

System Simulation

3D Collect SLX v7.01.00.xxx (Release Version)

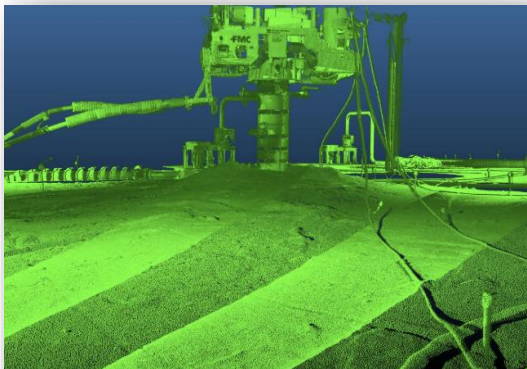
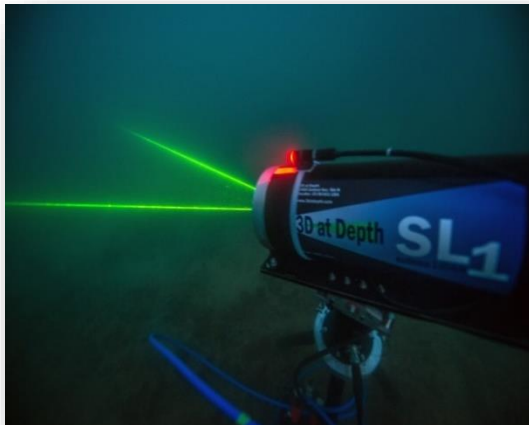
RTV SLX v7.01.01.xxx (Release Version)

EC-SL3 Sim v7.01.01.xxx

InstaCloud-SLX v7.01.01.xxx_Sim

3D Cloud * (all versions)

HANDBOOK



Jun 2024

Revision 7.01.xx

Suitable for SL3 or SL4

Version	Author	Short Change Discription	Date
1.0	D. Florin	Initial Release	2021 Jul 13
	D. Florin	Updated to Famly 7.xx.xx.xxx	2023 Apr 25
	D. Florin	Added some troubleshooting info if password is not accepted.	2024 Jan 11
	D. Floirn	Updated with Latest SL4 structures and messages	2024 Jun 12

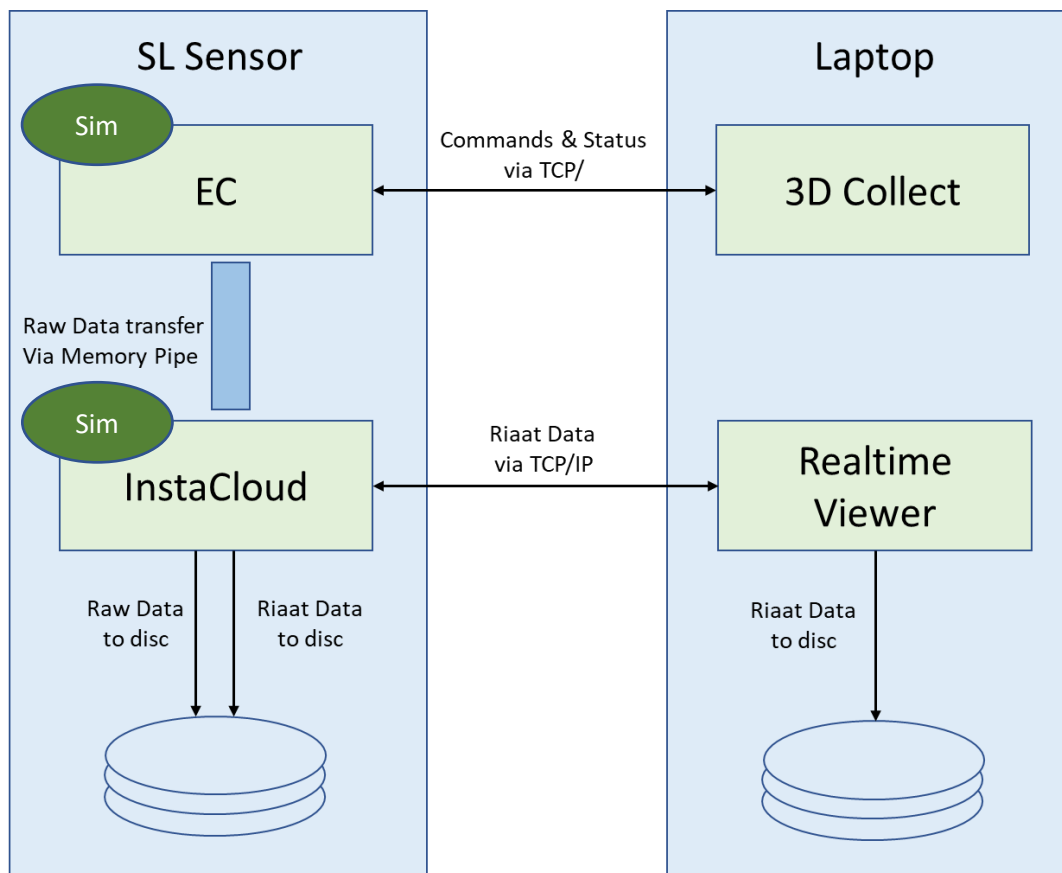
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1. OVERVIEW

The 3D Collect tool is the primary tool for user control and for viewing runtime status between the remote laptop computer and the Electronics Controller (EC) application on the sensor computer. 3D Collect gives the user a Graphical User Interface (GUI) for configuring and executing scan commands and monitoring the status of the sensor. The Real Time Viewer (RTV) application is the output of a sensor scan and is focused only on the sensor results, not on real time status or commanding. This document is how to get the simulation installed.

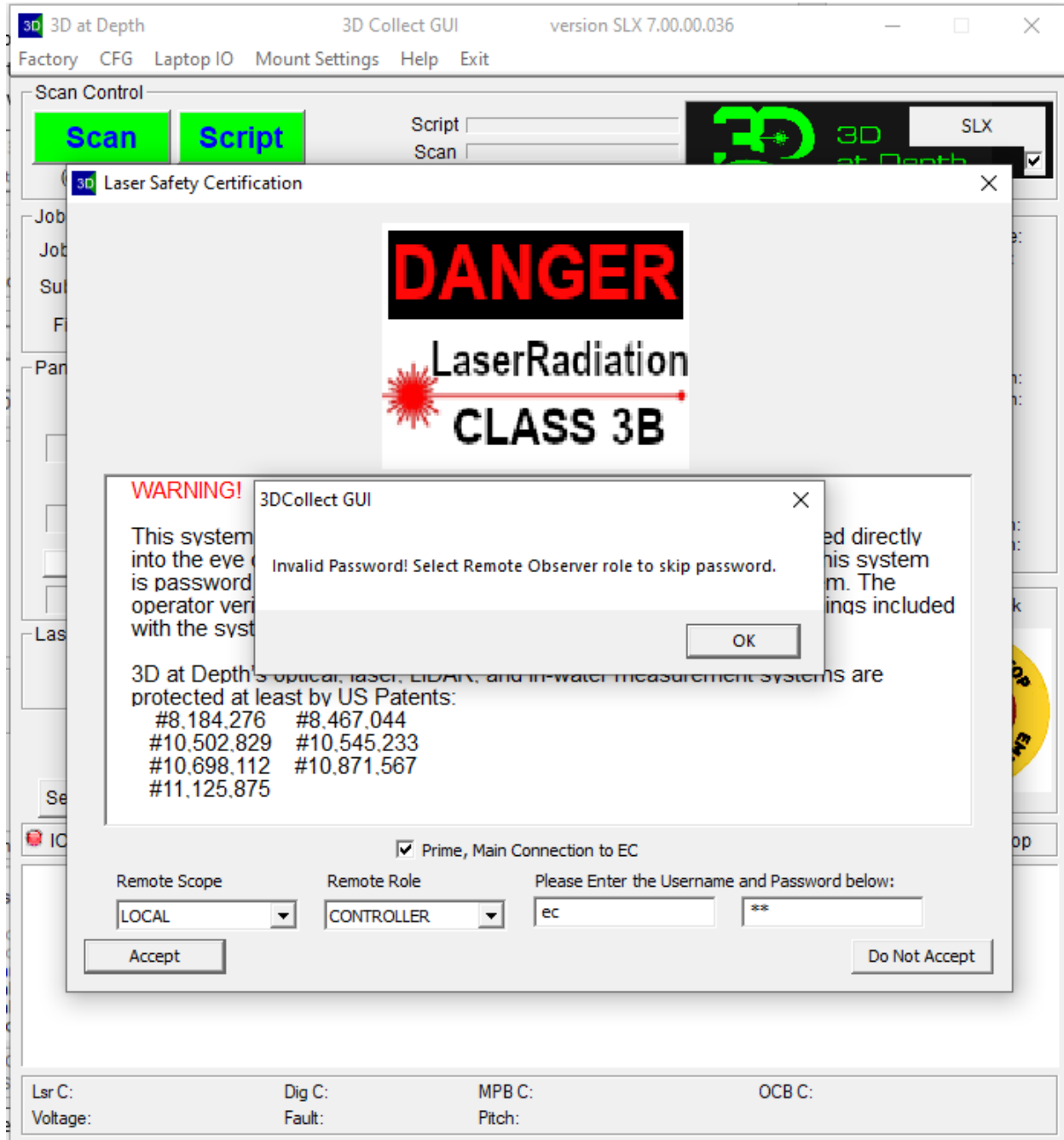
2. The 3D Data Flow



EC:	On board sensor Electronic Controller application, Sim works on any laptop.
InstaCloud:	On board sensor Raw to RIAAT conversion application, Sim works on any laptop.
Realtime Viewer:	Remote laptop live RIAAT data visualization tool.
3D Collect:	Remote laptop configuration and control tool for the sensor.

3. 3D Collect, Main User GUI

The primary 3D Collect Application Graphical User Interface (GUI) is shown below. This is the main user command and control interface for the sensor. This runs on the Laptop and connects to the sensor using TCP IP connections.

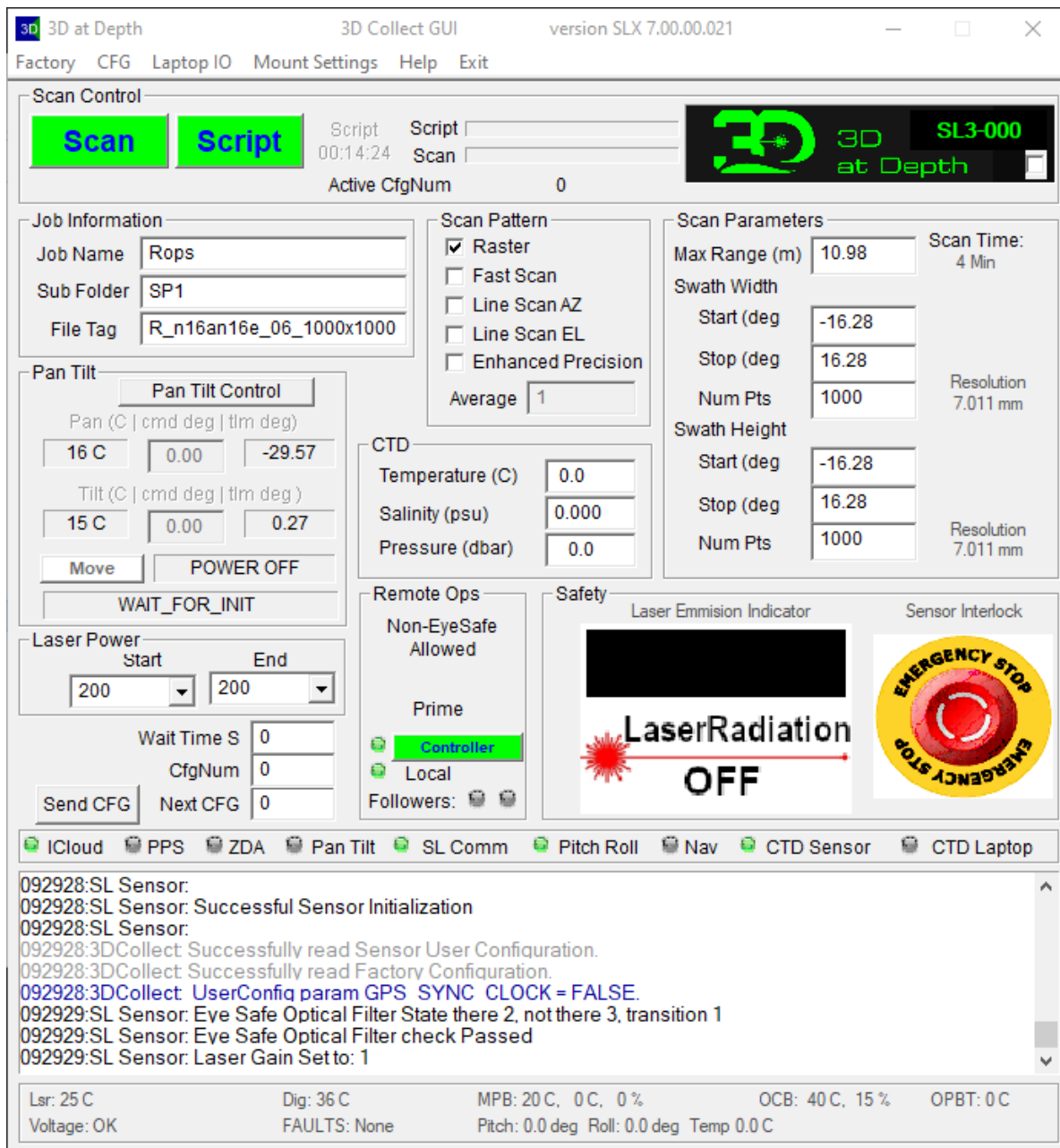


Put in the user name "ec" password "3d" to start up the GUI, soon each user will have there own username and password.

If password still does not work, then double check that the configuration files are properly loaded and at the correct location. Use the sharepoint location Latest\Simulator\SensorConfig as the source. These files may need to be at C:\3D\CFG and if the D drive is not mapped to the C drive, then also verify that these files are also at D:\3D\CFG. Don't have a D drive? Run the file Latest\Simulator\map_c_to_d.reg. This will create a "D" drive, but it is just pointing to the local "C" drive. Helps define paths for the system. Once EC can run, then EC will write user and factory parameters and keep them synchronized.

Once everything is there try closing everything and relaunching EC and 3D Collect.

Once 3D Collect allows you to log in, make sure the Laptop Parameters are set for address 127.0.0.1 and type of SL3 (we only have a simulator for SL3).



3D at Depth 3D Collect GUI version SLX 7.00.00.021

Factory CFG Laptop IO Mount Settings Help Exit

Scan Control

Scan **Script** Script 00:14:24 Scan Active CfgNum 0

Job Information

Job Name: Rops
Sub Folder: SP1
File Tag: R_n16an16e_06_1000x1000

Scan Pattern

☒ Raster
☐ Fast Scan
☐ Line Scan AZ
☐ Line Scan EL
☐ Enhanced Precision
Average: 1

Scan Parameters

Max Range (m): 10.98
Swath Width: Start (deg) -16.28, Stop (deg) 16.28, Num Pts 1000, Resolution 7.011 mm
Swath Height: Start (deg) -16.28, Stop (deg) 16.28, Num Pts 1000, Resolution 7.011 mm
Scan Time: 4 Min

Pan Tilt

Pan Tilt Control
Pan (C | cmd deg | tlm deg): 16 C, 0.00, -29.57
Tilt (C | cmd deg | tlm deg): 15 C, 0.00, 0.27
Move POWER OFF
WAIT_FOR_INIT

CTD

Temperature (C): 0.0
Salinity (psu): 0.000
Pressure (dbar): 0.0

Remote Ops

Non-EyeSafe Allowed
Prime
Controller
Local
Followers:

Safety

Laser Emmission Indicator
LaserRadiation OFF
Sensor Interlock
EMERGENCY STOP

Laser Power

Start: 200, End: 200
Wait Time S: 0
CfgNum: 0
Send CFG Next CFG: 0

Status Bar

ICloud PPS ZDA Pan Tilt SL Comm Pitch Roll Nav CTD Sensor CTD Laptop

092928:SL Sensor:
092928:SL Sensor: Successful Sensor Initialization
092928:SL Sensor:
092928:3DCollect: Successfully read Sensor User Configuration.
092928:3DCollect: Successfully read Factory Configuration.
092928:3DCollect: UserConfig param GPS SYNC CLOCK = FALSE.
092929:SL Sensor: Eye Safe Optical Filter State there 2, not there 3, transition 1
092929:SL Sensor: Eye Safe Optical Filter check Passed
092929:SL Sensor: Laser Gain Set to: 1

Lsr: 25 C Dig: 36 C MPB: 20 C, 0 C, 0 % OCB: 40 C, 15 % OPBT: 0 C
Voltage: OK FAULTS: None Pitch: 0.0 deg Roll: 0.0 deg Temp 0.0 C

The GUI provides entry for job specific information, scan pattern type selection, scan parameters, Pan & Tilt control, emergency stop and real time status. Scan control and automatic scan script controls are both controlled from here as well. Menu descriptions are provided in the next section.

4. Menu Tree Layout/Definition

Menu tree descriptions, with select parameter definitions are below. This is not an exhaustive definition since many of the parameters are self-describing.

1. Menu section
 - a. Factory Menu: Opens Factory Mode dialog
 - b. CFG Menu:
 - i. Software Versions: Report Software versions (EC, InstaCloud, RTV, CGUI)
 - ii. Load Scan CFG: Opens scan config file
 - iii. Save Scan CFG: Saves current scan config to file
 - iv. Change Sensor CFG: Inactive
 - v. Edit User CFG: Open Sensor User config dialog
 - vi. Edit Factory CFG: Open Sensor Factory config dialog
 - vii. Edit Laptop CFG: Open Laptop config dialog
 - viii. View User CFG: Open Sensor User config dialog
 - ix. View Factory CFG: View Sensor Factory config dialog
 - x. View Laptop CFG: View Laptop config dialog
 - xi. Edit CCI CFG: Open CCI config dialog
 - xii. View CCI CFG: View CCI config dialog
 - xiii. Reset EC and InstaCloud
 - c. Laptop IO Menu:
 - i. Laptop Extern IO setup dialog
 - ii. View Remote Connections
 - d. Mount Settings: Opens the Mount Settings dialog
 - e. Help Opens the corresponding help PDF
 - f. Exit Exit the program
2. Scan Control section
 - a. Scan Button: Sends the scan configuration to EC for execution
 - b. Script Button: Opens the scan script configuration dialog
 - c. Script Run Time: Displays the estimated time left in a script
 - d. Script Complete bar: Displays progress of the current script
 - e. Scan Complete bar: Displays progress of the current scan
 - f. Active CfgNum: Displays the sensor scan configuration ID (sensor scripts)
 - g. Sensor identifier Displays the sensor name that the GUI is connected to
 - h. Little empty box at lower right of 3D at Depth logo, check to allow window to go into the background. If not checked, then this window will stay on top, all of the time.
3. Job Information section (C:\Data\<JobName>\<SubFolder>\<FileTag><TimeStamp>.riaat)
 - a. Job Name: Used to configure main file save folder location
 - b. Sub Folder: Used to configure the secondary file save folder location
 - c. File Tag: Coupled with a time stamp used to create the scan file name

4. Scan Pattern section

- a. Raster: Single scan mode
- b. Fast Scan: Continuous low resolution scan mode
- c. Line Scan AZ: Motion horizontal scan mode
- d. Line Scan EL: Motion vertical scan mode
- e. Enhanced Precision: Enhanced Precision scan mode
 - i. Average: Number of samples for averaging at Enhanced Precision mode

5. Scan Parameters section

- a. Max Range: Maximum sensor data collection distance in meters
- b. Swath Width
 - i. Start Deg: Scan azimuth start position in degrees relative to home
 - ii. Stop Deg: Scan azimuth stop position in degrees relative to home
 - iii. Num Pts: Number of points collected by the sensor per scan line
 - iv. Resolution: Calculated horizontal distance between scan points
- c. Swath Height
 - i. Start Deg: Scan elevation start position in degrees relative to home
 - ii. Stop Deg: Scan elevation stop position in degrees relative to home
 - iii. Num Pts: Number of vertical scan lines
 - iv. Resolution: Calculated vertical distance between scan points

6. Pan Tilt section

- a. Pan Tilt Control Button: Opens the Pan Tilt Control dialog
- b. Pan Temp: Temperature of the Pan motor, C
- c. Pan requested angle: Requested pan angle in degrees
- d. Pan actual angle: Actual pan angle in degrees relative to Home/Zero position
- e. Tilt Temp: Temperature of the Tilt motor, C
- f. Tilt requested angle: Requested tilt angle in degrees
- g. Tilt actual angle : Actual tilt angle in degrees relative to Home/Zero position
- h. Move/Stop Button: Executes the move command to the requested angles
- i. Pan Tilt Command State/Status (based on previous commands)
 - i. POWER OFF
 - ii. POWER ON
 - iii. SETTLING
 - iv. MOVE_COMPLETE
 - v. INIT COMPLETE
 - vi. HOMED
 - vii. ...
- j. Pan Tilt Current State
 - i. RUN (ready for the next command)
 - ii. RUN_BUSY (working on a command)
 - iii. WAIT FOR INIT
 - iv. STOP1 (pan stopped)
 - v. STOP2 (tilt stopped)
 - vi. STOP_COMPLETE (Can now be cleared to continue)
 - vii. ...

7. Laser Power section

- a. Laser Power dropdown (3 power settings, 4 gain settings, used to create 12 power settings from 1 – 4000). Settings 1 to 4 are all eye safe (<0.39 mW). Levels 5 and above are all considered Class 3B (from 5 mW to 499 mW – Avoid beam exposure to eye).
- b. Start box is the starting laser gain, the End box is the end laser gain. Software will adjust gains between scan lines in equal increments from start to end. All data is in one scan file. SL4 continues scanning even while laser power is adjusted – so some data may be missed while filters are getting into position or be of a different power level. Amount of data missed is very small.

CTD section

- c. Temperature (c): Temperature of the water at scan location
- d. Salinity (psu): Salinity of the water at scan location
- e. Pressure (dbar): Pressure on the sensor at scan location

8. Scripts on Sensor

- a. Send CFG : Write parameters into a CCI configuration file on sensor
- b. Wait Time S : Time in the CCI configuration to wait between move and scan
- c. CfgNum : The CCI configuration number, sets file name and reference
- d. Next CFG : The next CCI configuration that is done after current one (script)

9. Remote Ops

- a. Maximum power level that could be asked for – EyeSafe Only or NonEyeSafe allowed
- b. 3D Collect designation – Prime (connected to EC) or computer name (Remote Ops)
- c. Current role – Observer, Standby or Controller
- d. Network scope – Local (to EC; Offshore) or Remote (On shore)
- e. Followers: Status for each of the followers that are connected (CGUI to CGUI connections)

10. Safety section

- a. Laser Emission Indicator: Flashes Yellow in eye safe mode, Red in non eye safe
- b. Remote Interlock Connector: Emergency stop button for shutting down the sensor

11. Instrument Status section, grey LED if not in use.

- a. ICloud Displays green when connection is established with InstaCloud
- b. PPS Displays green when Pulse Per Second time sync is being collected
- c. ZDA Displays green when ZDA time sync is being collected
- d. Pan Tilt: Displays green when Pan Tilt is on, Initialized and Homed.
- e. SL Comm: Displays green when connection is established with EC
- f. Pitch Roll: Displays green when the pitch roll sensor is on
- g. Nav: Displays green when the Navigation data is coming in (Motion)
- h. CTD Sensor: Displays green when CTD data is received, turns red if missing (left),
- i. CTD Laptop: Displays green when CTD coming into Laptop (only if external)

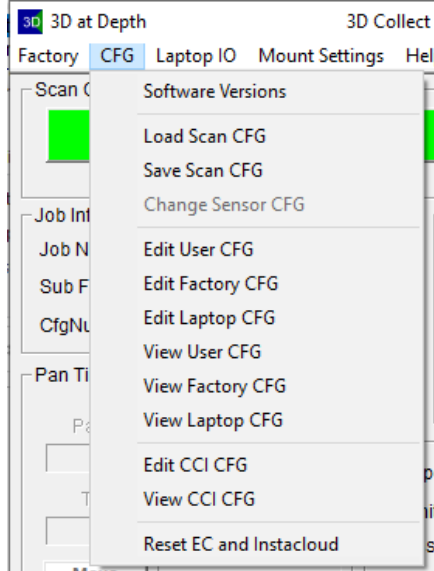
12. Status Message section: Displays EC, InstaCloud, RTV, and 3D Collect, messages.

13. Temp Bar section

- | | |
|--------------------------------|--|
| a. Lsr | Laser temperature (driver heat reject) |
| b. Dig | Digitizer temperature |
| c. MPB | |
| i. Power Board Temperature 1 C | |
| ii. Board Temperature 2 C | |
| iii. Humidity % | |
| d. OCB (optical control board) | |
| i. OCB Temp C | |
| ii. Humidity % | |
| e. OPBT | Optical Power Board Temp |
| f. Voltage | Ok / Fault |
| g. FAULTS | None/Fault name |
| h. Pitch | Current pitch reading |
| i. Roll | Current roll reading |
| j. Temp | Current pitch roll temperature |

5. CFG Menu

Configuration are set using the configuration tab and selected submenu. The submenu configurations are shown below however some parameters are only useful in factory mode and beyond the scope of this user manual. Configurations are parameters that are needed for flexibility and change from job to job but usually will have the same value throughout a job or while operating in a specific setup. It is highly recommended that the Laptop and User parameters are reviewed at the start of each job even if they are not changed. Laptop parameters are stored on the Laptop while User and Factory parameters are stored on the sensor. Only the Remote operations role of Controller may modify parameters. Remote operation roles of Standby or Observer can only view parameters but may not make changes.



Software Versions: Show what version of software is running in the system

Load Scan CFG: Loads a previously existing set of 3D Collect scan settings into 3D Collect.

Save Scan CFG: Saves the current 3D Collect scan settings to a file.

Edit User CFG: Loads the binary Sensor User config file for editing.

Edit Factory CFG: Loads the binary Sensor Factory config file for editing.

Edit Laptop CFG: Loads the binary Laptop config file for editing.

View User CFG: Open dialog for loading, viewing, and saving Sensor User config files.

View Factory CFG: Open dialog for loading, viewing, and saving Sensor Factory config files.

View Laptop CFG: Open dialog for loading, viewing, and saving Laptop config files.

Edit CCI CFG: Loads the binary CCI config file for editing.

View CCI CFG: Open dialog for viewing CCI config files.

Reset EC and InstaCloud: Command for EC and InstaCloud to exit and restart

6. How to Install Simulator

The first step is to perform a standard software install. This is already done on all the sensor laptops, but if a work laptop is going to be used, here is how to do it. If you already have the standard software installed and only need the simulator, then skip ahead to step number 7.

6.1. Get the latest software

Link to the Software Sharepoint> Latest>SL3 site is here (it is good to bookmark this in the browser to make it easier to find later):

 [SL3](#)

First install 3DTools_v045.msi

1. Install the support package with an old version of the tools. Download then install *.msi; Share point link:

 [3DTools_v045.msi](#)

at SharePoint>General>Latest>SL3, File is 3DTools_v045.msi

2. This Generates folders on the C drive: C:\3D, C:\3D\Cfg, C:\3D\Log
3. Add Folder C:\3D\doc
4. Also add the folder C:\Data, if not already there. It helps to put all the riaat files in a common folder. I try to organize them by project name in the Data folder.
5. Use this share point link to get the Latest software

 [Latest](#)

at SharePoint>General>Latest> then select Folder SL3 Copy to folder (on install computer) C:\3D at Depth

*.exe ... this will be the latest 3D Collect, 3D Point Cld, ChangeHdr.

No need to copy EC-SL3 or InstaCloud as these are normally on the sensor, but it also will not hurt anything.

Copy in folder dlls (in the Latest>SL3) all files to the same above location, C:\3D at Depth

Select the folder x64 (in the Latest>SL3) and copy to folder (on install computer) C:\3D at Depth\x64

*.exe ... this will be the latest 2D Viewer, 3D CloudMotion, 3D CloudStatic and RTV.

Copy in folder dlls (in the Latest>SL3>x64) all files to the same above location, C:\3D at Depth\x64

Make a copy of the specific RTV SLX_vX.XX.XX.exe and rename the copy to "RTV SLX.exe"

This is so that if the GUI is launched, then it will also launch the RTV with it, automatically.

Select the folder Documentation>Manuals (in the Latest>) Copy to folder (on install computer) C:\3D\doc

*.pdf ... these are all the help files over several versions, but easiest to get them all.

6. Often shortcuts are made to 3D Collect, 3D Clouds, 2D Viewer and ChangeHdr to be placed on the desktop, but this is up to the user.

6.2. Install of simulator versions of code

The simulator is optional but is very useful for training and practicing using the system. Scripts and sequences can be tested on it as well as general operation.

7. (Optional) Install of simulator versions of code (continued from above)

Select the folder Simulator (in the Latest>) Copy to C:\3D at Depth and the x64 in C:\3D at Depth\x64.

Copy the Latest>Simulator>dlls to C:\3D at Depth

Copy the Latest\Simulator\dlls\64LaptopForSim to C:\3D at Depth\x64.

3D Collect SLX *.exe (released version) will run with simulator versions of EC and instaCloud.

EC-SL3_SIM*.exe, InstaCloud-SLX*Sim.exe, IOCtrlTester_sl3_Sim*.exe

In C:\3D at Depth Make a copy of InstaCloud-SLX*Sim.exe and rename it to InstaCloud-SLX.exe

In C:\3D at Depth\x64 Make a copy of RTV SLX_*.exe and rename it to RTV SLX.exe (this is the normal version - no simulator needed)

There is also a folder that **may or may not be needed**, try running the simulator first and if there are errors or the program just closes, then copy

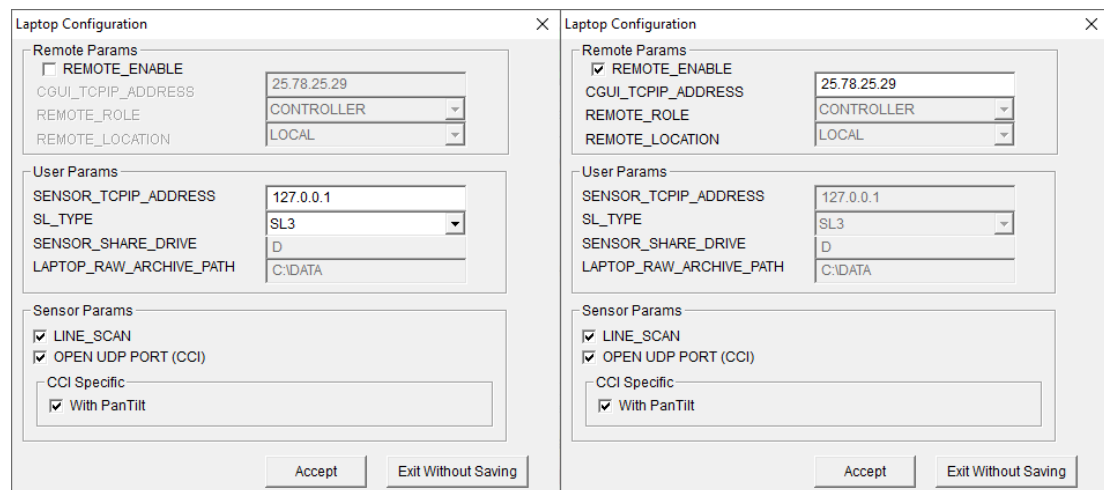
Latest>Simulator>dlls>to Window System32 *.* to C:\Windows\System32

If dlls already exist, skip them the first time. Only if simulator does not run do you want to replace them.

8. For Simulator - Configuration settings, Run 3D Collect SLX* (don't run EC, it will just slow you down at this point):

The simulator must be setup with parameters to run locally. Ignore warning about EC not initialized. It is ok if parameter files do not exist – accept defaults then change. The CCI can be selected for simulation as well, although this is less common, if you wish to use the Command and control interface (remote operations low bandwidth command option). Below shows the box “OPEN UDP PORT (CCI)” checked, but for normal operation, this should be left unchecked.

Left is the “Prime” operator (normal mode), Right is the Remote Operator



The TCP IP address is set to 127.0.0.1 to point to your own computer. The simulation could also run on a different computer and then IP address of that computer would go in this spot if that is the configuration desired.

Double check the USER PARAMETERS - the pan/tilt is simulated, the CTD is not - so pick air or manual entry of the CTD. Must **Accept** the update so that the SENSsor RAW ARCHIVE PATH is updated for simulation. Example:

Sensor User Configuration
✕

Parameters

SENSOR_RAW_ARCHIVE_PATH	C:\DATA
MOTION_SCANS_PER_FILE	500
PAN_PRE_HOME_ANGLE	0.000
TILT_PRE_HOME_ANGLE	0.000
PAN_HOME_TIMEOUT_SEC	150.000
TILT_HOME_TIMEOUT_SEC	60.000
PAN_SPEED_DEG_SEC	1.400
TILT_SPEED_DEG_SEC	1.400
PAN_OVERSHOOT_DEG	4.000
PAN_TILT_STABILITY_DEG	0.300
CTD	Factory Mode-Air
EMERGENCY_SHUTDOWN	TRUE
GPS_SYNC_CLOCK	NO_TIME_SYNC
L_D_CABLE_SET	PRIMARY
ARCHIVE_RAW_DATA	FALSE
ARCHIVE_RIAAT_DATA	FALSE
SENSOR_CFG_PATH	C:\3D\CFG
INS_DATA_TYPE	NO_NAV_DATA

PAN_TILT_TYPE	SIDUS
PAN_TILT_LOCATION	OPTICALHEAD
PAN_TILT_METHOD	COMM
PAN_TILT_PORT	5
PAN_TILT_BAUD_RATE	9600

☒ Pan Only ☐ Pan and Tilt
☒ Auto Brake ☐ Manual Brake

PAN_ACCEL_DEG_SEC2	500.0000
TILT_ACCEL_DEG_SEC2	500.0000
PAN_TILT_HOLD_AMPS	0.12500
PAN_LOGGING_PERIOD_S	4

Fault Enables

☒ PT Supply V	☒ OCB Temperature
☒ PT Current A	☒ OCB Humidity
☒ PT Linear Comp	☒ PB Temperature 1
☒ PT Leak	☒ PB Temperature 2
☐ Pan Temperature	☒ PB Humidity
☒ Tilt Temperature	☒ Digitizer Temperature
☒ OPB Temperature	☒ Laser Temperature

Accept

Exit Without Saving

Setup the Factor parameters, Password to get in is "3d8depthcfg". If your Sensor serial number is SL3N-XXX then it is nuclear and you can perform nuclear size scans (10,000 x 1450 points). If the number is SL3-XXX, then you are restricted to normal size scans (1450 x 1450 points). Must **Accept** the update so that the CFG_PATH is updated for simulation.

Factory Configuration

Data SENSOR_SERIAL_NUMBER: SL3N-000 RAW_ARCHIVE_PATH: C:\DATA		Comm Ports OCB_COMM_PORT: COM5 OCB_COMM_CFG: 115200,N,8,1,10000 PANTILT_COMM_PORT: COM14 PANTILT_COMM_CFG: 9600,N,8,1,10000 AUXSENSOR_COMM_PORT: COM6 AUXSENSOR_COMM_CFG: 115200,N,8,1,10000		Air Range Calibration T1_AIR: 4.500000 FF_AIR: 1.000000		Emergency Fault Values OCB_TEMPERATURE_LIMIT_C: 55.00 OCB_HUMIDITY_LIMIT_%: 50.00 PB_TEMPERATURE_LIMIT_1_C: 50.00 PB_TEMPERATURE_LIMIT_2_C: 50.00 PB_HUMIDITY_LIMIT_%: 50.00 DIG_TEMPERATURE_LIMIT_C: 46.00 PAN_TEMPERATURE_LIMIT_C: 50.0000 TILT_TEMPERATURE_LIMIT_C: 50.0000 LSR_TEMPERATURE_LIMIT_C: 50.00 OPB_TEMPERATURE_LIMIT_C: 50.00 CFG_PATH: C:\3D\CFG	
Quad Angle Calibration AZ_AI_NEG_V_TO_DEG: 3.9911001 AZ_AI_POS_V_TO_DEG: 3.9902999 EL_AI_NEG_V_TO_DEG: 3.9856999 EL_AI_POS_V_TO_DEG: 3.9890001		Water Range Calibration T1_WATER_G4000: 4.3740001 FF_WATER_G4000: 0.9832500 T1_WATER_G3000: 4.3652000 FF_WATER_G3000: 0.9830500 T1_WATER_G2000: 4.4187999 FF_WATER_G2000: 0.9834400 T1_WATER_G1000: 4.5278001 FF_WATER_G1000: 0.9834800		T1_WATER_G400: 4.3870001 FF_WATER_G400: 0.9833300 T1_WATER_G300: 4.3694000 FF_WATER_G300: 0.9831600 T1_WATER_G200: 4.0000000 FF_WATER_G200: 1.0000000 T1_WATER_G100: 4.0000000 FF_WATER_G100: 1.0000000		T1_WATER_G4: 4.0000000 FF_WATER_G4: 1.0000000 T1_WATER_G3: 4.0000000 FF_WATER_G3: 1.0000000 T1_WATER_G2: 0.0000000 FF_WATER_G2: 1.0000000 T1_WATER_G1: 4.0000000 FF_WATER_G1: 0.0000000	
Mailbox Pan Tilt Settings PAN_COMP_ZERO_IP1: 0 PAN_COMP_ZERO_IP2: 0 TILT_COMP_ZERO_IP1: 0 TILT_COMP_ZERO_IP2: 0		PT_SUPPLY_MAX_LIMIT_V: 30.0 PT_SUPPLY_MIN_LIMIT_V: 20.0 PT_CURRENT_MAX_LIMIT_A: 0.310 PT_COMP_LIMIT_MM: 1.000 PT_LEAK_LIMIT: 2.00		Temp Calibration TEMP_COMP_POLY2: -0.0002553 TEMP_COMP_POLY1: 0.1014739 TEMP_COMP_POLY: -2.2257969		Additional Configuration OCB_DIFF_COMMS: TRUE SCANNER_SHIFT_CTS: 0.500000 AUTO_SHUTDN_TIME_SEC: 1200 LASER_START_TIME_SEC: 4	
External Temperature Calibration EXT_THERM_COMP_POLY0: 0.000000000 EXT_THERM_COMP_POLY1: 1.000000000 EXT_THERM_COMP_POLY2: 0.000000000 EXT_THERM_COMP_POLY3: 0.000000000 EXT_THERM_BOARD_0: 0.000000000 EXT_THERM_BOARD_1: 1.000000000		Pitch Roll Calibration ROLL_EQN_OFFSET: 0.000000 ROLL_EQN_X: 1.000000 ROLL_EQN_X2: 0.000000 ROLL_EQN_X3: 0.000000 ROLL_COMP_POLY0: 0.000000000 ROLL_COMP_POLY1: 1.000000000 ROLL_COMP_POLY2: 0.000000000 ROLL_COMP_POLY3: 0.000000000		PITCH_EQN_OFFSET: 0.000000 PITCH_EQN_Y: 1.000000 PITCH_EQN_Y2: 0.000000 PITCH_EQN_Y3: 0.000000 PITCH_COMP_POLY0: 0.000000000 PITCH_COMP_POLY1: 1.000000000 PITCH_COMP_POLY2: 0.000000000 PITCH_COMP_POLY3: 0.000000000		T0 Configuration PROC_NUM_LOS: 5 NUM_PROC_UPSAMPLE: 2 MF_T0_POSITION: 43 MF_START_PROC: 120 TRIGGER_LEVEL_MV: 300 ☒ T0_PROCESSING	
				X_OFFSET_M: -0.013200 Y_OFFSET_M: 0.145300 Z_OFFSET_M: 0.192400 FRNTGLS_TO_FRNTSNSR_M: 0.004000 LASER_SERIAL_NO: None		Accept Exit Without Saving	

- If you have the simulator - Try running EC-SL3_SIM*.exe, this will automatically launch InstaCloud-SLX.exe if it is there.
Launch 3D Collect SLX*, which will also launch the RTV if the name is correct.
- Try running 3D CloudMotion, make sure it comes up. Same with 2D Viewer to check that software is functional. (optional – but a good way to experiment with these tools)

That should be everything you need. I usually place shortcuts on the desktop for the simulator version of the applications, but that is up to the user. Please let me know if anything does not work or if there are missing steps where it is unclear what to do next.

7. Running Scans with Simulator or with File Playback

Using the simulator built into EC to play back data (advanced data playback / Selection of a specific digitizer data set). If you do not make a selection while running in simulation mode, then default is the pattern 2 with the 3 point return.

In CGUI, Set the

Job Name = "3D_FACTORY_SIM" = access to both the digitizer sim or used for file playback/replay.

Sub Folder = "SIM_PATTERN_1"

Sub Folder = "SIM_PATTERN_2"

Where the first two choices are:

Sim pattern 1 – defines a constant LOS radius at 2/3 maximum requested scan range

Sim pattern 2 – defines simulated raw data, 3 bands, some noise at 1/2, 3/4, and 5/6 of maximum defined range

Otherwise set

Sub Folder = "AUTO_MODE_SIM" and playback is used – this will send the RIAAT point data back through processing.

File Tag is the name of the file you want to play back. It must be located in the directory:

"C:\Data\Sim\<file Tag string>.raw"

System does not currently support playback of *.riaat files (yet)

It has been a few years since I have setup a completely new system so I might be missing stuff.