



Field



Release Notes Topcon Field August 9, 2024

Topcon Field V9.0 Release Notes - Introduction

Please take time to read these Release Notes. They contain information about the following:

- New Features
- Improvements
- Bug fixes

NOTE:

It is always recommended, before upgrading your field software, user’s backup their jobs; and following any update to your field software, users perform in-the-field checks to ensure data integrity.

[Table of Contents](#)

Key Features.....	3
GNSS	5
Optical.....	6
Map.....	7
Topo.....	7
Stake	7
COGO.....	8
Import/Export	9
Reporting	9
Coordinate Systems.....	10
General	10
Resolved Issues.....	11

Topcon Field V9 Release Notes

The following new additions/revisions have been made to Topcon Field V9.0.



Please take time to read the release notes. They contain information about the following:

- New Features
- Feature Enhancements
- Issue Resolutions

Key Features

Product Update

With the release of Topcon Field V9.0, we have made some minor modifications to the User Interface. These enhancements do not impact configurations or product performance. Your product experience with the Topcon Field solution remains the same reliable experience that you know and expect from Topcon.

An example of the updates includes the  button changing to the  (drawer). The actions remain the same, but the icon has been updated.

IFC File Support

TOPCON Field V9 has greatly improved support and usability of IFC files. Improvements include:

- Create points in the center of circles.
- Create centerline of 'tubes' in the BIM model by using the Compute centerline Cogo function to calculate the centerline of any tube-like item in a BIM model, such as a pipe or cylinder.
- Compute the center point of a selected face. This improvement allows users to create points at the center of objects like bolts or cylinders.
- V4.3 (Bentley) support

SkyBridge and PPP

Topcon Field Skybridge Improvements include:

- Added Skybridge to the Configuration type (RTK, RTK Network).
- Moved the Skybridge selection option to the Receiver configuration wizard.
- The base station is now saved to the job after base estimation to improve configuration times.
- Improved GNSS Status window to show Skybridge Base Estimation status and PPP Convergence progress at the top of the list.

- Support Galileo HAS for Autonomous PPP for Hiper HR, Net-G5 GNSS receivers.
- Field now supports Triple-Frequency PPP.

Drawing (*.dwg) improvements

Improved support for drawings (*.dwg) in V9 includes the following:

- Support DXF/DWG custom line styles in both the 2D and 3D map
- Added an option in File Export to include visible background drawings.
- Civil3D feature lines are now imported as Polylines.
- Added an option to import mesh as 3D models from DWG format.

3D Models

Added transparency settings to 3D models (0% - no transparency, 25%, 50%, 75% options). This setting will override the transparency for every mesh. Users can now choose the transparency level of the imported 3d models from dwg files in MF.

Other improvements include:

- Import 3D models as a mesh is now an option. Previous versions allowed importing as surfaces but not as a mesh.
- Added an option to clip points in a 3D model. This allows users to only show the points needed for a specific floor/elevation improving data management in 3D models.
- Improved zooming and rotating around a 'point of interest' in 3D mode. Selecting an object in 3D mode, creates a rotation point in the center of the object.
- Added vertical scaling when transforming 3D drawings.
- Improved support for Civil3D entities.
- Support Architectural Objects in drawings (*.dwg).
- Clipping planes: users can now select a point from map/list in case of Elevation mode.
- Improved zooming and rotating around the point of interest in 3D.
- Added an option to clip points with 3D model.
- Added the clipping planes function to the 3D toolbar.
- Added vertical panning for 3D models.
- On the 3D Toolbar, the Orto and Perspective buttons were combined to improve user workflows.

- Added additional attributes data (IFC-data) in Topcon Field.
- Improved staking of 3D model element(s). When selecting an element, Field will now keep the selected element isolated when switching to Stake from the Main Map.
- Improved 3D Model navigation. Added the option to 'Show All' 3D Model after user hides a selected portion of the model. This option is available on the Rt Click menu of the main map.
- Snap Toolbar and 3D. The Snap toolbar now works in true 3D mode.
- Improved 3D model display and management.

Surfaces

Topcon Field V9 includes the following improvements when working with Surfaces.

- Multiple options have been added when creating surfaces. The user can now select points, delete, and add points in the map preview function in surface creation. Surfaces can be created using background drawing points or using points from a Point List. Users can also create a surface by selecting the face of a 3D model.
- Added the option in Contour Settings to automatically create contours when creating a surface. Users can also define the contour drawing properties including Layer and Style.
- Volume Report improvements. Updated Field Reports to add a Surface Volume report including cut/fill map and results.
- Surface Inspection. Added a Surface Inspection tool that allows users to compare Point Clouds to Planes. A Surface or 3D model can be compared to a Point Cloud and a report on the difference between the design surface and scanned point cloud of the real surface can be calculated. The inspected design surface can be a surface in the job, a plane, an entire 3D model or one face of an element of 3D model. The result of inspection is a color-coded point cloud showing the difference between scanned and design surfaces where the green portion is within the deviation tolerance threshold and the blue and red portions are positive and negative offsets within the specified deviation output limits but outside the tolerance threshold.
- Added the option in Calculate Area to include a surface.

GNSS

- Added SureTopo as an option for both Hybrid Resection and Stake.
- Added the option in Configuration to select the SBAS type.
- Updated the TILT compensation options for the HiPer HR, HiPer VR, GRX3. Increased tilt range from 15° up to 30°.
- Updated the Mock location feature to include the orthometric height (elevation) when a geoid model is present in the job. Additional quality data has also been added to Mock Location (HRMS and VRMS).

- Improved workflow when connecting to Topcon Relay. If the user tries to connect to the Relay base without an Enterprise connection, the user is now warned that the connection needs to be established to Enterprise before connecting to the receiver.
- Updated the antenna database to NGS20.
- Base station battery status is now reported in Topcon Field.
- RTCM SC135 protocol is now supported for Satel and R2Lite UHF radios.
- When using a Topcon FT-100 Data Controller, a DGPS solution is now possible using the FT-100's internal GNSS.
- Added Galileo HAS to Autonomous PPP Config for Topcon HiperHR and NET-G5.
- Improved options available under the GNSS Advanced settings and now include an Interference Environment setting for Anti-jamming.
- Updated the Advanced Settings user interface to remove the RTK Ambiguity Resolution Period setting. The setting is now covered on FW level.
- Added firmware build information into Receiver Info screen.

Optical

- Edit Prism dialog Improvements:
 - Center Offset now in mm and does not depend on distance units set in the job.
 - In Edit Prism, Sheet prism type is now supported so users can use the aperture setting.
 - Added an ability to set a negative prism vertical offset.
- Added a View option to the Digital Level (DL) report dialog.
- Resection Setup
 - Improved resection setup. When measuring control points, Field will recognize the Control Point names from the geometry of the control and use the point(s) for the setup.
 - Added Resection quality information based on design pt inverse to the observed pts in the setup report.
- Backsight Setup – updated Backsight Setup so the Precise measurement settings are now used when measuring the backsight. Previous versions used the Quick settings for Backsight measurement.
- Remote Control. Users can now add Remote Control feature to the Favorites Menu.

Map

- The Map Scalebar has been moved in UI so it's visible at all times.
- Black/dark background added as a map display option on the Map screens.
- Improved Hatch options to allow 45deg angle hatch.
- Improved the Linework report to include the slope distance of the selected line.
- Added the option to create the center of a circle by selecting 3 points on the circle.
- Major improvements were made to WMS support. New regions, logging and overall improved performance when using WMS services.
- Added 'Center Current Position' as an option to Map Properties. This option will center the users' current position in the map, and keep the map centered around their position.
- When adding a background image, Field will now Auto-determine when the image is Tiff or GeoTiff format.
- Background drawings are now updated after editing the Layer Style.
- Supported 6pt-10pt line width for line styles (e.g. linework, areas, layers, codes).

Topo

- Added Perpendicular Occlusion to the TS Offset options. This offset option allows users to create an inside corner that cannot be directly observed.
- Added 'Rectangle' as a control code option. This option draws a rectangle with 90-degree angles.
- Improved Auto Topo by adding a second option. Users can now configure 'Time and Distance' or 'Time OR Distance' as options.
- Improved the line string list to show the last user string at the top of the list.
- Added support for both depths when using dual frequency depth finders (Sonarmite).
- Added "Stationing" as display option in the Topo map view.

Stake

- In Roading users can now Select a segment point directly from the Stake Cross section map instead of having the back out of the Stake menu to change the segment point.

- Added Level Sound similar to Digital levels when staking DTMs. Field now uses a rapid beep for cut, slow beep for fill, and solid tone for in tolerance.
- Added an option in the Map view settings 'Center Current Position' to keep the stake position in the center of the map view. This option is also available in Topo.
- Added a setting to center the current position when staking out in map view.
- Onboard: Added support for Continuous Distance (Reflectorless) in stakeout routines.
- Added a Productivity Report for staked data. The report shows setups during the day and points set from the setup(s). The Productivity report is available for both Optical and GNSS.
- Updated the Compass display so it can now be positioned connected to the left screen border.
- Improved Stake Line and added an option to select the next line to stake directly in the map view.
- Improved Stake Line/Linework (not Real-Time): after selecting another line, the station value is reset to 0+00.00.
- Added the functions "select all" and "uncheck all" to Stake Reports Config List.
- The navigation Compass is now semitransparent in the Stake Grid view.
- Added the High Precision Mode option in Stake Grid.
- SureTopo is now an option in Stake.

COGO

- Display slope distance of a polyline
- Added Info button to the surface properties contours tab.
- Added the option to compute the centerline of any tube-like element in a 3D model.
- Added the option to compute center point of a selected face on 3D model.
- Create Surface has been added for a selected face of 3D model.
- Tape Dim no longer requires the user to be connected to the instrument.

Import/Export

- New Formats Supported:
 - 12D XML
 - ESRI geodatabase (GDB)
 - IFC 4.3
 - SGD12 (*.DAT)
 - AutoCAD DWG 2024
- Support import/export of Coordinate System (projection) from/to prj format.
- Improved Exchange>From File and between Jobs to include new background image types. Users can now select GeoTIFF, TIFF, JPEG and BITMAP as import formats.
- For the GT7 format, added the option to export 'surface code defined in point note'.
- MaXML 1.7 Import/Export new data types:
 - Perpendicular GPS Offset
 - Second frequency depth sounder data
 - Grid Azimuth and IsLocked surface draw properties
 - Drawing line/area properties for survey codes
 - Time for Helmert transformation parameters
- Import/export of CS (projection) from/to prj format
- Export point with WA stations to Check Sheet format.
- Filtering stake reports export by date/time
- Added an option to import mesh as 3D models from DWG format.
- When importing points from Autodesk Point Layout (APL) the GTP records are now imported from IFC/RVT as points in the job.
- Civil3d feature lines are now imported as polylines.
- Added an option to export notes as surface codes to the *.GT format.

Reporting

- Added Productivity Report to the list of available reports. The report includes setup(s) by user for the day and points set out. This report is available for both TS and GNSS setup.
- Improved Linework report to show 3D (Slope) length.

- When exporting multiple reports, date/time filters set will now apply for multiple reports.
- Added Check Sheet report to the list of available point reports. The report Shows the Check points, Weighted Average and Residuals to the points.
- Updated the Linework report to show the 3D/Slope Distance of linework.
- Improved Field Reports and users can now move the text box to a desired location.
- Added the options 'Select All' and 'Uncheck All' to the Stake Reports Configuration List.

Coordinate Systems

- Improved the Datum list to show the most recently used at the top of the list.
- Allow to export data in CS defined from the external *.prj file.
- Updated support for the Portugal / Coordinate Systems to the 2023 Revision.
- Add support for the Alaska HWY LDP (Low Distortion Projection).
- Belgium LB72 projection, EPSG code added.
- New Slovenian geoid VRP 2016
- New geoid RAC23 for Corsica
- Slovak geoid added.
- Brazil Geoid hgeoHNOR2020
- Argentina Geoid AR16
- Supported time-dependent datums.

General

- Enterprise and SiteLink3D V2 improvements.
 - Updated options when downloading from the web services. Users now have the option to either download and save to the Field Controller or download and create a job.
 - To improve account security, user credentials are now erased when switching Enterprise/SitelinkV2 accounts.

- The photo app now stays active after taking a photo, allowing multiple photos to be taken without have to re-enter the app.
- Improved the camera options to allow the flash to be used on Field Controllers that have a Flash.
- Improved Full Screen mode so Topcon Field now takes the full screen and no longer shows the task bar at the bottom of the screen.
- Backup and Restore Improvements. Improved connection to TOPCON Enterprise for data management. Added the option 'Upload to Enterprise' in the Full Backup configuration.
- Added the option in the Topcon Field Maintenance dialog to reset Topcon Field to a reset point and remove all user data/documents.
- Improved Layer support to include the following:
 - Layers are now sorted by Name by default.
 - Added the option in Edit Points to 'User Layer from Code' in the Style Settings.
- Improved the Extra Info Tab in Edit Points to show where points are referenced (Localization, Road, etc)
- Improved the Filters in Topcon Field. When setting a filter in Field, the filter was not synchronized in all windows. At times, a filter set in Edit Points would be applied in Stake even when the filter was removed in Stake.
- Added Vietnamese language.

Resolved Issues

- Resolved an issue when using the Weighted Average feature in Topcon Field. At times, after performing a single point localization and Measuring control points using Weighted Average, Topcon Field would report high residuals on a point. If the 'use Weighted Average' option was unchecked then rechecked, the residuals would change.
- Resolved an issue with the online help file search tool. At times, a keyword search would not return a result.
- Resolved an issue with Topcon Field when using the Camera on the Field Controller. When changing the tablet orientation, at times Topcon Field would crash.
- Resolved an issue when importing Shape files in the Latvia-LKS_92 Projection. The shape file would import with an offset.
- Resolved an issue when exporting points by Date/Time. If the Daylight Savings time setting is checked on, the points would not export.

- Resolved an issue with duplicate points when using the Calculate functions. Previous versions were not case sensitive which would result in error messages if the names were the same except for capitalization. For example, a1 and A1 would be treated as duplicate points.
- Resolved an issue when opening WMS maps in Topcon Field. At times, the maps would not load and even when loading, would incorrectly display the layers (colors).
- Resolved an issue when exporting Raw data to the *.plm format. The Prism constant would not export to the Raw data file.
- Resolved an issue when importing *.IFC files. Some imported files would not display correctly and would show gaps in the lines drawn.
- Resolved an issue with multiple edits of points. Multiple editing of HRef (Heights) in Raw Data worked in GNSS mode but would not allow multiple edits for raw Optical data.
- Resolved an issue when exporting the Job History to *.txt format. The coordinates exported would have the values truncated if there were more than 10 digits in the coordinate(s).
- Resolved an issue in the Job History report. If the scale in Resection was set to 'User Defined' when the job history report was exported, the scale factor was reported as 1.0.
- Resolved an issue when working with the reference network SAPOS in the Federal state of Saxony-Anhalt. Users were not able to use the correction data from SAPOS when selecting a mountpoint for GPS, GLO, GAL and Beidou. If the mountpoint was switched to GPS, GLO only, Field would return a fixed solution.
- Resolved an issue when enabling WMS services in Topcon Field. At times, you could not disable the service and switch to another WMS service.
- Resolved an issue when exporting to the *.plm format. The header in the file was missing and the Vertical Angles reported in radians were not correct.