

Product/Area

RMS

Routes Management System

Content

Product/Area.....	1
1 RMS.....	3
1.1 Description	3
1.2 Solution components	3
2 Installation and configuration.....	3
2.1 SAP Business One	3
2.2 Mobile application	3
3 Use	4
4 Routes Add-on	4
4.1 Setup.....	4
4.1.1 Settings.....	4
4.1.2 Synchronization.....	5
4.1.3 Users	6
4.1.4 Vehicles	6
4.1.5 Zones	7
4.1.6 Routes Master	7
4.1.7 Mobile Synchronization	8
4.2 Messages.....	9
4.3 Routes.....	10
4.3.1 Route status	10
4.3.2 Creating the route.....	11
5 Mobile Application.....	15
5.1 Registering a new user	16
5.2 Settings.....	16
5.3 Routes.....	17
5.3.1 Delivering a Document	18

1 RMS

1.1 Description

The Routes Management System for SAP Business One is a solution integrating the SAP Business One application with mobile devices, designed to assist on the planning and execution of the delivery process.

An SAP Add-on creates a new kind of document in SAP to plan routes, where you can combine sales documents to be delivered, assign them to vehicles, and let you calculate the optimized route delivery sequence, for more efficiency, by using Google Maps functionalities.

Once you complete the planning from SAP, each route is sent to the vehicle driver's mobile devices, by using the Routes mobile application, and all the information regarding each document and delivery waypoint is immediately available.

The mobile application let the driver use the device GPS to navigate until destination, and has the ability to capture the customer signature, take pictures and save the geolocation position where the delivery is being confirmed. All the captured data is also immediately synchronized to the cloud and back to the SAP client application, where the user can check and confirm all information captured from the mobile device.

1.2 Solution components

The solution includes:

- Routes SAP Business One Add-On. Lightweight, available for 32bits and 64bits.
- Routes mobile application for Android. Available at the Google Play Store as **Routes for SAP Business One**.
- Routes mobile application for ios. Available at the Apple Store as **Routes for SAP Business One**

2 Installation and configuration

2.1 SAP Business One

On SAP Business One, you need to install the Routes Add-On.

Once installed and started, it will create a new menu on SAP, the Routes Menu.

Check the Routes Add-on section for a detailed explanation about how to configure it.

2.2 Mobile application

Depending on your mobile device system: Android or iOS, download the Routes application from your application store, and follow the steps described in the [Mobile application section](#).

3 Use

First stage:

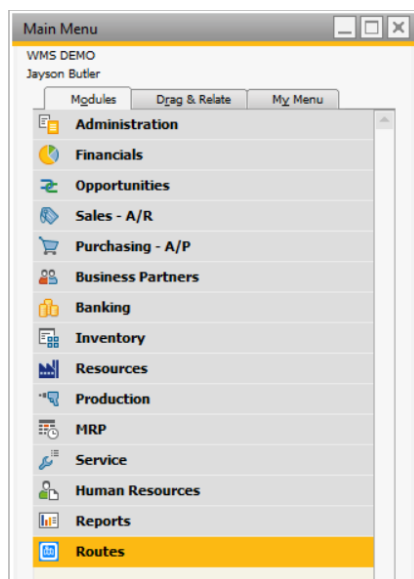
1. Install the SAP RMS Add-on, and configure it with the provided settings.
2. Download the RMS mobile application at your mobile devices.
3. Register your users-drivers from the RMS mobile application.
4. Register the same users in your SAP company, by using the RMS Add-on, to grant access your users to your company.
5. Define your company vehicles, and assign users to the vehicles.

Everyday usage:

1. Create route documents, assign documents to vehicles.
2. Release the route
3. Use the mobile application to deliver the documents, confirming the deliveries.
4. Get all information synchronized to SAP.

4 Routes Add-on

Once installed in SAP, you will have the Routes menu available.



4.1 Setup

4.1.1 Settings

At the Route Settings you will configure the following parameters.

Display routes url: To display the visual optimized route, you need to have installed another

Mobile integration

You can opt to enable or disable the mobile integration. If you just want the Add-on functionality to prepare routes, but will not interact with vehicles and drivers with the mobile application, then you can disable this option and ignore the settings under this section.

Routes Mobile API URI: This is the cloud backend used to synchronize the information between SAP and the mobile devices. Argentis will provide this.

Routes Mobile Company Id: Is your SAP Company identifier, provided by Argentis, which uniquely identifies your installation. You will need a Company Id for each company you expect to use.

Routes Mobile API Key: Also provided by Argentis, this key grants your company access to the system backend.

Automatic Mobile to SAP Synchronization

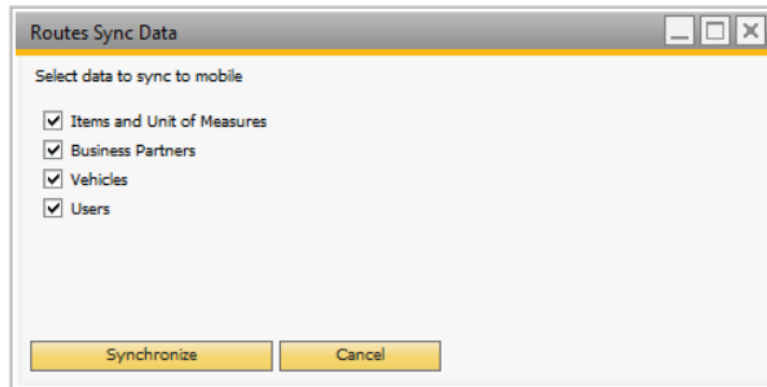
Information between the mobile devices and SAP has to be synchronized. The add-on can handle this automatically if you enable this setting.

You can also indicate the interval period between each synchronization attempt.

4.1.2 Synchronization

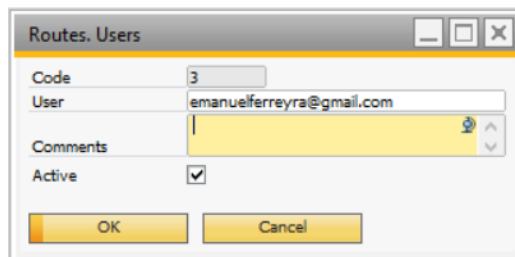
SAP information needs to be synchronized to the RMS cloud, to be available for the mobile application.

You can synchronize objects at any time, all previous data is overwritten.



4.1.3 Users

The users module let you creates users.



4.1.4 Vehicles

Vehicles are used to deliver your items, and are assigned to drivers.

From this module you will define your company vehicles, which will be used at the routes definition, assigning documents (sales orders, delivery notes, a/r invoices) to be delivered. There are several fields in the definition, most of them included to detail information about the vehicle and usable for reporting tasks.

The maximum weight and volume defined for the vehicle is used when planning the route, to calculate the load percentage.

Routes. Vehicles

Vehicle code

Truck A

Description

Truck A

VIN

Engine

Year

Maker

Max weight

10,000,000

Max volume

20,000,000

Tag Number

Status

Registration Date

Mile Out Lease

0,000000

Mile Out Fuel

0,000000

Vehicle Weight

0,000

Id

Vehicle Rate

0,000000

Mileage Cost

0,000000

Rfg Cost

0,000000

Insurance

0,000000

Vehicle MPG

0,000000

Gas Price

0,000000

Truck Cost

0,000000

Acquired Date

Lease Expire Date

Return Date

Aprox Rate/Year

0,000000

Lease Company

Owner License Info

Comments

Users

#

User

emanuelferreira@gmail.com

devuser@mail.com

Delete selected

Add Users

OK

Cancel

In the below section, there is a User’s list. These users are the mobile application users which will have access to the vehicle, and will be able to select it, to see and deliver the routes assigned to the vehicle.

4.1.5 Zones

You can define zones and then assign them to your business partner addresses. This is useful when planning your routes, to filter documents with delivery addresses on specific zones.

Zones

Zone code

South

Description

South area

Comments

Active

☒

OK

Cancel

Business Partner Master Data

Code

Manual

V70000

Vendor

Name

SMD Technologies

Foreign Name

Group

General Supplies

Currency

US Dollar

Federal Tax ID

US11-345690

Account Balance

-6,300.16

Goods Receipt POs

472,910.23

Purchase Orders

0.00

Local Currency

General

Contact Persons

Addresses

Payment Terms

Payment Run

Accounting

Properties

Remarks

Attachments

Pay To

Bill To

Define New

Ship To

Define New

Pay To

City

Philadelphia

Zip Code

19145

Country

Philadelphia County

State

Pennsylvania

Country

USA

Street No.

Building/Floor/Room

Tax Office

GLN

Tax5 Enabled

Yes

Evocation

Route Zone

South area

Set as Default

>>

4.1.6 Routes Master

You can use a Route Master definition, to assign them to specific business partners, and then filter documents when planning routes.

For example you can define a Route Master indication the default ship day of week is Thursday, then assign this Route Master id to the business partner, and when creating a route for Thursday filter for documents with this Route Id:

Route Master	
Route Id	11221
Description	Desc
Ship Date	07/05/18
Short / Long	Short
Overhead Time	0,000
Load Time	0,000
Stop Time	0,000
Mileage	0,000
Single Rate	0,000
Helper Rate	0,000
Comments <input type="text"/>	
<div> <input type="button" value="OK"/> <input type="button" value="Cancel"/> </div>	

Default ship day of week
☐ Monday
☐ Tuesday
☐ Wednesday
☒ Thursday
☐ Friday
☐ Saturday
☐ Sunday

Business Partner Master Data		General	
Code	Manual C30000 Customer	Local Currency	
Name	Microchips	Account Balance	17,205.02
Foreign Name		Deliveries	82,666.98
Group	Large Accounts	Orders	207,514.48
Currency	US Dollar	Opportunities	3
Federal Tax ID	US26-487636		

General		Contact Persons	Addresses	Payment Terms	Payment Run	Accounting	Properties	Remarks	Attachments
Tel 1	555-0103	Contact Person	Judy Brown						
Tel 2		ID No. 2							
Mobile Phone									
Fax	555-0104								

WMS BP ID	4
Externo	Yes
Multiples Lotes	
Sujeto Retenciones	
Codigo Retenciones	
Certificado	
T. Retencion	
Factor Provider	
Factor Account	
Route Master Id	Test

[illegible]

4.1.7 Mobile Synchronization

All actions and events performed at the mobile devices are synchronized to SAP. At this module you have a log of all the events, and you can also manual synchronize any pending event by using the Synchronize button.

Event	Date	Result...	Description
Route status update	10/25/2018 9:35:53 AM	Succeed	Route entry 19 status updated to Closed
Route line status update	10/23/2018 4:04:31 PM	Succeed	Route entry 20 line 2 status updated to Closed
Route status update	10/23/2018 3:58:44 PM	Succeed	Route entry 20 status updated to InTransit
Route line status update	10/23/2018 11:35:24 AM	Succeed	Route entry 19 line 2 status updated to Closed
Route status update	10/23/2018 11:08:51 AM	Succeed	Route entry 20 status updated to Released
Route status update	10/23/2018 10:59:10 AM	Succeed	Route entry 20 status updated to InTransit
Route status update	10/23/2018 10:28:34 AM	Succeed	Route entry 18 status updated to Closed
Route line status update	10/12/2018 9:19:34 AM	Succeed	Route entry 19 line 1 status updated to Closed
Route status update	10/12/2018 8:48:14 AM	Succeed	Route entry 19 status updated to InTransit
Route line status update	10/9/2018 10:08:36 AM	Succeed	Route entry 18 line 1 status updated to Closed
Route status update	9/28/2018 11:05:38 AM	Succeed	Route entry 18 status updated to InTransit
Route status update	9/28/2018 11:02:35 AM	Succeed	Route entry 18 status updated to Released
Route status update	9/28/2018 11:02:35 AM	Succeed	Route entry 18 status updated to InTransit
Route status update	9/28/2018 11:02:35 AM	Succeed	Route entry 18 status updated to Released
Route status update	9/28/2018 11:02:35 AM	Succeed	Route entry 18 status updated to InTransit
Sales Document Draft Created	9/27/2018 2:29:13 PM	Succeed	Sales Order Draft created for customer Microchips

Buttons: Synchronize, Refresh, Cancel, Clear log

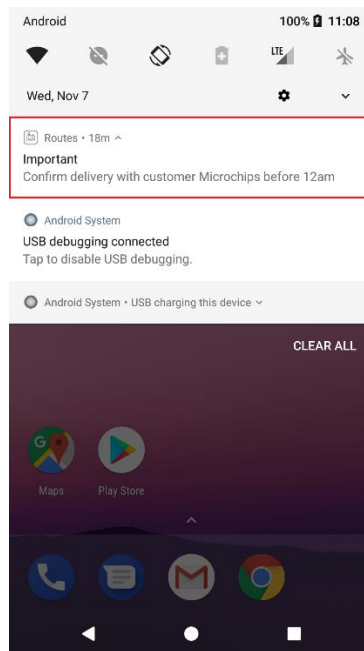
4.2 Messages

The platform supports sending messages from the SAP Business One client to mobile devices. Messages are delivered with push notifications to the device.

You can select one or many users who to send the message, then complete a Title and Message, and click send.
This

Routes. Messages	
Users	emanuelferreyra@gmail.com
Title	Important
Message	Confirm delivery with customer Microchips before 12am
<input type="button" value="Send"/> <input type="button" value="Cancel"/>	

You will receive the message on your device like:



4.3 Routes

The Route is a new document defined by the solution that let you include sales documents: Orders, Delivery Notes and A/R Invoices, to be delivered by a driver using a vehicle and the mobile application.

The document has a header, with the document date, delivery date and document entry number.

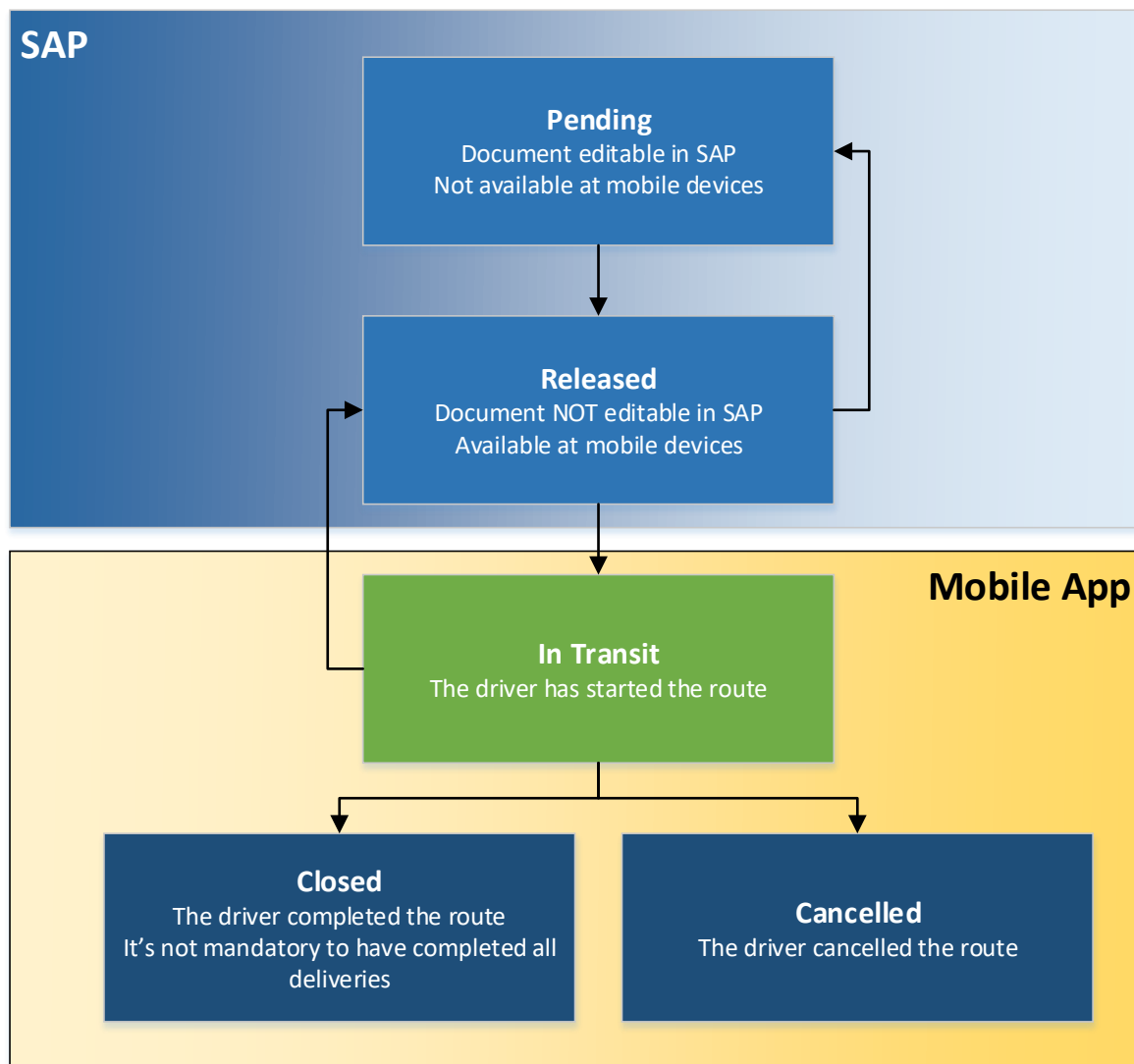
It also contains a Route Title. This is displayed at the mobile application as the route header for a quick identification by the driver.

Routes	
Entry	<input type="text"/>
Doc Date	11/08/18
Delivery date	11/09/18
Status	Pending
Route title	New Route
Origin warehouse	<input type="text"/>
Origin address	<input type="text"/>
Destination address	<input type="text"/>

4.3.1 Route status

An important field is the Route Status:

- **Pending:** While pending, the route is editable in the SAP Business One application, and is not visible for the mobile devices. The user can change anything in the document.
- **Released:** When the document is added to SAP, you will be able to change the status to Released. Releasing indicates you are making the route available at the mobile devices, for the users who has the vehicles included in the route document.
- **In transit:** From the mobile application, the user will be able to start the route delivery process, changing the status from Released to In Transit. Once the route is in transit, is no longer editable from SAP.
- **Closed or cancelled:** The final status for the route is Closed or Cancelled, this final status is set by the user at the mobile application.



4.3.2 Creating the route

You need to complete the origin and destination address. This are the route start and end point, and it's used to calculate the optimized sequence order to deliver each document (based on Google Maps service).

The screenshot shows the 'Routes' configuration window in SAP. It includes fields for 'Entry', 'Doc Date' (11/08/18), 'Delivery date' (11/09/18), 'Status' (Pending), and 'Route title' (New Route). A red box highlights the 'Origin warehouse', 'Origin address', and 'Destination address' fields, which are essential for route calculation. On the right, there are filters for 'Business partner', 'Items', 'Shipping Type' (Any), 'Zone' (Any), and 'Delivery date from' (10/08/18 to 11/10/18). Action buttons include 'Add Orders', 'Add Deliveries', 'Add Invoices', 'Find', and 'Refresh Data'.

4.3.2.1 Add documents

The route consists in one or more sales documents, to be delivered to customers.

You can add multiple documents at a time by using the filters and the Find button, this will load into to the details all documents matching the filter criteria.

Only documents in open status, and documents not included in other routes will be included.

You can also add specific documents by using the Add Orders, Add Deliveries or Add Invoices button. This will pop-up a document selection window where you can pick specific documents.

Once you added documents. The route will keep in the details only the documents with the [Sel](#) checkbox column select.

To delete a document from the route, you can un-check the [Sel](#) column, and press the **Refresh Data** button.

The Address for each document is automatically loaded from the ShipTo address defined in the document, but it's editable in the route. You should use Google Map's addresses format (street, city, zip code, country) to get better results when calculating the optimized delivery route sequence.

4.3.2.2 Assigning vehicles to documents

With the documents in the route, you will assign a vehicle to each document, which will deliver to the document address.

You can assign different vehicles in the same route document, or you can use the same vehicle for all your documents in a single route.

When you assign a vehicle to a document, the grid in the lower part is populated with information indicating the vehicle percentage of load in terms of volume and weight, and the quantity of documents assigned to the vehicle.

4.3.2.3 Document status

Each document in the route also has a status: Pending or Close, depending if the delivery was completed for that customer.

4.3.2.4 Optimizing the delivery sequence

When you completed the preparation of the route, adding all of the documents to be delivered, you can use the **Get Sequence** or the **Display route optimization** button.

This function uses Google Maps Directions API to calculate the optimized delivery sequence, starting from the origin address, including every document address (waypoints) and ending at the destination address.

There is an API limit of until 23 waypoints for each vehicle route. More waypoints cannot be optimized.

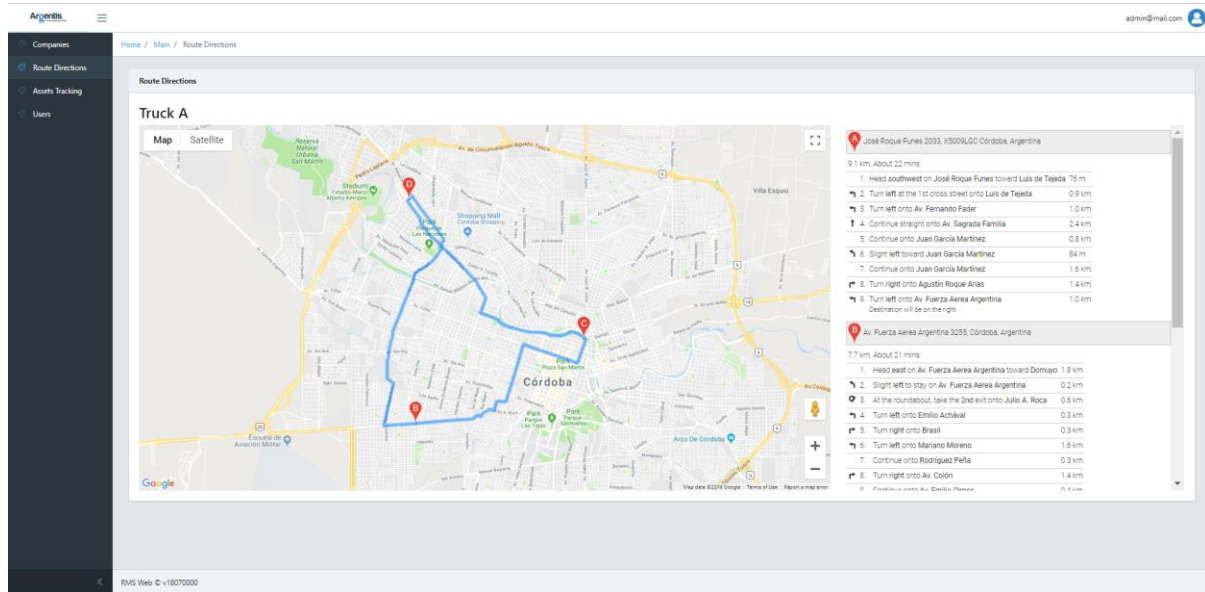
When using the *Get Sequence* button the Sequence order column will be completed, with the recommended sequence order to deliver. You can also override this value manually
This sequence number is used at the mobile device to present the delivery order sequence to the driver (documents are arranged in this order).

Origin warehouse			Business partner	
Origin address		Roque Funes 2033, Córdoba, Argei		Items
Destination address		Roque Funes 2033, Córdoba, Argei		Shipping Type
				Zone
				Delivery date from
				Route Master

ne	Address	Doc Total	Doc Weight	Doc Volume	Sel	Vehicle	Trailer	Status	Sequence order	Ro
					<input type="checkbox"/>					
ter T	Rincon 495 , Córdoba, ARGENTINA	1.950,000000	0,000	0,000	<input checked="" type="checkbox"/>	Truck A ▼	▼	Pending	2	
sq	Av Fuerza Aerea 3255 , Córdoba, ARGENTINA	900,000000	200,000	200,000	<input checked="" type="checkbox"/>	Truck A ▼	▼	Pending	1	

4.3.2.5 Display route optimization

You can also view the visual route optimization, by using the *Display route optimization* button. It will open the routes web application, with the maps view:



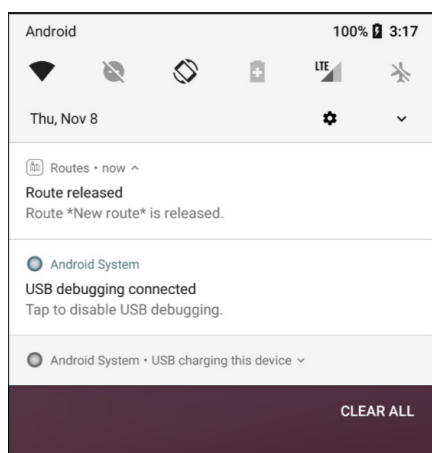
4.3.2.6 Releasing route

Where the route is ready for delivery, you can change the status from pending to released (the route document has to be created first, you can't release a route in add mode).

Change the status and update the document:

Routes	
Entry	22
Doc Date	11/08/18
Delivery date	11/09/18
Status	Pending
Route title	<div>Pending - Pending</div> <div>Released - Released</div>

Devices with vehicles selected matching the vehicles assigned in the route will receive a push notification indicating the route is released.



4.3.2.7 View delivery results

When you complete a document delivery from the mobile device, you'll see the line status changes to Closed, and you will have a link in the notes column, to open the delivery information.

Routes

Entry

22

Doc Date

11/08/18

Delivery date

11/09/18

Status

In Transit

Route title

New route

Origin warehouse

Origin address

Roque Funes 2033, Córdoba, Argei

Destination address

Roque Funes 2033, Córdoba, Argei

Business partner

Items

Shipping Type

Any

Zone

Any

Delivery date from

10/08/18

to

11/10/18

Route Master

Add Orders

Add Deliveries

Add Invoices

Find

Refresh Data

Entry	Due Date	BP Code	BP Name	Address	Doc Total	Doc Weight	Doc Volume	Sel	Vehicle	Trailer	Status	Sequence order	Route total Distance	Comments	Notes
591	10/25/18	C23900	Parameter Technology	Rincon 495 , Córdoba, ARGENTINA	1.950.000000	0.000	0.000	<input type="checkbox"/>	Truck A		Pending	2	15.61 mi		
592	10/25/18	C20000	Maxi-Teq	Av Fuerza Aerea 3255 , Córdoba, ARGENTINA	900.000000	200.000	200.000	<input checked="" type="checkbox"/>	Truck A		Closed	1	15.61 mi		Delivered

You can see the timestamp, user logged in the application, and the location where the delivery was confirmed, also with the captured signature image and pictures.

Routes. Delivery confirmation

Document entry: 592

Document No: 592


Delivered at: 11/8/2018 4:20 PM

Delivered by: emanuelferreys@gmail.com


Delivered

Notes

Signature confirmation and pictures



Delivery location



OK Cancel Open Browser Map Location Next

5 Mobile Application

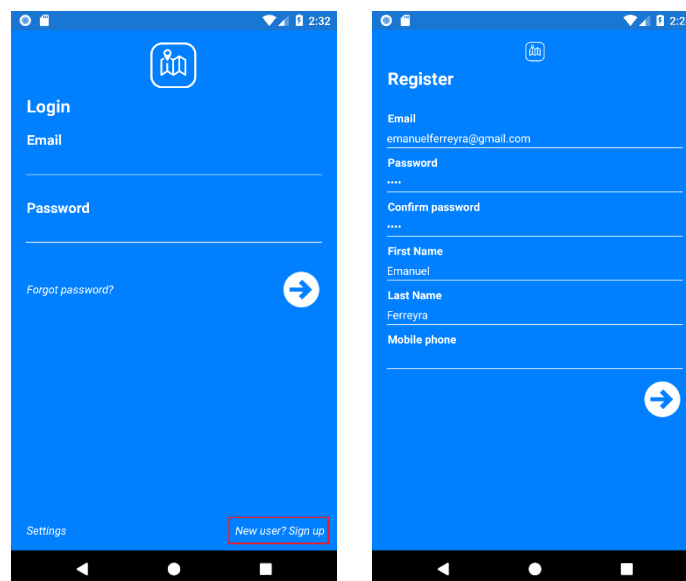
The Routes mobile application is available for free at the Google Play Store and the Apple Store. You must install it into your device from there.



5.1 Registering a new user

The first time you will use the application you will need to register to the platform, by using your email.

Use the [New User? Sign up](#) link to access the Register screen.



5.2 Settings

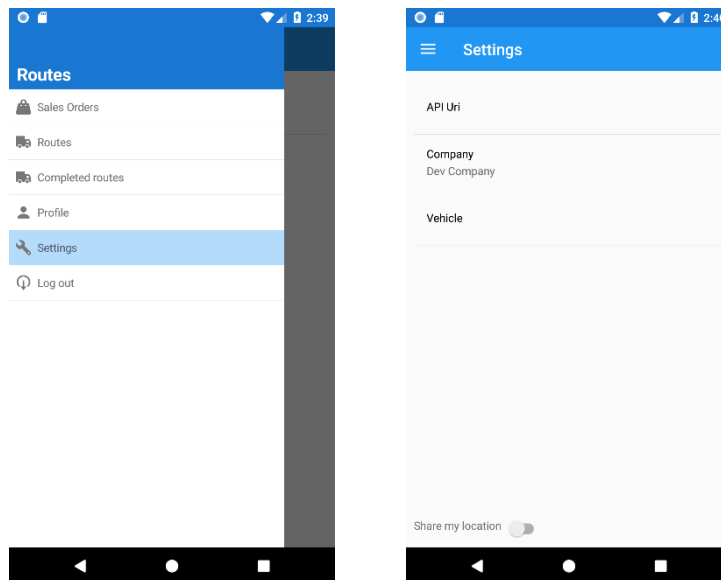
You need to select what company you are going to connect to, and which vehicle you are driving, you do that from the Settings screen.

You can also complete the API Uri, this is the Routes backend address. You can leave this field empty to use the default one.

The companies available for you will be the companies where your user was created and is active. See section [Users](#).

Same logic applies for the available vehicles to select. You will be able to select vehicles from your company, where your user was added as a user. See section [Vehicles](#).

When you have a Company and Vehicle selected you are ready to receive and deliver routes assigned to your vehicle.

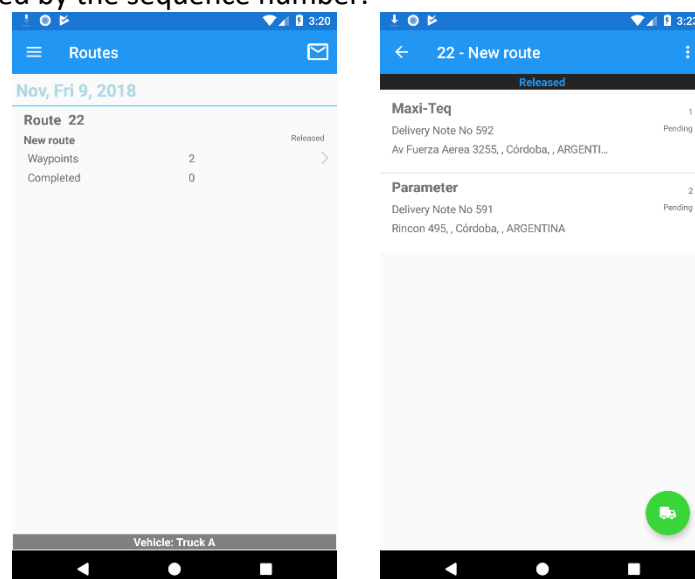


5.3 Routes

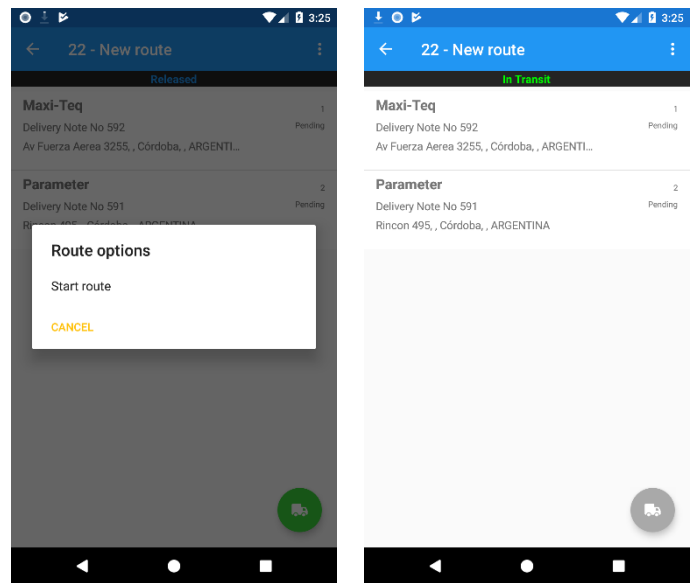
At the Routes menu, you will see the routes assigned to the vehicle you have selected from settings.

The route information includes the title, delivery date, route number, the status and the quantity of waypoints.

Tapping on a route will take you the route details, where you have the documents included in the route, ordered by the sequence number.



When in release status, you have to use the green floating button with the truck, to start the route.
After starting, the route status will change to *In Transit*. This change will be synchronized back to SAP.



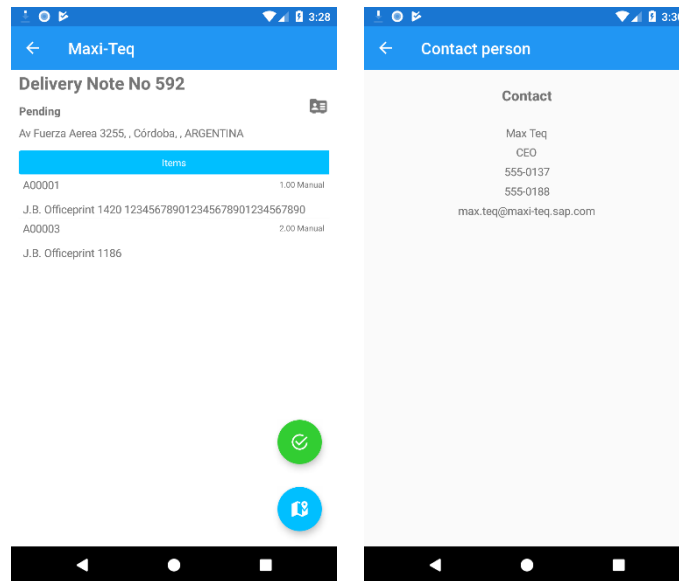
Routes

Entry	22	Origin warehouse	
Doc Date	11/08/18	Origin address	Roque Funes 2033, Córdoba, Argei
Delivery date	11/09/18	Destination address	Roque Funes 2033, Córdoba, Argei
Status	In Transit		
Route title	New route		

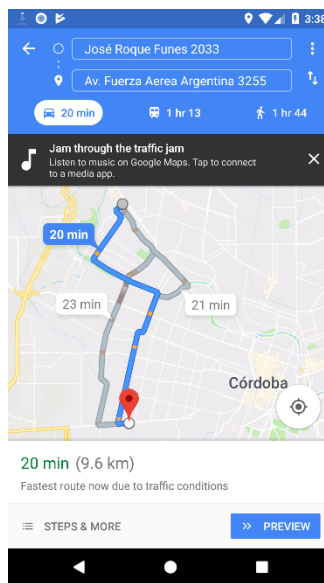
Document Type	Entry	Due Date	BP Code	BP Name	Address
▼ Delivery Note					
	⇒ 591	10/25/18	⇒ C23900	Parameter T	Rincon 495 , Córdoba, ARGENTINA
	⇒ 592	10/25/18	⇒ C20000	Maxi-Teq	Av Fuerza Aerea 3255 , Córdoba, ARGENTINA

5.3.1 Delivering a Document

To deliver a document, the driver will tap on the document, and will see the document details content.
It also has the delivery address, and a link to view the customer contact information

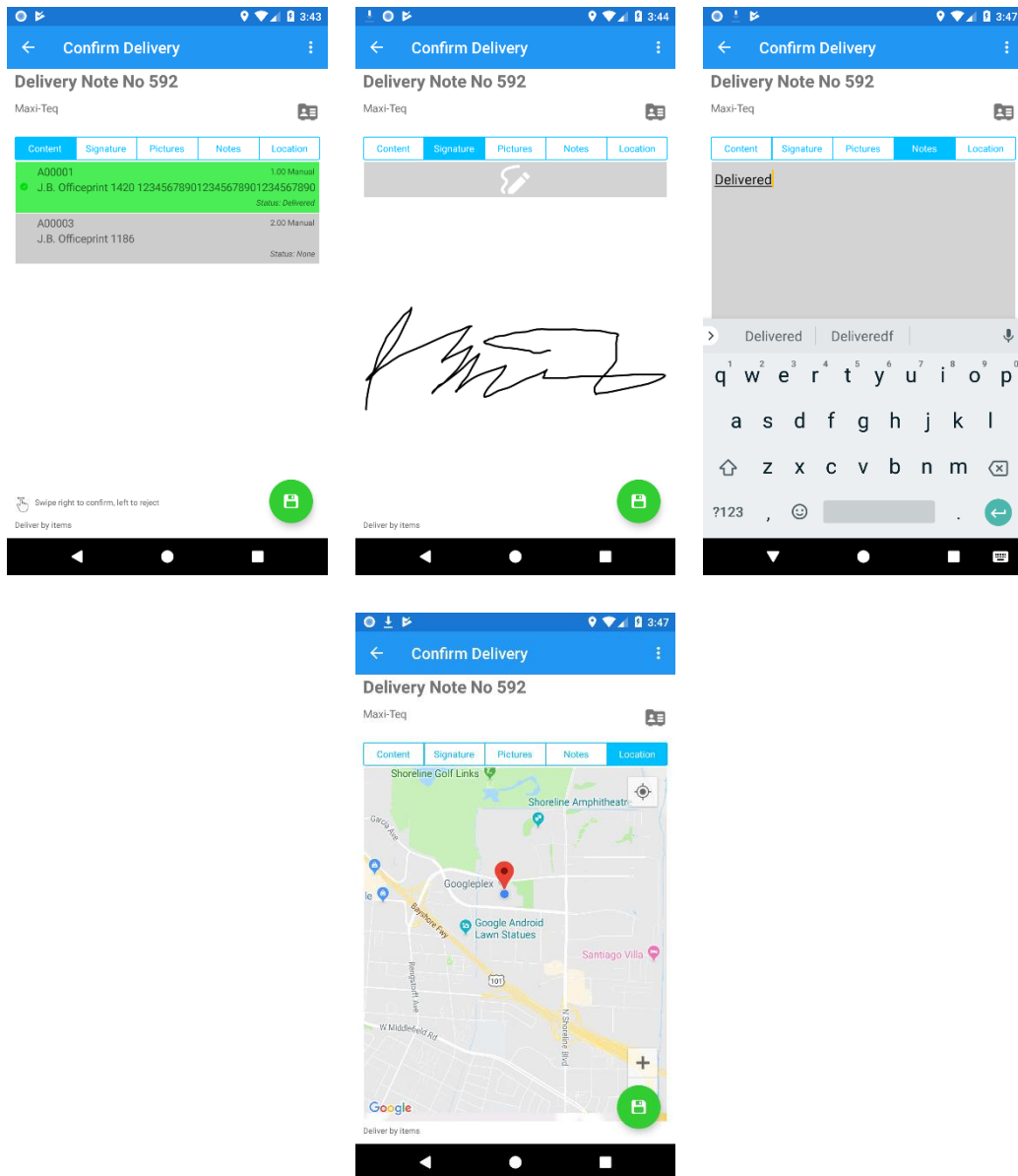


The floating sky blue button with the map in the below section let you open the maps application at your mobile device, with the destination address set, to use the gps navigation system.



And the green button will take you to the confirm delivery step, with the options to:

- Indicate for each item or package in the document if it was accepted or rejected.
- Capture a customer signature.
- Take pictures
- Include text notes
- Save the position (geolocation) where the delivery is being confirmed.



5.4 Completed Routes

When a route is closed or cancelled, is no longer visible from the Routes menu, and it's listed in the completed routes menu.

You can view the route information, including all documents, the captured signatures, pictures and notes.