

How has the C4Gnet.XYZ Changed? And why?

The C4G RTN (Real Time Network) has been in operation since November of 2007, with the intention of bringing National Spatial Reference System (NSRS) positions to users in Real-Time. The C4G RTN started out as GPS only and quickly expanded to include GLONASS and in 2008 C4G had 42 CORS deployed throughout Louisiana. All servers were hosted at LSU C4G and the infrastructure hardware and software quickly increased by 4 times what it was in 2008.

It became clear that to provide our clients with 24/7 top-tier Quality of Service, C4G needed to move its mission-critical servers off-campus to a top-tier hosting facility to give our clients availability that was never possible on the LSU network. Non-critical servers are still at LSU C4G so we currently manage hardware and software at both LSU and our off-campus hosting facility.

When C4G launched C4Gnet.XYZ in January of 2018 there were too many important advancements bundled into it to get into it here, but verbose details on the tools and features are available in the C4Gnet.XYZ RTN User Guide found on the [C4Gnet.XYZ](#) portal.

Our core servers and software have undergone major upgrades, essentially operating on a totally new platform. Now that the C4Gnet.XYZ has gone through this expansion phase there are over 130 stations in the RTN and statewide coverage with GPS, GLONASS, Galileo and BeiDou constellations being supported so we are concentrating on outreach to help users understand and benefit from these many new features and services we provide.

Statewide Coverage

C4Gnet.XYZ has coverage for the entire State of Louisiana.

C4Gnet.XYZ Constellation Upgrades

All C4Gnet.XYZ stations support GPS, GLONASS, Galileo and BeiDou constellations, we continue to replace all our older receivers with the latest GNSS capable receivers. We currently support all constellations and signals including L2C and L5. If you wish to access all constellations, you will want to use a mountpoint that includes GREC in its name.

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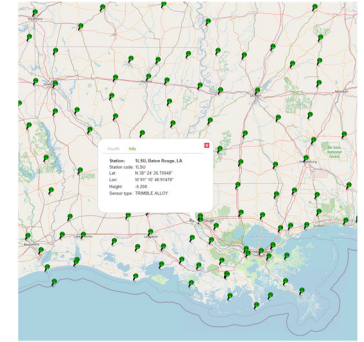
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C4Gnet.XYZ

New Visitor Information



Welcome to the C4Gnet.XYZ Portal

This website supports C4Gnet.XYZ Real-time Network users and services provided by the LSU Center for GeoInformatics and services provided by the Louisiana Spatial Reference Center (LSRC). If you are visiting the C4Gnet.XYZ Portal for the first time, please take the time to read all the information below before continuing. If you just want to use the freely available GNSS post processing service or the raw static GNSS CORS files, then continue to the next section to learn how to gain access to them.

Get a Free Account

Free user accounts are available for the C4Gnet.XYZ GNSS Online Post Processing Service which requires a yearly free subscription that is available simply by asking one of the C4Gnet.XYZ administrators. To get a free user account, first Register @ <http://c4gnet.xyz/RegisterAccount.aspx>, then send an email to rosbor1@lsu.edu or vdubin@lsu.edu and request a free C4Gnet.XYZ GNSS Online Post Processing Service Subscription.

Static raw GNSS data for all the C4G CORS are also available through our Reference Data Archive by anonymous FTP at <ftp://cors.lsu.edu:8021/> or HTTP access at <http://cors.lsu.edu/>.

Logging on to this website as a Registered User

Registered users are able to login to this portal with their organization name, username, and password. If you forget your password you will need your organization name and username to request that a password reset link is sent to your email address. Passwords are required to have a minimum of 8 characters when reset.



C4Gnet.XYZ Visitor Information

How to Log-in to the NTRIP caster for real-time corrections

Registered users with active Subscriptions will be able to log in to the C4Gnet.XYZ NTRIP caster for real-time corrections for their field rovers using the following information in their NTRIP client settings:

Host Address: C4Gnet.XYZ

Port Address: 9000

Once connected to the NTRIP caster your rover can request a list of available mountpoints.

What are Mountpoints?

A mountpoint defines the type of processor used, what satellite constellations are supported, the format of the correction messages and the reference frame that relates to a real-time data stream. When connecting to the C4Gnet Real Time Network, a mountpoint list is generated from which a user selects the desired mountpoint. If a mountpoint is hard coded in a rover setup the mountpoint list will not be displayed.

NOTE: All mountpoints except the legacy ones use this naming structure:

TYPE_SATS_FORMAT_REFERENCE FRAME

Also Note: The Legacy mountpoint names are obsolete!

Since legacy mountpoints like GLN_RTCM3_2, GLN_CM Rx and GLN_NetDGPS do not follow the new naming convention, it was hard to know what is being provided in their solutions. Therefore, some have been removed from the mountpoint list already and others will be removed soon.

If you currently use a legacy mountpoint, you must change to one of the new mountpoints using the new naming convention. While legacy mountpoints will work for a short while the same as the new ones, you will have to figure out what each one contains after connecting to it and since it will be removed soon, we recommend that you do not use them anymore and move to a new mountpoints ASAP.

New Mountpoint Naming Convention uses 4 Groupings:

(1)TYPE_(2)SATS_(3)FORMAT_(4)REFERENCE FRAME

Each character grouping is separated by an under bar before the next set of characters.

1. The first set of characters is the **SOLUTION TYPE**. **VRS**, **PPP** or **NSB** are the current processing methods that you can choose:
 - VRS** or **Virtual Reference Station**: Uses a Network RTK Processor to create a Virtual Reference Station and applies network corrections in RTK accuracy from the parent processor to the receiver data.
 - PPP** or **Precise Point Positioning**: Uses a Network RTXNet Processor to create a Virtual Reference Station and applies network corrections in RTK accuracy from the parent processor to the receiver data.
 - NSB** or **Nearest Single Base**: Selects the nearest suitably operating reference station using the position reported by the rover and propagates that receiver's observation data to the rover.
2. The second set of characters points out the **SATELLITES** ;
 - GPS**: Mountpoints with GPS in the name use GPS satellite vehicles only.

GNSS: Mountpoints with GNSS in the name use both GPS and GLONASS SVs in the solutions.

GREC: Mountpoints with GREC in the name include 4 satellite constellations, which include Galileo, BeiDou, GPS and GLONASS Satellite Vehicles in their solutions. Mountpoints with GREC in the name only appear in mountpoints in the CMRx or RTCM3_2 format that use the PPP or NSB processing methods.

3. The next set of characters define the **MESSAGE FORMAT**.

The following explains each available format:

- **CMRx** This is the latest Trimble proprietary format for Network RTK mountpoints: CMRx allows Real-Time Kinematic (RTK) users to use more satellite constellations and signals as they become available, with faster initializations and improved performance near obstructions and under canopies. It offers significant compression (around 40%) over the already compact CMR/CMR+ format to help users receive corrections within less bandwidth. Trimble rovers **that support CMRx should use it exclusively**.
- **RTCM 3.2** Carrier and Code Differential Corrections for High-Precision RTK, Network RTK, and PPP-type applications. Recently modernized with so-called Multiple Signals Messages (MSM), for generic inclusion of new constellations and signals. MSM Currently supports GPS, GLONASS, Galileo, QZSS, BeiDou, SBAS.
- **CMRp** Network RTK mountpoint (e.g., CMRp_All): This is intended for legacy equipment in industry groups where CMR plus has been used as a quasi-standard format (such as precision agriculture). CMR plus is a Trimble format so non-Trimble users are advised to use the RTCM 3.x format unless you are sure your device fully supports CMR+.
- **RTCM 3.1** Network RTK mountpoint (e.g., GLN_RTCM3_1): This format supports both GPS and GLONASS SV's and will supply a network RTK data stream optimized for the user's location.
- **DGPS** Virtual Base mountpoint (e.g., NetDGPS): This will supply a sub-meter differential solution optimized for the user's location.

4. The fourth and last set of characters is the **REFERENCE FRAME** e.g.: **NAD83** and **ITRF2014**

NAD83 and **ITRF2014** are different reference frames, and we call them out in the mountpoint name so that users may tell them apart by simply looking at the mountpoint names. C4Gnet.XYZ can support any reference frame users need to work in so if or when we get requests for additional reference frames or when a new datum is published by National Geodetic Survey (NGS), we can add these and make them easy to select by looking at the reference frame being used at the end of each mountpoint name.

Recommended Survey Mountpoints:

- Trimble Rovers – PPP_GREC_CM Rx_NAD83
- Other Rovers – PPP_GREC_RTCM3_2_NAD83

NOTE: We encourage you to try other mountpoints if you are not getting the expected precisions or number of SV's.