SMART VENDING

Routing Workflows

Centralized & Mobile Route Planning

ver.2.2. date: 21.02.2017.

Content

1   Document Purpose

Televend Routing Workflows document describes all existing machine filling workflows supported by Televend Smart Vending system.

Document purpose is to provide necessary information to vending operators how each of the supported workflows must be configured and used.

2   Revision history

Version	Date	Author(s)	Change
2.2.	21.02.2017	Romana Rožić	Sub-clusters, tomorrows urgency
2.1.	01.08.2017	Nikola Runjavec Tea Meštrović	Clusters, machine assignment, Use of mobile app, Confirmation of visit action

3 Route planning

There are two types of Route Planning:

1. PRE -KITTING – where pickup is based on stock levels which are frozen at the moment of the route creation. In this model route product/component quantities can be refreshed until products are issued from the warehouse or first machine is visited.
2. LIVE PICKUP – where pickup is always based on current stock levels and constantly refreshed.

Routes can be created according to one of the following models:

1. CENTRALIZED: Pre Kitting routes created on Televend Cloud application
2. CENTRALIZED: Live Pickup routes created on Televend Cloud application
3. MOBILE ROUTING: Live Pickup routes created on Televend Mobile application.

3.1 Centralized routing

Process scheme for centralized planning with pre kitting is following:
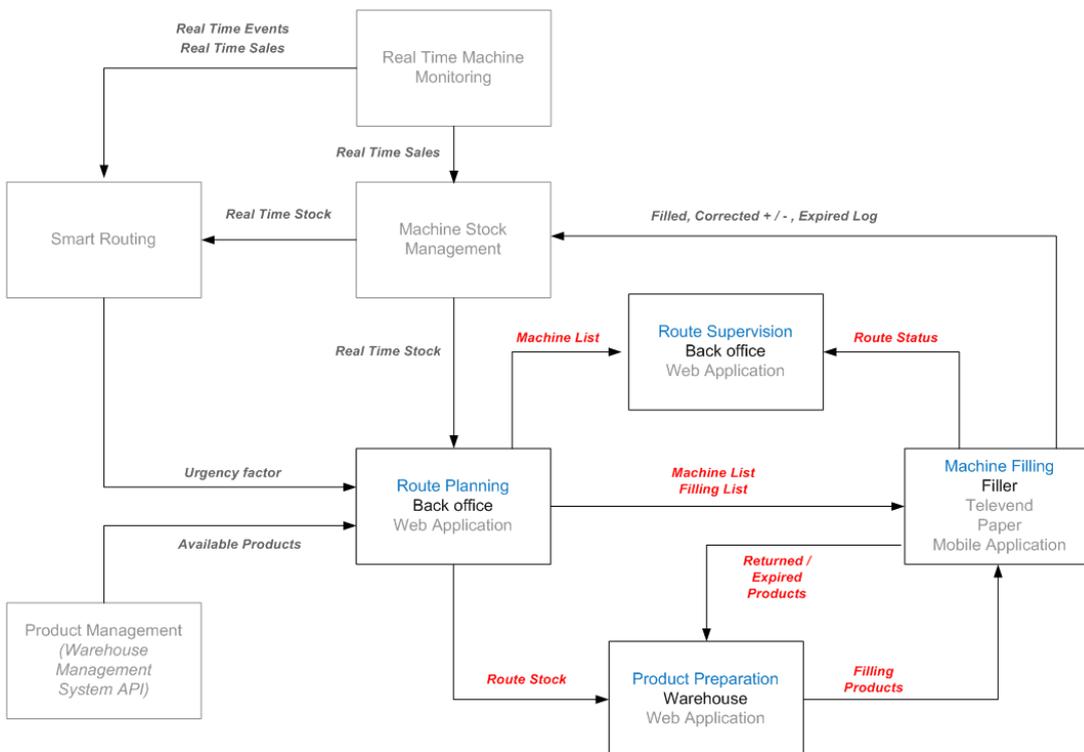
Planning of the route is done in back office using Televend Cloud web application.

Routes are planned by Filler Supervisor and executed by Fillers.

Filler Supervisor assigns vending machines to the Fillers and decides daily which machines route Filler will execute. Route can be executed once Route Order is issued.

Route contains list of machines to be visited, products/components to be filled during visit and total product/component stock required from warehouse for this route, all of which is communicated on the mobile application or exported in pdf.

One or more routes can be assigned to the Filler but only one can be active per Filler.

Basis for selecting machines into the route and assigning the filler for this route is machine assignment. Machines can be assigned to fillers:

1. Directly – using machine assignment tool
2. By Cluster – grouping machines according to some geographical or other criteria and then assigning Fillers to those clusters

3.1.1 Direct Assignment of Machines to Fillers

In order to assign machines directly, in user settings following must be selected. This implies this filler will exclusively be responsible for machines assigned to him.

Machines are assigned in **Administration -> Machine Assignment**

3.1.1.1 Select Filler

User
Fabian Bauer (Filler) ▾
Fabian Bauer (Filler)
Adam Beck (Filler)
Stefan Muller (Filler)

3.1.1.2 Assign Available Machines

Select machines from Available Machines list and click green button to assign to Filler

AVAILABLE			ASSIGNED TO FABIAN BAUER (FILLER)	
☐ NAME	LOCATION		☐ NAME	LOCATION
VM355899 Sielaff	7885 Hamburg Nord		VM355908 Sielaff	7894 Hamburg Nord
VM355900 Sielaff	7886 Hamburg Nord		VM355909 Wurlitzer	7895 Hamburg Nord
VM355901 Sielaff	7887 Hamburg Nord		VM355910 N&W	7896 Hamburg Nord
VM355902 Sielaff	7888 Hamburg Nord	▼	VM355911 N&W	7897 Hamburg Nord
VM355903 N&W	7889 Hamburg Nord		VM355912 Vendo	7898 Hamburg Nord
VM355905 N&W	7891 Hamburg Nord	>	VM355913 Vendo	7899 Hamburg Nord

3.1.1.3 Reassign Machines

To reassign machines first you have to remove assigned machines from Filler Assigned list and then assign again to the new Filler. Select machines and click red button

AVAILABLE			ASSIGNED TO FABIAN BAUER (FILLER)	
☐ NAME	LOCATION		☐ NAME	LOCATION
VM355899 Sielaff	7885 Hamburg Nord		VM355908 Sielaff	7894 Hamburg Nord
VM355900 Sielaff	7886 Hamburg Nord		VM355909 Wurlitzer	7895 Hamburg Nord
VM355901 Sielaff	7887 Hamburg Nord		VM355910 N&W	7896 Hamburg Nord
VM355902 Sielaff	7888 Hamburg Nord		VM355911 N&W	7897 Hamburg Nord
VM355903 N&W	7889 Hamburg Nord	▼	VM355912 Vendo	7898 Hamburg Nord
VM355905 N&W	7891 Hamburg Nord		VM355913 Vendo	7899 Hamburg Nord
VM355906 Sielaff	7892 Hamburg Nord		VM355914 N&W	7900 Hamburg Nord
VM355907 Sielaff	7893 Hamburg Nord	<	Previous 1 Next	
Previous 1 Next				

3.1.2 Assignment of machines through clusters and sub-clusters

3.1.2.1 Creating a cluster

Cluster is a specific group of machines which you group according to your preference, and organization structure.

Clusters can be created in **Administration -> Machine Clusters** by clicking on Add new cluster.

After defining the name of the cluster, click on the cluster to open following window where it is possible to put machines inside by region, location, or machine by machine:

Sub-clusters are groups inside of the cluster which are geographically close to each other. They are grouped together by putting the same number next to location. For example two locations where you put the same number will belong to the same sub-cluster.

3.1.2.2 Adding user to the cluster

In order to organize users into cluster in user settings it is necessary to select following in data access area:

In Cluster lists fillers can be added to clusters by clicking on the following:

Unlike direct machine assignment it is possible to assign multiple users to the same cluster.

3.1.2.3   Sub-clusters

Sub-clusters are a sub unit of a cluster. A cluster can have for example 80 machines which belong to one filler. Since 80 machine are usually too much to visit in one route, using sub-clusters they can be separated into geographical units of machines close to each other. In that way you can have for example 4 groups of machines in the cluster. Sub-clusters have their own urgency number, according to the highest urgency of the machine in that group, which helps you decide if one of the sub-clusters in the tour should or shouldn't be visited.

In routing view the sub-clusters are grouped together in the form of expandable menus, making it faster to decide which machines are going to be visited.

In order to group machines into sub-clusters, it is necessary to "enter" the desired cluster, click on *add sub-cluster* and write the same name for the machines which you need to group.

3.1.3 Create a new centralized route

After you have assigned machines to users or created clusters, you are able to put machines into route.

3.1.3.1   Live pickup

New routes are created in **Routes -> Route List -> Add New Route**

3.1.3.1.1   Select Filler

Select Filler by name and route duration and route type. Default duration is one day and default type is refill route.

1- Filler assigned machines or machines assigned to Filler through cluster, are automatically added to the list when selecting the user

2- URGENCY Factor 4 means highest urgency and 1 lowest. There are additional flags marking the reason of the urgency meaning following:

    a. REFILL - Urgent because popular products are on low stock

    b. SCHEDULED – Urgent because this machine has a scheduled visit in its settings (Machine > Settings > Days until urgent)

    c. LOCATION – Urgent because other machine on this location has higher urgency level

    d. FACING – Urgent because there are more products completely out of stock (empty facing) then allowed. Number of allowed empty facings can be customized.

    e. EXPIRY – Urgent because expiry date is close.

3- If you have smart routing algorithm activated the locations/machines with urgency factor lower than 4 will not be automatically selected in the route and will be grey, but it is possible also to include such machines by clicking on such locations.

3.1.3.1.2   Urgency calculation day -today/tomorrow

1. Calculation day: today - when you are creating routes for current day

2. Calculation day: tomorrow - when you are creating routes for next day (tomorrow)

3.1.3.1.3   Route and the pickup list

Upon save of such route, list of machines and planned actions on them can be exported in PDF or communicated to the filler on the mobile app.

Pickup list is based on real time product and component quantities and communicated on the mobile app.

3.1.3.2   Pre-kitting:

New routes are created in **Routes -> Route List -> Add New Route**

3.1.3.2.1   Select Filler

Select Filler by name and route duration and route type. Default duration is one day and default type is refill route.

Filler assigned machines or machines from cluster, are automatically added to the list, and planned filling quantities are created.

3.1.3.2.2   Confirm or Edit Planned Quantities

Planned quantities are required quantities of product/component from the warehouse.

View and edit quantities by clicking Details arrow. Reserve in percentage can be added to planned quantities.

Telemetry column contains difference between current product stocks in machine and total fill quantity set for those products in machine.

3.1.3.2.3   Save Created Route

To save route click Save button in the right bottom of the screen.

In that moment planned quantities are locked and can be edited only until products are issued from the warehouse or first machine is visited.

3.1.3.3   Route SETUP in pre-kitting model

It is possible to select in Routes > Route list > Route Setup the default type of route to Refill + Cash Collection.

When the route is saved three documents can be generated:

OUTPUT	INFORMATION	FORMAT	INPUT TO PROCESS
Product List (part of Pickup List)	All the products or components needed from the warehouse for created route	PDF XLS CSV	Route Product Preparation
Warehouse List (part of Pickup List)	Required products or component quantities from the warehouse per machine	PDF XLS CSV	Machine Product Preparation
Filling List (part of Pickup List)	Filling product/component quantities per machine per column	PDF XLS CSV	Machine Filling

Pickup list can be downloaded in desired format by clicking **Routing -> Route List -> Export**
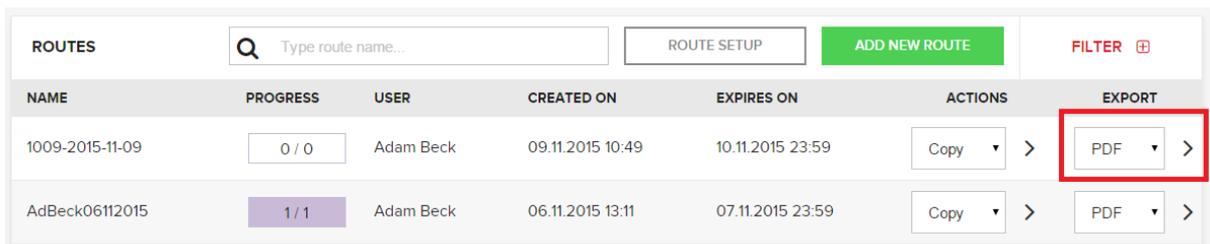
3.1.4 Machine Filling

During machine filling Fillers use:

- Filling list (Printed or on mobile app)
  - Product or component filling quantities
- Televend Box
  - Machine refill

- o Cash collection
- o Planogram update
- o Televend configuration update
- Mobile application (optional)
  - o Check filling quantities
  - o Correct stock after filling if needed
  - o Planogram update
  - o Machine refill
  - o Cash collection

3.1.5 Use of mobile app in pre-kitting model

Every morning the merchandiser can see his route by using the mobile app. When there is an active route the *Routes* tab is green (like shown in the picture).
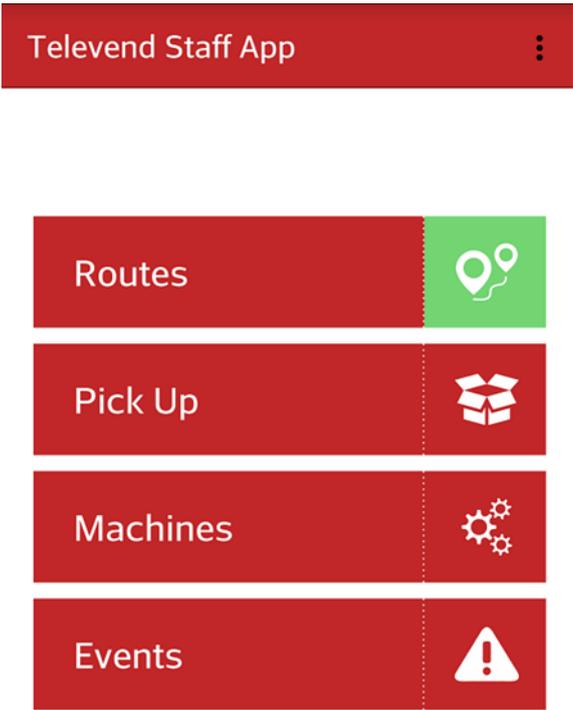
By pressing the Routes tab, the merchandizer can see the machines that are in his route/tour:
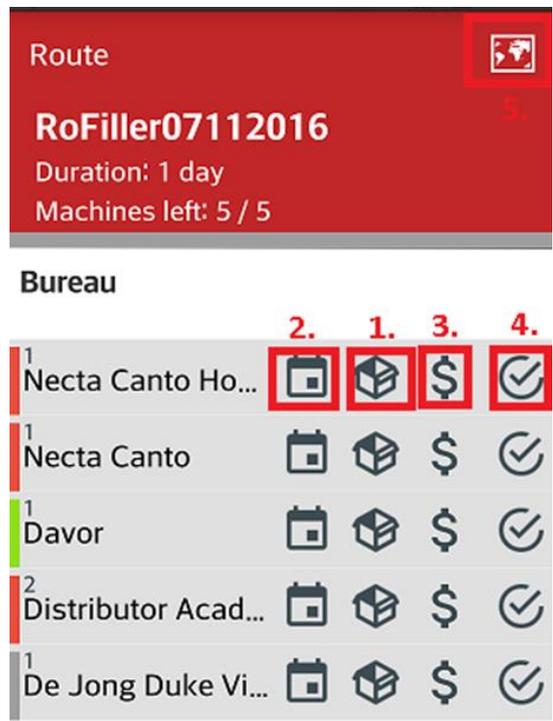
1. Click on this icon to see the pickup list for this machine
2. Click on this icon to set the expiry date for this machine
3. Click on this icon to scan the barcode (the icon is only visible in case cash collection or refill and cash collection route has been created)
4. Click on this icon to execute all the necessary actions on the machine
5. Click on this icon to open a map view of the machines in the route

3.1.5.1 Setting up the expiry date

Each time before refilling the machine, you also have to set up the expiry date for the selected machine (see picture above). By pressing the expiry date icon, a pop up window with time calender appears:
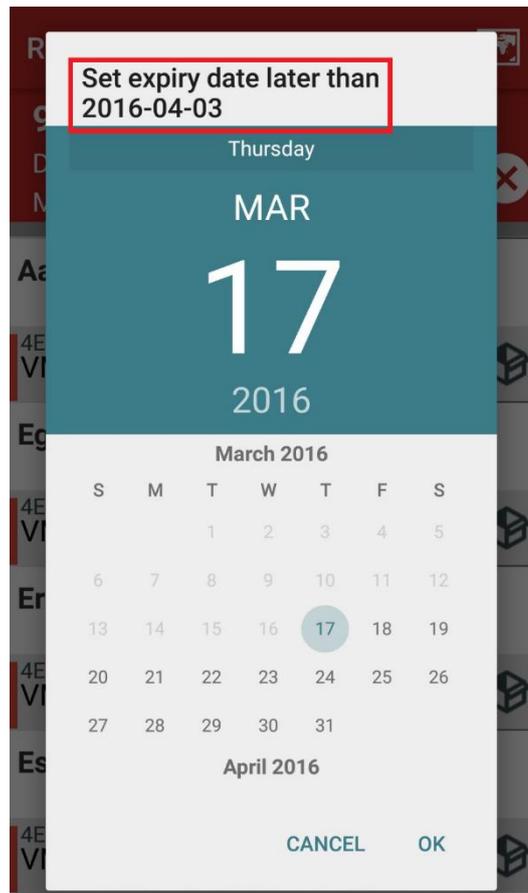
If you don't set the expiry date each time anew, the old date will remain remembered, which will then unneccessary raise the machine's urgency factor. To be sure that you have set up the urgency factor, check if the calendar icon turned green.

While setting the expiry date, you also have the information about the date of your next visit to the machine (area in red) –it is recommended, to remove the products from the machine if they will expire before this date.

3.1.5.2 Scanning the barcode

Press the dollar icon and scan the barcode.

After a successful scan, press ok:
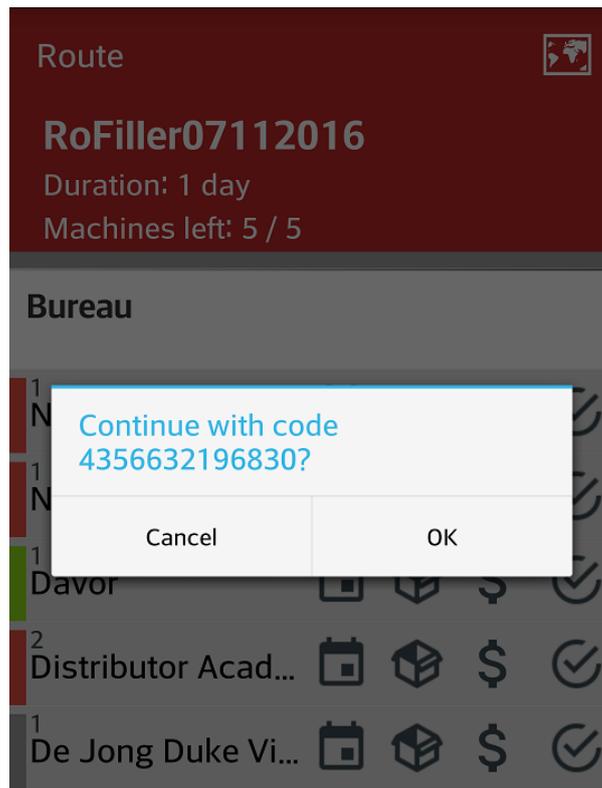
3.1.5.3   Machine refill and/or cash collection

To confirm machine refill and/or to perform cash collection (depending on the route type) press the icon (as shown in the picture below)

After pressing the above marked icon a pop-up window appears, informing you about the actions you're about to perform (planogram push, machine refill, cash collection -depending on route type):

3.2   Mobile Routing

Mobile routing is a route model where fillers have the autonomy to decide which machines to visit and create the routes by themselves. The pickup in mobile routing is refreshed live – everytime when pickup page on mobile app is opened.

Every morning the merchandisers should choose the machines they want to visit on that particular day and then create routes for the chosen machines. It is important to carry out this action in the morning to be sure that they are using the most actual data:
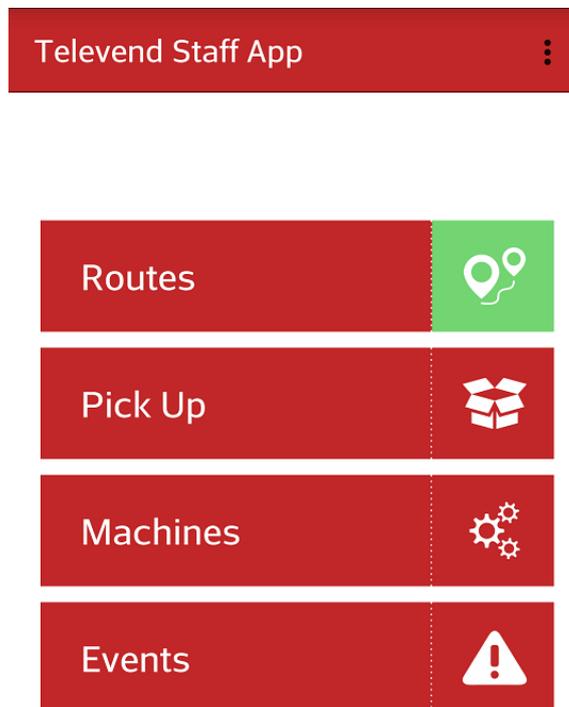
3.2.1 Route creation

A. Click on the route icon

B. Choose the machines you want to add to your route by clicking on the machine first and then on the "save" icon. You should choose the machines with urgency factors 4 and 3.
The letters mark following:
R – Refill
L – Location
S – Scheduled
E – Expiry
F – Facing

If there is a lack of products on machine and some products will also expire soon, then you will be notifed that both reasons raised urgency factor e.g. 4RE
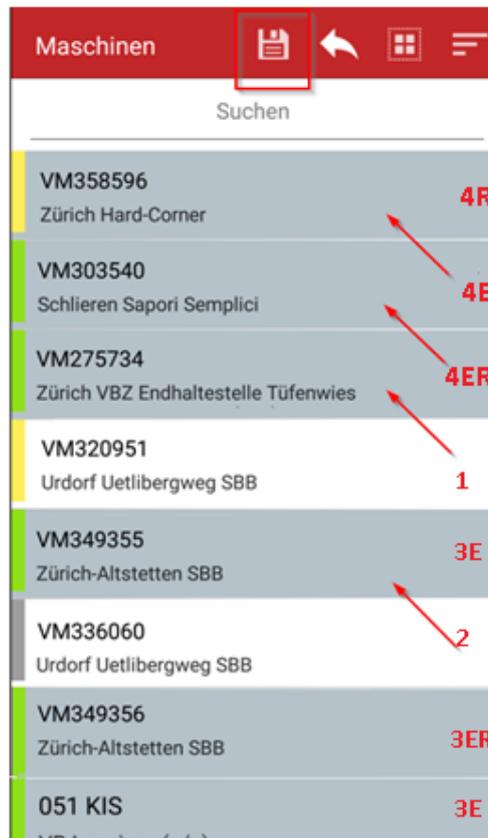
C. A route with its pickup list is created for the chosen machines:
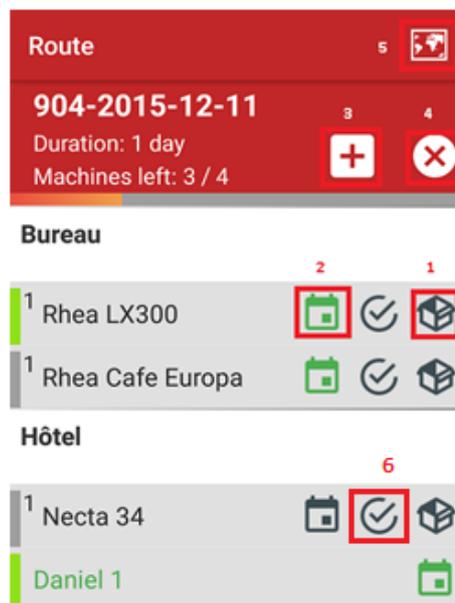
1. Click on this icon to see the pickup list for this machine

2. Click on this icon to set the expiry date for this machine
3. Click on this icon to add additional machines to your route
4. Click on this icon to end the route (you can add the machines that haven't been visited to a new route)
5. Click on this icon to open a map view of the machines in the route
6. Clic on this icon to confirme actions planned for tihs machine (planogram change, refill)

3.2.2 Setting up the expiry date

Each time you add a machine to your route, you also have to set up the expiry date for the selected machine (see picture above). By pressing the expiry date icon, a pop up window with time calender appears:
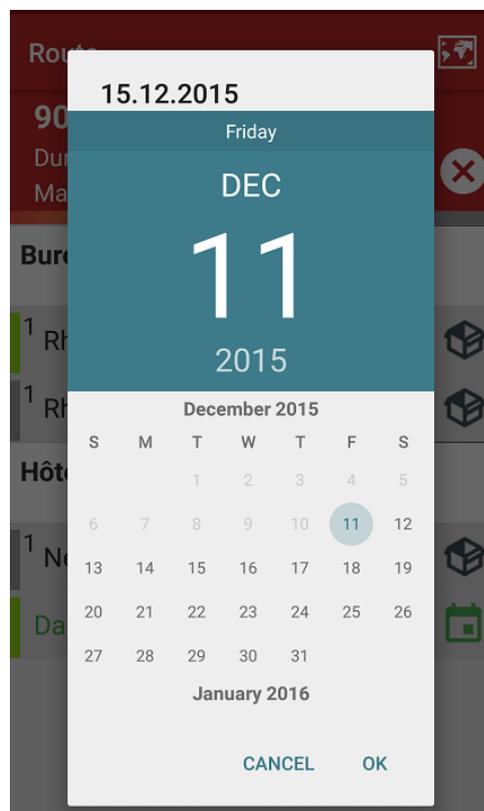
If you don't set the expiry date each time anew, the old date will remain remembered, which will then unneccessary raise the machine's urgency factor. To be sure that you have set up the urgency factor, check if the calendar icon turned green.

3.2.3 Live pickup

By clicking the "box" icon near the machine a pickup list appears. You should pack the products to the box in the same order as displayed on the list.

Pick Up: VM358596	
Products	
Coca Cola Classic 5dl PET	2
Rivella rot 25 cl Dose	1
Red Bull Energy Drink 355ml Dose	1
Red Bull Energy Drink 25cl	1
Bounty Duo 57 g	1
Snickers 2Pack	2

3.2.4 New planogram

If there is a new planogram pending the new products are shown in the pickup list and the ones that have been replaced are not shown.

Mitnehmen: VM302150	⊞
Produkte	
Red Bull Energy Drink 25cl	1
⊞ Snack Attack (Twix Cappuccino 46g×2)	10

Planogram changed ·
new product added

3.2.5 Failed vends

If there are failed vends in the chosen machine (since the last refill), a red icon with the number of failed vends is shown (picture under).

To fill the machine to maximum values, the merchandisers should also take failed vend quantities when packing the products into the box. There is always a possibility that the products from the registered failed vends were delivered to the customer.

3.2.6 Machine overview

For a more detailed view of the machine in route, simply click on the machine:

3.2.7 Details

The initial screen shows general data about the machine.

3.2.8 Fill

The *Fill* tab shows the product quantity for every column (spiral); you can also edit the product quantity hier:
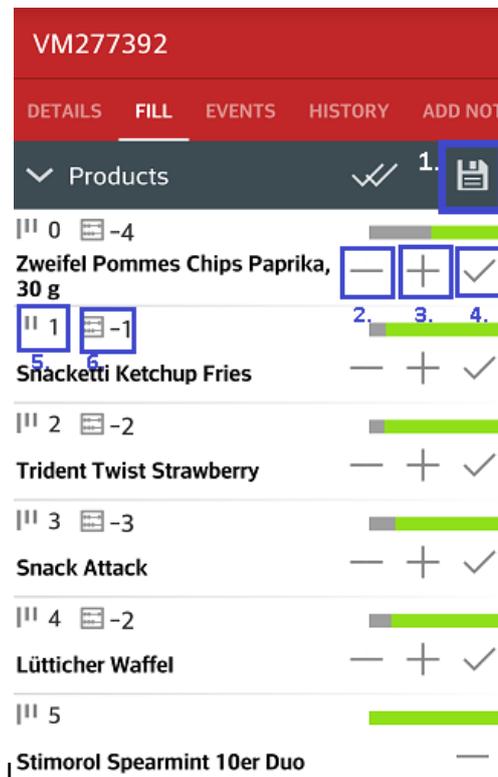
These tabs have different functions that are shown in the picture above and below:

1. Save changes
2. Remove product quantities from the spiral
3. Add product quantity to the spiral
4. Refill the column to the predefined fill quantity
5. Number of spirals
6. Number of products missing
7. Undo the changes

If you choose function number 4, all the spirals/columns will be refilled to their fill quantities. In this moment, your changes are not saved und you can easily undo them (function no. 7 in the picture below). If you want to save your changes you have to save them by selecting function no. 2.

3.2.9 Events

In the Events tab you can see all unsolved warning and alarm events. This way you can see all active problems with your machines.

If there is a machine in "red" status, it is recommended to check the event that caused it. Should you encounter an error with machine's payment system or sensor, it is definitely recommended to check that as well and to send a mobile note to the call center.

3.2.10 History

In History tab you can see all resolved warning and alarm events as well as history of info events for this machine.

3.2.11 Note

In Note tab you can create custom events. For example, if you encountered a serious problem, you should create an alarm event for it.In case you encountered some kind of problem with products, you should create a warning event.In case you just want to add some kind of info comment, you should then create an info event.

4   Confirmation of visit actions

There a various actions that can be confirmed on Televend box during the machine visit.
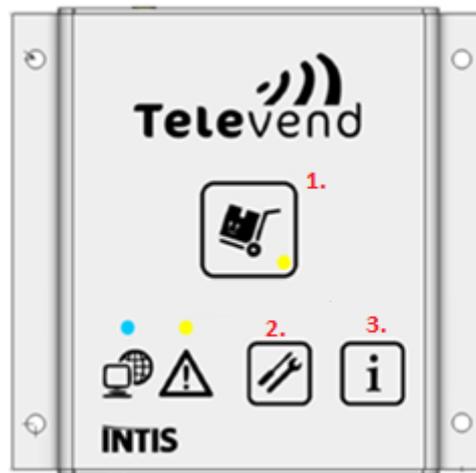
4.1   Planogram change

To download a new planogram first you have to enter the service mode - hold the Button 2 pressed for three three seconds. After that press the Button 1 and the new planogram will be downloaded. After you have sucessfully downloaded the new planogram, you must leave the service mode - hold the Button 2 pressed for three three seconds again.

4.2   Televend configuration update

To download a new configuration first you have to enter the service mode - hold the Button 2 pressed for three three seconds. After that press the Button 3 and the new configuration will be downloaded. After you have sucessfully downloaded the new configuration, you must leave the service mode - hold the Button 2 pressed for three three seconds again.

4.3   Machine refill

For all route models machine refill is done by pressing the Button 1. If the mobile app is used, machine can be refilled by pressing a refill confirmation button on Route tab.

If machine is not in the Refill route, refill can not be done because this action has to be planned to be triggered.

4.4 Cash collection

If route type is Refill and Cash collection, cash collection report will automatically be generated with refill by pressing Button 1. So the merchandiser can press the button only once to confirm all actions defined in the route.

If route type is Cash collection, cash report will be generated by pressing the Button 3.

If the mobile app is used, cash collection can be done by pressing the refill confirmation button on Route tab.

If route type is Refill, cash report can not be generated because this action has to be planned to be triggered.

4.5   Machine Filling Outputs

In Refill log all the details about machine filling can be found. Go to **Reports -> Refill Log** to find it.

REFILL LOG					PDF ▾	DOWNLOAD REPORT		FILTER ⊟

Period		Machine	Employee	Action	Source
30.11.2015	30.12.2015			- ▾	- ▾

REFILL	EMPTY FACINGS	DATE	LOCATION	MACHINE	PRODUCT SALDO/CAPACITY	DETAILS
✔	3	29.12.2015.	Al Oruba Medical Clinic	90400275		⌃

TIME	EMPLOYEE	COL	PRODUCT	ACTION	QUANTITY	FILL		SOURCE
12:54:16	Reden Elnar	67	Pepsi Can 1*24*355 Ml	Filled	4.0	5.0		Web
12:54:16	Reden Elnar	66	Mirinda orange	Filled	1.0	5.0		Web
12:54:16	Reden Elnar	65	Mirenda Citrus 1*24*355	Filled	1.0	5.0		Web
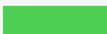
Important information found in refill log:

- Empty Facing
  - How many facings (columns/selections) where empty at the moment of refill
- Employee
  - Name of employee responsible for action recorded in refill log
- Action
  - Filled
    - Quantity of filled products forecasted in route planning
  - Corrected
    - Corrections done (+/-) after refill if there is difference
  - Returned
    - Extra products not filled in machine (reserve)
  - Expired
    - Products removed from machine due to expiry