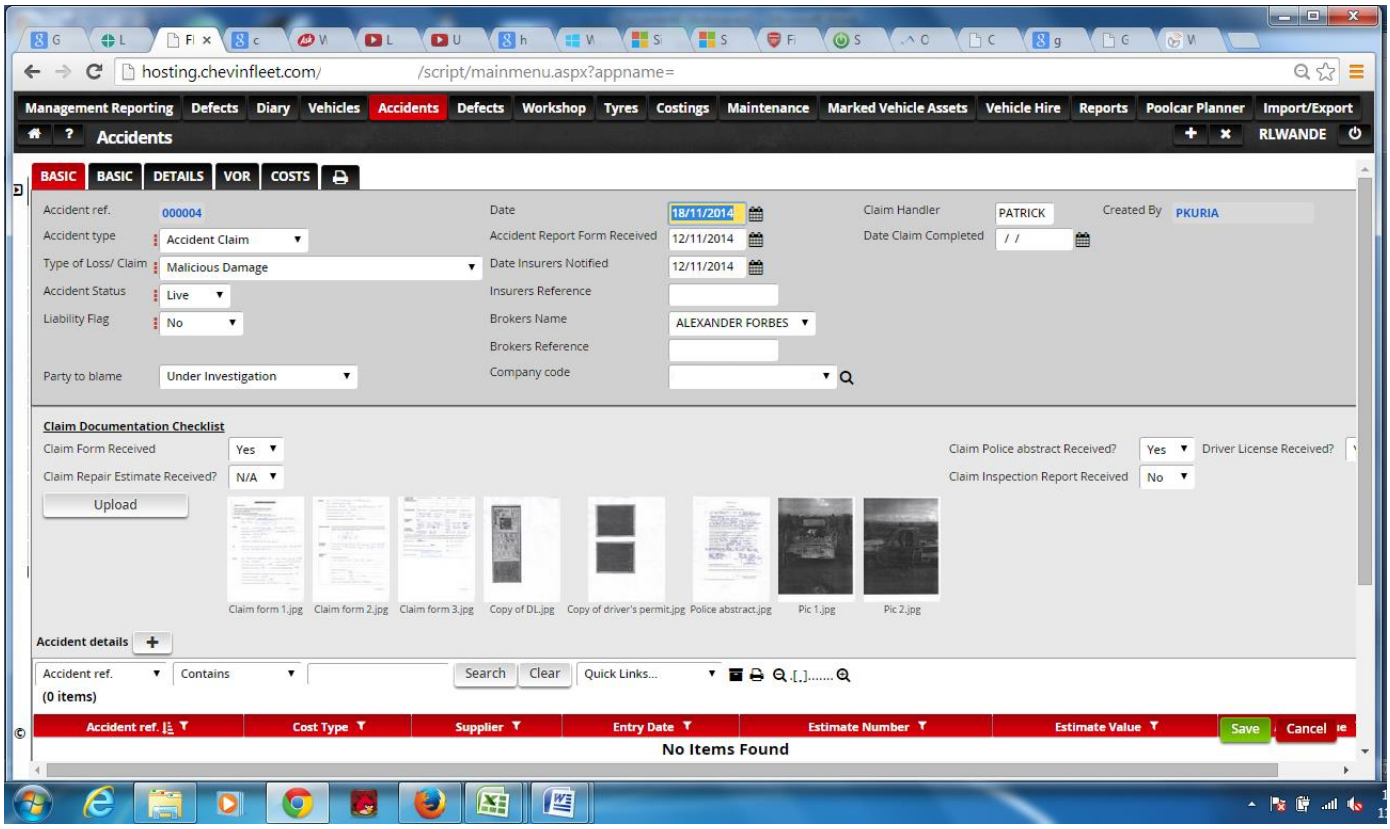
- ERP and Corporate finance, HR, Fixed Asset and Accounts Payable systems
    - **Oracle, PeopleSoft, SAP, JD Edwards, Lawson as well as main frame and legacy financial systems**
- Commercial Fuel & Procurement Cards
    - **Wright Express, Voyager, Comdata, T-Chek, JP Morgan Chase, Fleet One**
- Fuel Management Systems
    - **FuelMan, Gas Boy, EJ Ward, PetroVend, TRAK, FuelMaster, OPW**
- Real-Time Virtual Card
    - **T-Chek**
- Integrated pre and post trip inspections using Zonar®
- Warranty Recovery Service providers
    - **Cascor**
- Lessors & Maintenance Providers
    - **GE, ARI, LeasePlan, Wheels, PHH, GSA, Ryder, Penske, Fleet Response, Goodyear, Bridgestone, Firestone, Ford and NAPA**



MAIN MODULES:



Accidents



Accident Module User Interface

Accident ref.	Registration No.	Accident Status	Extra Registration No.	Third Party Involved	Total Cost (Net)	Accident Date	Driver Name	Make code	Model code	Division / Client	Comment
00000418	7723175	Live		No	0.00	20/10/2014	ABKULA GODANA		HZJ79R-TJMRS	KPS	THE VEHICLE WAS BURNT AFTER AN AMBUSH BY BANDITS AS IT WAS ESCORTING EXAMINATION PAPERS IN KAPEDO AREA.
00000417	7723324	Live		No	0.00	01/11/2014	SOLOMON MAINA		HZJ79R-TJMRS	KPS	The vehicle was stoned by rioting JKUAT students when it had gone to respond to a distress call by the school management to help quell the riots.
00000416	7723162	Live		No	0.00	03/11/2014	NGUME NZILU		HZJ79R-TJMRS	AP	The LHS side mirror was hit by a woman carrying avocados who ran away on seeing she had broken the said mirror.
00000415	7723542	Live		No	468353.00	12/09/2014	SILVANO MWANJALA		HZJ79R-TJMRS	GSU	Vehicle lost control of the vehicle when it had a tyre burst along the Ndurumu -Gichuru Road
00000414	7723550	Live		No	0.00	24/07/2014	JOHN CHERUIYOT ROTICH		HZJ79R-TJMRS	GSU	Driver lost control while driving along Kolowa-Tot road which was wet after heavy down pour
00000413	7108492	Live		No	0.00	18/03/2014	WYCLIFFE ACHOLA		HZJ79R-TJMRS	CID	Driver was trying to avoid a head on collision with a Third Party vehicle along Kiunga
00000412	7723413	Live		No	0.00	15/08/2014	HERBERT OMANDI		HZJ79R-TJMRS	KPS	The crack developed due to excess heat.
											The driver was driving to Eldoret and while at Nigeria area a lorry

Accident Module Table

Accidents and traffic incidents are an unfortunate part of fleet management, often requiring ongoing communication between numerous internal resources and third parties, including drivers, accident management companies and law enforcement. With FleetWave's Accident module, any incident can be recorded, managed and a number of analysis reports automatically generated. Whether you're looking to assess trends relating to accidents by driver, vehicle or day of the week, it's all possible with FleetWave's fully integrated Accidents Module.

With the module's Accident File, risk management can store any information relating to the accident including: who was driving, what vehicle was involved, the date, time, location and whether or not there was any police involvement. In addition, the flexible comment section within this module provides space for recording crucial information relating to damage details, repair estimates and photos required for insurance claims, subrogation and company records. Accident information can further be recorded within FleetWave's integrated work orders in order to fully detail any internal or external repair work conducted.

Bar Coding

FleetWave provides an open environment that can be integrated to a wide variety of industry standard bar code equipment. Use of handheld and bar coding technology, including wands and/or wireless data collection devices is a function of client requirements and not of FleetWave. FleetWave can be integrated with **any** barcode tool in a wide variety of ways. Chevin works with organizations to implement a handheld/bar code strategy that meets their individual short and long-term business requirements, integrating these devices seamlessly into FleetWave.

Billing

With the ability to accommodate limitless cost center, department and organization hierarchy details, FleetWave natively supports the comprehensive retention of complete cost transactions as well as accounting code details throughout the equipments lifecycle. This capability includes properly trapping all costs, revenue and fund details s well as accounting codes and dates as equipment move throughout the organization to include but not limited to; short and long-term leases, maintenance charges, complete fixed and variable activity based costs, internal service fund and recovery as well as unlimited miscellaneous charges. As a result, FleetWave supports almost limitless internal/external billing methodologies.

Bulk Fuel and Fluids

For fleets that rely upon onsite fuel stations to fuel their vehicles and equipment, keeping track of fuel receipts, issues and inventory can often be problematic. And with the price of fuel continually rising, accounting for each drop has become an essential task to accurately control costs and identify instances of miss-use or even theft. Trying to achieve this level of visibility using manual processes and spreadsheets requires excessive resource and stand alone automated

fuelling systems often fail to deliver the integrated approach to fleet management many operations aspire to achieve.

FleetWave's Bulk Fuel and fluid management module solves this problem by providing a centralized database to store all bulk fuel related information including fuel quantities, stick test records and fuel deliveries. The module allows fleets to quickly determine how much fuel is available at anytime, which facilitates a more efficient fuel management process. With links to a number of other related modules such as purchase orders, onsite fluid values (oil, antifreeze, hydraulic fluid, etc.) as well as external data providers such as OPIS, etc., in-depth reports and analysis can be automatically generated at user defined intervals to help fleet departments assess trends in usage and identify issues as they arise.

Key benefits:

- Automated reporting tool
- Centralized database for recording internal fuel supplies and issue details
- Promotes efficient fuel inventory management

Capital Expense, Budget and Vehicle Selectors

Setting budgets for the purchase of fleet vehicles and equipment can be a difficult process to manage without the ability to effectively forecast your inventory needs. Yet without clear visibility over which vehicles are due for replacement, defining the amount of capital expenditure required and creating an accurate forecast can be an impossible task. FleetWave's CAPEX module solves this problem by providing users with the ability to both view the number of vehicles due for replacement and apply directly for the financing required.

Commercial Fuel

With the current price of fuel, there has never been a greater requirement to measure and manage your fleet's fuel usage. FleetWave can be integrated to any commercial fuel and procurement card platform further extending FleetWave's flexible and comprehensive integration across all fuel acquisition methods. With the ability to assign fuel and procurement cards to drivers and vehicles (as well as multiple cards to a single vehicle), FleetWave supports the comprehensive management of complete procurement card details to include unlimited status and reason codes, credit card details, driver ID, PIN and access codes as well as complete usage and fuel issue details throughout the credit card lifecycle.

FleetWave can automatically validate and process comprehensive fuel issue details from any fuel card provider to include complete transaction details including fuel type, quantity, price per gallon, and costs per transaction

Costings

Visibility over the complete operational and running costs of a fleet can be difficult to achieve using traditional methods of fleet management. With FleetWave's Costings Module, all fleet related costs can be stored and summarized within one, centralized location. Extracting cost data relating to vehicles (including standing costs, depreciation, lease payments, tax and insurance), fuel and service, maintenance and repairs from all relevant modules, the Costings module provides an easily accessible platform for users to quickly obtain an overview of all fleet spend.

With all cost data available in a single place, users can quickly and easily produce reports in order to assess trends, monitor spend and promote efficiency. If more detailed and in depth reports are required for a particular cost stream, e.g. fuel spend, users can simply refer to the corresponding module for a full, itemized breakdown of all cost allocations.

Document Management

FleetWave's comprehensive document storage capabilities allow the application to store and present unlimited images/files (.jpg, .gif, .pdf, .doc, .xls, etc) directly on any form, anywhere within the application to support record specific data retention requirements. Further, FleetWave's fully integrated library capability allows system users to store and make available electronic documents such as vehicle specification and build sheets, technical service bulletins, shop manual and inspection sheets from directly within the application.

Driver Fines

FleetWave's Driver Fines module allows organizations to quickly access data relating to both drivers fines and tickets. The information captured within this module can be streamed through to FleetWave's dashboard and provide real-time tracking and analysis of related KPIs, such as the most common offending drivers or riskiest routes and locations.

Through identifying trends in drivers collecting tickets or speeding tickets, organizations can take a pro-active approach to dealing with these issues by altering delivery locations or implementing speed awareness training. In turn, by having access to a centralized database of drivers who have received tickets, accompanied with the Driver License/MVR checking, organizations are better able to protect themselves against the legal and financial risk of drivers failing to declare penalty points.

Key benefits include:

- Centralized database of all fine related information
- Ability to upload scanned copies of tickets and fines
- Automated analysis and reporting using pre-defined KPIs
- Enhanced compliance management

Driver Portals

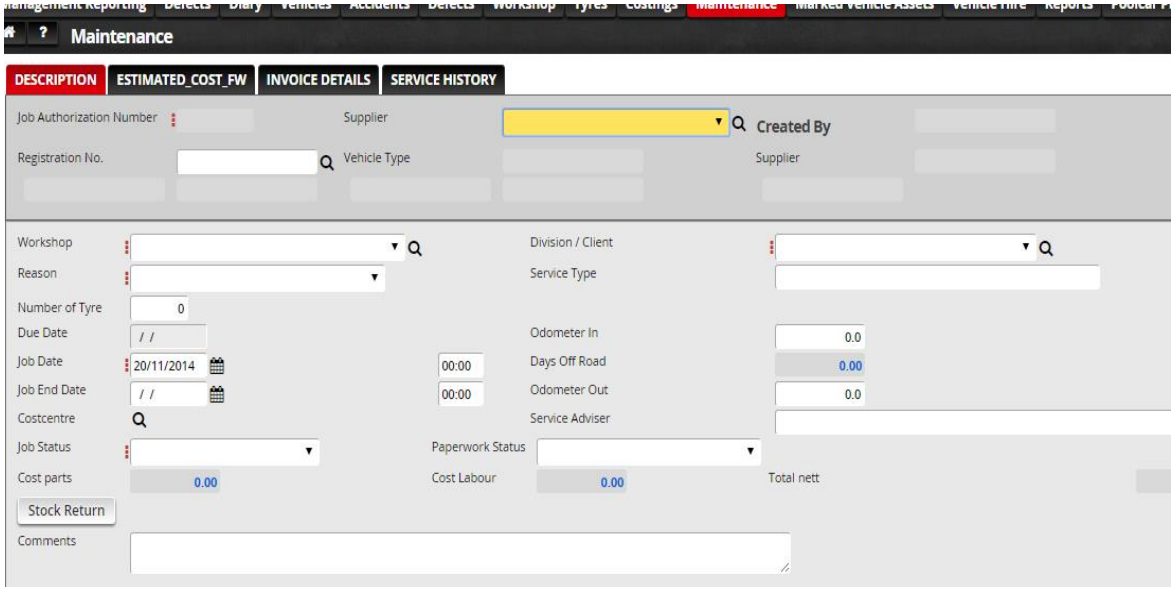
For organizations looking to grant fleet Drivers selected access to the fleet management system, FleetWave's Driver Portal allows drivers to update driver records, input monthly personal and/or business mileage (for imputed income calculations), monthly fleet related expenses and access driver related forms such as accident, inspection forms, Edmonton specific documentation, etc. all from an intuitive Driver Portal.

Driver Taxable Benefits

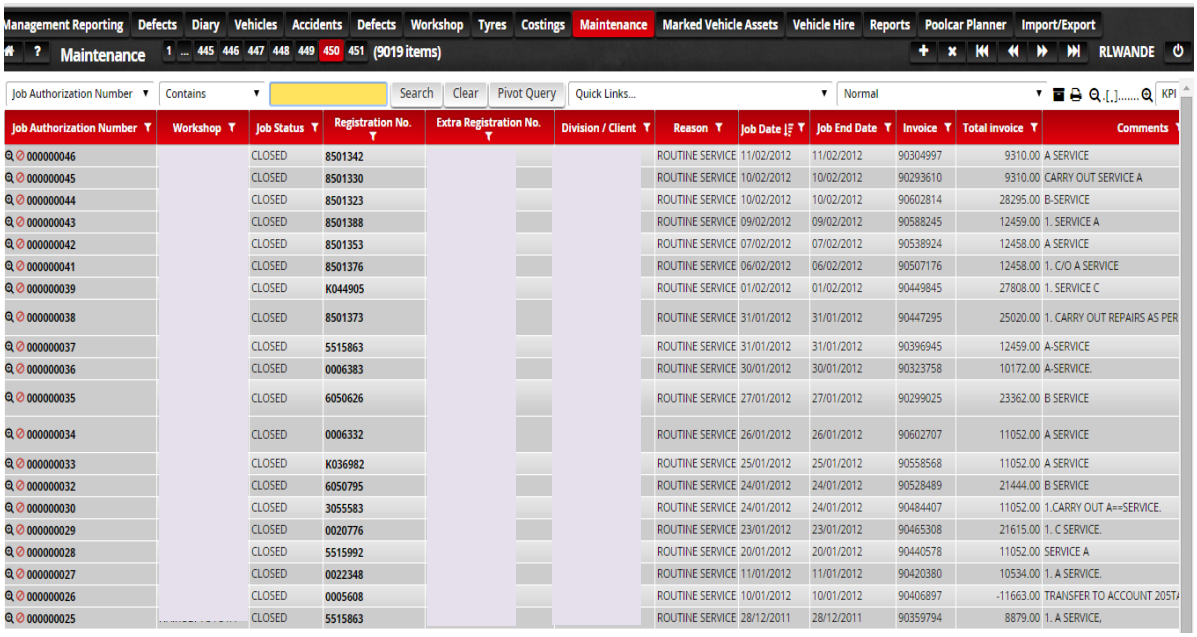
For employees with company cars, a taxes may be applied based on a percentage of the vehicle's value - –long with other aspects, which can include the vehicle's age, fuel type, list price and internal policy relating to payment of private fuel use. In order to ensure drivers are taxed appropriately based on their specific parameters while insuring that the business comply with taxation laws relating to submitting appropriate documentation to relevant authorities, HR or fleet departments are required to keep track of a series of complex data and manually administrate the documentation completion and communication process.

FleetWave's Driver Taxable Benefits module takes a traditionally complex and laborious administration process and simplifies it through automation. With data input into the Vehicles, Allocations and Driver modules, fed through automatically into the Driver Taxable Benefits module, FleetWave is able to facilitate the quick and efficient production of documentation, which can then be printed and sent to the relevant recipient. Automating this process and receiving alerts to notify users of pending submission deadlines promotes compliance adherence and reduces the likelihood of receiving financial penalties.

Maintenance Control Center



User Interface



Job Authorization Number	Workshop	Job Status	Registration No.	Extra Registration No.	Division / Client	Reason	Job Date	Job End Date	Invoice	Total invoice	Comments
000000046		CLOSED	8501342			ROUTINE SERVICE	11/02/2012	11/02/2012	90304997	9310.00	A SERVICE
000000045		CLOSED	8501330			ROUTINE SERVICE	10/02/2012	10/02/2012	90293610	9310.00	CARRY OUT SERVICE A
000000044		CLOSED	8501323			ROUTINE SERVICE	10/02/2012	10/02/2012	90602814	28295.00	B-SERVICE
000000043		CLOSED	8501388			ROUTINE SERVICE	09/02/2012	09/02/2012	90588245	12459.00	1. SERVICE A
000000042		CLOSED	8501353			ROUTINE SERVICE	07/02/2012	07/02/2012	90538924	12458.00	A SERVICE
000000041		CLOSED	8501376			ROUTINE SERVICE	06/02/2012	06/02/2012	90507176	12458.00	1. C/O A SERVICE
000000039		CLOSED	K044905			ROUTINE SERVICE	01/02/2012	01/02/2012	90449845	27808.00	1. SERVICE C
000000038		CLOSED	8501373			ROUTINE SERVICE	31/01/2012	31/01/2012	90447295	25020.00	1. CARRY OUT REPAIRS AS PER
000000037		CLOSED	5515863			ROUTINE SERVICE	31/01/2012	31/01/2012	90396945	12459.00	A-SERVICE
000000036		CLOSED	0006383			ROUTINE SERVICE	30/01/2012	30/01/2012	90323758	10172.00	A-SERVICE.
000000035		CLOSED	6050626			ROUTINE SERVICE	27/01/2012	27/01/2012	90299025	23362.00	B SERVICE
000000034		CLOSED	0006332			ROUTINE SERVICE	26/01/2012	26/01/2012	90602707	11052.00	A SERVICE
000000033		CLOSED	K036982			ROUTINE SERVICE	25/01/2012	25/01/2012	90558568	11052.00	A SERVICE
000000032		CLOSED	6050795			ROUTINE SERVICE	24/01/2012	24/01/2012	90528489	21444.00	B SERVICE
000000030		CLOSED	3055583			ROUTINE SERVICE	24/01/2012	24/01/2012	90484407	11052.00	1.CARRY OUT A==SERVICE.
000000029		CLOSED	0020776			ROUTINE SERVICE	23/01/2012	23/01/2012	90465308	21615.00	1. C SERVICE.
000000028		CLOSED	5515992			ROUTINE SERVICE	20/01/2012	20/01/2012	90440578	11052.00	SERVICE A
000000027		CLOSED	0022348			ROUTINE SERVICE	11/01/2012	11/01/2012	90420380	10534.00	1. A SERVICE.
000000026		CLOSED	0005608			ROUTINE SERVICE	10/01/2012	10/01/2012	90406897	-11663.00	TRANSFER TO ACCOUNT 205T
000000025		CLOSED	5515863			ROUTINE SERVICE	28/12/2011	28/12/2011	90359794	8879.00	1. A SERVICE,

FleetWave's'Maintenance Control Center (MCC) module has been designed to streamline the call center process and allow call center staff to quickly and efficiently handle incoming vendor and breakdown calls and their authorization in a seamless fashion. Designed to support national call center operations, FleetWave's MCC functionality allows call center staff to rapidly create jobs/purchase orders on a **single** screen that can present not only relevant contact as well as vendor details, but also historical repairs, pending due or past due inspections as well.

With the ability to be seamlessly integrated to any procurement card platforms as well as internal accounts payable systems, FleetWave's'MCC capabilities dramatically streamline the maintenance authorization process while eliminating redundant and paper intensive payment processing.

Motor Pool

Pool vehicles can be a cost effective and low risk means of facilitating employee mobility. FleetWave's integrated pool car management capabilities include functionality allows pool cars to be managed more easily by fleet departments through the use of a graphical pool reservation calendars and an interactive booking platform.

With FleetWave's fully integrated pool management module, vehicles and equipment can be centrally managed and reserved online. Capturing all key employee and organizational details, including flexible billing rates, department and account codes, as well as dynamic scheduling details, FleetWave provides instant, simplified oversight of pool vehicle availability, current usage and capabilities. Like all FleetWave modules, the pool module is totally user definable to allow for changes and future enhancements to the pool management process without the need for additional programming.

Key benefits include:

- Fully integrated reporting, real time queries and data extraction
- Centralized and interactive web-based booking system
- User-definable data capture and presentation
- Optional 'green car share' functionality to encourage reduced CO_2 emissions

Automated Key Access

FleetWave Key Control enables pool bookings to be administrated

Notifications

FleetWave's powerful multi-level security protocols and native notification capabilities allow the application to become the central information hub for all fleet related communications and activities. With the ability to seamlessly generate automated emails as well as SMS texts based upon any system managed event or status code; internal or external customers, drivers or even external service providers can be automatically notified when their vehicles are pending, due or overdue for service, their vehicles are ready for pick up, etc.

On-line Mileage Expenses Returns

Driver mileage (private/business) claim system with on-line approval and management escalation built in.

PDA and Hand-held Devices

Completely optimized fleet management requires the capture of real time information. For fleet organizations with a remote workforce, obtaining visibility over the real time status of an individual area or entire fleet can be challenging if relying upon traditional methods of data collection and database input. If remote technicians only update tasks completed or vehicle repair status at the end of the working day or week, outdated and incorrect information will influence decisions being made and creating unnecessary inefficiencies and risks.

With FleetWave's PDA module, remote technicians can update the centralized system via Smartphone's, tablets or other devices as soon as the task is complete. In addition, administration tasks including mileage claims and fuel issue details can be logged by drivers while away from the office and viewed in real time by all relevant personnel.

As with all FleetWave modules, the PDA interface is flexible and configured to provide appropriate access levels to individual employees.

Key benefits include:

- Access to real time fleet data anywhere with a web connection
- Promotes accurate visibility over the status of the entire fleet and informed decision making
- User-friendly interface
- Real time remote access to relevant fleet/driver data

Property Management

FleetWave's Property module provides a secure method for organizations to manage the assignment, transfer and allocation of non-vehicle assets across the organization. Used by large commercial, public sector and law enforcement clients, FleetWave's property module facilitates robust online assignment, transfer and receipt of an organization equipment – both from suppliers as well as internal locations, departments or cost centers. Used in conjunction with a hand held scanning device, the Property module enhances the physical inventory management process by proving a real-time, centralized database accompanied with an automated audit trail of past and present location and personnel assignment.

To ensure security of equipment transfers, the property module supports comprehensive user access rights – with incorporated permission sequences, which enable management to authorize and/or decline transfer or allocation requests.

Key benefits include:

- Easy integration with hand-held scanning devices
- Increased visibility and enhanced management of non-vehicle assets, including real-property, IT assets as well as radios, surveillance equipment and quartermaster assets
- Centralized, real-time and automated audit trail functionality
- Functionality restricted by pre-defined access levels

Query Builder

FleetWave's integrated Query builder tool allows users to create their own queries and reports reflecting any field in the system using simple selections from 'drop-down boxes allowing self-service reporting without any report writing expertise.

The FleetWave Report Generator also supports:

- Letters and Mail-merge
- e-Mail generation
- SMS Text

Repairs

Running an efficient and compliant fleet requires a considerable level of scheduled repair and maintenance activity. It can also require an excessive amount of administration. The FleetWave Repairs Module reduces the burden of this fleet function by providing the ability to capture and manage unlimited user definable “events,” including any date or mileage sensitive inspection, repair, certification, expiration or renewal. A color coded traffic light system then automatically presents the status of each event as pending, due or overdue, providing a safety net for busy workshop managers and promoting compliance.

The Repairs Module provides integrated maintenance forecasting, workshop management and work order capabilities. In addition, data entered (in the work order) can be quickly and easily accessed – providing information on the date, odometer, location, as well as a summary of the parts, labor and expenditure. The Repair modules automatic warranty search Smart Tool recognizes new parts installed with a warranty, parts replaced under warranty (but not receiving their own warranty) and vehicles under warranty. The tool then provides intuitive, automated alerts to mechanics or stock room personnel should a recently installed part require replacement.

Key benefits include:

- Centralized database for full vehicle maintenance and repair history
- Warranty search function
- Ability to automatically analyze timesheets
- Quick links to Vehicles, Stock and Workshop modules
- Access levels can be set appropriate to role and responsibilities

Stock control

FleetWave provides a fully featured and robust 'first in, first out' inventory management system. The Stock module is linked with the work order module for direct issuing of stock items. Key components include: complete purchase order capabilities with automated re-order tools, minimum/maximum stocking levels, real-time presentation of inventory movement and utilization, multiple warehouse visibility and the ability to manage stock and non-stock items without the requirement of a master inventory catalogue. Of course, numerous reports are included covering every aspect of stock control.

Trips and Loads

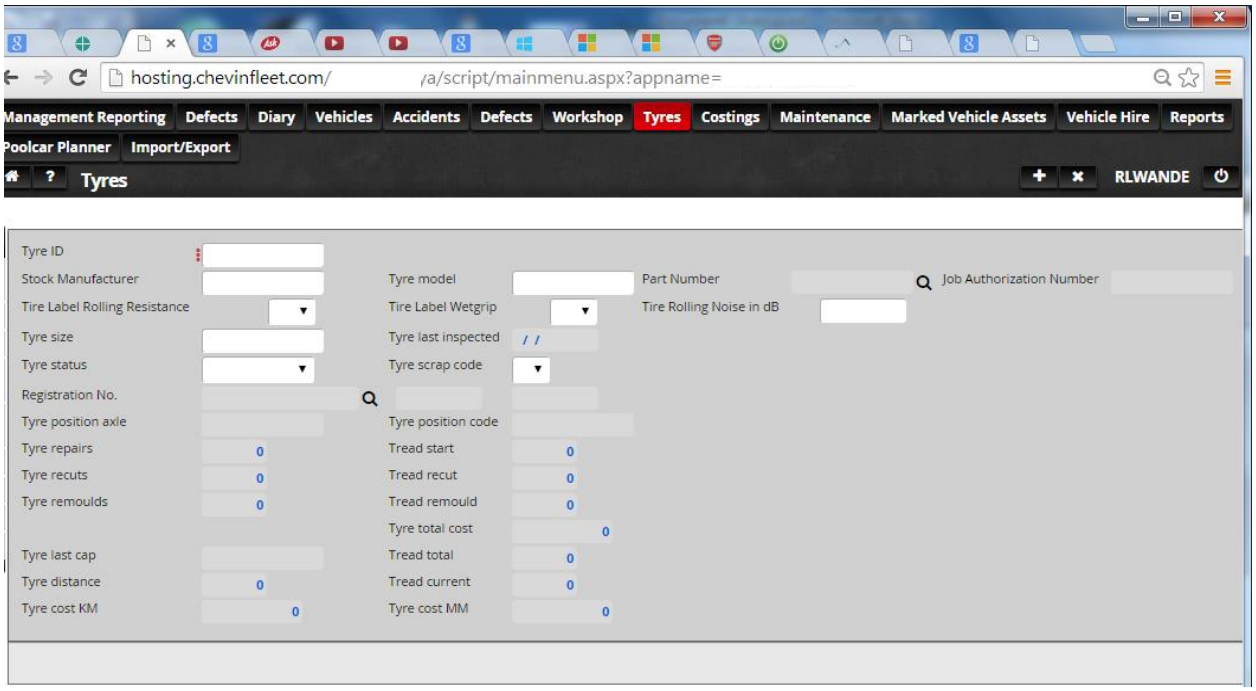
Developed for some of the largest non-government and international aid organizations in the world, FleetWave’s Trips and Loads Module has been designed to provide operators of large fleets with a centralized record of all vehicle routes, loads and deliveries. With this information captured and readily accessible in real time, organizations running large fleet and logistics operations can benefit from increased control over delivery schedules and enhanced visibility over the location of goods. This in turn can help to mitigate the risk of unidentified thefts or

losses, while automated reporting functionality can assist transportation managers in identifying inefficiencies and trends.

Key benefits

- Vehicle and trailer information is captured, including weight carrying capacity and cubic capacity
- A trip records the Vehicle / Trailer Combination information
- Vehicle trips may be grouped into convoys
- Driver trip allowance costs are entered for food and accommodation
- Statistics are produced to asses costs and performance
- Reports are produced to allow for analysis of these figures

Tires



Tyre module user interface

For many fleets, co-ordinating the purchase, usage and disposal of tires through a regular inventory management process is a perfectly appropriate method of keeping control of costs and maintenance requirements. Yet for fleets often operating large commercial and off road vehicles, recognizing a tire's worth as an asset rather than just another stock item is a crucial tactic in reducing cost and promoting safety.

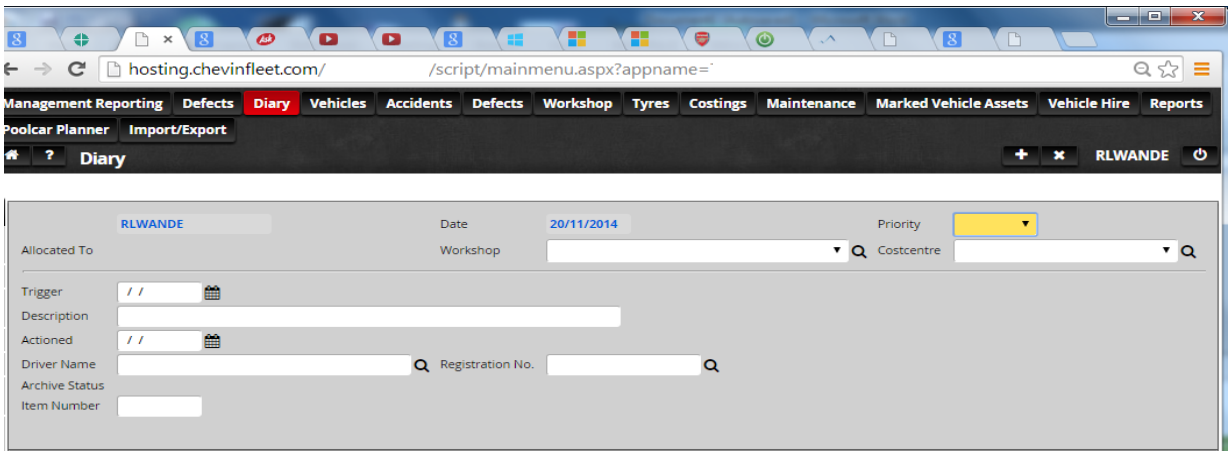
FleetWave's Tire Module helps fleets take a more comprehensive approach to the lifecycle management of a tires and related services. The Tire module promotes visibility over each and every interaction the tire has – from purchasing, installation through removal, retreading and repair. By recording all the tires owned by the fleet as specific assets, all related transactions can be stored in a centralized location providing a reliable audit trail of the location, status and ownership of any given tire at any given time – therefore reducing the likelihood of instances of theft going unidentified.

The Tire module can also assist in promoting more cost effective purchasing decisions by automatically analysing tread depth vs. mileage received – providing a true reflection of a tires total cost to the fleet and helping personnel make informed buying decisions.

Key benefits

- Automated reporting on a series of tire related KPIs
- Helps streamline purchasing of tires and related services
- Reduces cost and instances of unidentified thefts
- Improves visibility with full audit trail of tire life cycle and associated costs

Diary

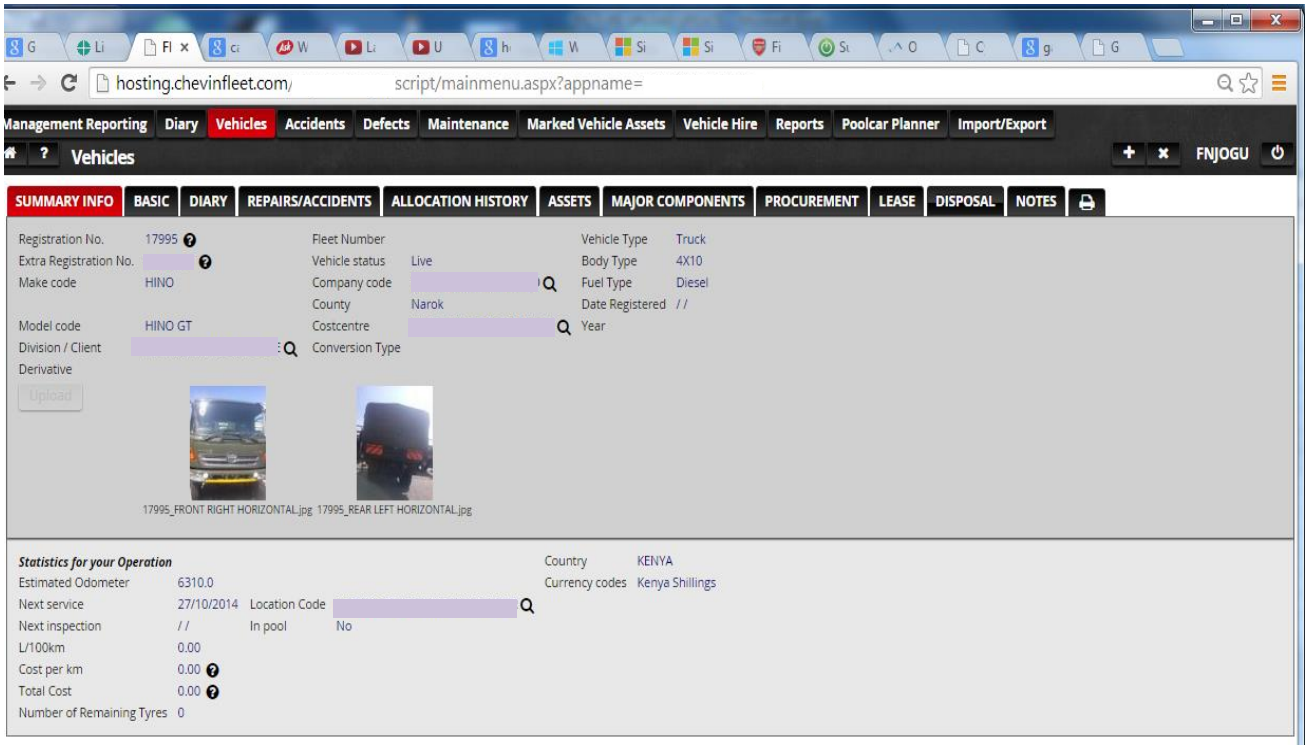


This is a User Interface for planning Vehicle events

Utilities

FleetWave's Utilities module has been designed to provide organizations with a dedicated tool to store and manage all of the system's security functionality, enabling organizations to establish user profiles by individual, role and level of responsibility. The module then automatically leverages these profiles across every aspect of the system to ensure the presentation of data and ability to create actions is appropriate to each specific user. The module accommodates up to twelve levels of organizational hierarchy and also acts as a portal to store and alter user login information.

Vehicles and Equipment Management



Vehicle Screen

The above details are captured for each and every vehicle that is within the organization. Snapshots of parts are captured to the detail as assets then stored in vehicles table as illustrated below.

Some of vehicle assets include;

Injector Pump

Master Cylinder Brake

Jack

Rear Rim

Rear left Tyre

Sedimentor

Side Mirror

Motor Starter

Front Left Window

Front Left Light Lens

Above is an example of snapshots for some asset parts of a vehicle. This can be as many as 100 parts.

FleetWave can hold and manage unlimited vehicle and equipment details, descriptions, unique identification numbering for any type of asset, class and sub class coding, full acquisition and disposal costs, unlimited upfit options, multiple meters and meter types (miles, kilometers, hours, cycles, etc.) and accessories, major

components and attached serialized components as well as dynamic attributes such as finance details, depreciation, replacement algorithms, etc. FleetWave captures and manages all of the critical details reflecting complete lifecycle and total cost of ownership from acquisition through disposal. Additionally, FleetWave allows users to create and track **unlimited user definable data attributes** that can be specifically tailored to meet an organizations unique and evolving nomenclature and business requirements.

Below is an example of captured vehicle table;

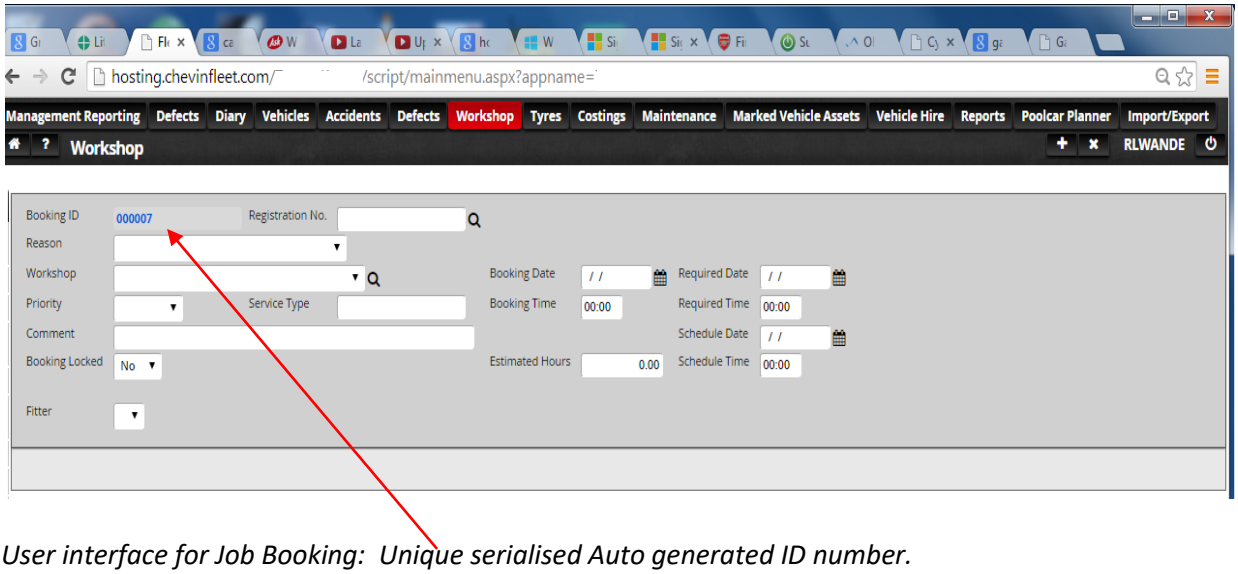
Vehicle Sales Tool

For the internal and external remarketing of fleet equipment whereby remote users can access a secure and fully integrated module to view and quote on available vehicles and equipment being remarketed. Like eBay, this tool allows users to access images, historical maintenance records and place bids upon a specific vehicle. FleetWave automatically tracks bids, and can be configured to generate emails notifying users and management of current and/or superseded bids, and notify winners. This tool can also be configured to provide these or modified capabilities to external remarketing organisations such as auction houses or disposal companies.

VIN Decoding

FleetWave supports the real time or batch process integration with external VIN Decoding Service providers. The VIN decode process allows specific vehicle data to be seamlessly maintained using standard industry tools to decode a vehicle/asset VIN so that data is always consistent as provided by the manufacturer. Decoded data can be obtained for Passenger, Light Truck, RV's, Heavy Truck, Trailers and Motorcycles.

Workshop



User interface for Job Booking: Unique serialised Auto generated ID number.

For operations that operate their own workshops, FleetWave offers a complete Workshop module, designed to manage the repair and maintenance of fleet vehicles and equipment while providing clear visibility over workloads and technician activity. With its flexible architecture, FleetWave's Workshop module can be easily configured to meet the specific requirements of each organization, only presenting mechanics with the data appropriate for their role. This module also provides automatic email or text notifications to advise of the status of any date or meter driven event logged in the system.

The Workshop Module can be utilized to support the real-time capture and consolidation of labor time, tasks and jobs using an intuitive touch screen interface allowing technicians to easily sign off jobs directly from the workshop. The module can be further extended to measure technician time and productivity details, helpful for integration with external time capture and payroll systems.

Key benefits include:

- Work request reporting and monitoring
- Work Order creation
- Technician timesheets/ efficiency monitoring
- Workshop loading planner
- Touch screen capability
- Direct input of time sheets
- Multi location planner
- Workshop and recall forecasting capabilities

Workshop Remote Working

FleetWave can be used to issue work orders to a technician enabling remote checklists of tasks on a particular work order on a laptop, PDA or 'tough-book' ruggedized unit.

Workshop Touchscreen Solution

This allows each technician to have their own login to FleetWave, offering them the list of jobs for the day and once each job has been started, what tasks must be completed, to allow paperless data capture in the workshop.

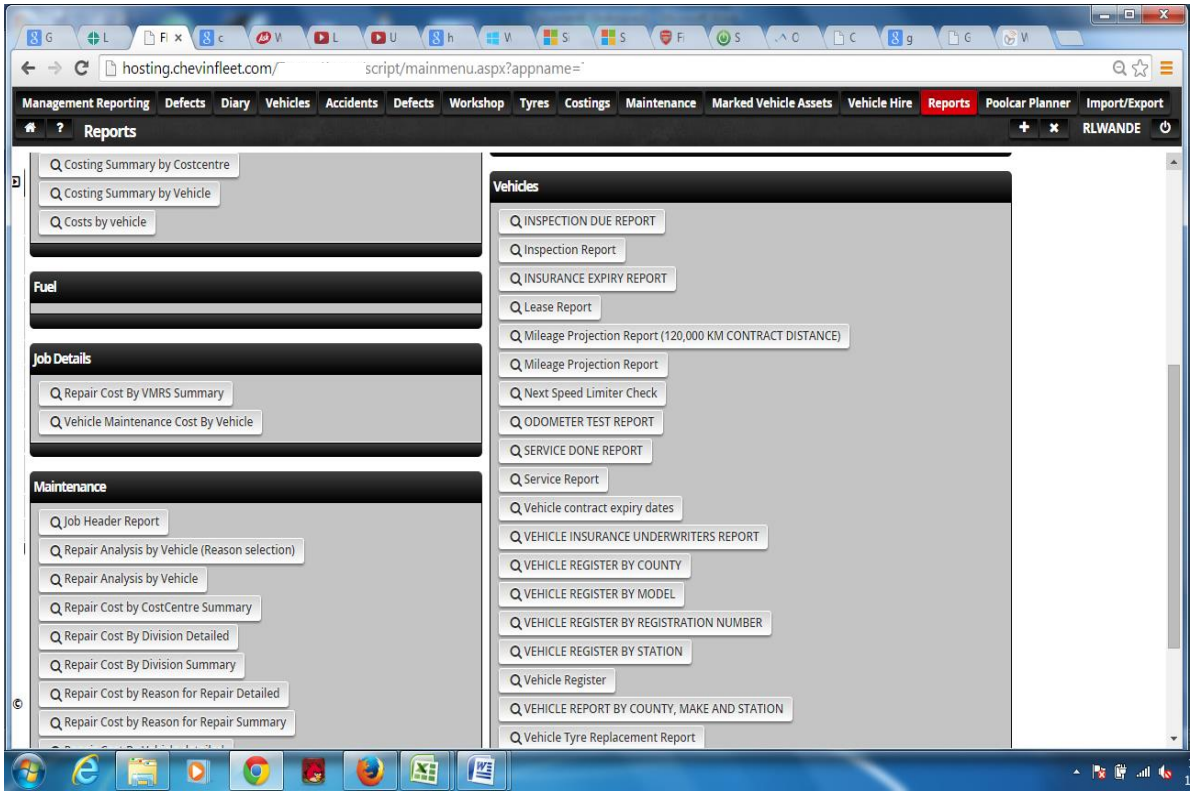
This detailed time management function further allows the workshop supervisor the ability to see:

- What jobs are in progress at any time
- Estimate completion times and workloads
- Increase workshop efficiencies
  (even actual times vs standard times if this level of reporting is required.)

Touchscreen management also allows the service writer to view of each job while in progress as well as projected completion times for reporting to clients.

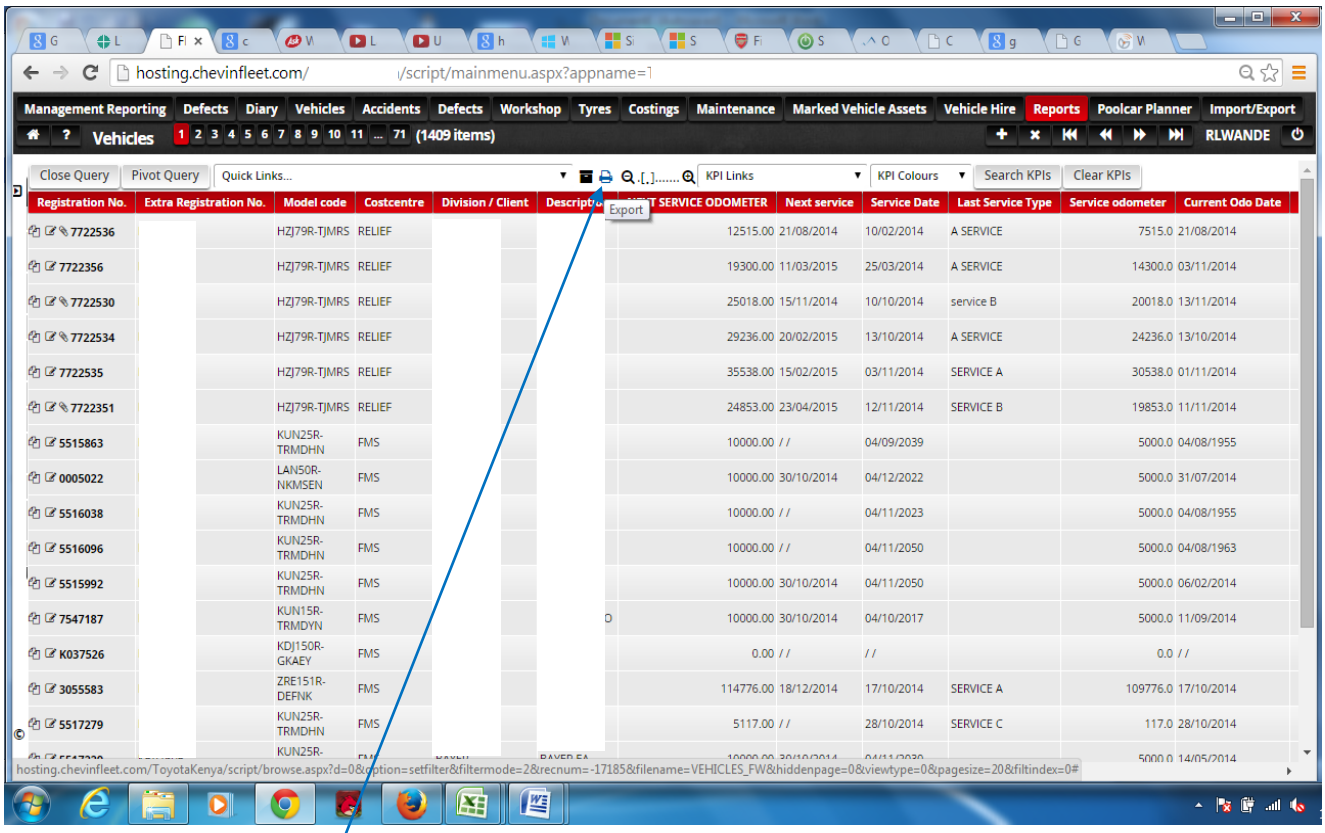
For electronic notification, once the job has been completed, FleetWave's built in email engine can automatically email clients to let them know that their vehicle is ready, without the need for user interaction. This instantly reduces workload and improves communication.

FLEETWAVE REPORTS

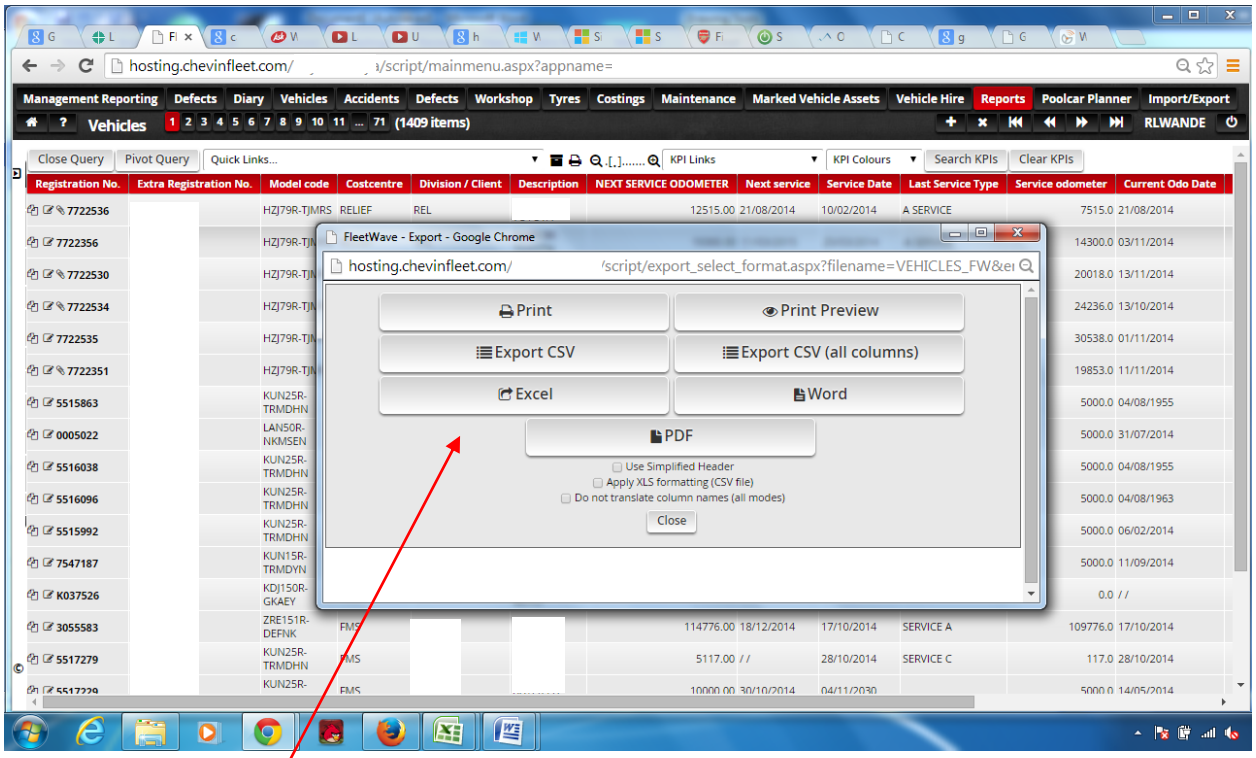


Fleetwave has so many reports which can be customized to the customers' requirement. Each of the above named module has its own reports.

Exporting System reports to clients' preferred format i.e *EXCEL, WORD, CSV, PDF ETC*

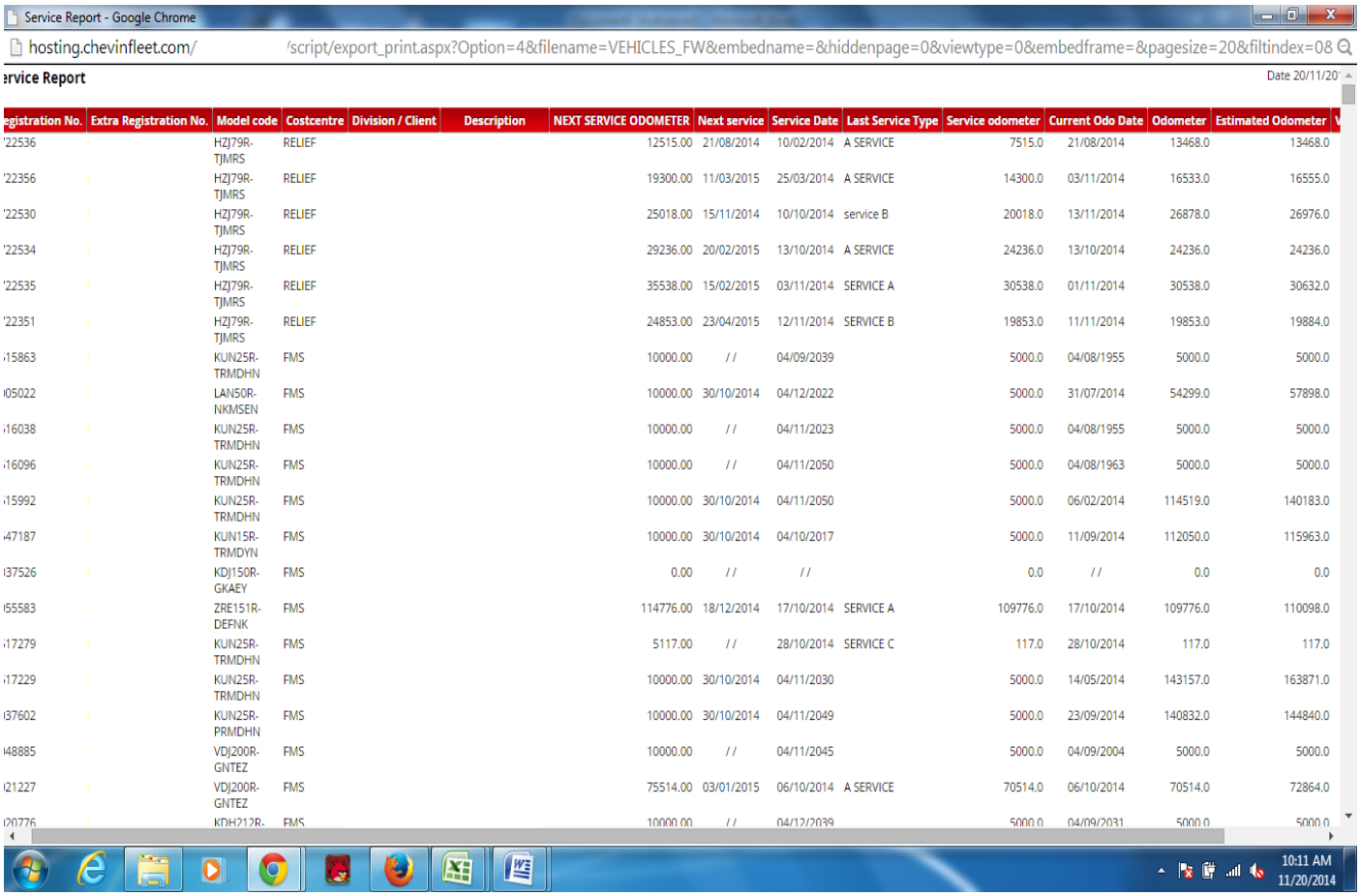


Sample Service Report : Export Tool.



Available Export Formats

PDF Export



egistration No.	Extra Registration No.	Model code	Costcentre	Division / Client	Description	NEXT SERVICE ODOMETER	Next service	Service Date	Last Service Type	Service odometer	Current Odo Date	Odometer	Estimated Odometer
'22536		HZJ79R-TJMRS	RELIEF			12515.00	21/08/2014	10/02/2014	A SERVICE	7515.0	21/08/2014	13468.0	13468.0
'22356		HZJ79R-TJMRS	RELIEF			19300.00	11/03/2015	25/03/2014	A SERVICE	14300.0	03/11/2014	16533.0	16555.0
'22530		HZJ79R-TJMRS	RELIEF			25018.00	15/11/2014	10/10/2014	service B	20018.0	13/11/2014	26878.0	26976.0
'22534		HZJ79R-TJMRS	RELIEF			29236.00	20/02/2015	13/10/2014	A SERVICE	24236.0	13/10/2014	24236.0	24236.0
'22535		HZJ79R-TJMRS	RELIEF			35538.00	15/02/2015	03/11/2014	SERVICE A	30538.0	01/11/2014	30538.0	30632.0
'22351		HZJ79R-TJMRS	RELIEF			24853.00	23/04/2015	12/11/2014	SERVICE B	19853.0	11/11/2014	19853.0	19884.0
·15863		KUN25R-TRMDHN	FMS			10000.00	/ /	04/09/2039		5000.0	04/08/1955	5000.0	5000.0
)05022		LAN50R-NKMSEN	FMS			10000.00	30/10/2014	04/12/2022		5000.0	31/07/2014	54299.0	57898.0
·16038		KUN25R-TRMDHN	FMS			10000.00	/ /	04/11/2023		5000.0	04/08/1955	5000.0	5000.0
·16096		KUN25R-TRMDHN	FMS			10000.00	/ /	04/11/2050		5000.0	04/08/1963	5000.0	5000.0
·15992		KUN25R-TRMDHN	FMS			10000.00	30/10/2014	04/11/2050		5000.0	06/02/2014	114519.0	140183.0
·47187		KUN15R-TRMDYN	FMS			10000.00	30/10/2014	04/10/2017		5000.0	11/09/2014	112050.0	115963.0
)37526		KDJ150R-GKAEY	FMS			0.00	/ /	/ /		0.0	/ /	0.0	0.0
)55583		ZRE151R-DEFNK	FMS			114776.00	18/12/2014	17/10/2014	SERVICE A	109776.0	17/10/2014	109776.0	110098.0
·17279		KUN25R-TRMDHN	FMS			5117.00	/ /	28/10/2014	SERVICE C	117.0	28/10/2014	117.0	117.0
·17229		KUN25R-TRMDHN	FMS			10000.00	30/10/2014	04/11/2030		5000.0	14/05/2014	143157.0	163871.0
)37602		KUN25R-PRMDHN	FMS			10000.00	30/10/2014	04/11/2049		5000.0	23/09/2014	140832.0	144840.0
·48885		VDJ200R-GNTEZ	FMS			10000.00	/ /	04/11/2045		5000.0	04/09/2004	5000.0	5000.0
)21227		VDJ200R-GNTEZ	FMS			75514.00	03/01/2015	06/10/2014	A SERVICE	70514.0	06/10/2014	70514.0	72864.0
)20776		KDH212R-	FMS			10000.00	/ /	04/12/2039		5000.0	04/09/2031	5000.0	5000.0

We service almost 100 clients, mostly in Kenya and Africa region, some of which are as listed below.

No	Name of Client and Contact Person	Type of Work Performed	Fleet Size
1	NATION MEDIA GROUP	FLEET TRACKING & FUEL SYSTEMS	90
2	KENYA WINE AGENCIES	FLEET TRACKING	30
3	EASY COACH LIMITED	FLEET TRACKING & FUEL SYSTEMS	115
4	TOYOTA KENYA LTD	FLEET TRACKING & WORKSHOP SOFTWARE SYSTEMS	3500
5	OIL FIELD MOVERS LTD	TRACKING & FUEL MANAGEMENT SYSTEM	80
6	POPULATION SERVICES INTERNATIONAL- KENYA (PSI)	FLEET TRACKING & FLEETWAVE SOFTWARE	50
7	AMREF INTERNATIONAL – KENYA	FLEET TRACKING & FLEETWAVE SOFTWARE	200
8	UNITED STATES INTERNATIONAL – KENYA UNIVERSITY (USIU)	FLEET TRACKING, FUEL & FLEETWAVE SOFTWARE SYSTEMS	50
9	HILCREST INTERNATIONA SCHOOLS	FLEET TRACKING, FUEL & WORKSHOP SOFTWARE	50
10	UNIVERSITY OF NAIROBI (UON)	FLEET TRACKING, FUEL & WORKSHOP SOFTWARE SYSTEMS	200
11	NATIONAL OIL CORPORATION OF KENYA	FLEET TRACKING AND FUEL MANAGEMENT SYSTEM	150
12	UGANDA REVENUE AUTHORITY (URA)	FLEET TRACKING AND FLEETWAVE SYSTEM	200
13	ISUZU EAST AFRICA	FLEET TRACKING AND FLEETWAVE SYSTEM	1000
14	GULF ENERGY	FUEL MANAGEMENT SYSTEM	UNLIMITED
15	STANDARD GROUP	FUEL MANAGEMENT SYSTEM	UNLIMITED
16	TULLOW OIL	FUEL MANAGEMENT SYSTEM	150
17	KENYA TEA DEVELOPMENT AUTHORITY (KTDA)	FLEET TRACKING AND FUEL MANAGEMENT SYSTEM	900
18	BRITISH HIGH COMMISSION (BHC)	FUEL MANAGEMENT AND FLEETWAVE SYSTEM	100
19	COUNTY GOVERNMENT OF KISUMU	FLEET TRACKING AND FLEETWAVE SYSTEM	200
20	GEOTHERMAL DEVELOPMENTCOMPANY (GDC)	FUEL MANAGEMENT SYSTEM	156
21	KENYA NATIONAL HIGHWAY AUTHORITY (KENHA)	FLEET TRACKING AND FLEETWAVE SYSTEM	100
22	KENYA BROADCASTING CORPORATION (KBC)	FLEET TRACKING AND FLEETWAVE SYSTEM	100