



Gocator Firmware 5.0 - Release Notes

Firmware Version 5.0.3.14

Document Revision C

Compatibility

The Gocator 5.x web interface requires Chrome, Firefox or Edge. IE 11 is supported in a limited fashion (see known issues for details).

The 5.x releases are compatible with 4.x SDK.

New Features

<i>New data viewer</i>	The new data viewer provides high performance 3D visualization and displays high density datasets. It is based on WebGL and WebSockets, which offer increased performance and no longer require the Adobe Flash plugin.
<i>G3 point cloud data output</i>	Disabling uniform spacing provides a raw 3D point cloud from the sensor and reduces sensor CPU usage.
<i>Polygon target alignment</i>	A new target option allows more accurate alignment of ring-layout sensor systems. Sensors are aligned relative to the corners of a square or rectangular cross-section target. Other polygonal cross-section targets can be used as well.
<i>Profile Closed Area tool</i>	The new Profile Closed Area tool allows cross sectional area measurements on profiles with uniform spacing disabled. This tool is specifically designed for use with multi-sensor ring-layout systems on 360-degree scans for high-accuracy volume measurement.
<i>Surface Sphere tool</i>	The new Surface Sphere tool allows for accurate measurement of sphere center position and radius.
<i>GDK access to run-time variables</i>	GDK tools can now access "runtime variables" which can be set from PLC protocols. These are the same variables that were previously accessible via the Script tool.
<i>Sensor crash diagnostics</i>	Sensors will now after a crash notify and prompt the user to download a Gocator support file. The Gocator support file now includes crash information that can be used in determining the root cause of the crash. This not only applies to firmware issues but also issues caused by GDK tools.
<i>Digital, Analog, Serial output in GoX</i>	When using the GoX Accelerator, it is now possible to output from sensor I/O with digital, analog, and serial outputs.
<i>ASCII fixed length number formatting</i>	ASCII output can now be formatted with fixed length numbers using a zero prefix such that handling on robot controller and PLCs is easier.

G200 Raw tools

Standard raw profile tools can now operate on G200 scan data. Profile position and dimension measurements can be performed.

Improvements

<i>UI Performance</i>	The load time for the Output and Dashboard pages was improved for jobs with many measurements.
<i>.NET SDK memory</i>	When using the .NET SDK wrapper DLL, it is no longer necessary to manually destroy objects to free them from memory.
<i>Restart reason</i>	The cause for a sensor restart is now displayed as a message in the logging panel.
<i>Demo mode</i>	Using the keyboard shortcut Alt-Shift-D, automatic rotation is applied in 3D view. The speed can be adjusted with Alt-Shift-+ and -.
<i>Emulator browser engine</i>	The emulator browser engine was switched from IE to Chromium. This improves performance and increases reliability.
<i>G200 active area</i>	The active area on G210, G230 and G250 sensors can now be adjusted.
<i>G250 frame rates</i>	Separate frame rates are displayed for Profiles and Tracheid frames to clarify the actual rate of frame output.
<i>G205 light bar</i>	The duty cycle of the G205 light bar was limited to 10% to prevent potential damage.

Fixes

<i>Accelerator remote SDK connection</i>	It was not possible to connect to an accelerated sensor from a remote SDK application on a separate PC.
<i>GoAccelerator sensor state</i>	The sensor state could be tracked incorrectly after starting and stopping acceleration on a sensor. This could prevent starting acceleration again on a sensor.
<i>CSV output</i>	CSV output could be incorrect when a GDK tool with profile data output was present.
<i>Poor Y offset alignment</i>	Y offset alignment accuracy could be poor.
<i>G3 alignment</i>	G3 scan data was scaled after alignment is performed on a surface with a large angle relative to the sensor. This resulted in measurement values that were larger than the actual measurements.
<i>Script duplication</i>	Duplicating a script was not prevented. It is not possible to use multiple



scripts in a single job.

<i>Interreflection processing drops</i>	Processing drops could be reported on the first scan on a G3 sensor with Interreflection set as scanning engine.
<i>Moving bar alignment</i>	Moving bar alignment could fail to complete and needed to be cancelled by user.
<i>Accelerator crash after sensor disconnect</i>	After disconnecting an accelerated sensor from the network and reconnecting it again, the accelerator could crash.
<i>Y offset alignment</i>	Occasionally a buddy system could fail to start after alignment in which Y offset was calculated.
<i>G3 digital output</i>	Digital output on a G3 sensor with autostart enabled was not working correctly.
<i>Emulator crash</i>	An emulator session could crash when switching part matching modes.
<i>Video mode with script</i>	A sensor could crash when attempting to run in Video mode with a Script tool present.
<i>Part matching</i>	With Edge mode part matching, measurements could become "Invalid" under some conditions.
<i>Profile Round Corner tool</i>	Resetting the ROI for the Profile Round Corner tool was not functioning correctly.
<i>Health indicators</i>	Health indicators could update too frequently
<i>Part detection with Z angle transformation</i>	Creating a model with Edge mode part matching could fail for sensor systems aligned with a Z angle.

Known Issues

<i>Internet Explorer</i>	Internet Explorer 9 and 10 are no longer supported and several issues exist with Internet Explorer 11 with large data sets due to browser memory limitations. Refer to the Gocator user manual for IE 11 specific instructions to work around some of the issues.
<i>Right-click menu</i>	The right click menu in the visualization has been removed. All functionality is accessible through the toolbar buttons.
<i>Region resize handles</i>	Regions do not feature resize handles on the sides of the region boxes. This will be added back in an upcoming release.
<i>X or Z angle in recordings</i>	G2 profile mode recordings with X or Z angle in the transformation of a sensor do not show profiles when stepping through the recording due to recording playback limitations.
<i>Translations incomplete</i>	Not all English text is translated in every translation.



Protocol version is specified as [Major].[Minor]. Firmware releases with the same Protocol Major version are backward compatible and users do NOT need to recompile their applications unless features in the newer version are used. Note that these are protocol and SDK changes between Release 4.7 SR1 and Release 5.0. Refer to the Gocator 4.x SDK migration guide for details on how to port your 3.x application to Gocator 4.x or 5.x firmware.

SDK

Action	Name	Description of change
<i>Added</i>	GO_DATA_MESSAGE_TYPE_UNIFORM_PROFILE GO_DATA_MESSAGE_TYPE_PROFILE_POINT_CLOUD GO_DATA_MESSAGE_TYPE_UNIFORM_SURFACE GO_DATA_MESSAGE_TYPE_SURFACE_POINT_CLOUD	New data message type names.
<i>Deprecated</i>	GO_DATA_MESSAGE_TYPE_PROFILE GO_DATA_MESSAGE_TYPE_RESAMPLED_PROFILE GO_DATA_MESSAGE_TYPE_SURFACE	Deprecated in favor of new names.
<i>Added</i>	GO_DATA_TYPE_PROFILE_POINT_CLOUD GO_DATA_TYPE_SURFACE_POINT_CLOUD	New data type names replacing old names deprecated below.
<i>Deprecated</i>	GO_DATA_TYPE_RAW_PROFILE GO_DATA_TYPE_RAW_SURFACE	Deprecated in favor of new names.
<i>Added</i>	GoUniformProfileMsg GoProfilePointCloudMsg GoUniformSurfaceMsg GoSurfacePointCloudMsg	New message type class names replacing old names deprecated below.
<i>Deprecated</i>	GoResampledProfileMsg GoProfileMsg GoSurfaceMsg	Deprecated in favor of the new names.
<i>Added</i>	GO_ALIGNMENT_TARGET_POLYGON	New polygon alignment target.
<i>Added</i>	GoSetup_*PolygonCorner*	New functions for polygon alignment corner specification.
<i>Added</i>	GoSetup_TracheidRate GoSetup_FrameDataRate	New functions to differentiate Tracheid and Profile data rates on G250 sensors.
<i>Added</i>	GO_HEALTH_*	Added a number of new health indicators.



Configuration and Protocol changes

Action	Type	Name	Description of change
<i>Added</i>	Configuration	Setup/Trigger/TracheidRate	The frame rate of Tracheid data (read-only).
<i>Added</i>	Configuration	Setup/Trigger/FrameDataRate	The frame rate of normal (range/profile/surface) data (read-only).
<i>Added</i>	Configuration	Setup/Alignment/Polygon Setup/Alignment/Polygon/Corner	Added various settings for polygon target alignment. For a complete list, see the user manual.
<i>Added</i>	Configuration	SurfaceBoundingBox/Features/AxisLine	Axis line geometric feature.
<i>Added</i>	Protocol (Gocator)	Surface Point Cloud	New surface point cloud data message.
<i>Renamed</i>	Protocol (Gocator)	Profile Point Cloud	Data message renamed from <i>Profile</i> .
<i>Renamed</i>	Protocol (Gocator)	Uniform Profile	Data message renamed from <i>Resampled Profile</i> .
<i>Renamed</i>	Protocol (Gocator)	Uniform Surface	Data message renamed from <i>Surface</i> .
<i>Renamed</i>	Protocol (Gocator)	Alignment Result	Data message renamed from <i>Operation Result</i> .

GDK Changes

Action	Name	Description of change
<i>Added</i>	GDK_DATA_TYPE_PROFILE_POINT_CLOUD GDK_DATA_TYPE_SURFACE_POINT_CLOUD GDK_DATA_TYPE_UNMERGED_PROFILE_POINT_CLOUD	New data type names.
<i>Deprecated</i>	GDK_DATA_TYPE_RAW_PROFILE GDK_DATA_TYPE_RAW_SURFACE GDK_DATA_TYPE_UNMERGED_RAW_PROFILE	Deprecated in favor of new names.
<i>Added</i>	GdkRuntimeVars_Read32s GdkRuntimeVars_Write32s	New functions for accessing runtime variables from GDK tools.
<i>Added</i>	GdkRawSurfaceInput	New class for raw/point cloud surface data

