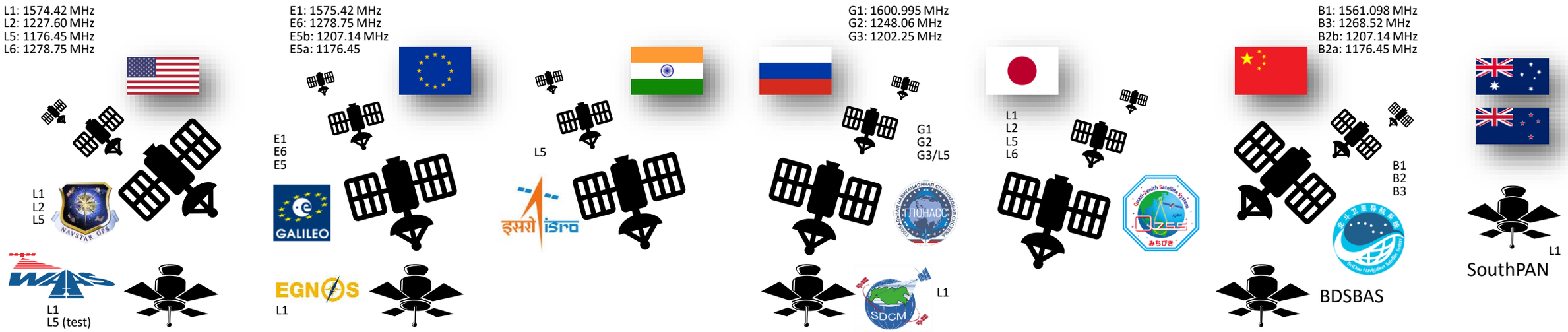
The Positioning Land and Space Scape – software, correction and processing services

Space – GNSS Constellations and Augmentation Systems
The Crowded Sky



Position Correction Services

- **Trimble RTX** — CenterPoint, FieldPoint, RangePoint, ViewPoint — PPP
- **HEXAGON** — HxGN SmartNet, TerraStar, veripos — RTK & PPP
- **TOPCON** — Topnet Live, MAGNET Relay — Network RTK
- **SAPCORDA** — SAPA Service, SPARTN L or IP
- **FUGRO** — Starfix PPP, Seastar PPP
- **LEAR** — PICO — PPP
- **UniStrong** — atlas — RTK
- **swift NAVIGATION** — SKYLARK™ Precise Positioning Service — RTK PPP
- **OCEANEERING** — C-Nav® — PPP
- **Position Partners** — AllDayRTK — RTK
- **POSITIONING AUSTRALIA** — Ginarn PPP, SouthPAN PPP

Others

- **ROKUBUN** — GNSS receiver and post-processing service.
- **GNSS SDR** — GNSS software receiver.
- **Curtin University / TU Delft** — LAMBDA and Ps-LAMBDA software

On-line Services

- **CentrePoint RTX** — Trimble
- **magicGNSS** — gmv
- **SCOUT** — UC San Diego
- **GAPS** — UNB, University of New Brunswick
- **OPUS** — National Oceanic and Atmospheric Administration, U.S. Department of Commerce
- **APPS** — Jet Propulsion Laboratory, California Institute of Technology
- **CSRS-PPP**
- **AUSPOS** — Positioning Australia

Commercial offerings

Trimble Business Center

Field-to-finish survey CAD software helps surveyors deliver high-accuracy GNSS data, create CAD deliverables, and leverage full data traceability throughout a project's lifecycle.

Leica Infinity

Designed to manage, process, analyse and quality check all field survey measurement data.

Starling

Starling is a receiver-agnostic precise positioning engine designed for automotive, industrial and consumer applications requiring higher accuracy from sensor-aided positioning.

MAGNET Software Suite

Users can collect survey mapping data and perform construction and layout operations using colorized cut and fill indicators. Users can also create geo-referenced projects and publish mass data maps online.

ONPOZ Software

OnPOZ Precision Positioning Software is a complete suite of applications that allows you to easily and accurately collect, record and post-process geospatial data.

PP-SDK

PP-SDK - Post-Processing Software Development Kit combines GNSS and base station data to achieve reliable cm-level accuracy. The SDK includes all the necessary tools to incorporate post-processing functionality into your own applications and products.

RTNet Software

Providing robust state-of-the-art positioning algorithms for solutions in GNSS operations and research. RTNet supports both Precise Point Positioning (PPP) and Network processing.

magicPPP

Implements new generation Precise Point Positioning (PPP) algorithms developed by GMV as a result of more than 30 years experience in GNSS based precise orbit determination, time synchronization and positioning.

Rupert Brown
v0.5 draft WIP
3 May 2021
FrontierSI
Geoscience Australia

Link to further information.

Service or software is open and freely available

Access to the service or software requires an account or licence.

Access to the service or software requires an account or licence and payment of a fee.

University / Institution offerings

NAPEOS

Napeos provides orbit determination and prediction, manoeuvre optimization and global parameter estimation capabilities and is able to process a wide variety of observation data, including: angles, range, range-rate, altimetry, satellite-to-satellite links and GNSS data.

Bernese

The Bernese GNSS Software is a scientific, high-precision, multi-GNSS data processing software developed at the Astronomical Institute of the University of Bern (AIUB).

GAMIT / GLOBK

GAMIT, GLOBK and TRACK form a comprehensive suite of programs for analysing GNSS measurements primarily to study crustal deformation. The software has been developed by MIT, Scripps Institution of Oceanography and Harvard University with support from the National Science Foundation.

GipsyX

Single high-level user interface supports majority of precise positioning applications. Single-receiver ambiguity resolution using JPL's GPS orbit and clock products.

GINS

The GINS software is developed and maintained by the CNES Spatial Geodesy team and is a precise orbitography application applied to spatial geodesy which allows the restitution of many geodesic or physical parameters accessible by spatial observations.

PRIDE PPP-AR II

PRIDE PPP-AR II originates in Dr. Maorong Ge's efforts on PPP-AR and later developed by Prof. Jianghui Geng's group. It is an open-source software package which is based on many GNSS professionals' collective work in GNSS Research Center, Wuhan University.

GINARN

Positioning Australia will develop and release a real-time position correction service delivered over the internet (the Ginarn Service). The suite of software systems (the toolkit) that create the service contain correction models and algorithms, and will be available under an open source licence (the Ginarn Toolkit).

RTKLIB

Tomoji Takasu

RTKLIB is an open source program package for standard and precise positioning with GNSS (global navigation satellite system). RTKLIB consists of a portable program library and several APs (application programs) utilizing the library.

GROOPS

The Gravity Recovery Object Oriented Programming System (GROOPS) is a software toolkit written in C++ that enables the user to perform core geodetic tasks. Key features of the software include the determination of satellite orbits from global navigation satellite system (GNSS) measurements, and the processing of GNSS constellations and ground station networks.

BKG Ntrip Client

The BKG Ntrip Client (BNC) is an Open Source multi-stream client program designed for a variety of real-time GNSS applications. It can compute a real-time Precise Point Positioning (PPP) solution from RTCM streams or RINEX files.

GPSTk

Provides an open source library and suite of applications to the satellite navigation community--to free researchers to focus on research, not lower level coding.

G-NUT Library

Geodetic Observatory
Pecny

First applications derived from the G-Nut library are based on the Precise Point Positioning technique. The post-processing as well as real-time processing has been implemented supporting static or kinematic positioning solutions.