

Asian Base Station Network Project Report

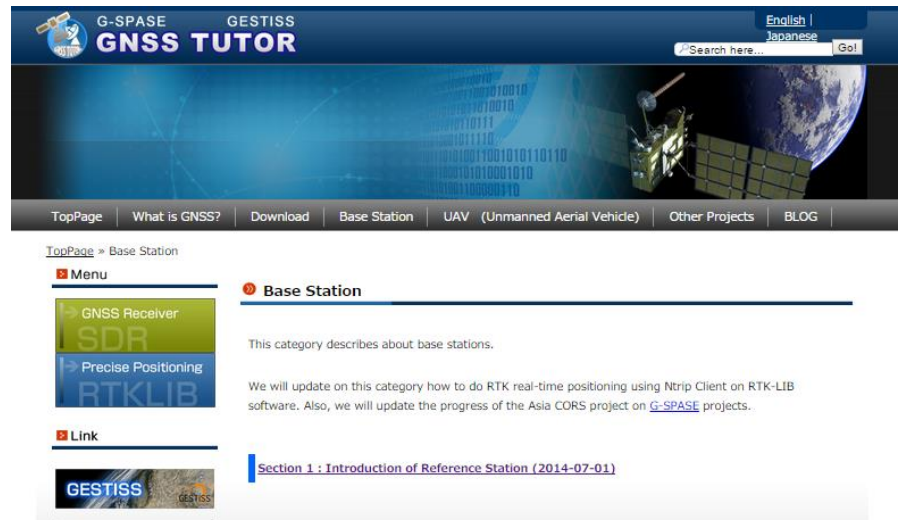
<https://www.facebook.com/groups/Base.station.GSPASE/>

<http://gnss-learning.org/>

Hiroko Tokura

Objective and plan for this year

- Meeting at 6th June
- Making manuals (How to set up?)
⇒ update on the website
- Maintenance and Support
 - Portable base station
 - Lending GNSS devices



The screenshot displays the website for G-SPASE GESTISS GNSS TUTOR. The header includes the site name, language options (English, Japanese), and a search bar. The main navigation menu contains links for TopPage, What is GNSS?, Download, Base Station, UAV (Unmanned Aerial Vehicle), Other Projects, and BLOG. The current page is titled "Base Station" and features a "Menu" section with links to "GNSS Receiver SDR" and "Precise Positioning RTKLIB". A "Link" section shows a "GESTISS" logo. The main content area includes a sub-header "Base Station" and a description: "This category describes about base stations." Below this, a paragraph states: "We will update on this category how to do RTK real-time positioning using Ntrip Client on RTK-LIB software. Also, we will update the progress of the Asia CORS project on [G-SPASE](#) projects." A section titled "Section 1 : Introduction of Reference Station (2014-07-01)" is also visible.

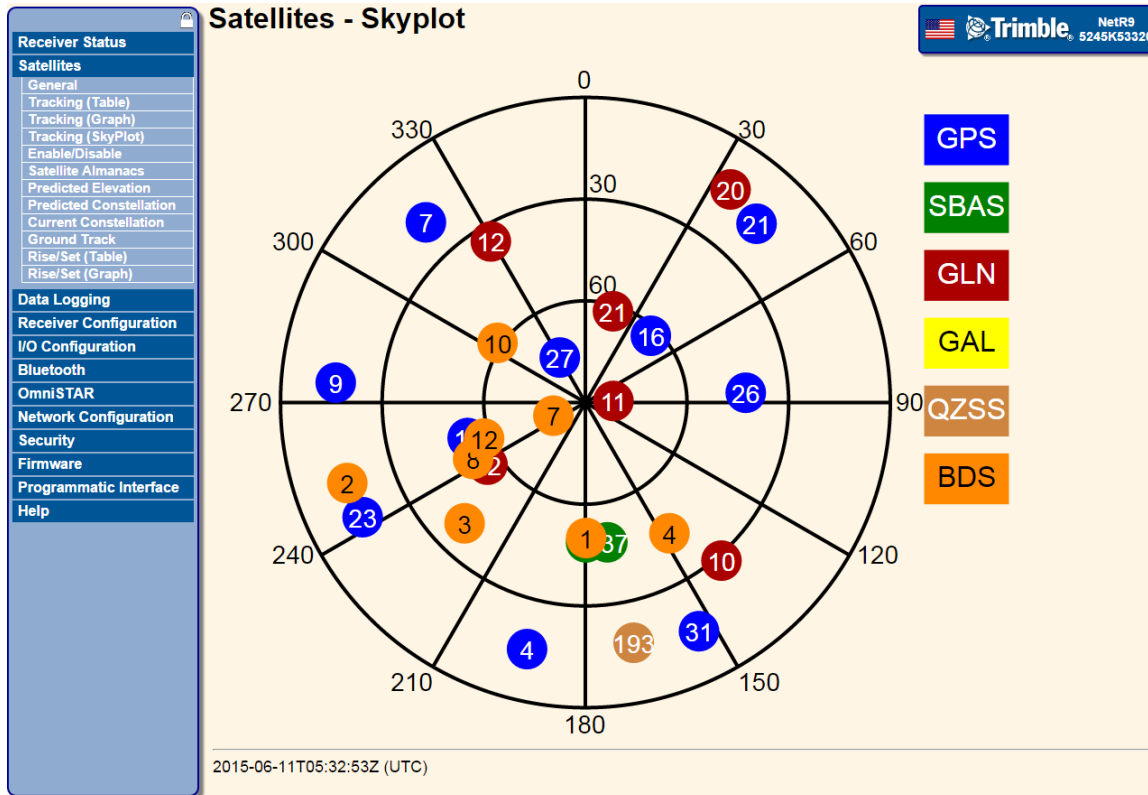
Contents

- Short introduction about
Settings for Base station and Rover
(a part of manuals)
- RTK-GNSS Demo



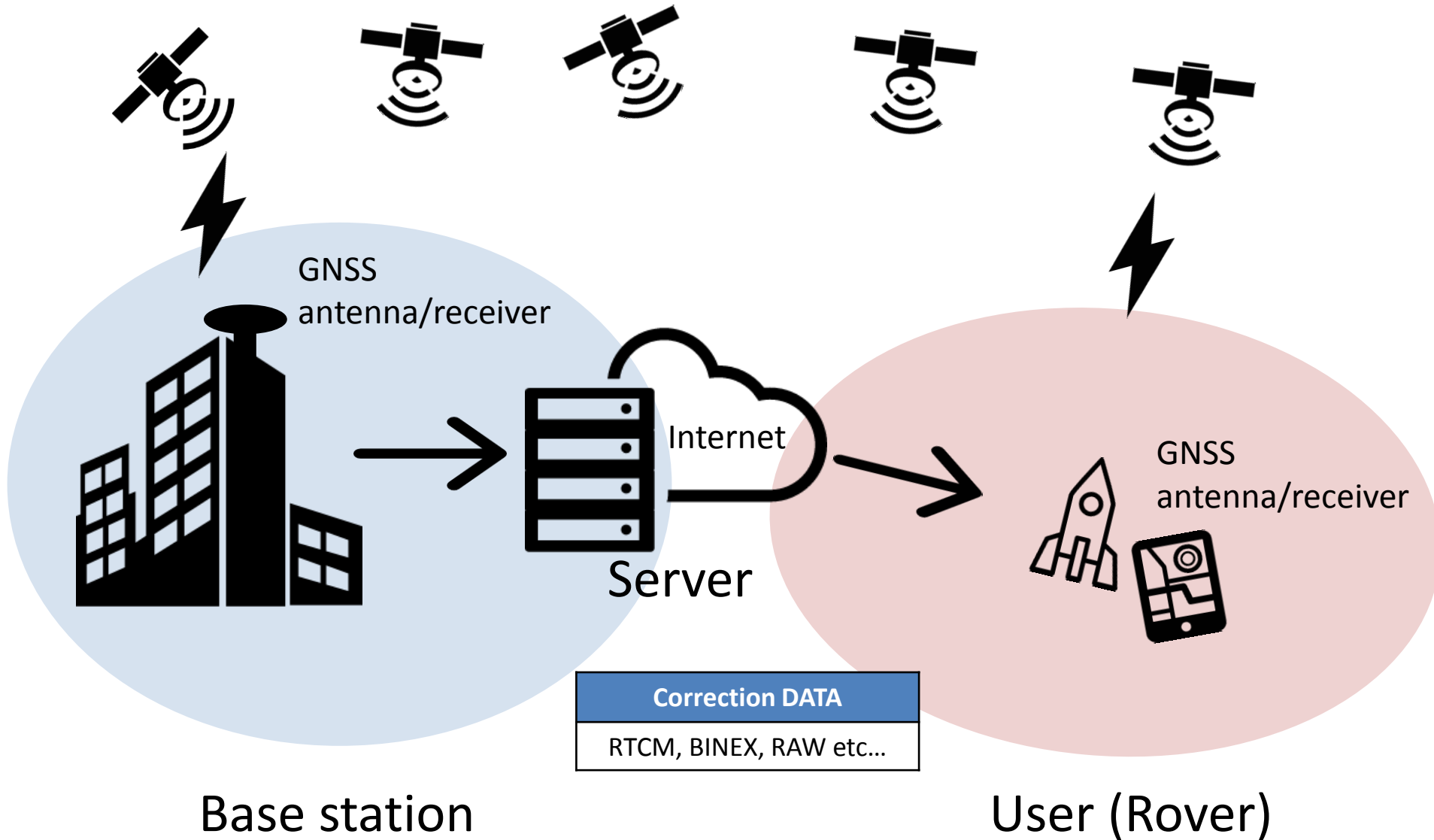
RTK-GNSS

(Global Navigation Satellite Systems) Settings for Base Station and Rover



Settings for Base station and Rover

What is RTK-GNSS ?



Contents

- Introduce
 - RTKLIB software package
 - NTRIP (Network Transport of RTCM data over IP)
- Settings for Base Station
 - Using STRSVR program from RTKLIB software package
- Settings for Rover
 - Using RTNAVI program from RTKLIB software package

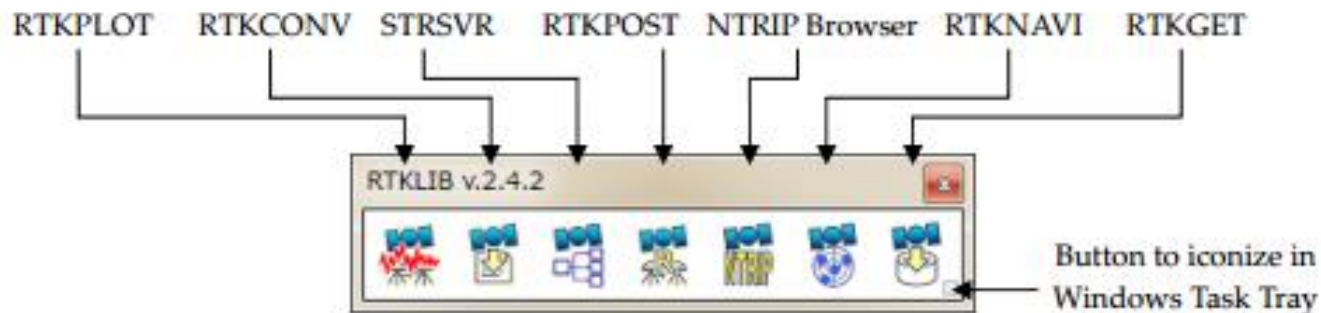


Figure 3.1-1 RTKLAUNCH window and launcher icons for APs

RTKLIB software package

Requirements



[Overview](#) | [Release Notes](#) | [Support](#) | [Documents](#) | [References](#) | [Porting to BB](#) | [To Do](#) | [Statistics](#) | [SDR Receiver](#)

RTKLIB: An Open Source Program Package for GNSS Positioning

- Computer to run RTKLIB on
- GNSS receiver capable of providing raw data (such as U-blox) and connected to the computer
- GNSS antenna

For RTK-GNSS

- Access to the corrections from a base station in close range OR a second raw data GPS receiver and antenna to set up your own base station.

RTKLIB software package

Install RTKLIB



G-SPASE GESTISS
GNSS TUTOR

English | Japanese

Search here... Go!

TopPage | What is GNSS? | Download | Base Station | UAV (Unmanned Aerial Vehicle) | Other Projects | BLOG

[TopPage](#) » [RTKLIB](#) » What is RTKLIB

Menu

- GNSS Receiver
SDR
- Precise Positioning
RTKLIB

Link



» What is RTKLIB

→ How to install RTK-LIB

[RTKLIB](#) is an open source program package for standard and precise positioning with GNSS (global navigation satellite system).

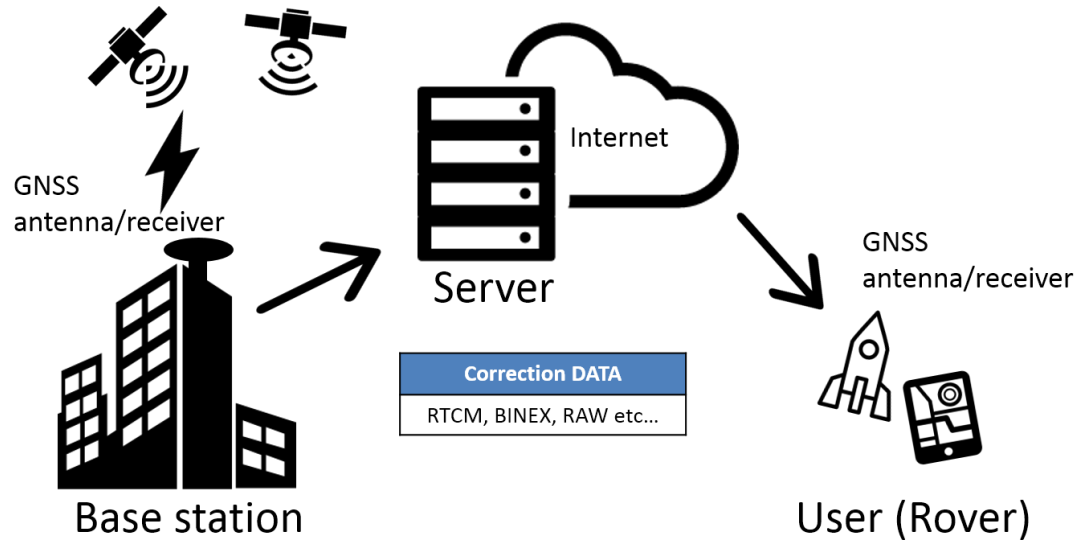
(refer the [Manual](#) for details)

If you want to install RTK-LIB, please check the installation guide. This guide is written for G-SPASE summer school 2014.

- [Windows](#)
- [Mac](#) (by using "Wine Bottler")

NTRIP (Network Transport of RTCM data over IP)

Requirements



- Internet connection
(typically cellular based, only requires 1-2 KB/second)
- RTK capable GPS Receiver
- Server IP address and login credentials for a system that can provide RTK correction data.

NTRIP (Network Transport of RTCM data over IP)

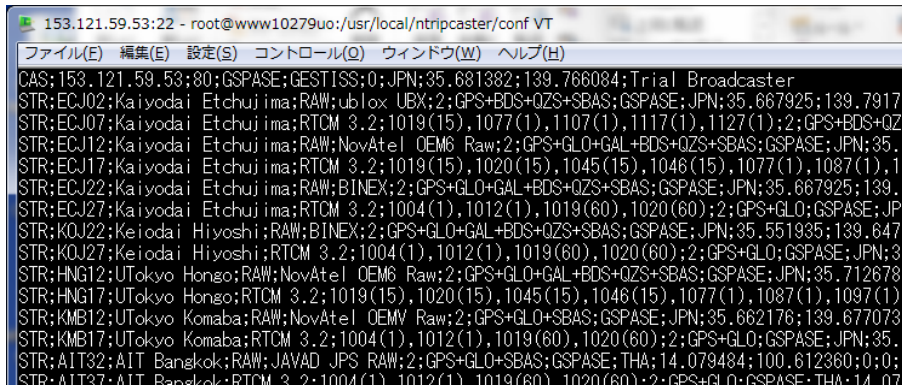
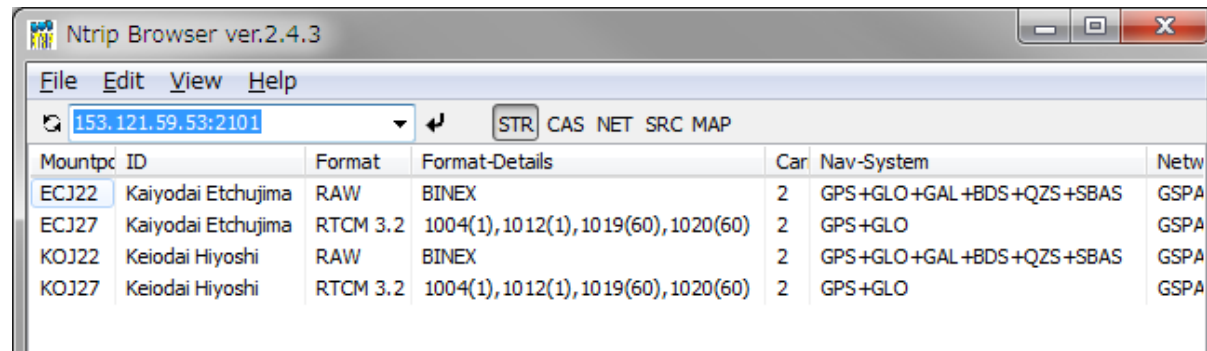
CORS



CORS(Continuously Operating Reference Stations)

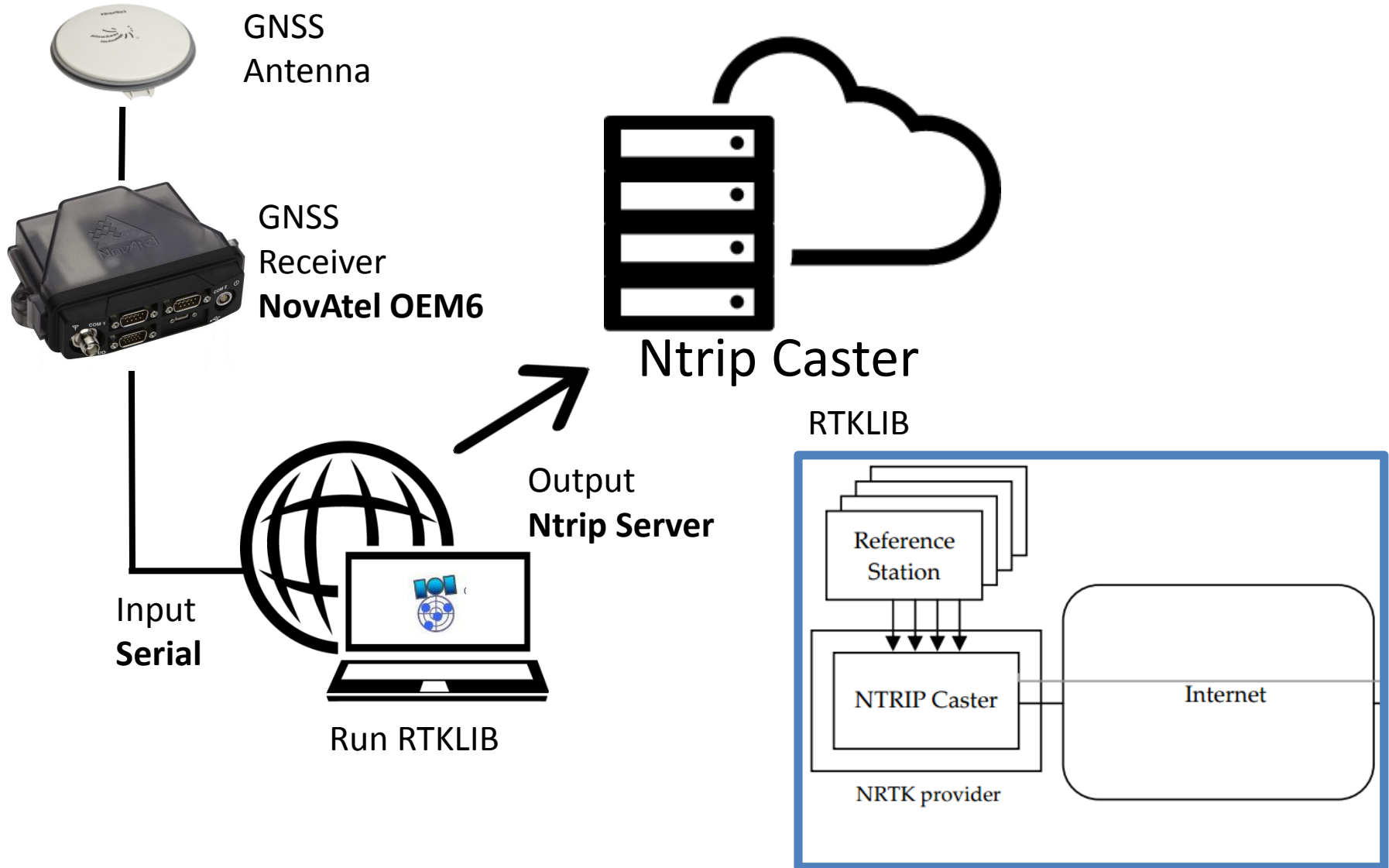
observation data via the Internet

Tokyo(Univ. of Tokyo, Keio Univ., TUMSAT)
Bangkok(Thailand), Jakarta(Indonesia)



Settings for Base station

Using STRSVR program from RTKLIB



Settings for Base station

Run STRSVR

- Rtklib_[ver.]-> bin-> rtklanch.exe

- Configure input and output data stream

- Split data stream

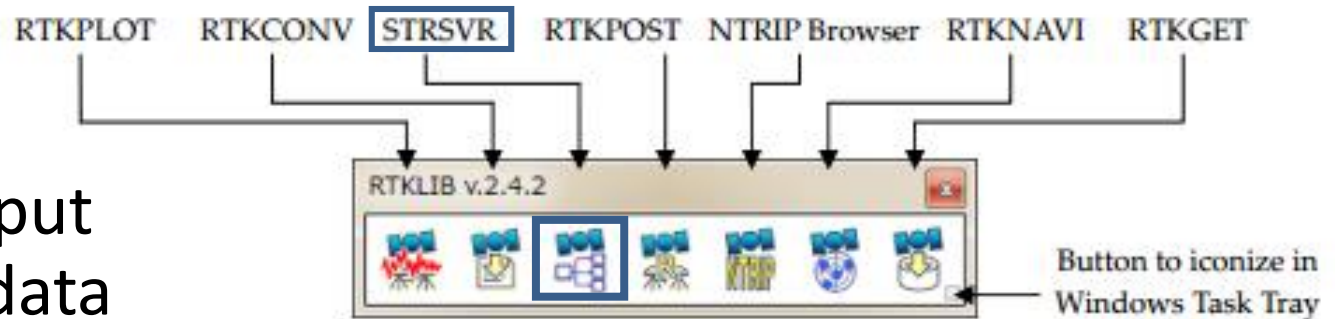
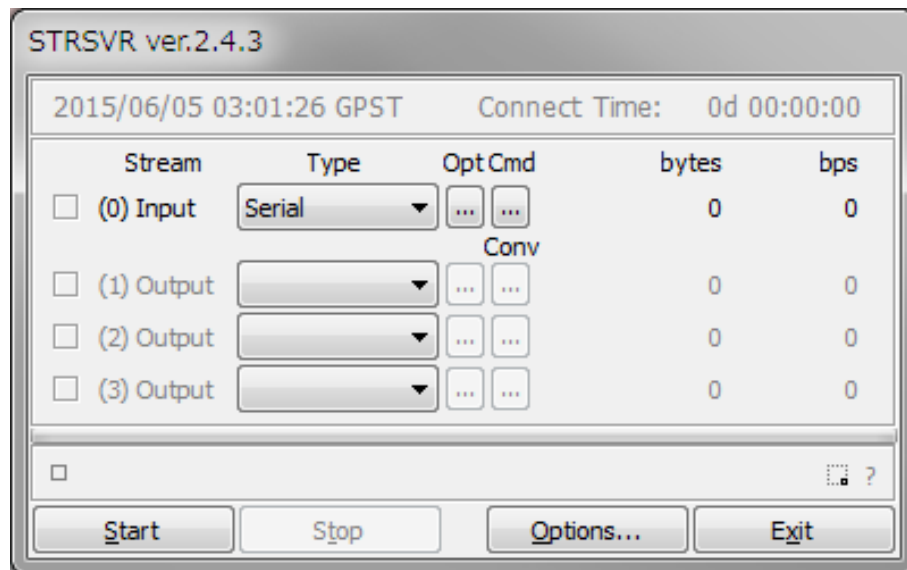


Figure 3.1-1 RTKLAUNCH window and launcher icons for APs



Settings for Base station

Using STRSVR program from RTKLIB



STRSVR ver.2.4.3

2015/04/20 10:02:03 GPST Connect Time: 0d 00:33:35

Stream	Type	Opt Cmd	bytes	bps
<input type="checkbox"/> (0) Input	Serial	...	643,550	0
<input type="checkbox"/> (1) Output	NTRIP Server	...	642,175	0
<input type="checkbox"/> (2) Output		...	0	0
<input type="checkbox"/> (3) Output		...	0	0

Buttons: Start, Stop, Options..., Exit

Serial options

Serial Options

Port: COM25 Parity: None

Bitrate (bps): 115200 Stop Bits: 1 bit

Byte Size: 8 bits Flow Control: None

Buttons: OK, Cancel

Serial commands

Serial/TCP Commands

Commands at startup

```
interfacemode novatel rctmv3
undulation user 0
fix position 35.666247876 139.79230368 59.8873
log rctm 1004 ontime 1
log rctm 1012 ontime 1
log rctm 1005 ontime 10
log rctm 1019 ontime 10
```

Commands at shutdown

```
interfacemode novatel novatel
unlog rctm 1004
unlog rctm 1012
unlog rctm 1005
unlog rctm 1019
unkog rctm 1020
```

Buttons: Load..., Save..., OK, Cancel

Loading file OEM4_RTCM_1Hz

Load Serial Commands

RTKLIB-rtklib_2.4.3 > data > dataの検索

名前	更新日時	種類
oem4_rctm3_1hz.cmd	2014/11/09 18:57	Windows コマ
oem4_rctm3_10hz.cmd	2014/11/09 18:57	Windows コマ
oem4_setcom115200.cmd	2014/11/09 18:57	Windows コマ
oem6_raw_1hz.cmd	2014/11/09 18:57	Windows コマ
skytraq_raw_1hz.cmd	2014/11/09 18:57	Windows コマ
skytraq_raw_10hz.cmd	2014/11/09 18:57	Windows コマ
skytraq_raw_20hz.cmd	2014/11/09 18:57	Windows コマ
ubx_m8n_bds_raw_1hz.cmd	2014/11/09 18:57	Windows コマ
ubx_m8n_glo_raw_1hz.cmd	2014/11/09 18:57	Windows コマ
ubx_m8t_bds_raw_1hz.cmd	2014/11/09 18:57	Windows コマ

ファイル名(N): oem4_rctm3_1hz.cmd Command File (*.cmd)

Buttons: 開く(O), キャンセル

Ntrip Server options

NTRIP Server Options

NTRIP Caster Host: 153.121.59.53 Port: 2101

Mountpoint: ECJ17 User-ID: Password:

String

Buttons: Ntrip..., OK, Cancel

Ntrip

Ntrip Browser ver.2.4.2

153.121.59.53:2101 STR CAS NET SRC MAP

Mountpoint	ID	Format	Format-Details	Ca	Nav-Systri	Netw
ECJ17	Kaiyodai Etchujima	RTCM 3.2	1019(15),1020(15),1045(15),1046(15),1077(1),1	2	GPS+GLO	GSPA
ECJ22	Kaiyodai Etchujima	RAW	BINEX	2	GPS+GLO	GSPA
ECJ27	Kaiyodai Etchujima	RTCM 3.2	1004(1),1012(1),1019(60),1020(60)	2	GPS+GLO	GSPA
KMB12	UTokyo Komaba	RAW	NovAtel OEMV Raw	2	GPS+GLO	GSPA
KMB17	UTokyo Komaba	RTCM 3.2	1004(1),1012(1),1019(60),1020(60)	2	GPS+GLO	GSPA

source table received

Start ⇒ ECJ17

STRSVR ver.2.4.3

2015/04/20 10:05:23 GPST Connect Time: 0d 00:00:08

Stream	Type	Opt Cmd	bytes	bps
<input checked="" type="checkbox"/> (0) Input	Serial	...	17,414	2,248
<input checked="" type="checkbox"/> (1) Output	NTRIP Server	...	12,492	2,248
<input type="checkbox"/> (2) Output		...	0	0
<input type="checkbox"/> (3) Output		...	0	0

(1) 153.121.59.53/ECJ17

Buttons: Start, Stop, Options..., Exit

Settings for Rover

Run RTKNAVI

- Rtklib_[ver.]-> bin-> rtklanch.exe

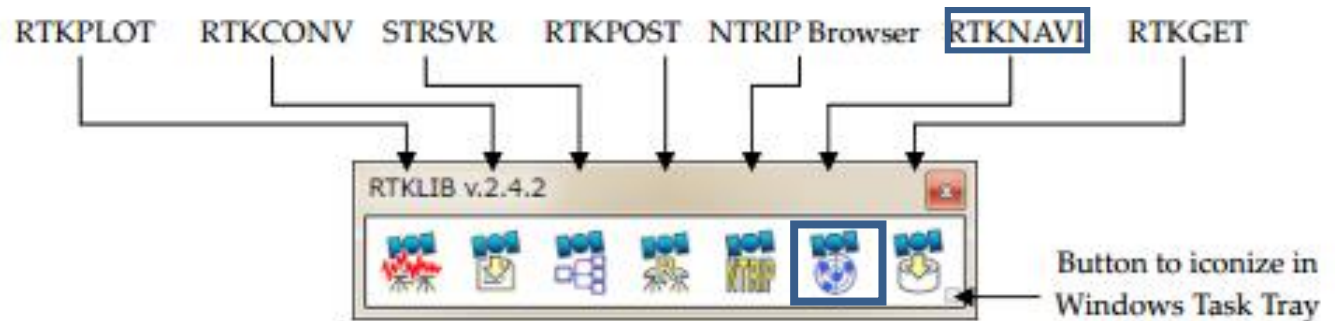
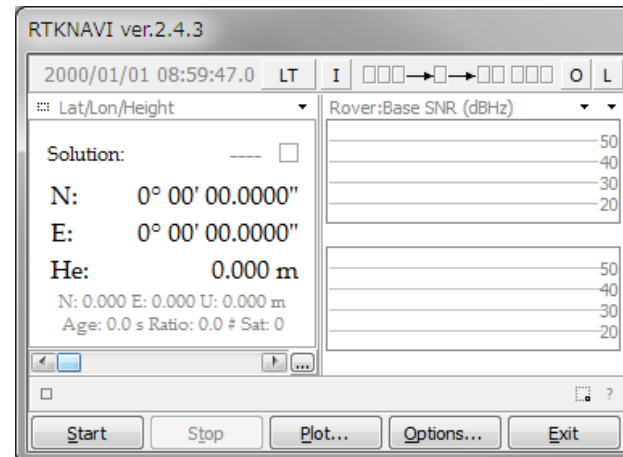


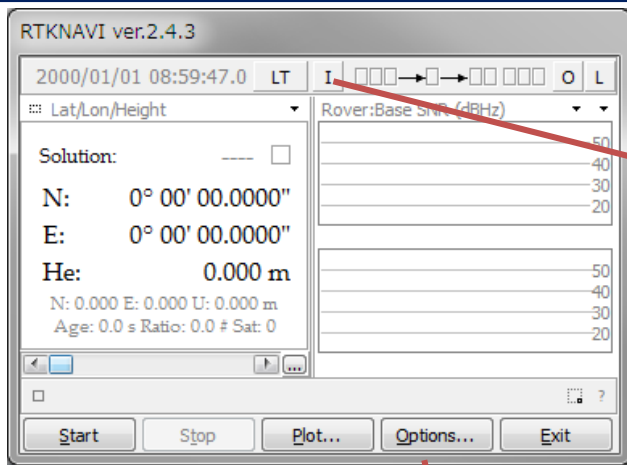
Figure 3.1-1 RTKLAUNCH window and launcher icons for APs

- Real time positioning
- Saving data

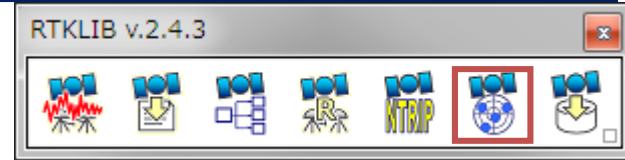
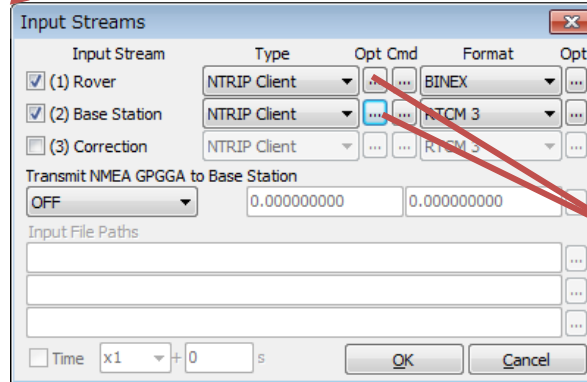


Settings for Rover

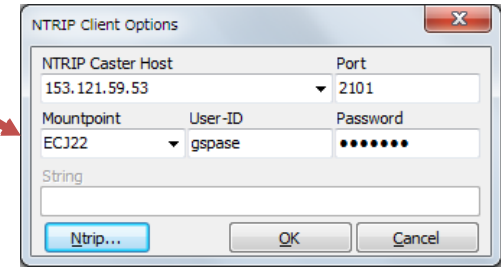
RTKNAVI.exe Base:ECJ27 rov:ECJ22



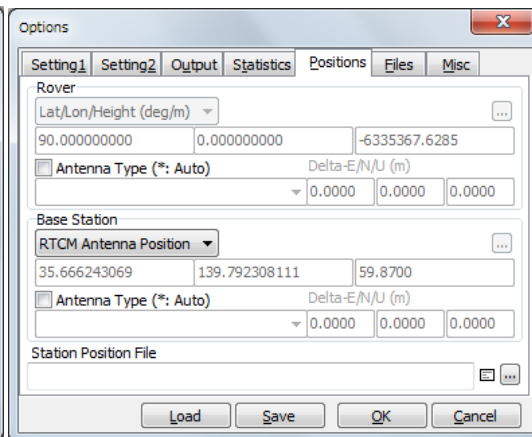
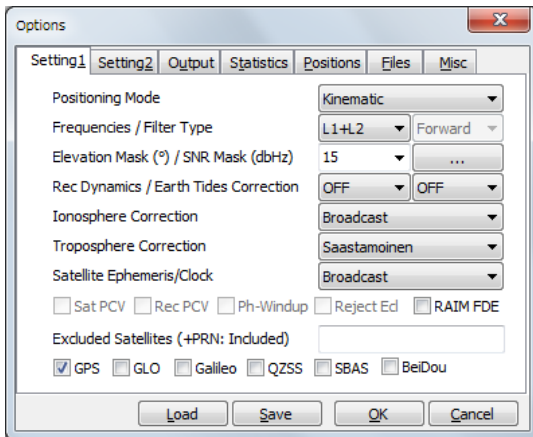
Input streams



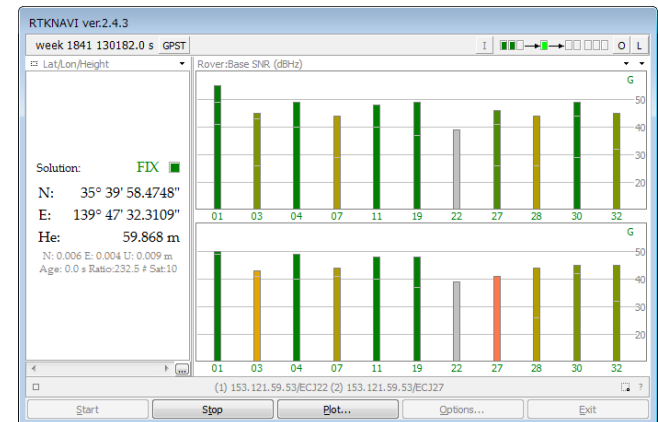
接続オプション それぞれ設定



Positioning options for RTK



Start⇒FIX RTK



RTK-GNSS Demo

Configurations



Antenna

Receiver

Wi-fi Router

Windows tablet
(with RTKLIB)

