Carlson SurvPC7

Version 7.0 Release Notes

Updated 2/3/2023

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Improvements and Resolved Issues By Release

Version 7.0

Release Date: February 3, 2023

Major New Features and Improvements SurvPC:

- SurvPC now supports x64 and x86 installations. Use x64 for improved performance, BIM, and Esri ArcGIS Online. The x86 version is required only for legacy Esri MXD use.
- The last known location of the user is now displayed in the map view for convenience.
- The software includes updated support for DXF/DWG/DGN including latest versions and improved blocks and inserts.
- BIM is now supported using IFC and Revit files. Includes viewing, storing, and staking in 2D or 3D mode. Purchase of BIM module is required.
- Esri ArcGIS Online is now supported. Log in with user credentials to read and store to the Esri Online ArcGIS database from within the software.
- SurvPC report and export options have been revamped and enhanced. It is now possible to export job, point, and stake reports in HTML or PDF format. Reports are easily customizable including the ability to add a logo.
- Tunnel road stakeout is now supported from Civil3D Land XML Files. The software will report tunnel wall under/over excavation data in real time. This new feature requires purchase of the Tunneling module.
- Total Station Monitoring is now supported under Survey->Feature Survey. This new feature requires purchase of the Monitoring module.
- Carlson Cloud has been improved and revamped. It is now possible to log in automatically on startup, define custom broadcast groups, or broadcast to all members. Chats are now displayed per-user. Notification method (immediate popup or flashing helmet) is now selectable. Users can now see who is logged in and the status of messages (read or unread). The helmet will now indicate if messages are available. Message size limitations have been removed.
- It is now possible to check for software updates and view release notes from the Software->About->Helmet menu.
- The list points routine now displays date/time, point source, and rod height columns.
- The point info button now shows more detailed point information, including photos and point history if the point has been modified or replaced.
- Rod height can now be edited from within the software. The software gives the option to only change the selected point, or reprocess and update all associated rod heights.
- Reference drawing files with full layer control are now supported. Reference drawings are read-only and can be auto updated using a set time interval or through Carlson Cloud.
- It is now possible to collect redundant measurements using the same point ID. All measurements will be tracked and averaged, and can be viewed later to disable/enable horizontal and/or vertical components of any measurement session.
- Automatic point proximity tagging is now supported. Enable in the Configure in Equip->Configure->GNSS Average tab. The user can customize the tag and proximity at which to auto populate descriptions. For example, a second measurement to point 3 can be auto tagged as "=3". Please see additional release notes about other options for redundant

measurement in this version.

- The software now includes a fully customizable user hot list available by double-tapping the top bar.
- The averaging routine has been improved. Measurements are now graphed in both horizontal and vertical as they are taken. Previous measurements to the point are displayed as well as one sigma and two sigma quality ellipses.
- The software now supports redundant cycles in the average screen. This allows the user to configure multiple measurement sessions on the same point with a time delay and RTK reset in between.
- Tolerance profiles are now supported.
- Catenary Survey is now supported under Survey->Feature Survey. This specialty routine will measure and report on power lines and other sagging lines. It allows specifying ground elevation and minimum distance to ground as well as deviation from expected catenary curve.
- SurvPC now defaults to creating new jobs inside of a folder. This new feature can be disabled in File->Job Settings if it is not preferred.
- It is now possible to copy a point using "Add" in the Point List dialog without changing anything except the name.
- Road Stakeout now supports the use of Solids/Carlson MDLs. Solids can be created from Revit and IFC BIM files using the BIM module and will be sectioned on the fly to allow real-time staking to any element of the 3D model. Purchase of the BIM module is required.
- SurvNet least square processing is now supported in the field for GPS measurements under Equip->Raw Data. A full HTML or PDF report will be created, and adjustments to points will be detailed in the Point Info screen.
- The software now offers automatic blunder detection for repeated measurements to the same point (either with the same point ID, or user defined duplication tag, i.e. "="). The user will be warned if the measurements differ by more than the user specified 2D or 3D tolerance, otherwise, measurements will be automatically averaged. This reduces the possibility for field error.
- The help menu now includes an option to take a screen capture. Specialist help links for certain hardware has also been added.
- The software now supports emailing reports, exports, debug logs, and screen captures directly from the field. The user can create an address book for easy address recall.
- Geoids covering the selected location can now be downloaded from the field.
- Point history is now supported, including point restore on older versions of a point.
- Stake Roads now allows the use of surface files including TIN and Multi-layer LandXML for stakeout or slope staking (Final Surfaces). Files will be sectioned in real time for complete staking access to any point.
- It is now possible to edit a point ID in Point List->Edit to average the measurement with previous measurements to an existing point.

Other New Features and Improvements SurvPC:
- The "Use IMU" setting has been removed from the receiver tab. All IMU settings have been consolidated to the Equip->Configure->IMU tab, allowing for easier access.
- It is now possible to jump to a new station in road stakeout based on the measured position.
- Distance to Surface is now presented visually in the MAP in Road Cross Section, in road stakeout.
- Shift up arrow and Shift down arrow will now change the current GPS Simulation elevation

by 1% of the current zoom level. Alt-up and Alt-down modify the GPS Simulation elevation by 2 cm.

- Export google earth now supports KML and KMZ.
- Instrument configurations can now be exported easily for sharing from the configure screen.
- The x86 version now supports full script toolboxes when the ArcGIS Esri Engine is used with MXD files.
- UTM/NAD27 coordinate systems are now supported.
- The TDOT and TDOT1 symbols files are now included in the SurvPC install.
- Ground control points (GCP) export is now available as a coordinate export type. This is the preferred export for Carlson Photo Capture.
- The KY Single Zone projection has been renamed to Kentucky Single Zone in the CSL file for consistency.
- Carlson SurvPC-Esri now supports Environments by dynamically creating options based on the Esri Py (python) file.
- SurvPC now supports a different user friendly approach to switching Category/Groups aimed at GIS users. This new method eliminates an extra click by allowing one click selection from the code list. This option can be selected in Advanced Settings->Software Settings->Switch Category/Group.
- The option "Store GPS Vectors in Raw File when available" has been removed. Vectors will always be stored in the raw file when available.
- The software can now automatically set the left or right offset for road stakeout by finding the correct left/right surface.
- Html reports will now be opened using the default browser.
- SurvPC NGS Search now has settings to control warnings displayed. The list of monuments found can be sorted by field. The distance from search center is displayed in the monument list. The user can extend the waiting time if the network is slow or a large search radius is specified. Lat/Lon display has been improved.
- New CRD files now always support alphanumeric point names. The legacy numeric only CRD file option is no longer supported for new jobs.
- SurvPC will warn a user that his job has existing GPS points and offer to reprocess them if he changes his geoid or projection.
- While in the SATView and SATInfo screens, the software will now display the breakdown of satellites in use and available by constellation. This will be displayed in the title bar at the top. This will not be displayed if that space is in use for displaying the time on site/time remaining (static logging).
- The "Store When Fixed" dialog now supports minimum fixed epochs.
- "Internal GSM" has been renamed to "Receiver GSM" and "Data Collector Internet" has been renamed to "Data Collector GSM or Wifi".
- IRNSS satellite data will now be properly displayed in the SATView and SATInfo tabs.
- Arc Tessellation has been improved in the map screen.
- SurvPC will offer "Skip This Point" and "Skip All Duplicates" if importing points triggers point protection. If the user taps "Skip All Duplicates" any further points with duplicate point ids will simply be skipped over during the import process.
- The software will now display grid shift file names in the System tab of the Localization dialog for projections that require them.
- The software now writes "--Reprocessed Raw data change. See 'filename'" to the RW5 file after reprocessing.
- Users will now be prompted to download grid files if they are required by the selected projection and are missing when the job is loaded.

- COGO->Inverse now reports the Delta N, Delta E, and Delta Z values.
- By default, neither the OS nor the display will go to sleep when SurvPC is running. This can be disabled from Equip-Configure setting "Prevent OS sleep when SurvPC running".
- Minimum OS version for SurvPC is now Windows 10. The installation will be blocked on computers not meeting this requirement.
- Multiple total station tolerance warnings are now combined into a single dialog.
- Vector records now include a G4 record to indicate final tilt offsets in metric. These values can be added to the G1 record to correct a tilt adjusted APC to APC vector.
- SurvPC will auto-select the current job's RW5 in File->Raw Data unless the current job is empty or there exists a TLV or PRJ file for the job. This eliminates a prompt.
- Stakeout settings have been rearranged for clarity. Navigation specific settings have moved to Advanced Settings->Software settings. Proximity is now listed as a mode, and proximity radius is available in the same dialog.
- The software now supports drawing files produced by MODUS CAD app. BYBLOCK insert capabilities are now also improved.
- When using previously surveyed point, the selected point ID will be used as the RTK Broadcast ID when possible. The "Store in Point List" prompt will default to the broadcast ID.
- West Azimuth is now supported. The GPS Simulation rotation will now also follow this setting.
- The Check Backsight button on the robotics tab now also allows the user to set the backsight.
- Users are now warned if the storage drive their job is located in has limited space. (< 100MB).
- In GPS Offset mode, the GNSS position status icon will continue to update in real time. Previously, this icon would show no position.
- The GridScan routine has been renamed to RoboScan.
- Model specific help is now available from the help menu. This is available for the BRx7 and CRx now but will be expanded. Internet access required.
- The "Store in Point List" button in base setup now uses the rtk broadcast id by default as the point id. Point protect will appear if that point ID already exists in the job.
- UTM Coordinate systems are now at the top of the list.
- The Ohio NAD83 LDP coordinate systems are now supported.
- System34 = West Reference is now supported.
- The SLOVAKIA/S-JTSK [JTSK03] / Krovak East North (EPSG 8353) coordinate system is now supported.
- The 2012B Geoid will no longer be included in the SurvPC install. The 2018 Geoid continues to be provided. The 2012 version can be auto downloaded from the Geoid setup button if needed.
- Drawings will now load with increased speed and less memory use.
- The "Default User Settings" feature under the Helmet in the About screen will now offer two options: Reset User Warnings and Reset Job Settings to Default.

Bug Fixes in SurvPC:
- Editing RW5 files no longer truncates the lines at 123 characters.
- The Wrong Driver selected error will now prevent users from continuing with instrument configuration on the wrong driver.
- The software will no longer include centerline error in point description when storing Elevation Difference.
- SurvPC will report lack of internet connection if that is the cause of failure when attempting to create a new Carlson Cloud user.

- Localized GPS jobs now work correctly with google maps.
- When NMEA output is turned on and GGA messages are selected, the geoid value in the GGA message will use the correct sign. Previously, the value was incorrectly negated.
- If the selected coordinate system does not require NADCON conversion grid file, the NADConv folder will no longer be automatically created.
- Satellites with azimuth values of 0 will now be shown in the SATView screen SNR table.
- SurvPC will provide the ability to add photos from the store point dialog after set collection.
- SurvPC will no longer fail when it does not have permission to access the camera. It will report lack of access to the user.
- When the Water Authority or German Schema is used with the Esri ArcGIS Engine (mxd), the software will now obey Carlson's required field values instead of the Esri's Field required setting.
- Carlson RT4 and RT3 tablet camera and video feeds will no longer be incorrectly flipped and rotated.
- Resection residual values will now use absolute values when sorting in the results table using the column headers.
- The software no longer has the potential to store an old measurement if position data is lost (dead battery) on a cable connection.
- The distance error calculation message in advanced occupation now only shows the real result, and never compares against the precalculation result.
- Process Raw File->No Adjust will now respect the "Reduce to Grid Coordinates" setting even when the TS setting "Use Ground to Grid" is off.
- The turn to point button in resection will now turn directly to the point without prompting an additional dialog. The point entered in the Point ID will be remembered if the user goes into settings, uses turn to point, or goes into the robotics dialog.
- The Check level dialog now opens and closes more smoothly.
- Changing the NE order in Job Settings no longer causes the job headings to be abbreviated.