SURVEY OF ISRAEL
Geodesy, Cadastre, Hydrography, Mapping and GIS

המרכז למיפוי ישראל
גאודזיה, קדסטר, הידרוגרפיה, מיפוי וממ"ג

CORS support Team
CORS Project

מדינת ישראל – משרד הבינוי והשיכון

צוות התמיכה של מערך תחנות הקבע
פרויקט CORS

18/Sept/2022 - Version 1

This document presents the usage of the RINEX store for the Israeli CORS Porject.

For any other assistance please contact us on: +972-3-6231-697 / apn@mapi.gov.il

Site is under the domain: mapigps.co.il

Site enables 2 main services:

1. RINeX store
2. Autmated processing of Observation files (RINeX 2.11 only)

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1. **RINeX Store**

   Pressing the "GEO++ GPPWEB" title / image will load the GPPWEB application for RINeX store. On that site a username + password login is required (these are obtained only after completing a full registration at the CORS project signup process).
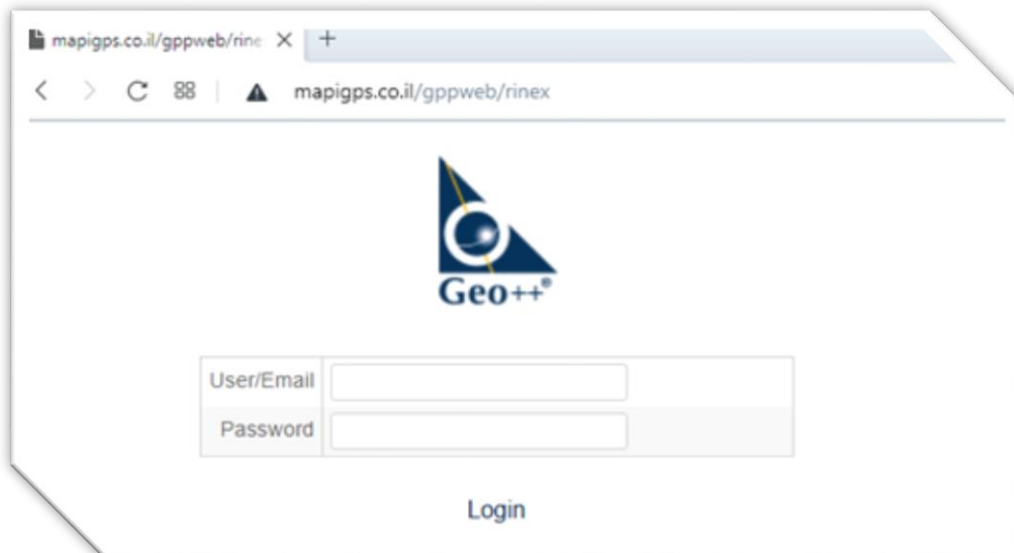
After login, a notification with a welcome message is popped, close it (Press OK). On the right upper side of the site the login username will be shown.
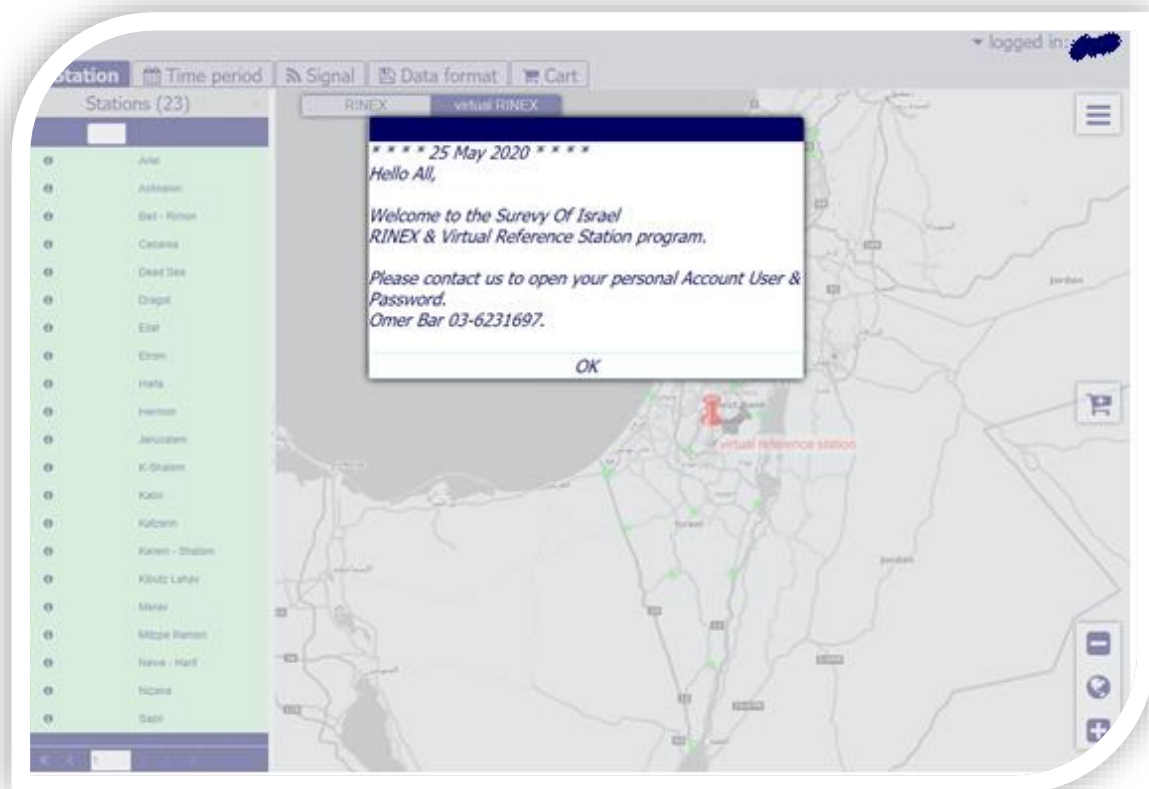
Important notice: for the entire pages of the RINeX
store buttons marked with blue color are the ones selected (or "pressed").

There are 2 sections for the RINeX store, they each have a specific section for full usage: (a)
Virtual RINeX Files Section and (b) Physical Sites Files Section. Press any of the links to jump
to the proper needed section.

I.   **Download Virtual Reference Station RINeX (VRX):**

1.   Creation and Downloading the desired files is split into 5 stages in 5 internal tabs:
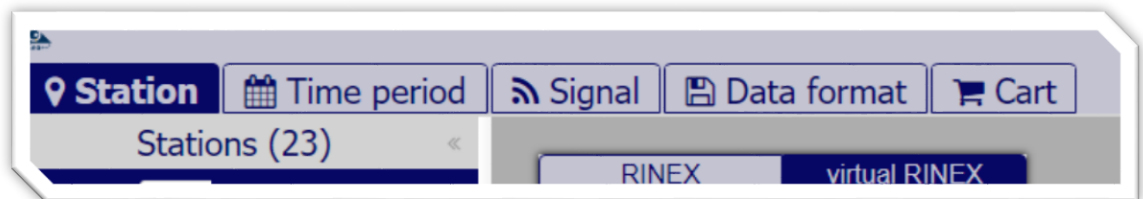
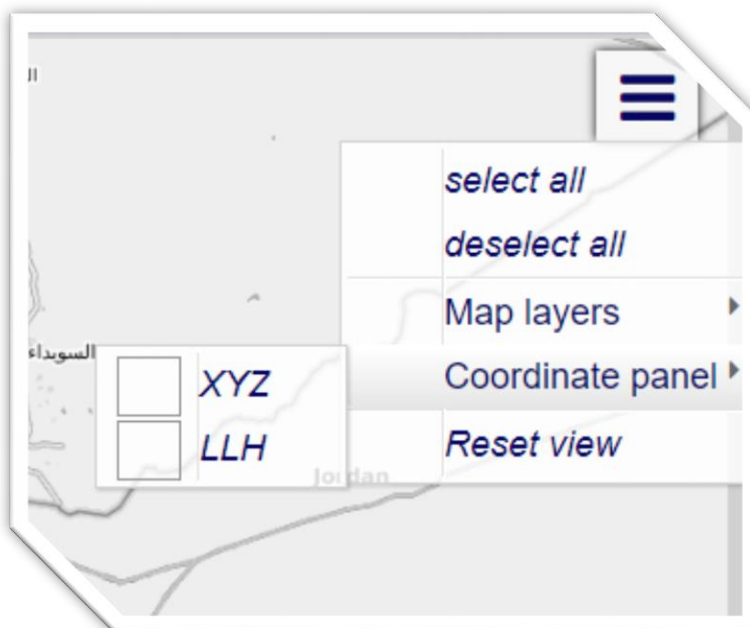Station tab – to select Physical site/s –or- Virtual site
Time tab – to select proper time for the files
Signal tab – to select the desired signals output
Data format tab – for selecting observation format, file extension and filename
convention
Cart tab – to complete the purchase and download the files when process ends

2.   On Station tab, at the top right of the screen there is an option button (three
horizontal lines), enable the coordinate panel by clicking "Coordinate Panel -> LLA"

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3. at screen bottom the latitude-longitude-altitude panel is now visible

Current position is of the pin shown on screen.

4. Proper location for the VRX needs to be typed in – preferably with rounding of the arc-seconds as in the example above (same for height). This will assist you to check the location is correct after loading the VRX files to a GNSS Processing software.

5. After pressing the OK button, the pin will move to the typed-in position. Nonetheless, the position can be selected with a double-click on the map (zooming in can assist in selecting the proper location).

6. Move to the Time tab. In this tab time frame of the VRX is selected.

7. You may choose between local-time and GPS-time.
8. After selecting the start-date, start-time, end-date, end-time and sample interval.

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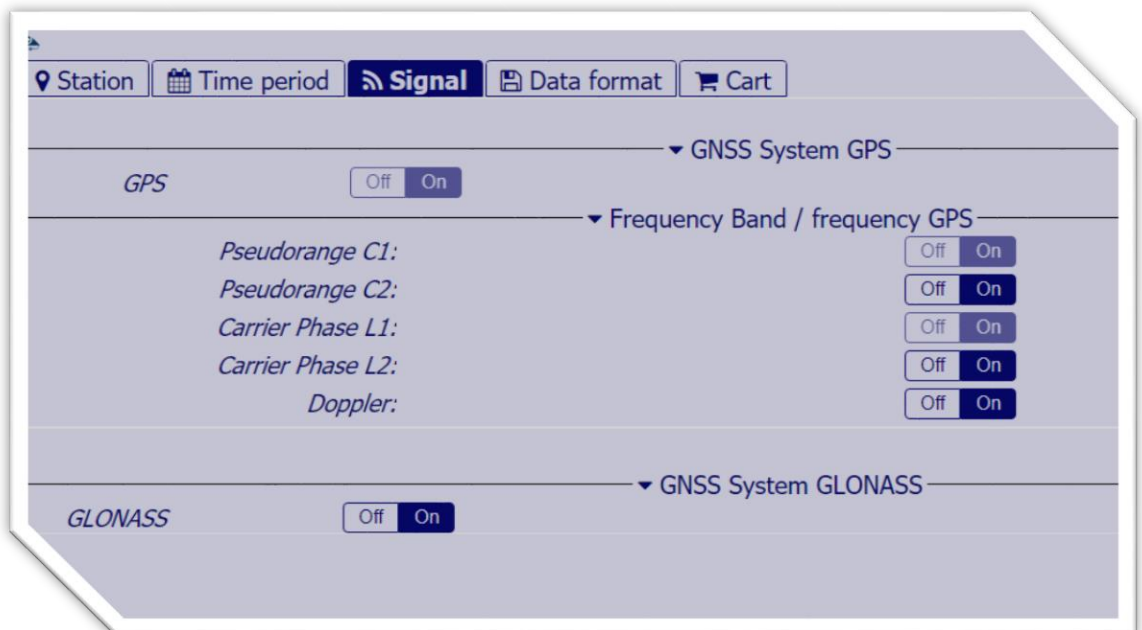
9. Take notice that the minimal time-interval is
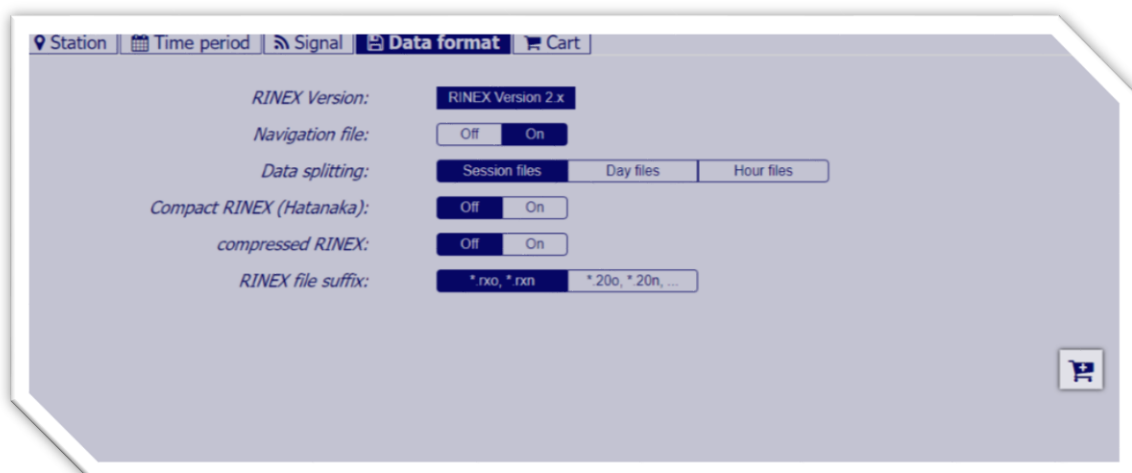   1sec (1 Hz).
10. You can select duration from the start-timing instead of an end-timing.

11. On the Signal tab you may choose which Satellite-systems and codes (measurement
    types) will appear in the VRX RINeX observation file.

12. By default, all fields are marked to be exported to the VRX RINeX observation files.
    For computations of trajectories (which contains movement of the GNSS receivers –
    and not static measurements) Doppler is advised to be set to export to the files – this
    does not change any fees.

13. At bottom, you may choose if GLONASS satellites are included or not.

14. On the Data Format tab, you need to select the format of the exported files.

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15. It is recommended to export navigational files.
16. Data splitting into files is enables in three forms – hourly files, daily files or session files – select depending on the GNSS processing software you are using needs.
17. Exported RINeX files can be compacted via HTANAKA Compression format or just written regularly. All files will be in RINeX version 2.11.
18. For any of you running Scientific GNSS processing software it is recommended to select – daily files.

19. On the right of the screen there is an "add to cart" button:

20. The following screen will let you see all setup information for the desired VRX as you typed it in.

21. Give a name to you project, no spaces are allowed here.
22. After checking the preferences to the VRX creation process – press order to start processing the VRX files.

gov
www.gov.il
1, Lincoln St., Tel-Aviv-Jaffa 6522034

SURVEY OF ISRAEL

www.mapi.gov.il
רחוב לינקולן 1, תל-אביב-יפו 6522034

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23. At the Cart tab you can view current (and past) projects.

24. At this example VRX field is marked with a green V marker, and there are 100% of the data available.

25. After pressing the "Order now" button – you need to accept the fees and agree VRX RINeX file creation.

26. After pressing OK/YES the server will start producing the VRX RINeX files – as long there is a hot coffee mug at the "order state" column server is still processing the request, when all data is read a green V marker will show up.

27. Press the button to download the files.

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28. At the pop-up window, click again the button to download the files to the local computer you are working with.

Files will be downloaded automatically to the folder you set at the browser settings for default download directory – or the browser will ask for a specific location to save the files.

29. RINeX Files within the ZIP file downloaded are seen as:

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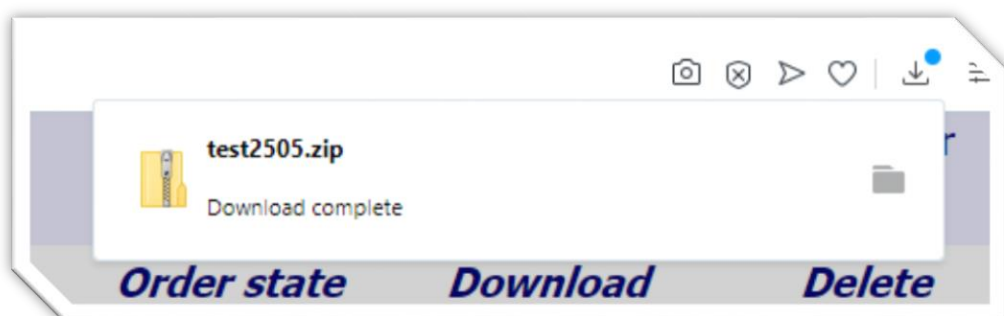
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Name	^	Type	Co
test145v.lrx		LRX File	
test145v.rxg		RXG File	
test145v.rxn		RXN File	
test145v.rxo		RXO File	

RINeX files will be named using the 4 initial letters of the project name you typed in. the different file types are:

.LRX file – textual file to sum all the data in the RINeX files.

.RXO / .22O – RINeX Observation file – version 2.11

.RXN / .22n – RINeX navigation file for GPS SVs – version 2.11

.RXG / .22g – RINeX navigation file for GLONASS SVs – version 2.11

II. RINeX files of physical sites:

1. Downloading the desired files of physical sites is split into 5 stages in 5 internal tabs:
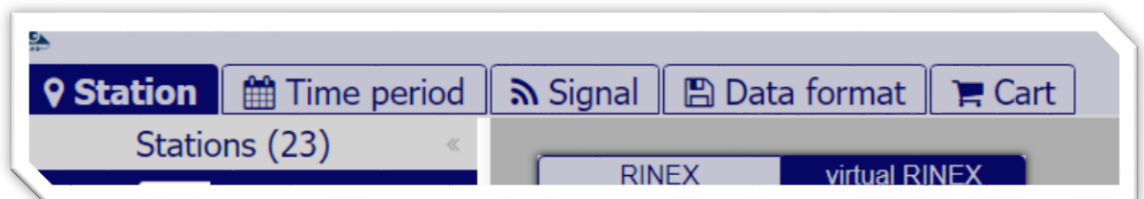
Station tab – to select Physical site/s –or- Virtual site

Time tab – to select proper time for the files

Signal tab – to select the desired signals output

Data format tab – for selecting observation format, file extension and filename convention

Cart tab – to complete the purchase and download the files when process ends

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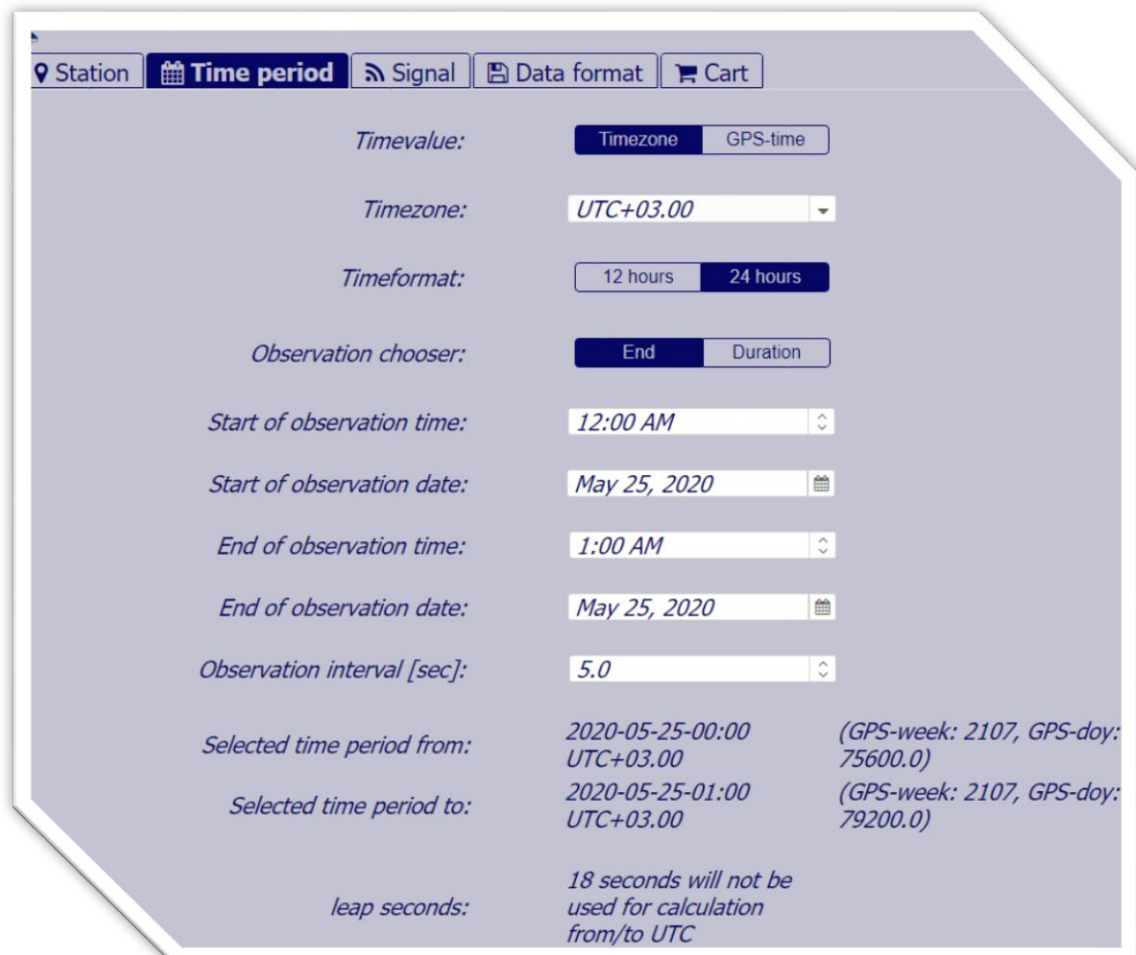
2. At Station Tab – RINEX button need to be pressed/selected (displayed in blue color)
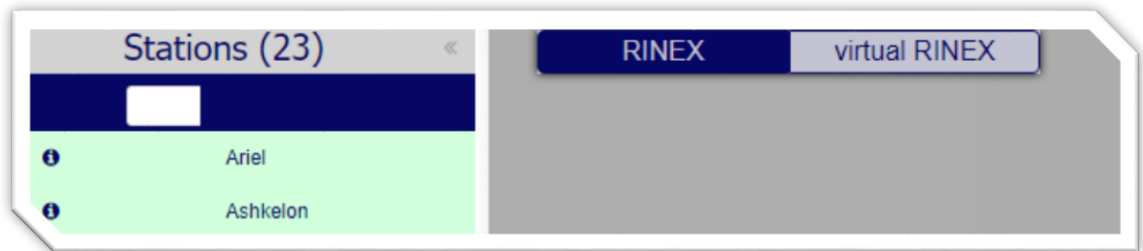
3. Selecting sites can be by clicking on their names, please see that there might be more than 1 page for the sites names (depending on the bowsers zoom ratio). To select all sites with a single click – there is a hidden button just under "Stations" header – circled in brown.
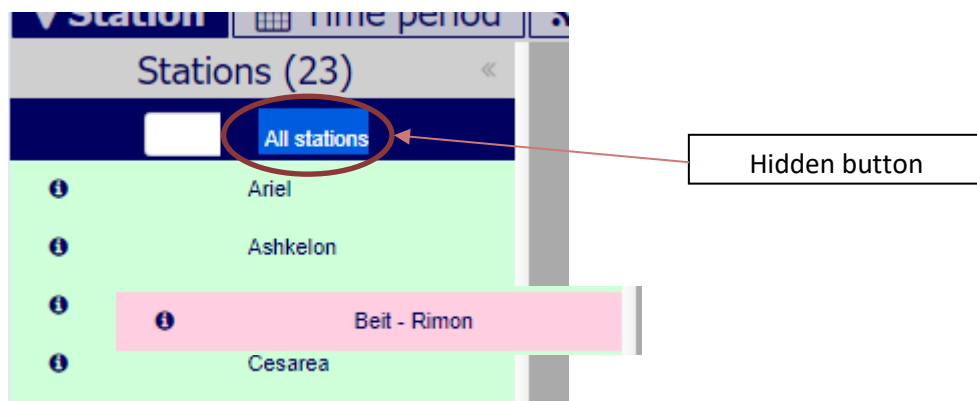
4. Move to the Time tab. In this tab time frame for the desired RINeX files.

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5. You may choose between local-time and GPS-time.
6. After selecting the start-date, start-time, end-date, end-time and sample interval.
7. Take notice that the minimal time-interval is 1sec (1 Hz).
8. You can select duration from the start-timing instead of an end-timing.

9. On the Signal tab you may choose which Satellite-systems and codes (measurement types) will appear in the downloaded RINeX observation file.

10. By default, all fields are marked to be exported to the sites RINeX observation files. For computations of trajectories (which contains movement of the GNSS receivers – and not static measurements) Doppler is advised to be set to export to the files – this does not change any fees.
11. At bottom, you may choose if GLONASS satellites are included or not.

12. On the Data Format tab, you need to select the format of the exported files.

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13. It is recommended to export navigational files.
14. Data splitting into files is enables in three forms – hourly files, daily files or session files – select depending on the GNSS processing software you are using needs.
15. Exported RINeX files can be compacted via HTANAKA Compression format or just written regularly. All files will be in RINeX version 2.11.
16. For any of you running Scientific GNSS processing software it is recommended to select – daily files.

17. On the right of the screen there is an "add to cart" button:

18. The following screen will let you see all setup information for the sites selected. within the Station section - you can see the availability of the data at the server.

19. Give a name to you project, no spaces are allowed here.
20. After checking the preferences to the RINeX creation process – press order to start processing the VRX files.
21.
22. At the Cart tab you can view current (and past) projects.

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23. After pressing the "Shop now" button – you need to accept the fees and agree VRX RINeX file creation.

24. After pressing OK/YES the server will start producing the VRX RINeX files – as long there is a hot coffee mug at the "order state" column server is still processing the request, when all data is read a green V marker will show up.

projectname	VRx	Order date	Available	Order state	Download	Delete
ⓘ nzrt_may25		2020-05-25	✓ 100 %	☕		✗
ⓘ test2505	✓	2020-05-25	✓ 100 %	✓	⬇	✗
ⓘ ▇▇▇		2020-05-07	✗	✓	⬇	✗
ⓘ ▇▇▇		2020-05-04	✗	✓	⬇	✗
▇▇▇		2020-04-26	✗	✓	⬇	✗

♀ Station ‖ 📅 Time period ‖ 📶 Signal ‖ 📄 Data format ‖ 🛒 Cart

25.

26. Once the order is ready a green marker will appear at the Order Satays column ✓

27. Press the ⬇ button to download the files

projectname	VRx	Order date	Available	Order state	Download	Delete
ⓘ nzrt_may25		2020-05-25	✓ 100 %	✓	⬇	✗
ⓘ test2505	✓	2020-05-25	✓ 100 %	✓	⬇	✗
ⓘ ▇▇▇		2020-05-07	✗	✓	⬇	✗
⌕ ▇▇▇		2020-05-04	✗	✓	⬇	✗

♀ Station ‖ 📅 Time period ‖ 📶 Signal ‖ 📄 Data format ‖ 🛒 Cart

28. At the pop-up window, click again the ⬇ button to download the files to the local computer you are working with.

Name	Type	Size
nzrt_may25.zip	.zip	529 KB
action	send to email address	send
Delete		✗
download		⬇

cancel

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Files will be downloaded automatically to
the folder you set at the browser settings for default download directory – or the
browser will ask for a specific location to save the files.

29. RINeX Files within the ZIP file downloaded are seen as:

Name	Type
nzrt145v.lrx	LRX File
nzrt145v.rxg	RXG File
nzrt145v.rxn	RXN File
nzrt145v.rxo	RXO File

RINeX files will be named using the 4 letters of each physical site. the different file types are:

.LRX file – textual file to sum all the data in the RINeX files.

.RXO / .220 – RINeX Observation file – version 2.11

.RXN / .22n – RINeX navigation file for GPS SVs – version 2.11

.RXG / .22g – RINeX navigation file for GLONASS SVs – version 2.11

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2. **Autmated processing of Observation files**

   This module can only process RINeX v2.11 files. Only Observation files are needed.

   a) Login into the service is via username and password allocated to you after the enrollment process is over.
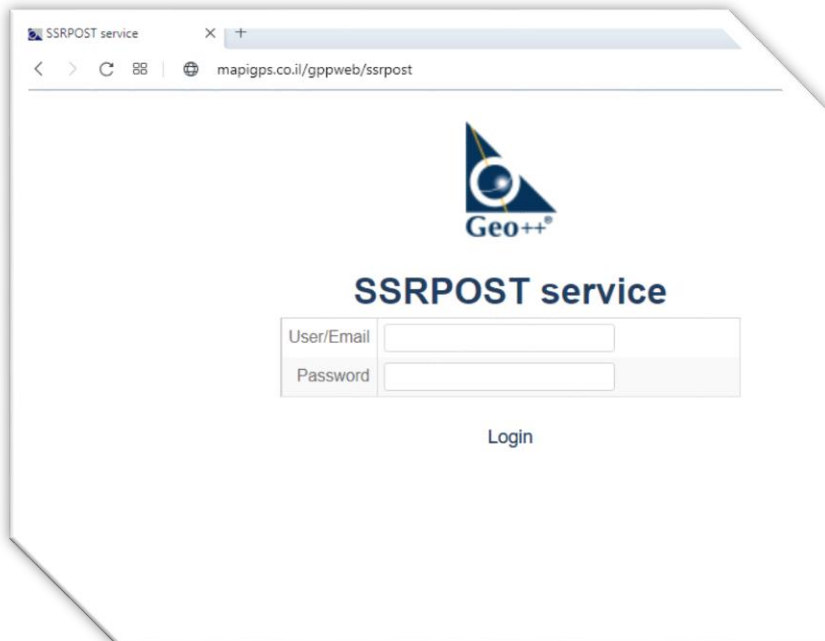
   b) Each point is processed individually, so for multiple solutions for same point several projects are needed.

   c) Opening a project follows next steps: (i) naming the project (no spaces are allowed, and only English chracters), (ii) pressing the "plus" button right of the name field.
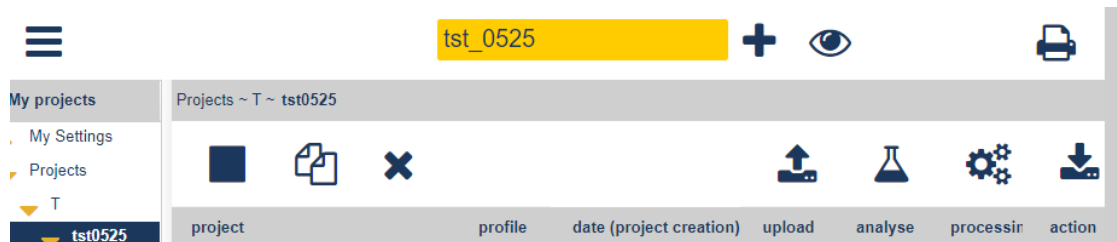
   d) To process of the data you need to upload it to the service, several files can be uploaded. All files uploaded will be taken into account and final coordinate will be a weighted average of the coordinates computed for each file (weights are based on error estimates outputs).
   Press "Start" to upload files.

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Detect the RINeX Observation file you wish to upload.
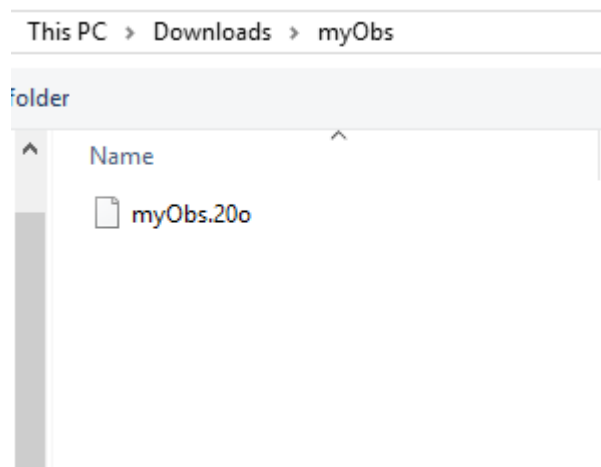
e) After the service will detect all input files it might automatically start analysis of the data

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f) If the analysis process doesn't start automatically, you can press the "Potion" button to start it.

project		profile	date (project creation)	upload	analyse	processing	action
▸ test20200525			2020-05-25 18:00	✔	⚙		

g) Processing should be run afterwards automatically, if not press the "Gear" button to start it.

project		profile	date (project creation)	upload	analyse	processing	action
▸ test20200525			2020-05-25 18:00	✔	✔	‖	

h) Using the hot coffee mug, the service lets you know it is processing the data

| project	profile	date (project creation)	upload	analyse	processing	action
▸ test20200525		2020-05-25 18:00	✔	✔	☕	

i) Once the processing is complete the green V marker will be displayed on all columns ✔

project	profile	date (project creation)	upload	analyse	processing	action
▸ test20200525	GNWEB	2020-05-25 18:00	✔	✔	✔	✔

j) know you can download a processing report.

project		profile	date (project creation)	upload	analyse	processing	action
▸ test20200525		GNWEB	2020-05-25 18:00	✔	✔	✔	✔

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k) To download only the report you can click the "PDF" button. To download all processing information you can click the "Dwonload" button
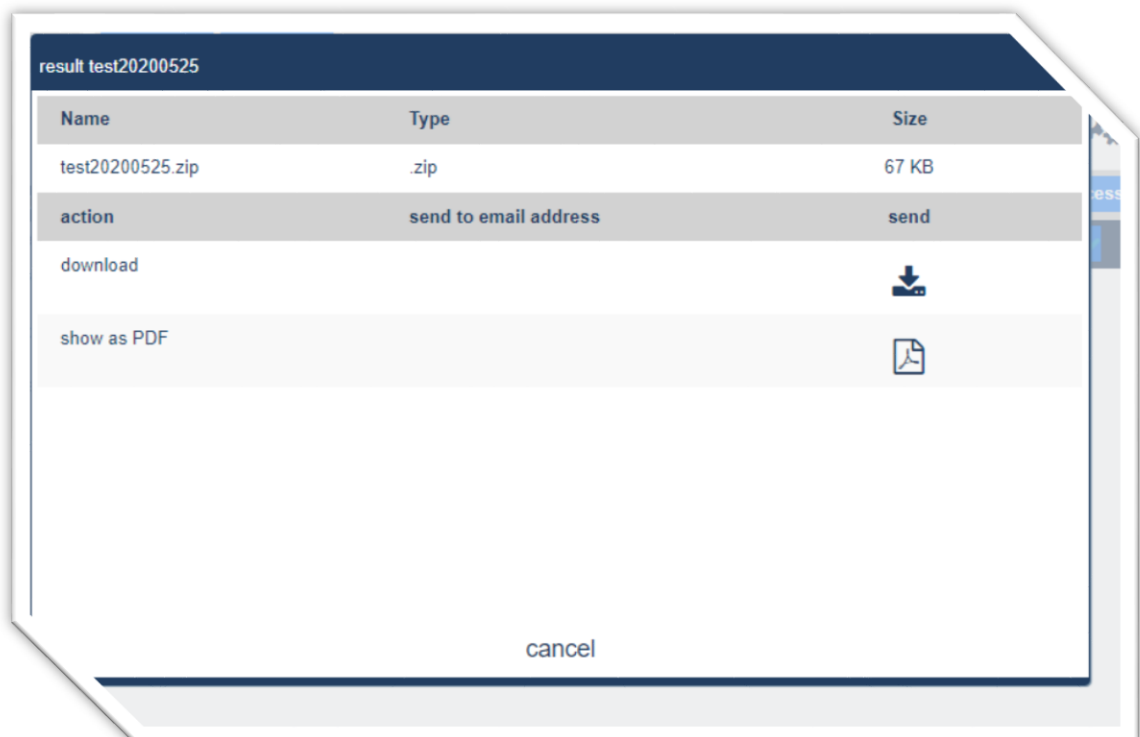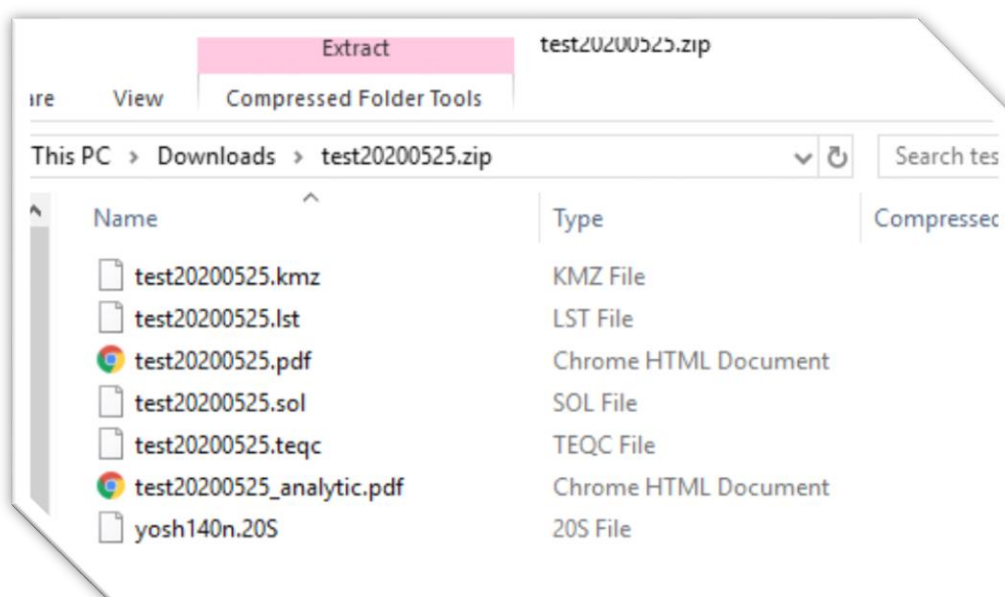

l) After pressing the "Download" button a Zip file will be downloaded to the brwsers default Downloads directory, or a session window will open for you to decide where to save the zip file.

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פרויקט CORS
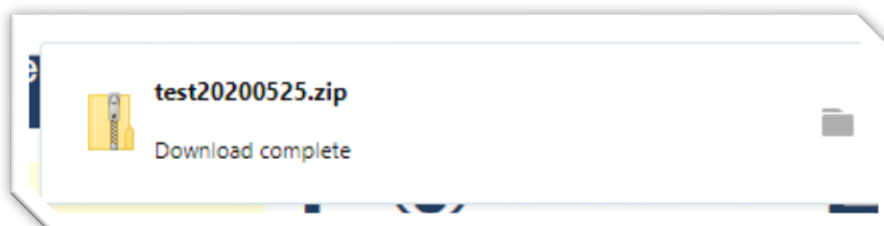
Content of the Zip file is shown here:

KMZ file is an XML file describing the processed point position – in KMZ file format.
SOL / LST are textual files with processing results including error setimates.
PDF file is the processing report.
.20S file is a summary file created by TEQC, which runs some of the analysis on the Observation file by the service.

On any issue regarding the site operation, you may contact the CORS Project personnel:

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Cheers,

CORS Project

These pages were written and edited by Omer Bar