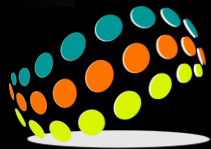


Manhole Asset Lock (AL1) Solution



G-Matrix Systems
Integrated System Design

RAMAC™
Remote Access Management and Control Systems



G-Matrix Systems

Integrated System Design

G-Matrix Systems addresses the modern need for monitoring through a range of bespoke IOT communications solutions, from cold chain monitoring, to security and entry control, tracking, fluid measurement and more.

G-Matrix Systems is a **Full IoT Turn-key** solution provider and is completely network Agnostic

CONTACT US

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Cell: +27 72 594 8408

Our Core Business

RESEARCH & DEVELOPMENT

Internal R&D for product enhancement ensuring G-Matrix is always ahead of the curve with future Technologies.



RAPID PROTOTYPING

The G-Matrix Systems “Heart” is an all-encompassing device which allows for multiple sensors to be connected allowing rapid prototyping. This, together with our in-house 3D printers ensures prototypes are aligned with Customer expectations



PRODUCTION

40 000+ GPS units pass through our Test jigs every month supported by the G-Matrix test data base and monthly SLA



"A Good company delivers excellent products and services.
Great companies does all that and strives to make the world
a better place"

Bill Ford - Executive Chairman of *Ford* Motor Company

Our Services

- Electronic Firmware Development in right down to microprocessors
- Low Power Products – Sigfox, LORA, GSM, Low Power Radio, BLE, Solar powered, NB-IoT, RPMA, M-CAT1, MQTT Products.
- Labview Software Development
- Electronic and Mechanical Interfacing.
- Development on "Internet of Things" networks
- Integration on 3rd party Platforms
- Deployment of LPWAN networks
- Intensive research and development in Sigfox, Lora, BLE, Wi-Fi & GSM communication
- Management Systems for remote communication
- Development of smartphone application.

Current Products

RAMAC™

Remote Access Management and Control Systems

- Cold Storage Monitoring
 - Smart Location Button
 - Range Detector
 - Remote Lock Monitor and driver
 - Cable Theft Solution
 - Asset Tracker
 - Temperature Sensor
 - Power State Monitor
 - Tamper Proof Container Locks
 - Intrusion protection Sensors
 - Vibration Sensor
 - Magnetic Sensor
 - Power consumption and Battery monitor
 - Camera Pole Maintenance Monitoring
- RAMAC™ Portal is a ready to use online web-based portal, available to any customer
 - RAMAC™ App allows local device configuration, OTA Firmware updates, diagnostics and real time information of the device
 - RAMAC™ Cerebro is a consumer facing App which can be white labelled for our channel partners
 - RAMAC™ API allows for easy integration



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Integrated System Design

Our IoT Footprint

Remote Access Management and Control Systems

September 01, 2021 10:54:59 WED

Akheel Jame...

Account:

All Accounts

Device Types:

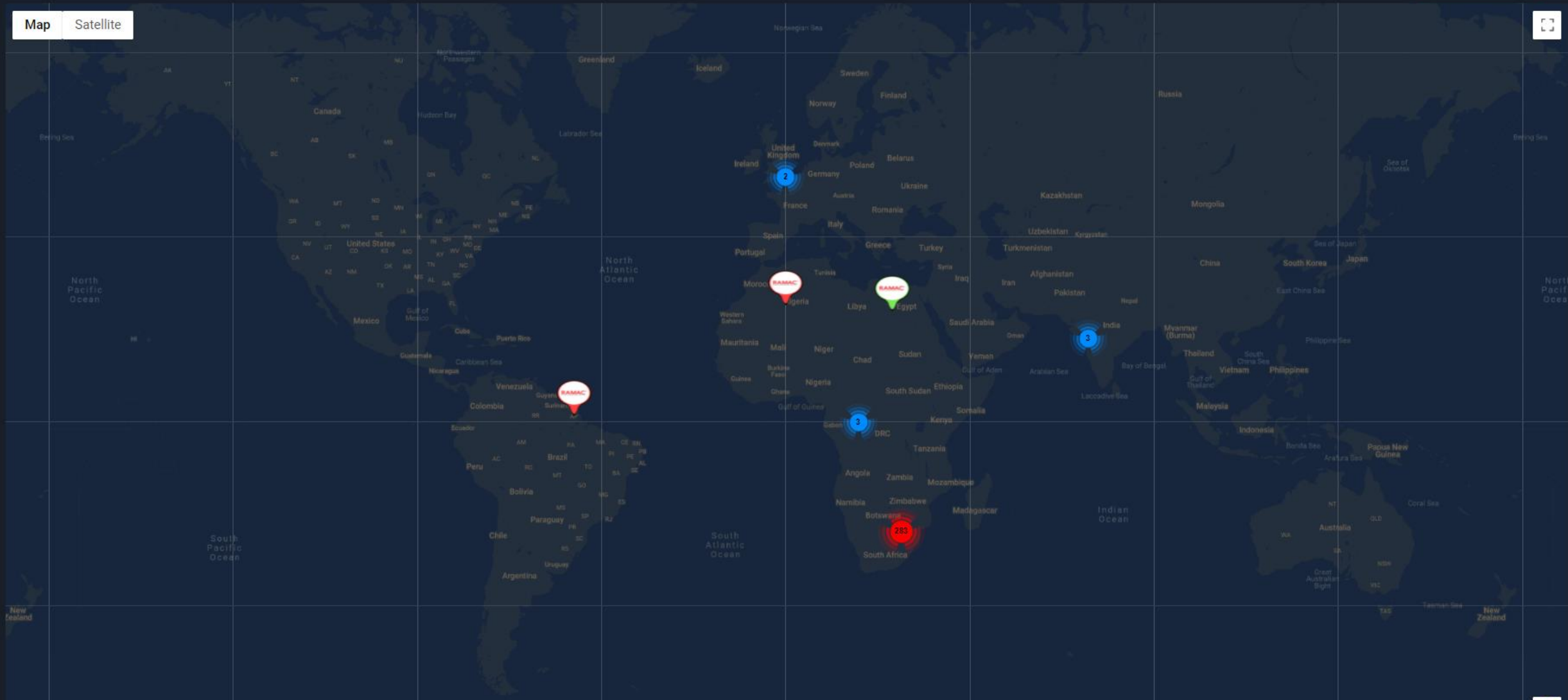
All Device Types

Devices:

All Devices

Total Devices : 433

Map Satellite



Your full **IoT Turn-Key** solution partner

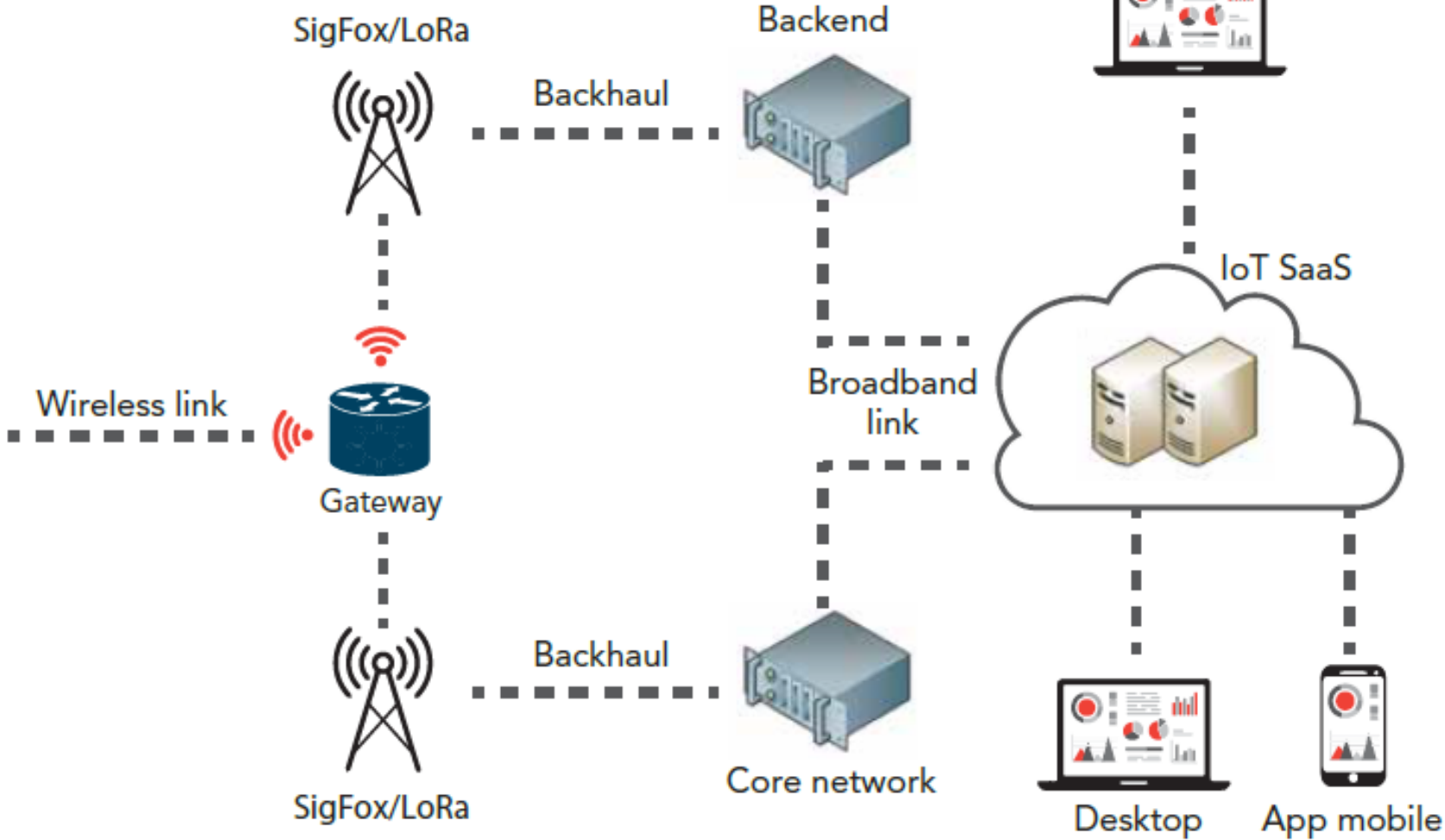
Network Overview



RAMAC
IoT Solutions



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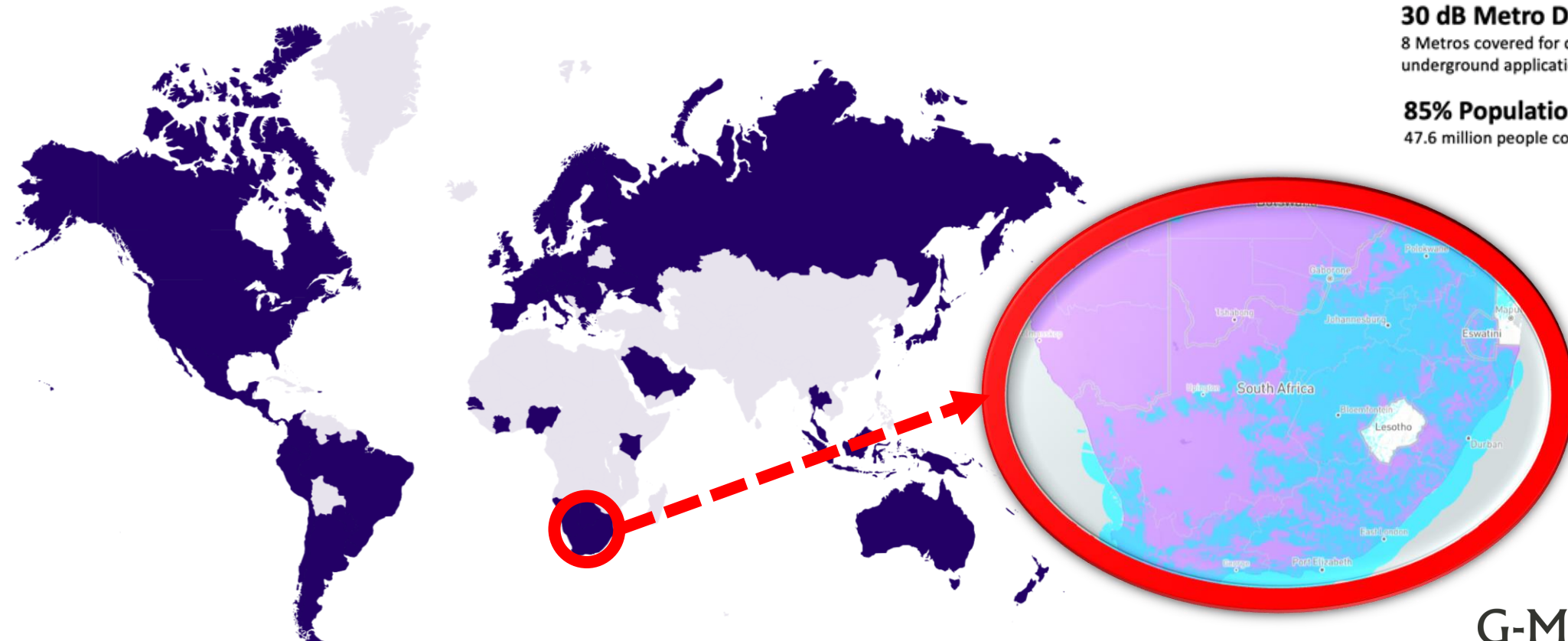


The Global Network



A worldwide footprint

Sigfox 0G network is already available in 72 countries and regions



SqwidNET
A DFA COMPANY

93% Population Covered
52 million people covered

90% Coverage on Highways
143 952 km of paved roads covered
538 829 km of gravel road covered

30 dB Metro Densification
8 Metros covered for deep inbuilding and underground applications

85% Population covered at 20dB
47.6 million people covered for indoor applications



G-Matrix Systems
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RAMAC Tamper Sensor

The **RAMAC™-Tamper Sensor (T1)** is a SigFox Internet of Things(IoT) device that was originally designed for the monitoring of Manhole Covers. The 3-Axis accelerometer allows the device to enter an ultra-low power state yet still wakeup immediately on detection of movement. This allows customers to use the device for monitoring of movement or Tilt on any assets that should be stationary. The ruggedized sensor allows for real-time monitoring and incorporates BLE Functionality which enables the device to distinguish between authorized and unauthorized access (Alarm Evert).



Key Features

- Low Power real-time Communication utilizing LPWAN compliant radio networks
- 3-Axis Accelerometer
- 5 years+ Expected Battery Life
- Small form factor, simple installation
- Battery status notification
- Tamper detection alarms
- Unauthorized access alerts
- High Temperature status notification
- API and Call-back configuration

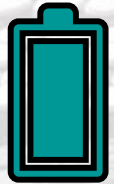
Asset Lock-Manhole (ALM1)

The **RAMAC™-Asset Lock (ALM1)** is a SigFox Internet of Things(IoT) device that is specifically designed for the locking and unlocking of M4A Manhole Covers. The 3-Axis accelerometer allows customers to use the device for monitoring of movement of the paddle or Tilt on any manhole. The ruggedized sensor allows for real-time monitoring and incorporates BLE Functionality which enables the device to distinguish between authorized and unauthorized access (Alarm Evert).

Key Features



- Manage Access to Manholes via Work Orders
- Control Motor that will unlock the mechanical lock
- Unauthorized access alerts



- Low Power real-time Communication utilizing Sigfox
- 5 years+ Expected Battery Life



- Small form factor, simple installation
- Compatible with M4A 600 & 900 Manhole covers
- Tamper detection alarms

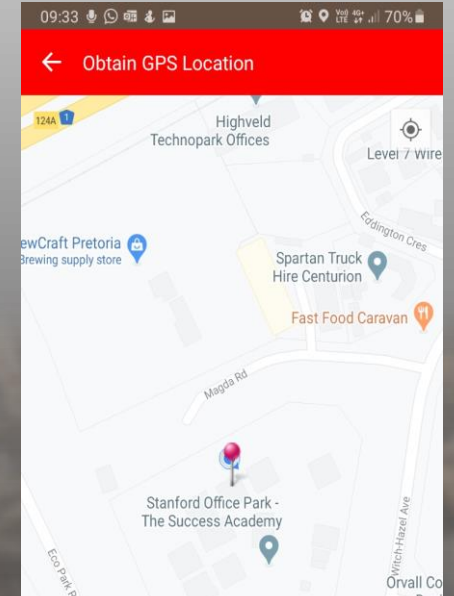
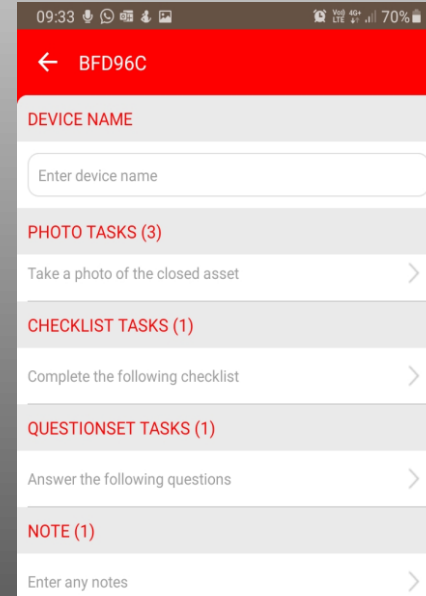
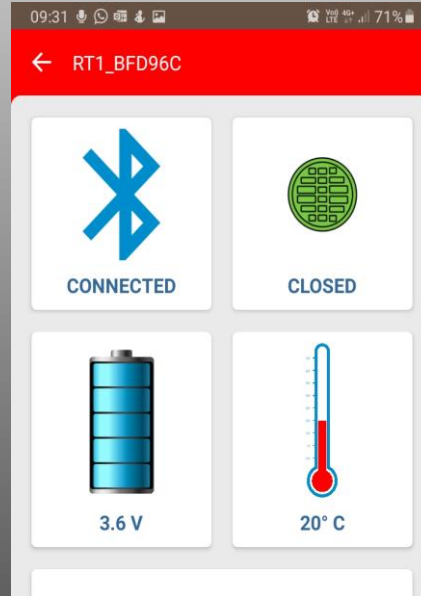
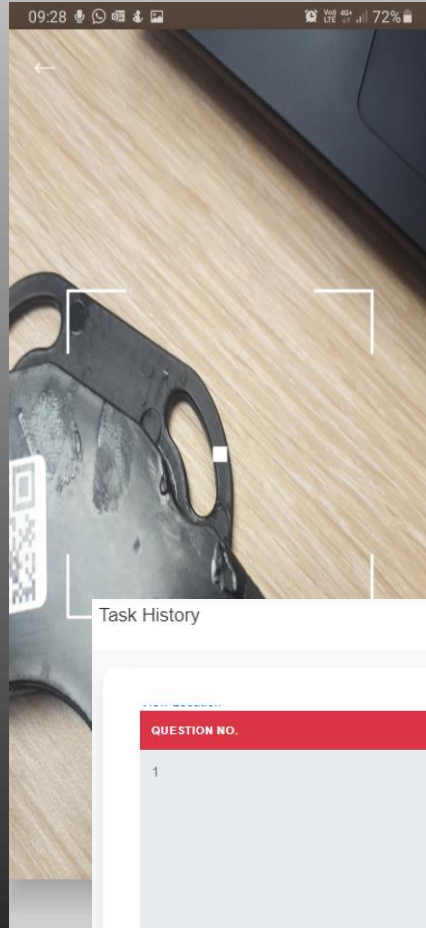
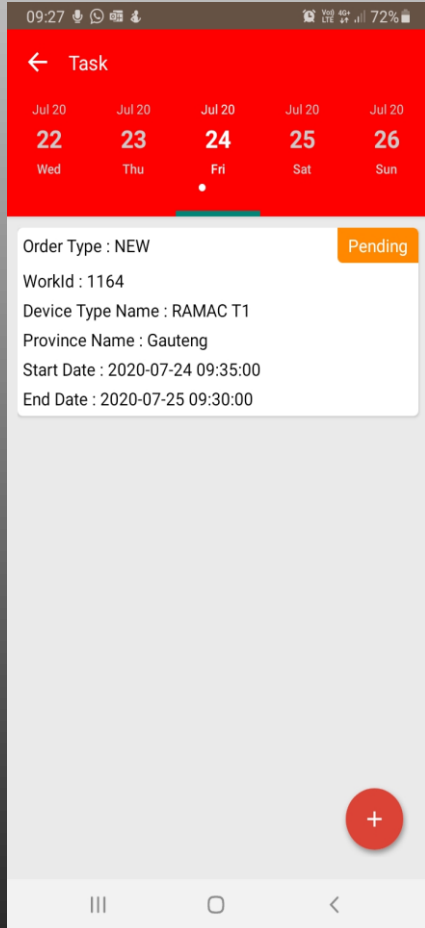


m4a
OUR PRODUCTS BUILD NETWORKS



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RAMAC™ App Work Orders

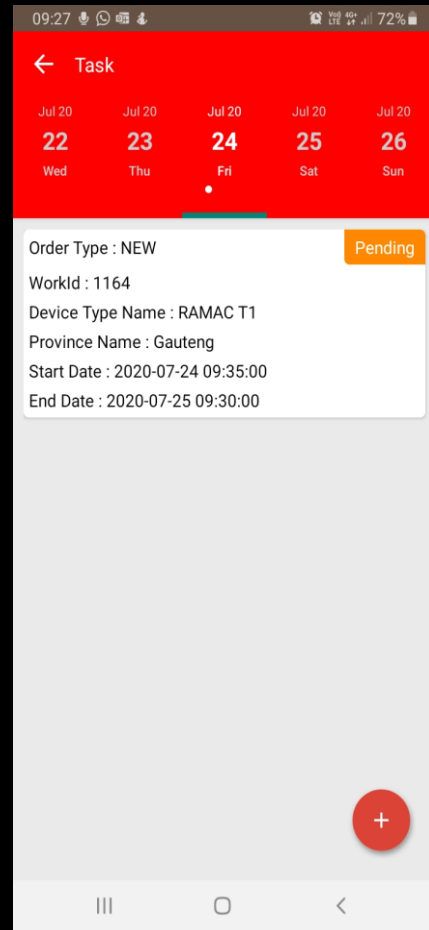


QUESTION NO.	TASK	ANSWER
1	Take a photo of the height installed in the ground	
2	Take a photo of the installed Device	



Completing Work Orders on the RAMAC™ App

Click on Work order from previous Screen

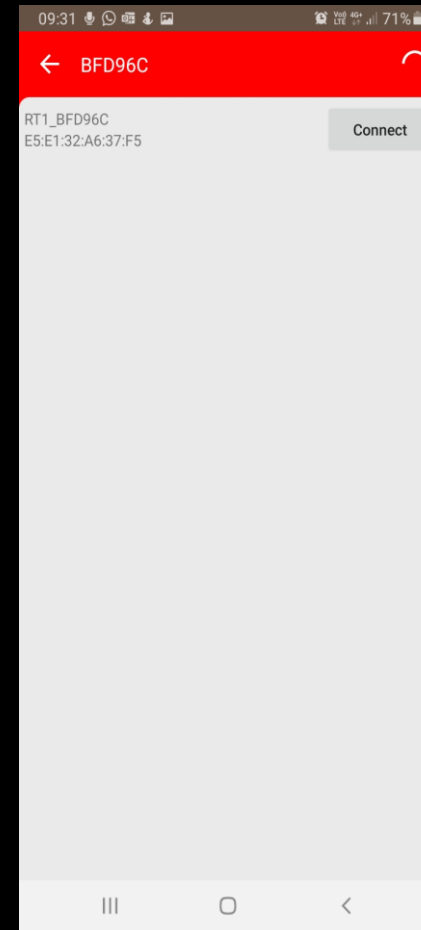


Open required work order if there is more than one

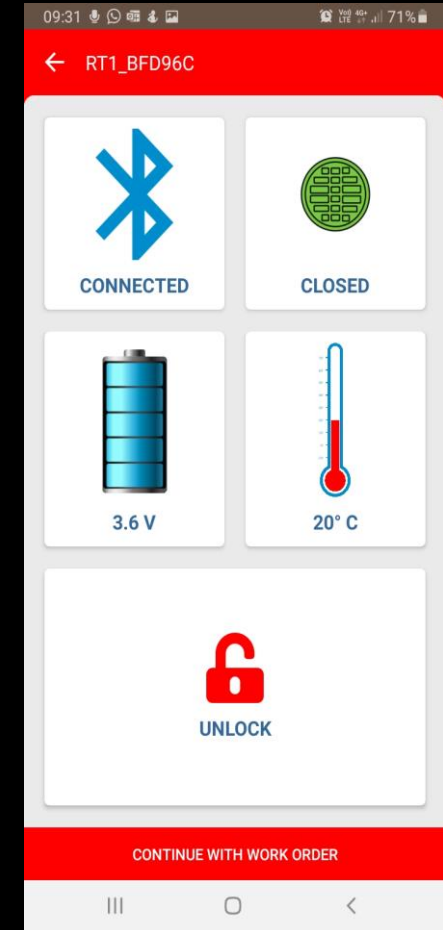
Scan QR code of device you are installing



Connect to the device using BLE



Once Connected you will be able to view Device Status



Click on "Continue with Work Order" at the bottom of the screen

Completing Work Orders on the RAMAC™ App



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Fill in the required Install Form

09:32 71%

← BFD96C

DEVICE NAME

Enter device name

PHOTO TASKS (3)

Take a photo of the inside of the asset >

Take a photo of the inside of the asset cover >

Take a photo of the closed asset >

CHECKLIST TASKS (1)

Complete the following checklist >

QUESTIONSET TASKS (1)

Answer the following questions >

NOTE (1)

Enter any notes >

CLOSED ASSET (3)

Save Asset Closed Position >

UPLOAD ALL TASKS

Ensure last 3 items have Ticks or you will not be able to complete the work order

09:33 70%

← BFD96C

DEVICE NAME

Enter device name

PHOTO TASKS (3)

Take a photo of the closed asset >

CHECKLIST TASKS (1)

Complete the following checklist >

QUESTIONSET TASKS (1)

Answer the following questions >

NOTE (1)

Enter any notes >

CLOSED ASSET (3)

Save Asset Closed Position ✓

Enable Communication ✓

Obtain GPS Location ✓

UPLOAD ALL TASKS

Ensure Location is accurate when plotting the installation on map

09:33 70%

← Obtain GPS Location

PHOTO TASKS (3)

Take a photo of the closed asset >

CHECKLIST TASKS (1)

Complete the following checklist >

QUESTIONSET TASKS (1)

Answer the following questions >

NOTE (1)

Enter any notes >

Save location

Upload all tasks at the bottom to Complete Work Order

09:33 70%

← BFD96C

DEVICE NAME

Enter device name

PHOTO TASKS (3)

Take a photo of the closed asset >

CHECKLIST TASKS (1)

Complete the following checklist >

QUESTIONSET TASKS (1)

Answer the following questions >

NOTE (1)

Enter any notes >

CLOSED ASSET (3)

Save Asset Closed Position ✓

Enable Communication ✓

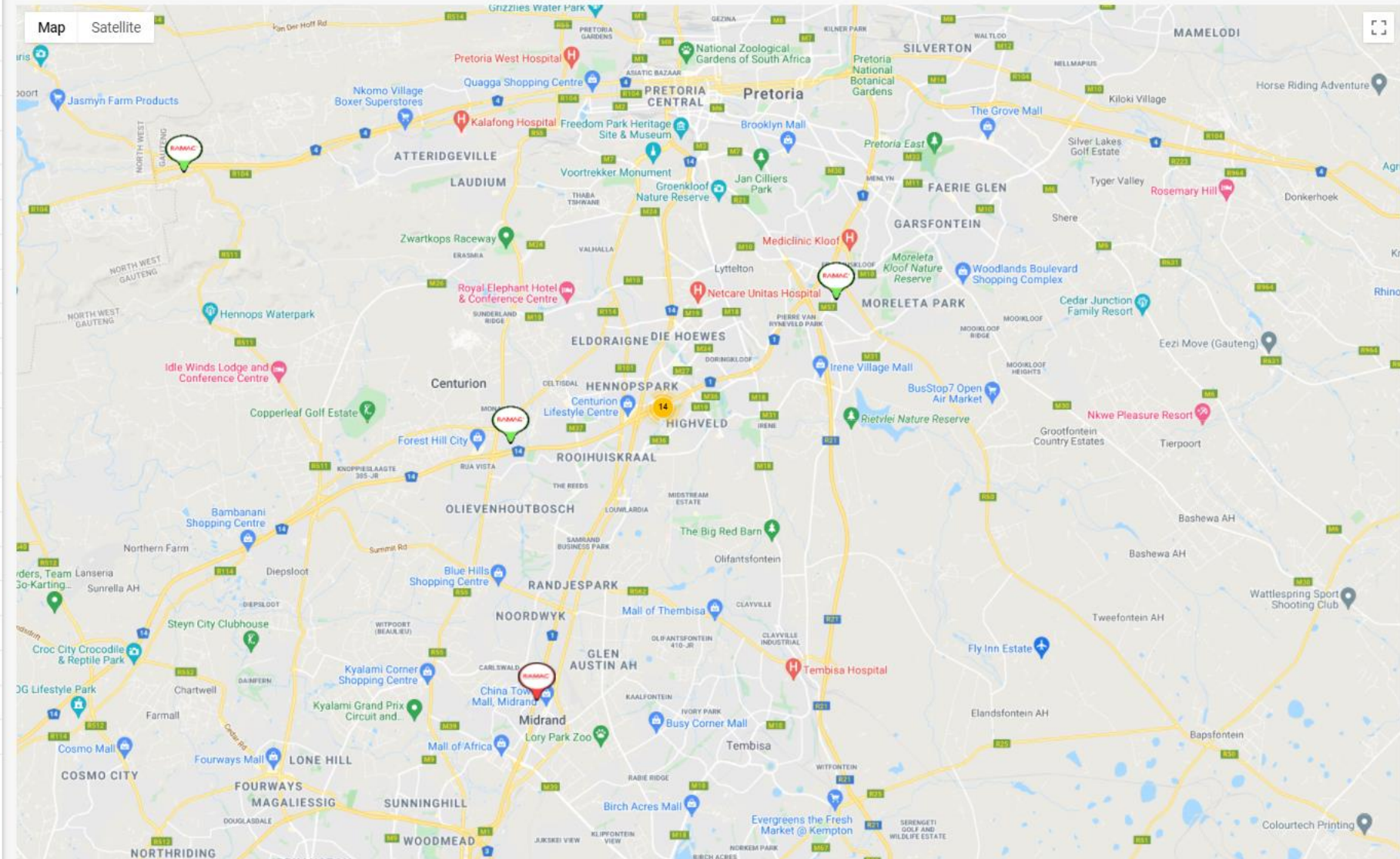
Obtain GPS Location ✓

UPLOAD ALL TASKS



Account: All Accounts Device Types: RAMAC AT1 Devices: All Devices

Alerting Devices



Devices Having Alert

11 (Alert Devices) / 32 (Total Devices)

Show All

DEVICE ID	DEVICE TYPE	ALARM STATUS	LAST SEEN
C74604	AT1	! ↻	12 minutes ago
C5007B	AT1	! ↻	1 hour ago
C4DD3B	AT1	! ↻	1 hour ago
C4DD2C	AT1	! ↻	1 hour ago
C12ED1	AT1	! ↻	1 hour ago
C4D277	AT1	! ↻	1 hour ago
C6A9C1	AT1	! ↻	1 hour ago
C57B76	AT1	! ↻	1 day ago
C75DF9	AT1	! ↻	8 days ago
C7690A	AT1	! ↻	8 days ago
BFA048	AT1	! ↻	19 days ago

Device Data- Alerts

Alerts are sent via Email, Telegram with a map card and shown in the NOC Dashboard View.

The platform keeps an audit log of every alert sent from the portal and where it was sent.

Should any user reset the alarm they will need to supply a reason.

Every action like muting a unit, resetting an alarm, suspending a device is time stamp recorded with the user details for accountability reasons.

The screenshot shows the RAMAC NOC Dashboard Alerts page. The header includes the RAMAC logo, the title "Remote Access Management and Control Systems", the date "November 17, 2021 05:57:12 WED", and the user "Akheel Jam". The main content area has a search bar with filters for "Device Type" (RAMAC AT1), "Start Date" (2021-10-17), "End Date" (2021-11-17), and "Device ID". There are "Search" and "Export" buttons. Below the filters is a table of alerts:

DEVICEID	ALERT TYPE	DATE TIME	VIEW MAP
C7258F	AT1 Movement Alarm	2021-11-11 13:34:52	No Location
C51581	State: -Armed -Not Alarming -Temperature Normal -Door Closed -New Location -Moving	2021-11-08 15:30:31	
C51581	State: -Armed -Not Alarming -Temperature Normal -Door Closed -New Location -Moving	2021-11-08 15:24:40	
C51581	State: -Armed -Not Alarming -Temperature Normal -Door Closed -New Location -Moving	2021-11-08 15:18:50	

The screenshot shows a Telegram alert notification. At the top, there is a "ADD MEMBERS" button and a close button. Below is a map card showing a location on Brittlewood Avenue with a timestamp of 19:38. The main text of the alert reads:

Movement alarm for AT1 device
Device:C6C3E5
Description:LEVI_Test 2
Date:2021-08-23 19:38:38

Account:V2 SALES DEMO
<https://portal.ramac.io/vd/C6C3E5/19>
19:38

Movement alarm for AT1 device
Device:C71A07
Description:LEVI_Test
Date:2021-08-23 19:38:42

Account:V2 SALES DEMO
<https://portal.ramac.io/vd/C71A07/19>
19:38

P1 Device Location Update
Device:C5005E
Description:Akheel_Goodwill
Date:2021-08-23 19:41:23

Account:V2 SALES DEMO
Map:[Click Here](#) to view latest location on map



RAMAC™ Portal Audit Log

May 28, 2021 07:55:16 FRI Home / Work Order History

Search Device Id

Work Order History

Start Date: End Date: Order Type: Assigned User: Device:

Status:

[Clear Search](#)
Show entries

WORK ORDER ID	WORK ORDER TEMPLATE	CLIENT	START DATE	END DATE	ORDER DATE	ORDER TYPE	DEVICE	STATUS	ASSIGNED TO	INSTALLATION DATE	ACTION
7697	Protea Coin	Protea Coin	2021-05-27 14:01:00	2021-05-27 15:16:00	2021-05-27 14:01:44	NEW	RAMAC MD1	COMPLETED	Kenneth Lindgren	27-05-2021	
7696	Protea Coin	Protea Coin	2021-05-27 13:57:00	2021-05-27 15:15:00	2021-05-27 13:58:53	NEW	RAMAC MD1	COMPLETED	Kenneth Lindgren	27-05-2021	
7695	Protea Coin	Protea Coin	2021-05-27 13:53:00	2021-05-27 15:16:00	2021-05-27 13:53:33	NEW	RAMAC MD1	COMPLETED	Kenneth Lindgren	27-05-2021	
7654	Protea Coin	Protea Coin	2021-05-27 12:03:00	2021-05-27 14:15:00	2021-05-27 12:04:29	MAINTENANCE	C6A397	NEW	Kenneth Lindgren	27-05-2021	
7653	Protea Coin	Protea Coin	2021-05-27 00:12:00	2021-05-27 13:10:00	2021-05-27 11:36:43	NEW	RAMAC MD1	COMPLETED	Kenneth Lindgren	27-05-2021	
7652	Protea Coin	Protea Coin	2021-05-26 14:38:00	2021-05-26 16:25:00	2021-05-26 14:38:45	NEW	RAMAC MD1	NEW	Kenneth Lindgren	-	
7590	Protea Coin	Protea Coin	2021-05-25 12:15:00	2021-05-25 13:45:00	2021-05-25 12:25:01	NEW	RAMAC MD1	COMPLETED	Kenneth Lindgren	25-05-2021	
7591	Protea Coin	Protea Coin	2021-05-25 12:15:00	2021-05-25 13:45:00	2021-05-25 12:25:01	NEW	RAMAC MD1	COMPLETED	Kenneth Lindgren	25-05-2021	
7592	Protea Coin	Protea Coin	2021-05-25 12:15:00	2021-05-25 13:45:00	2021-05-25 12:25:01	NEW	RAMAC MD1	COMPLETED	Kenneth Lindgren	25-05-2021	
7593	Protea Coin	Protea Coin	2021-05-25 12:15:00	2021-05-25 13:45:00	2021-05-25 12:25:01	NEW	RAMAC MD1	COMPLETED	Kenneth Lindgren	25-05-2021	

- NAVIGATION
- Home
- Work Order
- Workorder Templates
- Maps
- Devices
- Replace Device
- Transfer Devices
- Update Subscription
- Device Notifications
- Masters
- Messages
- Message History
- Reports
- Alerts
- Accounts
- Integrations
- Users
- Notification Subscription Users
- Devices Audit Log
- Accounts Audit Log
- System Fault

Pulse Sensor



Cable Theft Sensor



Vibration Sensor



Temperature Sensor



RAMAC™ Portal
& Mobile App



Smart Location
Button



Remote Lock Unit



RAMAC™
Remote Access Management and Control Systems

Power State Sensor



Asset Tracker



Magnet
Sensor



Intrusion Protection





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G-Matrix Systems addresses the modern need for monitoring through a range of bespoke IOT communications solutions, from cold chain monitoring, to security and entry control, tracking, fluid measurement and more.

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Contact Us

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