Release Note History	

Product:	Software GEDO Rec
Software-Version:	until 2.4.1.1
Hardware-Version:	
Date:	January 16, 2020
Author:	TS
Relevance:	important
Action:	update

Version: 2.4.1.1 (Jan 16, 2020)

- **Bug fix: Chainage for RFID Tag detection**
  The length recorded by the odometer is corrected according to the alignment when recording RFID transponders in GEDO Doc. There was an error in the calculation when correcting the length in a curve, which caused the chainage value to diverge. This has now been corrected, so that a chainage accuracy of 5cm on 10m can be achieved for a calibrated odometer.

Version: 2.4.1 (Sep 29, 2019)

- **Feature: RFID Tag detection**
  GEDO Doc (gauge and cant survey) enables the documentation of transponders installed on the track by adding an RFID reader unit. The odometer together with a linked alignment help during the measurement to determine the current chainage and calculate a 3D coordinate for each RFID chip recorded.
  The corresponding RFID measuring device for the GEDO CE 2.0 track measurement trolley is available on request.

- **Timestamp during station import**
  When importing the station setup from Trimble Access, Win32 controllers did not display the timestamp due to the long data paths. To verify the correct location information, the file path display has been shortened to ensure that the timestamp is always displayed.
  Also, when importing from Trimble Access, the most recently modified files are now preselected instead of the most recently created files.

- **Project settings for projects created by GEDO Proxy**
  If a project is automatically generated from GEDO Proxy the project was previously assigned the program initialization settings. This has been standardised to creating a new project in

GEDO Rec so that the settings of the last opened project are always adopted for a new project.

- ***Uniform measurement acquisition during station setup***
  The setting of the face order and the observation order can now no longer be changed during station setup after the first point is measured to ensure correct setup calculation.

- ***Bug fix: Defining the root directory***
  In GEDO Rec v2.4.0 the root directory of the projects could not be defined. This functionality has now been restored.

Version: 2.4.0 (Jul 30, 2019)

- ***Feature: New prism dialogue and prism type MT1000***
  The dialogue for setting the prism definition has been revised. In addition to the previous configuration, options for standard prisms in passive and active mode, the prism type MT1000 active and passive is now also available. When these prism types are selected, the vertical angle measurement is automatically corrected. It is important that this prism type is only used in combination with the corresponding Trimble prism MT1000. Target IDs for passive prisms are no longer supported.

- ***Feature: Individual base length for twist calculation***
  Until now the twist value displayed in the measurement dialogue was always based on 1m. The base length for twist calculation can now be set individually within the measurement options dialogue on page 2. The calculation for the displayed values is always done by interpolation based on the previously saved measured points.

- ***Feature: Base length for twist calculation in export format "Sensor values (*.csv)"***
  When exporting the sensor values for gauge and cant to the "Sensor values (*.csv)" format, the base length of the twist calculation can now be specified by the user. In addition, a second twist parameter for checking different wave lengths has been added.

- ***Feature: Combination of Profiler and GNSS***
  To date, an absolute profiler measurement could only be carried out in combination with a total station measurement. Now GNSS line points can also be used to determine absolute coordinates for the profiler measurements.

- ***Feature: Target height and offset for profiler measurement***
  When measuring with the Profiler, a target height and a longitudinal offset can now be specified in a similar way to the measurement with the total station. The intended profiler target is automatically selected as soon as the Profiler measurement menu is called up.

- ***Feature: Automatic adjustment of column width***
  When displaying a data list, the column width is now automatically scaled based on the table contents.

- ***Feature: Checking the trolley orientation within one measurement section***
  For the track trajectory calculation, it is essential that the alignment of the track measuring trolley is identical for all measurement points from one station setup within one line. The settings for the fixed trolley side and the prism side can therefore not be changed after the measurement has started. The settings still remain individual if a new line name is assigned or measured from a new position.

- **Instrument communication updated and increased**
  The software component for total station communication has been updated. Due to this, the command execution becomes much more reliable and significantly reduces the number of messages that are particularly common for Win32/64 systems.
  Further, the connection mode "USB+Radio" is no longer supported. If this mode was set during a previous software installation, the communication settings must be checked and confirmed.
  As an alternative to an integrated radio module, an external radio module Trimble Data Link Radio 2.4 GHz (TDL 2.4GHz) can now be configured for the communication with a total station.
  For communication via Bluetooth, a connection via RS232 must be used with the COM port set according to the Windows settings.

- **GEDO Scan functionality removed**
  For more than 2 years the data recording with a scanner has been taken over by the "GEDO Scan" software and developed there. Due to this, the GEDO Rec module Scan has been completely replaced and is now no longer included in the GEDO Rec installation package. Previous software licenses have already been transferred to the new software.

- **Plausibility of track geometry settings**
  The system now checks the definitions of the standard gauge and cant base settings for plausibility when setting the track geometry. If the two values do not match, the setting cannot be accepted.

- **Bug fix: Invalid character "?" in line name**
  Special characters such as "?" are not allowed in the definition of the line name. However, it could happen from time to time that records with invalid characters were saved, which caused problems when opening the project later. Instead of the "?" symbol, the line name is now initialized with "Line" and the point name with "Point".

- **Bug fix: Gauge value for deactivated sensors**
  Up to now, measurements with deactivated sensors always documented a fixed track gauge of 1435mm. This has now been corrected so that the standard gauge is used according to the currently defined track geometry.

- **Bug fix: Scaling of Trimble functions dialogue**
  When adjusting the window size in Win32/64 systems, the instrument function dialogue may not have been scaled correctly so that the functions could no longer be triggered. This has now been fixed.

- **Bug fix: Turn total station during station setup**
  Previously, the current instrument height was not taken into account when automatically turning the total station towards the fixed point during station setup. This has now been fixed so that the vertical angle implies the current instrument and target height.

- **Bug fix: Orientation angle for station setup on a known point**
  When a known station setup has been performed, an incorrect unknown orientation may have been calculated if no backsight orientation was not used in 3D. This is now fixed.

Version: 2.3.2 (Sep 06, 2018)

- **Feature: Compatibility with Trimble T10 and TSC7**
  The new software version fully supports radio communication with Trimble TSC7 and T10 controllers. The radio module port will be detected automatically after setting the correct radio cannel and network ID.

- **Feature: Pre-defined codes**
  The measurement point code can now be added to a list. This list allows an easy selection for the next code input. The list of user defined codes is stored permanently within the program settings to be available for all projects.

- **Feature: Options for topo point measurements**
  Increment and "clear code after storage" settings done in measurement options are now also applied for topo point measurements. A new option is available for topo points only that allow two face measurements (e.g. for network adjustment measurements).

- **Feature: Automated warnings for trolley sensor measurements**
  The software is now checking if trolley sensors for gauge and cant measurement are activated when starting a single or continuous measurement. Otherwise the user will see a warning to avoid incomplete measurement data. Further, the gauge sensor measurement is checked to be sensible before starting the line measurement.

- **Feature: Plausibility check for point continuity**
  The distance between the previously and current measured point is observed so as to avoid incorrect prism tracking. The user will be informed if a point was already stored at the same position or the distance is unusual.

- **Feature: Incrementation of profiler points**
  An individual point increment can also be defined to 0 to avoid automatic name is changing.

- **Feature: Station setup detail export for GEDO Office**
  Measurement export to a GEDO ProjectXML-file now also includes station setup details for stations, where no further measurements have been done. This allows loading and using them within GEDO Office.
  Station setup results that have been re-loaded from the instruments station buffer during the measurement are detected as identical so that all these measurements are combined within one station.

- **Feature: New Export "Profiler DB system (*.csv)"**
  A new export format "Profiler DB system (*.csv)" is available. It includes all profiler points together with their centre line offset and height offsets to the reference rail.

- **Feature: Topo points included in Kokes Rail export**
  Kokes Rail data export now also includes an additional file containing measurement data for topo point measurements.

- **Measurement data accuracy within XML-file**
  The number of decimal places for distance measurement values within the ProjectXML-file is extended from 3 to 4 for increased precision during further analysis.

Version: 2.3.1 (May 05, 2017)

- **Feature: Use tablets with integrated radio**
  GEDO Rec can now be used with some third party computer models if they have an internal radio module to communicate with Trimble instruments (e.g. Panasonic FZ-G1). Radio module and driver compatibility need to be checked case by case.

- **Feature: Display twist value**
  A twist value is displayed in addition to cant offset and gauge during single survey and continuous survey. The twist is giving the rate of cant change per meter compared to the last stored point. Further a comparison with a flexible tolerance is possible which is interpolated from a tolerance table depending on the point distance interval. Therefore a reference table needs to be located in *\Common Files\Gedo*. A tolerance exceeding is marked with a prefixed "!".

- **Feature: Tracking mode "Precise"**
  Track documentation in single survey allows switching between instrument's tracking mode "standard" and "precise". Measurement is done in stop and go mode and instrument is working in tracking mode. In precise mode it will automatically switch and do standard measurement when storing a value. Standard measurement is immediately storing the value captured in tracking mode.

- **Feature: New export format "gauge file (*.spw)**
  A new export format "gauge file (*.spw) is available for exporting data captured in "gauge and cant" survey. The exported file is identical to the file format created by GEDO Vorsys file whereby the chainage distance between the points can be defined individually.

- **Feature: Bluetooth port selection via device name**
  The port for communicating with the trolley can now also be selected by the device name as defined in the Bluetooth settings. Due to this for GEDO Rec it is no longer necessary to define the trolley as virtual COM port.

- **Start profiler measurement while instrument is in tracking mode**
  Absolute profiler measurement can now also be started from single survey while the instrument is working in tracking mode. This enables a more comfortable switch between instrument and profiler measurement.

- **Compatibility with Trimble Access 2017.00**
  Due to an update in Trimble Access software with version 2017.00 it was no longer possible to run the software simultaneously with GEDO Rec. As this is absolutely necessary for GNSS measurements, the GEDO software handling is changed. Now it is necessary to set instrument port "GNSS" before starting Trimble Access. All GEDO applications must be closed while starting Trimble Access.

- **Export format "Sensor values CZ (*.csv)" improved**
  Export of gauge and cant measurements into file format "Sensor values CZ (*.csv)" only included one line. Now it is also possible to combine several lines into one file.

- **Bug fix: View measurement before storing**
  The option was not applied correctly in single survey measurement. As expected, the measurement values will be displayed before storing if the option is activated. Deactivating the option is storing the values automatically without any preview. The option is not available for continuous measurements.

- **Bug fix: Gauge and Cant measurement**
  Communication between the measurement trolley and the controller might have been overloaded for longer sections. Data handling is improved at this point.

Version: 2.3.0.3 (June 23, 2016)

- **Feature: New export format for Center line**
  A new export format "GIC format (*.csv) is available. Exported file includes all line points with their details for point name, code, center line coordinate in the middle between both rails, height of lower rail (top of the rail), gauge, cant and inclination as positive value.

- **Feature: Use local back sight as reference point**
  Back sight measurements defined during local station setup are now stored as reference points. Due to this it is possible to link various station setups in a local system by using them for next stationing.

- **Export format "Sensor values CZ (*.csv) modified**
  Export for gauge and cant measurement is modified. Points are now sorted according to their time stamp, starting with the first measurement. Further the inclination value is now given in meter.

- **Input of special characters**
  Unsupported special characters are now automatically deleted after entering them into a text box. This will avoid incorrect character in definition of project name, measurement line, point name or code.

- **GEDO Scan improved**
  Minimum scan angle is now 60°. An additional message is checking when only a range of scanning area is defined for recording. Availability of trolley measurement record is verified after finishing the scan

- **Improved scanner control**
  The scanner communication is enhanced. This will avoid problems when starting the scan. Therefore it is necessary to use a GEDO CE 2.0 trolley with firmware version 3.C or newer. When GEDO Rec and GEDO Scan are running simultaneously it is necessary to use at least GEDO Proxy version 1.0.2.1.

- **Bug fix: Potential crash because of regional settings**
  Station setups timestamp is used for line identification in overlapping menu. But the timestamp formatting is depending on regional settings which were not considered. Due to this the software was crashing when creating the splines during project start up or overlapping panel. This is now fixed.

- **Bug fix: Station elevation for local instrument position**
  Station height was calculated incorrect for local station setups when the option was activated. This is now fixed.

Version: 2.3.0.1 (May 18, 2016)

- **Display station overlapping**
  Line selection dialogue for station overlapping is now only displaying the lines from station setups available in the current measurement file.

- **GNSS measurement without RTK-correction**
  If connection to base station or positioning service gets lost during the measurement, the accuracy is transmitted as 0,000. This value is now detecting this value as incorrect, so that such measurements cannot be stored.

- **Chainage information during gauge and cant measurement**
  Chainage information in gauge and can measurement dialogue was only displayed before starting the measurement. This is now modified so that current chainage measured with odometer is visible during the measurement.

- **Bug fix: instrument connection between tablet PC and TSM server**
  Connecting to total station was not possible using GEDO Rec version 2.3.0 together with an older tablet PC. This is now fixed.

Version: 2.3.0 (May 04, 2016)

- **Feature: Display station overlapping**
  A new function is added to the single survey menu and continuous survey menu that allows the display of the line measurement deviations compared to previous station. Distance and height offsets to the closest point are indicated. It is not necessary to have both measurements at an identical chainage position.

- **Feature: Local station setup**
  The known station setup menu can now be used for local station establishments. The station setup should be done as usual, however without having the reference points in advance. Station setup and measurements can be transferred to a global coordinate system later in GEDO Office when using the correct reference and station coordinates.

- **Feature: Instrument height slope measurement**
  Instrument height in the station setup menu can now be entered as measured slope distance between the ground marker and the bottom of notch. The software automatically calculates the true vertical height to instrument's trunnion axis (top mark).

- **Feature: Export station setup measurements to Kokes Rail**
  The new export format "Kokes Rail (*.rec/*.mro)" can be used to transfer station setup measurements to Kokes Rail software for further data analysis. In addition to the measured backsight points, coded topo points with "OR" are added.

- **Feature: Aligning the trolley position with the profiler's laser pointer**
  For absolute profiler measurements, an additional "Laser" button was added into the single survey dialogue. It is activating or deactivating the profiler's laser pointer if the port is activated. It is possible to position the trolley perpendicular to a desired profile point and measure the trolley's reference position before changing to the profile measurements dialogue.

- **Feature: Gauge and cant measurement with a point name**
  A point name can now be defined for individual points during gauge and cant measurement. This will replace the continuous number in the sensor values export.

- **Feature: New Export "Sensor values CZ (*.csv)**
  A new export for gauge and cant measurements has been added. It will export a point list with individual grid distances with the following information: Time Stamp; Point Name; Cant, Gauge. Point name will only be available for points stored manually.

- **Odometer for absolute profiler measurement**
  The user will now receive a warning if the trolley was moved during an absolute profiler measurement and absolute coordinate cannot be calculated correctly. Due to this measurement can only be stored as a relative profiler point.

- **Bug fix: Station setup logging**
  Setting adjustments for station setup backsight measurements were only logged correctly for first face measurements. The station setup calculation was always correct but the error in measurements occurred when checking the results in GEDO Office.

Version: 2.2.6.5 (Jan 18, 2016)

- **Feature: Odometer supported for profiler measurement**
  During relative profile measurement the chainage display is now updated by odometer values. Current chainage information changes automatically when the trolley is pushed due to odometer measurement. This allows any profile location to be referred to a real-time chainage position.

- **Feature: Third rail measurement**
  A new measurement menu allows the control of an additional measurement device to measure offset values to a third rail (e.g. third rail electrification). The appropriate measurement extension for GEDO CE 2.0 is available as a custom specific solution.

- **GNSS measurements export**
  Measurements captured with GNSS could not be exported directly into coordinates out of GEDO Rec since version 2.2.0. This was only possible out of GEDO Office 2. With this update also GNSS measurements are included in GEDO Rec's coordinate exports.

- **New Faro SDK**
  The latest Faro SDK v. 5.5.3.0 is from now on available in this install.

Version: 2.2.5.2 (July 09, 2015)

- **Feature: Profilers height adapter**
  The profiler height adapter is no longer defined as fix setting in the trolley with GEDO Config CE. Now it can be set individually in Profiler's measurement panel. Trolleys with defined height offset unequal 0.000m have to be configured accordingly afresh.

- **ASCII conformity of scan and project names**
  Scan and project names are now checked to be conform to an ASCII-Format.

- **Overwrite within one scan**
  It is now possible within one scan to move the trolley back to the last synchronization point, type in the same point name and continue the scanning. The first measurement of the area will be deleted automatically in preprocessing. This is useful especially when you've

recognized during the scan procedure that the odometer didn't measure correctly e.g. the wheel of movable trolley side was blocked.

- **Station import from Trimble Access with Win32**
  To load a station setup from Trimble Access into GEDO Rec, the station setup file had to be located in the Trimble Data folder in the root directory. This has now been modified for Win32-version, so that the file will be found automatically in the standard work directory of Trimble Access.

Version: 2.2.5.1 (June 3, 2015)

- **Switch between instrument types**
  Connection to instrument could not be established if last measurement was done with a different instrument port. Software restart was necessary to change the setting. This is now modified so that new sensor can be connected directly after setting in configurations.

- **Bug fix: Single Survey with GNSS**
  Menu "Start single survey" doesn't give trolley sensor values during measurement with GNSS. Single survey measurement is now also possible with GNSS.

- **Bug fix: XML-Export**
  In seldom circumstances exported XML-file didn't include trolley orientation for measured lines points. Consequently this information was missing in GEDO Office. This is now fixed.

Version: 2.2.5   (May 13, 2015)

- **New method for kinematic scan**
  A new scanning workflow has been implemented. Prior to the start process, the user must now define the scan as either "Absolute" or "Relative".
  The absolute scan mode is designed to be used in cases where local or global point cloud processing is required. This scan mode allows synchronization points to be used in the office software to geo-reference the point cloud to either an absolute co-ordinate system (global synchronisation) or to a straight line (local synchronisation).
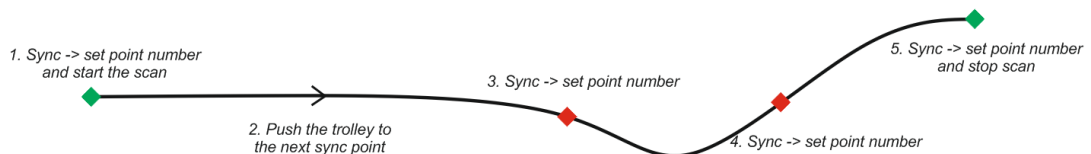
The Relative scan mode is an optimized procedure to generate a pseudo global 3D point cloud by using only the chainage information and design data of the current track. The user needs to synchronize the trolley on locations with known chainage information.
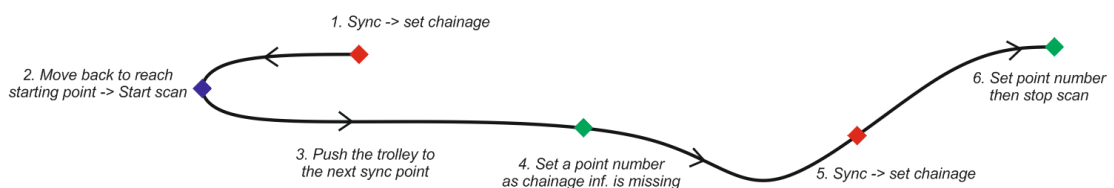
These synchronization points, expressed as chainage information or point numbers will be used to correct the trolley odometer values. Knowing the exact segment length, the office processing software will fit the point cloud to its correct length.

- **Validity check of gauge sensor calibration**
  Gauge sensor measurement will be check for reliability during calibration. The user will see a message that advise to check the settings if the reference value doesn't fit the track geometry. Similarly if there is a large difference compared to previous calibration.

- **Bug fix: Export of Profiler points**
  The export of measurement data captured with Profiler 2.0 created incorrect values in some cases. This is now fixed. Displayed values during measurement were always correct.

Version: 2.2.4.1 (Dec 30, 2014)

- **Initialisation of Scanner**
  Some scanner models gave error "GPIO cable missing" although cable was installed. Communication is revised now, so connection to start a measurement will be established successfully.

Version: 2.2.4   (Dec 30, 2014)

- **Calibration of Profiler with GEDO CE 2.0**
  On some circumstances profiler calibration did not work properly with already existing trolleys. Calibration function is modified now.

- **Order of COM-Ports**
  For easier handling communication ports for trolleys and profiler are always sorted in ascending order.

Version: 2.2.1   (Dec 29, 2014)

- **Bug fix: Active prism**
  Definition and selection of active prism causes software to fail to response. This is now fixed. Various change between prism type "Passive" (with or no ID) and "Active" is possible.

- **Bug fix: Tracking mode during single survey**
  Sensor values of trolley were no longer transferred after activation of tracking mode in single survey measurement. Points could not be documented in tracking mode. This function is now restored.

Version: 2.2.0   (Nov 28, 2014)

- **Measuring gauge and cant**
  Measuring mode 'gauge and cant' allows the recording of gauge and cant without an instrument. Chainage or station values are measured from the Odometer, which is integrated in the wheel on the movable side of trolley GEDO CE 2.0. The continuous recording is stored in a separate file. Distance of interpolated points is defined during the export, Sensor values (*.csv)'. An updated license file might be necessary.

- **New stationing "Import from station buffer"**
  The station setup results in GEDO Rec are written into the instrument's internal station buffer. In this way the results can be used with a different controller, which is very useful when working with two instruments (overlapping) at the same time for more productivity. This function is only available with the Trimble S8 (not provided for S6 or SPS)

- **Implementation of Profiler for GEDO CE 2.0**
  Measurement with the Profiler for the GEDO CE 2.0 trolley is implemented into GEDO Rec software. Now it is possible to measure distance and height offsets to objects relative to the track. This can be done in a separate survey mode. Calling in single survey measurement mode will calculate absolute coordinates. Also the profiler calibration can be done with ease. Details for Profiler use are documented in manual.

- **Joystick function reworked**
  Previously joystick functionality was tricky to handle with the Tablet PC. Steering was reworked uniformly for all system. The total station turns during joystick button of keyboard is pressed. A simple click on the screen display will start a continuous movement until the stop button in the middle of the joystick cross is pressed.

- **Tracking with SPS-Instrument**
  If an SPS instrument was used previously, tracking mode with 10 Hz could not be used. Now the rate will be downgraded to 2,5Hz when used with a passive prism, so that tracking is possible.

- **Station setup**
  "Angles only" is only available for station setup on a known point without computing station height.

- **Bug fix: Station setup**
  If multiple rounds was selected the software stopped in the first face. This is now fixed.

- **Bug fix: Control point**
  Using control point was not possible with Tablet PC. This is now fixed. Further you have the option to define any desired point for control check.

- **Bug fix: Enable radio with Tablet PC**
  The radio channel of total station was blocked for TSC after connection with a Tablet PC. Dies is fixed, so that switching between different controllers for instrument control is possible.

- **Scanner mode request**
  The new version of the Faro SDK allows the request as to whether or not the scanner is in recording mode. Hook up errors because of double triggering are avoided.

- **Scanning synchronisation point**
  First and second point of every scan has to be a synchronisation point. Therefore a synchronisation window pops up when the start button is pressed. In this window the point name can be changed if necessary.

- **Update chainage value**
  The odometer is activated before scanning data is recorded. Display of chainage value in synchronisation window is updated when odometer is moving.

Version: 2.1.3   (Dec 17, 2013)

- **Twist calculation**
  The export format "Sensor values" now calculates and shows the twist in addition to chainage, gauge and cant values.

- **Profiler**
  If the Profiler is used in relative mode the current gauge and cant values are measured ahead of each new Profiler measurement instead of only once when the dialog is opened. The trolley therefore can be pushed from one profile o the other without the need to close and open the dialog again and again.

- **Export of GEDO CE 2.0 survey data**
  If a report is generated, the trolley calibration values are used in order to calculate the respective data. Instead of the trolley parameters at the time of the survey, the parameters of the currently selected trolley were used. In case of a GEDO CE 2.0 trolley that means that if the trolley was not connected to the control unit, default calibration values were used for export instead what caused seriously wrong results. That has been fixed now.

- **Certified language files**
  Due to quality assurance when it comes to translated language files (*.gxl) only language files that were checked by Trimble and were certified with a unique key. Unauthorized editing of these files is no longer possible. The software by default is delivered with English and German.

Version: 2.1.2   (Sep 30, 2013)

- **New look & feel of context menus**
  Due to a restructuring of the software to fit the higher resolution of Trimble Tablet PC, all context menus have been replaced by button panels. This was necessary as the size of context menus is defined by the settings in the operating system.

Version: 2.1.0   (Aug 30, 2013)

- **Mean value computation for GNSS measurements**
  For standard and topo survey a mean value can be used that is calculated from all single measurements of a defined observation time. Additionally, the standard deviations of those mean coordinates are calculated and may help to estimate the inner quality of the measurement. By using the mean coordinates the reliability of a GNSS survey may be improved.

- **Bug fix in Station setup on known point**
  The setting whether the elevation should be computed did not have any effect when using station setup on a known point. The elevation was always computed using back sights instead of using the elevation of the point the instrument is setup on. This bug has been fixed.

- **Control point measurement**
  If a control point is defined the same list is available now as within a station setup. That means that not only fix points from the coordinate file may be used but measured topo points or former station setups as well.

- **Import of a station setup from Trimble Access**
  The import of station setup information has been restructured to meet Trimble Access requirements (instead of only SurveyController) and works properly again.

- **Instrument interface update**
  The interface to connect to Trimble total stations has been modernized and optimized. In addition to that, it is no longer necessary to request TSM Server codes. They are not required any more.

- **Optimized measurement of profiler points and scans**
  Points that were measured using the profiler with an absolute reference are no longer linked to the respective line point by using the entered chainage value. A unique time stamp is used instead what improves later data synchronization significantly.

- **Tracklight performance**
  If Tracklight is enabled its flashing frequency changes depending on whether a prism is locked (higher frequency) or not (lower frequency). If the total station is in robotic mode the user immediately sees the target locked state even without the control unit being around.

- **Sound files are played synchronized now**
  If the target locked state changed quite quickly the respective voice messages were interrupted. That sometimes led to contradictory messages. All voice messages are now played completely and new messages will be queued.

Version: 2.0.0   (Jan 22, 2013)

- **New icons**
  The Trimble Access software look and feel has been adopted by using the same icons.

- **Optimized joystick functionality**
  The joystick can be operated stepless – while a button is pushed the total station will rotate at the preset speed.

- **Support for latest trolley generation GedoCE_2.0**
  The new trolley is equipped with an internal storage device which stores all relevant trolley geometry parameters on it. A trolley configuration file therefore is no longer needed. In the trolley selection dialog simply "GedoCE_2.0" has to be selected.

- **Support for Trimble Access SDK app „Gedo GNSS Server"**
  With this new functionality GedoRec becomes capable to be used with any GNSS receiver that is supported by Trimble Access. Both applications communicate internally with each other, so that the coordinates from Access are available in GedoRec as well.

Version: 1.9.4   (Sep 14, 2012)

- **New TSM Server version**
  GedoRec now uses the improved Trimble S-Series driver version 4.14.0

- *Emulator mode*

Version: 1.9.3   (Dec 15, 2011)

- *Error at profiler calibration fixed*
  During the calibration of the profiler unit the height index was calculated severely wrong under certain constellations. A correct height index is absolutely necessary for the calculation of topo point coordinates.

- *Profiler calibration*
  Two different target heights may be entered when the calibration plates on fix and movable trolley side have different heights.

Version: 1.9.2   (Aug 31, 2011)

- *Displayed results flicker when refraction is strong*
  During tracking on long distances invalid distance measurements caused a flickering of the result labels due to strong refraction. A timeout of 2.5sec fixed this problem.

- *Fixed bug during station setup with two points measured in 2D only*

- **Trolley files now stored in Common Files\Gedo\Trolley**
  After first start of this version the complete Trolley directory will be moved to a common directory or will be created there. Advantage: The sensor calibration has to be done only once and is available for all other Gedo applications.

- *TSM files now stored in Common Files\Gedo*
  All TSM license files are stored in a common directory and will be used by all Gedo applications Advantage: The license code must only be entered once.

- *Trolley settings were not stored correctly in the job file*
  The current trolley definition parameters were not stored correctly under certain circumstances. Instead the default settings were stored.

Version: 1.9.1   (May 15, 2011)

- *Error at profiler calibration fixed*
  During the calibration of the profiler unit the height index was calculated severely wrong under certain constellations. A correct height index is absolutely necessary for the calculation of topo point coordinates.

Version: 1.9.0   (Apr 04, 2011)

- *New TSM Codes necessary*
  When switching to this version new TSM Codes need to be used. The old ones are no longer valid. The codes can be requested free of charge from Sinning by transmitting your controller serial.

- *Trolley definition files are now compatible between GedoTrack and GedoVorsys*

- *Porting to TSC3*
  The software now runs on TSC3 as well. Benefit from the many advantages of this new control unit.