

For

# **RASID**

# Nurturing a Smart & Sustainable Environment for Quality Living



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# 1. RASID SYSTEM

A major driving force behind Dubai's development by providing extensive municipal services to a diverse population, the Dubai Municipality is one of the largest establishments in the emirate. Its reach encompasses urban planning and supervision, environmental protection and enhancement, conservation of public parks, regulating and ensuring international quality standards in construction and building materials and food and consumable items and professional services in laboratory certification and accreditation.

In line with Dubai's Vision 2021 to transform into a fully integrated Smart City, an extensive review of structures has led to, among many others, an egovernment plan to streamline government department processes and deliver services electronically.

RASID is one such initiative by the Dubai Municipality to address serious waste management and transportation concerns in the emirate. The need for an online automatic monitoring system is becoming increasingly apparent to monitor and manage the activities of waste management companies, right from the point of collection, through transit to dump yard access, overall review/analysis of key performance indicators and control of illegal and unauthorized dumping, hence the introduction of RASID – an exclusive and customized system that provides an easy, user-friendly, scalable and powerful tool to regulate, monitor and manage registered waste management companies.

Authorities and stakeholders can access statistics and real-time status online to aid efficient process management. An independent **Technology Centre**, located in Bur Dubai, manages RASID online and also extends procedural assistance and after-sales support.

RASID is fully scalable and could easily include monitoring of other categorized waste such as biological/ hospital/chemical etc., when required. Additional information includes the GIS mapping of locations,



geo-coding of waste categories/dump yards, statistics on the weight/volume of waste handled, review reports of the volume of waste handled and processed, along with geographic point of interests, vehicle performance, container status, driver behavior, etc. An automatically updated digital map of various locations, time schedule of specific routes and collection is also available. This would enhance the operational efficiency by means of point-to-point collection monitoring and control of fleet status and real-time management.

# 1.1. Features and Functionalities

- · Live fleet online tracking
- Emergency alerts
- Alerts and notifications
- Group tracking
- Real-time map-based tracking
- External vehicles tracking
- Route management
- Reverse geo-coding
- · Geo-fencing
- Customized map
- Speed tracking
- Ignition Control
- Fuel consumption control
- Multi-access end-user groups
- Strong and concise reporting modules
- Trip summary analysis reports
- Vehicle diagnostics summary
- Multi-layer dashboard



### 1.2. Procedures and benefits

RASID **registration** is mandatory for such waste management companies as specified by the Municipality's Waste Management Department.

Service providers have to register with the RASID Service by installing a GPS tracking device as well as a Weighing system/Acoustic/Level sensor wherever applicable and facilitate integration to the RASID service infrastructure directly.

Upon registration, the authorized companies can access the system by using the assigned user credentials and monitor and manage their registered vehicles online. The system also provides an online facility for the registered companies to monitor their fleet.

Registration of each vehicle / transport unit would entail a **registration fee** as stipulated by the Municipality, which can be either:

- 1. Paid ONLINE
- 2. Directly to the Bank account

Payment by cheque can be delivered to **RASID Monitoring and Control Centre**, Office No. 403, ART Tower, Al Mina Road, Bur Dubai.

Email: info@rasid.ae Tel: + 971 (0)4 3473890 Fax: +971 (0)4 349 3893

The RASID system will be integrated with the Municipality's Gate Management System in use at waste disposal sites (NAFITH) through only notifications to assist with gate-opening processes.

# 2. RASID website (www.rasid .ae)

A dedicated website (<u>www.rasid.ae</u>) is available for RASID operations and functions of related activities. The website is intended to cover broadly for online Monitoring, Registration, Profile Administration, Online Payment, Database management, Guidance to users and report generation.



The website <u>www.rasid.ae</u> is intended to cover all the aspects of Rasid online services, besides educating the customers about its various services and the step by step procedures to follow for the necessary functions involved, namely for registering into the website, the details needs to be filled in, signing in procedure, status review and monitoring of their respective fleet and the procedure to generate an invoice online.

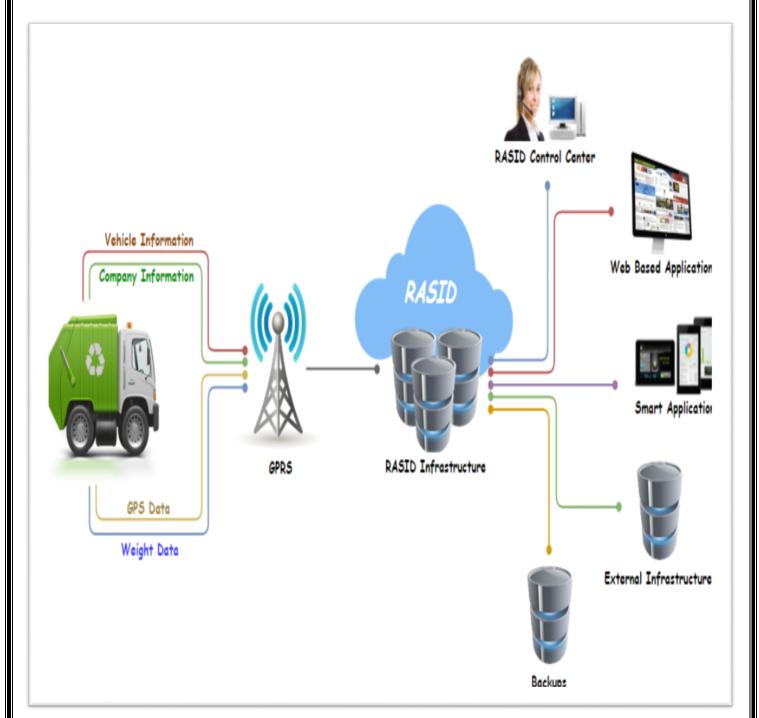
The website will also be updated with various guidelines, latest news and information applicable to the customers, additional facilities added, software and features, user's manual, applications available and download procedures, frequently asked questions, besides a helpline.

# 2.1. System Operation Architecture

There will be direct communication between the tracking devices and the Dubai Municipality Server without any third-party linkages. The service providers have to provide the device protocol document to communicate with the Municipality Server and then the following process will be enabled.

- The device will send the GPS data through the GSM network to the Municipality Server
- 2. The RASID Application will retrieve the data directly from the Server
- 3. The Server will share the tracking data publically to the public application for registered users and display it on the Application.
- 4. The data processed through the GPS devices is **not to be shared** with any third party servers.





**Snapshot: Operational methodology** 

#### **RASID Monitoring and Control Centre**

#403, ART Tower, Al Mina Road Bur Dubai, Dubai, UAE, <a href="mailto:info@rasid.ae">info@rasid.ae</a>, <a href="mailto:support@rasid.ae">support@rasid.ae</a>, P: + 971 (04) 3473890, F: + 971 (04) 3473893



# 2.2. Company Registration Procedure

The registration would remain valid for the entire duration of the continuity of the contract (five years) with the Municipality's Waste Department. The registration process explained below is based on the concept of establishing the standard and user-friendly method. The explained process may deviate to more user-friendly methods and simplifying the documentation requirements based on the real time scenario.

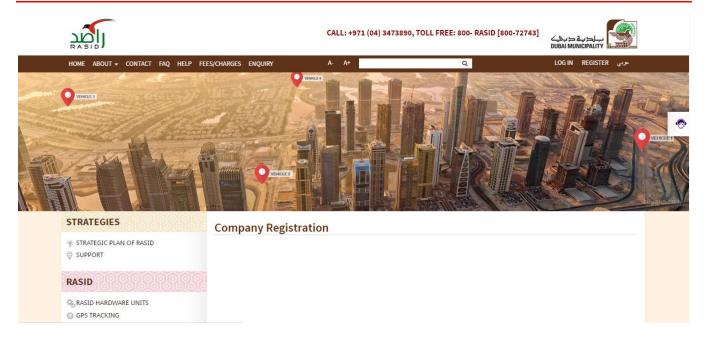
**Registration:** The website will be provided with step-by-step procedure for registration process as follows:

Website address www.rasid.ae

After opening up the RASID website, please click on the Registration tab, which will open to a new page.







During the process of company registration, the customer will be asked to upload soft copies of the relevant documents. (It is advised to keep soft copies of the Commercial Trade License and the company logo).

- Please type in the Company Name
- Please type in the name of Manager or Authorised Person
- Please type in the name of Owner
- Please type in the Trade License Number
- Please mention the issue date of registration Trade License
- Please mention the expiry date of registration Trade License
- Please choose YES if the company is registered or No if the company is NOT registered with the Dubai Economic Department
- Choose the most preferred mode of communication from the pull down menu
- Please type in the alternate or secondary contact number
- Mention Fax number
- Mention email address
- Mention the company website
- Please select number of years that the company is operating in UAE

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- Please choose the emirate in which the business office is established
- Please mention the address details in the subsequent columns such as the landmark area, street, building and unit number etc.
- Mention the PO Box
- Mention the Plot Number
- Please select an appropriate Username for your login credential
- Choose a password
- Retype the password chosen
- Please select the soft copy of your trade license and upload
- Please select the soft copy of your company logo license and upload
- Please tick mark the terms and conditions and accept
- Then click register

Once the process is completed the user will be advised as the process is completed. The registration application along with copies of the documents will be relayed to DM IT Centre, who will verify the documents and confirm an acceptance and approval.

**User name / Password:** If the registered companies would like to change their username or password in the RASID Online services, they can do so by logging into the RASID Online Services. They can change Password as often as they like.

The user will be intimated by email and SMS about the progress of initial registration of the company and can access to register the vehicle or Fleet in the next step.

Subsequently upon completing the company registration process, the login access will be granted. The waste management companies will be asked to fill in the details of vehicle such as Name, Type, and Plate Number etc. The received information will again be relayed to DM for scrutiny and confirmation. Upon receipt of acceptance from DM, the company name and its vehicle registered will be available in the system. The status of



acceptance or rejection by the DM will be passed on to the user email registered.

If the Acceptance is confirmed, the user can access the other services such as addition and deletion of vehicle (s). A user-friendly process will be implemented for ease of entries and the minimum time required to complete the process. The information would follow the same path of communication for DM verification, Approval/Rejection.

Upon Acceptance, the complete details will be on the system and the user can proceed with generating an online Invoice by filling the requisite fields and Request for Invoice. The Invoice generated will have the relevant details of the Company, details of the fleet where payment is due and the due date for payment.

An Online payment facility is established for the companies to make the payment online.

- SMS/ Email: An Automatic SMS and email will be generated to the registered account upon every process undertaken using the website services/ call Centre Assistances availed to their registered mobile number and the email address provided. Pop Up messages will also be provided during the process of registration.
- General notifications and payment reminders will be sent to the registered companies as and when needed.



# 3. RASID System Requirement

Minimum RASID System Requirements for Waste Management Company Vehicles is given below:

System	Vehicle Type				
Requirement	Compactor	Skip Loader	RORO	Tipper	Trucks/Pick up/n
GPS Tracking	✓	✓	✓	✓	✓
Weight Sensors	✓				
Lifting and Activation Alert		✓	<b>√</b>		

- **Compactor** is a machine or mechanism used to reduce the size of waste material or soil through compaction. A trash compactor is often used by a home or business to reduce the volume of trash. Normally powered by hydraulics, compactors take many shapes and sizes.
- **Skip Loader** is a heavy equipment machine used in construction to move aside or load materials such as demolition debris, or waste.
- RORO is a vehicle designed to connect with wheeled cargo carrier.
- **Tipper** is a truck used for transporting loose material (such as waste) Tipper is equipped with an open-box bed, which is hinged at the rear and equipped with hydraulic pistons to lift the front, allowing the material in the bed to be deposited ("dumped") on the ground behind the truck at the site of delivery.
- Trucks and Pickups self explanatory
- The above table represents the current minimum RASID system requirements for Non DM Vehicles. Requirement for any vehicle not mentioned in the above table shall be subjected to the Waste Management Department review and advice.



 The Dubai Municipality reserves the right to change the minimum requirements for any type. Any changes made by DM will be communicated to all Waste management companies prior to its implementation.

# 3.1. Service Fee and Charges

The registered waste management companies can generate an Invoice for their registered fleet on line, which will indicate the waste management company Fleet details, the payment Amount, and date due for payment as well as the mode of payment options. With this invoice they can initiate online payment or advise their concerned banks for transfer of funds due with the invoice or deposit the cheque directly at the RASID Monitoring and Control Centre. An online payment facility through the RASID website <a href="https://www.rasid.ae">www.rasid.ae</a> is also available for making instant payment using debit/credit cards. The respective company accounts in the Rasid system will only be activated upon receipt of payment or clearance of cheque as applicable.

Though the Call Centre will be functional 24/7 and provide necessary guidelines, support services, and monitoring, the payment / cash transactions can only be made between 09.00 a.m. to 14.00 p.m. on all working days (except Fridays, Saturdays and government holidays).

Procedure	Charges	Terms and Conditions		
GPS Device /Device	AED 3000	Applicable for each brand or model of		
Integration with Dubai		devices- irrespective of number of devices		
Municipality – RASID Server		used.		
Vehicle Registration	AED 250	Applicable for each vehicle being registered		
charges				
	Annual Charges			
Yearly License fee	AED 960	The customer benefits include :		
		<ul> <li>support software modules such as STP, and other treatment plants access system</li> <li>Truck Violations and Malpractice Alert system.</li> </ul>		



Smart phone Applications for     increase term
<ul> <li>inspectors.</li> <li>24/7 System support Call Centre</li> </ul>
24/7 Monitoring and Reporting services
<ul> <li>high availability, full redundant IT system and web hosting.</li> <li>software maintenance</li> </ul>

If any of the waste management companies are registered under the Dubai Municipality availing the RASID services, the payment of subscription charges are mandatory. Also the subscription charges are mandatory whether a single vehicle or multiple vehicles or a single device or multiple devices is/are employed.

# Payment terms and conditions

- 1. One-time integration charges of GPS tracking device Brand/Model per customer will be charged only once the device has been approved by the RASID Technology Provider.
- 2. Account will be created for each registered waste management companies and one-year subscription/service charges are to be paid in advance as agreed with the Dubai Municipality every year during the contract period of five years.
- 3. It is the responsibility of the company to ensure the prescribed accuracy standards of weighing sensors are maintained and undertake accuracy related compatibility checks periodically as required. It is pertinent to mention that integration of such sensors are in line with the requirements specified by Dubai Municipality, compatible with RASID System. If the waste management company transporters employing different Brand / Model Numbers/ GPS devices, Sensors etc. they must be responsible for assuring the authenticity of data received.
- 4. A notification to the customer will be issued keeping the Dubai Municipality informed, in case if the payments are not received in the agreed schedule and RASID reserves the right to activation or deactivation of such services.



- 5. If the Registered waste management companies wishes to remove any vehicle/ or device, from RASID system, they would need to notify the RASID Control & monitoring centre and the Service/Subscription charges will be stopped from the following month of the date of notification, the pending amount for each vehicle will be adjusted against their subsequent dues.
- 6. All the waste management companies are requested to ensure that their assigned transports are fitted with GPS Tracking System along with weighing scale and level sensors as appropriate to the activities they are engaged in. It is the responsibility of Waste Management Company to ensure the required accuracy level is always maintained by the weighing system, which will be installed on board their vehicle. The GPS System Service providers to be requested to ensure that the data/information provided through their GPS devices are compatible with the RASID Server.
- 7. The service providers thus to be aware that the DATA is not permitted to be shared with any third party servers, other than the RASID Server and such data received shall remain the sole property of DM. For more technical information for the integration process, a visit to the DM RASID Server department can be made with prior confirmation. For technical and other clarifications, customers can contact the Rasid Technology Services Call Centre facility on the assigned telephone or by email: info@rasid.ae.

### 3.1.1. Required Data for RASID System

Data to be Sent from the Tracking Device to RASID System		
Requirements Data (Minimum and mandatory)		
Location Details	The location coordinates with data and time	
Speed	The Speed details with the Speed Exceptions	
Ignition	The Ignition status with date and time	



Odometer	The current odometer reading with date and time (kilometre)
PTO Status	PTO Status with the exception alerts
	The Total weight of the collected waste
Weight	The total weight based on the location
	Overload alert
	Arms lifting alert
Geo-fence Violation	Send the Geofence alert to RASID Tracking system

# 3.1.2. Device Specification Requirements

GPS Device specification requirements for Implementation of RASID System			
Re	equirements (Minimum and mandatory)		
SIM Card Requirements	Provide GPRS/3G Data SIM Card with a minimum data capacity of 20Mb for a month.		
	Quad Band 900/1800 MHz, 850/1900 MHz		
GSM(GPRS)	GPRS Class 10 (Upto 85.6)		
	SMS for OTA configuration		
	NMEA-0183 Protocol		
GPS/GPS+GLONASS	32 channel receiver		
	High sensitivity, Not less than -161 dBm		
IMEI	Device IMEI should be valid under TRA		
Latitude and Longitude Format	Device should send the latitude & longitude in decimal format		
Date and Time Format	Device should sent the date & time in UTC format		



Speed Format	Device should send the speed in Miles/Hour format	
Direction Format	Device direction setting should have 0-360 degrees	
Digital Inputs	Minimum 2 Digital Inputs	
Digital Outputs	Minimum 2 Digital Outputs	
Analog Inputs	Minimum 1 Analog Input	
1 Wire Interface	Device Should have 1 wire interface for temperature/ibutton	
Power supply	The power supply should be between +5 to +30 v	
USB/Serial Interface	The USB/Serial Interface should be available for initial configuration	
Internal Battery	The internal battery should have a minimum backup of 24 hours	
FOTA/ USB/ Serial	The firmware of the device should be upgradable through OTA as well as USB/Serial Interface	
Flash Memory	Flash memory should be minimum 2MB ( or equivalent to >= 2000 offline records ) for saving the records, when GSM not available	
Data Sending mode	Device should send the data in Time, Distance and Direction mode	
PTO Connection	To get the PTO status	
CAN Interface	Mandatory for the vehicles which having CANBUS for accurate data	
On-board Weighing System for Bulk Collection		
Communication	RS232 Communication (Serial Communication)	



	Total weight
Weight Data	Weight per location
	Partial Weight (Weight on collection)
Alorts Configuration	Configuring weight limit
Alerts Configuration	Alert for overloading
Data Pushing Mode	Data Pushing on Event (Bin Collection)
Data i ostili ig Mode	Data Pushing on Predefined Interval
Data Polling Mode	Data Polling on Request(online Polling)
Weight Sensors	To get the weight of the bins based on location
Accuracy	1% Full scale
Capacity (GVW)	17 -50 Tons
Operating Voltage	15 -30V
Operating temperature	0 to 60 degree C
Inclinometer –	3 degrees
chassis lean alarm	
Inclinometer –	40% off Centre
body load alarm	
Weighing modes	Standard, axle, twin/5th wheel and air, drawbar
Indicator type	LCD
Indicator Size	79.0 x 30.9 mm
Indicator Operating temperature	-10 to + 50 °C



Indicator Environmental protection	IP20
Indicator Resolution 240 x 90 Dots	240 X 90 dots
Dot pitch	0.42 mm
Load cell port	4 pin connector (for junction box)
Overload alarm - Audible	Optional external alarm sounder on vehicle
Password protection	4 digits, manager and user PIN
Form factor	Din cut out
Load cell types	Up to 8 CANbus or analogue load cells
Interfaces	RS232
Baud rate	1200, 2400, 9600, 19200, 57600
Connector	9 pin to printers/scoreboard bps
Printer capability	Impact or heavy duty type
Wireless	Range Up to 50 meters in open terrain ,
Remote Handheld Unit	15 channels , A-O, Frequency 868MHz (complies with the European license free ISM band regulations),
	Viewing area 50.6 x 31.0 mm,
	Minimum voltage 3.3 (with reminder on screen) Vdc,
	Max charging voltage 4.2 V dc,
	Charging time Three hours approximately, discharged to full, Battery type -Nickel Metal Hydride, rechargeable – ruggedized, Backlight 8 seconds per button push, IP 66 Protection



RFID Interface	For the personnel identification			
Two way communication	With the driver			
Features and alerts w	Features and alerts within the device			
Ignition On/Off	Ignition On/Off status alert			
Engine Immobilization	Engine Immobilization (as output)			
Over speed	Over speed alerts			
SOS button (optional)	SOS alert during emergency – Panic Button			
Harsh Braking	Harsh braking alert during rash reduction in velocity			
Harsh Cornering	Harsh Cornering alert during rash change in angular velocity			
Harsh Acceleration	Harsh acceleration alert during rash change in velocity			
Temperature Sensor (optional)	Environment temperature			
Fuel Sensor (optional)	Fuel sensor for the detection of fuel level of the device			
Device battery Low	Battery Low status of internal & external battery			
Towing	Tow alert during illegal movement of the vehicle			
Tampering/Battery Removed	Tampering/Battery Removed alert when primary power supply is cut off			
Geo-fence	Geo-fence feature should be available within the device			
Weight	The weight of the collected waste based on the location			



# 3.2. Approval process of Tracking Device

### 3.2.1. Provide DM TRA Approved and Configured Device

The Waste Management Companies are to provide one sample GPS device to the RASID Monitoring and Control centre for checking the waste management company and to provide a TRA Approved tracking device after full configuration in the RASID registration centre, along with a copy of an approval certificate, the device will be DM approved once the company has defined the vehicle/waste type list and meets with the DM specifications.

The new device registration is related with defining the list of the vehicle/waste type in RASID System, without this definition, the device will not be registered into the RASID System.

# 3.2.2. Provide the Communication Protocol and GPS Device Specifications

The waste transportation company should provide RASID System Provider with the communication protocol of the tracking device to ensure that the device is sending the data directly to RASID environment and not shared with any external servers. Also provide GPS device Specifications for review and verification.

# 3.2.3. Provide Tracking Device/Weighing Device specification

The waste management company has to provide the specifications of tracking device/ weighing device (if applicable).

# 3.2.4. Verify the Device Specifications of GPS device and Weighing System

The RASID System Provider will carry out specification review and device verification to make sure that the tracking device has the minimum specified requirements and the data is directly going to RASID environment.



If the weighing system is applicable, review, verify and approve the weighing system specifications.

If any or both of these devices (GPS device and Weighing System) are rejected, the waste management company to replace the device with a suitable device/Model.

# 3.2.5. Return the Tracking Device

Once the device has been approved form RASID System Provider, the provided Tracking Device will be returned by the Rasid Technology Provider to the waste management company (which possesses less than 5 devices/vehicles).

For the tracking devices provided by the waste management company whose fleet strength is five and more, the device will be retained with the RASID Technology Service Provider for the purpose of feasibility tests for feature enhancements during the course of contract. RASID will collect only one device of a same brand/model for this purpose.

# 3.2.6. Register the Device in RASID System

Once the company has provided the required information, the RASID Technology Provider will register the device into the RASID System, and the device will be authorized to be installed on the vehicle for the registered company.

# 3.2.7. Pay the Device Registration Fees

Once the device registration is complete and approved from the RASID System Provider, the company has to pay the device registration fees through the RASID online system or RASID Registration Centre. Payments cannot be processed without the said approval. The device shall only be activated upon receipt of payment.



#### 3.2.8. Provide the Contact information

Once the device has been registered into RASID System, the transportation company has to provide RASID System Provider with the contact information for the device support.

#### 3.2.9. Process/procedure

- 1. RASID Approved On-Board Weighing System (Specification)
- 2. Tracking Data Transfer requirements (Data Transfer Specification)
- 3. Weighing Data Transfer requirements (Data Transfer Specification)
- 4. Approval process of Tracking Device (Providing Sample and Protocol)
- 5. Calibration Certificate and Approval of On-Board Weighing System

### 3.2.10. Tracking Device approval process

- 1. Applying for the device approval online
- 2. Provide specification, data sheet and protocol document
- 3. RASID will verify the tracking device details and preliminary approval
- 4. RASID will provide notification to submit sample unit and make online payment
- 5. RASID will integrate hardware and give final approval