Fuel Monitoring

Research has shown that the highest percentage of any fleet's total operating expenses goes towards fuel. Thus fuel consumption takes substantial share of logistics operational expenses. All transportation providers need to keep a close watch on fuel usage and associated expenses. With the rise in fuel prices on a consistent basis this aspect of transportation is becoming more critical with every passing day. Lack of fuel monitoring could result in serious business consequences and make a business non viable. Accurate monitoring and evaluation of operation of vehicles and machines is necessary for all the transportation sectors and information on fuel consumption is also crucial.

Keeping all these factors in view, NaxerTech came up with comprehensive solutions of fuel measuring and monitoring in two ways. One with Vehicle's Fuel Gauge and Second is a delicate Fuel Probe solution.

Measuring/ Monitoring with Vehicle's Fuel Gauge:

In this type of fuel monitoring, NTT-101's fuel wire are connected to the fuel gauge of the vehicle. NTT-101 then calculates the fuel of the vehicle by sensing the voltage on the fuel gauge. Accuracy of such monitoring completely depends on the condition & working of the vehicle's fuel gauge. This is low cost and less intrusive, but probably less accurate.

Measuring/ Monitoring with Fuel Probe:

NaxerTech, with passion for more Accuracy and High Quality, has now developed and came up with a very accurate fuel probe solution. NaxerTech's Fuel Probe is equipped with capacitive level measurement sensors. Compared with the standard resistive type fuel sensors the capacitive sensors are completely electronically operated and contain no moving parts, ensuring high accuracy, stability and reliability in operation. In contrast to the fuel flow meters, the capacitive level sensors are not embedded into the fuel line and do not affect the engine operation. With the help of capacitive sensors now it is easy to accurately determine the time and the amount of refueling and drains, which is impossible with the fuel flow sensors.

With our system, clients will be able to monitor the change of fuel consumption in real time, and have this change reflected in different Fuel Reports and graphs in Pegasus. Our system can send out the alarm when the fuel value is higher or lower than the expected range. Thus every transport/ fleet manager will be able to:

❖ Report, track and control the amount of fuel that has been filled in the tank
❖ Monitor the amount of fuel left on the tank

Unique differences from other sensors:

✓ Real time operation system built-in
✓ Stable and exact output signal.
✓ Power and data lines are electrically insulated
✓ Metal parts are insulated from the common ground
✓ Electrical components are encapsulated & non-interaction with the tank body.
✓ Protection of fuel level sensor output from short circuit.
✓ Allows cutting "at place" up to 30% of its initial length without re-calibration.

Reports in Pegasus Include:

1. Fuel Fillings Report - See location and time fuel was purchased to determine if there was a potential fuel theft.
2. Fuel Graph Report - monitor fuel used by each vehicle; reconcile fuel consumed against Kms driven.
3. Idle Time Report - view the number of hours of idling per vehicle; pinpoint underutilized or inactive driving hours.
4. Trip Base Fuel Report - view estimated fuel consumption per trip by a vehicle.

Specifications

Operating Principle	Capacitive
Measurement Accuracy	97%
Supply Voltage	9V-60V
Operating Temperature	-10°C to +65°C
Current Consumption	10mA
Output Signal	
Length	

Manual Fuel Entry System & Trip Fuel Report

Pegasus provides the feature to add fuel entries manually for each filling. Depending on fuel entries, Pegasus provides a report called **Trip Fuel Report**. Below are the screenshot of Fuel Entry dialog box and Trip Fuel Report.

Fuel Entry

Fuel Quantity	Fuel Cost	Fuel Type	Date	Tank Full
14.65	40	0	21 April 2014 05:00	☐
18.315	50	0	24 April 2014 05:00	☐
18.32	50	0	29 April 2014 05:00	☐
38.47	105	0	29 April 2014 05:54	☑

Current Fuel Entry:

Fuel Quantity: 38.47   Fuel Cost: 105
Fuel Type: Petrol/Diesel ▾   Date: 29/04/2014
Fuel Tank: ☑ Full   Odometer: 178401
Filling Station: airport shell
Refrence:

[New Fuel Entry...]   [Save] [Delete] [Cancel]

Fuel Entry Dialog Box

Trip Fuel Report

Device Name	GW5974Y
Device ID	1004092
Report Runtime	30/04/2014 01:53:40PM
Report Time Period	21/04/2014 00:00 – 29/04/2014 23:59

Total Mileage (Km)	894.21
Total Driving Time	17:17:00
Total Idle Time	07:02:19
Total Fuel Used	89.53
Total Fuel Cost	244.39
First Location	SSNIT Road, GA West
Last Location	Spintex Road

Device	Start Time	End Time	Trip Time	Driving Time	Idle Time	Stop Time
GW5974Y	21/04/2014 00:07	21/04/2014 01:31	01:24:01	01:06:17	00:08:58	00:08:46
GW5974Y	21/04/2014 03:36	21/04/2014 04:29	00:53:16	00:45:00	00:07:53	00:00:23
GW5974Y	21/04/2014 18:45	21/04/2014 18:56	00:10:41	00:03:32	00:06:38	00:00:31
GW5974Y	21/04/2014 21:55	21/04/2014 22:39	00:44:14	00:36:10	00:07:19	00:00:45
GW5974Y	22/04/2014 00:11	22/04/2014 01:45	01:34:04	01:23:08	00:09:55	00:01:01
GW5974Y	22/04/2014 03:14	22/04/2014 04:26	01:12:07	00:36:59	00:16:42	00:18:26
GW5974Y	23/04/2014 12:22	23/04/2014 13:52	01:29:40	00:58:16	00:30:54	00:00:30
GW5974Y	23/04/2014 16:11	23/04/2014 17:49	01:38:08	00:51:05	00:39:00	00:08:03
GW5974Y	23/04/2014 18:12	23/04/2014 18:48	00:36:28	00:29:42	00:06:23	00:00:23
GW5974Y	23/04/2014 19:56	23/04/2014 20:10	00:14:18	00:09:13	00:04:28	00:00:37
GW5974Y	23/04/2014 21:49	23/04/2014 22:31	00:42:32	00:35:43	00:06:36	00:00:13
GW5974Y	24/04/2014 01:45	24/04/2014 02:02	00:17:28	00:11:54	00:05:26	00:00:08
GW5974Y	24/04/2014 17:15	24/04/2014 18:18	01:03:09	00:31:02	00:31:54	00:00:13
GW5974Y	24/04/2014 18:43	24/04/2014 20:26	01:42:27	00:44:04	00:53:48	00:04:35

Continued...

Start KM	End KM	Distance	Fuel Used	Fuel Cost	Start Location	Reached Location
178,108.58	178,150.82	42.24	4.23	11.54	SSNIT Road, GA West	Spintex Road
178,150.82	178,189.65	38.83	3.89	10.61	Spintex Road	SSNIT Road
178,189.65	178,191.70	2.05	0.21	0.56	SSNIT Road	Accra - Cape Coast Road. GA West.
178,191.70	178,215.84	24.14	2.42	6.60	Accra - Cape Coast Road. GA West.	Onyankle Street
178,215.84	178,284.16	68.32	6.84	18.67	Onyankle Street	Accra – Cape Coast Road
178,284.16	178,297.55	13.39	1.34	3.66	Accra – Cape Coast Road	SSNIT Road
178,297.55	178,346.22	48.68	4.87	13.30	SSNIT Road	Meridian Road, Tema Metropolitan
178,346.22	178,371.24	24.75	2.48	6.76	Meridian Road, Tema Metropolitan	Boundary Road North
178,371.24	178,401.03	29.79	2.98	8.14	Boundary Road North	Accra – Tema Motorway
178,401.03	178,406.06	4.99	0.50	1.36	Accra – Tema Motorway	Airport City, Accra, Accra Metropolis
178,406.06	178,425.98	19.92	1.99	5.44	Airport City, Accra, Accra Metropolis	Accra - Cape Coast Road. GA West.
178,425.98	178,433.81	7.83	0.78	2.14	Accra - Cape Coast Road. GA West.	SSNIT Road
178,433.81	178,457.76	22.85	2.29	6.24	SSNIT Road	Airport City, Accra, Accra Metropolis
178,457.76	178,476.69	18.93	1.90	5.17	Airport City, Accra, Accra Metropolis	Nii Tempon Street, Greater Accra

*Trip Fuel Report completely depends on the Fuel Entries.*

Sharp Fuel Report

- ❖ Real time fuel monitoring
- ❖ Average fuel consumption
- ❖ Fuel report with graph
- ❖ Fuel fillings report
- ❖ Trip based fuel report

Sharp Fuel Report

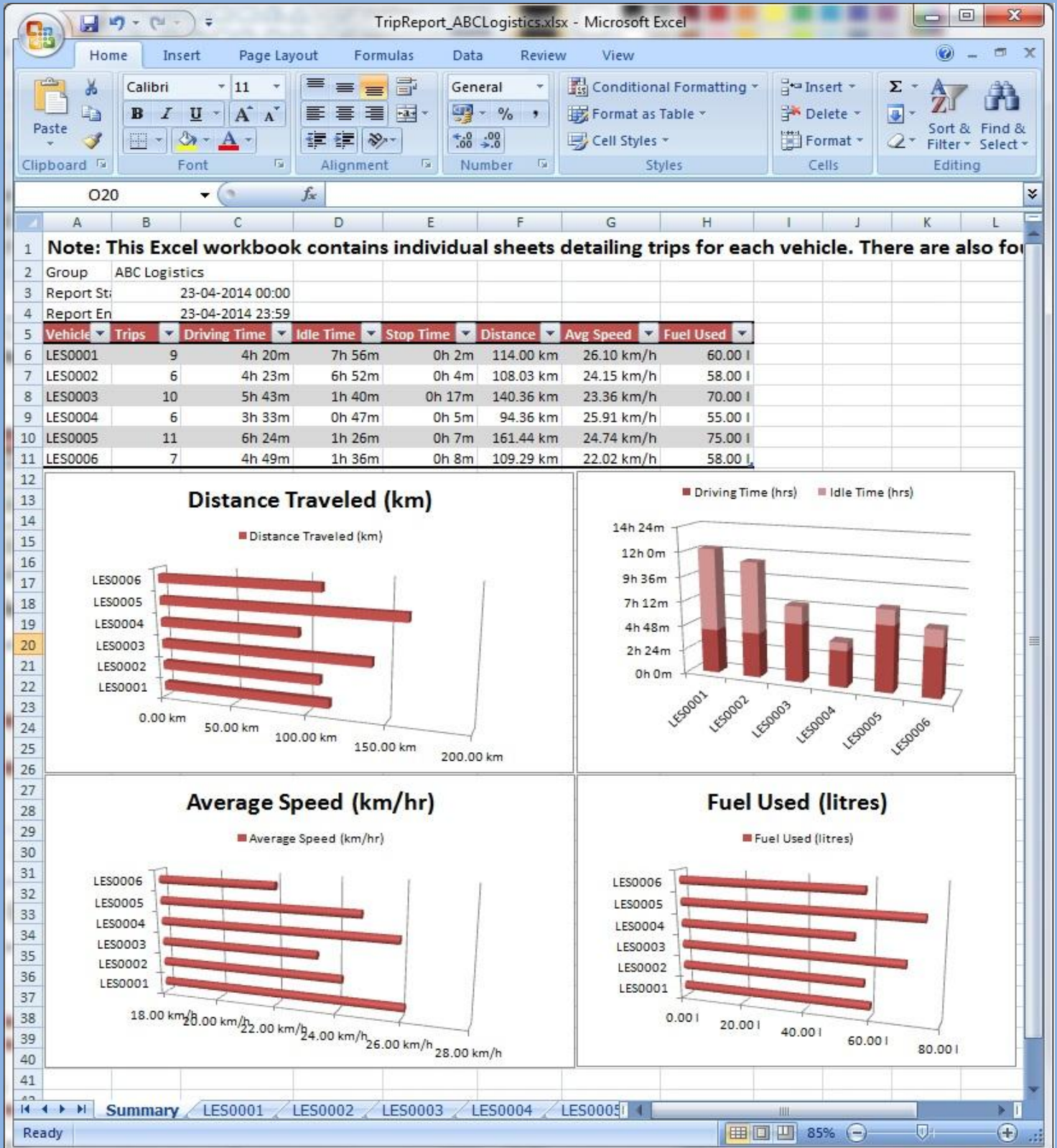| Name (ID)	Demo
Report Run Time	4/04/2014 6:05:05 PM
Report Time Period	22/03/2014 14:00 – 24/03/2014 23:59
Total Distance (KM)	1078.39
Total Fuel Used (L)	267.33

AVG Speed (km/h)	38.06
Tank Size (L)	100
First Location	175, Loughboroigh, North West, Lecestershire
Last Location	Stanford on Soar, Loughboroigh, North West, Lecestershire
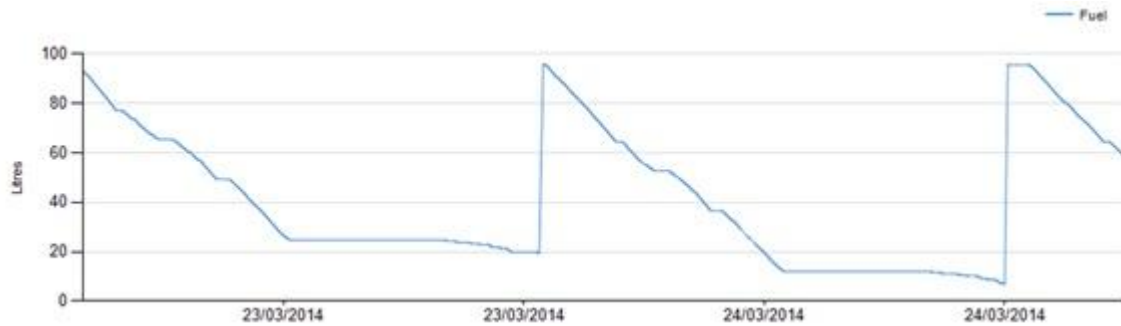
Date	Status	Speed	KM	Fuel	Location
22/03/2014 14:00	Driving	42.60	90,999.30	93.02	175, Loughboroigh, North West, Lecestershire
22/03/2014 14:01	Driving	42.60	90,999.05	92.88	175, Loughboroigh, North West, Lecestershire
22/03/2014 14:02	Driving	51.86	90,999.63	92.78	Meadow Ln, Loughboroigh, North West, Lecestershire
22/03/2014 14:03	Driving	50.00	91,000.73	92.57	Meadow Ln, Loughboroigh, North West, Lecestershire
22/03/2014 14:04	Driving	48.15	91,001.27	92.47	Meadow Ln, Loughboroigh, North West, Lecestershire
22/03/2014 14:05	Driving	35.19	91,002.53	92.24	Stanford on Soar, Loughboroigh, North West, Lecestershire

Trip Excel Report

- ❖ Specially designed for large fleets
- ❖ Provides complete information of each vehicle such as:

  - o Number of Trips
  - o Driving Time
  - o Idle Time
  - o Stop Time
  - o Distance Travelled
  - o Average Speed
  - o Total litres of Fuel Used
  - o Graphical representation of **Distance Traveled** by each vehicle in a fleet
  - o Graphical representation of **Driving Time** vs **Idle Time** of each vehicle in a fleet
  - o Graphical representation of **Average Speed** of each vehicle in a fleet
  - o Graphical representation of **Fuel Consumed/ Used** by each vehicle in a fleet

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