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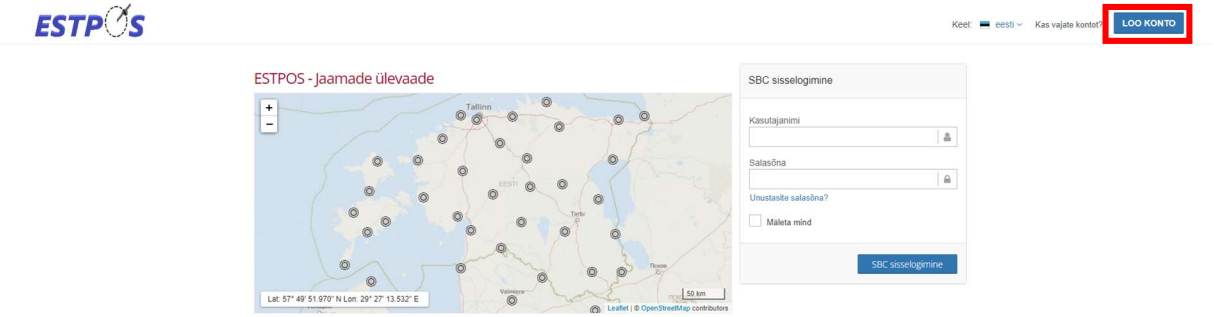
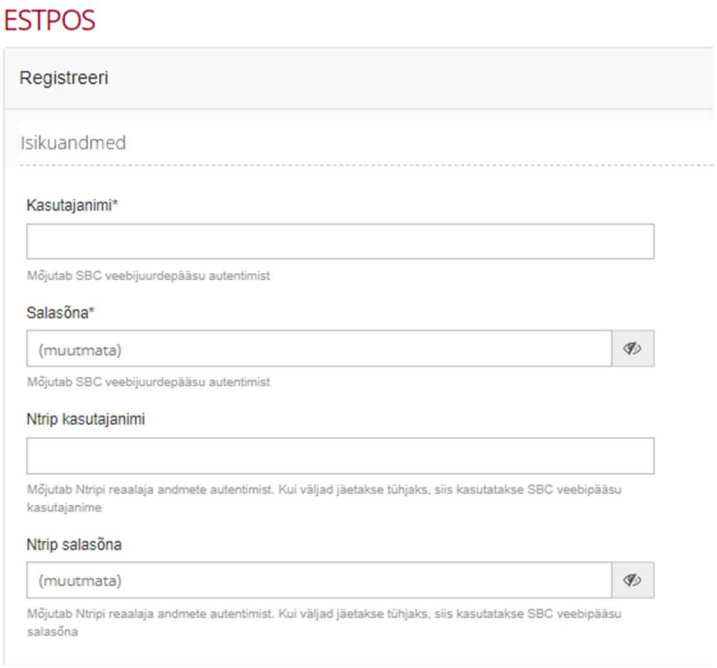
ESTPOS user manual

Creating an ESTPOS user account

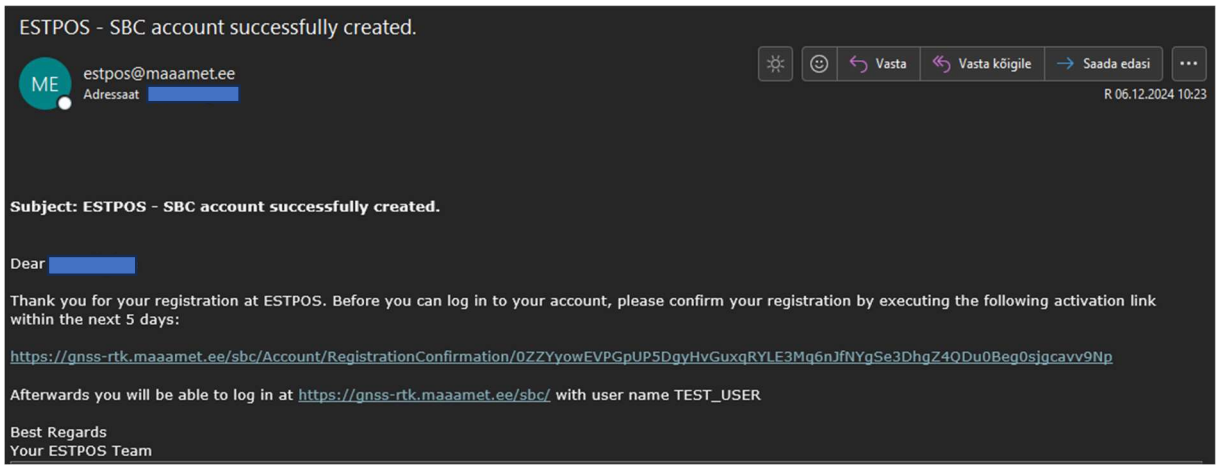
To use the ESTPOS services a ESTPOS user account must be created in the ESTPOS user portal - https://gnss-rtk.maaamet.ee/sbc/Account/Index?returnUrl=%2Fsbc. **If you want to use ESTPOS RTK corrections in more than one device then separate accounts for each device must be made because only 1 (one) simultaneous connection to the ESTPOS network is allowed with one user account.** Below is a description of how to create an account.



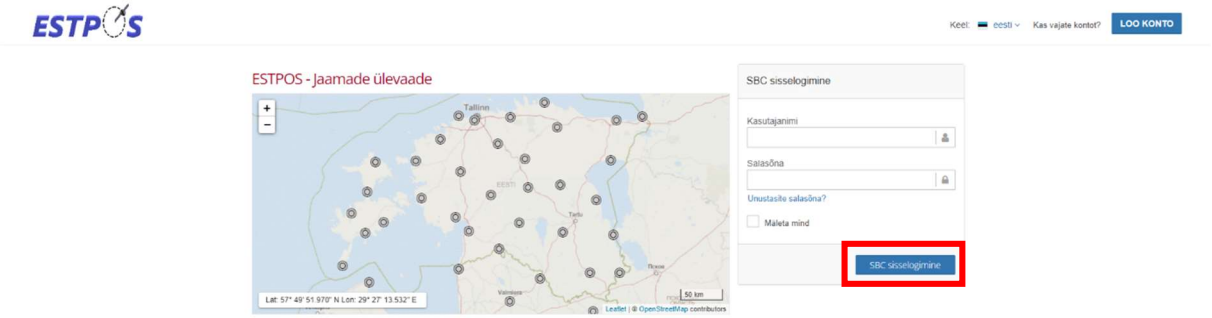
- The user can choose different usernames and passwords for the ESTPOS user portal (account services and settings management, RINEX data download, GNSS computation and transformation) and NTRIP connection (ESTPOS RTK corrections). The separate NTRIP username and password can also be left blank, in which case the same username and password for the NTRIP connection as for the ESTPOS user portal is valid.
- **When choosing a username and password, we recommend using only numbers and letters of the English alphabet. Special characters and letters (@, *, #, %, ä, õ, ö ,ü, etc.) can cause problems when connecting to the ESTPOS network.**



- In addition, the name of the account creator, the name of the company, the user's contact email address and the name of the device for which the user uses the account must also be provided during registration. All notifications sent from the ESTPOS network and information letters sent by the ESTPOS user support will be sent to the contact email specified during registration.
- Once the account is successfully created, the user needs to activate it. The ESTPOS user portal will send a letter to the contact email selected during registration, with a link to activate the account.

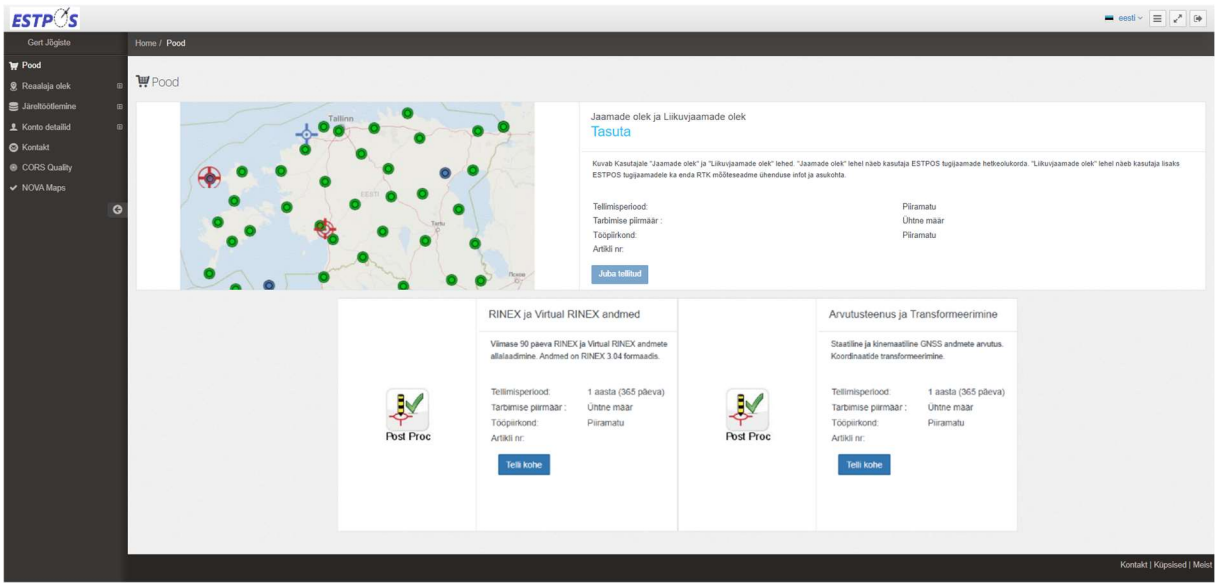


- If the account has been successfully activated, it is possible to log in to the ESTPOS user portal.



- When logging in to the ESTPOS user portal the ESTPOS services **Shop** is shown. From there, the user can choose the suitable services that he wants to use (the content of the services and a more detailed description can be seen in the chapter **ESTPOS services**):

    1. **RINEX ja Virtual RINEX andmed**
    2. **Arvutusteenus ja Transformeerimine**
    3. **Jaamade olek ja Liikuvjaamade olek** (this service is added automatically to every new account)



- **Users must order each desired service separately. After ordering all subscriptions will remain in „pending“ state and will be activated by ESTPOS user support as soon as possible. The user will be notified of the activation of the order to the contact email address given during registration.**

ESTPOS services

RINEX ja Virtual RINEX andmed:

- Allows to download the last 90 days of RINEX and Virtual RINEX data. A Virtual RINEX file is a RINEX file created from the data of ESTPOS base stations. The data is in RINEX 3.04 format. Older data is archived in the ESTPOS archive, and to use it, you need to contact the ESTPOS user support.
- More detailed information about using the service is given in the chapters **RINEX data** and **Virtual RINEX data**.

Arvutusteenus ja Transformeerimine:

- Allows to calculate precise coordinates that are given in the selected coordinate system based on the uploaded rover data and data from the ESTPOS base stations on the **Computation** subpage of the **Post Processing** page. Computations are made with the Leica Infinity software.
- Allows to transform the geocentric coordinates of the WGS84 system into the Estonian national L-EST97 planar coordinate system on the **Transformation** subpage of the **Post Processing** page.
- More detailed information about using the service is given in the chapters **Computation** and **Transformation**.

Jaamade olek ja Liikuvjaamade olek:

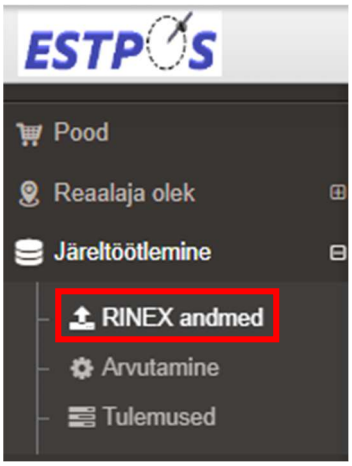
- In the left menu of the user portal, under **Live Status**, the pages **Site Status** and **Rover Status** are displayed.
- **Site Status** shows users the live status of all ESTPOS reference stations. **Rover Status** shows users the live status of all ESTPOS reference stations and the status and location of their GNSS-RTK rover.

RTK parandid – not a public service:

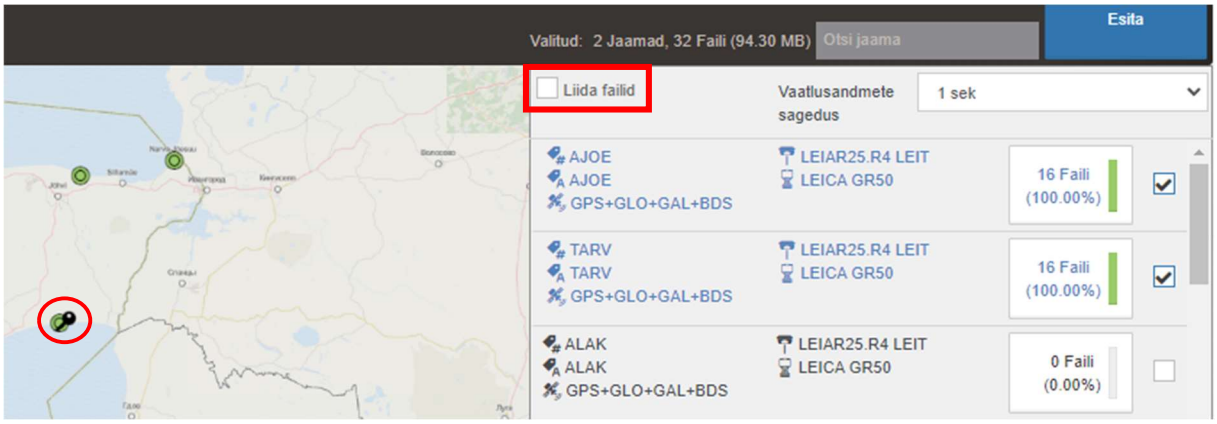
- Allows the user to receive a correction from the ESTPOS network to determine the precise position of their RTK-GNSS device. **Access to the Ntrip server of the ESTPOS network is allowed only from IP addresses originating from Estonia.**
- ESTPOS network settings:
    - Ntrip server address: gnss-rtk.maaamet.ee (213.184.51.72)
    - Port: 8083
    - Mountpoints: DGNSS_iMAX; DGNSS_VRS; DGNSS_Nearest; RTCM2_iMAX; RTCM2_VRS; RTCM2_Nearest; RTCM3_iMAX; RTCM3_VRS; RTCM3_Nearest; MSM5_iMAX; MSM5_VRS ja MSM5_Nearest.
- DGNSS (Differential GNSS) messages contain only signals from GPS satellites. RTCM2 and RTCM3 messages contain signals from GPS and Glonass satellites. MSM5 messages contain signals from GPS, Glonass, Galileo and Beidou satellites.
- iMAX and VRS are network corrections. For Nearest, the correction comes from the nearest GNSS base station.

RINEX data

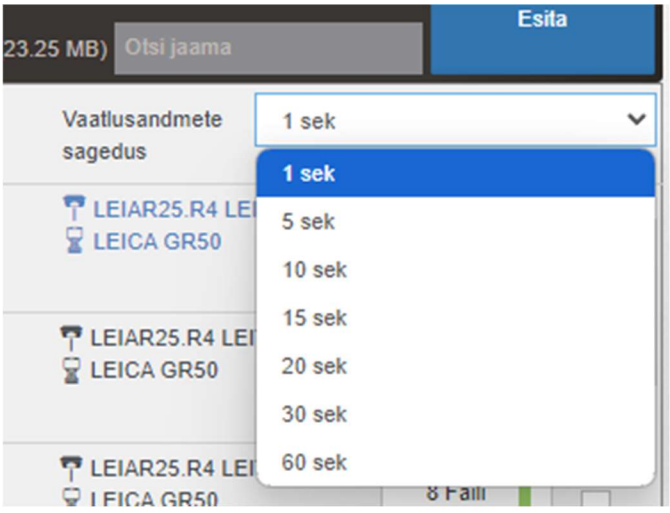
1) Select **Post Processing** and **RINEX Data.**



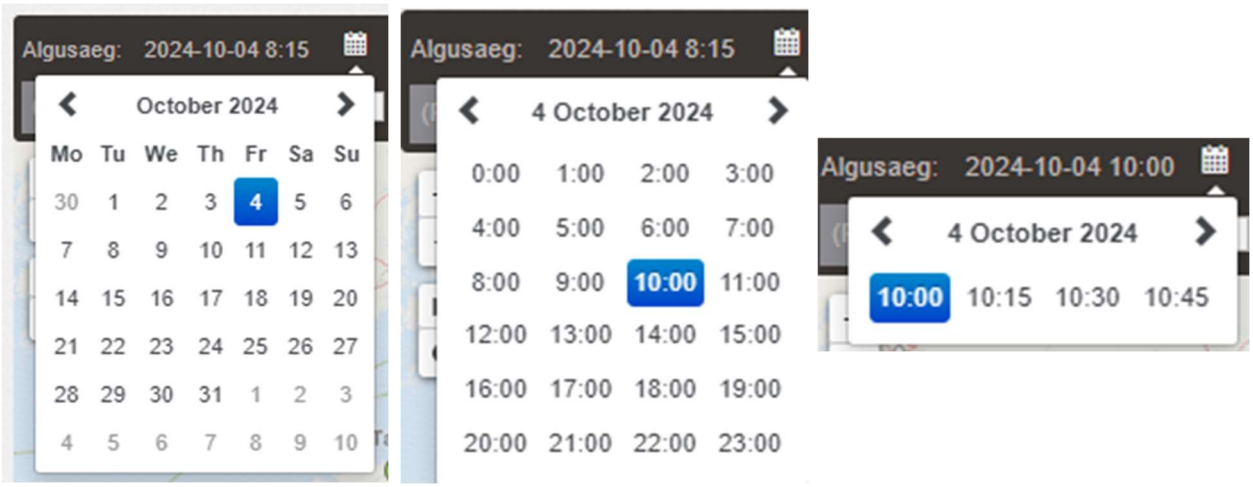
2) Select a GNSS station or stations (either from the map or use the search on the right to search for a station). A black key icon appears on selected stations.
3) By default, all RINEX files are 15 minutes long. Using the **Merge files** option, all files of one base station are merged into one RINEX file.



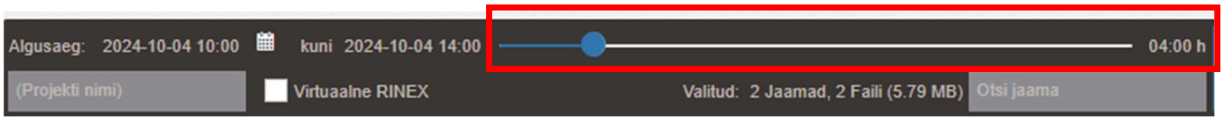
4) The rate of observation data can be selected under the station search bar.



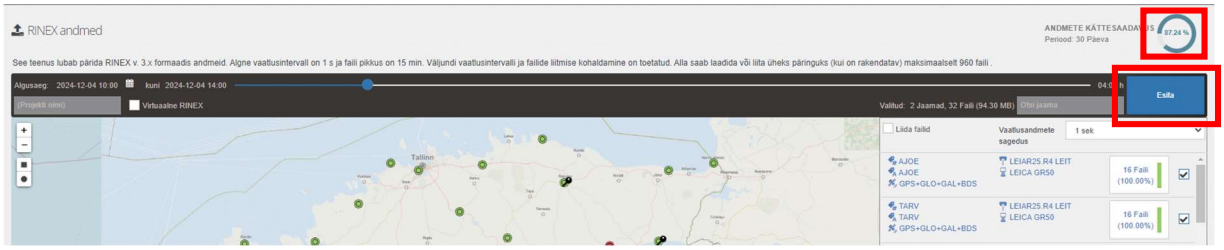
5) Press the calendar icon to select a date. After the date, select the time of the file start time and finally the quarter hour of the start time (00, 15, 30, 45).



6) The length of the file can be changed using the blue circle in the header. The length of the file is visible in the right part of the header.

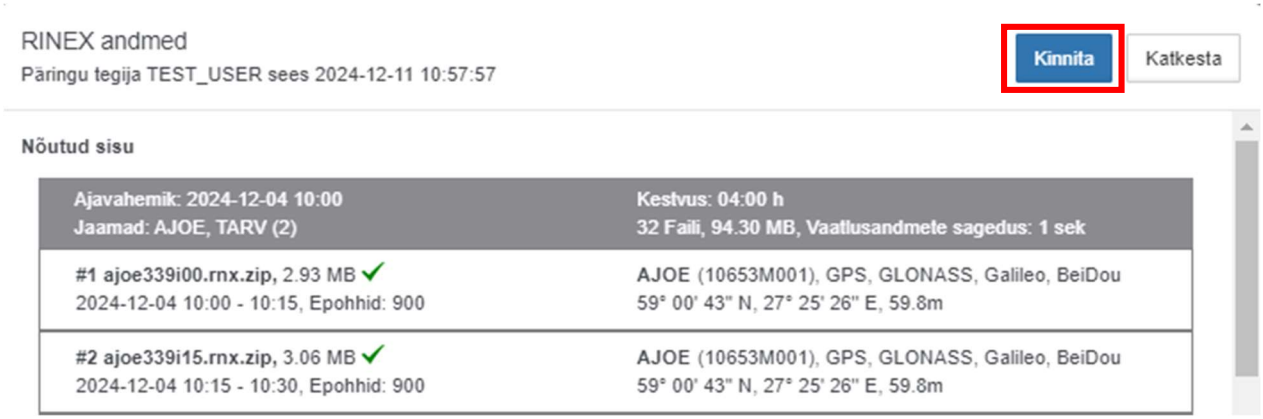


7) When the setup is completed press **Submit.**

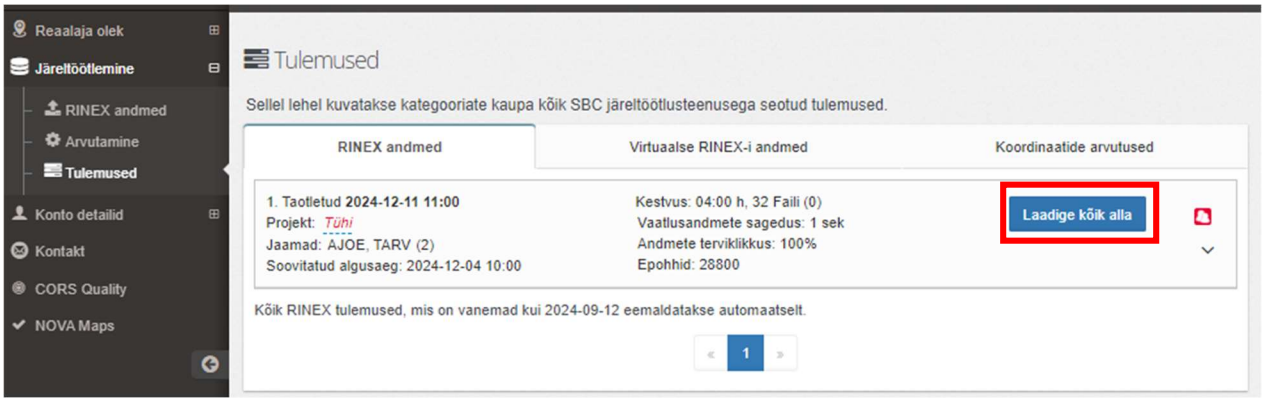


8) Above the **Submit** button is an indicator of data availability for the last 30 days. By clicking on the indicator, you can get more detailed information about the availability of RINEX data of ESTPOS base stations for the last 30 days.

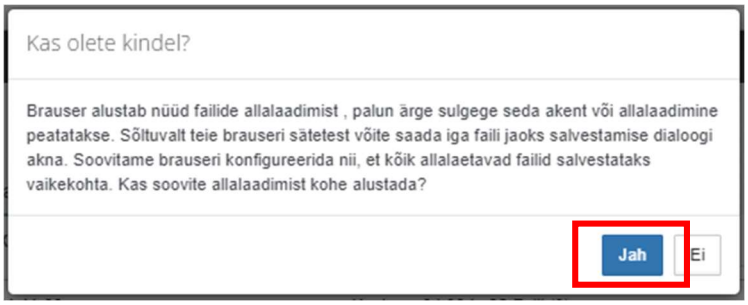
9) Press **Confirm**.



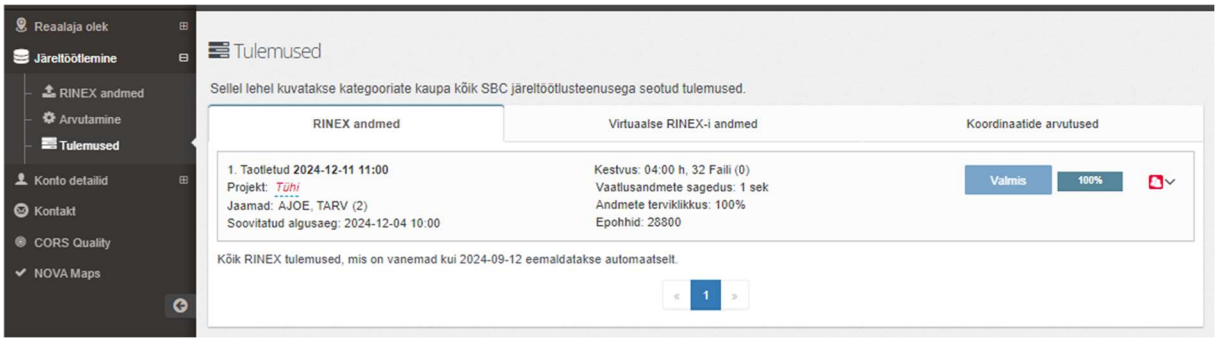
10) The user is then automatically taken to the **Results** page. Press **Download All** to download the RINEX data**.**



11) In the pop-up window choose **Yes.**

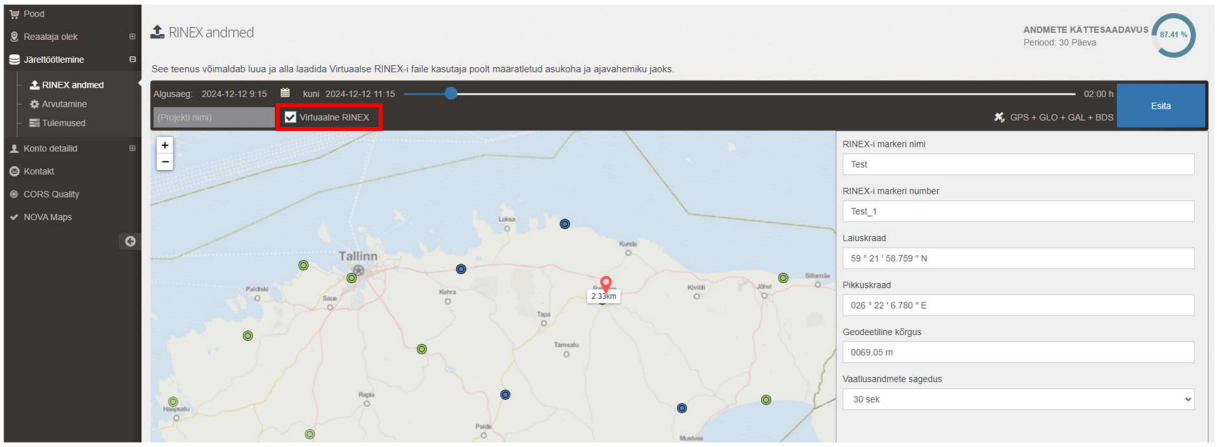


12) Files have been successfully downloaded.

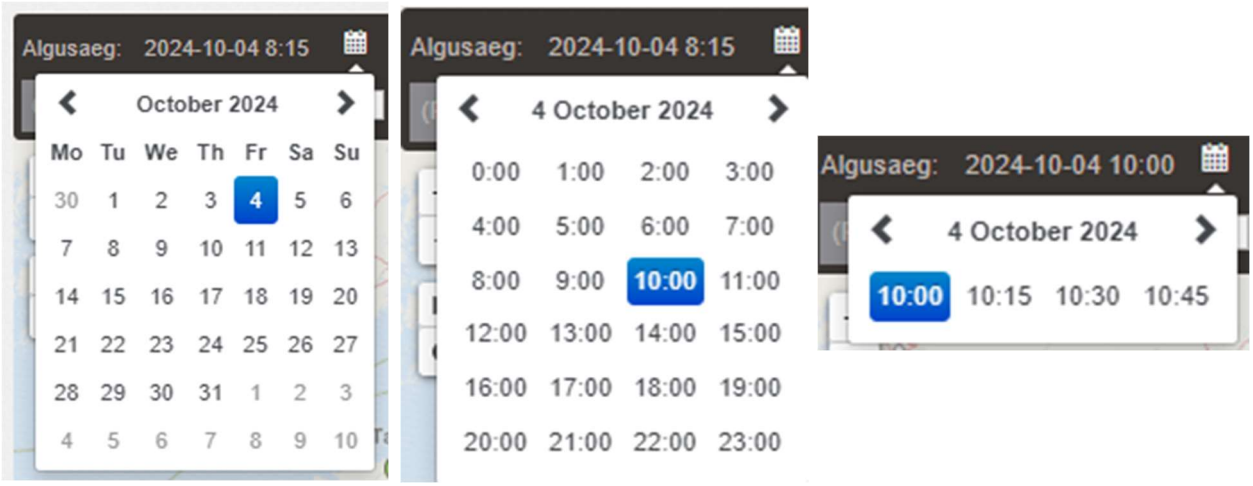


Virtual RINEX data

1) Select **RINEX Data** under **Post Processing**. Check the **Virtual RINEX** box.



2) Insert the coordinates and height (ellipsoidal) of the virtual point.
3) Press the calendar icon to select a date. After the date, select the time of the file start time and finally the quarter hour of the start time (00, 15, 30, 45).

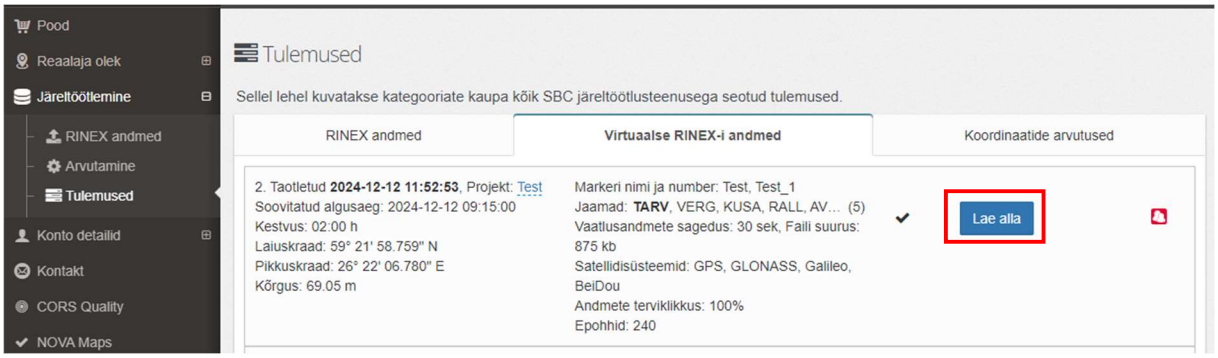


4) The length of the file can be changed using the blue circle in the header. The length of the file is visible in the right part of the header.

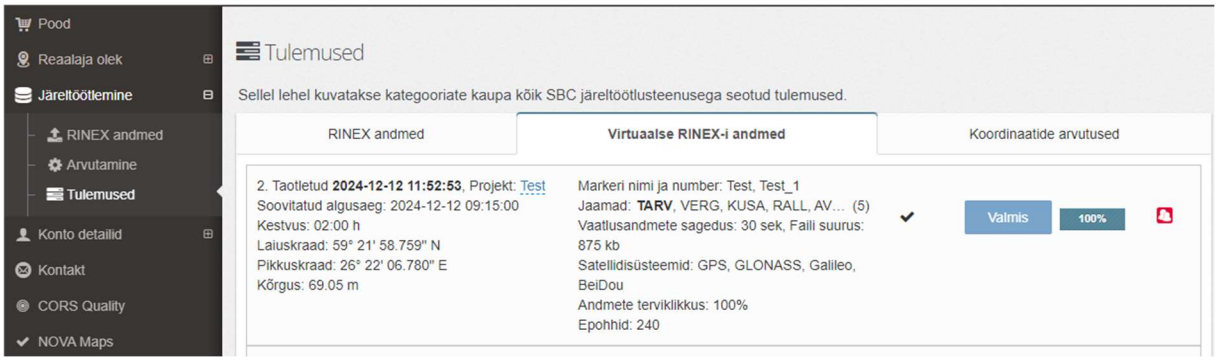
5) When the setup is completed press **Submit.**

6) Press **Confirm.**

7) The user is then automatically taken to the **Results** page. Press **Download All** to download the Virtual RINEX data**.**

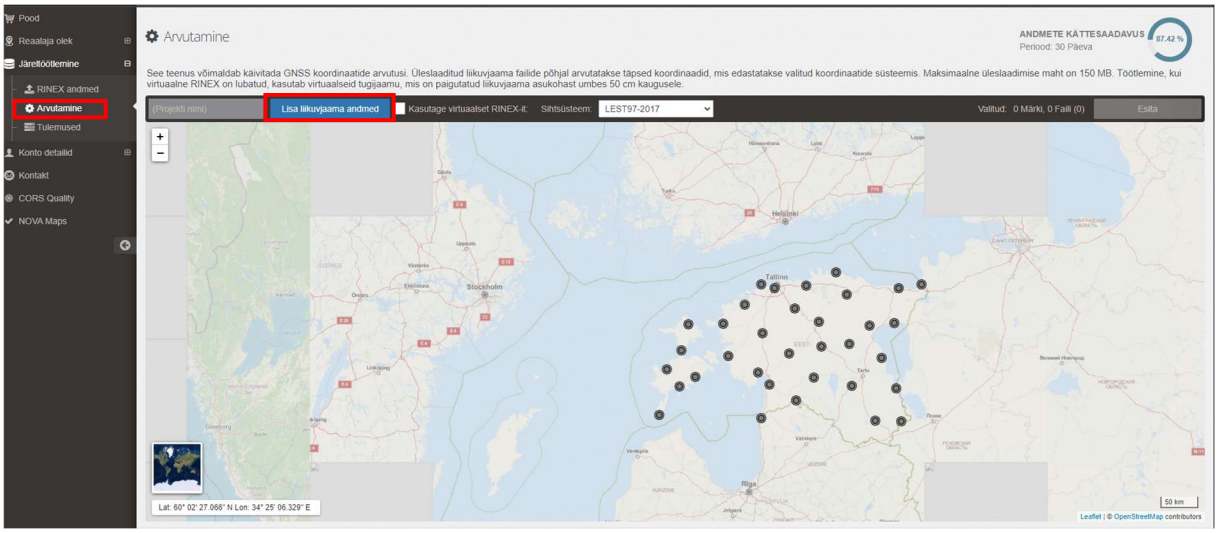


8) Files have been successfully downloaded.

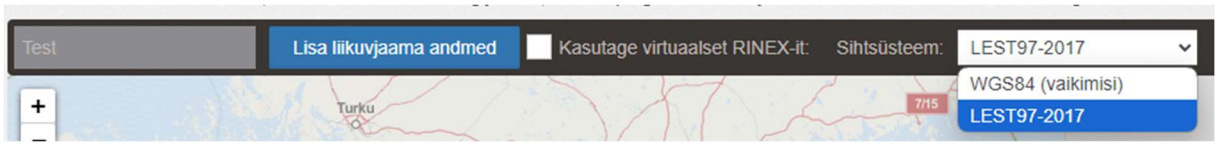


Computation

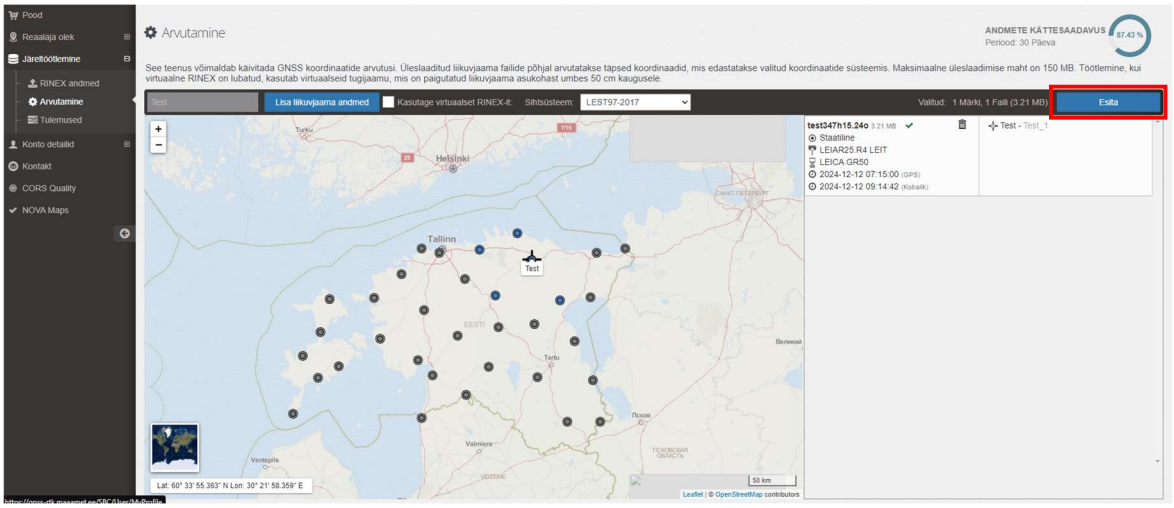
1) Choose **Computation** under **Post Processing.**
2) To add your rover data select **Add Rover Data.** Only RINEX format data is supported.



3) The results (**Target System**) can be computed in the international geodetic system (WGS84) or in the Estonian national coordinate system L-EST97 (LEST97-2017). LEST97-2017 Target System uses the Estonian geoid model to get the orthometric height H.

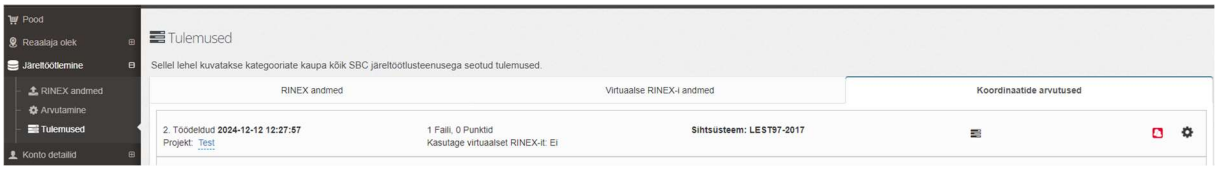


4) Select **Submit.**

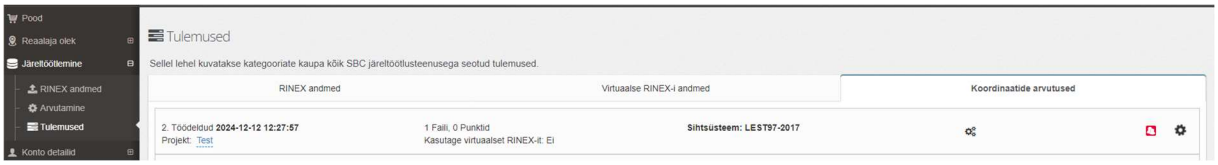


6) Select **Confirm.**

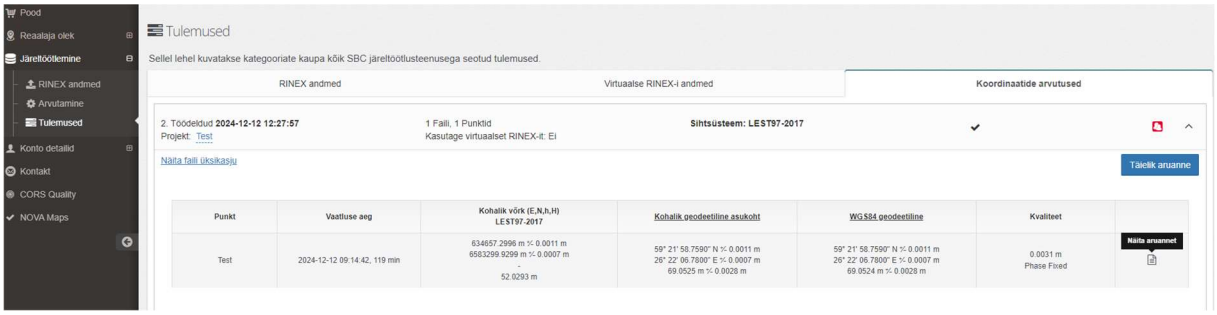
7) User is taken to the **Results** page.



NB! If the gear icon is visible, then the data is being processed. The duration of data processing depends on the length of the input data file and the recording interval. The calculation of an input data file with a length of 3 hours and a recording interval of 1 second can take up to 20 minutes.

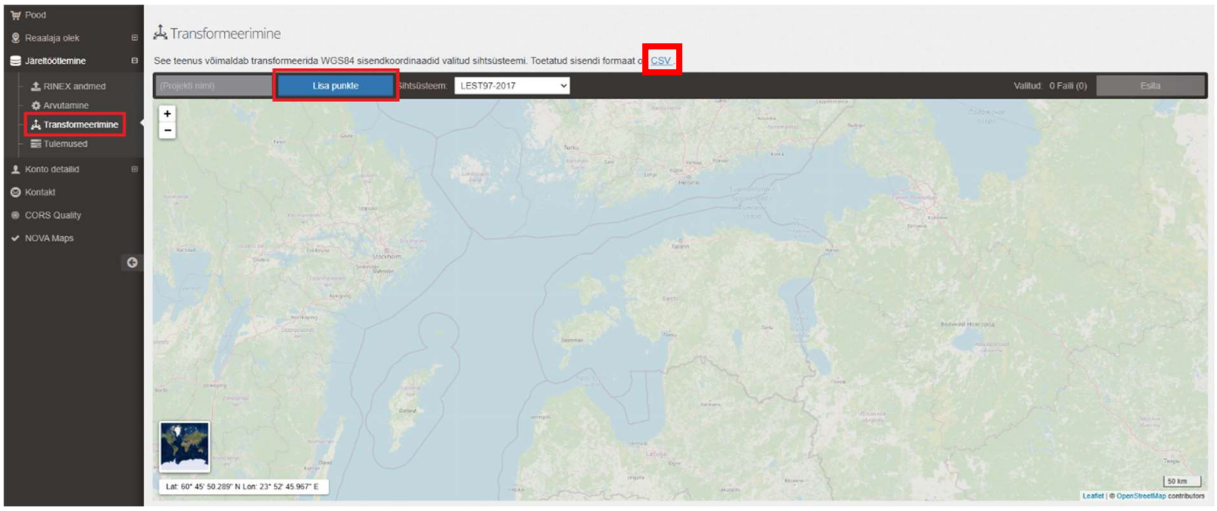


8) Results are ready when the button **Full report** is active**.**

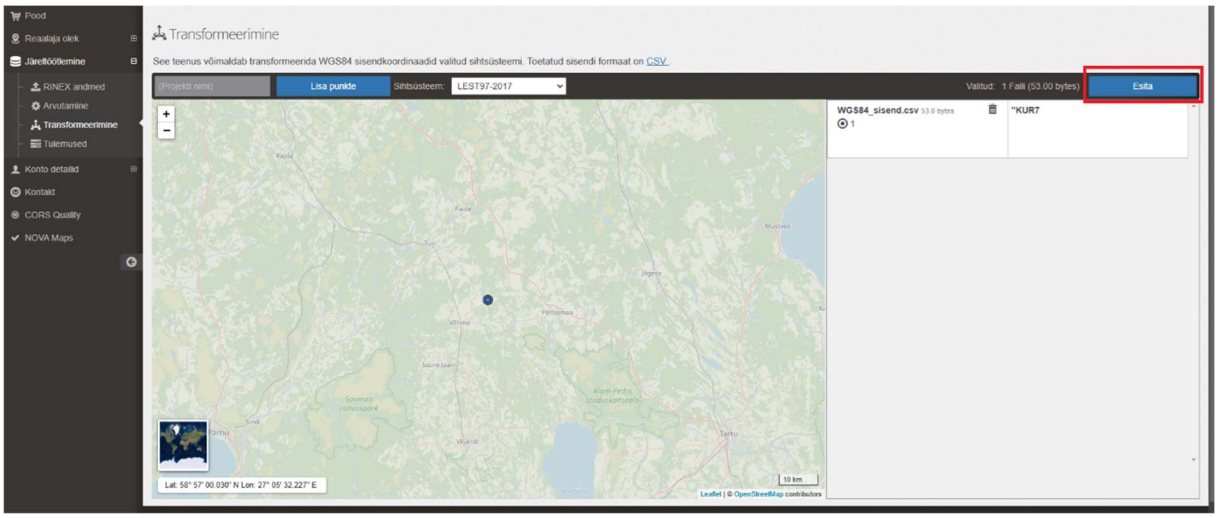


Transformation

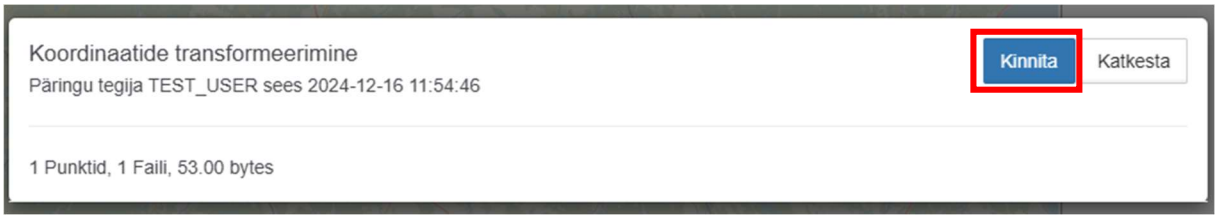
1) Choose **Transformation** under **Post Processing.**
2) The **Add Points** option allows you to upload XYZ geocentric coordinates in the WGS84 coordinate system. The input file must be in CSV format. More detailed instructions about the input file can be seen under the **CSV** option.



3) Select **Submit.**



4) Select **Confirm.**



5) User is taken to the **Results** page. The results can be downloaded in CSV format using the **Export** option.