



Well-known chemical industry corporation adopts for its dispatch operations, a RFID optimized TRUCK LOGISTICS SYSTEM

Automatic and efficient tracking of truck movement within
plant premises

Efficient queuing and minimizing of waiting time

Optimum utilization of loading bays and weighbridges

Automated dispatch processing, trip data management
and seamless backend integration with existing ERP



INSIDE:

Key Requirements
Solution
Implementation
Working
Benefits
Links

TECHNOLOGY

Solution:

EPC Gen2 compliant
vehicle tracking solution

Tag Type:

Parka™ UHF Passive

Reader/Antenna:

Xtenna™
Xtenna Proximity™

Method:

Multiple Tracking via Integrated
Reader/Antenna modules

Integration Platform:

RFID Middleware:

Xtenna™ WebToolkit
Xtenna™ Studio

Application: Essen RFID's Truck
Logistics System

Database: SQL Server 2012

ERP: SAP

Tag Manufacturer/Supplier:

Essen RFID, with US based chip inlay

Reader/Antenna Manufacturer:

Essen RFID, with US based module

Systems Integrator:

Essen RFID

For further details contact:

Essen RFID

24-B, Jolly Maker II
Nariman Point
Mumbai 400021 India
www.essenrfid.com





CASE STUDY

KEY REQUIREMENTS:

Deepak Fertilisers and Petrochemicals (DFPCL) is a leading producer of industrial chemicals and fertilizers in India. From its plant at Taloja near Mumbai, its various products are manufactured, packed in bags and sent to distributors. The company utilizes a fleet of trucks for product distribution, consisting of both, permanent and temporarily contracted vehicles. These trucks are booked by the company's transport department and called to the plant when required as per the truck's distribution destination. This requisition and dispatch process needed to be automated and streamlined as truck movement within the plant area was inefficient with truck drivers availing of additional waiting time, resulting in loading bay underutilization and delays.

Main challenges:

- Knowing how many trucks were lined up and waiting outside the plant gates for entry into the premises.
- Efficient utilization of all loading bays for loading dispatch goods with least waiting time for the trucks.
- To track the availability of suitable loading bay for each truck.
- To manage and guide the truck drivers so they can reach their allotted loading bay within minimal period of time.
- To automate the process of detection and loading of trucks within the company premises.
- Determining the time spent by the trucks at each touch point within the plant.
- Generating a token as a unique code for each truck, helping in identification and the ascertaining current status of the truck within the premises.
- Information sent to truck drivers through SMS during token generation, regarding estimated time before loading of material.
- Reduction in time spent by dispatch office in ascertaining required trucks available which have reported for loading and bringing down the waiting time of these trucks outside the plant.
- Instant information and alerts to administrator regarding current status and waiting queue at each loading bay.
- Tracking history of trucks pertaining to timings, documentation, and details of vendors, materials, trips, etc.

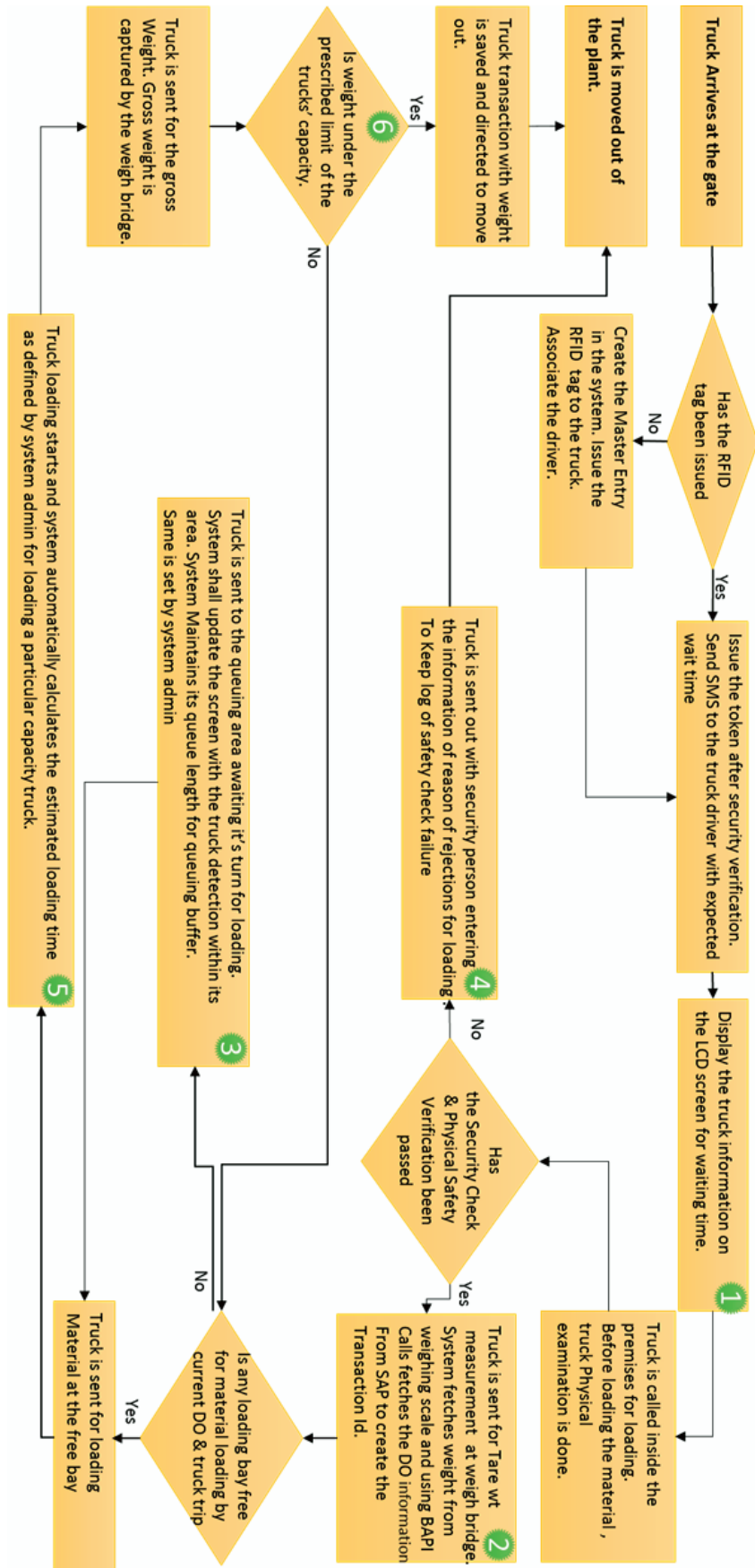
SOLUTION:

Essen RFID offered an efficient solution for truck tracking and transit management based on RFID, that would track the delivery trucks at each touch point starting from issuing of token till the loaded truck moves outside the plant, while minimizing waiting period for loading of goods. It involved the use of RFID tags on the vehicles and deployment of integrated antenna-readers at the various touch points within the plant. The solution is implemented through SQL Server 2012 as the database with backend ERP integration through SAP.



CASE STUDY

Operation Flow:





CASE STUDY

IMPLEMENTATION:

A PARKA™ RFID tag is issued to each truck when it receives a token number on entering the premises. These tags are registered into the database using Xtenna Proximity™ readers. Xtenna™ antenna-readers for detecting truck movement are mounted at each touch point within the plant, such as entrance/exit gates, weighbridges, queuing area and loading bays. LCD displays are mounted at all the truck queuing areas.

The entire tracking process is controlled through Essen RFID's Truck Logistics System, and its front-end VETRA™ web application.

WORKING:

Modules:

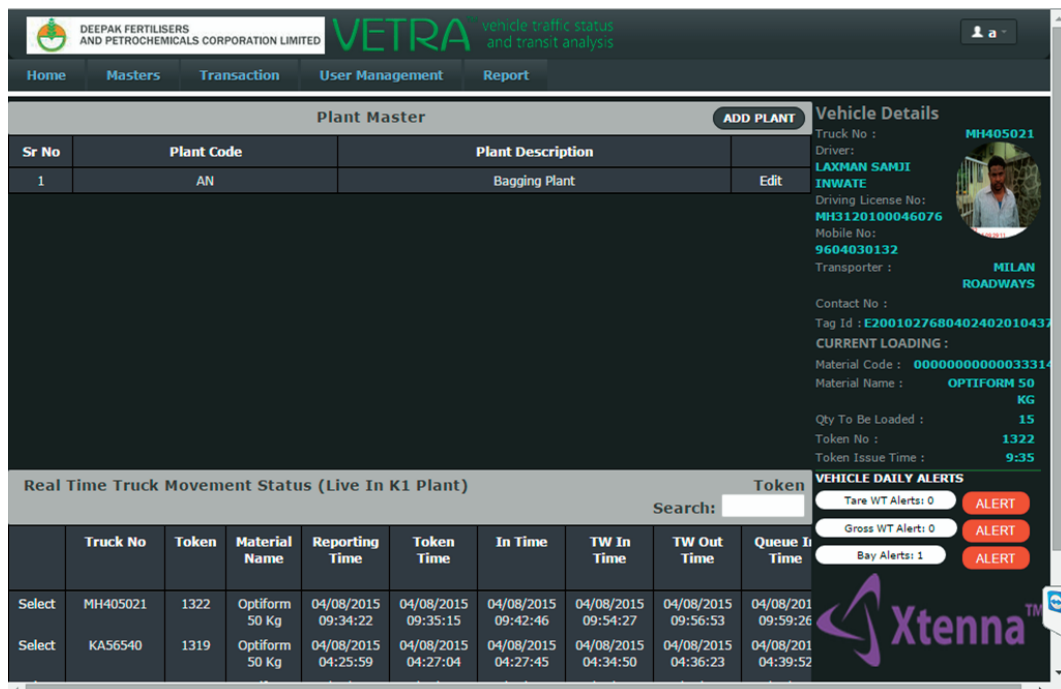
The Truck Logistics System has the following main modules:

- Registration
- Mapping Modules
- Dashboard

Registration Module:

This module is used to register the truck, driver and other important entities into the RFID system. The main masters used in this module are:

Plant Master: This is used to register the various plants within the company premises along with data such as plant name, description, etc.



The screenshot shows the VETRA web application interface. At the top, there is a navigation bar with 'Home', 'Masters', 'Transaction', 'User Management', and 'Report'. The main content area is divided into two sections: 'Plant Master' and 'Vehicle Details'.

Plant Master Section:

Sr No	Plant Code	Plant Description	
1	AN	Bagging Plant	Edit

Vehicle Details Section:

Truck No : MH405021
 Driver: LAXMAN SAMJI INWATE
 Driving License No: MH3120100046076
 Mobile No: 9604030132
 Transporter : MILAN ROADWAYS
 Contact No :
 Tag Id : E2001027680402402010437
 CURRENT LOADING :
 Material Code : 0000000000033314
 Material Name : OPTIFORM 50 KG
 Qty To Be Loaded : 15
 Token No : 1322
 Token Issue Time : 9:35

Real Time Truck Movement Status (Live In K1 Plant)

	Truck No	Token	Material Name	Reporting Time	Token Time	In Time	TW In Time	TW Out Time	Queue In Time
Select	MH405021	1322	Optiform 50 Kg	04/08/2015 09:34:22	04/08/2015 09:35:15	04/08/2015 09:42:46	04/08/2015 09:54:27	04/08/2015 09:56:53	04/08/2015 09:59:26
Select	KA56540	1319	Optiform 50 Kg	04/08/2015 04:25:59	04/08/2015 04:27:04	04/08/2015 04:27:45	04/08/2015 04:34:50	04/08/2015 04:36:23	04/08/2015 04:39:52

VEHICLE DAILY ALERTS

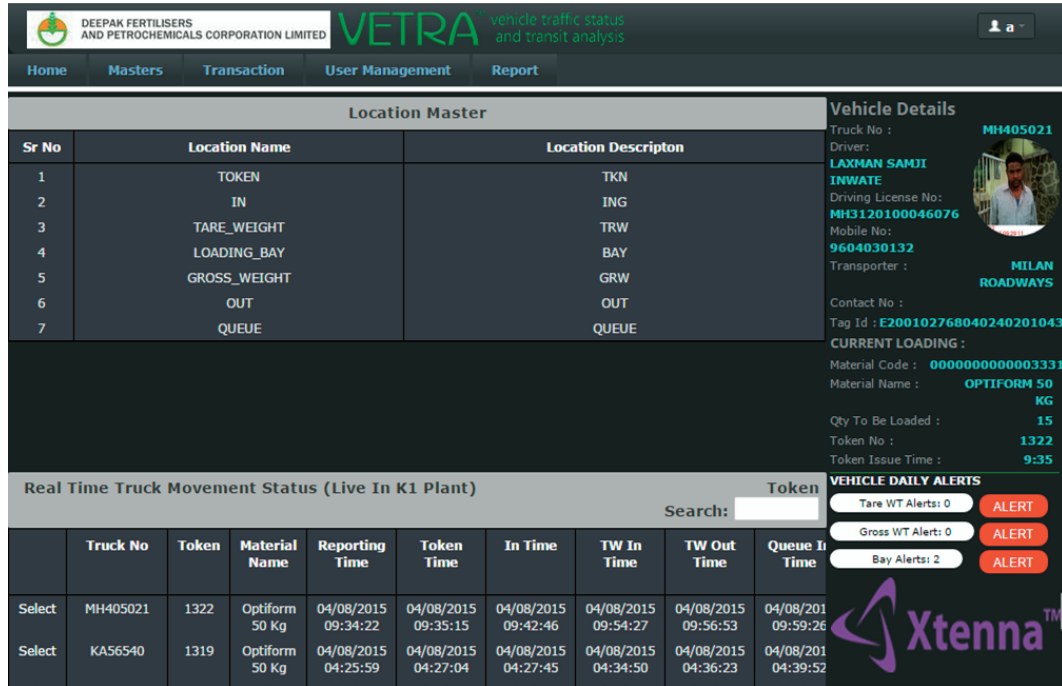
Tare WT Alerts: 0 ALERT
 Gross WT Alerts: 0 ALERT
 Bay Alerts: 1 ALERT

The Xtenna logo is visible in the bottom right corner of the screenshot.



CASE STUDY

Location Master: This is used to register the various truck-stop locations within each plant, such as Token Issue, Tare Weighbridge, Loading Bay, Gross Weighbridge, etc.



DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LIMITED **VETRA** vehicle traffic status and transit analysis

Home Masters Transaction User Management Report

Location Master									
Sr No	Location Name	Location Description							
1	TOKEN	TKN							
2	IN	ING							
3	TARE_WEIGHT	TRW							
4	LOADING_BAY	BAY							
5	GROSS_WEIGHT	GRW							
6	OUT	OUT							
7	QUEUE	QUEUE							

Vehicle Details
 Truck No : MH405021
 Driver : LAXMAN SAMJI INWATE
 Driving License No : MH3120100046076
 Mobile No : 9604030132
 Transporter : MILAN ROADWAYS
 Contact No :
 Tag Id : E2001027680402402010437
 CURRENT LOADING :
 Material Code : 0000000000033314
 Material Name : OPTIFORM 50 KG
 Qty To Be Loaded : 15
 Token No : 1322
 Token Issue Time : 9:35

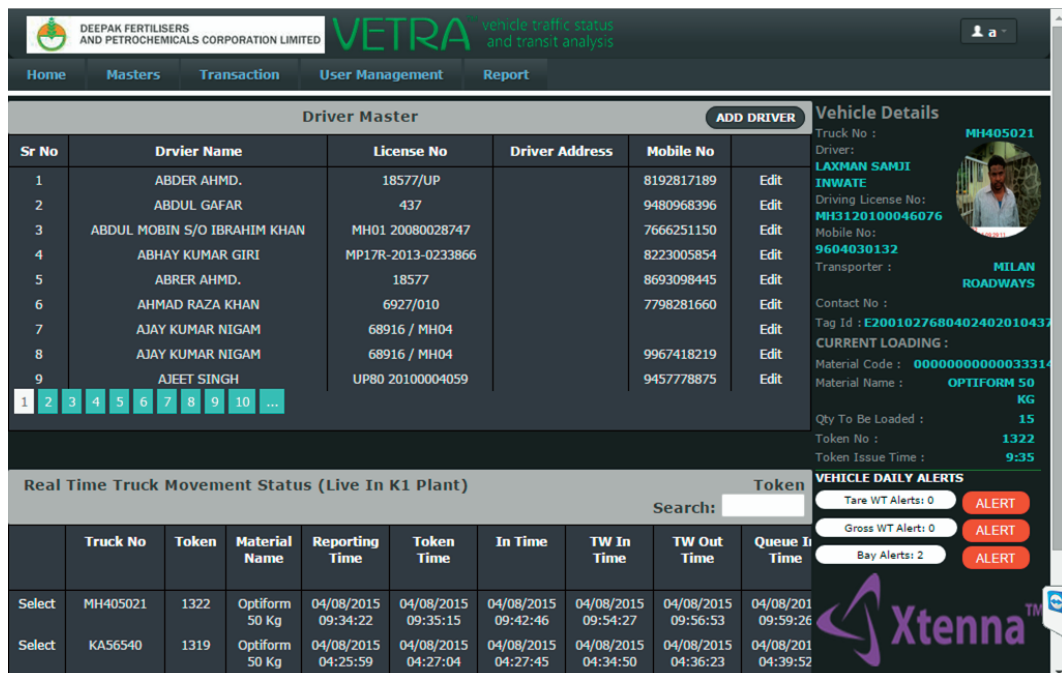
Real Time Truck Movement Status (Live In K1 Plant) Search: Token

	Truck No	Token	Material Name	Reporting Time	Token Time	In Time	TW In Time	TW Out Time	Queue In Time
Select	MH405021	1322	Optiform 50 Kg	04/08/2015 09:34:22	04/08/2015 09:35:15	04/08/2015 09:42:46	04/08/2015 09:54:27	04/08/2015 09:56:53	04/08/2015 09:59:26
Select	KA56540	1319	Optiform 50 Kg	04/08/2015 04:25:59	04/08/2015 04:27:04	04/08/2015 04:27:45	04/08/2015 04:34:50	04/08/2015 04:36:23	04/08/2015 04:39:52

VEHICLE DAILY ALERTS
 Tare WT Alerts: 0 ALERT
 Gross WT Alerts: 0 ALERT
 Bay Alerts: 2 ALERT

Vendor Master: Here the vendors (transporters) available with the company are registered into the database along with their name, address and other contact details.

Driver Master: Using this, the driver of the truck is registered into the database along with necessary details such as driver's name, driver's address, driving license number, etc.



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Home Masters Transaction User Management Report

Driver Master					
Sr No	Drvnr Name	License No	Driver Address	Mobile No	
1	ABDER AHMD.	18577/UP		8192817189	Edit
2	ABDUL GAFAR	437		9480968396	Edit
3	ABDUL MOBIN S/O IBRAHIM KHAN	MH01 20080028747		7666251150	Edit
4	ABHAY KUMAR GIRI	MP17R-2013-0233866		8223005854	Edit
5	ABRER AHMD.	18577		8693098445	Edit
6	AHMAD RAZA KHAN	6927/010		7798281660	Edit
7	AJAY KUMAR NIGAM	68916 / MH04			Edit
8	AJAY KUMAR NIGAM	68916 / MH04		9967418219	Edit
9	AJEET SINGH	UP80 20100004059		9457778875	Edit

Vehicle Details
 Truck No : MH405021
 Driver : LAXMAN SAMJI INWATE
 Driving License No : MH3120100046076
 Mobile No : 9604030132
 Transporter : MILAN ROADWAYS
 Contact No :
 Tag Id : E2001027680402402010437
 CURRENT LOADING :
 Material Code : 0000000000033314
 Material Name : OPTIFORM 50 KG
 Qty To Be Loaded : 15
 Token No : 1322
 Token Issue Time : 9:35

Real Time Truck Movement Status (Live In K1 Plant) Search: Token

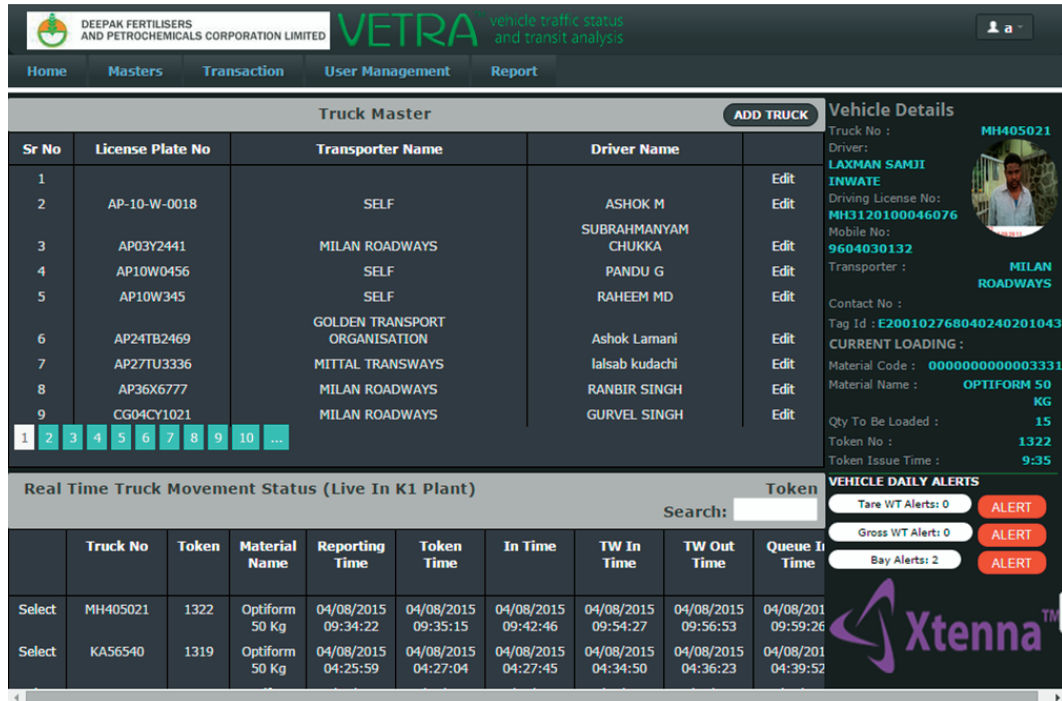
	Truck No	Token	Material Name	Reporting Time	Token Time	In Time	TW In Time	TW Out Time	Queue In Time
Select	MH405021	1322	Optiform 50 Kg	04/08/2015 09:34:22	04/08/2015 09:35:15	04/08/2015 09:42:46	04/08/2015 09:54:27	04/08/2015 09:56:53	04/08/2015 09:59:26
Select	KA56540	1319	Optiform 50 Kg	04/08/2015 04:25:59	04/08/2015 04:27:04	04/08/2015 04:27:45	04/08/2015 04:34:50	04/08/2015 04:36:23	04/08/2015 04:39:52

VEHICLE DAILY ALERTS
 Tare WT Alerts: 0 ALERT
 Gross WT Alerts: 0 ALERT
 Bay Alerts: 2 ALERT



CASE STUDY

Truck Master: Each truck is registered into the database along with its details such as license plate number, truck driver, vendor (transporter/truck owner), truck's maximum carrying capacity, etc.



DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LIMITED **VETRA** vehicle traffic status and transit analysis

Home Masters Transaction User Management Report

Truck Master

Sr No	License Plate No	Transporter Name	Driver Name	
1				Edit
2	AP-10-W-0018	SELF	ASHOK M	Edit
3	AP03Y2441	MILAN ROADWAYS	SUBRAHMANYAM CHUKKA	Edit
4	AP10W0456	SELF	PANDU G	Edit
5	AP10W345	SELF	RAHEEM MD	Edit
6	AP24TB2469	GOLDEN TRANSPORT ORGANISATION	Ashok Lamani	Edit
7	AP27TU3336	MITTAL TRANSWAYS	lalsab kudachi	Edit
8	AP36X6777	MILAN ROADWAYS	RANBIR SINGH	Edit
9	CG04CY1021	MILAN ROADWAYS	GURVEL SINGH	Edit

Vehicle Details

Truck No : MH405021
 Driver : LAXMAN SAMJI INWATE
 Driving License No: MH3120100046076
 Mobile No: 9604030132
 Transporter : MILAN ROADWAYS
 Contact No :
 Tag Id : E2001027680402402010437
 CURRENT LOADING :
 Material Code : 0000000000033314
 Material Name : OPTIFORM 50 KG
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VEHICLE DAILY ALERTS

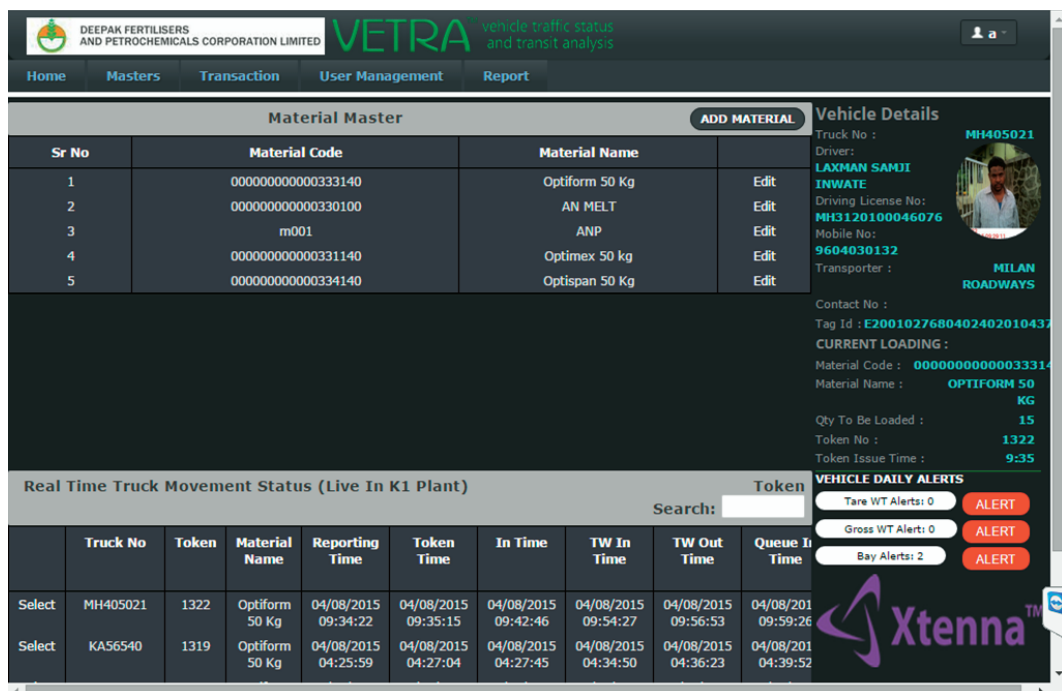
Tare WT Alerts: 0 ALERT
 Gross WT Alerts: 0 ALERT
 Bay Alerts: 2 ALERT

Real Time Truck Movement Status (Live In K1 Plant)

	Truck No	Token	Material Name	Reporting Time	Token Time	In Time	TW In Time	TW Out Time	Queue In Time
Select	MH405021	1322	Optiform 50 Kg	04/08/2015 09:34:22	04/08/2015 09:35:15	04/08/2015 09:42:46	04/08/2015 09:54:27	04/08/2015 09:56:53	04/08/2015 09:59:26
Select	KA56540	1319	Optiform 50 Kg	04/08/2015 04:25:59	04/08/2015 04:27:04	04/08/2015 04:27:45	04/08/2015 04:34:50	04/08/2015 04:36:23	04/08/2015 04:39:52

Xtenna™

Material Master: This is used to register the various materials being transported by the trucks from the company's plants. Details such as material name, description, etc. are entered into the database.



DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LIMITED **VETRA** vehicle traffic status and transit analysis

Home Masters Transaction User Management Report

Material Master

Sr No	Material Code	Material Name	
1	00000000000333140	Optiform 50 Kg	Edit
2	00000000000330100	AN MELT	Edit
3	m001	ANP	Edit
4	00000000000331140	Optimex 50 kg	Edit
5	00000000000334140	Optispan 50 Kg	Edit

Vehicle Details

Truck No : MH405021
 Driver : LAXMAN SAMJI INWATE
 Driving License No: MH3120100046076
 Mobile No: 9604030132
 Transporter : MILAN ROADWAYS
 Contact No :
 Tag Id : E2001027680402402010437
 CURRENT LOADING :
 Material Code : 0000000000033314
 Material Name : OPTIFORM 50 KG
 Qty To Be Loaded : 15
 Token No : 1322
 Token Issue Time : 9:35

VEHICLE DAILY ALERTS

Tare WT Alerts: 0 ALERT
 Gross WT Alerts: 0 ALERT
 Bay Alerts: 2 ALERT

Real Time Truck Movement Status (Live In K1 Plant)

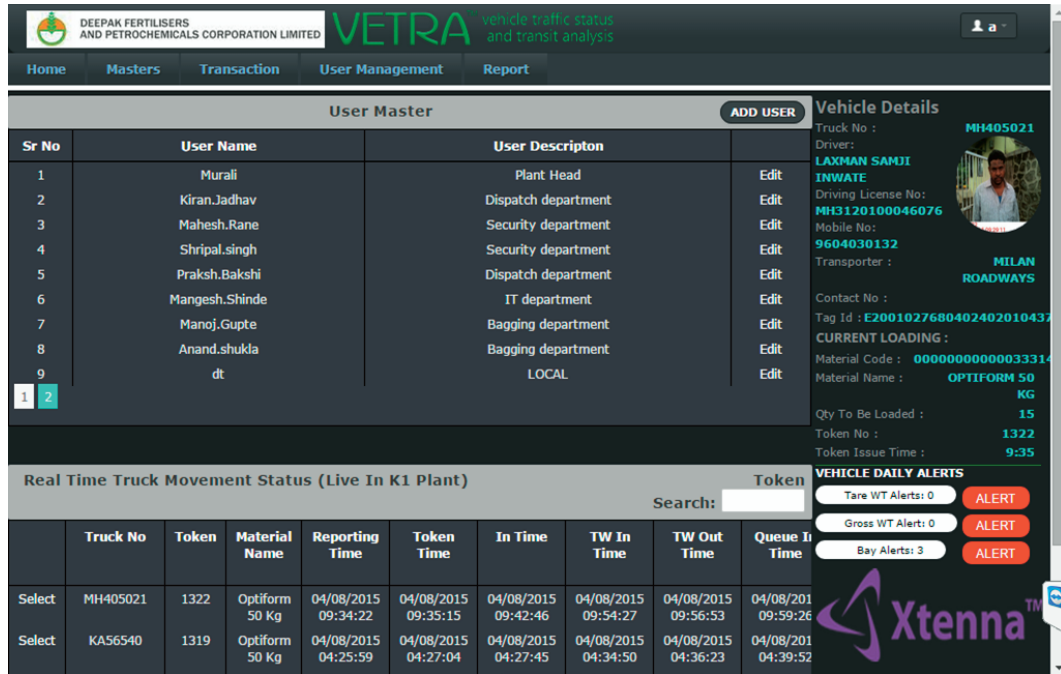
	Truck No	Token	Material Name	Reporting Time	Token Time	In Time	TW In Time	TW Out Time	Queue In Time
Select	MH405021	1322	Optiform 50 Kg	04/08/2015 09:34:22	04/08/2015 09:35:15	04/08/2015 09:42:46	04/08/2015 09:54:27	04/08/2015 09:56:53	04/08/2015 09:59:26
Select	KA56540	1319	Optiform 50 Kg	04/08/2015 04:25:59	04/08/2015 04:27:04	04/08/2015 04:27:45	04/08/2015 04:34:50	04/08/2015 04:36:23	04/08/2015 04:39:52

Xtenna™



CASE STUDY

User Master: This maintains all information about each user along with user ID, user status, etc.



DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LIMITED **VETRA** vehicle traffic status and transit analysis

Home Masters Transaction User Management Report

User Master ADD USER

Sr No	User Name	User Description	
1	Murali	Plant Head	Edit
2	Kiran.Jadhav	Dispatch department	Edit
3	Mahesh.Rane	Security department	Edit
4	Shripal.singh	Security department	Edit
5	Praksh.Bakshi	Dispatch department	Edit
6	Mangesh.Shinde	IT department	Edit
7	Manoj.Gupte	Bagging department	Edit
8	Anand.shukla	Bagging department	Edit
9	dt	LOCAL	Edit

Vehicle Details

Truck No : MH405021
 Drivers : LAXMAN SAMJI INWATE
 Driving License No: MH3120100046076
 Mobile No: 9604030132
 Transporter : MILAN ROADWAYS

Contact No :
 Tag Id : E2001027680402402010437
 CURRENT LOADING :
 Material Code : 0000000000033314
 Material Name : OPTIFORM 50 KG
 Qty To Be Loaded : 15
 Token No : 1322
 Token Issue Time : 9:35


Real Time Truck Movement Status (Live In K1 Plant) Token

Search:

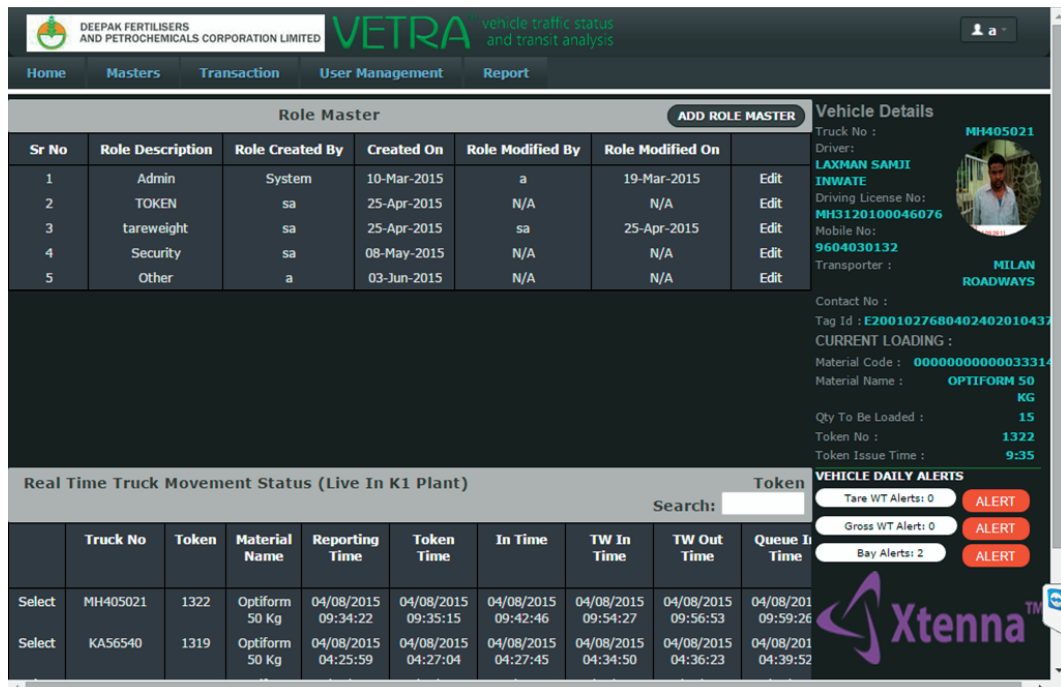
	Truck No	Token	Material Name	Reporting Time	Token Time	In Time	TW In Time	TW Out Time	Queue I Time
Select	MH405021	1322	Optiform 50 Kg	04/08/2015 09:34:22	04/08/2015 09:35:15	04/08/2015 09:42:46	04/08/2015 09:54:27	04/08/2015 09:56:53	04/08/2015 09:59:26
Select	KA56540	1319	Optiform 50 Kg	04/08/2015 04:25:59	04/08/2015 04:27:04	04/08/2015 04:27:45	04/08/2015 04:34:50	04/08/2015 04:36:23	04/08/2015 04:39:52

VEHICLE DAILY ALERTS

Tare WT Alerts: 0 ALERT
 Gross WT Alerts: 0 ALERT
 Bay Alerts: 2 ALERT



Role Master: This is used to define various roles or designations for the various users within the system, such as administrator, operator, etc. Each user can only have access to the data that has been assigned to his particular role.



DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LIMITED **VETRA** vehicle traffic status and transit analysis

Home Masters Transaction User Management Report

Role Master ADD ROLE MASTER

Sr No	Role Description	Role Created By	Created On	Role Modified By	Role Modified On	
1	Admin	System	10-Mar-2015	a	19-Mar-2015	Edit
2	TOKEN	sa	25-Apr-2015	N/A	N/A	Edit
3	tareweight	sa	25-Apr-2015	sa	25-Apr-2015	Edit
4	Security	sa	08-May-2015	N/A	N/A	Edit
5	Other	a	03-Jun-2015	N/A	N/A	Edit

Vehicle Details

Truck No : MH405021
 Drivers : LAXMAN SAMJI INWATE
 Driving License No: MH3120100046076
 Mobile No: 9604030132
 Transporter : MILAN ROADWAYS

Contact No :
 Tag Id : E2001027680402402010437
 CURRENT LOADING :
 Material Code : 0000000000033314
 Material Name : OPTIFORM 50 KG
 Qty To Be Loaded : 15
 Token No : 1322
 Token Issue Time : 9:35

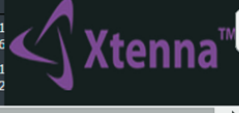
Real Time Truck Movement Status (Live In K1 Plant) Token

Search:

	Truck No	Token	Material Name	Reporting Time	Token Time	In Time	TW In Time	TW Out Time	Queue I Time
Select	MH405021	1322	Optiform 50 Kg	04/08/2015 09:34:22	04/08/2015 09:35:15	04/08/2015 09:42:46	04/08/2015 09:54:27	04/08/2015 09:56:53	04/08/2015 09:59:26
Select	KA56540	1319	Optiform 50 Kg	04/08/2015 04:25:59	04/08/2015 04:27:04	04/08/2015 04:27:45	04/08/2015 04:34:50	04/08/2015 04:36:23	04/08/2015 04:39:52

VEHICLE DAILY ALERTS

Tare WT Alerts: 0 ALERT
 Gross WT Alerts: 0 ALERT
 Bay Alerts: 2 ALERT



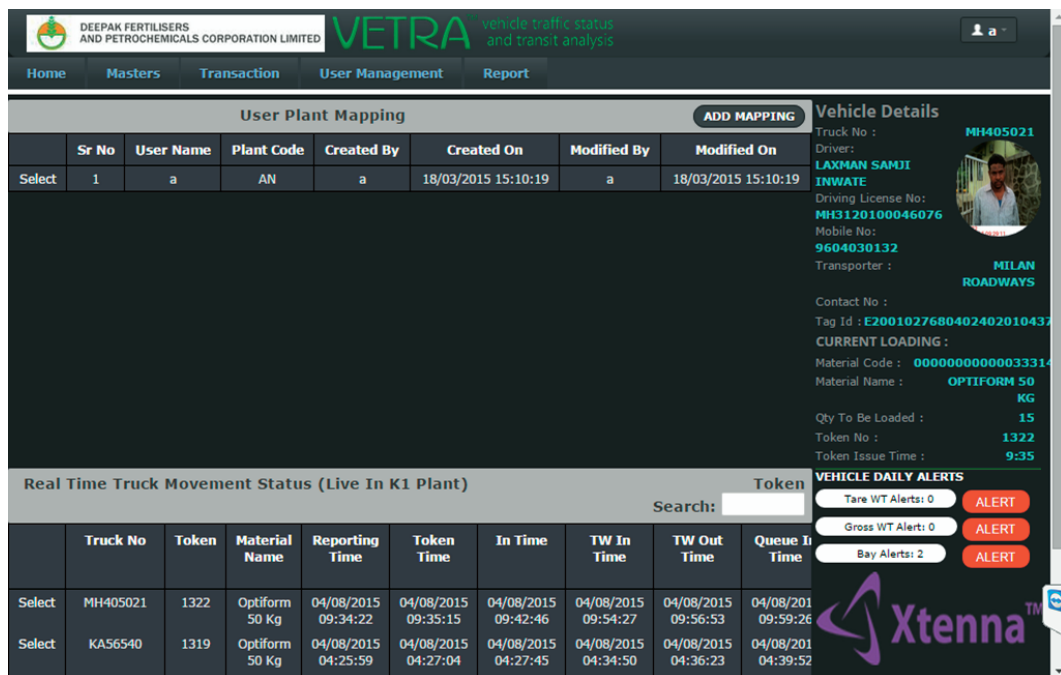


CASE STUDY

Mapping Modules:

Mapping modules are used to establish the relationship between the data in various masters, such as the materials with their loading bay location. The various mapping modules are:

User Plant Mapping: This is used to map a particular user of the application with a plant registered in the Plant Master. The user will then only be able to details of the plant/plants that have been mapped to him.




The screenshot shows the VETRA application interface for DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LIMITED. The main menu includes Home, Masters, Transaction, User Management, and Report. The 'User Plant Mapping' section features an 'ADD MAPPING' button and a table with columns: Sr No, User Name, Plant Code, Created By, Created On, Modified By, and Modified On. A single entry is visible with Sr No 1, User Name 'a', Plant Code 'AN', Created By 'a', and Created On '18/03/2015 15:10:19'. To the right, 'Vehicle Details' for truck MH405021 are shown, including driver LAXMAN SAMJI INWATE, license number MH3120100046076, mobile number 9604030132, transporter MILAN ROADWAYS, and current loading of OPTIFORM 50 KG. Below this is the 'Real Time Truck Movement Status (Live In K1 Plant)' section with a search bar and a table with columns: Truck No, Token, Material Name, Reporting Time, Token Time, In Time, TW In Time, TW Out Time, and Queue I Time. Two entries are shown for trucks MH405021 and KA56540. On the right, 'VEHICLE DAILY ALERTS' are displayed: Tare WT Alerts: 0 (ALERT), Gross WT Alerts: 0 (ALERT), and Bay Alerts: 2 (ALERT). The Xtenna logo is visible in the bottom right corner.

Plant Location Mapping: This maps registered plants to registered locations within the system.

Role Menu Mapping: This maps a specific user role to the various menus within the application. A particular user defined role can access only those menus that have been authorized to that role in order to modify or update the data within the application. For e.g. a user defined as administrator can access all menus, whereas a user designated as operator will have restricted access.




CASE STUDY


DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LIMITED

VETRA

vehicle traffic status and transit analysis



Home
Masters
Transaction
User Management
Report

Role Mapping				
Sr No	ROLE DESCRIPTION	Created By	Created On	Created By
1	Admin	System	10-Mar-2015	Edit
2	TOKEN	sa	25-Apr-2015	Edit
3	tareweight	sa	25-Apr-2015	Edit
4	Security	sa	08-May-2015	Edit
5	Other	a	03-Jun-2015	Edit

Vehicle Details

Truck No : **MH405021**

Driver : **LAXMAN SAMJI INWATE**

Driving License No : **MH3120100046076**

Mobile No : **9604030132**

Transporter : **MILAN ROADWAYS**

Contact No :

Tag Id : **E2001027680402402010437**

CURRENT LOADING :

Material Code : **0000000000033314**

Material Name : **OPTIFORM 50 KG**

Qty To Be Loaded : **15**

Token No : **1322**

Token Issue Time : **9:35**

Real Time Truck Movement Status (Live In K1 Plant)

Token Search:

	Truck No	Token	Material Name	Reporting Time	Token Time	In Time	TW In Time	TW Out Time	Queue In Time
Select	MH405021	1322	Optiform 50 Kg	04/08/2015 09:34:22	04/08/2015 09:35:15	04/08/2015 09:42:46	04/08/2015 09:54:27	04/08/2015 09:56:53	04/08/2015 09:59:26
Select	KA56540	1319	Optiform 50 Kg	04/08/2015 04:25:59	04/08/2015 04:27:04	04/08/2015 04:27:45	04/08/2015 04:34:50	04/08/2015 04:36:23	04/08/2015 04:39:52


VEHICLE DAILY ALERTS

Tare WT Alerts: 0 ALERT

Gross WT Alerts: 0 ALERT


Bay Alerts: 2 ALERT

Material Bay Mapping: This is used to map the availability of material at a particular loading bay.


DEEPAK FERTILISERS AND PETROCHEMICALS CORPORATION LIMITED

VETRA

vehicle traffic status and transit analysis



Home
Masters
Transaction
User Management
Report

Mapping Matetial Bay Master					
Sr No	Plant Code	Loading Bay	Material Code	Material Name	
1	AN	B1	00000000000333140	Optiform 50 Kg	ShutDown
2	AN	B2	00000000000333140	Optiform 50 Kg	ShutDown
3	AN	B4	00000000000330100	AN MELT	ShutDown
4	AN	B3	00000000000333140	Optiform 50 Kg	ShutDown
5	AN	B3	00000000000331140	Optimex 50 kg	ShutDown
6	AN	B1	00000000000334140	Optispan 50 Kg	ShutDown
7	AN	B2	00000000000334140	Optispan 50 Kg	ShutDown
8	AN	B3	00000000000334140	Optispan 50 Kg	ShutDown

Vehicle Details

Truck No : **MH405021**

Driver : **LAXMAN SAMJI INWATE**

Driving License No : **MH3120100046076**

Mobile No : **9604030132**

Transporter : **MILAN ROADWAYS**

Contact No :

Tag Id : **E2001027680402402010437**

CURRENT LOADING :

Material Code : **0000000000033314**

Material Name : **OPTIFORM 50 KG**

Qty To Be Loaded : **15**

Token No : **1322**

Token Issue Time : **9:35**

Real Time Truck Movement Status (Live In K1 Plant)

Token Search:

	Truck No	Token	Material Name	Reporting Time	Token Time	In Time	TW In Time	TW Out Time	Queue In Time
Select	MH405021	1322	Optiform 50 Kg	04/08/2015 09:34:22	04/08/2015 09:35:15	04/08/2015 09:42:46	04/08/2015 09:54:27	04/08/2015 09:56:53	04/08/2015 09:59:26
Select	KA56540	1319	Optiform 50 Kg	04/08/2015 04:25:59	04/08/2015 04:27:04	04/08/2015 04:27:45	04/08/2015 04:34:50	04/08/2015 04:36:23	04/08/2015 04:39:52

VEHICLE DAILY ALERTS

Tare WT Alerts: 0 ALERT

Gross WT Alerts: 0 ALERT

Bay Alerts: 2 ALERT



CASE STUDY

Trip Cancel: This is used to cancel the trip of a particular truck. This can be done only by an authorized person who has to enter the reason for trip cancellation.

The screenshot shows the VETRA software interface for trip cancellation. It includes a navigation menu, a 'Trip Cancel Master' table, and 'Vehicle Details' for a specific truck.

Sr No	Token No	License Plate No	Driver Name	Reason
1	5	MH32Q6168	BASANT PATEL	NOT VALID
2	12	MH32Q5268	GAUTAM P WANKHADE	NOT VALID
3	19	MH04EL6799	DEELIP SITARAM KOLI	
4	96	MH46AF5428	AMAR JEET GAUTAM	DELIVERY ORDER IS CANCELLED
5	177	NL2K7745	GURPRATAP SINGH	DATA ENTRY IS NOT COMPLETED
6	233	MH06AQ3344	KRISHNA J	AN MELT TAG NOT DETECTED
7	284	MH43Y2071	ABDER AHMD.	N/A
8	304	MH48T7368	KALESH KUMAR YADAV	DATA ENTRY NOT DONE
9	320	MH34M8036	gurjant singh	DATA ENTRY NOT DONE

Vehicle Details:

- Truck No: MH405021
- Driver: LAXMAN SAMJI INWATE
- Driving License No: MH3120100046076
- Mobile No: 9604030132
- Transporter: MILAN ROADWAYS
- Contact No: [Redacted]
- Tag Id: E2001027680402402010437
- CURRENT LOADING: [Redacted]
- Material Code: 00000000000033314
- Material Name: OPTIFORM 50
- Qty To Be Loaded: 15 KG
- Token No: 1322
- Token Issue Time: 9:35

Real Time Truck Movement Status (Live In K1 Plant)

	Truck No	Token	Material Name	Reporting Time	Token Time	In Time	TW In Time	TW Out Time	Queue In Time
Select	MH405021	1322	Optiform 50 Kg	04/08/2015 09:34:22	04/08/2015 09:35:15	04/08/2015 09:42:46	04/08/2015 09:54:27	04/08/2015 09:56:53	04/08/2015 09:59:26
Select	KA56540	1319	Optiform 50 Kg	04/08/2015 04:25:59	04/08/2015 04:27:04	04/08/2015 04:27:45	04/08/2015 04:34:50	04/08/2015 04:36:23	04/08/2015 04:39:52

VEHICLE DAILY ALERTS:

- Tare WT Alerts: 0 ALERT
- Gross WT Alerts: 0 ALERT
- Bay Alerts: 2 ALERT

Dashboards:

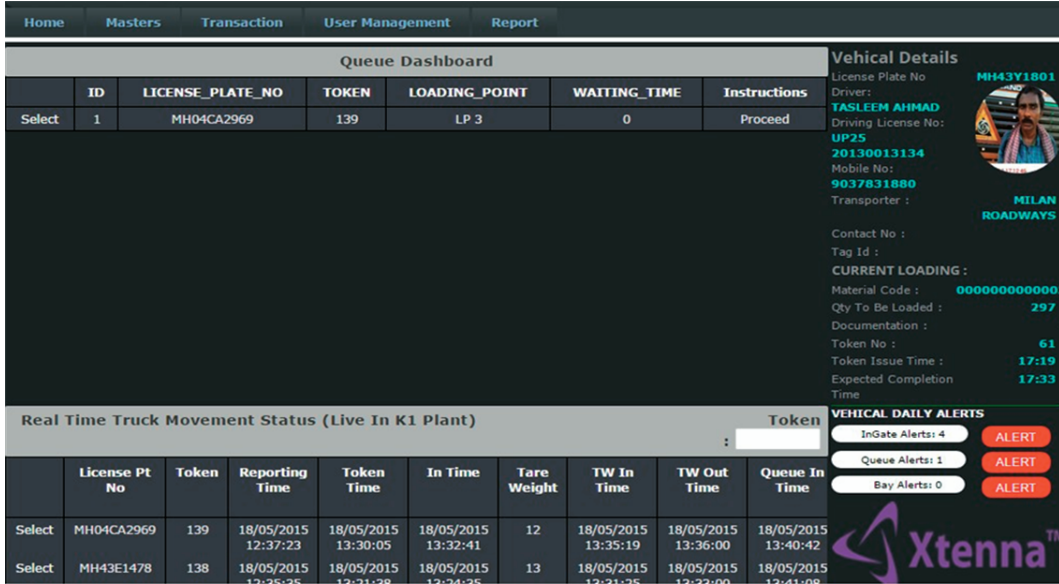
Dashboards are used to display the current status of trucks at various locations within the plant. They are also displayed on large LCD screens at these locations for the benefit of the truckers. They are used to provide directions to the trucks, such as proceed and wait instructions. There are three dashboards used by the system as follows:

Token Dashboard: This shows the list of trucks to whom the token has been successfully issued. It also shows the approximate time for the truck to reach the loading bay, along with instructions that help the truck towards their assigned bay.

Queue Dashboard: When a truck completes weighing of tare weight, it proceeds to its assigned loading bay. However, if the loading bay is occupied by another truck, then the truck has to wait for its turn in the queue waiting area. The queue dashboard gives details to each truck regarding the estimated waiting time and also provides them with instructions.



CASE STUDY



The screenshot shows a 'Queue Dashboard' with a table of truck details and a 'Vehicle Details' sidebar. The table includes columns for ID, LICENSE_PLATE_NO, TOKEN, LOADING_POINT, WAITING_TIME, and Instructions. The sidebar provides information for vehicle MH43Y1801, including driver name, license, and transporter details.

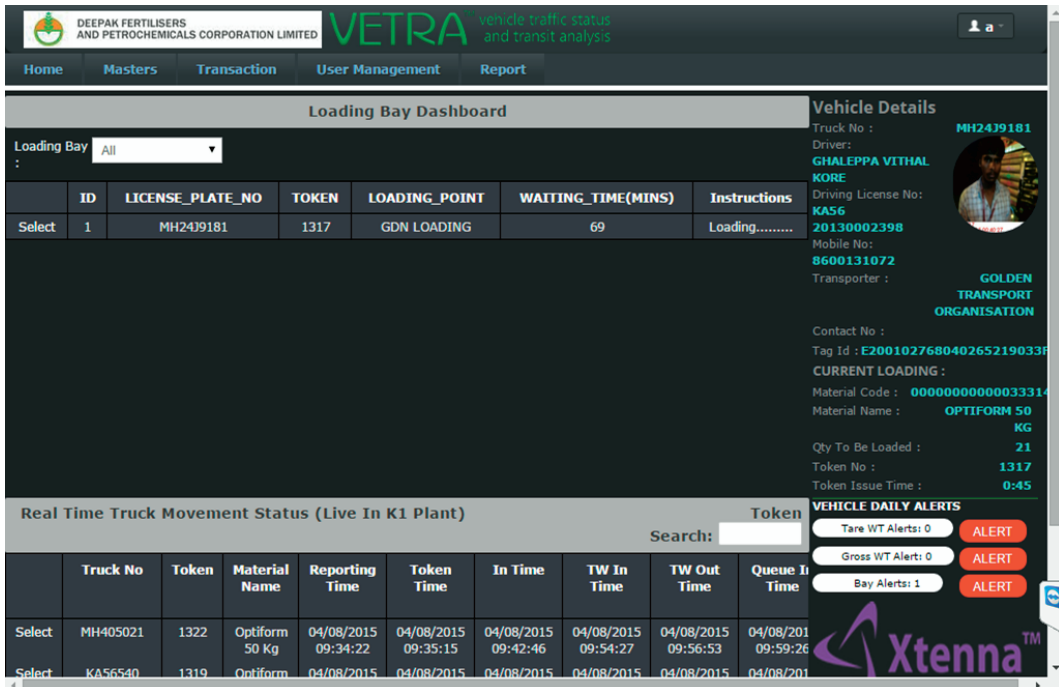
ID	LICENSE_PLATE_NO	TOKEN	LOADING_POINT	WAITING_TIME	Instructions
Select 1	MH04CA2969	139	LP 3	0	Proceed

Vehicle Details:
 License Plate No: MH43Y1801
 Driver: TASLEEM AHMAD
 Driving License No: UP25
 20130013134
 Mobile No: 9037831880
 Transporter: MILAN ROADWAYS

Real Time Truck Movement Status (Live In K1 Plant)

License Pt No	Token	Reporting Time	Token Time	In Time	Tare Weight	TW In Time	TW Out Time	Queue In Time
Select MH04CA2969	139	18/05/2015 12:37:23	18/05/2015 13:30:05	18/05/2015 13:32:41	12	18/05/2015 13:35:19	18/05/2015 13:36:00	18/05/2015 13:40:42
Select MH43E1478	138	18/05/2015 12:25:25	18/05/2015 12:31:28	18/05/2015 12:34:25	13	18/05/2015 12:34:35	18/05/2015 12:32:00	18/05/2015 12:41:08

Loading Bay Dashboard: When a truck reaches the loading bay, it needs to stay there till the loading has been completed. This dashboard displays the approximate loading time for the truck at the bay and the waiting time for the next truck in the queue awaiting loading.



The screenshot shows a 'Loading Bay Dashboard' with a table of truck details and a 'Vehicle Details' sidebar. The table includes columns for ID, LICENSE_PLATE_NO, TOKEN, LOADING_POINT, WAITING_TIME(MINS), and Instructions. The sidebar provides information for vehicle MH24J9181, including driver name, license, and transporter details.

ID	LICENSE_PLATE_NO	TOKEN	LOADING_POINT	WAITING_TIME(MINS)	Instructions
Select 1	MH24J9181	1317	GDN LOADING	69	Loading.....

Vehicle Details:
 Truck No: MH24J9181
 Driver: GHALEPPA VITHAL KORE
 Driving License No: KA56
 20130002398
 Mobile No: 8600131072
 Transporter: GOLDEN TRANSPORT ORGANISATION

Real Time Truck Movement Status (Live In K1 Plant)

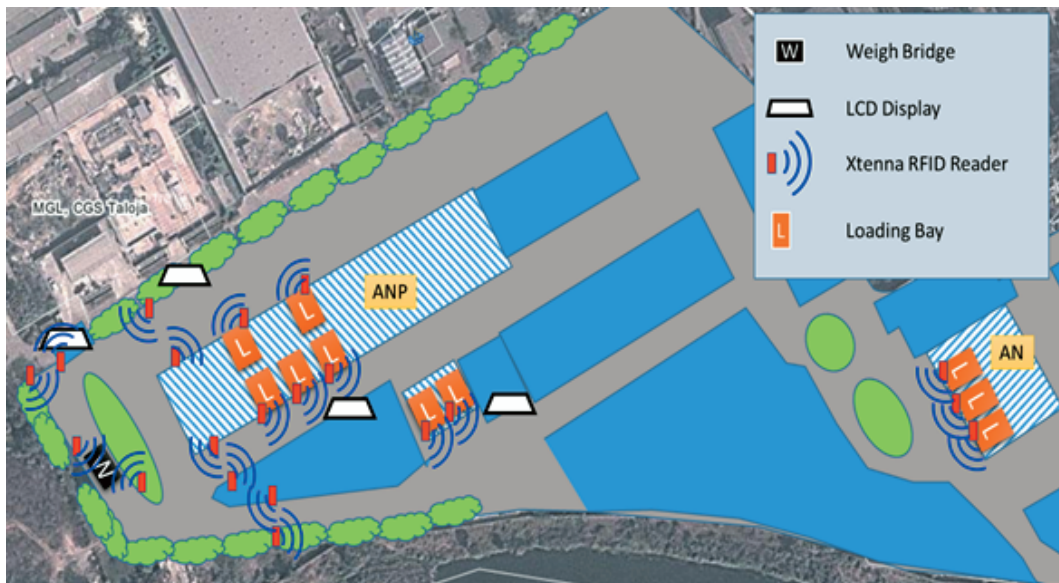
Truck No	Token	Material Name	Reporting Time	Token Time	In Time	TW In Time	TW Out Time	Queue In Time
Select MH405021	1322	Optiform 50 Kg	04/08/2015 09:34:22	04/08/2015 09:35:15	04/08/2015 09:42:46	04/08/2015 09:54:27	04/08/2015 09:56:53	04/08/2015 09:59:26
Select KA56540	1319	Optiform	04/08/2015	04/08/2015	04/08/2015	04/08/2015	04/08/2015	04/08/2015



CASE STUDY

Working Process:

The Truck Logistics System is implemented for multiple plants of the client within the premises. An example of antenna-reader placement for one of the plants is given below.

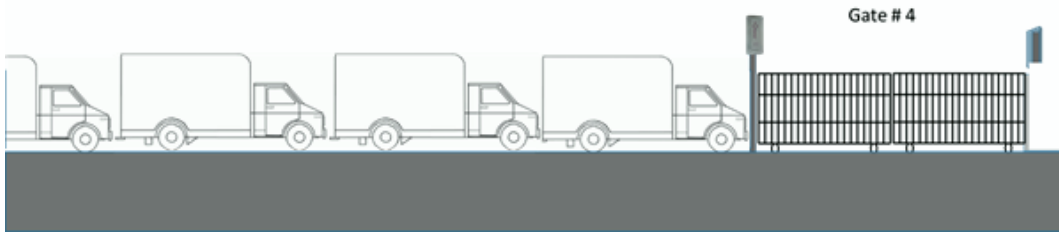


Each truck entering the premises goes through the following process points.

1. Security Gate: Capture photo and issue token
2. Dispatch: Data is fetched from SAP to RFID
3. Issue of RFID tag
4. Entry Gate - IN
5. Dispatch - Tare weight
6. Queue IN
7. Loading Bay
8. Queue OUT
9. Dispatch - Gross Weight
10. Security Gate - OUT



CASE STUDY

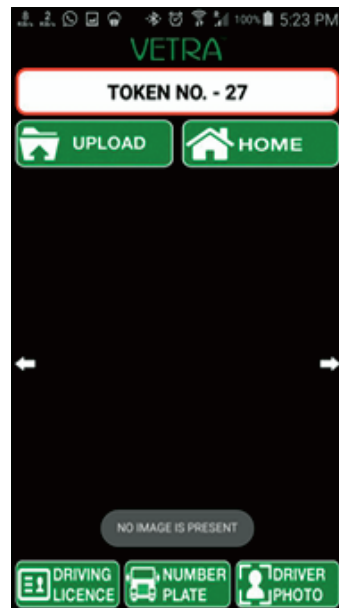
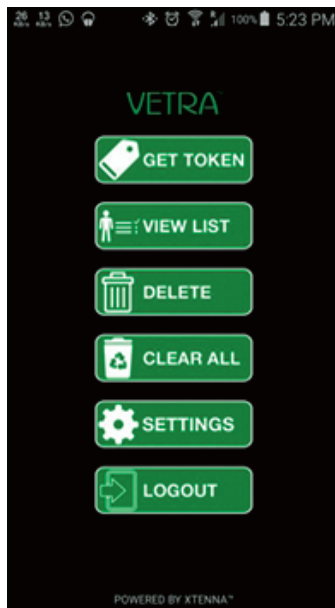
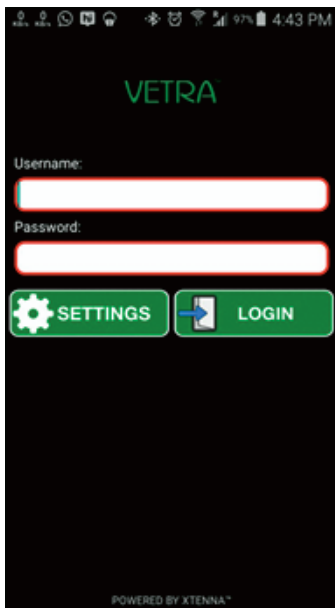


Trucks waiting at the Entry Gate

Security Gate - Capture photo and issue token using handheld VETRA™ app:

To avail entry into the plant, the truck reports at the security gate, along with the Sales Order provided by the Transporter.

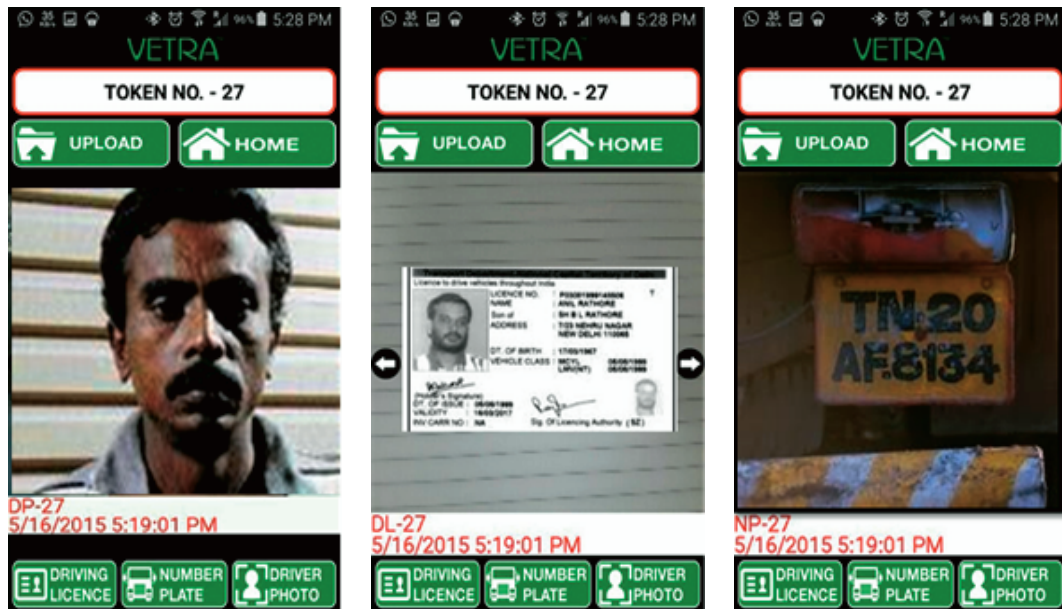
The security guard verifies the driver along with his driving license. The truck's reporting time at the gate is marked and details of the truck driver such as name, mobile number, etc. along with photographs of the truck are captured into the system using the VETRA™ app on the handheld device. A token is generated and associated with this data.



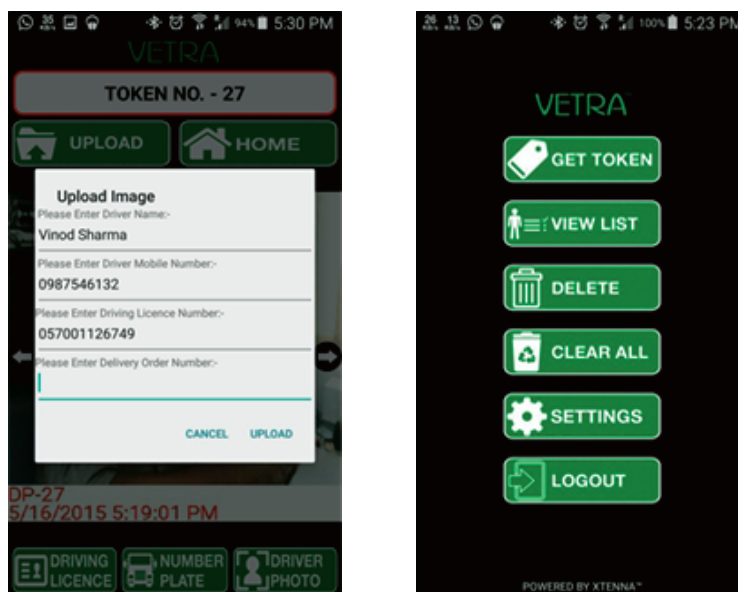


CASE STUDY

Photographs of the truck driver, his driving license and the truck license plate are captured in the handheld device by the security guard at the gate.



He then enters details such as Driver Name, Mobile Number, Driving License Number and DO number into the device for uploading into the RFID system. Once uploaded, it is confirmed on screen and the data arrives at all the other process stations in the premises.

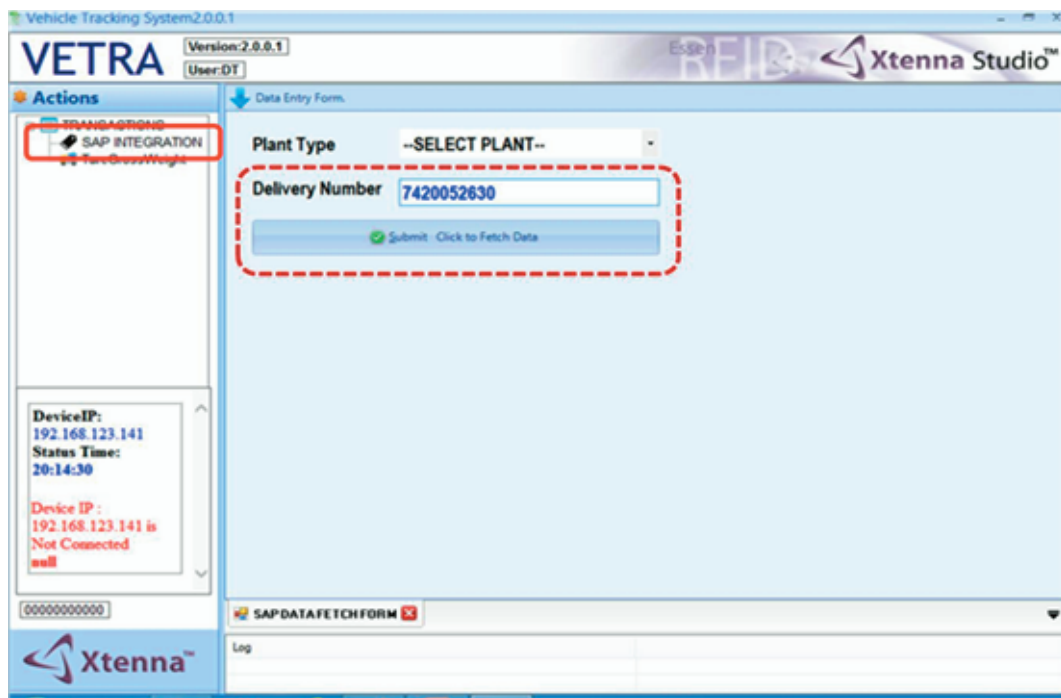




CASE STUDY

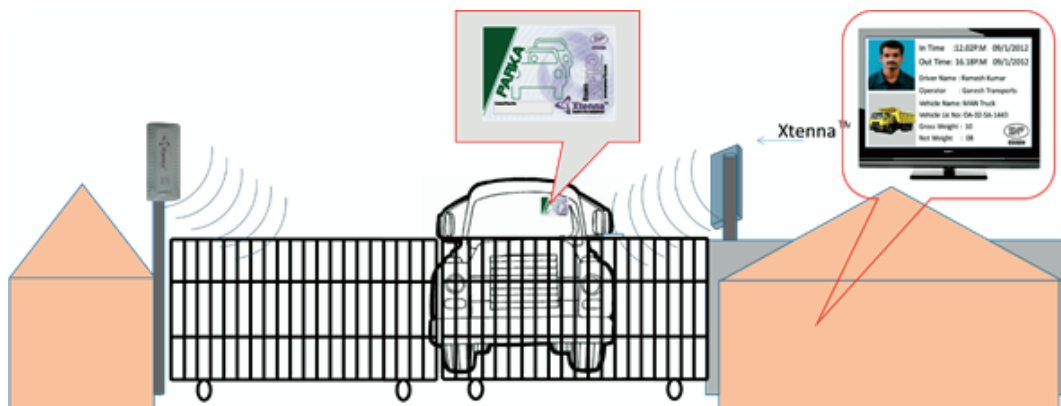
Dispatch: Data is fetched from SAP to RFID:

To obtain all truck information and DO details from the SAP, the Dispatcher/ Weigh Bridge Operator fetches (imports) data into the RFID System using the common DO number, with a single click within the provided application at the dispatch weighbridge location. This data can now be used for tracking the truck inside the plant with product information and loading quantity. The related details can be seen on the Web Dashboard.



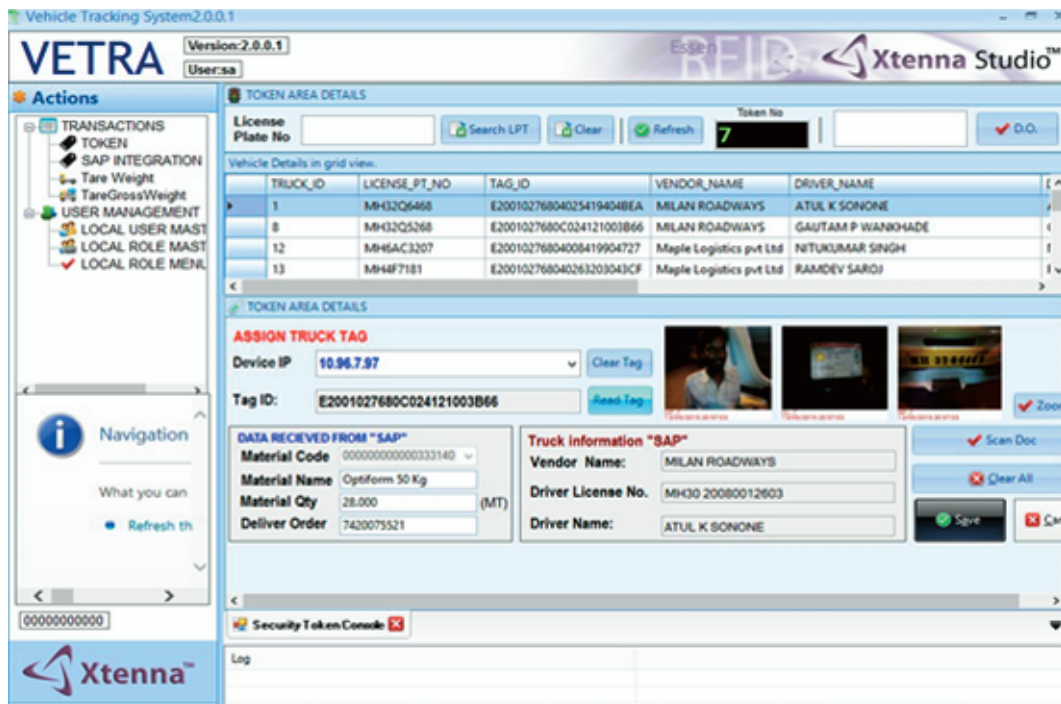
Issue of RFID tag:

The truck driver now goes to the Security Gate after obtaining the DO number against the Sales Order. Security Personnel at the gate check the papers given by truck driver. Using the DO data, the truck details are compared with the photos taken by the security guard and a PARKA™ RFID tag is assigned to the truck for access to the plant. The tag is placed on the Xtenna Proximity™ reader and read by it, saving the data into the RFID System. From this point onwards, the truck is tracked through RFID for the rest of the duration inside the premises.





CASE STUDY



Entry Gate - IN:

As the truck arrives at the entry gate of the plant, the Xtenna™ antenna-reader mounted detects the RFID tag affixed on the truck and marks its IN time. This simultaneously instructs the weighbridge operator about the next expected truck arrival at the weigh bridge with information about the truck. Once the RFID tag is detected at the IN gate, security can monitor the truck's movement through various locations within the plant premises with the readers mounted at all these locations. On entering the plant, the truck first proceeds for tare weight measurement at the RFID-enabled weighbridge.

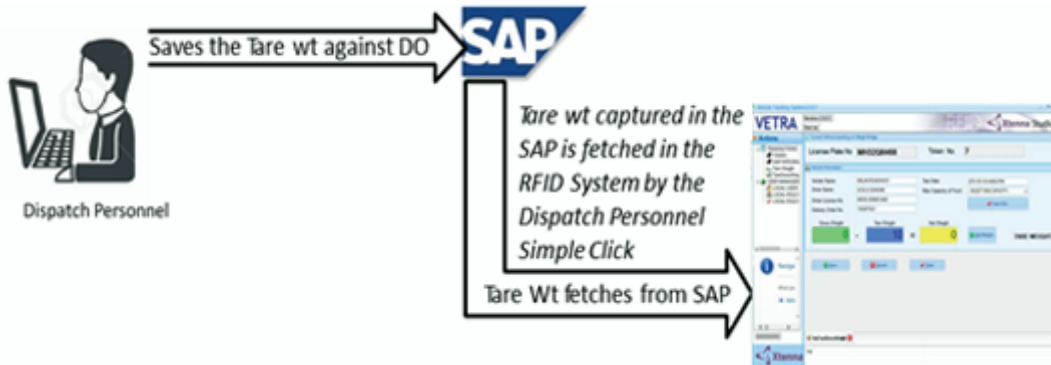




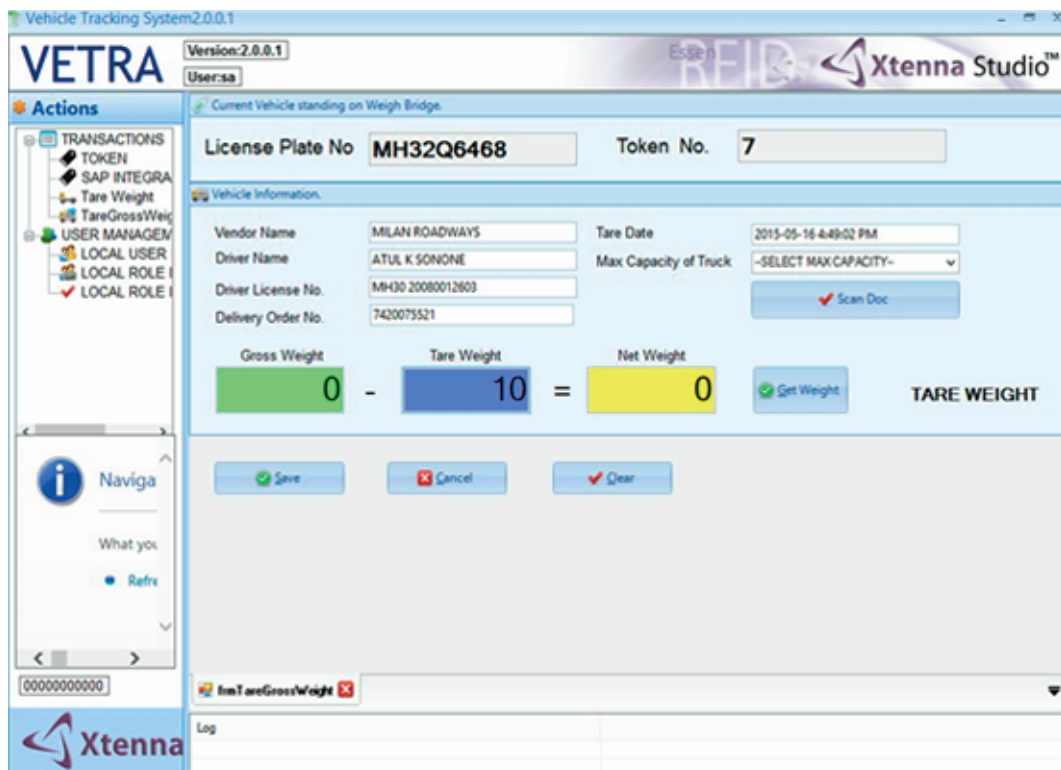
CASE STUDY

Dispatch - Tare Weight:

When the truck proceeds to Dispatch for tare weight measurement, the system updates the status of the truck accordingly. The empty truck arrives at the weighbridge for measuring the tare weight of the vehicle before the goods are loaded.



The RFID system creates a transaction for the truck to load the goods. For this the truck's DO is fetched from SAP. The tare weight and time are updated in the database. A tolerance limit is allowed for the truck's tare weight as per the company's policy and is assigned by the system.



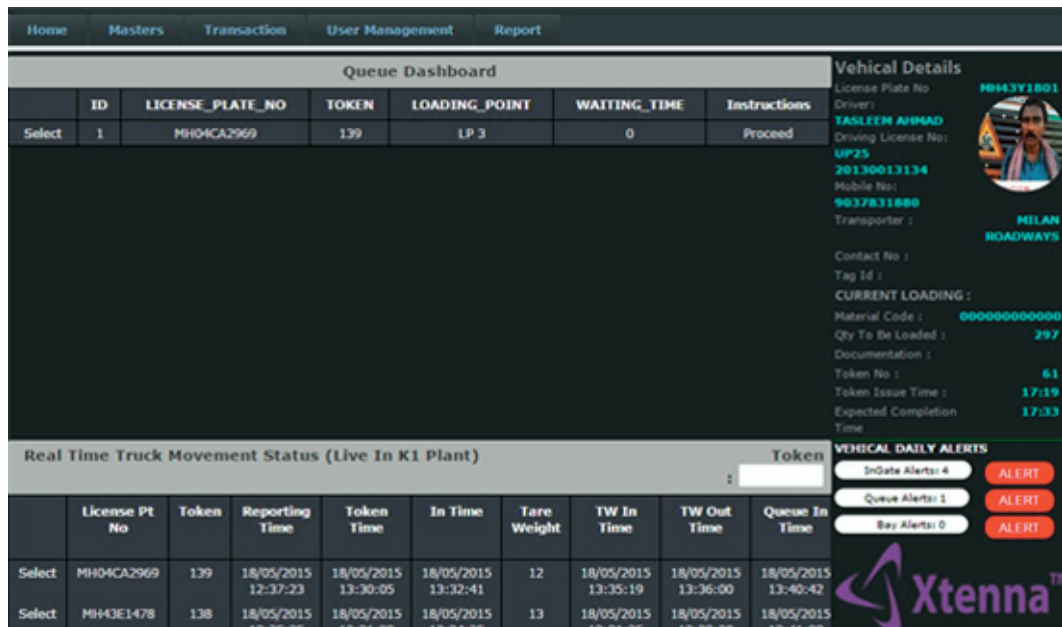
The truck is then directed by the weighbridge operator deploying an LED display, to the loading bay of the goods. If a loading bay is free for material loading on to the truck, then the truck is directly sent to the particular loading bay, else the truck needs to wait for its turn in the queuing area.



CASE STUDY

Queue IN:

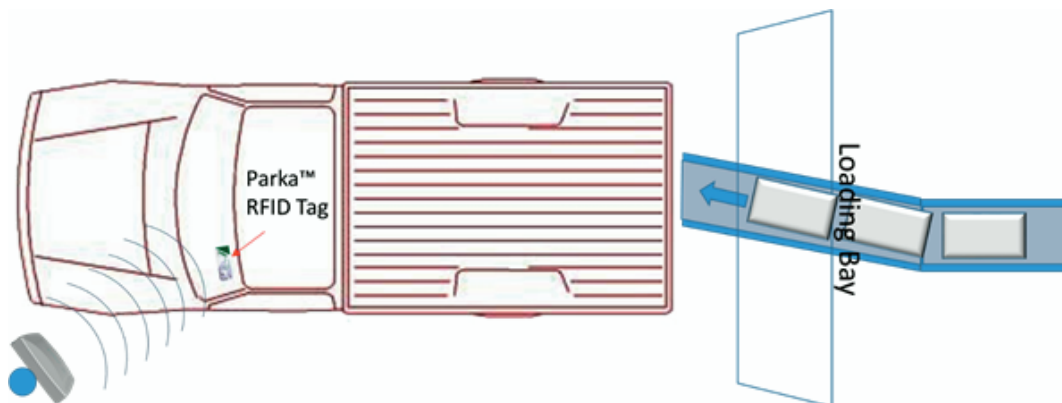
After completing weighing of tare weight, the truck needs to wait in the queuing area, before proceeding for loading goods when the loading bay becomes available. Here the truck driver is instructed once again through the digital signage (LCD screen) mounted in the queuing area, which gives instructions to each truck driver of estimated time for existing loading to be finished so that he can be prepared to take his truck to the next available loading bay. A queuing time / buffer time limit is configured by the system admin for trucks' queue length and buffer time. Depending on the actual loading duration at the loading bay, the range of the waiting time is configured into the system and a minimum and maximum limit is set for the number of trucks allowed in the queue.



The screenshot displays a software interface for a queue management system. At the top, there are navigation tabs: Home, Masters, Transaction, User Management, and Report. The main section is titled "Queue Dashboard" and contains a table with columns: ID, LICENSE_PLATE_NO, TOKEN, LOADING_POINT, WAITING_TIME, and Instructions. Below this is a "Real Time Truck Movement Status (Live In K1 Plant)" table with columns: License Pt No, Token, Reporting Time, Token Time, In Time, Tare Weight, TW In Time, TW Out Time, and Queue In Time. To the right, there are "Vehical Details" for a specific truck, including License Plate No (MH43Y1801), Driver (TASLEEM AHMAD), Driving License No (UP25 20130013134), Mobile No (9037831880), and Transporter (MELAN ROADWAYS). There are also "VEHICAL DAILY ALERTS" for InGate, Queue, and Bay, each with an "ALERT" button. The Xtenna logo is visible in the bottom right corner.

Loading Bay:

Loading personnel decide to whom the loading priority is given depending on the truck loading capacity and size of the truck. After checking the documents, the truck is assigned to a Loading Bay, for loading the material on the truck.



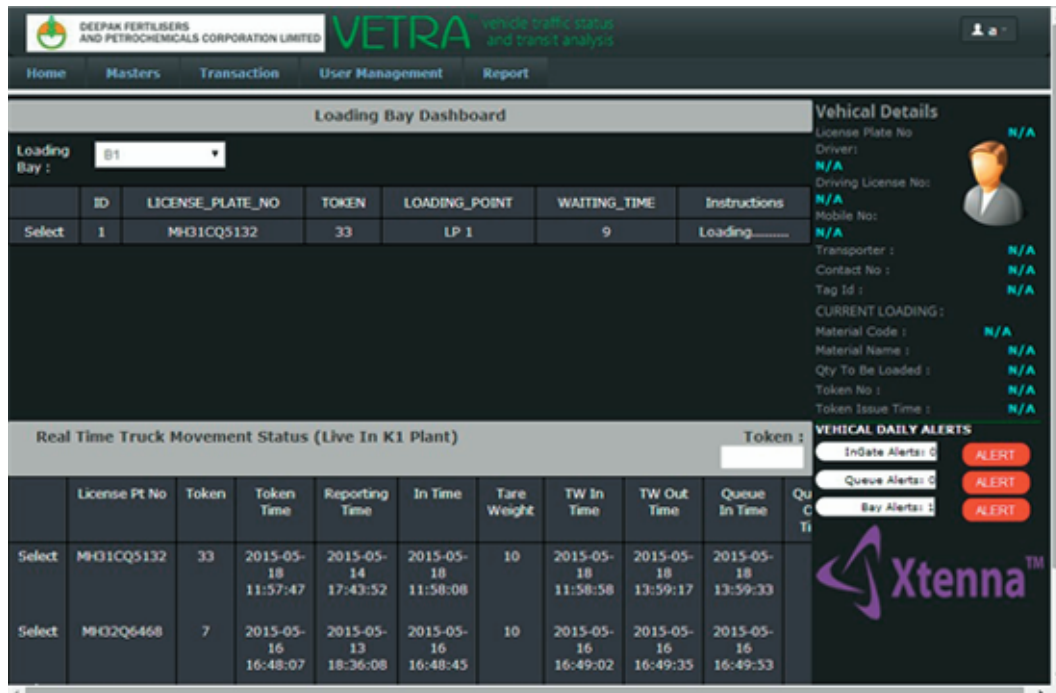


CASE STUDY

When the truck arrives at the loading bay, the Xtenna™ mounted there detects the truck and the system adds the information against the transaction created for that truck and updates the status as under loading.

Based on the capacity of the truck, its average loading time has been defined by the loader, depending on whether the loading bay has automatic or manual loading. A minimum and maximum time required at each loading bay is already defined in the system, depending on the output capacity of the loader. Therefore, the minimum and maximum time required to load the particular truck is calculated by the system.

Once loading is completed, the truck's last detection time at the bay is recorded as the Loading OUT time. Hence excess time taken for loading automatically generates an alert for the supervisors.



The screenshot shows the VETRA web application interface for Deepak Fertilisers and Petrochemicals Corporation Limited. The interface includes a navigation menu (Home, Masters, Transaction, User Management, Report) and a 'Loading Bay Dashboard' section. The dashboard displays a table for 'Loading Bay' with columns for ID, LICENSE_PLATE_NO, TOKEN, LOADING_POINT, WAITING_TIME, and Instructions. Below this is a 'Real Time Truck Movement Status (Live In K1 Plant)' section with a table showing truck details and movement times. The table has columns for License Pl No, Token, Token Time, Reporting Time, In Time, Tare Weight, TW In Time, TW Out Time, Queue In Time, and Queue Out Time. The 'Xtenna™' logo is visible in the bottom right corner of the interface.

ID	LICENSE_PLATE_NO	TOKEN	LOADING_POINT	WAITING_TIME	Instructions
Select 1	MH01CQ5132	33	LP 1	9	Loading.....

License Pl No	Token	Token Time	Reporting Time	In Time	Tare Weight	TW In Time	TW Out Time	Queue In Time	Queue Out Time
Select MH01CQ5132	33	2015-05-18 11:57:47	2015-05-14 17:43:52	2015-05-18 11:58:08	10	2015-05-18 11:58:58	2015-05-18 13:59:17	2015-05-18 13:59:33	
Select MH02Q6468	7	2015-05-16 16:48:07	2015-05-13 18:36:08	2015-05-16 16:48:45	10	2015-05-16 16:49:02	2015-05-16 16:49:35	2015-05-16 16:49:53	

Queue OUT:

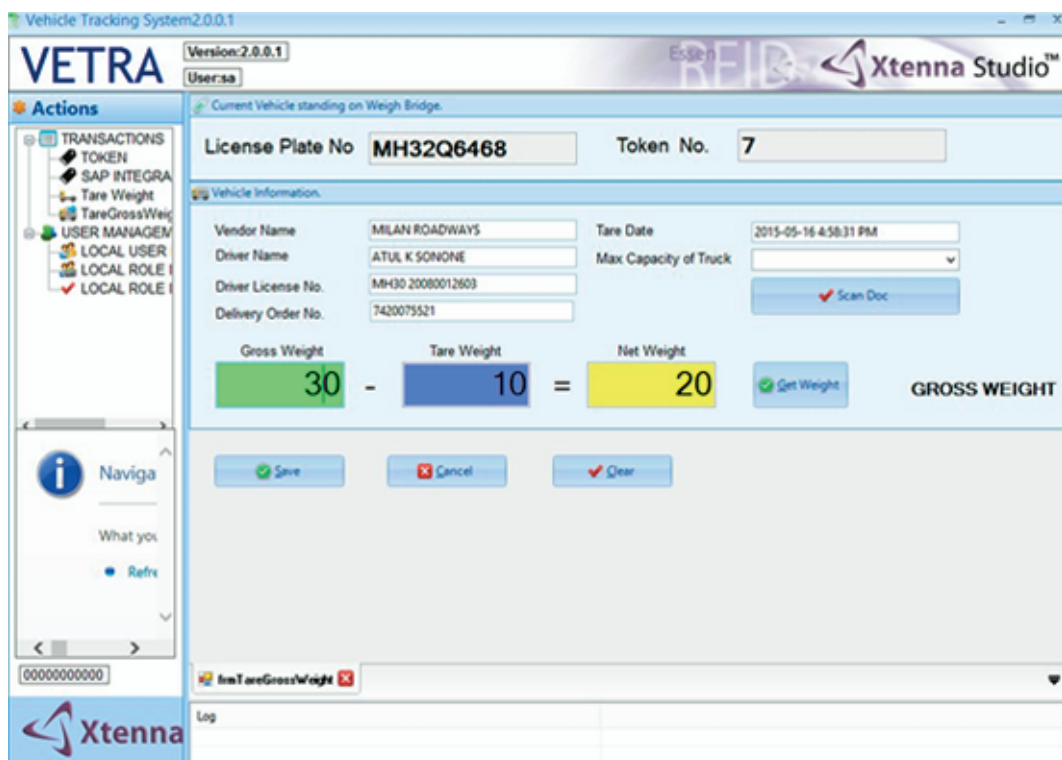
The truck is then directed for weighment of gross weight on the weighbridge, using digital signage (LCD screen). In case of weighbridge not being vacant, the truck is instructed to wait with approximate waiting time indicated to it. The Queue OUT reader marks the 'Out' time of the truck from the queue area.



CASE STUDY

Dispatch - Gross Weight:

After goods have been loaded, the truck arrives at the Dispatch weighbridge for gross weighing. Its RFID tag is read by Xtenna™ and the truck is identified. The truck's data and gross weight allocated in the DO is fetched from SAP by the RFID system. The weighing is done and examined against its tolerable limit allowed in terms of underloading and overloading. If the truck has not been adequately loaded, it is sent for reloading, and if overloaded, it is sent to unload the excess load. The net weight of goods being transported in that transaction is thus validated by the system.



Vehicle Tracking System 2.0.0.1

VETRA Version: 2.0.0.1 User: sa

Current Vehicle standing on Weigh Bridge.

License Plate No: **MH32Q6468** Token No. **7**

Vehicle Information:

Vendor Name	MILAN ROADWAYS	Tare Date	2015-05-16 4:58:31 PM
Driver Name	ATUL K SONONE	Max Capacity of Truck	
Driver License No.	MH30 20080012603		
Delivery Order No.	7420075521		

Gross Weight: **30** - Tare Weight: **10** = Net Weight: **20**

Buttons: Save, Cancel, Clear, Get Weight, Scan Doc

Navigation: Naviga, What you, Refre

Footer: Xtenna



CASE STUDY

Security Gate - OUT:

Once the gross weight is captured and net weight of the transaction validated, the truck moves to the exit gate. At the exit gate, exit documentation for the transaction is completed and the truck driver is handed over the invoice, delivery challan, excise gate pass and road permits. The truck has to reach the



exit gate within the stipulated time to enable efficient dispatch operations. The Xtenna™ mounted at the exit gate detects the truck's PARKA™ tag and logs the exit time, after which the tag is returned back by the exiting truck. The returned tag is disassociated from the assigned truck in the database and sent to the entry gate for reuse with another incoming truck.



Xtenna™ devices at various locations in the plant



CASE STUDY

The administrator can monitor the status at all locations within the premises through the VETRA™ web application.

The screenshot displays the VETRA web application interface for Deepak Fertilisers and Petrochemicals Corporation Limited. The interface includes a navigation menu (Home, Masters, Transaction, User Management, Report) and a main content area with several sections:

- Summary of Trucks Inside Plant (Live In K1 Plant):** A table with columns: AT TOKEN (0), AT IN GATE (0), AT TARE WT (0), AT QUEUE IN (4), AT LOADING BAY (3), AT QUEUE OUT (0), AT GROSS WT (0). Each cell has a "Click for Details" link.
- Real Time Truck Movement Status (Live In K1 Plant):** A table with columns: Truck No, Token, Material Name, Reporting Time, Token Time, In Time, TW In Time, TW Out Time. It lists several trucks with their respective data.
- Vehicle Details:** A sidebar containing information for truck MH405021, including Driver (LAXMAN SAMJI INWATE), Driving License No (MH3120100046076), Mobile No (9604030132), Transporter (MILAN ROADWAYS), Contact No, Tag Id (E2001027680402402010437), and CURRENT LOADING details (Material Code, Material Name, Qty To Be Loaded, Token No, Token Issue Time).
- VEHICLE DAILY ALERTS:** A section with buttons for Tare WT Alerts (0), Gross WT Alerts (0), and Bay Alerts (1), each with an "ALERT" button.

The Xtenna logo is visible in the bottom right corner of the interface.

BENEFITS:

- Regulated inflow of trucks into the plant premises.
- Automatically tracks the progress of each truck in its movement through the plant premises and monitors adherence to time cycle from entry to exit.
- Tracks the time spent by trucks at each touch point within the plant.
- Identification of delay areas and bottlenecks in the dispatch process.
- Optimum utilization of all loading bays within the plant for goods dispatch.
- Intelligently fulfilled Delivery Orders with automated messages and alerts.
- Efficient weighbridge operations and automated weight calculation.
- Efficient queuing of trucks and minimizing of trucks in each queue.
- Indication of estimated waiting time at each section or touch point to the truck drivers as well as dispatch staff on display screens.
- SMS alerts to truck drivers to proceed for weighing and loading.
- Identification of time wasters amongst truck drivers.
- Efficiency and accuracy lead to improved dispatch management.
- In-built checking for underloading and overloading of trucks.
- Efficient document generation and processing for goods dispatch.
- Improved security within the plant premises.
- Automated real-time status report generation for trucks, trips, destinations, entry/exit times and quantity dispatched.



CASE STUDY

LINKS:

Hardware:



Tags:



Software:



Reference Example:

<http://www.essenrfid.com/Mailer/truck-tracking-flash-demo.pdf>