



Data Manager Handbook

Version

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Version control

VERSION DATE	AUTHOR	CHANGES
May 2020	Lukas Miglinas, RNE Timetable IT Manager	New manual for the roll-out of the new CIS
July 2024	Jaroslav Lučkay, Senior Sales Manager / Nektarios Zacharias, Senior IT Manager	Update on the content of the Handbook

1. Introduction

This user guide aims to help CIS Data Managers (DMs) how to create and maintain their data in the CIS. It explains how to define and edit formulas and other variables for the calculation of charge estimates.

1.1. Responsibilities in Data Management

As the CIS uses the IT framework of the RNE Railway Infrastructure System (RIS) – which displays the topology data along with the properties available in the RNE Big Data -, thus it is inherently connected to it, there is a split of responsibilities regarding the management of the overall data used for the calculation of charge estimates. The following table displays which type of data are maintained either in the CIS or in the RIS and who is in charge of them.

Type of data	Tool	Responsible person
Topology data: Locations, Segments, Primary Location Codes (PLCs), Passenger, Freight, Distance data, Border locations, Line categories, Location categories, line electrified or not	RIS	<ol style="list-style-type: none"> 1) Member of RNE RIS Change Control Board to provide initial data; Support by CIS Data Manager is needed regarding location categories and line categories if applicable 2) Data import is done by RNE Joint Office 3) Correction and addition of missing data is done by CIS Data Manager
RFC segment data	RFC layers of RIS	RFCs
Formulas	CIS	CIS Data Manager
Additional (topology) parameters if needed for the formulas	CIS	CIS Data Manager
Train parameters	CIS	CIS Data Manager
Time dependencies	CIS	CIS Data Manager
Terms and Conditions	CIS	CIS Data Manager

Currency and exchange rate if currency is not EURO	CIS	CIS Data Manager
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There is a separate user manual available for the RNE RIS, which can be requested via support.ris@rne.eu.

2. CIS Production and Test System

2.1. CIS Production System

IM's charging data are stored and maintained within the RNE CIS Production System.

The CIS Production System is accessible under the following link:
<https://cis-online.rne.eu>

2.2. CIS Test System

Before entering or editing IM's charging data within RNE CIS Production System, it is advised to test the whole procedure within the RNE CIS Test System. A DM account has been created for all DMs in the test system as well for this purpose.

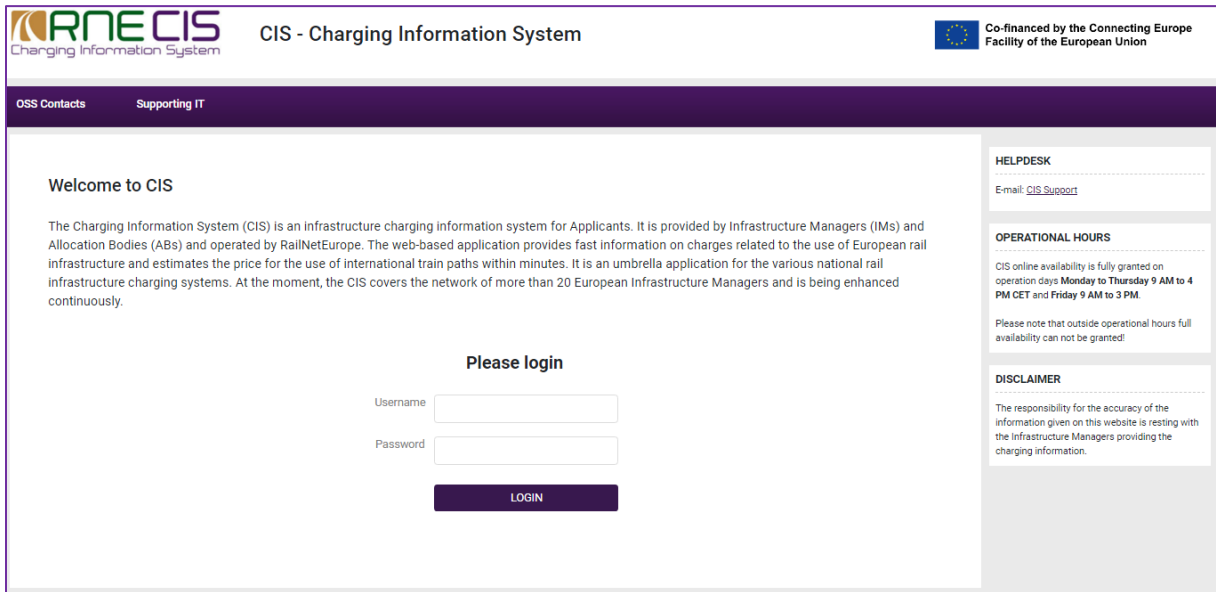
The DM user interface of the CIS Test System is accessible via the following link:
<http://cis-test.rne.eu/cis/login>

3. Login credentials for Data Managers

To log in the CIS Production System, DMs must use the same login credentials as for accessing the RIS production environment.

To log in the CIS Test System, DMs must use the same login credentials as for accessing the RIS test environment.

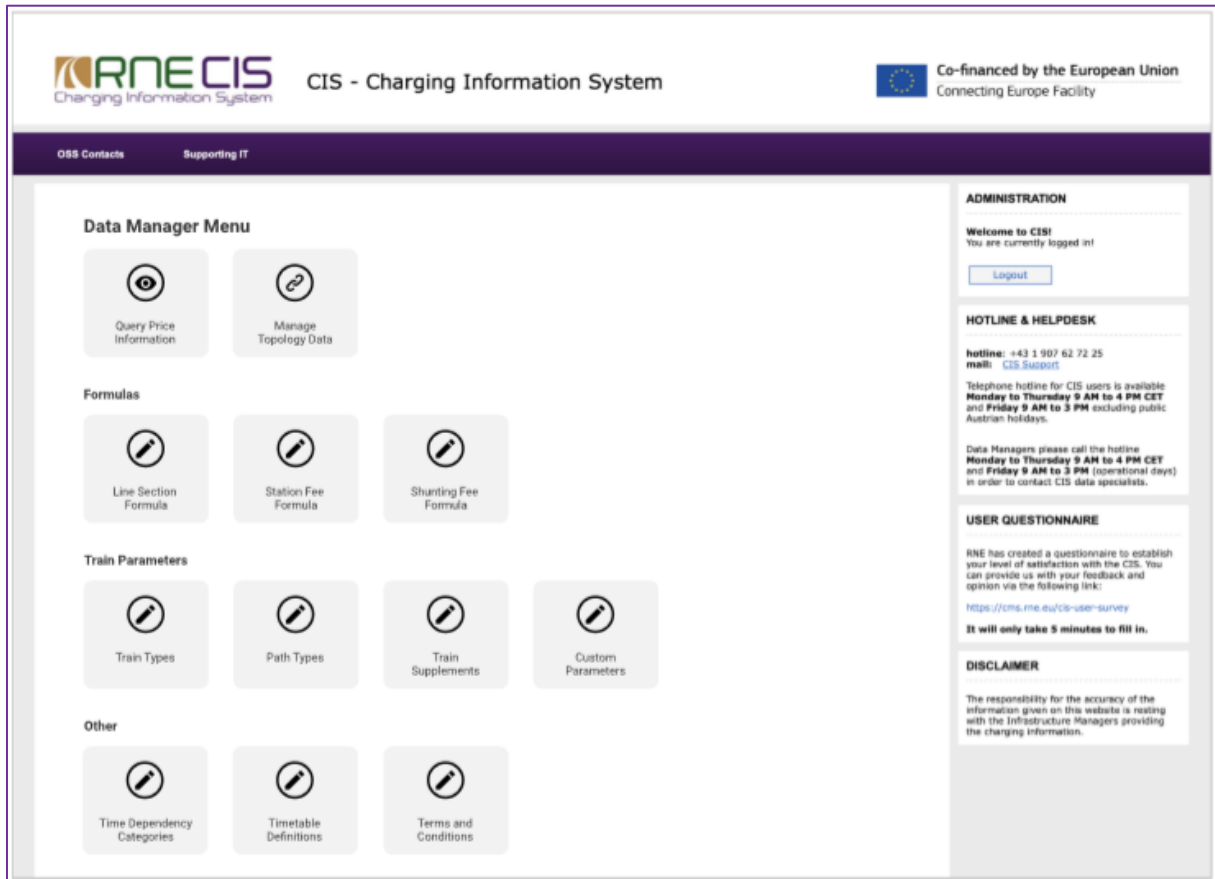
User account and in case forgotten new password can be requested via support.cis@rne.eu.



The screenshot shows the CIS - Charging Information System login page. At the top left is the RNE CIS logo and the text 'Charging Information System'. To the right of the logo is the text 'CIS - Charging Information System'. Further right is the European Union flag and the text 'Co-financed by the Connecting Europe Facility of the European Union'. Below the header is a dark blue navigation bar with 'OSS Contacts' and 'Supporting IT' links. The main content area is white and contains a 'Welcome to CIS' section with a paragraph of text. Below this is a 'Please login' section with 'Username' and 'Password' labels, two input fields, and a 'LOGIN' button. On the right side of the page is a sidebar with three sections: 'HELPDESK' with an email link 'CIS Support', 'OPERATIONAL HOURS' with a paragraph of text, and 'DISCLAIMER' with a paragraph of text.

4. Home Page Dashboard

After the user has logged in as a DM, the following Home Page Dashboard will appear. DM's dashboard provides structured and intuitive menu facilitating a DM to do the tasks. There are four sections: Manage Topology Data (additional parameters), Formulas, Train Parameters and Other.



The screenshot shows the CIS - Charging Information System dashboard. At the top, there is a header with the RNE CIS logo, the text "CIS - Charging Information System", and a European Union flag with the text "Co-financed by the European Union Connecting Europe Facility". Below the header, there are two tabs: "OSS Contacts" and "Supporting IT". The main content area is divided into several sections:

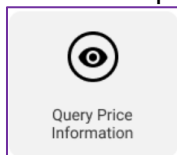
- Data Manager Menu:** Contains two buttons: "Query Price Information" (with a magnifying glass icon) and "Manage Topology Data" (with a link icon).
- Formulas:** Contains three buttons: "Line Section Formula", "Station Fee Formula", and "Shunting Fee Formula", each with a pencil icon.
- Train Parameters:** Contains four buttons: "Train Types", "Path Types", "Train Supplements", and "Custom Parameters", each with a pencil icon.
- Other:** Contains three buttons: "Time Dependency Categories", "Timetable Definitions", and "Terms and Conditions", each with a pencil icon.

On the right side of the dashboard, there is a sidebar with the following sections:

- ADMINISTRATION:** "Welcome to CIS! You are currently logged in" with a "Logout" button.
- HOTLINE & HELPDESK:** "hotline: +43 1 907 62 72 25" and "mail: CIS.Support". It also includes telephone and data manager hotline hours.
- USER QUESTIONNAIRE:** "RNE has created a questionnaire to establish your level of satisfaction with the CIS. You can provide us with your feedback and opinion via the following link: <https://cms.rne.eu/cis-user-survey>. It will only take 5 minutes to fill in."
- DISCLAIMER:** "The responsibility for the accuracy of the information given on this website is resting with the Infrastructure Managers providing the charging information."

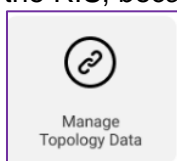
4.1. Query Price Information

To access query charging information window (see CIS User Handbook for more details) click



4.2 Manage Topology Data

To access additional parameters to be used for the topology data which are not included in the RIS, because they are IM-specific, and to manage them, click



Manage topology parameters window contains 2 tables: **Line** and **Topology Parameters**. In Line table DMs can add and define a line.

Line
Test data

Line ID ↑	Parameter Name	Parameter Value	Action
No data			

Topology Parameters

Parameter Name ↑	Parameter Type	Allowed Elements	Action
<input type="text"/>	(All)	(All)	
Test	Number	Line	✎ 🗑
Test parameter	Number	Line	✎ 🗑

There are 2 steps involved in line creation. Firstly, click **Add Line** and give the line a number and save it.

Line ID ↑	Parameter Name	Parameter Value	Action
<input type="text"/>			
Test line 001			🗑 ↻

Secondly, once you saved your newly created line, **Add Parameter Value** appears. Click it to define a parameter name and value. When finished click save.

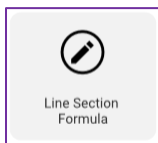
Line ID ↑	Parameter Name	Parameter Value	Action
<input type="text"/>			
<div style="display: flex; justify-content: space-between; align-items: center;"> Test line 001 <input type="button" value="+ ADD PARAMETER VALUE"/> ✎ 🗑 </div>	<div style="border: 1px solid #ccc; padding: 2px; margin-top: 5px;"> Select... <div style="border: 1px solid #ccc; padding: 2px; margin-top: 2px;"> Test Test parameter </div> </div>		🗑 ↻

To add topology parameter click Add Topology Parameter, name your parameter, select a type of it from drop down menu. The type may be either number or character. Then from Allowed Elements drop down menu select relevant element and save. DMs can edit topology parameter or delete them by clicking respective icons.

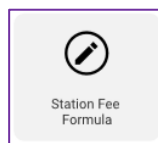
Parameter Name ↑	Parameter Type ↓	Allowed Elements ↓	Action
	(All)	(All)	
	Select...	Please select...	Save Refresh
Test parameter	Number	Line Line Segment Location	Edit Delete
+ ADD TOPOLOGY PARAMETER			

4.2. Formulas

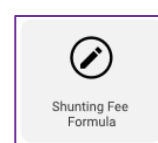
The Formulas section is divided into 3 formula calculation categories:



Line Section Formula



Station Fee Formula



Shunting Fee Formula

Clicking on one of the formula editor categories the user will be redirected to the relevant formula editor window where a formula can be defined.

3.2.1 Line Section Formula

In **Line Section Formula** editor, Line section price window, the DMs can define a formula for section charging.

IMPORTANT:

Total Price option is only available for line section calculation. Here the DMs can define additional formula. By default, it shows the sum of the price per line section. Default setting cannot be changed, only additional parameters can be added.

Next to a Line Section Formula there is a triangle which when clicked allows the user to quickly navigate between formula categories: line section, station fee, shunting fee.

The user can select another timetable period directly from formula editing page.

For the DM's convenience a row of frequently used mathematical symbols is added.

A formula can contain simple values or be a complex expression containing custom functions and conditions.

A formula is composed of expression. Every expression contains one or more expression parts.

Formula Help

Here is the list of the variables that can be used in your formula. For some variables, such as TrainCategory and TrainType, the values that are used by the system are listed in the most right column.

Search + ADD CUSTOM FUNCTION

Variable	Description	Values	Action
▶ Line Parameters			
▶ Input Parameters			
▶ Built-In Functions			
▶ Custom Functions			

To assist the DMs in assembling the formulas, a collapsible help section with a list of variables is available. The variables are grouped into **Line Parameters, Location Parameters, Input Parameters, Built-in Functions, Custom Functions.**

Variable	Description	Values	Action
▼ Line Parameters			
LineCategory	Name of the LineCategory of the specific line		+
LineCode	LineCode of the specific line		+
LineLength	length of the line in meters		+
▼ Input Parameters			
CarLength	length of car in meters		+
LoadWeight	load weight in tons		+
MaxAxleLoad	max axle load in tons		+
WagonCount	number of wagons		+
TrainCategory	text specifying the train category eg. 'Passenger'	'Freight' 'Passenger'	+

When expanded the help section contains all possible parameters and built-in functions with a short description. The user can add required parameter or function to the formula from the list by clicking +.

The below Line Parameters are connected to the data included in the RIS as follows:

LineCategory	RIS, CIS layer, CIS_LINE_CATEGORY
LineCategoryNr	RIS, CIS layer, CIS_LINE_CATEGORY_NUMBER
LineCode	RIS, CIS layer, CIS_LINE_CODE
LineSegmentCode	RIS, CIS layer, CIS_LINE_SEGMENT_CODE
LineIsFreightLine	RIS, CIS layer, CIS_LINE_IS_FREIGHT
LineIsPassengerLine	RIS, CIS layer, CIS_LINE_IS_PASSENGER
LineLength	RIS, CIS layer, DISTANCE_IM
LineIsElectrified	RIS, CIS layer, CIS_LINE_ELECTRIFIED

In other words, the DM has to add only the pre-defined variable to his formula and the system will automatically take into consideration the respective parameters in the RIS referred to in the 2nd column above.

The Input Parameters are provided by the users when making a calculation.

3.2.2 Custom Function

In every formula the user can define custom functions which can be used in other formulas of the same timetable year as well.

When the user adds a custom function to a formula (i.e. enter a function name in the formula), this function can be edited by clicking on the the function name.

If the user requires custom function which is not available in the list of variables, there is an option to add custom function. By clicking + ADD CUSTOM FUNCTION user is directed to a new window.

A custom function can either be a value or a function. A description containing a further explanation can be added for both.

The user can also add custom expressions to a function.

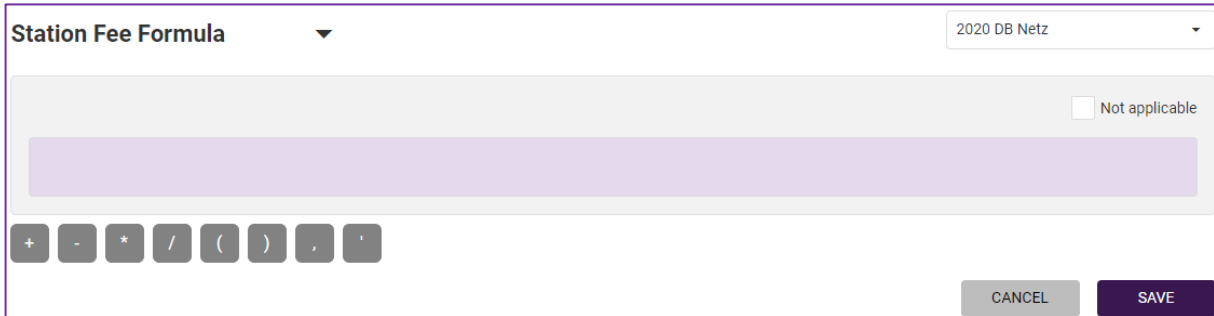
In expression window the user has an option to choose comparison operator from drop down menu, duplicate already created expression, add part of expression, or delete it.

Expression is saved independently from the formula and can be reused in other formulas in the same timetable year. The user can add a comment to the expression.

Clicking '**Expression Help**' button will bring out a help window with practical hints.

3.2.3 Station Fee/ Shunting Fee Formula

Station/ Shunting Fee formula editor functions are similar to Line section formula functions. In addition, there is a checkbox **'Not applicable'** which is relevant only to Station/ Shunting Fee formula editor. If station or shunting fee is not applicable on the network of the IM of the user, he can check the box in order to exclude the formula from calculation.



The below parameters are connected to the data included in the RIS as follows:

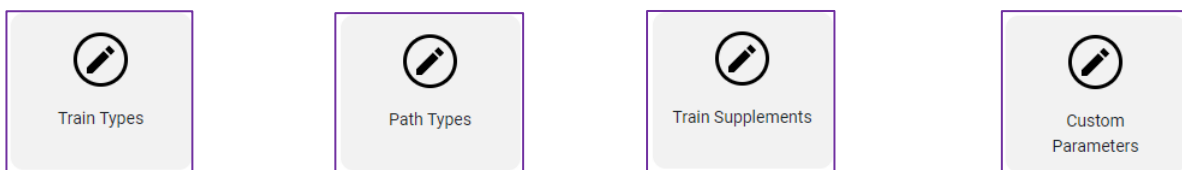
LocationIsPassenger	RIS, CIS layer, Freight possible flag
LocationIsFreight	RIS, CIS layer, Passenger possible flag
LocationCode	RIS, CIS layer, PLC

In other words, the DM has to add only the pre-defined variable to his formula and the system will automatically take into consideration the respective parameters in the RIS referred to in the 2nd column above.

Note: The input for the parameters IsStartLocation and IsEndLocation are provided by the user when defining the routing for a calculation.

4.3. Train Parameters

Train Parameters section contains 4 categories:







The workflow for all 4 categories is similar so once you master one, you master all of them. You may find the following information repetitive, however, for the sake of clarity we explain workflow for each train parameter category.


4.3.1 Train Types

Clicking **'Train Types'** brings the user to a page where the user can define custom train types of his IM's charging scheme. Train types can be categorized into freight and passenger trains.

In the Train Type Menu, the DM can view, create, edit and delete train types. The train types created will be displayed in a table view. The DM has an option to filter train types by category, code or name.

Train Types			2020 DB Netz
Train Category	Train Type Code	Train Type Name	Action
(All)			
Passenger	001002345	Gdansk-Koper	 
Freight	00102378	Basel-Genova	 

+ ADD NEW TRAIN TYPE

To add a new train type, click **'Add New Train Type'**. From drop down menu select type of the train: **'Freight'** or **'Passenger'**, enter train code and train name and save by clicking 

DMs can also edit or delete train types by clicking respective icons:



4.3.2 Path Types

The process to create and edit **'Path Types'** is similar. Clicking **'Path Types'** brings the user to a page where custom path types can be customized. Path types can be categorized into freight and passenger paths.

In the Path Type Menu, the DM can view, create, edit and delete path types. Created path types will be displayed in a table view. Option to filter paths types by category, code or name is available as well.

Path Types			Please select...
Train Category	Path Type Code	Path Type Name	Action
(All)			
(All)			
Freight			
Passenger			
No data			

+ ADD NEW PATH TYPE

DMs can also edit or delete path types by clicking respective icons:



4.3.3 Train Supplements

Within **'Train Supplements'** category the user can categorize train supplements into freight and passenger.

The DM can view, create, edit and delete train supplements.

The train supplements are displayed in a table/list view, with the option to edit or remove them. To add new train supplements, click **'Add new train supplement'**.

Train Supplements
Please select... ▾

Train Category ▾	Train Supplement Code ▾	Train Supplement Name ▾	Action
(All) ▾			
No data			

DMs can also edit or delete train supplements by clicking respective icons:



4.3.4 Custom parameters

Custom parameters allow DMs to configure custom parameters for calculation of train running price. DMs can define custom parameters for passenger and freight trains. Current custom parameters set can also be copied to a new timetable.

Custom Parameters
2020 DB Netz PLC ▾

<input type="checkbox"/>	Train Category ▾	Name ▾	Type ▾	Values ▾	Default Value ▾	Action
<input type="checkbox"/>	(All) ▾		(All) ▾			
<input type="checkbox"/>	Freight	flexibility	Single choice list	geographical flexibility,none,temporal fl...	none	
<input type="checkbox"/>	Freight	priority	Single choice list	high priority,none,very high priority	none	

(0) Parameters selected
Please select... ▾
COPY SELECTED PARAMETERS TO TIMETA...

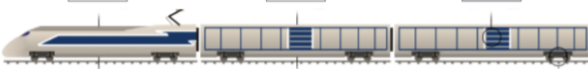
Defined custom parameters will appear in user menu: Custom Parameters. Here user will have an option to choose custom parameters defined by the DM.

Common parameters

Number of Locomotives

Number of Wagons

Load Weight (total, t) *



Weight of all Locomotives (t)

Weight of all Wagons (t) *

Axle load (t)

Length of all Locomotives (m)

Length of all Wagons (m)

Special parameters

Request Average Speed (km/h)

Wagon and Load Weight (total, t)

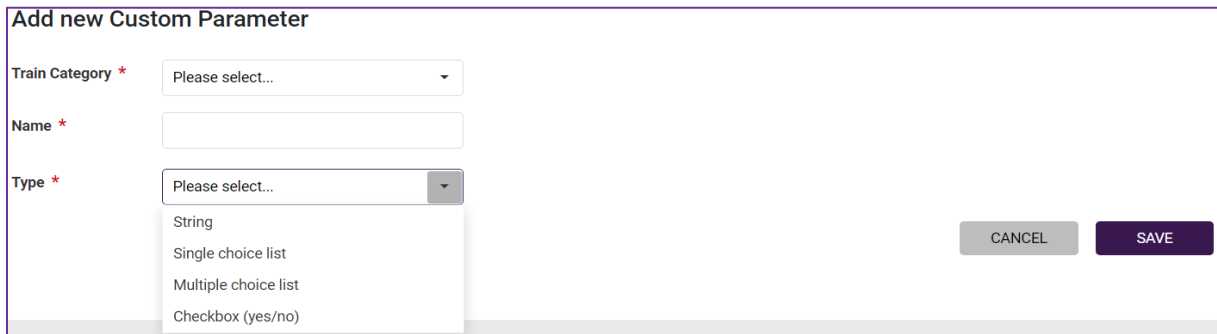
Number of All Diesel Locomotives

Number of All Electric Locomotives

Number of all Steam Locomotives

Please note: if the DM has not defined any custom parameters this window will not appear in user menu.

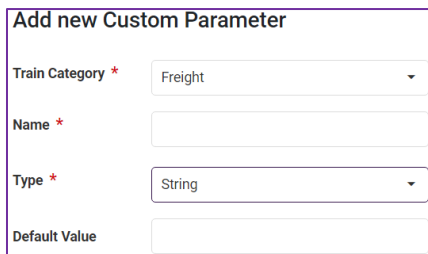
To add new custom parameter, click 'Add new parameter'. You will be redirected to the following window.



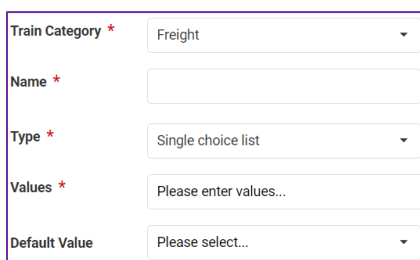
In a train category field, the DM can select category (freight or passanger) which will be applied to a train. In the name field enter the name of the custom parameter that you want to define. The Type window provides drop down menu with several parameter type options: **String, single choice list, multiple choice list, checkbox (yes/no).**

Depending on the type of parameter selected a different new window appears for the DM to add value of custom parameter:

- **String:** Enter default value.



- **Single choice list:** Enter a name, the values which have to be separated through commas and a default value



- **Multiple choice list:** Enter a name, the values which have to be separated through commas and the default values?

Train Category *	Freight
Name *	
Type *	Multiple choice list
Values *	Please enter values...
Default Value	Please select...

- **Checkbox:** select yes or no.

Train Category *	Freight
Name *	
Type *	Checkbox (yes/no)

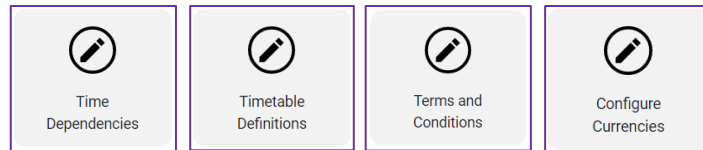
After defining custom parameter click '**Save**' to save.

DMs can also edit or delete custom parameters by clicking respective icons:



4.4. Other

The 'Other' section is divided into 3 submenus:



4.4.1 Time Dependencies

Some DMs may require time dependency features for their charging formula. For this purpose, enter 'Time Dependencies' category where the user will be able to view, create, edit and delete time dependency categories.

The window is divided into two main tables: 'Time dependencies' and 'Time dependency Categories'.

Created time dependency categories will be displayed in a table view, with the option to edit or remove them. At the bottom of the table there is a button for adding new time dependency.

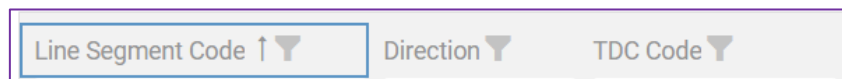
Time Dependencies

Line Segment Code ↑ ▾	Direction ▾	TDC Code ▾	Time From-To	Valid Days	Action
(All) ▾	(All) ▾	(All) ▾			
No data					
<input type="button" value="+ ADD NEW TIME DEPENDENCY"/>					

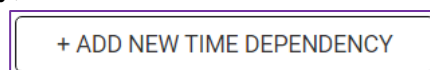
Time Dependency Categories

TDP Code ↑ ▾	TDP Text ▾	Action
Default Time Dependency	Default Time Dependency (created by default from EICIS)	✎ 🗑
<input type="button" value="+ ADD NEW CATEGORY"/>		

The DM has an option to filter time dependencies or list the in ascending or descending way.



To add new time dependency, click:



The DM will be directed to a new window:

Add new Time Dependency

Line Segment Code *

Time From *

Time To *

Valid Days * Select All
 Mon Tue Wed Thu Fri Sat Sun

Direction *

TDC Code *

In the new window fields that are marked with red Asterix are mandatory. First please select '**Line Segment Code**' from a drop-down menu. Define timeframe by defining '**From**', '**To**' times. Choose validity days. For direction the DM has an option to choose from drop down menu one of the following values:

Bidirectional

Normal

Inverse

Bidirectional

Finally select TDC code and save created time dependency.

TDC Code *





To add new time dependency, click '**Add New Category**'. Define required category directly in the table and save it. There are also options to edit category or delete it.

TDP Code ↑	TDP Text ↓	Action
Default Time Dependency	Default Time Dependency (created by default from EICIS)	<input type="button" value="edit"/> <input type="button" value="delete"/>

4.4.2 Timetable Definitions

In '**Timetable Definitions**' category DMs are able to define timetables in order to version formulas, time dependencies, terms and conditions and custom parameters. DMs view, create, edit and delete timetable versions. Timetable versions are displayed in a table view and the user has an option to edit or remove them directly from the table.

To add new timetable, click '**Add New Definition**'.

Timetable Definitions			
Name ▼	Year ↓ ▼	Active ▼	Action
	(All) ▼	(All) ▼	
2020 DB Netz PLC	2020	✓	 
2019 DB Netz PLC V1	2019	✓	 

+ ADD NEW DEFINITION







4.4.3 Terms and Conditions

Clicking 'Terms and Conditions' will redirect to a window where the DM is able to upload terms and conditions applicable for certain timetable year. DMs have the possibility to edit terms and conditions directly in the editing window.

Uploaded terms and conditions become visible for the user.

The DMs may add any information here that is relevant for the charge estimates to be calculated by the users. For example, if something cannot be included in the formulas due to high complexity or direct link to the IM's network statement where details about its charging scheme are available.

Terms and Conditions
2020 DB Netz PLC ▼

↶ ↷
Font ▼
Size ▼
A° 
B
I
S
U






SAVE

4.4.4 Configure Currencies

First, the DM must select the currency which is applicable in his IM's country. If the currency is different from EUR, the DM also must set the exchange rate and keep it up to date in case of significant change. Select a currency of your country from drop down menu. For our example we will choose Polish currency.

Configure Currencies

Currency *

Exchange rate *

- [ALL] Albanian lek
- [AZN] Azerbaijani manat
- [BAM] Bosnia and Herzegovina convertible mark
- [BGN] Bulgarian lev
- [BYN] Belarusian ruble
- [CHF] Swiss Franc
- [CZK] Czech Koruna
- [DKK] Danish Krone

Once the currency is selected an exchange rate window appears where DMs are required to define exchange rate. Once exchange rate is set up click save.

Configure Currencies

Currency *

Exchange rate *