

Development of a standardized timetable for Combined Transport (EiFa)

Template and Technical Specification

FKZ: 19F1112A+B

July 2022 - June 2023

Table of contents

1. Background and Project Objectives	3
2. Timetable Template and Technical Specification	4
2.1. EiFa-CT Nomenclature	4
2.2. EiFa-CT Field format structure and instructions	5
2.3. EiFa-CT Example	7
2.4. EiFa-CT Excel File	8
2.5. EiFa-CT Example for creating an EiFa format Excel (XLS) file	9
2.6. EiFa-CT CSV Copy template	13
2.7. EiFa-CT CSV Data Example	14
2.8. EiFa-Excel Formatting (after importing an EIFA-CSV)	15
3. Help and Support	16

1. Background and Project Objectives

In order to achieve the climate goals, set by the federal government, an increased shift of traffic to environmentally friendly modes of transportation are a crucial element. To succeed in this, the digitization of involved stakeholders and the transparency of Combined Transport (CT) must be significantly enhanced. Only through these means can the entry for new customers be facilitated. It is essential to make information about existing environmentally friendly routes by rail and water easily comparable and visible to potential users.

Potential users of Combined Transport (especially logistics companies and shippers) currently lack sufficient means to compare road transports with environmentally friendly Combined Transport. This is mainly due to the fact that timetable data is currently only published by individual stakeholders on their own channels, and, to make matters worse, these data are not comparable due to different contents. In some cases, no information is published, and if it is, the nature and extent of the information and data formats (Excel, PDF, image file, website, etc.) vary widely. Additionally, a consistent coding of terminals is not universally available. Without easy access to CT, significant potential for modal shift in freight transport remains untapped, even though many are willing to use environmentally friendly transport solutions, and the contribution of freight transport to achieving climate goals is insufficient.

The project's goal is to facilitate the exchange of connection information between stakeholders and third parties. This will increase the digitization and transparency of this green mode of transportation and establish the basis for a stronger shift to environmentally friendly modes of transportation, specifically rail and waterway transport. The unified timetable structure is explicitly designed for these two modes of transportation, with the optional capability of making this data accessible on cross-stakeholder platforms. The innovation lies in a unified timetable format, which is currently absent but is an essential foundation for the digitization and increased transparency in Combined Transport.

The core objective of EiFa is to enhance the transparency of CT through a clear coding methodology of timetable objects in a digital reference model, aiming to:

- Resolve inefficiencies caused by non-uniquely declared terminals in timetables
- Facilitate the networking and data exchange among stakeholders
- Enable the visibility of cross-modal information
- Allow the voluntary provision of timetable information on cross-platforms through a semantic standard
- Facilitate access to intermodal transport for potential CT users and thereby support modal shift.

2. Timetable Template and Technical Specification

The standardized timetable template for Combined Transport and its corresponding technical specification, developed from expert interviews, surveys, workshops, and industry exchanges, are documented below.

2.1. EiFa-CT Nomenclature

ID	Content nomenclature	Nomenclature Description / Info box
0	ID	Identifier like UUID ¹ for API data exchange
1	Timetable valid from Date	Date as of which the timetable is valid
2	Timetable valid until Date	Date until which the timetable is valid
3	UIRR Code Origin Terminal	UIRR code for the start terminal
4	Name of Origin Terminal	Name of the start terminal (see name in UIRR code)
5	Origin Country	UN/LOCODE of the start terminal (two letters)
6	UIRR Code Destination Terminal	UIRR code for the destination terminal
7	Name of Destination Terminal	Name of the destination terminal (see name in UIRR code)
8	Destination Country	UN/LOCODE of the destination terminal (two letters)
9	Closing for LU at Origin Terminal [Days]	Day defined between operator and terminal for the last delivery of a loading unit at the start terminal
10	Closing for LU at Origin Terminal [Time]	Time defined between operator and terminal for the last delivery of a loading unit at the start terminal
11	Days of Departure from Origin Terminal	Day of departure of the means of transportation (train, barge, ferry)
12	Provision of LU at Destination Terminal [Day]	Day from which the operator / forwarding agent has access to the loading units, based on the departure days / shipping days
13	Provision of LU at Destination Terminal [Time]	Time from which the operator/forwarding agent has access to the loading units
14	Clearance Gauge for Railway Network	Codes ² for the maximum height and width of loading units that can be loaded onto wagons
15	CT Operator Name	Name of the CT operator according to the RICS code
16	CT Operator RICS Code	"Railway Interchange Coding System ³ " or railroad code is a four-digit code used in various applications to identify a company operating in the railroad business
17	CT Operator Contact Person Name	Name of the responsible contact person at the CT operator
18	CT Operator Contact Phone Number	Contact person or general telephone number
19	CT Operator E-Mail Address	Contact person or general e-mail address
20	CT Operator Web-Link	Website of the CT operator
21	Others	Free text field for further comments from the CT operator, e.g. coordinates of the terminals if no code is available

¹ <https://www.uuidgenerator.net/>

² <https://www.uirr.com/de/road-rail-ct/framework-conditions/railway-infrastructure.html>

³ <https://uic.org/support-activities/it/rics>

2.2. Eif-CT Field format structure and instructions

ID	Content nomenclature	Data field format
0	ID*	UTF8 String, Special character
1	Timetable valid from Date	DD.MM.YYYY HH:MM +OFFSET
2	Timetable valid until Date	DD.MM.YYYY HH:MM +OFFSET
3	UIRR Code Origin Terminal	UTF8 String, Special character
4	Name of Origin Terminal	UTF8 String, Special character
5	Origin Country	2 Character (UN/LOCODE)
6	UIRR Code Destination Terminal	UTF8 String, Special character
7	Name of Destination Terminal	UTF8 String, Special character
8	Destination Country	2 Character (UN/LOCODE)
9	Closing for LU at Origin Terminal [Days]	UTF8 String, Special character
10	Closing for LU at Origin Terminal [Time]	HH:MM:SS +OFFSET
11	Days of Departure from Origin Terminal	UTF8 String, Special character
12	Provision of LU at Destination Terminal [Day]	UTF8 String, Special character
13	Provision of LU at Destination Terminal [Time]	HH:MM:SS +OFFSET
14	Clearance Gauge for Railway Network	UTF8 String, Special character
15	CT Operator Name	UTF8 String, Special character
16	CT Operator RICS Code	UTF8 String, Special character
17	CT Operator Contact Person Name	UTF8 String, Special character
18	CT Operator Contact Phone Number	UTF8 String, Special character
19	CT Operator E-Mail Address	UTF8 String, Special character
20	CT Operator Web-Link	UTF8 String, Special character
21	Others	UTF8 String, Special character

Instructions for the individual fields:

ID #0: Unique timetable ID. Assigned by schedule provider. Encoded as UUID, e.g. <https://www.uuidgenerator.net/>, operator name and unique operator timetable number

ID #1: Date and time in 24-hour format, time zone incl. offset of the relevant terminal

ID #2: Date and time in 24-hour format, time zone incl. offset of the relevant terminal

ID #3: UIRR code, if available, if not available BIC Facility Code or UNLOCODE. If no code is available, please enter terminal coordinates in WGS 84 as GeoDec in field #21 Others

ID #4: UIRR code as basis

ID #5: Start - Terminal Country UNLOCODE (2 letters)

ID #6: UIRR code, if available, if not available BIC Facility Code or UNLOCODE. If no coding available, please enter terminal coordinates in WGS 84 as GeoDec in field #21 Others

ID #7: UIRR code as basis

ID #8: Destination - Terminal Country UNLOCODE (2 letters)

ID #9: Deadline 0 or 1, 7 fields, example deadline Monday: 1000000

ID #10: Deadline time in 24-hour format, time zone incl. offset of the relevant terminal

ID #11: Departure day(s) 0 or 1, 7 fields, example departure Tuesday: 0100000

ID #12: Provision day A to G, always in relation to the departure day, B means provision 1 day after departure day

ID #13: Provision time in 24-hour format, time zone incl. offset of the relevant terminal

ID #14: Please only enter the maximum size of the loading units. Coding according to: <https://www.uirr.com/de/component/downloads/downloads/739.html>

ID #15: RICS link: <https://uic.org/support-activities/it/rics>

ID #16: Analog to operator name from RICS

ID #17: Name of the contact person

ID #18: Telephone number of the contact person

ID #19: E-mail address of the contact person, alternatively service e-mail address

ID #20: Website of the CT operator

ID #21: Example of coordinates of a terminal without UIRR code: 48.998992, 8.424078

2.3. Eifa-CT Example

ID	Content nomenclature	Example
0	ID*	550e8400-e29b-11d4-a716-446655440000
1	Timetable valid from Date	01.01.2023 00:00 +01:00
2	Timetable valid until Date	31.12.2023 23:59 +01:00
3	UIRR Code Origin Terminal	575
4	Name of Origin Terminal	DUSS Terminal Karlsruhe
5	Origin Country	DE
6	UIRR Code Destination Terminal	508
7	Name of Destination Terminal	DUSS Terminal Berlin
8	Destination Country	DE
9	Closing for LU at Origin Terminal [Days]	1000000
10	Closing for LU at Origin Terminal [Time]	12:00:00 +01:00
11	Days of Departure from Origin Terminal	0100000
12	Provision of LU at Destination Terminal [Day]	B
13	Provision of LU at Destination Terminal [Time]	08:00:00 +01:00
14	Clearance Gauge for Railway Network	C70 C400 P400
15	CT Operator Name	EIFA TEST Intermodal
16	CT Operator RICS Code	3432
17	CT Operator Contact Person Name	Jane Doe
18	CT Operator Contact Phone Number	+49 1234523
19	CT Operator E-Mail Address	name@email.com
20	CT Operator Web-Link	https://sgkv.de/portfolio/projekte/eifa/
21	Others*	Loading Unit: Container and semi-trailer, no dangerous goods

2.4. Eifa-CT Excel File

Timetable valid from Date	Timetable valid until Date	UIRR Code Origin Terminal	Name of Origin Terminal	Origin Country	UIRR Code Destination Terminal	Name of Destination Terminal	Destination Country	Closing for LU at Origin Terminal [Days]	Closing for LU at Origin Terminal [Time]	Days of Departure from Origin Terminal	Provision of LU at Destination Terminal [Day]	Provision of LU at Destination Terminal [Time]	Clearance Gauge for Railway Network	CT Operator Name	CT Operator RICS Code	CT Operator Contact Person Name	CT Operator Contact Phone Number	CT Operator E-Mail Address	CT Operator Web Link	Others
01.01.2023 00:00 +01:00	31.12.2023 23:59 +01:00	575	DUSS Terminal Karlsruhe	DE	508	DUSS Terminal Berlin	DE	1000000	12:00:00 +01:00	1000000	B	08:00:00 +01:00	C70 C400 P400	EIFA TEST Intermodal	3432	Jane Doe	+49 1234523	name@email.com	https://sgkv.de/portfolio/projekte/eifa/	LU: Container
15.01.2023 00:00 +01:00	15.05.2023 23:59 +01:00	561	DUISBURG RHEINHAUSEN DIT	DE	421	VERONA QUADRANTE EUROPA	IT	1000000	18:00:00 +01:00	1000000	D	06:00:00 +01:00	C70 C400 P400	EIFA TEST Intermodal	3432	John Doe	+49 1234523	name@email.com	https://sgkv.de/portfolio/projekte/eifa/	LU: Trailer and Container
01.03.2023 00:00 +01:00	31.07.2023 23:59 +01:00	561	DUISBURG RHEINHAUSEN DIT	DE	450	POMEZIA S.PALOMBA	IT	1111100	12:00:00 +01:00	1111100	B	15:00:00 +01:00	C70 C400 P400	EIFA TEST Intermodal	3432	Jane Roe	+49 1234523	name@email.com	https://sgkv.de/portfolio/projekte/eifa/	no dangerous goods

Others individual fields are possible but are not processed / mapped in Eifa. Example: Express connection, costs, CO2, booking link, etc.

2.5. EiFa-CT Example for creating an EiFa format Excel (XLS) file

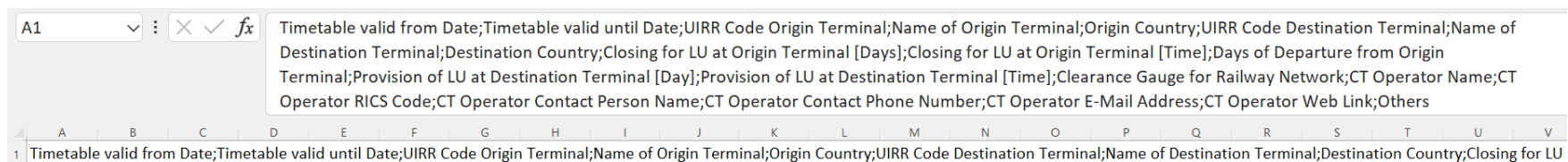
Step 1: Copy the data in the box below to the clipboard:

Timetable valid from Date;Timetable valid until Date;UIRR Code Origin Terminal;Name of Origin Terminal;Origin Country;UIRR Code Destination Terminal;Name of Destination Terminal;Destination Country;Closing for LU at Origin Terminal [Days];Closing for LU at Origin Terminal [Time];Days of Departure from Origin Terminal;Provision of LU at Destination Terminal [Day];Provision of LU at Destination Terminal [Time];Clearance Gauge for Railway Network;CT Operator Name;CT Operator RICS Code;CT Operator Contact Person Name;CT Operator Contact Phone Number;CT Operator E-Mail Address;CT Operator Web Link;Others

Step 2: Open Microsoft Excel (or a comparable spreadsheet tool).

Step 3: Create a new workbook and save it under a file name of your choice.

Step 4: Insert the information from the clipboard into cell A1.



Step 5: Execute the function "Convert Text to Table" function from the Data Taskbar option. Select the "Delimited" option Click "Next".

Convert Text to Columns Wizard - Step 1 of 3

The Text Wizard has determined that your data is Fixed Width.
If this is correct, choose Next or choose the data type that best describes your data.

Original data type

Choose the file type that best describes your data:

- Delimited - Characters such as commas or tabs separate each field.
- Fixed width - Fields are aligned in columns with spaces between each field.

Preview of selected data:

1	Timetable valid from Date;Timetable valid until Date;UIRR Code
2	
3	
4	
5	

Buttons: Cancel, < Back, Next >, Finish

Step 6: Then select the separator option as "Semicolon" alone and Click "Next".

The screenshot shows the 'Convert Text to Columns Wizard - Step 2 of 3' dialog box in Microsoft Excel. The 'Delimiters' section has 'Semicolon' selected. The 'Data preview' section shows the text 'Timetable valid from Date;Timetable valid until Date;UIRR Code Or' being split into three columns. The background shows a spreadsheet with the text 'Timetable valid from Date;Timetable valid until Date;UIRR Code Or' in cell A1.

Step 7: Now select the "Text" format for all columns and then close the dialog by clicking the "Finish" button.

The screenshot shows the 'Convert Text to Columns Wizard - Step 3 of 3' dialog box. The 'Column data format' section has 'Text' selected. The 'Destination' is set to 'SAS1'. A 'Data preview' window shows the following text being converted into columns:

Text	General	General
Timetable valid from Date	Timetable valid until Date	UIRR Code Or

The **result** is now displayed as follows. Each column has a timetable object entry:

Step 8: The file can now be saved as an **xls file**. Alternatively, it can be saved as a **csv (UTF8)**.

The screenshot shows the result of the text-to-columns conversion in Excel. The data is now organized into columns:

A	B	C	D	E	F	G	H
Timetable valid from Date	Timetable valid until Date	UIRR Code Origin	Terminal Name of Origin Terminal	Origin Country	UIRR Code Destination Terminal	Name of Destination Terminal	Destination Country Closing for LU

2.6. EiFa-CT CSV Copy template

You can use the following copy template to copy the content to the clipboard and then paste it into any text editor.

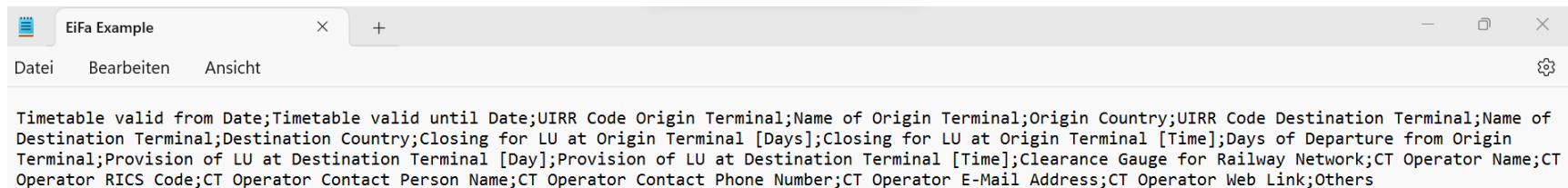
Step 1: Copy the data in the box below to the clipboard:

CSV-EiFa- Format Copy template (without sample data):

```
Timetable valid from Date;Timetable valid until Date;UIRR Code Origin Terminal;Name of Origin Terminal;Origin Country;UIRR Code Destination Terminal;Name of Destination Terminal;Destination Country;Closing for LU at Origin Terminal [Days];Closing for LU at Origin Terminal [Time];Days of Departure from Origin Terminal;Provision of LU at Destination Terminal [Day];Provision of LU at Destination Terminal [Time];Clearance Gauge for Railway Network;CT Operator Name;CT Operator RICS Code;CT Operator Contact Person Name;CT Operator Contact Phone Number;CT Operator E-Mail Address;CT Operator Web Link;Others
```

Step 2: Open a text editor tool.

Step 3: Insert the information of the clipboard into the editor.



Step 4: Save the file under any file name as a csv file type.

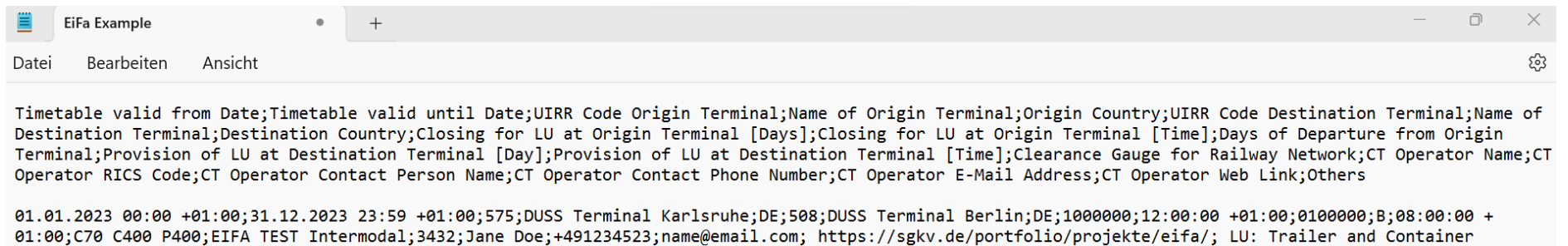
2.7. EiFa-CT CSV Data Example

The following data example can be copied into the created csv file to illustrate this.

CSV-EiFa- Data example copy template:

```
01.01.2023 00:00 +01:00;31.12.2023 23:59 +01:00;575;DUSS Terminal Karlsruhe;DE;508;DUSS Terminal Berlin;DE;1000000;12:00:00  
+01:00;0100000;B;08:00:00 +01:00;C70 C400 P400;EIFA TEST Intermodal;3432;Jane Doe;+491234523;name@email.com;  
https://sgkv.de/portfolio/projekte/eifa/; LU: Trailer and Container
```

The format is described in line 1, the content of the example is inserted in line 2.



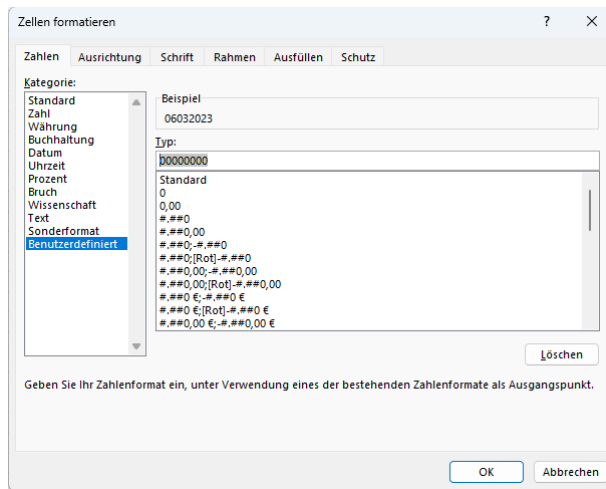
```
Timetable valid from Date;Timetable valid until Date;UIRR Code Origin Terminal;Name of Origin Terminal;Origin Country;UIRR Code Destination Terminal;Name of  
Destination Terminal;Destination Country;Closing for LU at Origin Terminal [Days];Closing for LU at Origin Terminal [Time];Days of Departure from Origin  
Terminal;Provision of LU at Destination Terminal [Day];Provision of LU at Destination Terminal [Time];Clearance Gauge for Railway Network;CT Operator Name;CT  
Operator RICS Code;CT Operator Contact Person Name;CT Operator Contact Phone Number;CT Operator E-Mail Address;CT Operator Web Link;Others  
01.01.2023 00:00 +01:00;31.12.2023 23:59 +01:00;575;DUSS Terminal Karlsruhe;DE;508;DUSS Terminal Berlin;DE;1000000;12:00:00 +01:00;0100000;B;08:00:00 +  
01:00;C70 C400 P400;EIFA TEST Intermodal;3432;Jane Doe;+491234523;name@email.com; https://sgkv.de/portfolio/projekte/eifa/; LU: Trailer and Container
```

2.8. EiFa-Excel Formatting (after importing an EiFa-CSV – An Example)

After opening an EiFa-CSV file, the format for the columns "Timetable valid from Date", "Timetable valid until Date" and "Days of Departure from Origin Terminal" should be formatted, Otherwise Excel may not display the CSV file correctly.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1	Fahrplan gültig	Fahrplan gültig bis	UIRR Code	SI Name	Start-Land	UIRR Code	ZI Name	des ZI	Ziel-Land	Annahme-sc	Annahme-zeit	Abfahrtstag	Bereit-stellu	Bereit-zeit	Profil	KV Operateu	KV Operateu	KV Operateu	KV Operateu	KV Operateu	KV Operateu	Sonstiges
15	6032023	9122023	553	BUNA VALUE DE		561	DUISBURG RI DE		A	15:00:00+01:00	10000	B		06:00:00+01:00	C70 C400 P4C HUPAC INTEI		3846				4,1589E+10	info.de@hupac.com/https://www.hupac.com/
16	6032023	9122023	553	BUNA VALUE DE		561	DUISBURG RI DE		A	15:00:00+01:00	100	B		08:00:00+01:00	C70 C400 P4C HUPAC INTEI		3846				4,1589E+10	info.de@hupac.com/https://www.hupac.com/
17	5062023	9122023	553	BUNA VALUE DE		561	DUISBURG RI DE		A	10:00:00+01:00	10	C		06:00:00+01:00	C70 C400 P4C HUPAC INTEI		3846				4,1589E+10	info.de@hupac.com/https://www.hupac.com/
18	13032023	9122023	561	DUISBURG RI DE		553	BUNA VALUE DE		A	16:00:00+01:00	100000	B		09:00:00+01:00	C70 C400 P4C HUPAC INTEI		3846				4,1589E+10	info.de@hupac.com/https://www.hupac.com/
19	6032023	9122023	561	DUISBURG RI DE		553	BUNA VALUE DE		A	15:30:00+01:00	1000	B		09:00:00+01:00	C70 C400 P4C HUPAC INTEI		3846				4,1589E+10	info.de@hupac.com/https://www.hupac.com/

The format must be edited for this as in the following. Select the "Format Cells" option in Excel by right clicking on these columns, then select "User-defined" and create a date field with the entry 00000000. A similar procedure is required for the all the three above mentioned columns. Once again, please note that the entry 00000000 must be created here under "User-defined" option as shown below.



3. Help and Support

If you have any questions, please contact the following contacts:

PTV GmbH	Florian Krietsch	florian.krietsch@ptvgroup.com
SGKV e.V.	Matthias Plehm	mplehm@sgkv.de

PTV Group

PTV Group is a leading global software company for traffic planning, simulation, and real-time management. With more than 40 years of experience in the fields of mobility, the Germany-based company provides software products based on proprietary algorithms ranging from microscopic and macroscopic modeling and simulation of traffic to real-time traffic management, benefiting more than 2,500 cities and municipalities. Bridgepoint acquired a majority stake in the company in January 2022 in order to further accelerate its growth together with shareholder Porsche Automobil Holding SE. Since 2023 PTV Group and Econolite are united under the brand Umovity. Further information can be found at <https://www.ptvgroup.com/>

SGKV e.V.

The Studiengesellschaft für den Kombinierten Verkehr e.V. (SGKV), translated as the German Promotion Centre for Intermodal Transport seeks to promote the relevance of intermodal and rational transport chains. The goal of the research association is to strengthen and further develop Combined Transport by bringing the research and practice together. As a neutral and non-profit Organisation, SGKV brings over eighty members under one roof: From terminal operators to operators of universities and freight forwarding agencies. Here, everyone is with the common goal of making the freight transport in Germany and Europe environmentally friendly, efficient, and more sustainable by means of intelligent intermodal transport chains. The purpose of SGKV is to research and promote in practice the rational combination of intra-business, inter-business, national, international transport, and transshipment. Therefore, it promotes the usage of Combined Transport as an environmentally friendly combination of transport modes to achieve environmental protection. Further information can be found at www.sgkv.de.