GIS APPLICATION
FOR UNECE TER NETWORK

User Manual)

Table of Contents

Revision Date	Version	Comment
April 21, 2021	1.0	Pre-final proposal

4 User Manual

4.1 Launching of the Application

The Application is launched by clicking the button/link in the UNECE website[1].

The loaded starting layout of the Application comprises:

- Map view with map controls (centered and zoomed out to maximum)
- Menu bar / panel (collapsed at right edge)
- Data table view (collapsed at bottom edge)

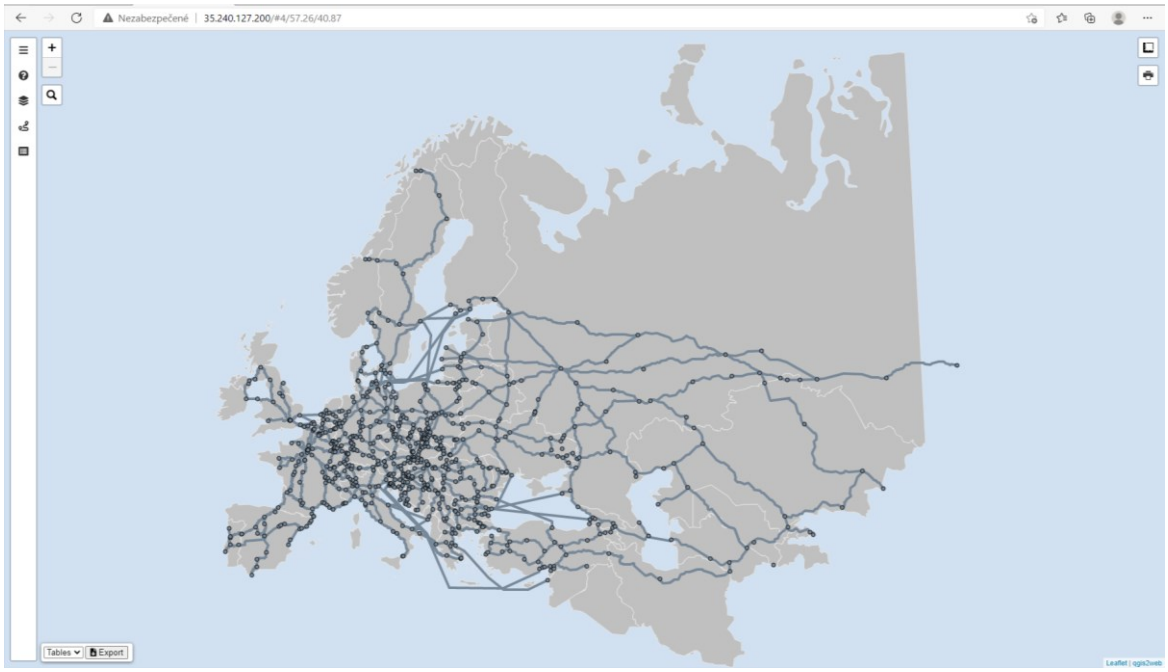

Fig. 2 The starting layout of the Application

Tooltip hints

Basic hints of all controls in the Application appear in tooltips poping-up on mouse over the respective buttons.

4.2 Map view controls and tools

Zooming of map view

Click on the "+" or "-" Map control button in the top left corner to zoom the map in/out by default step. Repeat several times to zoom into maximum / minimum level.

Panning of map view

Click and hold LEFT MOUSE BUTTON and move the mouse to pan the Map view into desired position.

[1] https:/unece.org/transport/rail-transport

Feature info

Hover the mouse over a feature (Line or Node) in the Map view to display the pop-up context label with the database identification of the feature in the following formats:

- Lines – Country: Line DB number (e.g. SK: 309178) or currently selected attribute in the Layer control panel
- Nodes – Name of the Node: Node DB Number (e.g. Trnava: 44085)

Click LEFT MOUSE BUTTON when hovering over a feature (Line or Node) in the Map view to trigger the shortlist with the basic information about the feature in the pop-up table.

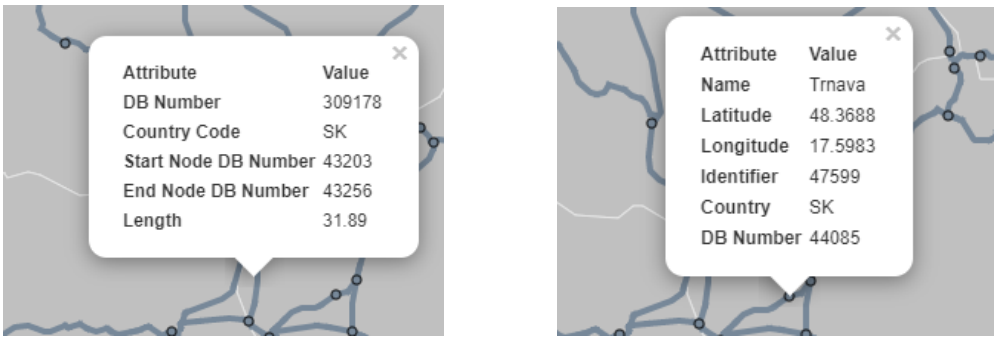

Fig. 3 Shortlist of basic feature attributes (left: Line, right: Node)

Click RIGHT MOUSE BUTTON when hovering over a feature (Line or Node) in the Map view to list the detailed properties of this feature.

Search Node tool

Click the "SEARCH" button in the top left corner to search for a specific Node (station) in the network. Type few letters of the city / station´s name in the search field and choose the exact (database) name from the auto-complete offer that appears below.

Note: If the name of the desired station does not appear in the auto-complete list, the station is not defined as Main Node and cannot be searched.

When the station is found, click the "SEARCH" button again to highlight the position of the station in the Map view – red circle appears around the selected station and the map is centered.

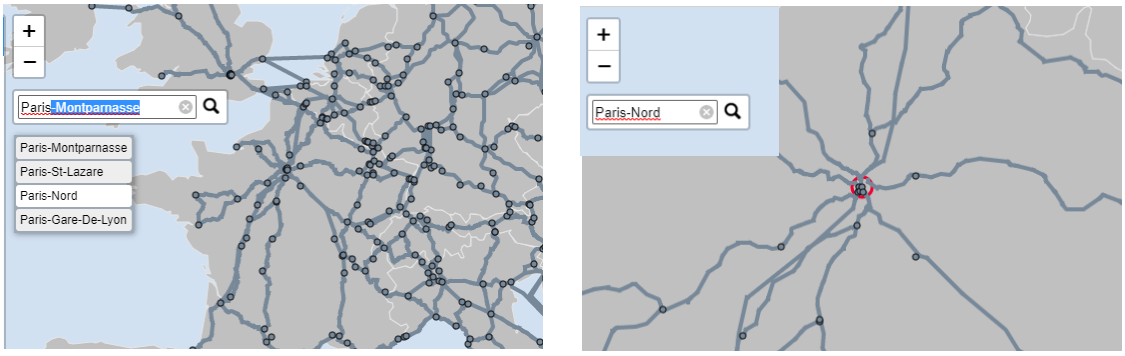

Fig. 4 Search Node tool functionality

Map measurement tool

Hover the mouse over the "MEASURE" tool button in the top right corner to display the dialogue window. Launch the "Create a New Measurement" and click the vertices of the polygon you want to measure in the Map view (the polygon is highlighted in green).

The coordinates of points, length and the area of the measurement is calculated automatically. Click the "Finish measurement" to display the summary of area measurement. Click the "Center to this area" to focus the Map view or "Delete" to abandon the measurement.

Plotting of the map view

Hover the mouse over the "PRINT" tool button in the top right corner to display the options. Select the option to launch the printing dialogue box. Select the printer, number of copies, pages, colour and other plot settings (in the extended form) or click the link to open the system-based dialogue window (depends on printer). Click the "Print" button in the dialogue window to complete the plot or "Cancel" to return back to the Application.

4.3 Menu bar / panel controls

Toggle the Menu bar / panel view

Click on the "Home" button in the top of the Menu to toggle its bar / panel view.

Help panel

Click on the "?" button in the Menu bar to display the Help panel. The panel contains basic hints on controls and functionality of the Application similar to this guide.

Layer control panel

Click on the "LAYERS" button in the Menu bar to display the Layer control panel.

Route search panel

Click on the "ROUTE" button in the Menu bar to toggle the Route search panel.

Feature info panel

Click on the "LIST" button in the Menu bar to toggle the Feature info panel with the full list of attributes / properties of the selected Line or Node.

Fig. 4 Menu panel

4.4 Layer control tools

Layer display

Choose the layers to be displayed in the Map view by checking the box in front of the name of the layer (feature): Countries, Lines, Nodes.

Line attribute display in map view

Select a Line attribute to be displayed in the map view in front of the attribute. The Lines in the Map view are coloured by categories, corresponding to the selected attribute.

The legend of marking colours is shown in the bottom part of the panel.

Switch in/out checkboxes in front of the categories in the legend list to display any desired combination of parameters in the Map view.

Line attribute selection into tables

Check the boxes right to the attribute names to be included into a table.

Click the "Create table of Lines" button to generate the table contents.

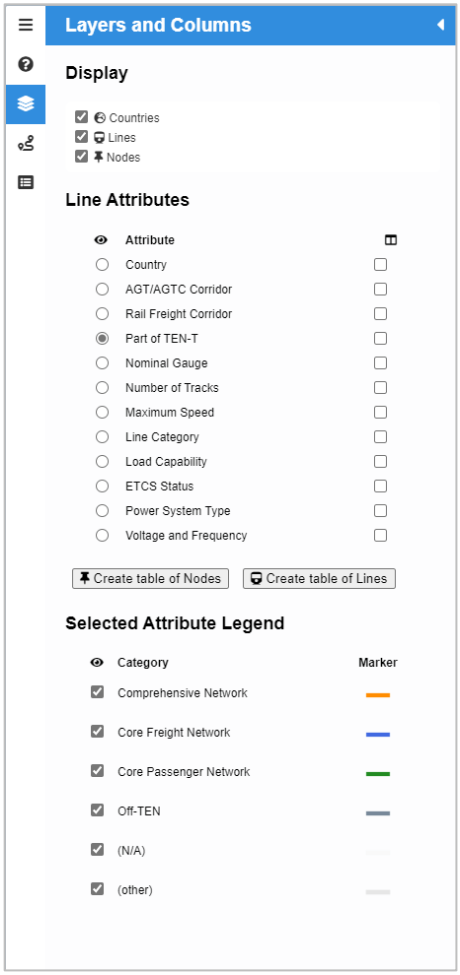

Fig. 5 Layer control panel

Nodes Table

Click the "Create table of Nodes" button to generate the table.

Note: For the Nodes layer, the functionality of attribute selection in the map view / tables is not provided as the number of attributes is quite limited and differentiation of their categories by colour brings no added information.

4.5 Route search tool

A Dijkstra-based route search algorithm is incorporated in the Application.

It enables to search the distance-based shortest-path route within the TER network between a pair of two selected (Main) Nodes.

The search can be further conditioned by speed restriction, i.e. minimum required speed can be set.

Note: In case the minimum speed is not defined for a specific Line, speed restriction is not applied (maximum speed is assumed).

Setting the From / To Node

The "From" and the "To" Node for the route search can be set in three ways:

- type the DB numbers of Nodes into the input fields in the top of the Route search panel
- find a station in the Search node tool and click the "Search from here" or "Search to here" button in the opened Feature info panel
- select a node in the map view with RIGHT MOUSE BUTTON click and then click the "Search from here" or "Search to here" button in the Feature info panel

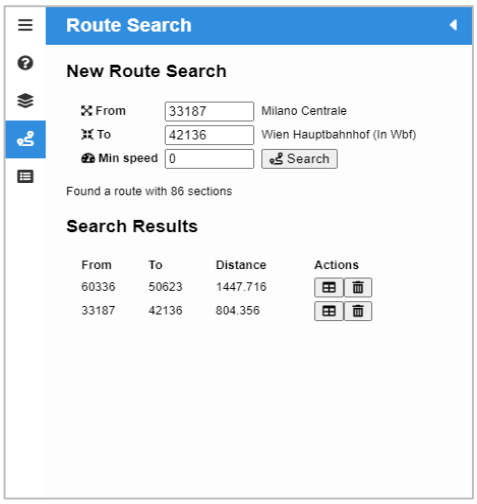

Fig. 6 Route search panel

Launching of the route search

Type in the desired speed restriction in the input field in the Route search panel (leave zero for no restriction). Click the "SEARCH" button to launch the route search script.

The searched route is highlighted in red colour in the map view and the summary of search results (Node From, Node To and Distance) is listed in the Route search panel. An loder route in the list is highlighted blue on mouse hover over it in the list.

Note: The route search procedure can be repeated several times (e.g. to simulate route search via intermediate point). The results are listed under each other.

Generation of table from route search

The list of Lines along the route search with attributes as selected in the Layer control panel can be exported into a separate "Route" table by clicking the "Table" button right to the search results.

Deletion of route search

The search results as well as generated table can be deleted by clicking the "Delete" button right to the search results.

Fig. 7 Example of two route search results:
Milano – Vienna (blue) and Zurich – Bratislava (red)

4.6 Table view

All the tables generated in the Layer control or Route search panels are stored in separate tables.

The list of tables can be viewed in the table view. Select the desired table in the list to switch between the tables.

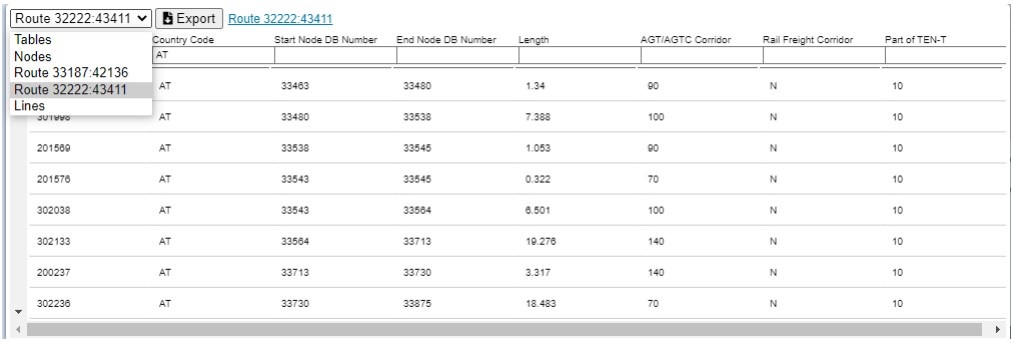

Fig. 8 Example of table view: Nodes, Lines and two Route search

Filtering in tables

Data in tables can be filtered by typing the searched value in the filter field box below the name of the attribute(s).

Table export

By clicking the "EXPORT" button next to the list, the selected table can be exported into a TAB separated text (.txt) file. The file can be downloaded by clicking the link that appears next to the Export button.

Hint: The file can be subsequently saved to any location by standard procedure of the operating system. To open the file in Excel editor, just open a new sheet and drag the downloaded file into the window.

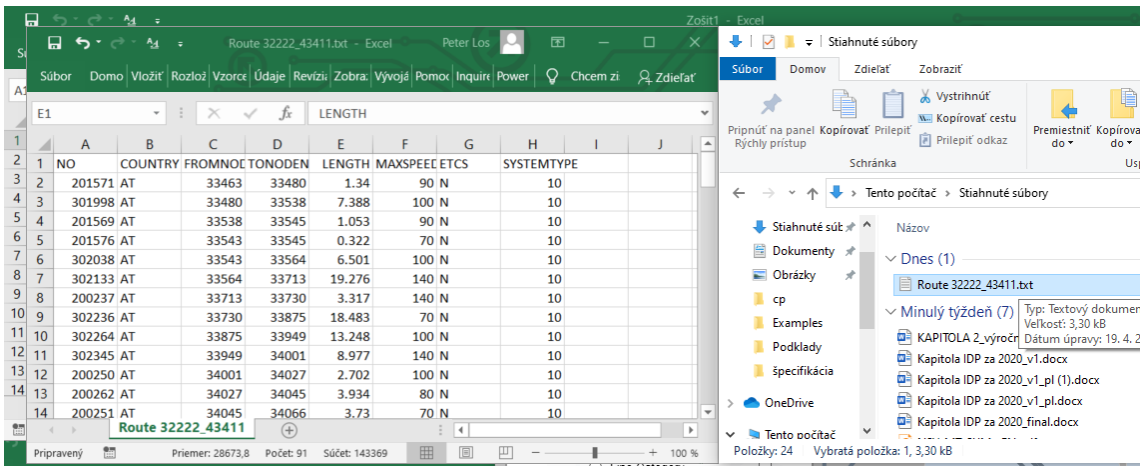

Fig. 9 Opening the exported table in Excel