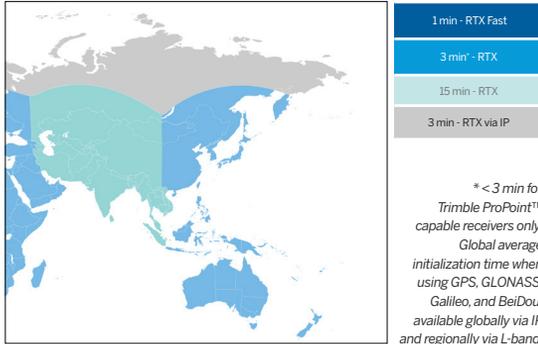
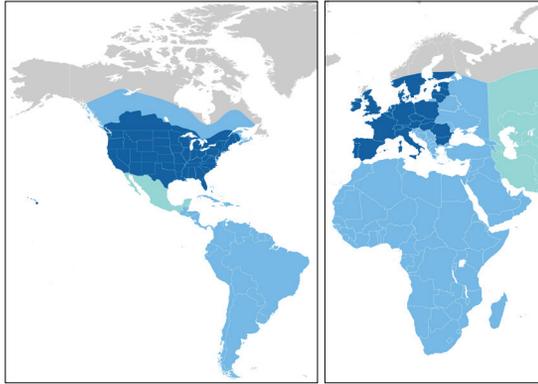


TRIMBLE RTX GLOBAL SATELLITE COVERAGE MAPS

For full coverage information, please visit:
<https://positioningservices.trimble.com/resources/coverage-maps/>



RMS performance based on repeatable in field measurements. Achievable accuracy and initialization time may vary based on type and capability of receiver and antenna, user's geographic location and atmospheric activity, scintillation levels, GNSS constellation health and availability and level of multipath including obstructions such as large trees and buildings.

WHEN TO USE EACH CORRECTION SERVICE

Receiver	HW Accuracy Level / Option or Unlock	Recommended Correction Service	Target Customer
Trimble R12i Trimble R12 Trimble R10	N/A	CenterPoint RTX	Surveyors outside of existing VRS Networks or where radio RTK is impractical or inefficient
Trimble R9s	Centimeter	CenterPoint RTX	Surveyors outside of existing VRS Networks or where radio RTK is impractical or inefficient
Trimble Geo 7x (MGIS)	Centimeter	CenterPoint RTX (IP only)	High accuracy mapping customers
Trimble Geo 7x (MGIS)	H-Star	FieldPoint RTX (IP only)	Mid accuracy mapping customers
Trimble Geo 7x (MGIS)	Floodlight	ViewPoint RTX (IP only)	Low accuracy mapping customers
Trimble R2	Centimeter	CenterPoint RTX	Entry level surveyors and high accuracy mapping customers
Trimble R2	Sub-Foot	FieldPoint RTX	Mid accuracy mapping customers
Trimble R2	Sub-Meter	ViewPoint RTX	Low accuracy mapping customers
Trimble R2	RTX	CenterPoint RTX	Entry level surveyors and high accuracy mapping customers
Trimble R1	N/A	ViewPoint RTX	Entry level mapping customers
Trimble TDC150	Full RTK or 7 cm Horizontal / 2 cm Vertical	FieldPoint RTX	Mid accuracy mapping customers
Trimble EM100	N/A	ViewPoint RTX	Entry level mapping customers
SP60	Full RTK or 7 cm Horizontal / 2 cm Vertical	CenterPoint RTX	Surveyors outside of existing VRS Networks or where radio RTK is impractical or inefficient
SP60	7 cm Horizontal / 2 cm Vertical	FieldPoint RTX	Surveyors outside of existing VRS Networks or where radio RTK is impractical or inefficient
SP90m	N/A	CenterPoint RTX	Surveyors outside of existing VRS Networks or where radio RTK is impractical or inefficient
SP20	Full RTK or 7 cm Horizontal / 2 cm Vertical	FieldPoint RTX	Mid accuracy mapping customers

Trimble RTX

SALES GUIDE FOR GEOSPATIAL

Trimble RTX® correction services are available in a wide range of accuracy levels to suit user's GNSS receiver configuration, workflows and budget. The below chart shows the Trimble RTX portfolio including information on initialization time and accuracy:

	CenterPoint® RTX	FieldPoint RTX™	ViewPoint RTX™
DELIVERY			
HORIZONTAL ACCURACY	< 2 cm	10 cm	< 50 cm
CONVERGENCE TIME*	< 1 min in Trimble RTX Fast coverage regions < 3 min* in Trimble RTX coverage regions		< 5 min

* 3 min for Trimble ProPoint capable receivers only. Global average initialization time when using GPS, GLONASS, Galileo, and BeiDou, available globally via IP and regionally via L-band.

- ▶ Initialization time is the time a user will need to wait for the GNSS receiver to achieve the specified accuracy. The receiver does not need to be stationary during this convergence period.
- ▶ Horizontal accuracy is quoted at RMS accuracy.

Trimble RTX (Real Time eXtended) technology provides high-accuracy GNSS positioning without the need for a traditional base station, VRS network coverage or investment in additional hardware or subscriptions (e.g. radio, modem, cellular service).

You and your customers can keep up to date with services updates and key messaging by visiting:

positioningservices.trimble.com/industries/survey
positioningservices.trimble.com/industries/mapping-gis

TRIMBLE RTX DEMONSTRATION: TALKING POINTS

HIGH ACCURACY

CenterPoint RTX provides better than 2 cm horizontal accuracy and 5 cm vertical accuracy.

COMPETITIVE ADVANTAGE: No other satellite-delivered correction service can match the accuracy of CenterPoint RTX.

DEMONSTRATING TO CUSTOMER: Allow CenterPoint RTX to converge before beginning the demo. Measure a point with GNSS receiver, demo other features of system, revisit the same point and show the negligible difference in position.

WORK UNTETHERED

COMPETITIVE ADVANTAGE: Trimble RTX is not limited by terrestrial infrastructure or owing/operating a base station.

DEMONSTRATING TO CUSTOMER: recommendation is to do a side-by-side cold start time to fix comparison with what the customer is using for their corrections today.

RTX VS RTK DEMO: There is a lot of preparation work associated with setting up and operating a base station, including locating and traveling to a known control point, setting up and levelling the receiver over the known position and configuring the base station for that control point. This preparation work is removed when using Trimble RTX.

RTX VS VRS DEMO: Show the similar initialization time of Trimble RTX Fast and VRS by performing a demo of each service. Cold start the receiver each time to show the performance of each service. Configure the correction and Internet connection (if applicable), and obtain a fixed RTK position.

CONVERGENCE TIME

Refer to the map to see what applies in your region.

COMPETITIVE ADVANTAGE: Trimble's RTX satellite delivered correction service delivers **unmatched convergence times in all regions**. Refer to the map for the convergence time in each region.

DEMONSTRATING TO CUSTOMER: Cold start the receiver noting the time it takes for precisions to reach stated accuracy levels or better.

ALL GNSS CONSTELLATIONS

Unlike other real-time satellite delivered correction services Trimble RTX uses signals from **all GNSS constellations including BeiDou III**.

COMPETITIVE ADVANTAGE: Geospatial professionals can work with more reliability in challenging GNSS environments, such as in urban multipath or under tree canopy. Even as GNSS satellites are retired and new ones become operational, users can depend on Trimble RTX to consistently track and deliver corrections that are more robust and reliable than ever before.

DEMONSTRATING TO CUSTOMER: Show the sky plot/used satellite count of a receiver using Trimble RTX as the correction source. The Trimble RTX solution will make use of every constellation tracked by the receiver. *The 15 min regions shown on the map do not include BeiDou III via L-band.*

WORK ANYWHERE

Trimble RTX is a global correction service. Coverage worldwide via satellite or IP/cellular provides for consistent high accuracy performance anywhere your customer needs to work.

COMPETITIVE ADVANTAGE: Users are not tied to one geographic location as with terrestrial correction sources. By using Trimble RTX, customers can stay on a consistent datum and coordinate system, even when working across large geographic areas.

DEMONSTRATING TO CUSTOMER: The coverage maps shows that a user can work over large areas without having to manage multiple VRS network subscriptions or timely base station setup.

NO HIDDEN COSTS

Trimble RTX does not require additional radios, modems or data plans.

COMPETITIVE ADVANTAGE: Customers already have everything they need in their Trimble RTX compatible GNSS receiver to start using the correction today. The cost of the correction subscription is the only expense incurred.

DEMONSTRATING TO CUSTOMER: Explain to the customer that the corrections are sent via satellite to the receiver, similar to SBAS. Demonstrate that no cellular connection is required to receive the corrections. No RTK radio antenna (if the receiver is radio equipped) needs to be installed.

xFILL PREMIUM

Trimble xFill® Premium is an entry level RTX service that allows users to maintain productivity for extended periods when there is a connection loss to their RTK or VRS corrections. This keeps users working efficiently during a radio black spot or cellular outage.

COMPETITIVE ADVANTAGE: xFill Premium subscriptions allow users to continue to collect high accuracy positions, even through extended RTK outages.

DEMONSTRATING TO CUSTOMER: Set up a base station >30 feet from the rover, a known location for the base isn't required. Obtain RTK fix (demonstrate other GNSS features during convergence). Trimble Access will indicate when xFill is being used. Turn the base station off, then you will be able to demonstrate that the rover is maintaining accuracy levels <2 cm.