DualInventive
Transforming Rail Safety

MTinfo 3000 mobile app
User Manual

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1 VERSION HISTORY

Version number	Date	Change log	Reference
1.4.0	24.08.2023	Removal: 'emergency' in contacts	
1.5.0	08.09.2023	Format changes, Disclaimer	
1.6.0	22.09.2023	Addition: Notifications	
1.6.1	26.10.2023	Modification: Notification logic diagram	
1.7.0	16.01.2024	Addition: Time zone feature (Screenshots) Modification: Rebranded, Terminology (Alerts to Notifications)	
1.7.1	26.01.2024	Addition: Instruction tile improved	6
1.8.0	26.03.2024	Addition: Return via mobile application	7.6
1.8.1	08.07.2024	Modification: Screenshots on switching protection zones	7.3, list item 6, list item **Error! Reference source not found.**
		Terminology change to MTinfo 3000 mobile app and web app	All
1.9.0	13.11.2024	Addition: SRACs, DI Technical Support	Safety Related Application Conditions, DI Technical Support
1.9.1	29.11.2024	Modification: Status page (system health)	Status page, Start screen
2.0.0	09.05.2025	Modification: Login (IDP), Company code entry, SRAC	Login, Select and switch company, Safety Related Application Conditions
2.0.1	17.06.2025	Addition: New error icon for protection zone and rail device during switching and RTS, Security Contact Modification: Login session duration, Status Page to 'Status page'	Errors and warnings during switching, Real-time status, DI Security Contact Login

2 SAFETY RELATED APPLICATION CONDITIONS

Safety Related Application Conditions OR SRAC(s) are essential requirements that must be fulfilled to ensure the safe use of MTinfo 3000. You will find references to SRACs throughout the User Manual.

SRAC MTI 16	The user (operator) must follow the real-time status (RTS) and notifications in the mobile app and respond.
SRAC MTI 17	The real-time status (RTS) information always prevails over a mobile device notification.
SRAC MTI 18	Use a mobile phone or tablet with push message functionality. Use the same phone number linked to the assigned user (for example, by using the same SIM card).
SRAC MTI 19	Use the latest mobile app of MTinfo 3000 on your mobile device.
SRAC MTI 20	Do not use mobile devices with ad blockers.
SRAC MTI 21	When the 'lock' icon appears for a project in the MTinfo app, the project has not yet been released. Tap the 'lock' icon to view the name and mobile phone number of the person responsible for releasing the project.
SRAC MTI 22	Contact IT to confirm the mobile device works correctly. Set up a procedure to ensure the correct display and interpretation of information from MTinfo 3000, including colours and text.

3 INTRODUCTION

This user manual describes the process of securing protection zones via the MTinfo 3000 mobile app. Rail devices such as the ZKL 3000 RC, RDI 3000 and RSS 3000 can be remote controlled via the MTinfo 3000 mobile app to secure protection zones. The app can also display the real-time status of rail devices like ZKL 3000 RC, RDI 3000 and RSS 3000.

For information regarding specific rail devices, please refer to the applicable user manuals.

For information regarding managing protection zones, please refer to the user manual "MTinfo 3000 web app".

4 APPLICATION

The MTinfo 3000 mobile app allows users to remotely operate one or more protection zones in a safe, effective, and efficient manner to gain safe track access. Dual Inventive's own private secured network is used to connect to rail devices such as ZKL 3000 RC, RDI 3000 and RSS 3000.

4.1   Scope

The MTinfo 3000 mobile app allows you to:

- View the projects for which you are authorised.
- Secure and unsecure protection zones using rail devices such as the ZKL 3000 RC, RDI 3000 and RSS 3000.
- View the real-time status of these rail devices.

4.2   Technical specifications

Using the MTinfo 3000 mobile app requires the following specifications:

- The MTinfo 3000 mobile app is compatible with smartphones/tablets running iOS or Android.
- To install the MTinfo 3000 mobile app a minimum storage capacity of 25 MB is required.
- An internet connection is required to use the MTinfo 3000 mobile app.
- Dual Inventive recommends using a tablet to view documents using the MTinfo 3000 mobile app.
- To view uploaded documents, a separate app might be needed (e.g. Adobe Reader for PDF documents).

5 CONDITIONS AND INSTRUCTIONS

> ⚠️ **WARNING**
> Users should not block MTinfo 3000 push messages or SMS to prevent missing critical notifications.

> ⚠️ **WARNING**
> Please read all safety instructions carefully before using rail devices such as the ZKL 3000 RC, RDI 3000 or RSS 3000. Please ensure you fully understand the system and its functions. When the correct safety measures are not followed, there is a risk of electric shock, fire or even death.

5.1   Conditions for use

Only use the MTinfo 3000 mobile app when the following criteria are met:

- The user holds an in-date competency for all of the rail devices being used.
- The user has been assigned the appropriate user rights in MTinfo 3000.
- The user has been authorised to use the MTinfo 3000 mobile app.

As a competent user you are responsible for:

- Any relevant paperwork, usernames, passwords and any authorisation codes assigned to you.
- Managing your password and your PIN and never sharing this information with others.

5.2   Instructions

- You will need a username, company code and password for the MTinfo 3000 mobile app.
- Additionally, you should ensure your mobile phone number is correctly entered in MTinfo 3000 with the correct country code (e.g. +44 for UK), as this is used for authorisation during the first login.
- You can change the desired language, see the user manual MTinfo 3000 web app.
- Only start using the MTinfo 3000 mobile app when your smartphone or tablet is fully charged.
- Always take care of your own safety within the railway environment according to the applicable and most up-to-date legislation.
- Issues may be encountered, which means protection zones cannot be switched. For more information about these notifications, see Chapter 0.
- Use the phone with the same phone number as registered to your personal account in MTinfo 3000 web app.
- Check whether the used rail devices have the correct certificates. Please refer to Dual Inventive's website for the list of required certificates.
- Use the latest app and web version of MTinfo 3000 on your mobile device. (SRAC MTI 19)
- Do not use mobile devices with ad blockers. (SRAC MTI 20)
- Contact IT to confirm the mobile device works correctly. Set up a procedure to ensure the correct display and interpretation of information from MTinfo 3000, including colours and text. (SRAC MTI 22)

6 START USING THE MTINFO 3000 MOBILE APP

6.1   Download and installation

1.   Go to the app store on your smartphone and search for "MTinfo 3000". If there are multiple versions, select the correct one.

2.   Download the free MTinfo 3000 mobile app.

3.   Accept all requests for additional permissions (like receiving notifications and using your GPS location).

6.2   MTinfo 3000 mobile app symbols
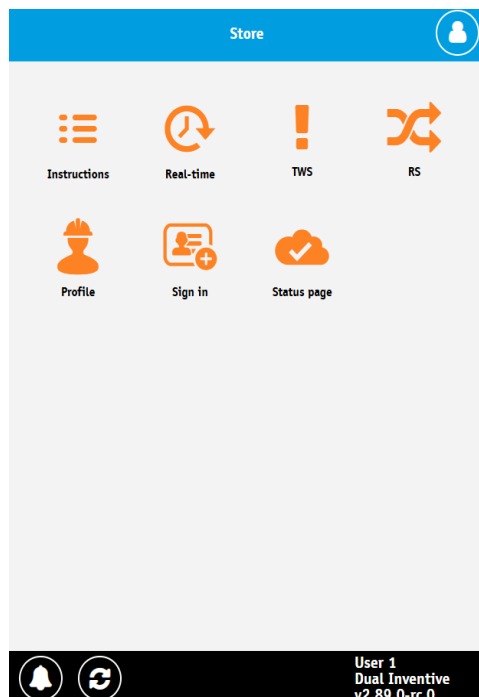
The MTinfo 3000 mobile app uses the following symbols.

ICON	MEANING
🔔	Shows all notifications which have been sent to your device by MTinfo 3000 for the last seven days and shows banner(s).
🔄	Refreshes the screen.

6.3   Login

❗	NOTE
	You can only log in with the correct user rights. Please contact your internal contact person to obtain them.

1.   Open the MTinfo 3000 mobile app and select "Login" in the top right corner.

2. The login screen appears.

- Enter the Email or username.

- Enter the password.

- Tick the box "Accept agreement".

- Tap "Log In".

- If you want to read the Terms of Use, tap the underlined words "Accept Agreement" and you will be redirected to the 'Terms of Use of MTinfo 3000'.

- If you have forgotten your password, tap "Forgot your password" and follow the instructions.

Note

You will stay logged in for *7 days,* unless you log out manually.

6.4 Two-factor authentication
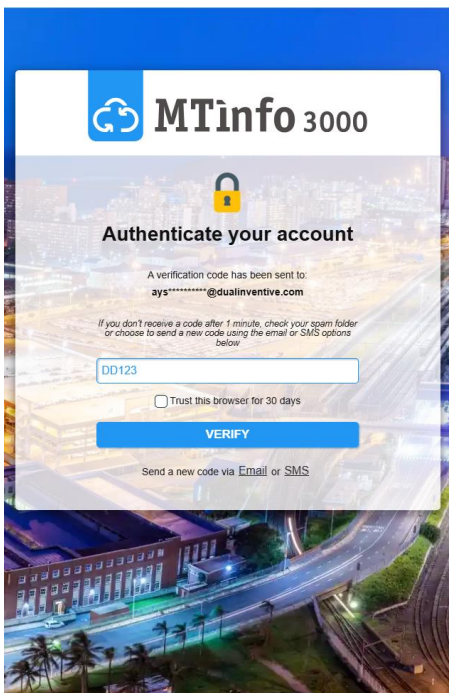
- **You will receive a two-factor authentication (2FA) code via email.** If the email is not received or the code has expired, you can request a new code to be sent via email or SMS to the phone number linked to your MTinfo 3000 account.

1. Enter the 2FA code.

2. Tap "Verify".

Note

- The authorisation code will expire after 30 days. If you do not log into the app within a month, you will receive a new authorisation code the next time you log in.

- If you do not receive an authorisation code, please speak with your internal contact person for more information. Your phone number might have been entered incorrectly in your MTinfo 3000 account.

6.5   Select and switch company
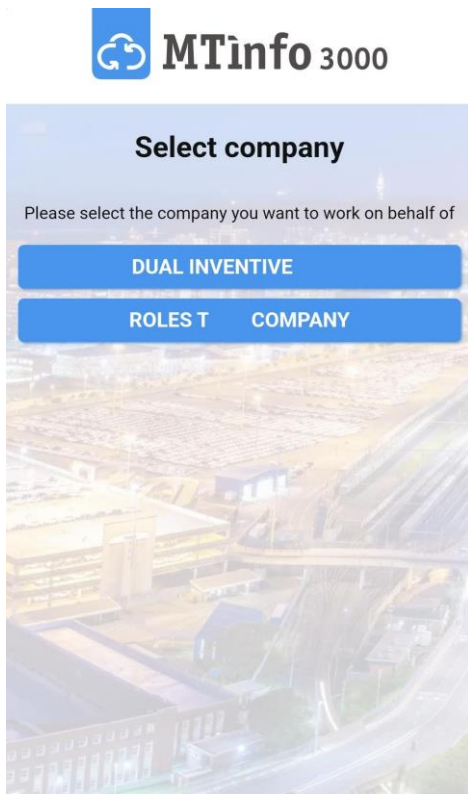
1. After you log in successfully, select your company.

2. To change companies after login, tap the account button and select "Change Company."
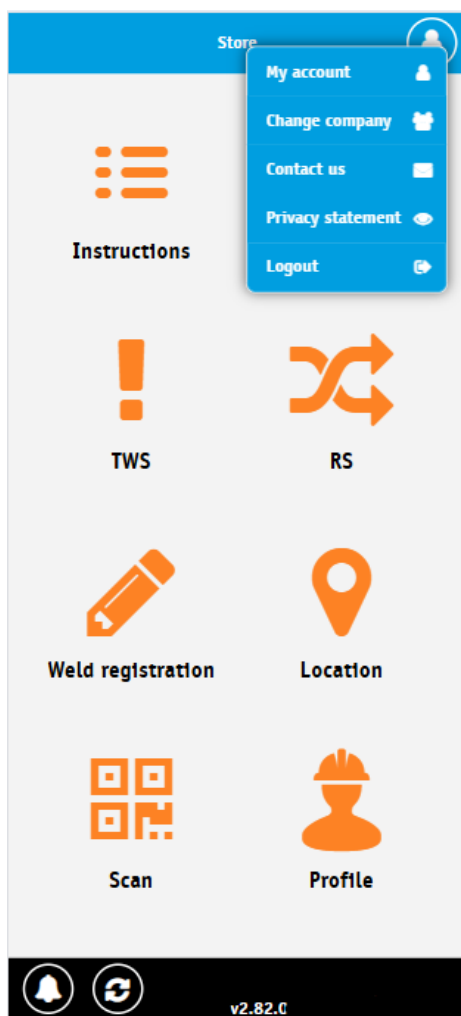
6.6   Logout
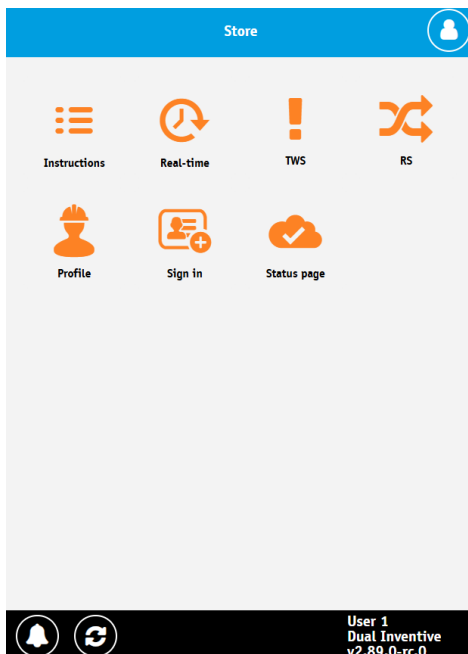
1. Tap the account button in the top right corner.

2. Select "Logout".

Note

*   You will be taken back to the home screen.
*   When you are done using the app, you can close it.

6.7   GPS-location

Upon opening the real-time status tile, the MTinfo 3000 mobile app might ask you to allow the use of your phone's location. If you do not give the app permission to use the location of your phone, your location will not be linked to the MTinfo 3000 mobile app. You can always change these permissions through the settings menu on your phone.

6.8   (Push) Notifications

The MTinfo 3000 mobile app will, upon first login, ask permission to send push notifications to your phone. You should always accept these permissions.

6.9   Start screen

Once you have installed and opened the MTinfo 3000 mobile app, the start screen appears. Once logged in, the MTinfo 3000 mobile app will show you a list of all the functionalities you have access to. A light orange tile indicates that you do not have the proper rights to access the tile. If you are not able to access certain tiles, please speak with your internal contact person. A dark orange tile indicates you have the full rights to access that tile.
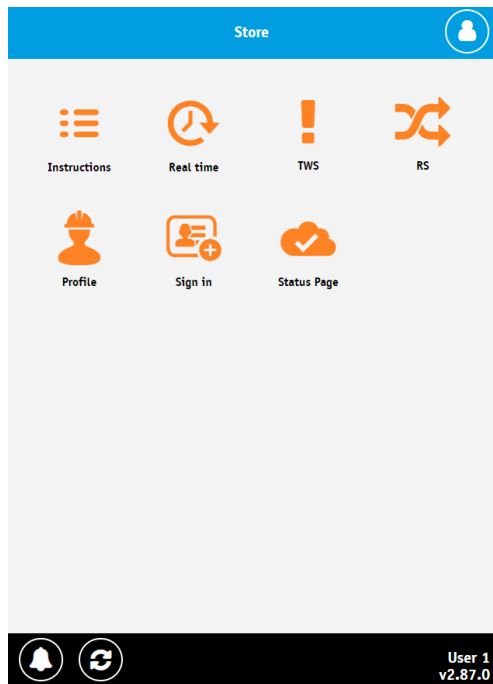
- The "Instructions" tile provides access to technical drawings and other information uploaded by the Project planner or Project designer in the MTinfo 3000 web app.
  It also has an upload function, which accepts images and/or PDF files. You need to be authorised for this function.
- The "Real-time" tile provides real-time information about projects and rail devices (see Chapter 6).
- The "RS" tile is used for switching protection zones (see Chapter 7).
- The "Location" tile is used for setting the location of a rail device without GPS that is installed in the track.
- The "Profile" tile offers the possibility to create a new profile or import an existing profile for the MTinfo 3000 mobile app.
- The "Sign in" tile is used for signing in or out with your account.
- The "Scan" tile offers the possibility to scan QR codes of rail devices.

|	NOTE
	The future version of the manual will provide details on the Instruction, Location, Profile and Scan tile will be elaborated in the future version of this manual.

7 SWITCHING

7.1   Conditions for switching

You can switch single or multiple protection zones in one action.

Before and during switching, please be aware of the following situations:

- If a rail device needs to be moved to a different location, please contact the person with the project's right "Design" and change the design according to the process in MTinfo 3000 web app.
- Non-released projects are indicated by a *red padlock*. Selecting one of these projects will display the name and phone number of the project leader. You will not be able to switch any devices on a project until it has been released.
- When the scheduled controller responsible for switching falls ill during a shift please contact the project's person with right "Planning" and change the planning according to the process.
- When the 'lock' icon appears for a project in the MTinfo app, the project has not yet been released. Tap the 'lock' icon to view the name and mobile phone number of the person responsible for releasing the project. (SRAC MTI 21)
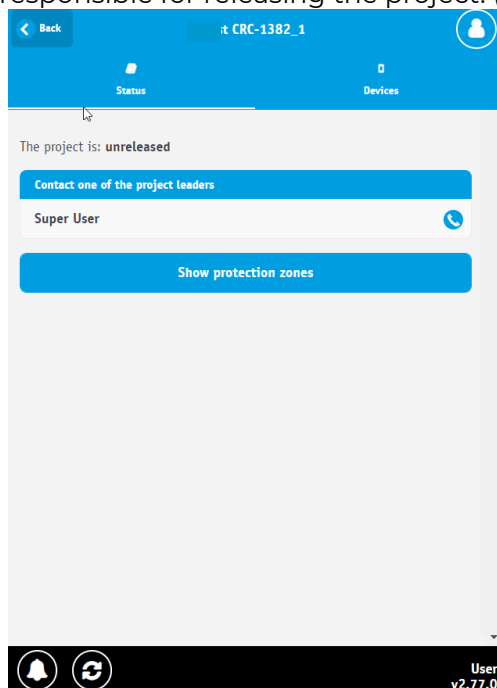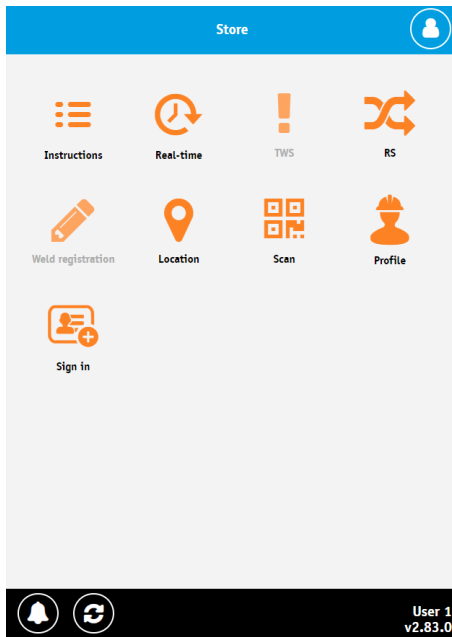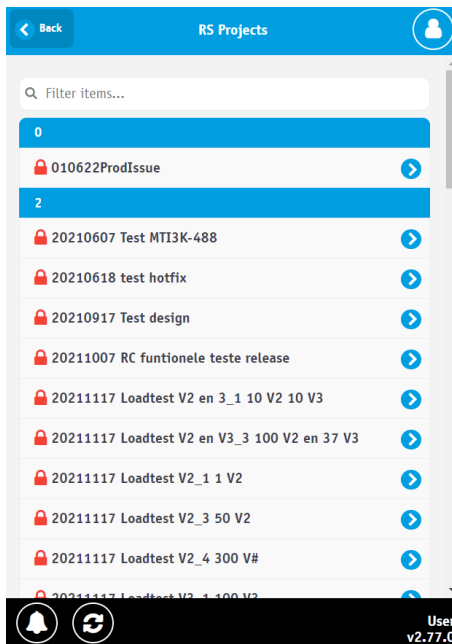

⚠	**WARNING**
	In case the connection is lost with a rail device, make sure that the key to switch the device is always available for the switcher.

7.2   Switching single protection zone

One protection zone can contain one or more types of rail devices such as the ZKL 3000 RC, RDI 3000 and RSS 3000 so those devices will be switched with the same action.
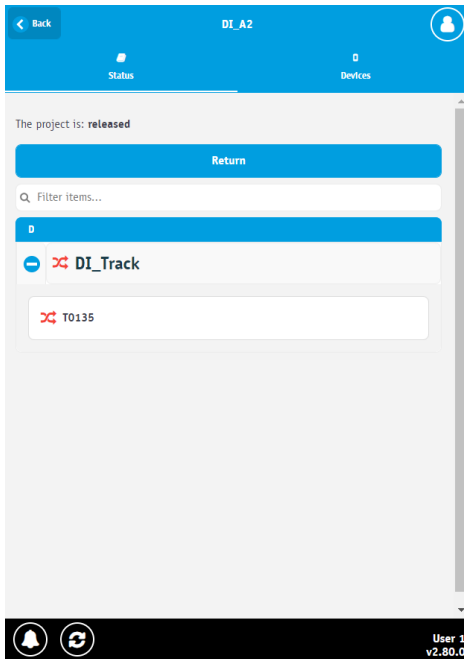
1. Tap the "RS" tile.

2. Tap the project for which you want to switch a protection zone.

Note

- You can only switch a protection zone for released projects which are marked with a green open padlock icon.
- Unreleased projects have a red closed padlock icon.

3. Tap the "**+**" icon to show the rail devices assigned to the protection zone.

4. Tap the protection zone you want to switch.

Note

- If a protection zone has no rail devices, the zone is disabled and the message "No devices assigned to protection zone" is shown.
- If you are not an assigned operator for the selected protection zone, you will see the error "You are not allowed to access the page" when you tap the projection zone.
- Rail device data is updated in real-time.
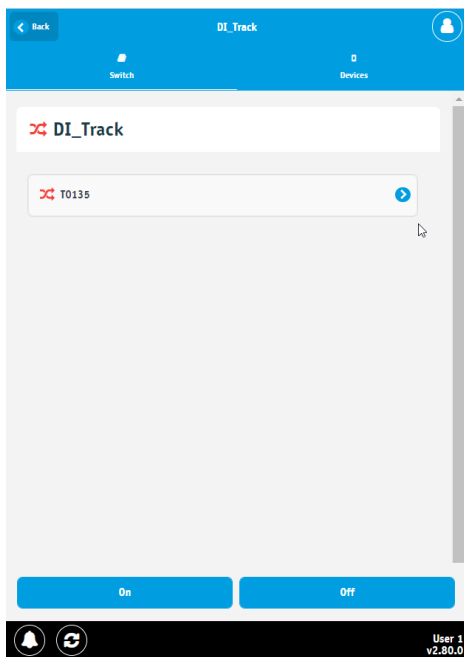
5. Select "On" to secure the protection zone by activating the attached rail devices.

6. Select "Off" to unsecure the protection zone by deactivating the attached rail devices.

Note

- The protection zone icon is coloured:
  - green if all rail devices within the protection zone are successfully activated.
  - orange if not all rail devices are currently activated or if a rail device is reporting problems.
  - red if all of the rail devices are currently de-activated
  - light grey if the protection zone has no rail devices or if the status is unknown.

- The latest status of all rail devices in the protection zone is indicated as follows:
  - green indicates the rail device is currently successfully activated and no problems are reported.
  - red in all other cases.
 - light grey indicates the status is unknown.
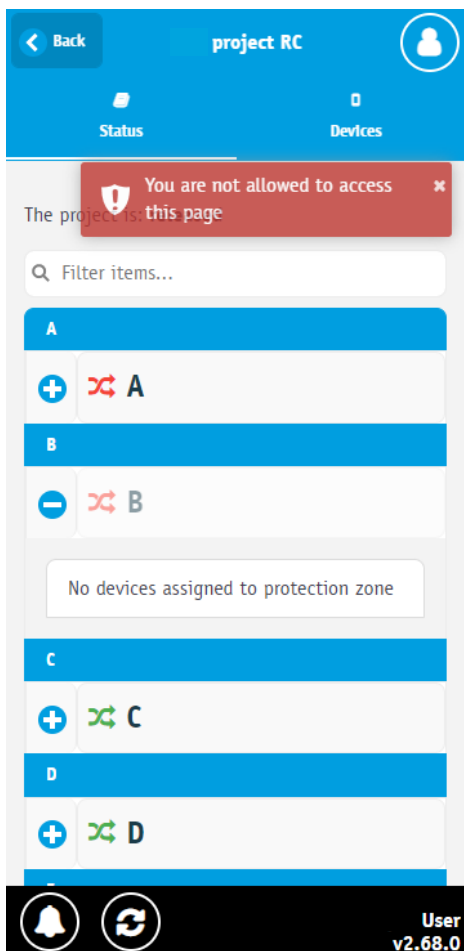
- If you are not allowed to operate the protection zone at the current time, the On/Off buttons will be disabled and the error message "You are not allowed to operate zone 'D' at this time" will be shown. Refresh the page to recheck using the refresh button at the bottom of the screen.
- Rail device data is updated in real-time.
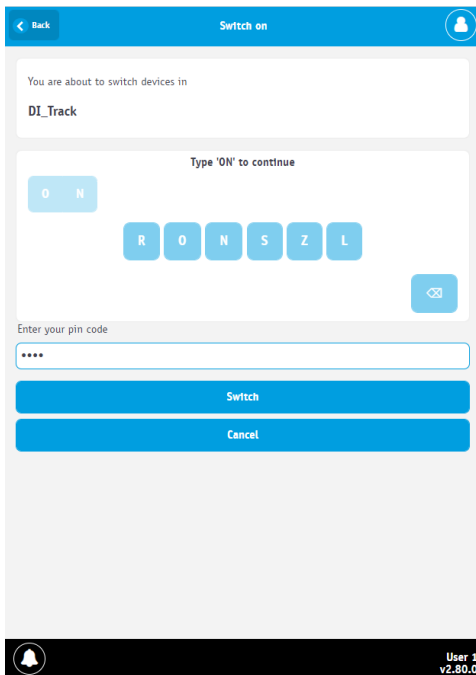
7. Tap the proper letters to spell "ON" or "OFF" depending on the action you chose.

8. Enter your pin code.
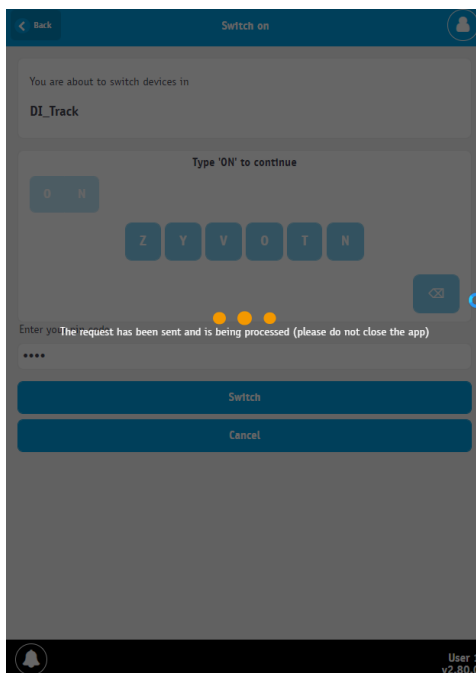
9. Tap "Switch" to continue or "Cancel" to abort.

• A loading screen is shown while the request is being processed.
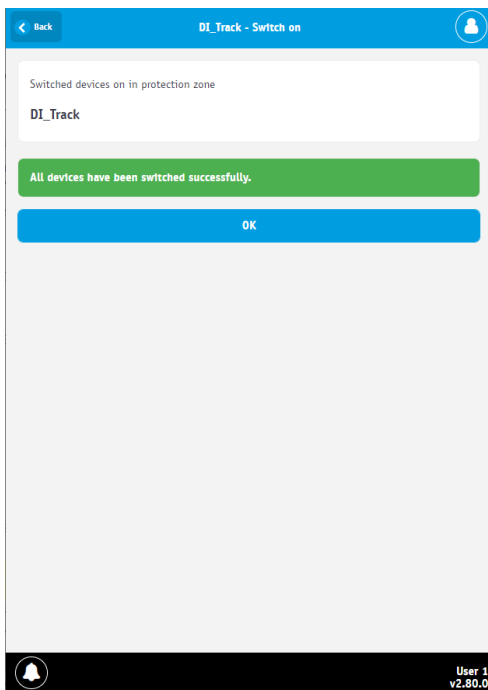
- If the correct PIN is entered when switching 'ON', the rail device will switch to the on. Refer to the rail device manual for information about the visual indication on the rail device itself.

- If the correct PIN is entered when switching 'OFF', the rail device will switch off. Refer to the rail device manual for information about the visual indication on the rail device itself.

## 7.3   Switching multiple protection zones

> **NOTE**
> It is only possible to switch multiple protection zones at once if this setting is enabled for your company. This setting can only be changed by the MTinfo 3000 administrator of your company.

One protection zone can contain one or more types of rail devices such as the ZKL 3000 RC, RDI 3000 and RSS 3000. These devices can be switched by using the same action. Multiple protection zone switching allows the creation and individual switching of protection zones. For example by creating two protection zones, one with ZKL 3000 RCs and one with RDI 3000 these protection zones can be switched separately.
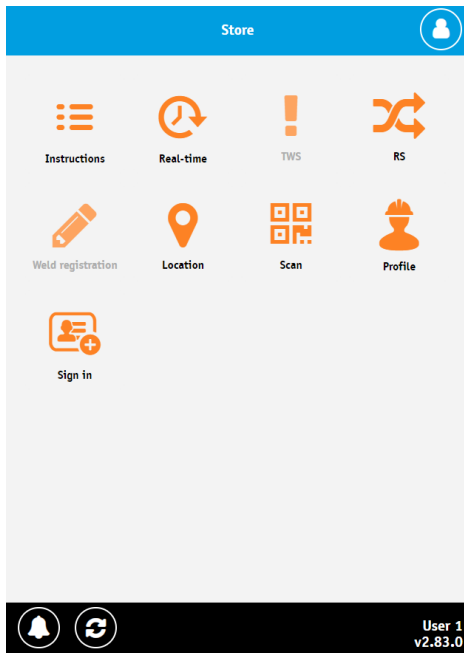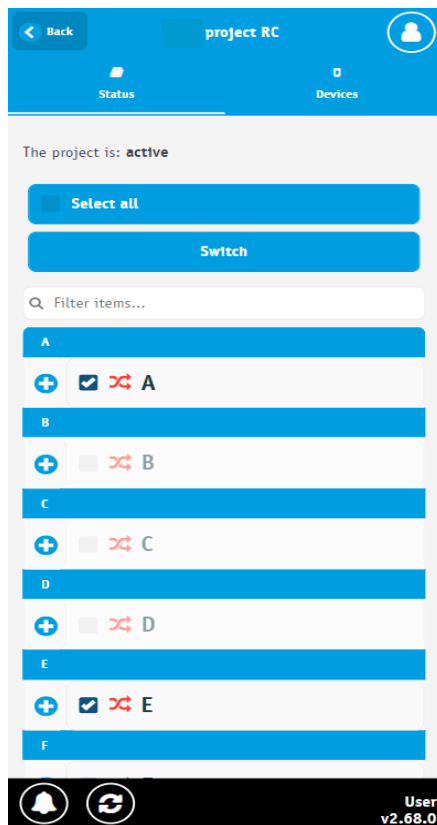
1. Tap the "RS" tile.
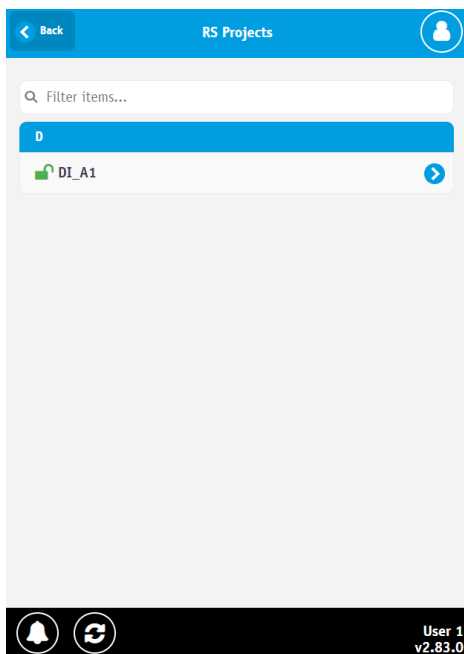
2. Tap the project for which you want to switch a protection zone.

Note

- You can only switch protection zones for a released project that is marked with a green open padlock icon.
- Unreleased projects have a red closed padlock icon.

3. Tap one or more protection zones you want to switch or use the "select all" button to check/uncheck all protection zones.
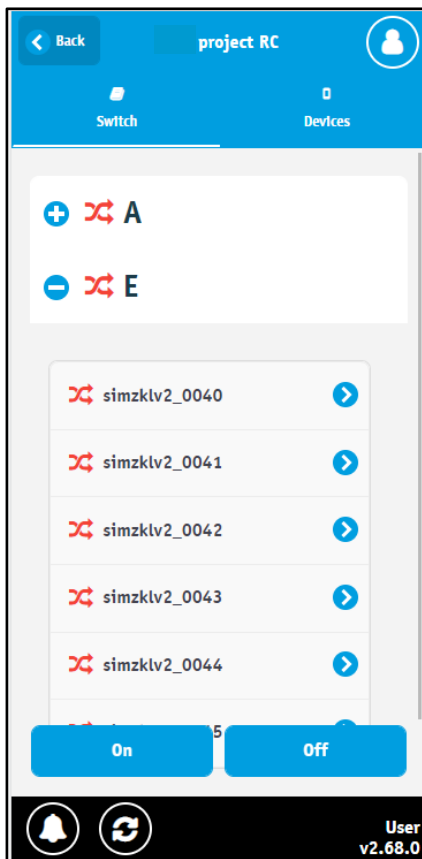
4. Tap "Switch" to continue.
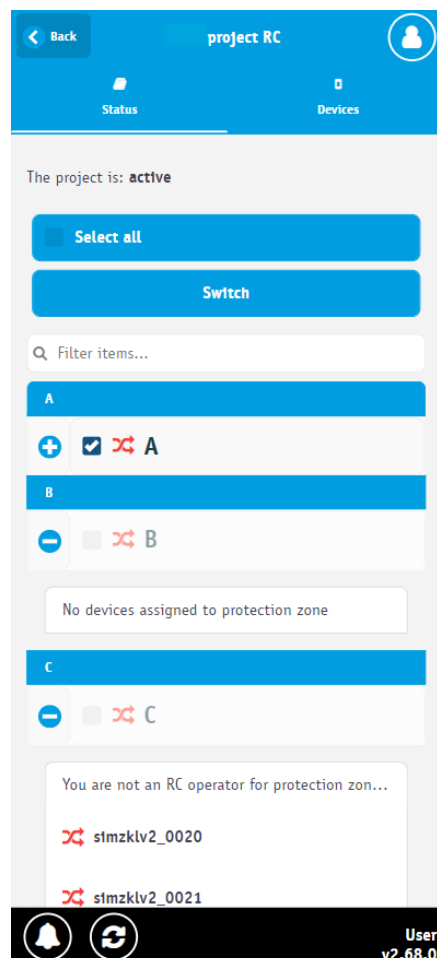
- If a protection zone has no rail devices, the zone is disabled and the message "No devices assigned to protection zone" is shown.
- If you are not an assigned operator of the protection zone, the zone is disabled, and you will see the message "You are not an operator for protection zone 'X'".
- If you are not allowed to switch at the current time, the protection zone is disabled, and you will see the message "You are not allowed to operate protection zone 'D' at this time.".
- Rail device data is updated in real-time.
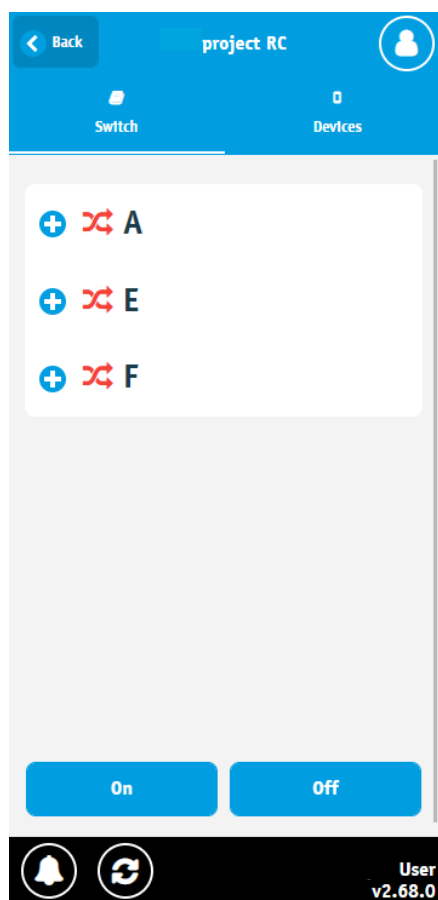
5. Tap "On" or "Off" to switch the rail devices in the selected protection zones On or Off respectively.

Note

- The protection zone icon is coloured:
  – green if all rail devices within the zone are successfully activated.
  – red if all rail devices within the zone are successfully dectivated.
 – light grey if the protection zone has no rail devices or if the status is unknown.

6. Tap the "**+**" icon to show the rail devices assigned to the protection zone.

Note

- The latest status of all rail devices in the protection zone is indicated as follows:
  - green indicates the rail device is currently successfully activated.
  - red indicates successfully deactivated.
  - light grey indicates the status is unknown.
- You can tap the rail devices for more details.
- Rail device data is updated in real-time.
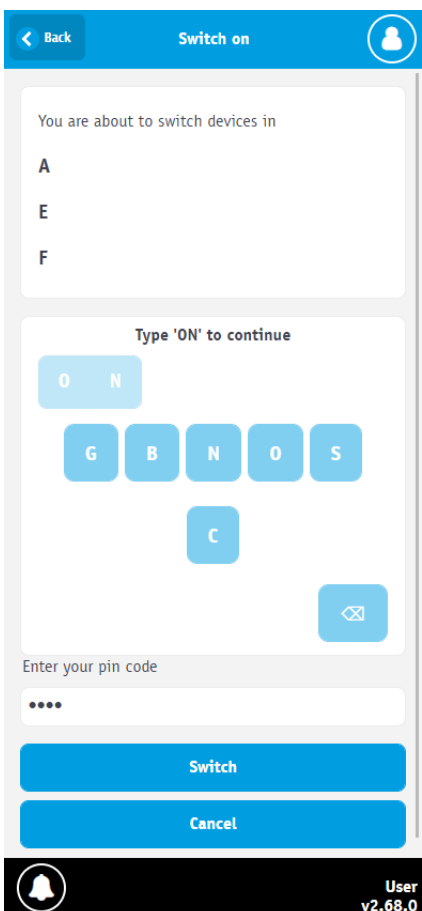
7. Tap the proper letters to spell "ON" or "OFF" depending on the action you chose.

8. Enter your pin code.

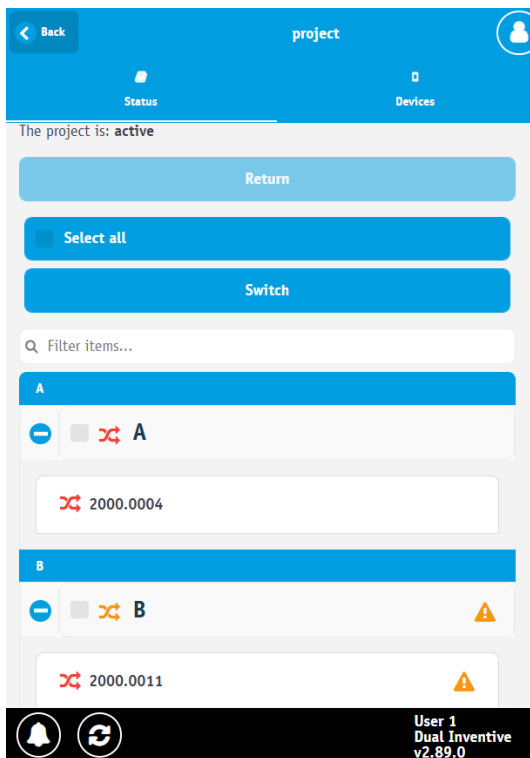9. Tap "Switch" to continue or "Cancel" to abort.
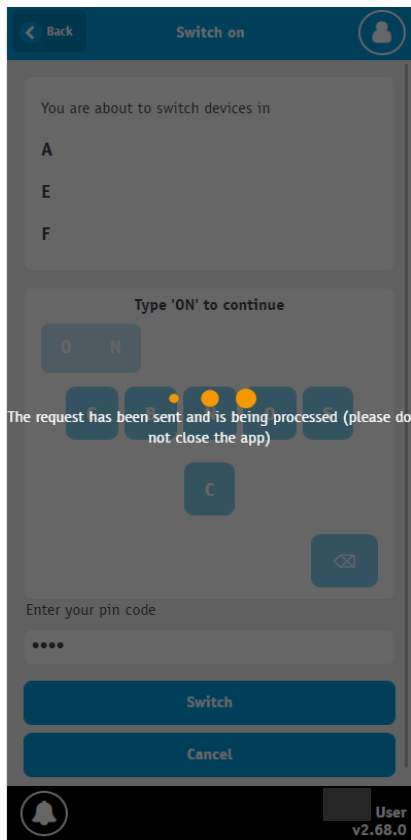
- A loading screen is shown while the request is being processed.
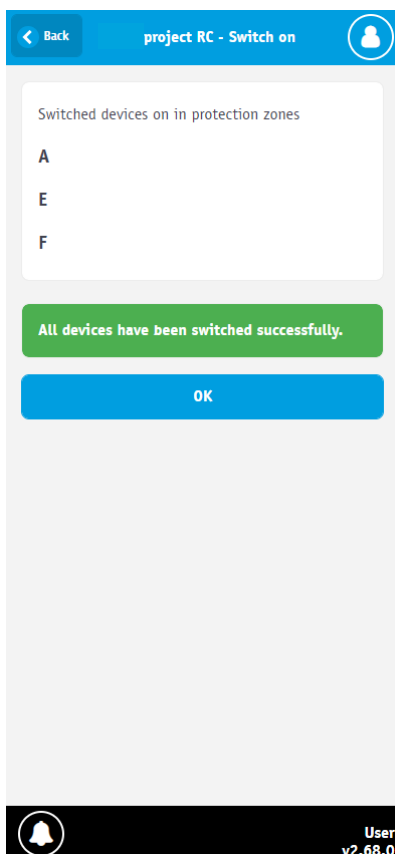
- When the request is processed successfully the result will look similar to this screen.

7.4 Errors and warnings during switching

1. In case there are errors and/or warnings, the result will be similar to this screen.
2. If the switch action is not successful, *repeat switch action.*
3. The system groups errors and warnings by protection zone and by rail device.
   a. If a rail device or protection zone is deactivated, it will be in red.
   b. If a rail device or protection zone cannot be switched, or is showing a different error, the system will show the icon ⚠️
4. To resolve the issue, refer to the section "Troubleshooting" of the rail device's user manual. If this does not solve the problem, contact <u>DI Technical Support</u>.
5. Tap "OK" to return to the "Switch zone" page.
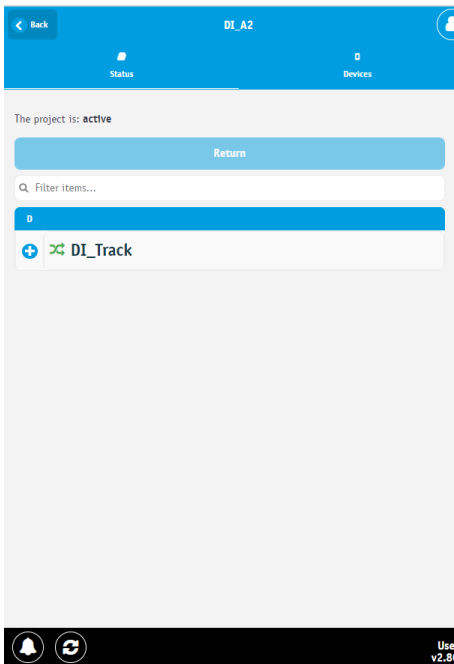
If the 'Return' button is disabled, ensure that **all protection zones are deactivated** in order to **enable** it.

7.6 Return via mobile application

This feature allows **operators on site** to 'Return' a project through their mobile application once it is released. The purpose of this feature is to **free the device(s)** under the released project(s) so that the **device(s) are immediately available** for other projects.
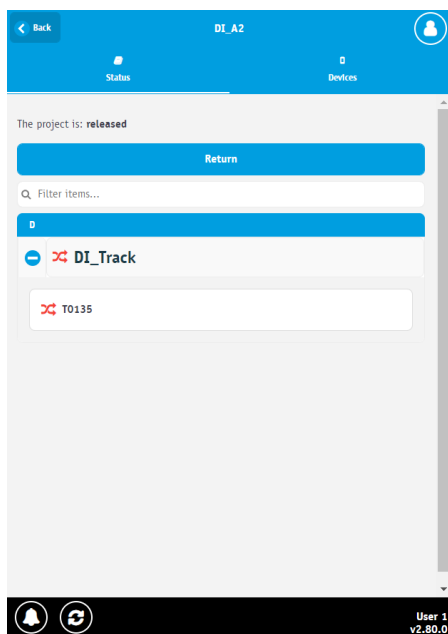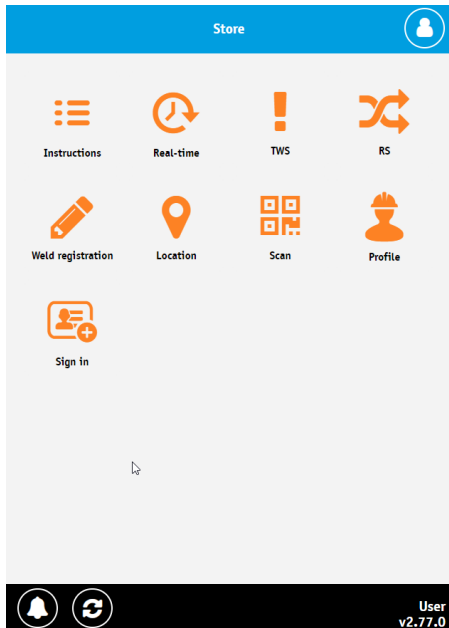

1. Tap on 'Return'.
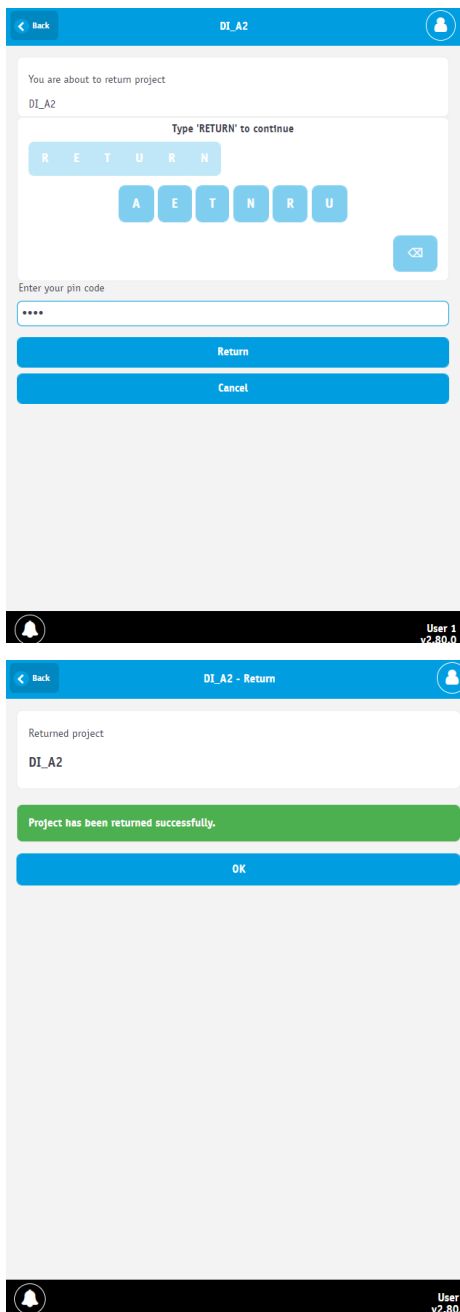
2. Tap the proper letters to spell "RETURN".

• Enter your pin code.

• Tap "Return" to continue or "Cancel" to abort.

3. Project is successfully returned via mobile application.

8 REAL-TIME STATUS

You can view real-time status about projects and rail devices. This section explains how to receive real-time information about a rail device, for example a ZKL 3000 RC.

1. Tap the "Real-time" tile.
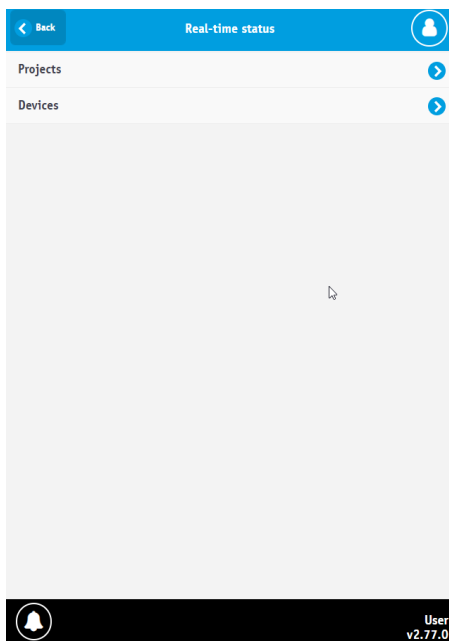
2. Tap "Devices".

- Optional: tap "Projects" and select the project with the rail devices you would like to see.
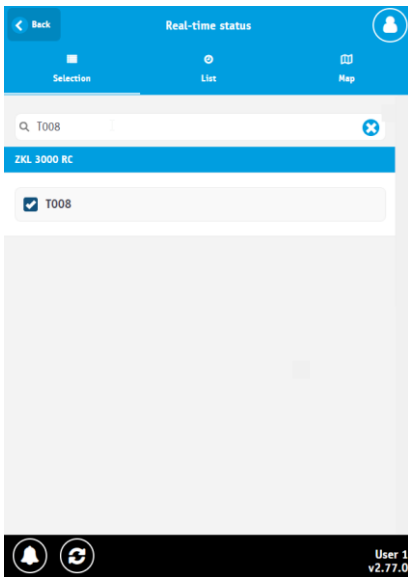
3. Select a rail device.

4. Tap "List" or "Map".
5. Tap the rail device.

- Real-time information of rail device appears in time zone selected by the user under 'My profile' in MTinfo 3000 web app.
- The table below explains the real-time information.

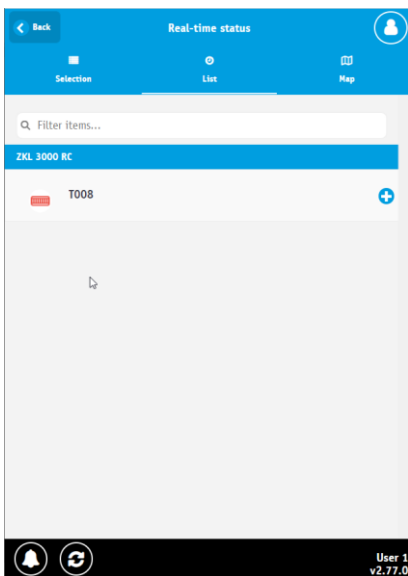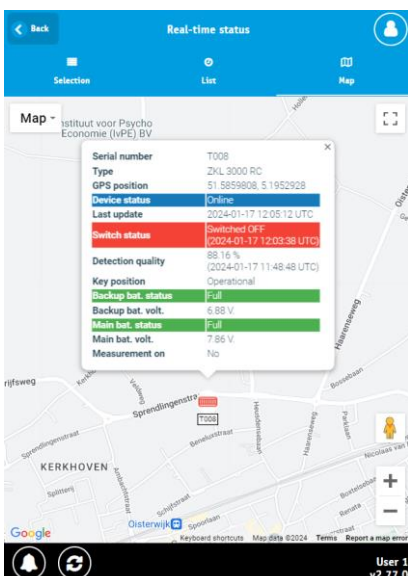| ITEM	EXPLANATION
Serial number	Serial number of the selected rail device.
Type	Type of rail device that is being displayed, in this case a ZKL 3000 RC.
GPS position	GPS position of the selected rail device.
Device status	Status of the rail device. Online when the rail device is connected to MTinfo 3000. Offline when the device is not connected with MTinfo 3000.
Last update	Timestamp of the last received message from the rail device in user's time zone.
Switch status	Rail device is switched ON or OFF.
Detection OK	Depending on the type of rail device, shows if the detection is OK or not OK. Reference the rail device manual for additional information on detection.
Detection quality	Detection quality (%) between the rail device and the track. Anything above 0% is considered OK. The detection quality will only show as not OK when the value is exactly 0%.
Key position	• OPERATIONAL: rail device can be switched remotely. • ON: rail device has been switched on manually and can therefore not be operated remotely. • OFF: rail device has been switched off manually and can therefore not be operated remotely.
Battery status (backup, main)	• Full: sufficient power (67-100%). • Half: adequate power (34-66%). • Low: low power (16-33%). • Critical: almost empty (4-15%). • Depleted: completely empty (0-3%). • Removed: completely empty (0%).
Battery voltage (backup, main)	Shows the voltage of the batteries of the rail device.
Device state	• Yes: The device is activated. • No: The device is not activated.

Note

a.   If a rail device shows an error or warning, the RTS will show the icon ⚠ over it.

b.   The real-time status (RTS) information always prevails over a mobile device notification. (SRAC MTI 17)

9 NOTIFICATIONS

A notification is either a message or a reminder of a message sent by MTinfo 3000 to a user's smartphone or tablet. A reminder for a critical notification is an extra service to help the user but it is explicitly not a mitigation of an identified risk.

The notification service starts as soon as the rail device has been assigned to a project and the project is released. It is the responsibility of the user to act upon these notifications.

> ⚠️ **WARNING**
>
> The user (operator) must follow the real-time status (RTS) and notifications in the mobile app and respond. (SRAC MTI 16)
>
> Use a mobile phone or tablet with push message functionality. Use the same phone number linked to the assigned user (for example, by using the same SIM card). (SRAC MTI 18)
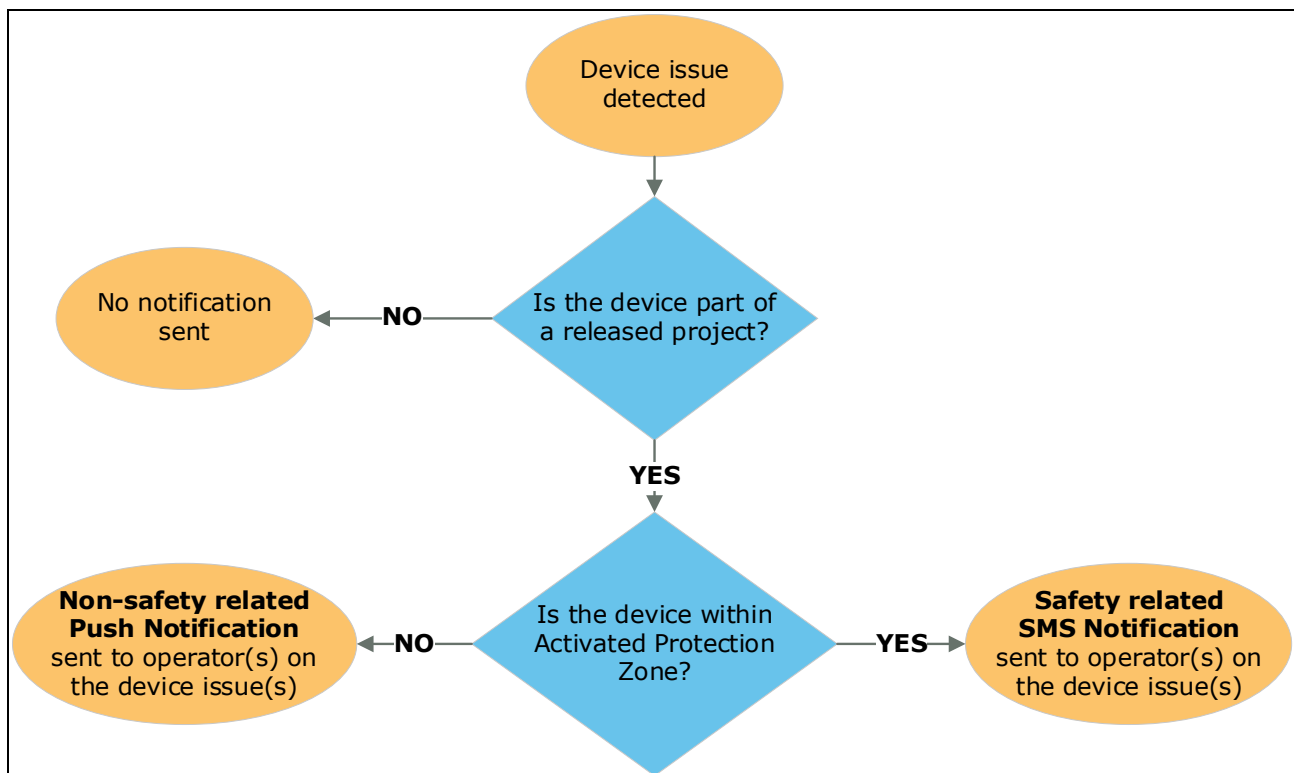
Figure 1 Notification logic diagram

9.1   Push notifications

Users with switching rights on a released project will automatically receive notifications via push notifications. Note the prerequisites to receive push notifications stated below.

> ⚠️ **WARNING**
> In order to receive the non-safety related push notifications the following prerequisites should be met:
> - Latest MTinfo 3000 mobile app installed on the users' mobile device

- Push notifications should be allowed
- User must be logged into the MTinfo 3000 mobile app

9.2   Text notifications

When a project has one or more activated protection zones, notifications will be sent via text messages (SMS). Users' mobile phone number is entered as alarm number within the user profile to enable this.

Please refer to the rail device's user manual for possible notifications and follow-up actions.

WARNING
Safety-related SMS messages will not be delivered to the user if a wrong phone number is registered or when the user blocks the MTinfo 3000 sender's phone number. Verify you have entered the correct phone number and do not block the sender.

9.3   Reminders

Reminders are sent for safety related notifications for specific rail devices. For example, when a rail device is offline. The reminders will help the user to remember that there is an unresolved issue with a specific rail device.

Rail devices that use batteries already have an implicit reminder system as the user is notified when the main or backup battery reaches a critical or depleted level.

NOTE
Reminders do not relieve the user of their responsibility to immediately act upon the notification. Please always consult the real-time status for up-to-date information about the situation.

A reminder is sent after a 15-minute interval. A maximum of 3 reminders are sent for one single situation. Reminders are only sent when the rail device is in activated state (i.e. in an activated protection zone).

Please refer to the rail device's user manual for possible notifications and the follow-up actions.

10 STATUS PAGE

Use the internet status page to remain informed about system maintenance and health. This page provides real-time information about the system's health.
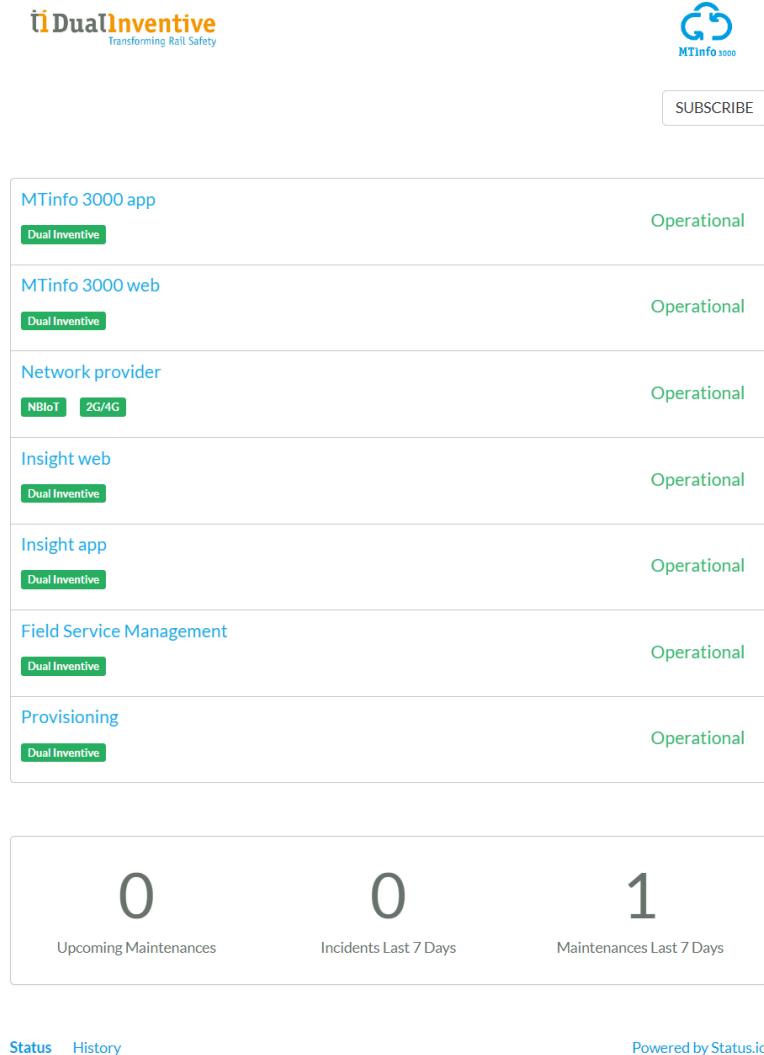

Figure 2 Status page

10.1 Access status page

1. Go to the Start Screen.

2. Select the Status Page icon.

3. Or use this direct link: https://mtinfo3000.status.io/.

The status page shows current incidents, scheduled maintenance, and the history of past incidents.

10.2 Subscribe to the status page

To receive email notifications about system updates, open the status page, click the `SUBSCRIBE` button, and follow the instructions to complete your subscription.

By using the status page and subscribing to updates, you will:

1. Receive *timely notifications* about system changes.
2. Be aware of *ongoing incidents or maintenance*.
3. *Plan your activities* based on the system's health.

11 SUPPORT

11.1   DI Technical Support

You can contact Dual Inventive Technical support through the email address
support@dualinventive.co.uk or call 03300 169033.

Alternatively, please refer to the 'Contact Us' section within the MTinfo 3000 for customer support details specific to your project.

11.2   DI Security Contact

The MTinfo 3000 is developed with a security-by-design method. Dual Inventive uses different layers of protection, including encryption, private networks, and a cloud system that is physically separate from other internet cloud systems. Dual Inventive monitors the system daily for security. Users are responsible for ensuring the security of their mobile devices.

If you identify any security concerns, please report them to [security@dualinventive.com.](mailto:security@dualinventive.com)