HIVE

Cloud infrastructure solution for global GNSS positioning services. Equip your users with means to achieve superior cm-level positioning accuracy.

HIVE is a service to process GNSS observations — receive, archive, convert to the desired format and deliver to the customer via realtime streaming or downloadable archives. HIVE consists of:

- A back-end server software, collecting and processing GNSS data from a global network of reference stations, as well as handling the customer requests for navigation information.
- A web service to discover, request, and configure the solution required for the specific case; as well as tools for administrators to monitor the state of the system and perform maintenance.
- Cloud storage to accumulate terabytes of GNSS information, organized in a scalable, reliable, and easy-to-access system.

FLEXIBLE DATA INPUT

Connect your mobile reference station, permanent CORS, or station network to HIVE. HIVE collects data streams from different kinds of sources with permanent status tracking and automated reconnection. In the case of station events like connection failure and reconnection, administrators receive notifications via email or webhooks.

EXPERT GNSS DATA MANAGEMENT

HIVE decodes the observations, supporting various vendor-independent and proprietary encoding formats. Observation files are analyzed, populating the database with the following metadata: time of first and last observation, the total number of observations, observation interval, observed satellite systems and signals.

INFINITE DATA STORAGE

Observation data is stored as hourly files in the original format. The next day data is transferred to AWS cloud storage. After 6 months, the data is downsampled to 5 sec and moved to a cool access tier where it is stored indefinitely.

Per user request, the desired timespan is extracted from the archive, converted to RINEX, and delivered to a user through Web UI or by uploading to the user's cloud storage.

POWERFUL GNSS DATASTREAM PRODUCER

A stream of decoded observations from the input channel transforms into multiple outbound RTK data streams. HIVE can modify observations by time adjustment, innovative frequency resampling, advanced GNSS filtering.

Essential RTK metadata could be added or changed: station ID, reference position, hardware info, etc. In addition, coordinate transformation messages with grid corrections could be generated.

Finally, the stream is encoded into different binary forms, and encoding options are also configurable.

CLOUD NTRIP CASTER

GNSS data streams can be listed and connected to via NTRIP — an industry-standard protocol supported by virtually any GNSS client software. HIVE NTRIP casters (streaming servers) provide lists of available streams and their properties and allow authorized clients to request and receive data streams.

EASY USER MANAGEMENT & ACCESS CONTROL

HIVE provides automated user registration via email sign up and verification. NTRIP credentials are provided automatically upon account creation.

Managers have full individual access and group-based control: they can allow/deny access of a specific user to a specific service, assign users and stations to organizations, can limit the number of concurrent NTRIP client connections.

Additionally, HIVE can receive the user's hardware NMEA and represent its trajectory on a map or compile a *.GPX file.

PROFOUND ACCOUNT MANAGEMENT

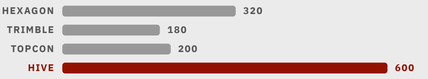
HIVE tracks user, station, organization balances and generates usage reports for station owners, organization managers, and HIVE administrators. Administrators can adjust pricing for any service, set up custom restrictions, or allow free access.

CORS MONETIZATION & INTEGRATED BILLING

HIVE has built-in integration with a payment processor. HIVE revenue split system automatically processes all service purchases and calculates CORS owner's share according to a selected plan.

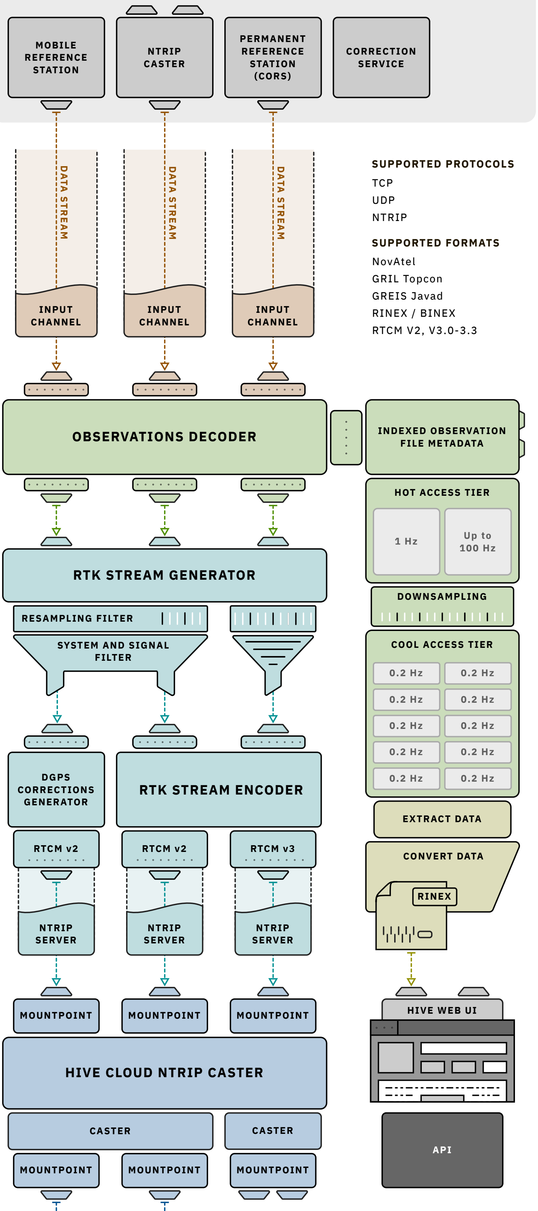
600 UNITS: HIVE MANAGES THE LARGEST NUMBER OF GNSS CORS IN RUSSIA

HIVE unites hundreds of stations owned by over 120 government and scientific organisations, commercial companies and sole CORS owners. They connect their stations to HIVE for several reasons: eliminate web server costs as HIVE provides free cloud storage; use HIVE to expand the business; get rid of CORS network administration burdens; save on internal support team.



GNSS CORS owners traditionally buy software licenses for network management, deploy the software on private physical servers, and hire local administrators. HIVE eliminates these unnecessary costs; its cloud infrastructure allows scaling CORS networks indefinitely and drives software ownership costs to zero.

HIVE supports many formats and protocols for input and output, with a primary focus on receiver- and vendor-independent standards, allowing the broadest range of end-user hardware and software to access the service.

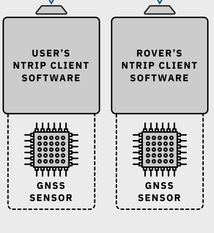


SUPPORTED PROTOCOLS

TCP
UDP
NTRIP

SUPPORTED FORMATS

NovAtel
GRIL Topcon
GREIS Javad
RINEX / BINEX
RTCM V2, V3.0-3.3



GNSS sensors are widely used in the following application areas: Unmanned vehicles, Drones & Robotics, Light electric vehicles and IoT.

Unlike competitors, HIVE can deeply customize GNSS data streams to meet the unconventional needs of cutting-edge companies.

Award-winning team Precision Navigation Systems OÜ is developing software and hardware solutions for the variety of non-standard applied and infrastructural tasks using precise GNSS positioning technologies.

Reach us via email hello@prns.io

Regional Winner Estonia 2018

Top 6 Deep Tech New Mobility 2019

Fifty Founders Battle Winner 2019

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