

# **ABC Infra Gate Application - Server System for Material Real-time Tracking (SMART)**



## **mSpace Technologies Private Limited**

H.No. 2-2-118/A, Flat-302, Sreemanrajals Residency,  
Tilak Nagar, New Nallakunta,  
HYDERABAD – 500 044  
Andhra Pradesh, INDIA  
Tel.: +91-9246084979  
+91-40-40192803  
[www.mspacetech.com](http://www.mspacetech.com)  
E-Mail: [info@mspacetech.in](mailto:info@mspacetech.in)

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## **1. Introduction**

The System for Material Real-time Tracking (SMART) is an IT based mobility solution to reliably digitize the information to track, monitor and analyze material movement in and out of construction camps. The SMART mobility solution is designed to capture transactions in near real-time. An incoming or outgoing material movement is tracked using easily available technologies like Android mobile phones.

**Android Mobile Client** : The SMART uses key data elements that can be captured through the mobile phone based application. Material related details such as type of material, grade of material, photographs such as vehicle registration number, the material and a picture of related document are gathered on the mobile device. The data captured by the mobile application is automatically uploaded if data connectivity is available, if not they are saved locally in the device's external microSD card. Whenever the device is connected to the internet through Wi-Fi, GPRS or 2G, data is uploaded to a centralized server and stored in a database.

**Server Application** : The data uploaded into the centralized storage can be analyzed in various ways to understand the material transit in the system at different points. The Server Side Application provides this functionality.

## **2. Key Benefits of using SMART & Server Side Analysis**

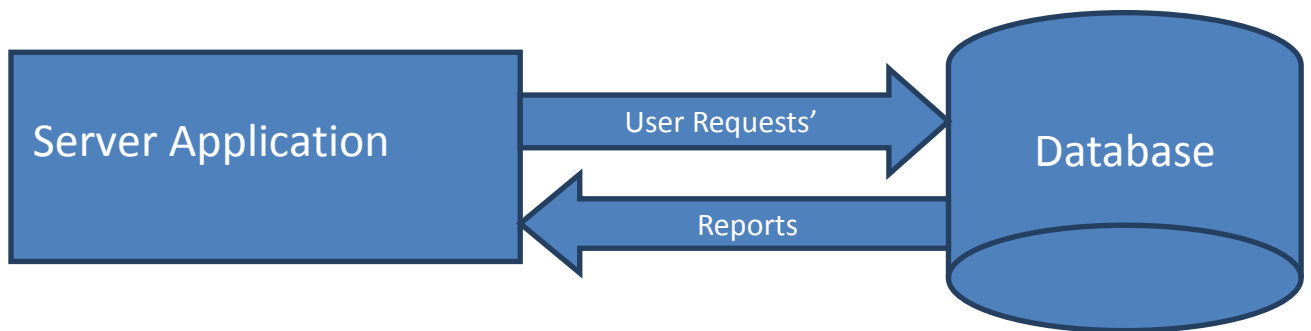
- All the transactions are recorded in the database and a centralized view of all the locations is available in one place.
- Facilitates viewing the data in multiple ways through the use of different types of reports provided on the server side application
- Export of data subsets to excel or pdf for subsequent processing
- Easy to use and intuitive

## **3. Solution Architecture**

The solution comprises of a client and server application. The client is an Android application that runs on a mobile device and is used to capture the data on site. The Server side application is a user friendly UI to access reports of various types. The server application is designed for ease of use and data retrieval is done through menu options provided on the UI. The

pictures and data are stored on the server hard disk. The stored data can be used to generate reports. These reports can be exported into Excel and PDF files for analysis purposes

The overall data process flow is as depicted in Figure 1.



**Figure 1: Data Flow Diagram**

## 4. Installation

OS: Microsoft Windows 7 and above.

Browsers : IE or Chrome

Installation: The Server application is currently hosted at the mspaceapps server. It can subsequently be hosted on the company's IT infrastructure thereby ensuring security of the data.

To access the application, click on this link

[ABC Infra Server Application](#)

## 5. Server Application

The server application is used to view and analyze data received from all the remote locations. The server application is secured access using login/password for each user. It is mandatory that each user uses their access ID/password combination.

## 5.1. Admin Login

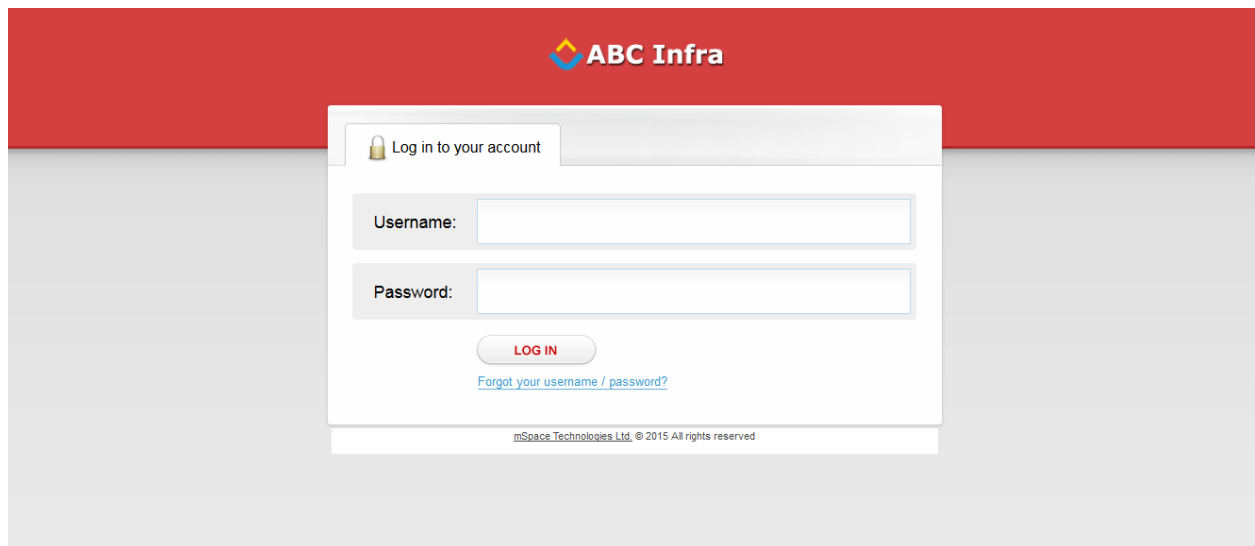
The administrator can create users and assign them to specific camps. The administrator can also authorize the mobile devices that can upload data.

- Register a new user with the following details:
  - User Name
  - Password
  - Camp ID
  - Mobile Number
  - IMEI Number
- **Note: For the purpose of this demo, a user called "demo" has been created with password "demo".**

## 5.2. Normal User Login

The following steps are used for Normal user login.

- Click on the link to start the server application in your browser.
- Select a user to Login and enter the password.
- Login as "demo" and password as "demo"



The screenshot shows a web application interface for ABC Infra. At the top, there is a red header bar with the ABC Infra logo. Below the header, a white login form is displayed. The form has a title "Log in to your account" with a lock icon. It contains two input fields: "Username:" and "Password:". Below the password field is a "LOG IN" button. A link "Forgot your username / password?" is located below the button. At the bottom of the form, the text "mSpace Technologies Ltd. © 2015 All rights reserved" is visible.

If the login credentials are correct, the user will be logged in and shown the Dashboard screen.

## 5.3. Dashboard

The Dashboard shows a summary of all the camp locations:

- Camp Name
- The number of Incoming Transactions
- The number of Outgoing Transactions
- The time and date of the last transaction at each camp site.

**ABC Infra** Hello **demo**, Last login: 20 Jul 2015 [Change Password](#) [Logout](#)

Dashboard- This site will contain the various reports based on ABC Infra Gate Application and Weighbridge Application.

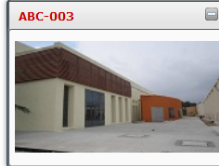
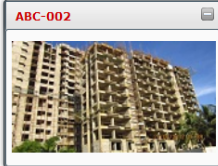

**Summary of Camp-wise Gate Transaction data in the last 24 hours.**

Show 10 entries Search:

CAMPID	CAMPNAME	LASTTXNDATE	INTXNCOUNT	OUTTXNCOUNT
ABC-001	ABC-001	Jul 20 2015 12:36PM	1	0
ABC-002	ABC-002	Jun 15 2015 2:53PM	0	0
ABC-003	ABC-003	Jun 12 2015 12:41AM	0	0

Showing 1 to 3 of 3 entries [First](#) [Previous](#) [1](#) [Next](#) [Last](#)

**Select the following Camp Image to view Camp Specific Reports.**



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## 5.4. Camp Selection

- On the Dashboard, at the bottom, there are images of the camp locations.
- Select any camp to view the details of the transactions of that camp.
- For e.g. Click on the camp ABC-001. This will show the Gate Transaction Report.

ABC Infra Gate Transactions Report - This site will contain the various reports based on ABC Infra Gate Application, Weighbridge Application and Stores Data.

Gate Transactions within Date Range

From : 20/07/2015  
To : 21/07/2015

Gate Transactions within Preset Range

Yesterday  Last Week  Last Month

ABC Infra Gate Transactions Report for ABC-001

Show 10 entries Search:

Date-Time	User	In/Out	From	To	Material	Type/Grade	Vehicle	Quantity	Photos
20 Jul 2015 - 12:36:04	Srini	In	Supplier -	ABC-001	Bitumen	VG 30	TS22AB2345	52366.00	View Photos

Showing 1 to 1 of 1 entries

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## 5.5. Transaction Reports - Gate Transaction Report

- This report shows the details of the transactions at the Gate of the selected camp. The transactions data will change depending on the date range that you select.
- The pre-set range allows you to quickly view data without having to specify the exact dates.
- The "From" and "To" date range option can be used to select specific dates.
- There is also an option to export the report to either pdf or excel.

## 5.6 Reports

The options on the left hand side allow the user to select different type of reports :

- Transaction Reports
- Gate Analysis Reports
- Vehicle Reports
- Link & Trace Reports
- Multidimensional Reports



## **5.7 User Tips**

1. Always login with your user ID.
2. Make sure you have selected a camp
3. Ensure that you have selected the From and To Date correctly.
4. If the number of entries is too many, use the date filters or the pre-set filters to narrow down the data range.

## **About mSpace Technologies**

mSpace Technologies Private Limited is founded by former IIT and IIM graduates with over 80 man years of experience in conceptualizing and implementing Information technology solutions. We provide Mobile Business Advantage to businesses across verticals (Infrastructure, Logistics, Utilities etc) by providing the following quality services:

- Business Consultancy
- Mobile Strategy - Solution conceptualization
- Design and Build Mobile Applications and end to end solutions
- Managed Solution Design Expertise - Hosting and Maintenance

These solutions are aimed at tracking and optimizing any business process or activity spread across various geographies thereby allowing near real-time monitoring of operations. This results in not only major savings in time, material and management but can also be used to significantly optimize operations through analysis of the data collected.

Telephone: +91-40-40192803 / 09246084979

E-Mail: [info@mspacetech.in](mailto:info@mspacetech.in)

URL: [www.mspacetech.com](http://www.mspacetech.com)