



TERONET

A product developed by:



TEROMOVIGO
Earth Innovation

Objectives

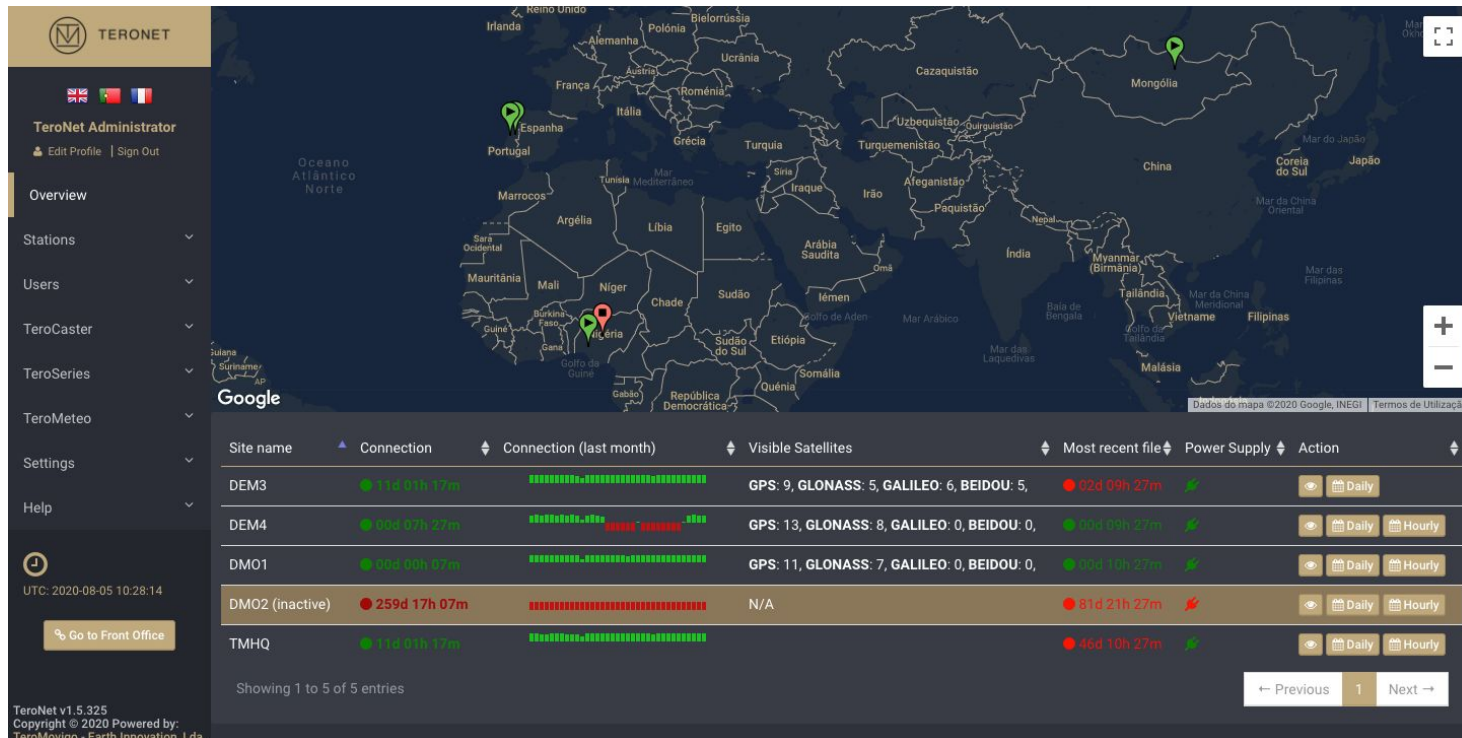
- Realtime CORS GNSS networks monitoring displayed in list or in geo-referenced map;
- Easy and controlled access to stations data;
- Simple network management;
- Integrated system **independent of GNSS receiver brand/model.**

Main Features

- Web service compatible with all platforms;
- Support for different types of communications between server and CORS (IP, SSH-Tunnel*, unattended);
- Security – restricted access to data files and metadata;
- Management tools - user access control, CORS management, etc.;
- Email notifications and automated CORS monitoring;
- Statistics – main statistics about network performance.

Network Management

- Easy management of CORS in the network;
- Easy management of users/groups that access the network;
- CORS data management;
- User activity accounting;
- Customized network reports and alerts.



The screenshot displays the TeroNet Network Management interface. On the left is a dark sidebar with the TeroNet logo and navigation options: TeroNet Administrator (with flags for UK, FR, IT), Overview, Stations, Users, TeroCaster, TeroSeries, TeroMeteo, Settings, and Help. The main area features a world map with two location pins: one in Spain and one in Algeria. Below the map is a table with 5 columns: Site name, Connection, Connection (last month), Visible Satellites, Most recent file, Power Supply, and Action.

Site name	Connection	Connection (last month)	Visible Satellites	Most recent file	Power Supply	Action
DEM3	11d 05h 17m		GPS: 9, GLONASS: 5, GALILEO: 6, BEIDOU: 5,	02d 09h 27m		Daily
DEM4	00d 07h 47m		GPS: 13, GLONASS: 8, GALILEO: 0, BEIDOU: 0,	00d 09h 27m		Daily Hourly
DMO1	00d 00h 07m		GPS: 11, GLONASS: 7, GALILEO: 0, BEIDOU: 0,	00d 10h 27m		Daily Hourly
DMO2 (inactive)	259d 17h 07m		N/A	81d 21h 27m		Daily Hourly
TMHQ	11d 03h 17m			46d 10h 27m		Daily Hourly

Showing 1 to 5 of 5 entries

Navigation: ← Previous | 1 | Next →

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GNSS Receiver Independent

Works with all major brands of GNSS receivers.



Server

The server manages all the network and processes automatically the files to RINEX. The server can use Linux or Windows operating systems.

Client

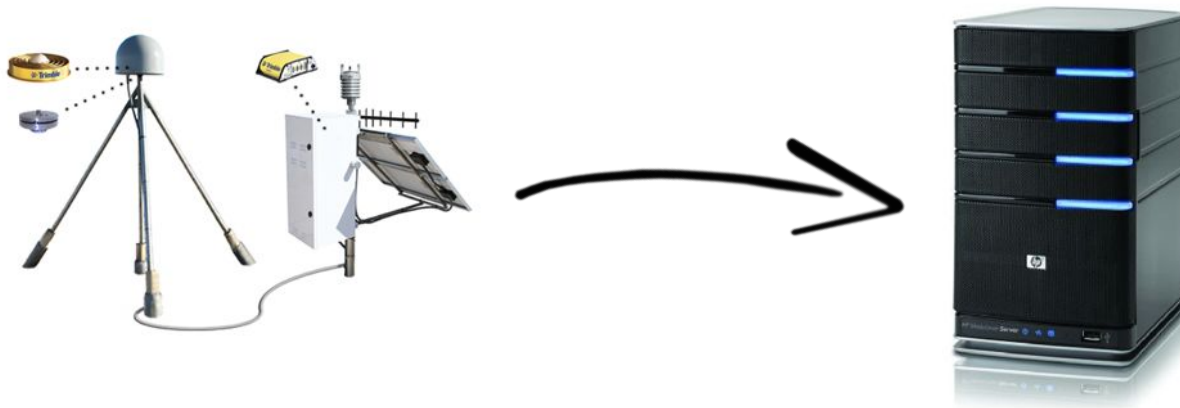
The client is only required to have a web browser, any browser / operating system will work. Remote access is possible from any point and at any time.



Communication:

The communication between the server and the GNSS station can be made by:

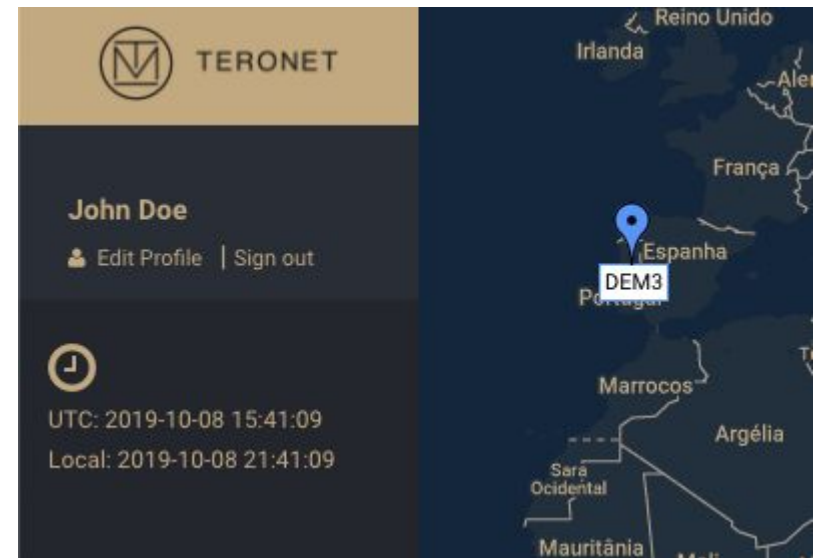
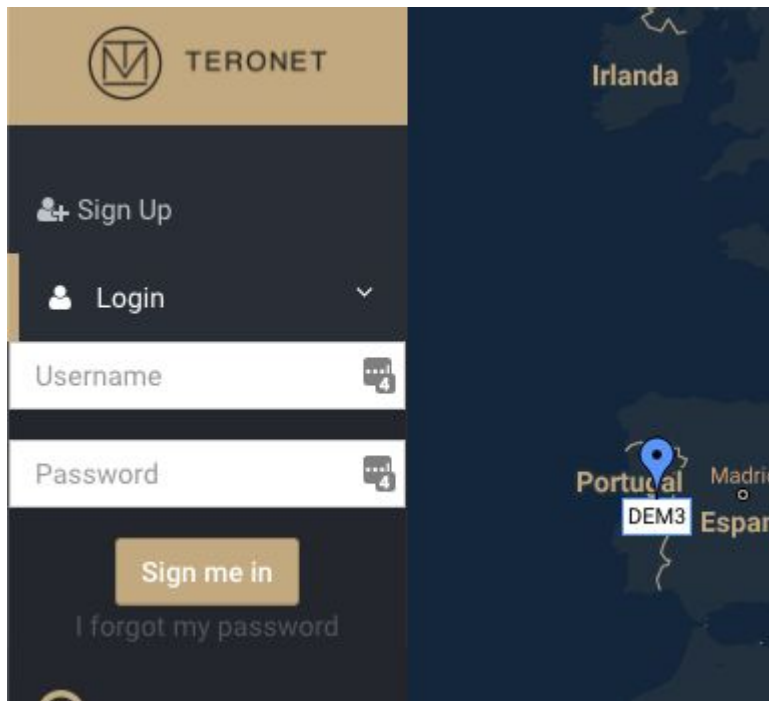
- Fixed IP;
- FILE (no remote monitoring);
- SSH-Tunnel*.



* This connection type was developed at TeroMovigo to avoid the need of a Public IP (and associated high costs) thus allowing the remote monitoring of the station.

Security

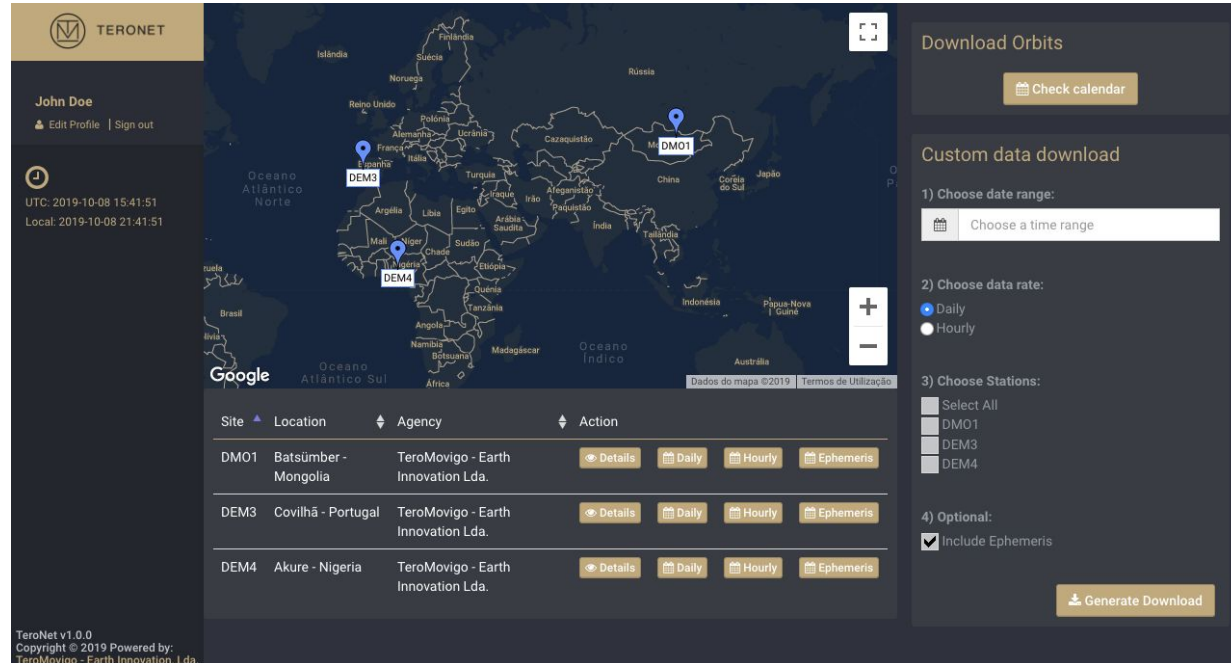
Only registered users with proper credentials can access the data within the network.



Accounting

Limited access for regular users (Non-Administrators).

- Possibility to limit which stations the users should have access to;
- Possibility to limit the amount of data the user can download;
- Possibility to create a bulk download.



The screenshot displays the TERONET web application interface. On the left, a user profile for 'John Doe' is visible with options to 'Edit Profile' or 'Sign out'. Below the profile, the current UTC and local times are shown. The main area features a world map with three station locations marked: DM01 in Mongolia, DEM3 in Portugal, and DEM4 in Nigeria. A table below the map lists these stations with their locations and agencies, and provides buttons for 'Details', 'Daily', 'Hourly', and 'Ephemeris' for each. On the right side, a 'Download Orbits' panel is open, showing options to 'Check calendar', 'Custom data download', and a 'Generate Download' button. The download configuration includes a date range selector, a data rate selector (Daily or Hourly), a station selection list (DM01, DEM3, DEM4), and an optional checkbox for 'Include Ephemeris'.

Site	Location	Agency	Action
DM01	Batsumber - Mongolia	TeroMovigo - Earth Innovation Lda.	Details Daily Hourly Ephemeris
DEM3	Covilhã - Portugal	TeroMovigo - Earth Innovation Lda.	Details Daily Hourly Ephemeris
DEM4	Akure - Nigeria	TeroMovigo - Earth Innovation Lda.	Details Daily Hourly Ephemeris

Download Orbits

[Check calendar](#)

Custom data download

1) Choose date range:

2) Choose data rate:
 Daily
 Hourly

3) Choose Stations:
 Select All
 DM01
 DEM3
 DEM4

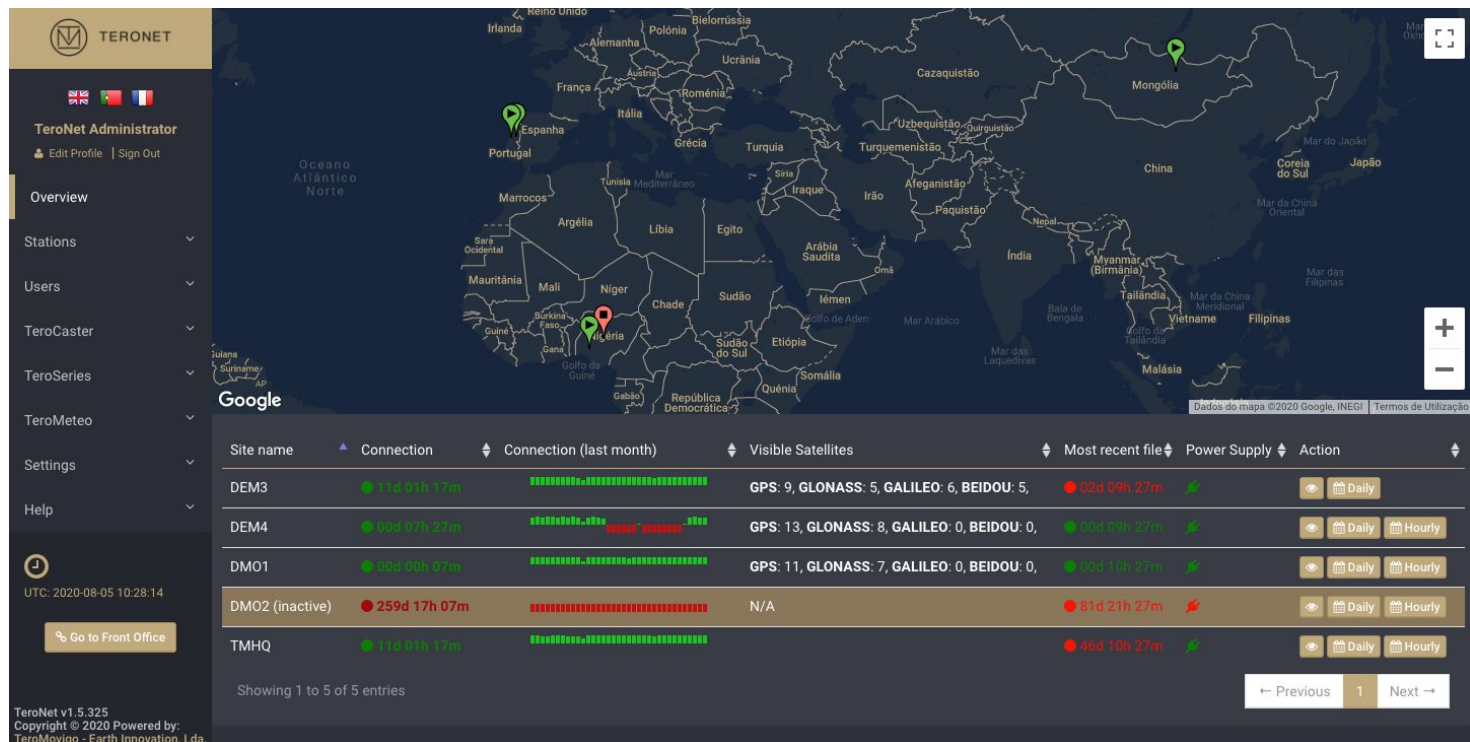
4) Optional:
 Include Ephemeris

[Generate Download](#)

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Real Time Information

Status of communications and data transfer is permanently monitored and available via graphical interface.



The screenshot displays the TERONET web interface. On the left is a navigation sidebar with options like Overview, Stations, Users, TeroCaster, TeroSeries, TeroMeteo, Settings, and Help. The main area features a world map with several stations marked by colored pins. Below the map is a table with the following data:

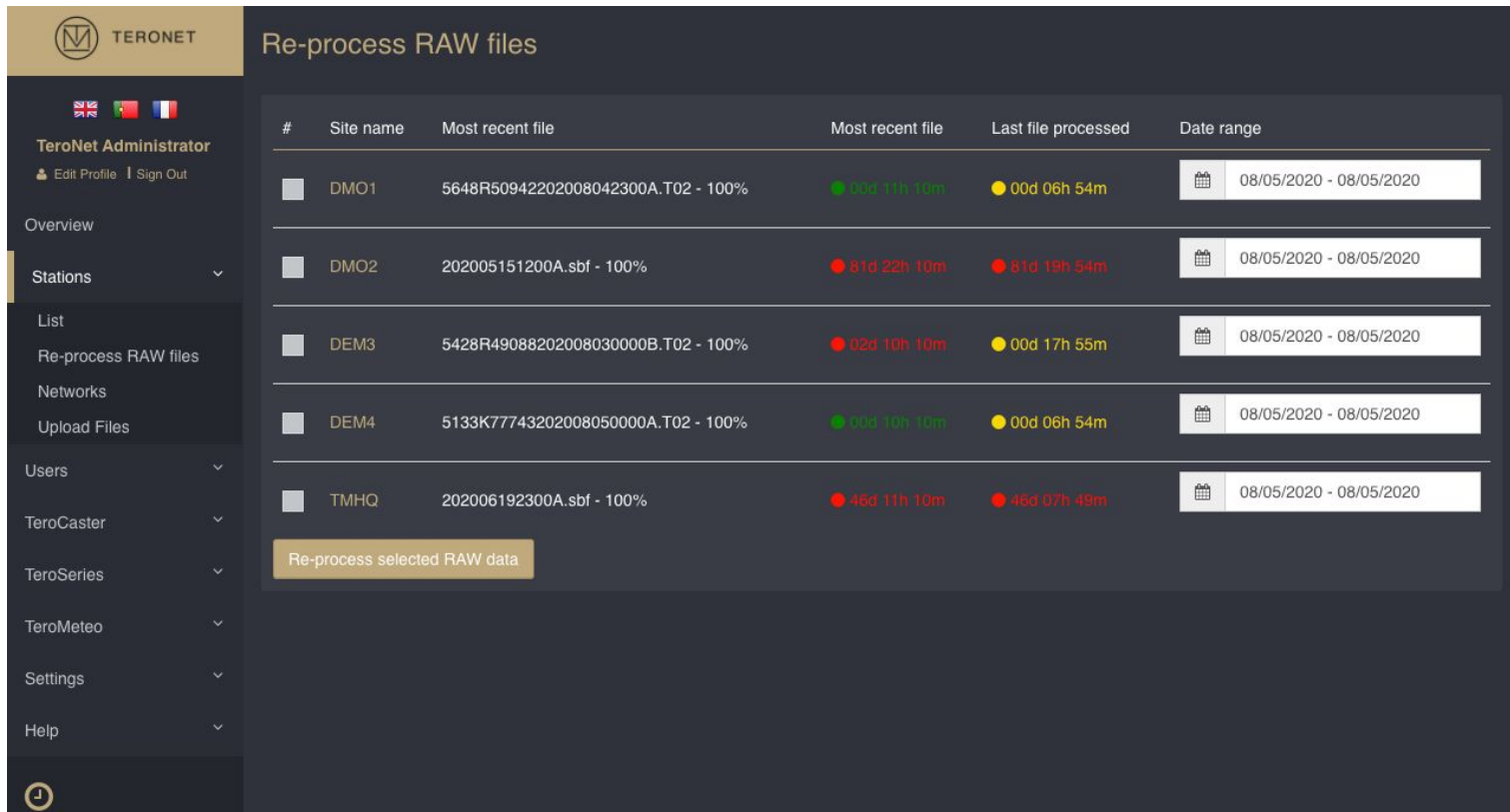
Site name	Connection	Connection (last month)	Visible Satellites	Most recent file	Power Supply	Action
DEM3	13d 09h 17m	[Progress bar]	GPS: 9, GLONASS: 5, GALILEO: 6, BEIDOU: 5	82d 99h 27m	[Green icon]	[Daily] [Hourly]
DEM4	09d 07h 27m	[Progress bar]	GPS: 13, GLONASS: 8, GALILEO: 0, BEIDOU: 0	09d 09h 27m	[Green icon]	[Daily] [Hourly]
DMO1	08d 00h 07m	[Progress bar]	GPS: 11, GLONASS: 7, GALILEO: 0, BEIDOU: 0	09d 10h 27m	[Green icon]	[Daily] [Hourly]
DMO2 (inactive)	259d 17h 07m	[Progress bar]	N/A	81d 21h 27m	[Red icon]	[Daily] [Hourly]
TMHQ	13d 09h 17m	[Progress bar]		46d 10h 27m	[Green icon]	[Daily] [Hourly]

Showing 1 to 5 of 5 entries

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Total Control Over Data

Possibility of re-processing old data with different configurations on independent stations and independent dates. All raw data is converted to RINEX versions 2.1+



TERONET

TeroNet Administrator
 Edit Profile | Sign Out

Overview

Stations

List

Re-process RAW files

Networks

Upload Files

Users

TeroCaster

TeroSeries

TeroMeteo

Settings

Help

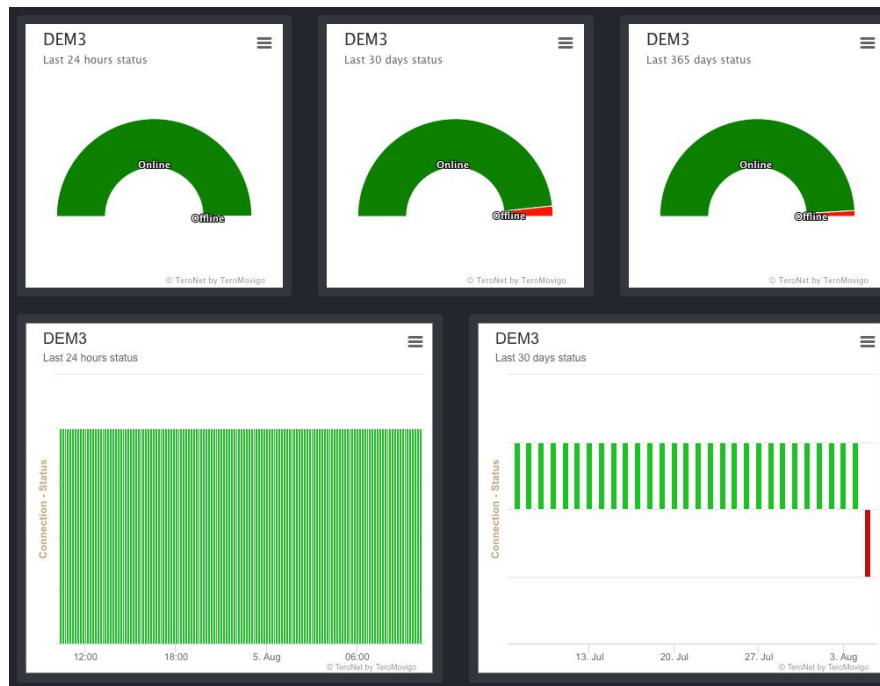
Re-process RAW files

#	Site name	Most recent file	Most recent file	Last file processed	Date range
<input type="checkbox"/>	DMO1	5648R50942202008042300A.T02 - 100%	● 00d 19h 10m	● 00d 06h 54m	📅 08/05/2020 - 08/05/2020
<input type="checkbox"/>	DMO2	202005151200A.sbf - 100%	● 81d 22h 10m	● 81d 19h 54m	📅 08/05/2020 - 08/05/2020
<input type="checkbox"/>	DEM3	5428R49088202008030000B.T02 - 100%	● 02d 10h 10m	● 00d 17h 55m	📅 08/05/2020 - 08/05/2020
<input type="checkbox"/>	DEM4	5133K77743202008050000A.T02 - 100%	● 00d 10h 10m	● 00d 06h 54m	📅 08/05/2020 - 08/05/2020
<input type="checkbox"/>	TMHQ	202006192300A.sbf - 100%	● 46d 11h 10m	● 46d 07h 49m	📅 08/05/2020 - 08/05/2020

Re-process selected RAW data

Station Statistics

Historical information about quality of communications of each station. (Ex. ON/OFF and delays in last 24 Hours, 7 Days and 30 Days)



Network Reports

Customized reports with station and users activity.

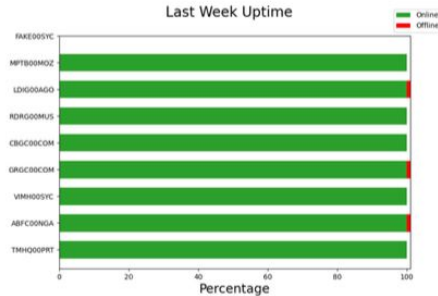


Stations Uptime

Last Week

Station	Uptime	Downtime
TMHQ00PRT	0%	100%
ABFC00NGA	-1%	101%
VIMH00SYC	0%	100%
GRGC00COM	-1%	101%
CBGC00COM	0%	100%
RDRG00MUS	0%	100%
LDIG00AGO	-1%	101%
MPTB00MOZ	0%	100%
FAKE00SYC	NAN%	NAN%

Last Week Uptime



RINEX Files

Daily

Name	Available	Expected	Percentage
TMHQ00PRT	4	7	57.14%
ABFC00NGA	0	7	0%
VIMH00SYC	0	7	0%
GRGC00COM	0	7	0%
CBGC00COM	0	7	0%
RDRG00MUS	0	7	0%
LDIG00AGO	0	7	0%
MPTB00MOZ	0	7	0%
FAKE00SYC	0	7	0%

RINEX Files

Hourly

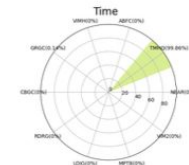
Name	Available	Expected	Percentage
TMHQ00PRT	108	168	64.29%
ABFC00NGA	0	168	0%
VIMH00SYC	101	168	60.12%
GRGC00COM	0	168	0%
CBGC00COM	0	168	0%
RDRG00MUS	0	168	0%
LDIG00AGO	0	168	0%
MPTB00MOZ	0	168	0%
FAKE00SYC	0	168	0%



Caster Usage Per User

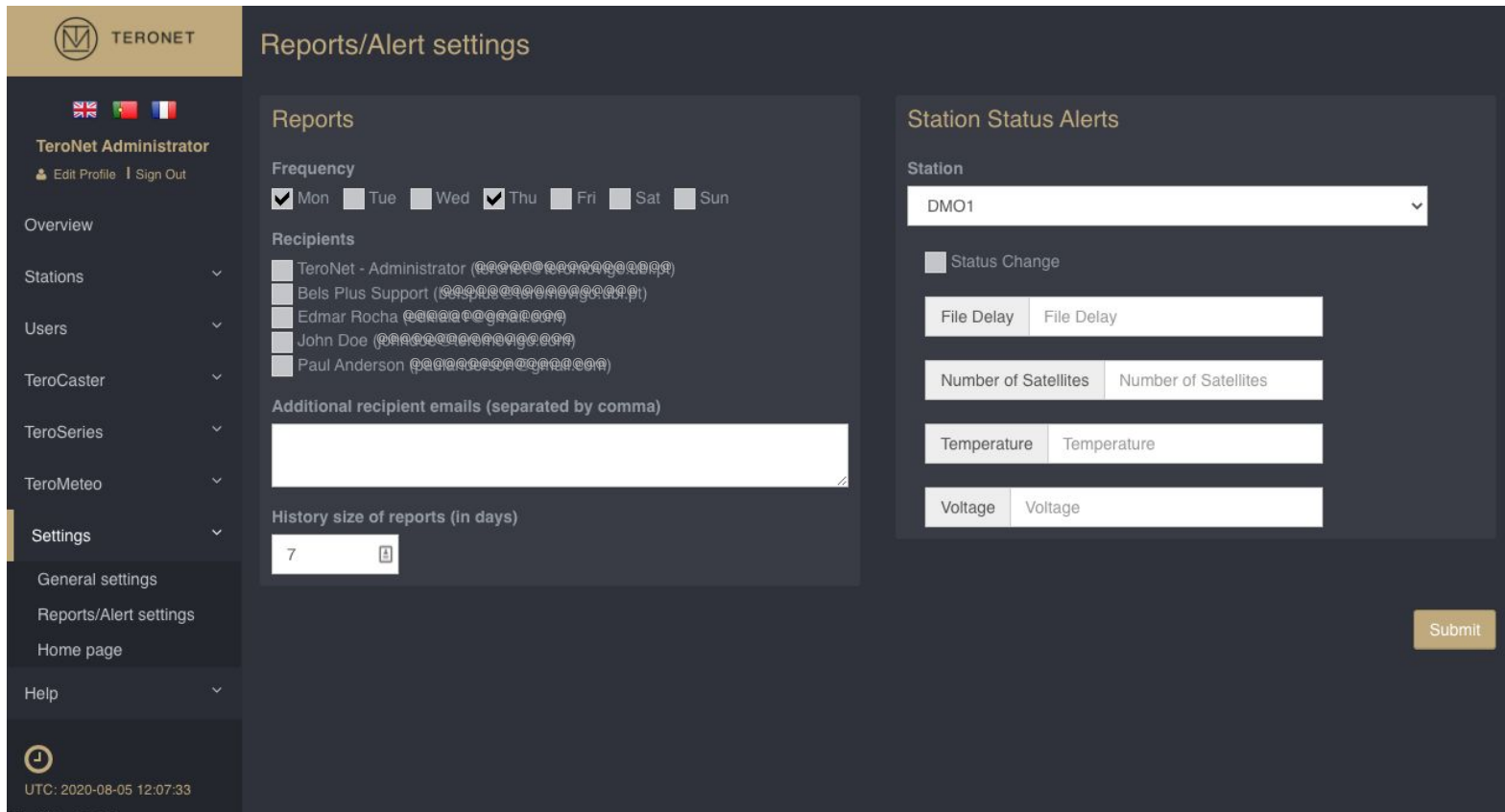
arodrigues

Name	Time	Total Connections
NEAR	00:00:00	0
TMHQ	04:38:29	5
ABFC	00:00:00	0
VIMH	00:00:00	0
GRGC	00:00:24	4
CBGC	00:00:00	0
RDRG	00:00:00	0
LDIG	00:00:00	0
MPTB	00:00:00	0
VIM2	00:00:00	0



Customization of Alerts

Customized alerts allow administrators to configure the size of periodic reports and establish alerts on specific events.



The screenshot displays the 'Reports/Alert settings' page in the TeroNet administrator interface. The page is divided into three main sections: 'Reports', 'Station Status Alerts', and a 'Submit' button.

Reports Section:

- Frequency:** A row of checkboxes for days of the week. 'Mon' and 'Thu' are checked, while 'Tue', 'Wed', 'Fri', 'Sat', and 'Sun' are unchecked.
- Recipients:** A list of email addresses with checkboxes. The recipients are: TeroNet - Administrator, Bels Plus Support, Edmar Rocha, John Doe, and Paul Anderson. The checkboxes for 'Bels Plus Support', 'Edmar Rocha', and 'John Doe' are checked.
- Additional recipient emails (separated by comma):** An empty text input field.
- History size of reports (in days):** A text input field containing the number '7'.

Station Status Alerts Section:

- Station:** A dropdown menu with 'DMO1' selected.
- Status Change:** A checkbox that is currently unchecked.
- File Delay:** Two text input fields, both containing the text 'File Delay'.
- Number of Satellites:** Two text input fields, both containing the text 'Number of Satellites'.
- Temperature:** Two text input fields, both containing the text 'Temperature'.
- Voltage:** Two text input fields, both containing the text 'Voltage'.

Navigation and Footer:

- The left sidebar shows the user is logged in as 'TeroNet Administrator' and provides navigation links for Overview, Stations, Users, TeroCaster, TeroSeries, TeroMeteo, Settings (selected), General settings, Reports/Alert settings, Home page, and Help.
- The footer shows the UTC time as '2020-08-05 12:07:33'.

Data Monitoring and Conversion

Data converted from RAW to RINEX using independent applications

Station Data

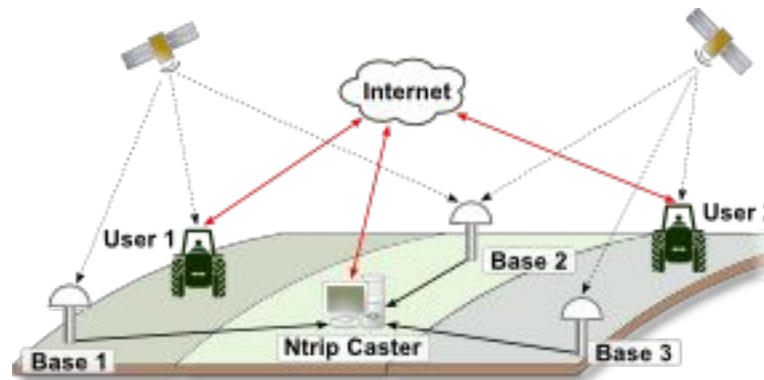
Easy access to the station data (RINEX Files).



TeroCaster: NTRIP Caster

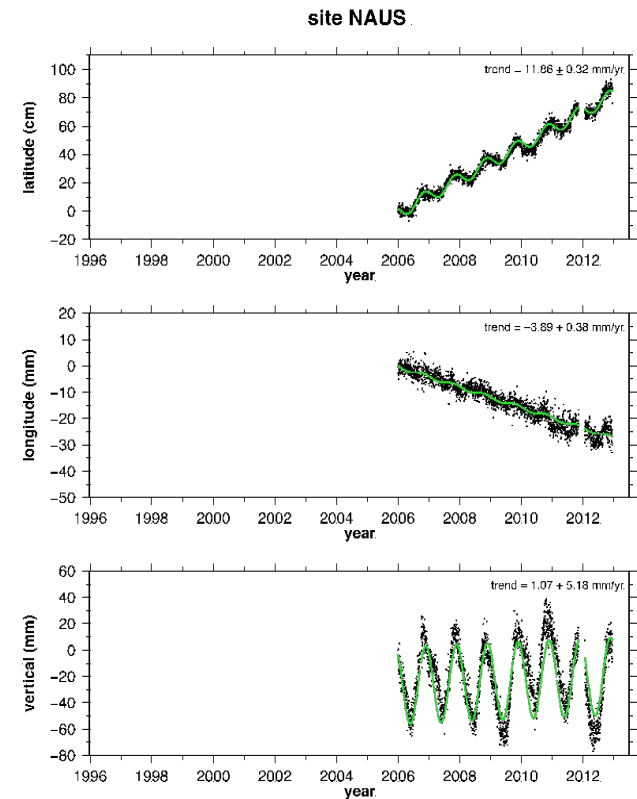
Integrated with TeroNet, TeroCaster is an open-source solution developed by TeroMovigo to implement NTRIP Caster.

It has all the functionalities of common NTRIP Caster software and is integrated with TeroNet in a seamless way.



Other features

- **Network Stability** - monitor internal deformations of the network or jumps in the station position and alert administration users;
- **FTP Forward** – Possibility to forward data to another FTP server for mirroring purposes.



Available plans

	BASIC	BASIC ⁺	CLOUD
SUPPORT			
▪ TeroMovigo data center backup	-	✓	✓
▪ TeroMovigo cloud backup	-	-	✓
▪ Years of support	3 5 10	3 5 10	3 5 10
INSTALLATION			
▪ Client premises server	✓	✓	-
▪ Cloud server	-	-	✓
▪ Number of stations	10 25 ∞	10 25 ∞	10 25 ∞
EXTRA FEATURES			
▪ TeroCaster (NTRIP Caster)	-	✓	✓



TERONET

Contact

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