

Manual for using the web interface

MTinfo 3000

to prepare for use of the ZKL 3000 RC system



ti DualInventive
Ubiquitous Rail

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1. INTRODUCTION

This manual describes how to prepare and manage MTinfo 3000 projects for the ZKL 3000 Remote Control (RC) Line Blockage System. MTinfo 3000 provides remote access to the ZKL 3000 RC system, which safeguards a section of track by producing and monitoring a short circuit, simulating a train in the section. This causes the track circuit to be 'OCCUPIED' placing the protecting signals danger. The section will be immediately closed for rail traffic, enabling rail workers to perform work on the track both safely and efficiently.

This manual is one of three that detail the entire ZKL 3000 RC system: The web interface MTinfo 3000, the ZKL 3000 RC Line Blockage System and the Remote Switch (RS) 3000.

2. DEFINITIONS & TECHNICAL SPECIFICATIONS

a. Application area of MTinfo 3000

The web interface, MTinfo 3000, enables the set up and management of projects to remotely switch (single or multiple) ZKL 3000 RC devices in a safe, effective and efficient manner. MTinfo 3000 can be used on any computer with an internet connection, once a user has been authenticated. MTinfo 3000 is an online application and does not require any software to be installed on your computer.

b. Technical specifications

The minimum requirements for your computer are:

Hardware:

- Internet:
 - At least broadband
- Computer:
 - Processor at least 1.5 GHz
 - Internal memory at least 2,048 MB
 - Video card at least 512 MB

Software:

- Web browser Mozilla Firefox. Recommended by Dual Inventive. You can download this via www.mozilla.com/firefox
- Additional software:
 - PDF reader (for MTinfo 3000 reports). Dual Inventive recommends Adobe Reader. You can download this via <http://get.adobe.com/reader>
 - Google Earth (for GPS Tracking). You can download this via <http://www.google.com/earth/>

Dual Inventive does not take responsibility for the above mentioned equipment or software being incorrect or absent.

3. CONDITIONS & SAFETY INSTRUCTIONS



WARNING!

Please carefully read all safety instructions before using MTinfo 3000 to ensure you fully understand the system and how it works. When precautionary measures and safety instructions are not properly followed there is a risk of electrocution, fire or even death.

a. Conditions for use

You may only use MTinfo 3000 when the following criteria is met

- you hold the MTinfo 3000 competency, and it is in date
- you have been assigned the appropriate user rights on MTinfo 3000
- you have been authorised to do so

As an MTinfo 3000 **manager** you are responsible for:

- Creating and managing users, and their respective rights for competent ZKL 3000 RC users in such a manner that misuse is avoided

As **competent user** you are responsible for:

- user names and passwords (and any authorisation codes via text message or PIN that you have been assigned)
- managing your password and, if applicable, your PIN. Sharing this information with others is **not allowed**
- the safety of the ZKL 3000 RC system. You should respond to alerts from ZKL 3000 RC system when something is not working correctly

b. Instructions

Other important instructions

- Dual Inventive will create the company and first user account (administrator) for the company. This user will become the nominated contact person inside your company
- There are certain situations where you may be prevented from switching the ZKL 3000 RC. For more information about these, see ZKL 3000 Installation manual, chapter "Troubleshooting"
- Ensure that the software on your computer system is kept up-to-date, including your internet browser, Google Earth and the PDF reader. No additional maintenance is required
- The hardware you use could limit the connection to MTinfo 3000. Please discuss this with your IT administrator should you encounter any issues

Instructions for first use

- Ensure you have been certified and have the appropriate rights to use MTinfo 3000
- Do not go on or near the line without the appropriate competencies or authorisation
- Always take care of your own safety within the track environment using the current applicable legislation
- Always use a secure connection to MTinfo 3000. The connection is safe to use when the web address is preceded by "https://"

4. USER RIGHTS MTinfo 3000

MTinfo 3000 utilises a rights based access control system. For security reasons we will only discuss the assignment of these rights with your company's contact person directly. If you require more information, please contact your local Dual Inventive supplier.

Explanation user roles in MTinfo 3000

These rights can be assigned to a right-bearing user per project.

User role	Explanation
Project lead	The project lead creates the project and assigns project roles to other users.
Project design	Assigns ZKL 3000 RC devices to the project.
Design verification	Verify the project design. Do not also assign this role to the user responsible for "project design".
Design validation	Validate the designed project. Do not assign this role to a user also responsible for "project design" or "project verification".
Project planning	Select users that can switch devices within the project. Assign ZKL 3000 RC devices to a period. Set the time period during which the user may switch.
Planning verification	Verify the planned project. Do not assign this role to a user in the project that is also responsible for "project planning".
Planning validation	Validate the planned project. Do not assign this role to a user in the project that is also responsible for "project planning" or "planning verification"
Project release	Can release the project
Project return	Can return the project

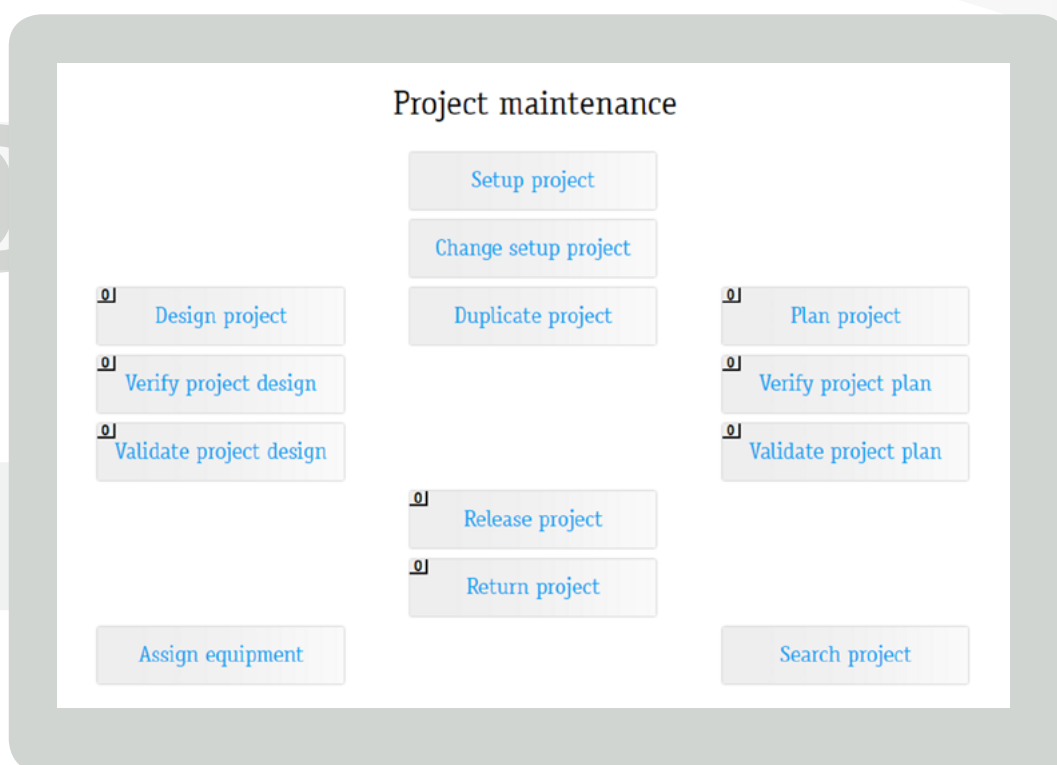
5. APPLYING MTinfo 3000

Always ensure a secure connection to MTinfo 3000.

a. Set up project

To set up a project, please follow these steps:

- Go to <https://mtinfo.dualinventive.com/>
- Enter your user name, company code and password
- Read the general terms & conditions and accept them
- Log in
- Click on “main menu”
- Click on “Project maintenance”. The following screen will appear:



- Select “Setup project” (ATTENTION: You will only be able to do this when you have had the appropriate user rights assigned)

WARNING! Never assign the same user all of the design/plan/verify/validate rights.

5. CONTINUATION APPLYING MTinfo 3000

Setup project

Project name:

WBI:

Type project:

WBU:

WBUV:

Project description:

Users

App users:

Projectleader-RC

On project:

Not on project:

Filter:

Project Design

On project:

Not on project:

- Enter a project name
- Select "RC" project type
- If required, add a description
- If required, add a second project lead RC (To add a user click on the desired user and on the arrow to the left. To remove a user from the project, select the user and click on the right arrow).
- Scroll down and assign users to the following sections:
 - Project design
 - Design verification
 - Design validation
 - Project planning
 - Planning verification
 - Planning validation
 - Project release
 - Project return

5. CONTINUATION APPLYING MTinfo 3000

MTinfo 3000 offers the opportunity to assign the role “Project Release” to more than one person. It is advisable to assign this role to at least two people for each project.

- If needed, add a remark to the project
- Next, click on “Save” to set up the project

Change a project

- If you want to change the project, you can do so by selecting “Change project set-up” on the Project maintenance page
- Finalise the changes and save the project

Changing design (If the location changes, or the ZKL 3000 RC being used has changed)

- Contact the project designer
- Alter the design to fit the changes
- Follow the procedure for equipment installation

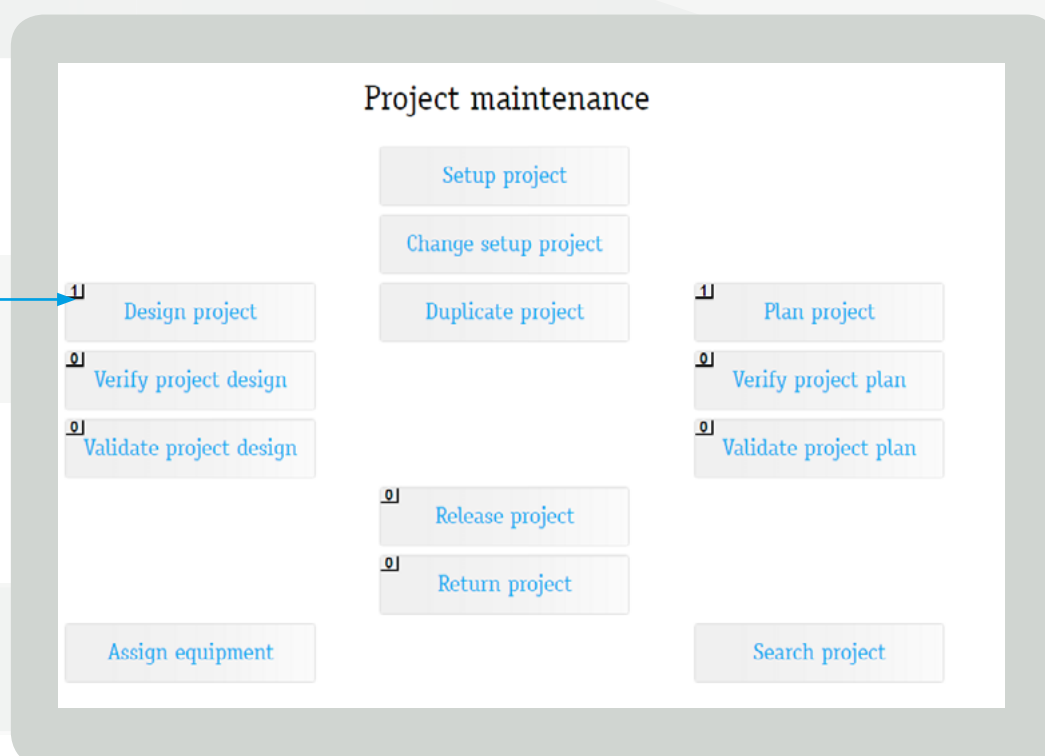
See Installation manual ZKL 3000 RC, chapter “Installing ZKL 3000 RC in the track”

Change planning

- In case the person planned for a project is ill or absent, please contact the project lead
- Start by selecting the Project maintenance page.
- Next, select the desired project.

b. Design project

The number of projects that you have been assigned to



5. CONTINUATION APPLYING MTinfo 3000

- Select “Project design” (ATTENTION! You will only be able to do this when you have been assigned the relevant roles and user rights)
- Select the project you want to design
- Select one or more ZKL 3000 RC you want to link to the project

In the period, the selected
ZKL 3000 RC become visible

You can add an additional
period with the plus icon

Period A

Period name

ZKL 3000 RC

Used in period:

110.0199 (Service: 2017-06-29)

Not used in period:

< >

Filter: Reset

110.0199

Equipment Remark (Visible In Realtime Status)

Period Remark (Visible At The RS 3000)

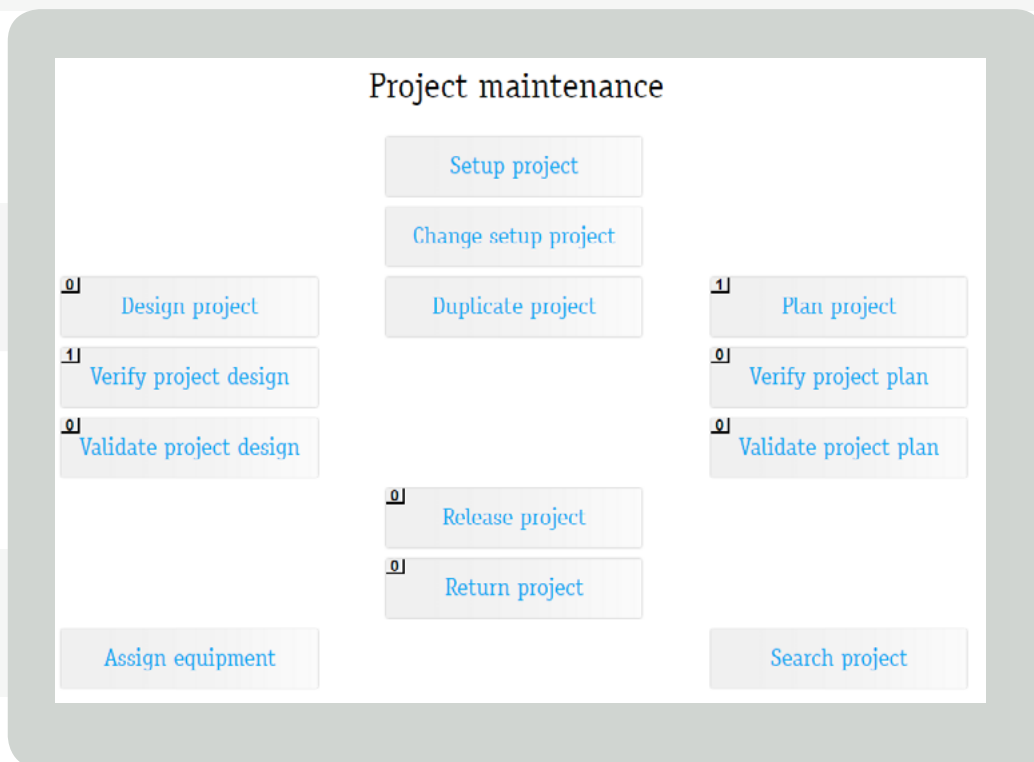
Project Remark (Visible At The Log/Email)

Save(Concept) Save(Verify) Cancel

Ready for release

- Enter the name of the period
- Add the ZKL 3000 RC to the period (You can create multiple periods. A ZKL 3000 RC can only be added to a single period in a project however)
- If needed, add a remark (E.g. the track circuit number)
- Save the design by clicking “Save” (Verify) in order for it to be verified

5. CONTINUATION APPLYING MTinfo 3000



- The users with verification and validation roles on the project will now be able to check the project design before release. In order to reduce risks, MTinfo 3000 uses the six eyes principle. This means that a second authorised user should verify the design and a third user is to validate the design. Subsequently, a project is designed by a total of three different users
- You can also save the project as a draft using the “Save (Concept)” option. This project will then be saved, but will not be submitted for verification. The project will remain in the “Project design” section
- Alternatively, you can bypass the project verification and validation by using the button “Ready for release”. You will only be able to do this if authorised on MTinfo 3000. Dual Inventive does NOT recommend this step in operational use
- There is also a “Cancel” option. This will not save any of the data entered

c. Plan project

- Navigate to the “Plan project” section (ATTENTION: You will only be able to do this when you have been assigned the relevant roles and user rights)
- Select the desired project
- Select users who are to switch the ZKL 3000 RC within the project
- Select the RS 3000 devices you want to add to the project. It is advisable to always add at least two RS 3000 to the project, the extra serves as a spare, in case of any issues

5. CONTINUATION APPLYING MTinfo 3000

Period A

Period name:

Users With Switching Right

Users:

Allowed to switch:

Jort Elst

Not allowed to switch:

Filter: **Reset**

Start switching period:

End switching period:

ZKL 3000 RC

Equipment Remark (Visible In Realtime Status)

110.0199

Project Remark (Visible At The Log/Email)

Save(Concept) **Save(Verify)** **Cancel**

Ready for release

- Select the users to be allowed to switch the devices during each period
- Set time limits on the period to define which user is allowed to switch (if left blank, there will be no limits between the release and return of the project)
- If required, add a remark
- Save the project for verification
- After, the authorised users of the project will be able to verify and validate the project plan. In order to reduce risks, MTinfo 3000 uses the six eyes principle. This means that a second authorised user should verify the design and a third user is to validate the design. Subsequently, a project is designed by a total of three different users
- You can also save the project as a draft using the "Save (Draft)" option. This project will then be saved, but will not be submitted for verification. The project will remain in the "Project plan" section

5. CONTINUATION APPLYING MTinfo 3000

- Alternatively, you can bypass the project verification and validation by using the button “Ready for release”. You will only be able to do this if authorised on MTinfo 3000. Dual Inventive does **NOT** recommend this step in operational use
- There is also a “Cancel” option. This will not save any of the data entered

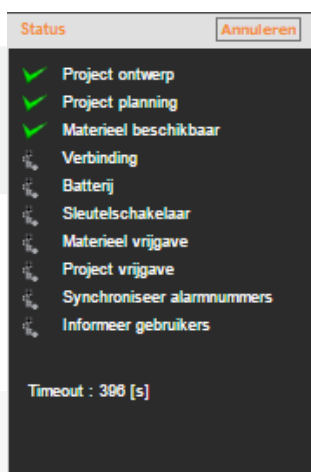
6. RELEASE, RETURN AND CLOSE PROJECT

a. Release

Please make sure that any ZKL 3000 RC on the project are installed in both the correct location and track. ATTENTION! Do not attempt this via the GPS location, but rather physically check its position in the track.

- Navigate to “Project maintenance”
- Select “Project release” (ATTENTION: You will only be able to do this when you have been assigned the relevant roles and user rights)
- Search for your project, select it and click “Ok(Release)”

The following window will open



Please be patient whilst MTinfo 3000 undertakes the checks required for it to safely release the project. At each stage, if successful, a green tick will be displayed. If all the checks are successful, the project is released. After release, the users on the project will be able to switch the devices as defined earlier in the design and plan.

6. CONTINUATION, RELEASE, RETURN AND CLOSE PROJECT

Explanation of definitions

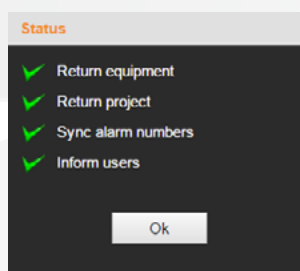
Status	
✓ Project design	➔ Checking project design, see chapter Design project
✓ Project planning	➔ Checking project planning, see chapter Plan project
✓ Equipment available	➔ Checking availability of devices
✓ Connection	➔ Checking network connection, see Installation manual ZKL 3000 RC, chapter “Significance of alerts”
✓ Battery	➔ Checking battery levels, see Installation manual ZKL 3000 RC, chapter “Significance of alerts”
✓ Key Switch	➔ Checking key switch position, see Installation manual ZKL 3000 RC, chapter “Testing the ZKL 3000 RC”
✓ Release equipment	➔ Releasing devices
✓ Release project	➔ Releasing project
✓ Sync alarm numbers	➔ Synchronising alarm numbers users on project
✓ Inform users	➔ Informing users on project
Ok	

If a check does not complete successfully, a red cross will appear. Clicking “OK” will display the error in more detail. After you have solved the indicated problem, you should be able to release the project.

b. Return

- To return a project so it can no longer be used, navigate to “Project maintenance”
- Select “Project return” (ATTENTION! You will only be able to do this when you have been assigned the relevant roles and user rights)
- Select the desired project and click on “Ok(return)”. ATTENTION! After returning the project, users will be unable to switch any devices on that project

Similar to the release process, MTinfo 3000 performs checks before it will return a project. Once again, as soon as all the checks are checked, the project is returned.



If a check does not complete successfully, a red cross will appear. Clicking “OK” will display the error in more detail.

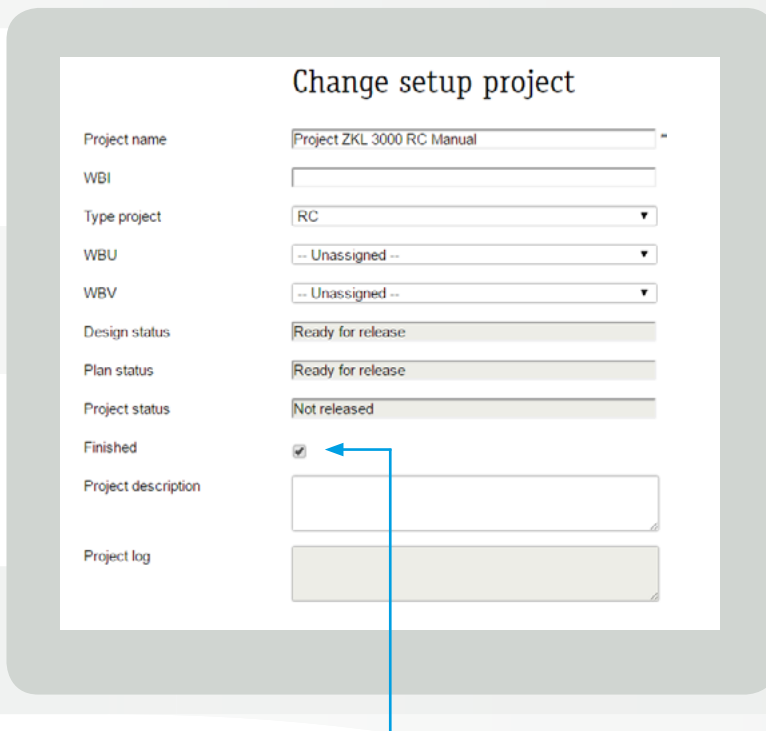
6. CONTINUATION, RELEASE, RETURN AND CLOSE PROJECT

c. Closing

After a project has been returned, it will remain in your list of available projects, in case you want to re-release it. To permanently close the project, follow the next few steps.

ATTENTION! Closing a project is irreversible.

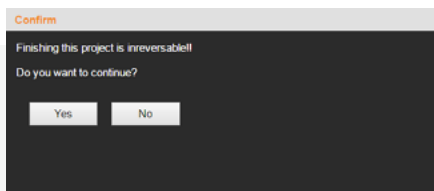
- Go to “Project maintenance” (ATTENTION! You will only be able to do this when you have been assigned the relevant roles and user rights)
- Select “Change setup project”



Change setup project

Project name	Project ZKL 3000 RC Manual
WBI	
Type project	RC
WBU	-- Unassigned --
WBV	-- Unassigned --
Design status	Ready for release
Plan status	Ready for release
Project status	Not released
Finished	<input checked="" type="checkbox"/>
Project description	
Project log	

- **Tick box for “Closed”**
- Click “OK” and you will be presented with the following message



Confirm

Finishing this project is irreversible!
Do you want to continue?

Yes No

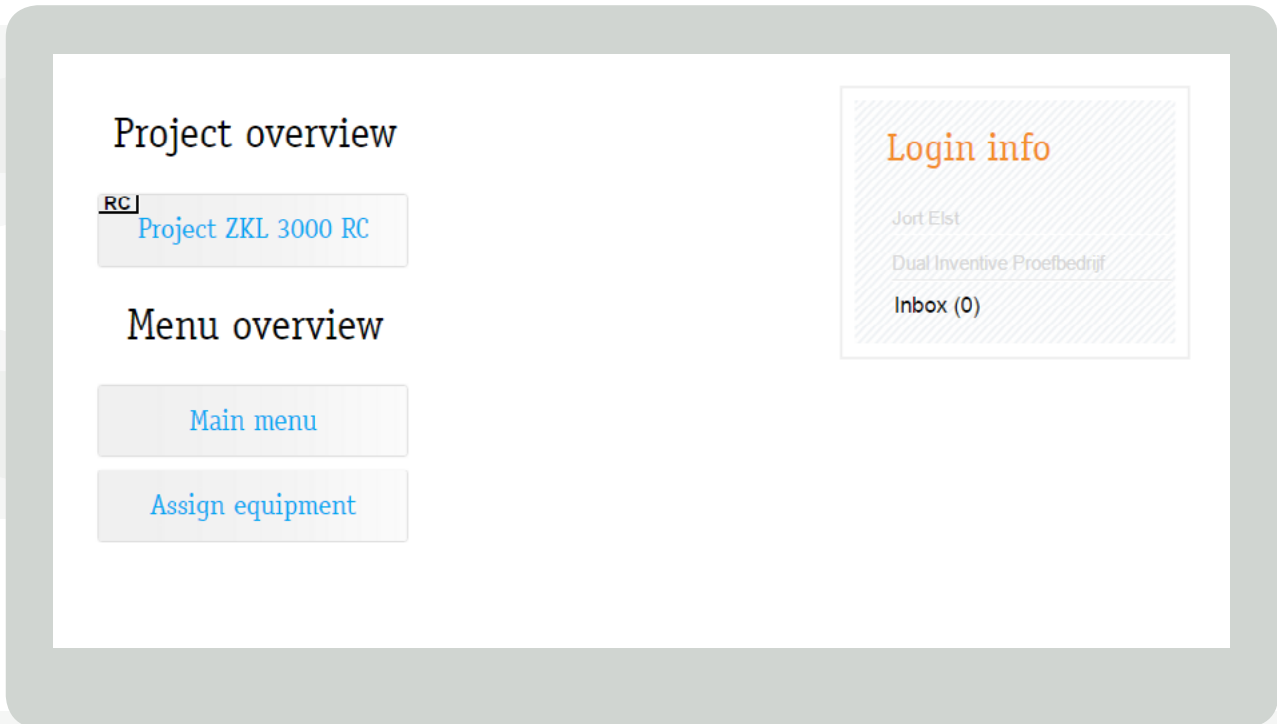
- Clicking on “YES” will close the project

7. ADDITIONAL FUNCTIONALITIES

a. Real-time status

This gives an up-to-date overview of the devices on the project

- To open this view, select the desired project from the project overview



- Next, under “shortcuts” (in the right side bar), select “Real-time status”. You will be presented with the following screen which will display the status of each device when it is selected



- Click on a ZKL 3000 RC device to view detailed information.
Check if all ZKL 3000 RC are connected

7. CONTINUATION ADDITIONAL FUNCTIONALITIES

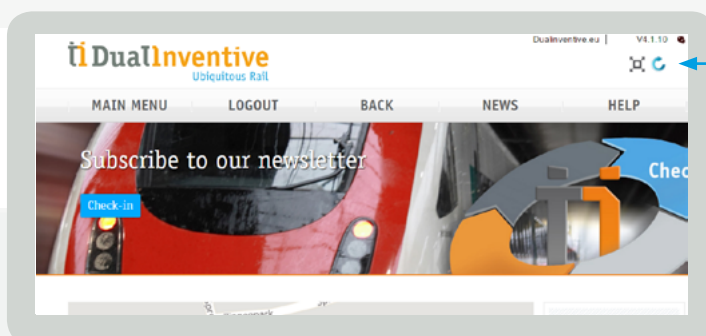
Status explanation ZKL 3000 RC

Status	Explanation
Measurement: ON	The ZKL 3000 RC is now switched "ON"
Measurement: OFF	The ZKL 3000 RC is now switched "OFF"
Detection: OK	A short circuit between the ZKL 3000 RC and the track was detected
Detection: NOK	No short circuit has been detected
Switch: ON	The ZKL 3000 RC switch is now "ON"
Switch: OFF	The ZKL 3000 RC switch is now "OFF"
Key: OPERATIONAL	The override key is in the 'OPERATIONAL' position
Key: OVERRULED	The override key is not in the 'OPERATIONAL' position
Batt 1: OK	The back-up battery is connected to the ZKL 3000 RC and has sufficient power
Batt 1: ALMOST EMPTY	The back-up battery is connected to ZKL 3000 RC but is almost empty
Batt 1: EMPTY	The back-up battery is empty
Batt 1: REMOVED	The back-up battery has been disconnected or is completely empty
Batt 2: OK	The external battery is connected to the ZKL 3000 RC and has sufficient power
Batt 2: ALMOST EMPTY	The external battery is connected to the ZKL 3000 RC but is almost empty
Batt 2: EMPTY	The external battery is empty
Batt 2: REMOVED	The external battery has been disconnected or is completely empty
Status: -	The ZKL 3000 RC cannot be reached

For a more in-depth explanation, please see the ZKL 3000 RC Installation manual, chapter "Troubleshooting"

b. Switching

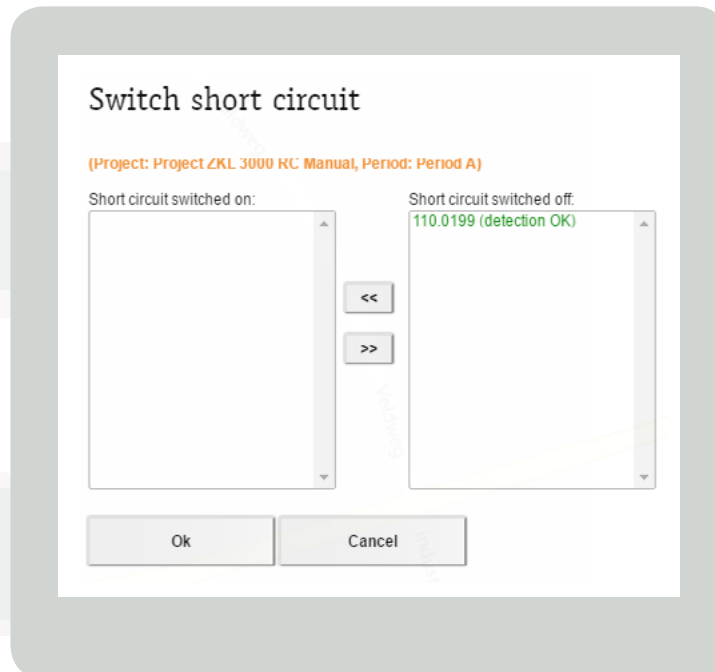
- Click on the arrow at the left of the screen to open a column with buttons. Via these buttons, you can interact with the ZKL 3000 RC
Attention, if you cannot see this button, please first click on "extended view". This is located above "Help".



- Click on "Switch short circuit"

7. CONTINUATION ADDITIONAL FUNCTIONALITIES

This screen will open.



- To activate a ZKL 3000 RC, move it to the left. To deactivate it, move it over to the right
- Click "OK"

You will be requested to authorise the switch either via text message or PIN (depending on your account settings). Once authorisation is completed, the following window will appear, indicating the ZKL 3000 RC has switched. MTinfo 3000 will indicate if there was a problem during switching with a red cross. If this is the case, please retry switching and consult the ZKL 3000 RC Installation Manual, chapter "Significance of alerts" for potential solutions.



You can also switch via the RS 3000. See the RS 3000 user manual, chapter "Switching".

8. SERVICE ALERTS

Users can opt-in to receive service alerts via email. In order to receive these, the nominated contact person at your company needs to make some changes on MTinfo 3000, such as entering your email address as the service email address. Monitoring starts as soon as the ZKL 3000 RC has been powered on. More information can be found in the ZKL 3000 RC Installation Manual. The recipient of the service alert is responsible for passing on the information in and dealing with the alerts in an adequate time frame.

Alert	Alert via	Action
The battery of the ZKL is almost empty	E-mail	Replace battery, see ZKL 3000 RC Installation Manual, chapter 'Prepare'
The ZKL 3000 RC is nearing service date	E-mail	Return the ZKL 3000 RC to Dual Inventive for calibration

For additional information, please see the ZKL 3000 RC Installation manual, chapter 'Significance of alerts'

Always take care of your own safety within the track environment using the currently applicable legislation.

9. MAINTENANCE & SERVICE

Please contact Dual Inventive for service and repairs.

IN CONCLUSION

If you encounter any problems when using our products or are unsure of anything in this manual, please report this to us via info@dualinventive.com, or by phone. MTinfo 3000 features a number of functions that have not been addressed in this manual. If you require more information, please contact us. Ultimately, customer satisfaction and your safety are our top priority and therefore we take all feedback very seriously. We use this to improve the safety and design of our products. On behalf of the Dual Inventive team, we wish you all the best.

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Ubiquitous Rail

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