Title   Interfacing a Gocator Sensor to Common Vision Blox
Revision   1.3

Purpose   This document explains how to interface a Gocator sensor to Common Vision Blox (CVB)

Equipment Gocator Firmware Release 3.6.5.15 or later
               Common Vision Blox 2011 or later
               Sherlock Version 7 or later (if Sherlock is required)
               Sherlock CVB Driver (if Sherlock is required)

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1 Overview

Common Vision Blox (CVB) is an open architecture, hardware independent toolkit for 3D image processing. Gocator includes a GenTL driver that can be used to stream 3D height map and intensity images into CVB in real-time.

Sherlock is an advanced machine vision software interface that can be applied to a wide variety of automated inspection applications. Sherlock can communicate to the Gocator via the Sherlock CVB driver.

This document assumes that CVB is already installed. If Sherlock is used, the document assumes that the Sherlock CVB driver and Sherlock are installed.

Refer to the *GenTL* chapter in the Gocator's User Manual on how to install and setup the Gocator GenTL driver. This document describes how to verify that CVB and Sherlock are properly connected to the Gocator. Users are assumed to be already familiar with the operation of the Gocator Whole Part mode.
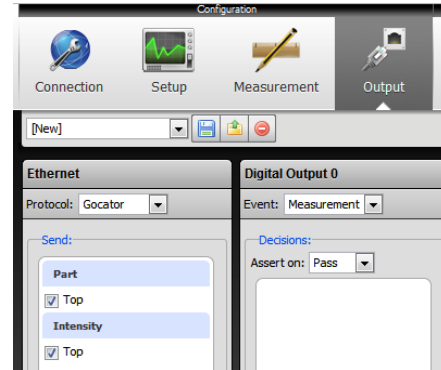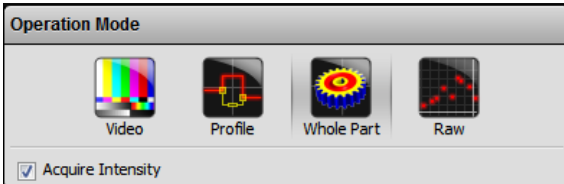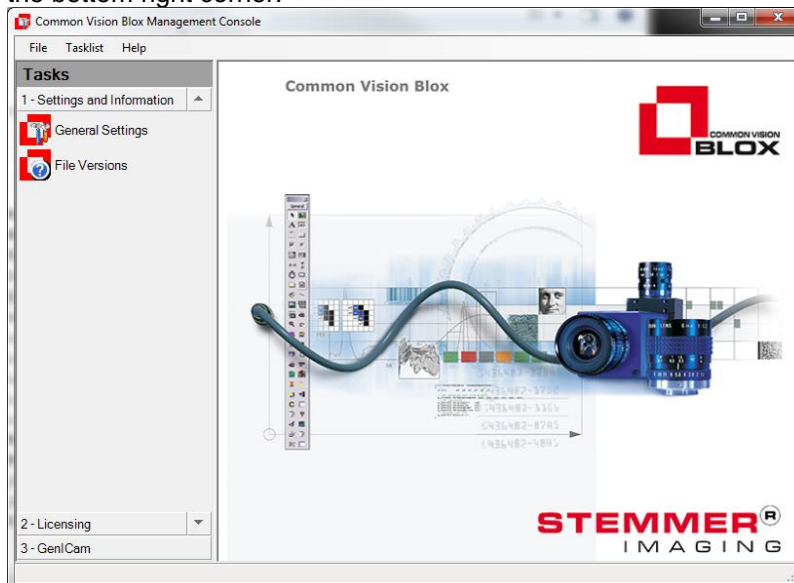
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2 Verifying the Connection Between the Gocator and CVB

Follow the steps below to setup CVB with Gocator for the first time:
1. Connect a Gocator to the PC running CVB.
2. Power up the Gocator and put the Gocator into Whole Part mode and enable the Ethernet output. Check Acquire Intensity if intensity data is required.
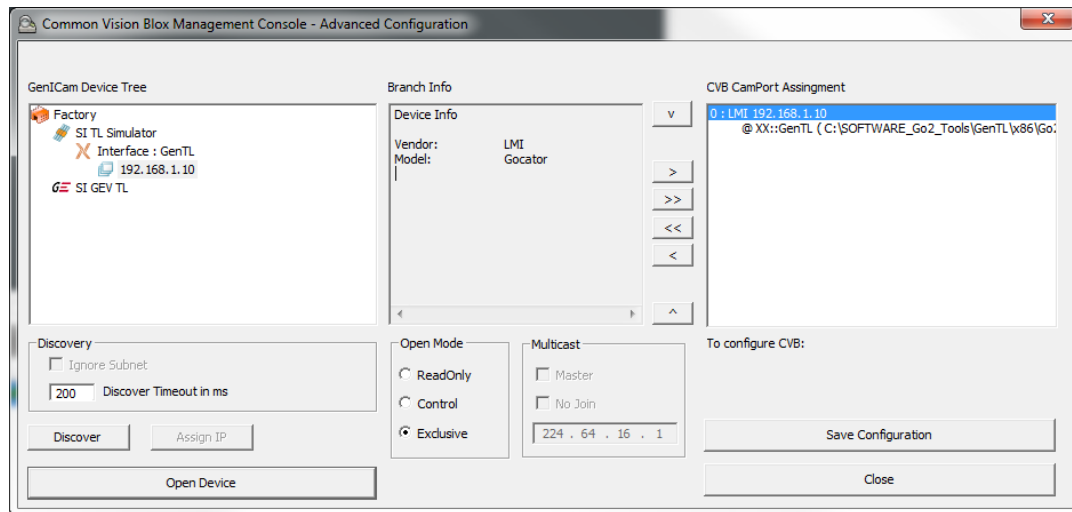

3. Start the CVB Management Console.
4. Click GenICam at the bottom right corner.

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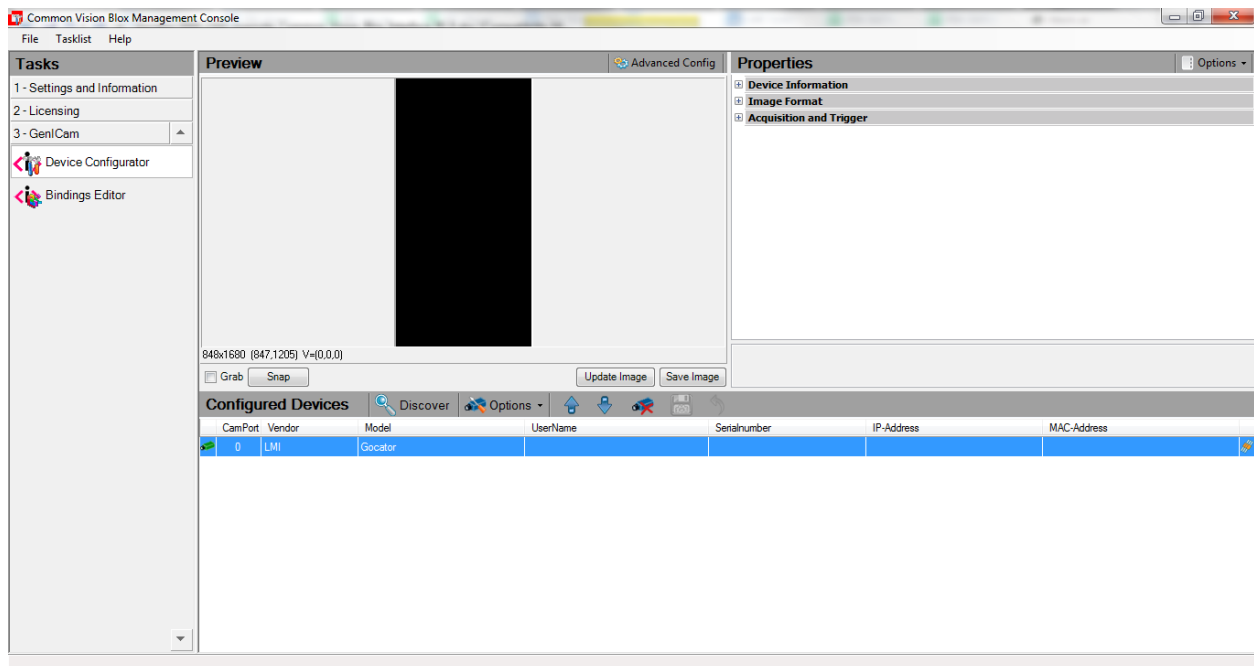HEAD OFFICE: 1673 Cliveden Avenue | Delta BC | V3M 6V5 | Canada

5. Select Device Configurator.
   Detected Gocators will be listed in the Configured Device table. The Gocator must be running and connected to the PC for this step to be successful.

   If no device is detected, select Advanced Config, select the LMI sensor from the list in the left and click ">>" to assign a Gocator to the CVB camera port.


When a Gocator is detected, the device shows up in the Configured Device list.

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6. Check Grab box to start data capturing.
7. Trigger the Gocator to output a part object. The method to trigger the Gocator depends on the Gocator setup.
   The output will be displayed in the Preview Window.
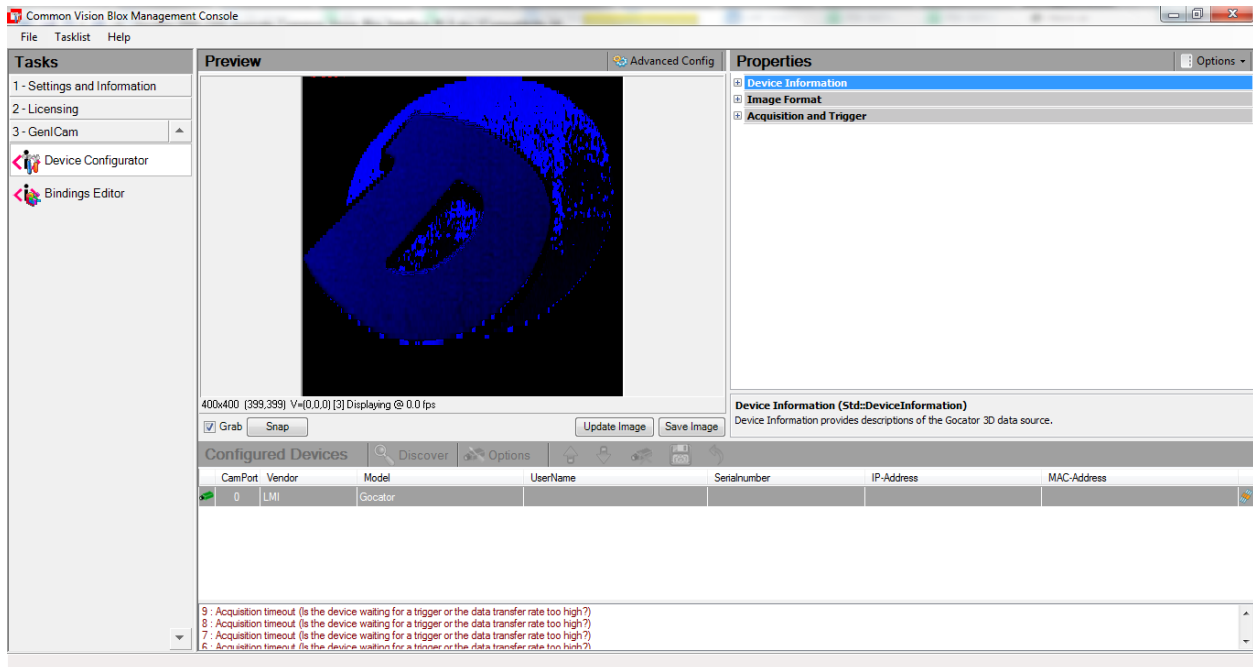
An acquisition timeout error might display periodically if the Gocator is put into encoder trigger mode and there is no parts scanned for a period of time.

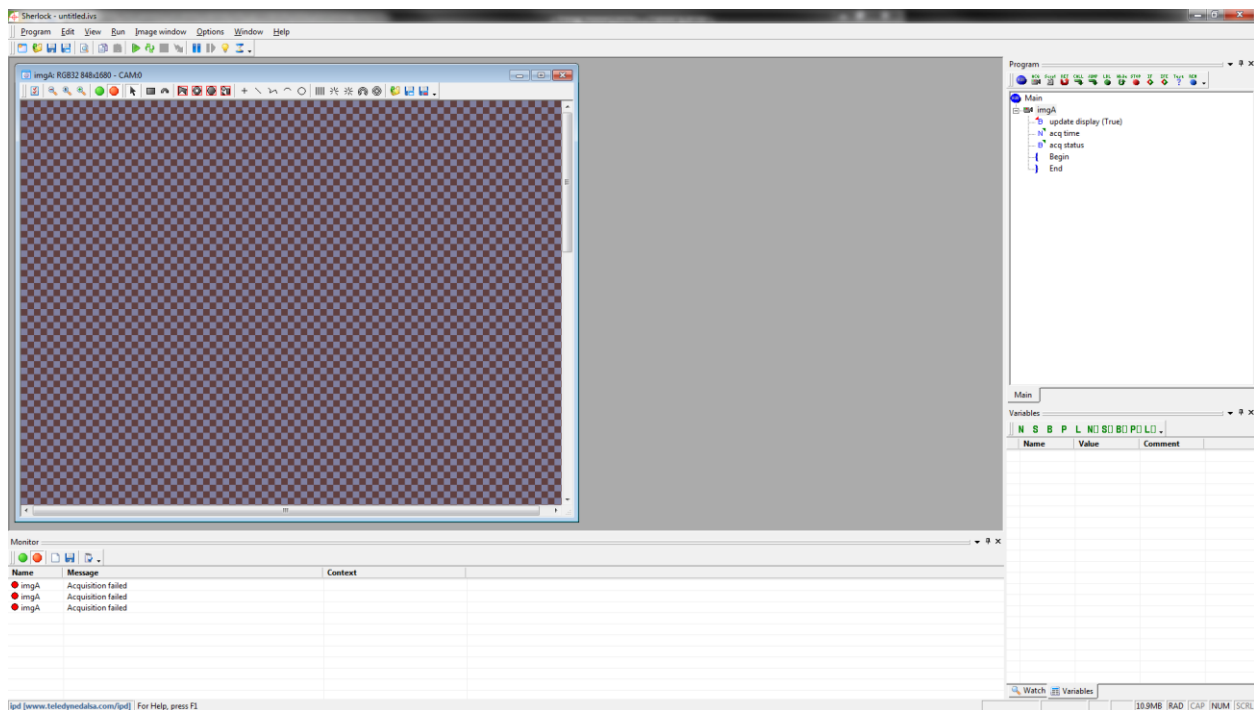User can configure the acquisition timeout under Settings and Information->General Settings.

3 Verifying the Connection Between Sherlock and CVB

1. Shut down CVB Management Console.
2. The camera port in the file *CVBDriv.ini* (normally under *C:\Program Files\ipd\Sherlock\Drivers*) should point to GenICam.vin, as shown below.

```
[Camera0]
Driver = %CVB%\Drivers\GenICam.vin
CameraPort = 0
```

3. Start Sherlock.

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It is normal to see an Acquisition Failed error in the Monitor window.

4. Select Image Window -> Options
5. Check the box "On acquisition timeout: Skip execution of this "image window" and continue executing program without a timeout error". Close the dialog box.
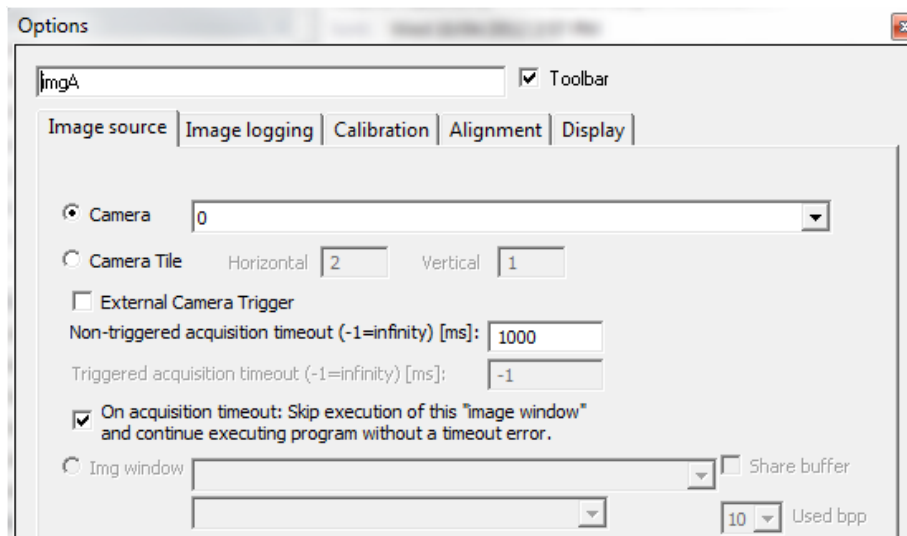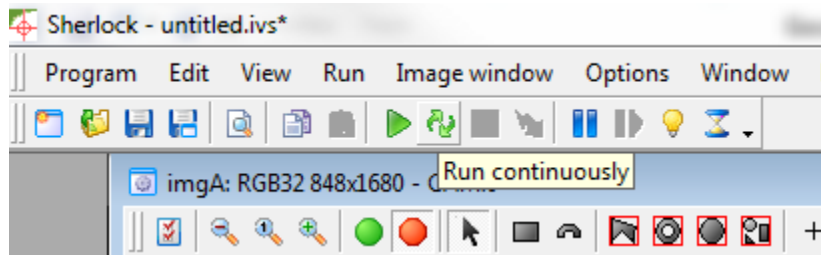

This setting prevents Sherlock from executing the program when an acquisition is timed out. Acquisition timeout is normal when no parts are detected.
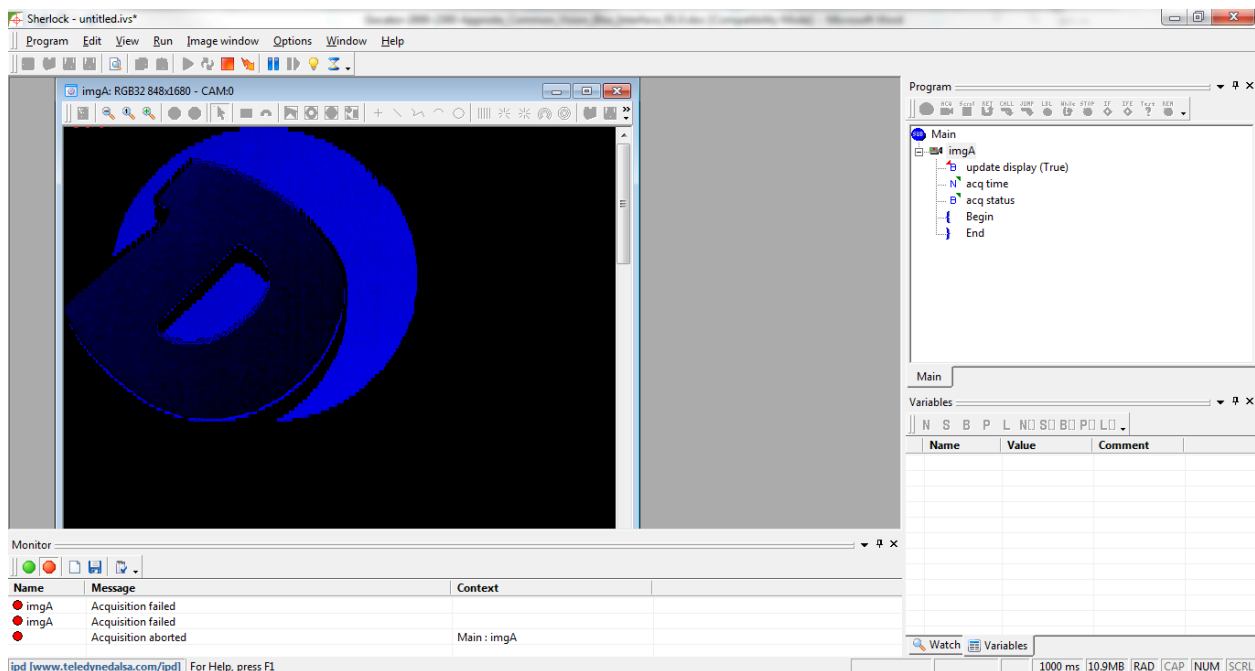
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6. Press the Run Continuously button to begin acquisition.

7. Trigger the Gocator to generate a part height map. The height map should be displayed in the image window.

4 Raw Mode Operation

To achieve the maximum frame rate, user can run the sensor in raw mode. The GenTL driver receives the raw profile data, resamples the data and then combines the profiles to create a part.

The resampling and combining profiles are done using parameters set in the *Whole Part* Mode. User first configurations resampling and part detection parameters in Whole part mode, then switches to the Raw Mode for operation.

The following settings should be set in Whole part mode

Travel Speed, Encoder Resolution

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Together with the spacing or frame rate settings, these settings allow the GenTL driver to calculate the y-axis resolution and to calculate how many profiles to combine into a part. User configure these settings in the Trigger Panel after the Whole Part mode is selected
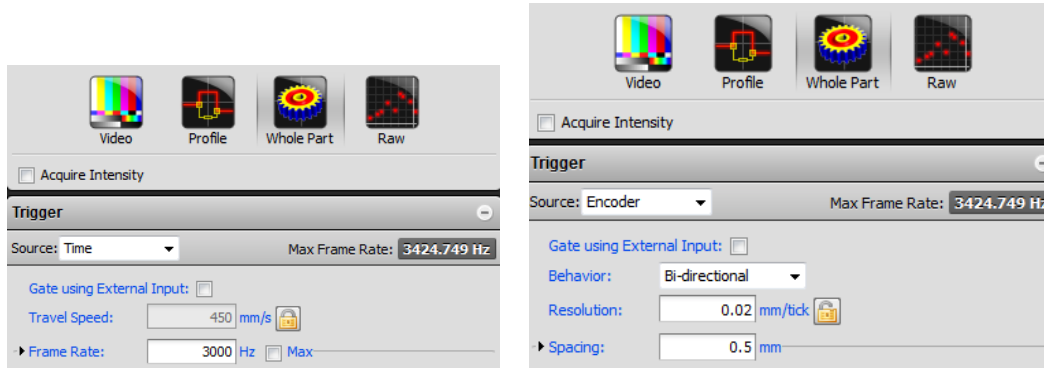
Part Detection Logic

The part detection logic is also configured in the Whole Part Mode. The part detection is logic is *different* from the one running on the Gocator; it can only detect one part at a time and does not uses the part detection gap parameters. The logic detects the beginning of a part when one or more profile point is above the part detection height threshold, and stops when all the points are below the part detection threshold, or when the data exceeds the maximum data length.

The raw part detection height threshold and the maximum length are configured in the Detection panel in the Whole Part Mode. The following settings are ignored in the panel; Threshold direction, gap threshold and area threshold.

X- Resampling Interval

When running in Raw mode, the GenTL driver performs x-resampling to incoming data. The X Resampling setting in the filter panel is used to configure the X resampling interval of the data output by the GenTL driver.

The X resampling, height threshold and maximum length are illustrated in the

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Output Page

Users should enable raw profile and intensity (if required) in the Output Page, *when the sensor is in Raw Mode.*

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