



# Trimble CenterPoint<sup>®</sup> RTX<sup>™</sup>

## FREQUENTLY ASKED QUESTIONS

### 1) WHAT IS TRIMBLE CENTERPOINT RTX?

Trimble Centerpoint RTX (Real Time eXtended) is a proprietary Precise Point Positioning (PPP) technology applying a variety of innovative techniques, which combined provide users with centimeter-level real time positioning accuracy anywhere on or near the earth's surface.

### 2) HOW DOES RTX WORK?

The corrections containing real-time precise orbit, clock and other information are transmitted to the rover via satellite or Internet. The error sources such as satellite orbit, satellite clock, and atmospheric delays are modeled at the rover location. The advanced software algorithms running on the rover receiver and satellite motion allow the position to quickly converge to an integer carrier phase solution. All broadcast corrections are derived from a global network of Trimble base stations.

### 3) WHICH APPLANIX PRODUCTS SUPPORT REAL-TIME RTX, AND WHAT ACCURACY CAN I ACHIEVE?

Airborne Real-time RTX:

- ▶ Horizontal: 0.04 m RMS
- ▶ Vertical: 0.08 m RMS

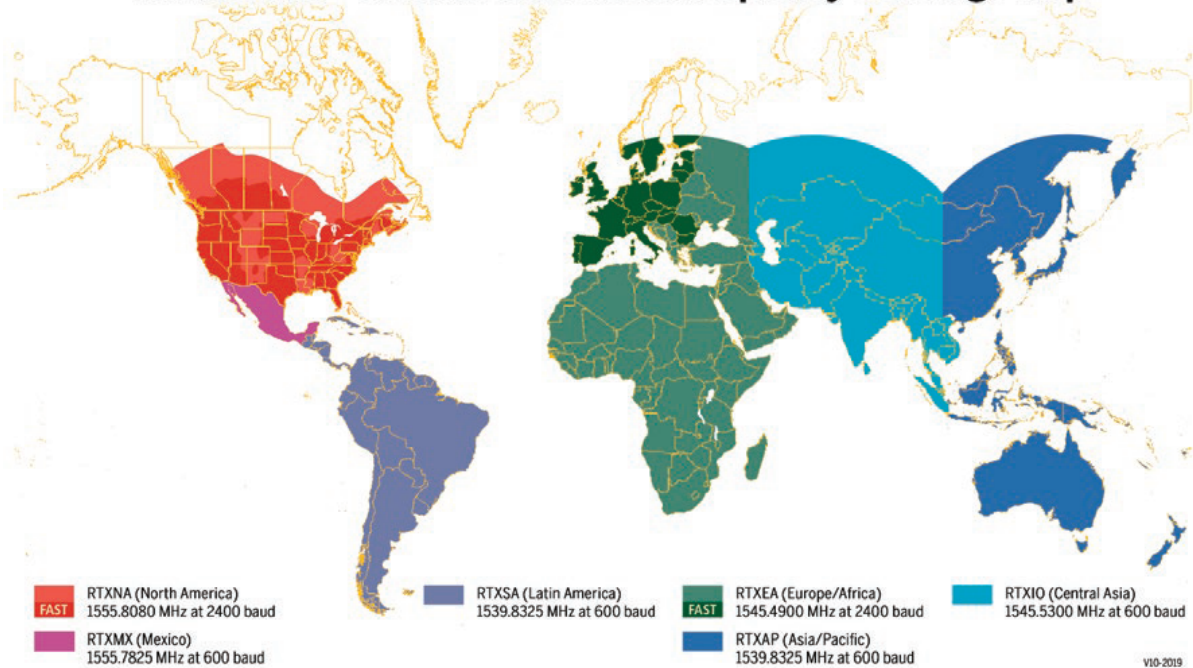
The real time orientation accuracy is improved using RTX for better geo-referencing accuracy and smoother control of auxiliary sensors such as stabilized mounts.

### 4) WHAT IS THE COVERAGE OF THIS SERVICE AND WHEN IS IT AVAILABLE?

The RTX corrections are transmitted over the air using geostationary satellites that operate in the L-Band range of frequencies or using the internet. RTX corrections are truly global - delivery via L-band satellite is possible in the areas shown on the coverage map below. Delivery via NTRIP is possible anywhere an internet connection is available.



## Trimble RTX® Satellite Broadcast Frequency Coverage Map



## 5) WHAT IS MEANT BY “CONVERGENCE TIME” AND DOES THIS MATTER FOR MY APPLICATION?

Convergence is the process of calculating your position to a desired accuracy level. When a receiver's position reaches full accuracy, then it is considered to be fully converged (initialized).

## 6) IS THERE A DIFFERENCE IN CONVERGENCE TIME FOR DIFFERENT REGIONS OF THE WORLD?

Yes, the RTX service is segmented into standard (global) regions and fast regions.

**Fast region:** Convergence in real-time is almost instantaneous.

**Standard region:** Convergence time is 15 to 20 minutes.

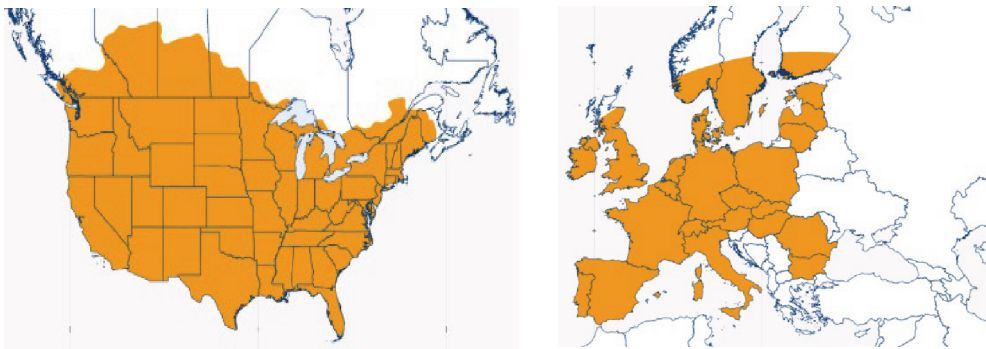
## 7) WHY IS THE CONVERGENCE TIME BETTER IN THE RTX FAST REGION?

- Fast regions use a denser network of reference stations to compute a regional ionospheric model for atmospheric corrections while the standard region uses a global model.



## 8) WHERE ARE THE RTX FAST REGIONS?

The current fast regions are illustrated below. The fast regions are continuously being expanded.



## 9) DO I HAVE TO WAIT UNTIL RTX CONVERGES BEFORE I CAN BEGIN MY SURVEY?

No, the time it takes to transit to the mapping areas counts towards convergence time.

## 10) WHAT IS THE DIFFERENCE BETWEEN REAL-TIME CENTERPOINT RTX AND THE POSPAC CENTERPOINT POST-PROCESSED RTX (PP-RTX) SERVICE?

PP-RTX is an off-line web based augmentation service for the Applanix POSPac post-processing software. Since the PP-RTX solution is processed in the forward and reverse directions and then combined, all convergence effects are removed. The only restriction is that the length of trajectory itself must be longer than the convergence time in order to achieve full accuracy. As well, since the PP-RTX service is web based instead of L-Band satellite based, its coverage is global. For more details please see the PP-RTX FAQ.

## 11) WHAT HAPPENS IF I LOSE CORRECTIONS OR MY GNSS IS JAMMED IN MID-FLIGHT? WILL THIS CAUSE ME TO LOSE MY MISSION?

If you lose corrections or experience significant interference that causes cycle slips in mid-flight, the system will first go to a less accurate mode, and then will automatically attempt to re-converge back to full accuracy.

## 12) HOW DO I ACTIVATE RTX ON MY SYSTEM?

RTX is activated automatically “over-the-air” once a subscription is purchased. Please contact an Applanix Customer Support representative for details on how to purchase a subscription. Visit our [Customer Support Page](#) for more details.



## 13) IS IT POSSIBLE TO GET A DEMO SUBSCRIPTION OF RTX?

Yes, a free 3-day demo subscription is available for all compatible receivers. This can be activated on [tpsdemo.trimble.com](https://tpsdemo.trimble.com) or by contacting Correction Services Customer Care.

## 14) ARE THERE SPECIFIC SOFTWARE/FIRMWARE REQUIREMENTS TO RUN RTX ON MY SYSTEM?

Yes, it is recommended to use the latest production firmware. Please contact [Customer Support](#) for more details.

## LEARN MORE

For more details on Trimble RTX Corrections, learn more [here](#).