straightpoint

USER GUIDE

WCOGS
Wireless Centre of Gravity Software

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1. Introduction

Intended Use

The Straightpoint Wireless Centre of Gravity Software (WCOGS) is intended to be used by professionals in the heavy lifting and weighing industry for the determination the centre of gravity of large and heavy structures using multi-arrays of compression loadcells.

The software and required drivers is provided on a USB memory stick.

The software licence is free.

Additional Required Items & Documents

- Straightpoint SW-USBBS Transceiver (supplied with software);
- Straigntpoint WNI Series Compression Loadcells (minimum 3; maximum 30);
- Loadcell User Guide SU3342;
- Desktop computer /laptop/tablet.

Computer System Requirements

- Intel i3 processor with minimum 2 GB RAM;
- Windows XP, Vista, Windows 7 or Windows 8 (must have English language option selected);
- Spare USB port (not hub).

2. System Overview

General

When moving large industrial items such as absorbers, generators, turbines, reactors, boilers, towers, locomotives, boats, military equipment or offshore industry parts such as oil rigs and production platforms, heavy lift companies very often need to be able to quickly report the weight and centre of gravity of such loads.

The Straightpoint wireless centre of gravity system uses telemetry compression loadcells that, in conjunction with the WCOGS software, allows the monitoring of individual load points in real-time, and the determination of the dynamic centre of gravity.

The system can weigh and calculate centre of gravity of objects and structures weighing anywhere from 20t - 4000t.

WCOGS Software

Features;

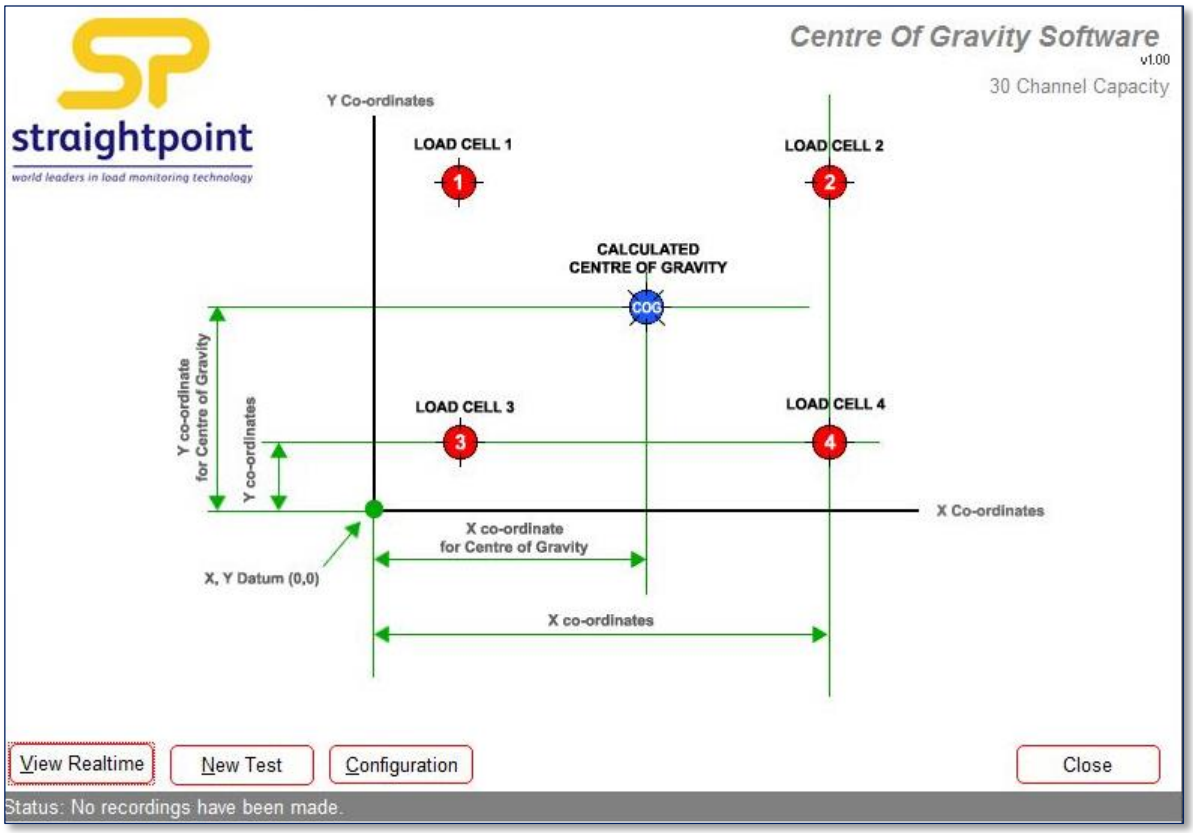
- 100% Wireless;
- Simple and quick installation;
- User friendly interface;
- Between 3-30 loadcells of the same capacity can be used at any one time;
- ISO19901 compliant;
- 500m range;
- On screen, real time centre of gravity view;
- Simultaneous data logging and viewing;
- Three weighing’s per report with averages;
- Plot loadcell positioning using measurements or GPS co-ordinates;
- Extra fields for operator, client, wind speed and temperature available for reporting;
- Full mass, load and centre of gravity analysis reporting and printing;
- Full range of accessories for wired, wireless PC and PLC integration via analogue or serial output.

3. Installation & Set Up

Installation

1. Inset the USB key in to a spare USB port on your computer/laptop (do not use a hub) and follow the on-screen instructions to install the software.
2. Remove the USB Key.
3. Insert the SW-USBBS Transceiver into the USB port, and let the drivers install.

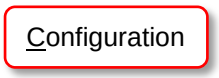
4. Run the software from the desktop or start menu icon and you will be presented with the screen below.



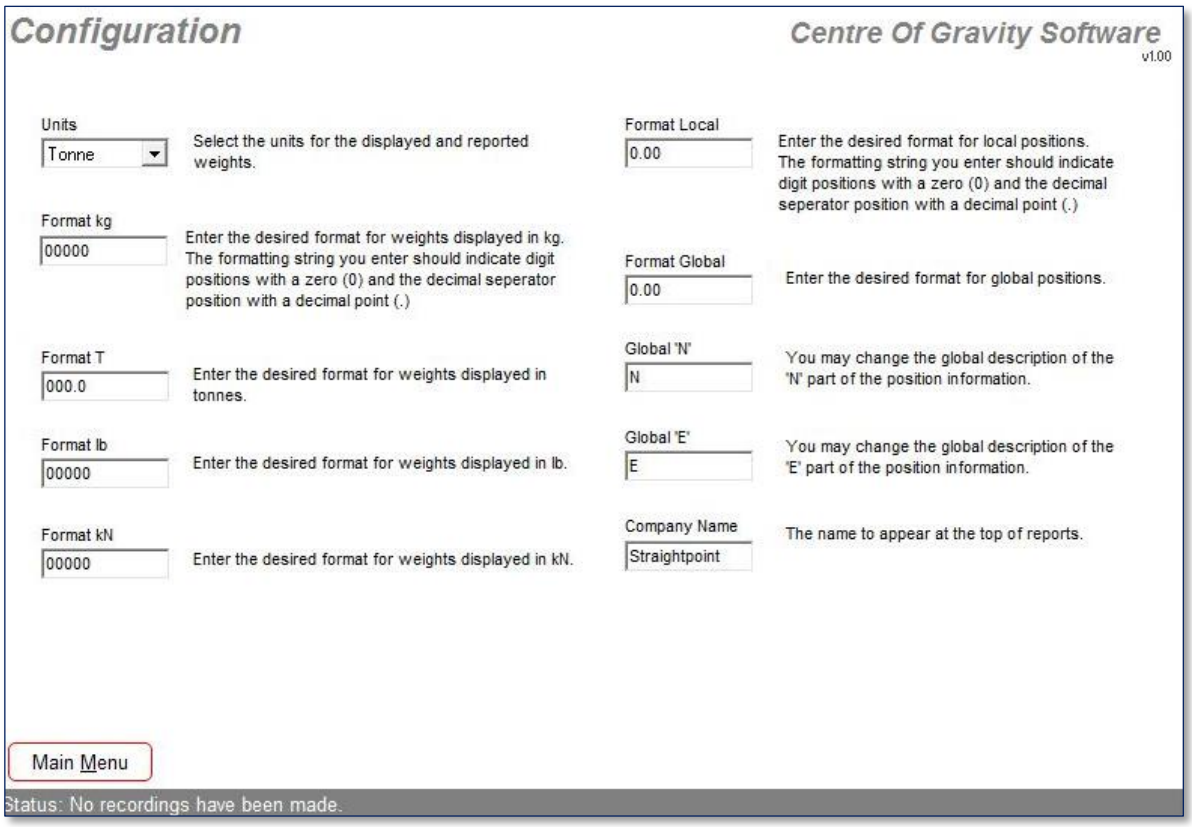
Set Up

To set up loadcells for the first use;

1. Click on the ‘configuration’ button



This will reveal the following screen:



2. Enter configuration details.

Units – select the units required for weighing from the drop-down list.

Format kg – if using kg units, enter weighing increments e.g. if weighing in 50kg units, enter ‘00050’.

Format T – if using tonne units, enter weighing increments e.g. if weighing in 0.05t increments, enter ‘000.05’.

Format lbs – if using lb units, enter weighing increments e.g. if weighing in 100lb increments, enter ‘00100’.

Format kN - if using kN units, enter weighing increments e.g. if weighing in 0.5kN increments, enter ‘00050’.

Format Local – set this if measuring and recording measurements between the loadcells locally rather than using GPS co-ordinates, e.g. if using a tape measure. And measuring in metres to the nearest 10mm, enter format as ‘0.01’.

Format Global – set this if measuring and recording measurements between the loadcells using GPS co-ordinates. If GPS co-ordinates are to 4 decimal places, enter format as ‘0.0001’.

Global N – this would normally be ‘North’, but change if required.

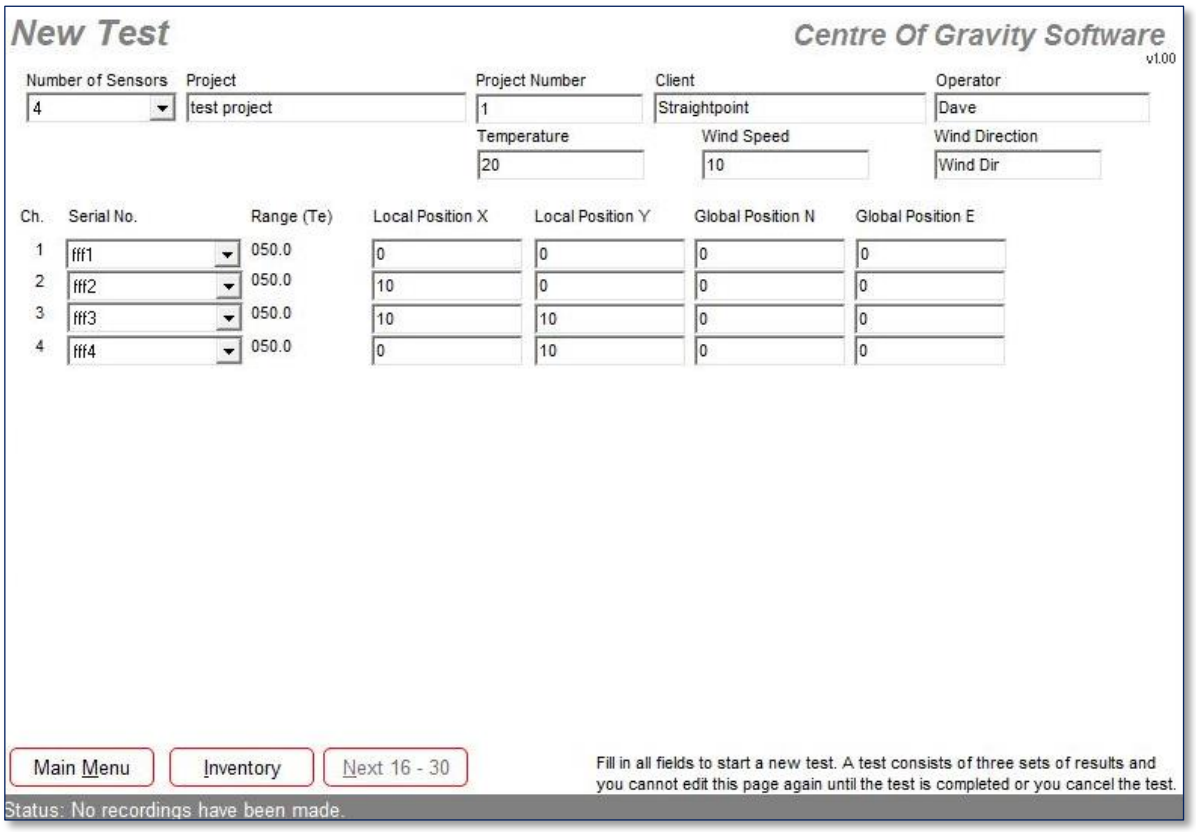
Global E – this would normally be ‘East’, but change if required.

Company Name – Enter your company name.

3. When complete click ‘Main Menu’.

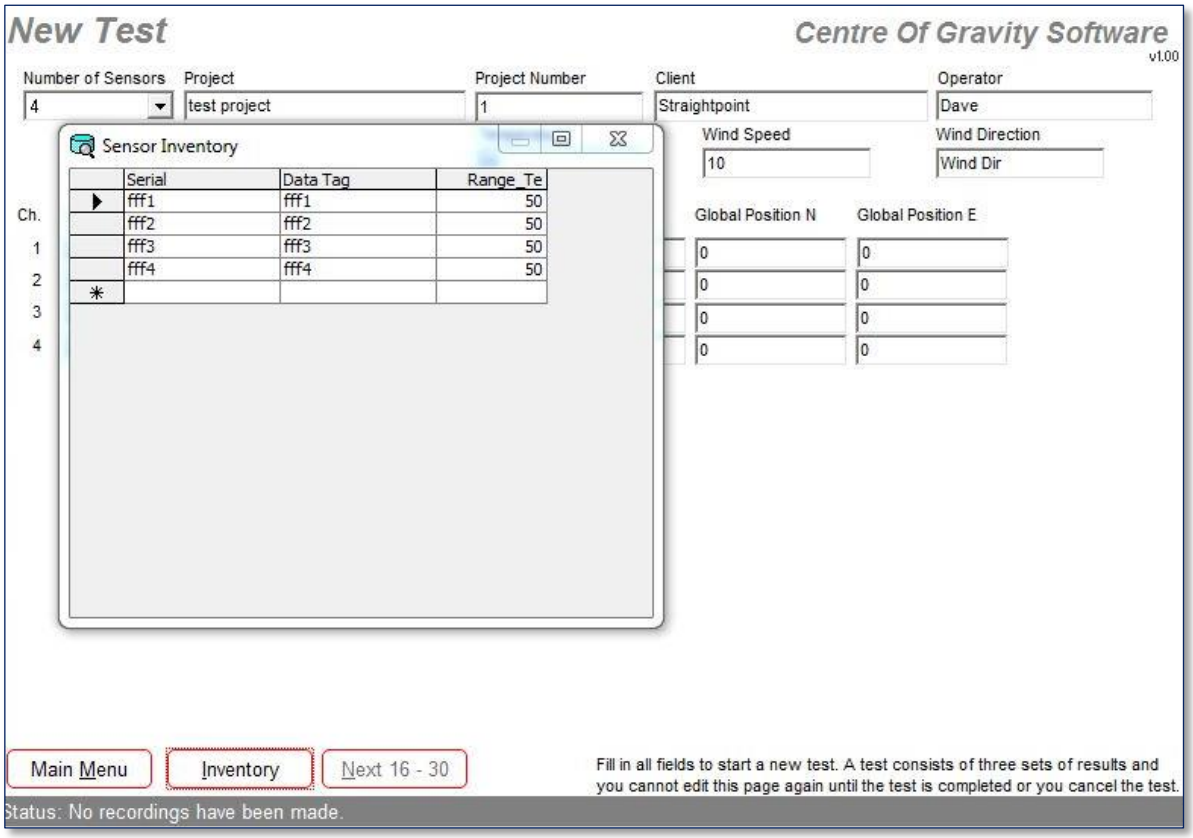
4. Now set up the loadcells to be used. Click on the ‘New Test’ button.

This will reveal the following screen:



5. Add the loadcells to be used. Click on the ‘Inventory’ button.

This will reveal the following screen.



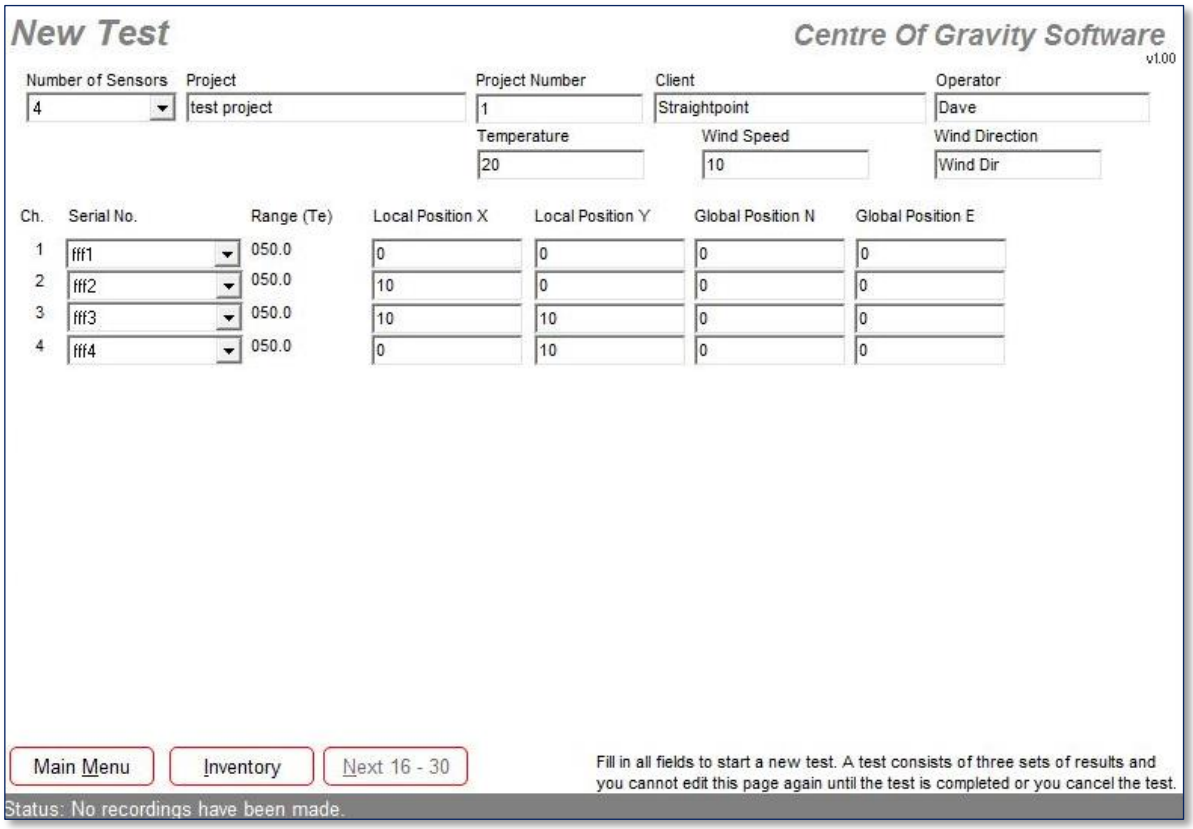
6. For each loadcell enter:

Serial Number – this is engraved on the loadcell, and on the calibration sticker.

Data Tag – This is a unique code for the loadcell, and is always the last four digits of the loadcell serial number. This is 2290 in the above photograph.

Range – Enter the capacity of the loadcell. This can be found on the loadcell, and also on the calibration certificate.

7. Once all of the loadcells have been added, close the screen by clicking ‘X’ in the top right hand corner. This will return you to the ‘New Test’ screen where you can set up for a new test.



8. Enter basic test information.

Number or Sensors – enter number of loadcells to be used for the test.

Project – enter project name if and as required.

Project Number – enter project or job number if and as required.

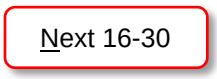
Client – enter client name if and as required.

Operator– enter operator name if and as required.

Temperature – enter ambient temperature of test location if and as required.

Wind Speed – enter wind speed at test site if and as required.

9. From the drop-down boxes, choose the loadcells or 'sensor number' to be used for the test.
10. Enter the x any co-ordinates for the position of the loadcells in either local or global measurements. In the screenshot, shown as 1o metres apart with the first loadcell at the datum 0,0.
11. If more than 16 loadcells are to be used in a single test then click on the 'Next 16-30' button to view.



12. Set up is now complete and the system ready to be used. 'Click Main Menu' to proceed.

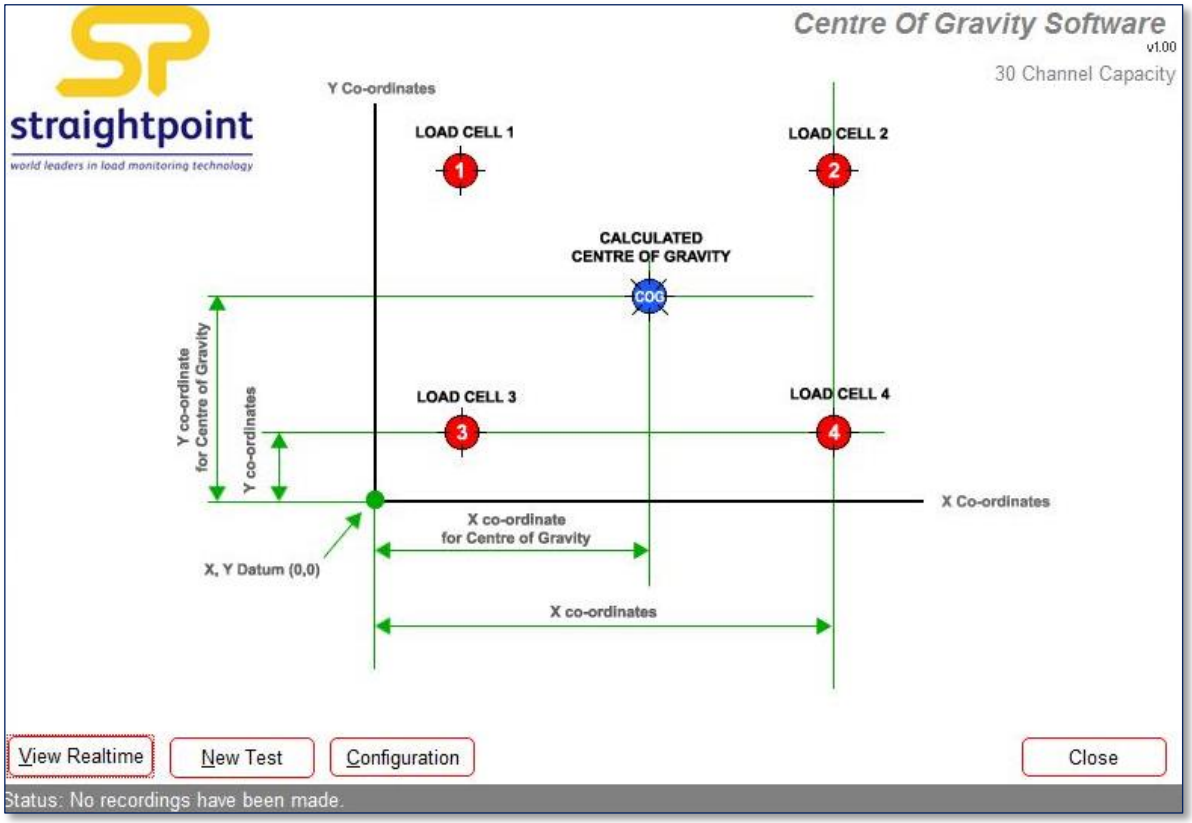
Using the System

Safety Note

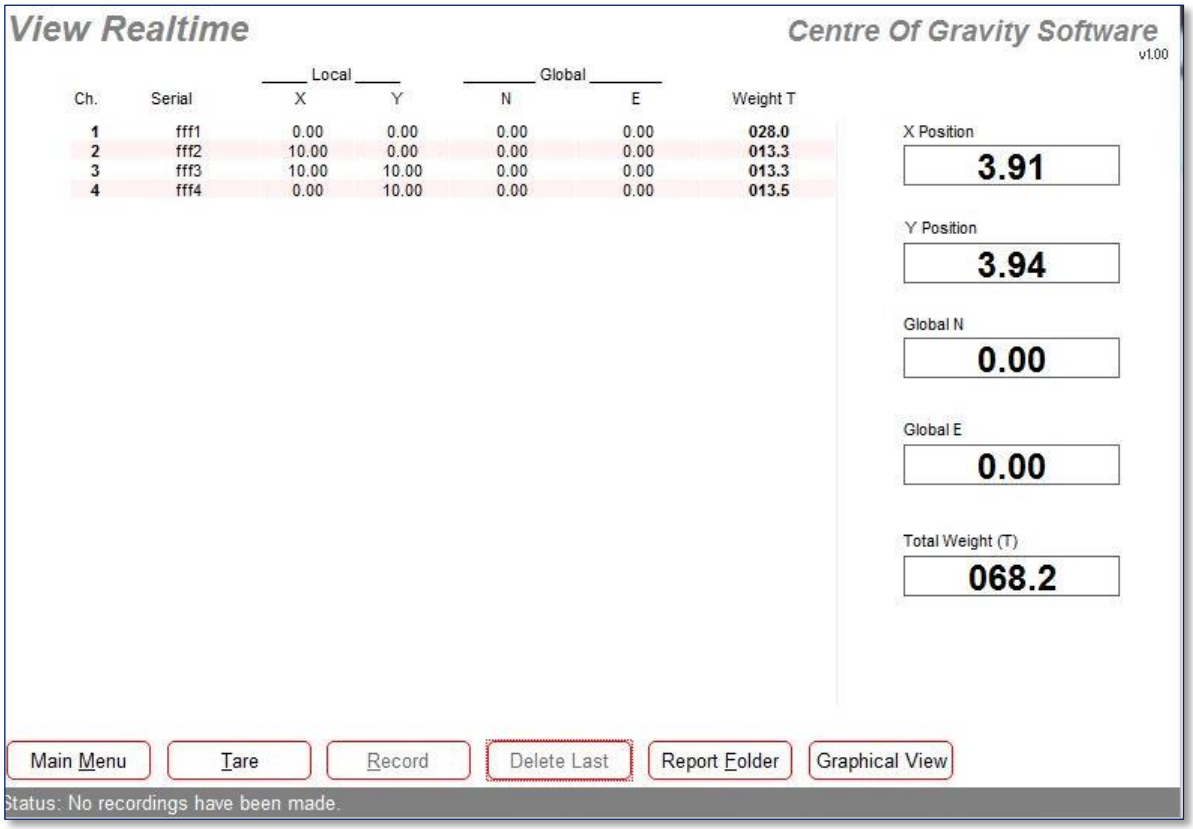
Ensure Straightpoint wireless compression loadcells are handled and used in accordance with the safety instructions within the Loadcell User Guide SU3342. This is supplied with the loadcell.

Other equipment used in conjunction with Sraightpoint loadcells, such as jacks, hydraulic cylinders, chains, strops, lifting frames, and other material handling equipment, must be inspected, checked, handled and used in accordance the appropriate manufacturer/supplier information and/or with all pertinent regulatory requirements and Industry Standards/Codes of Practice.

Realtime Weight & Centre of Gravity



1. In the main screen, click the ‘View Realtime’ button’.



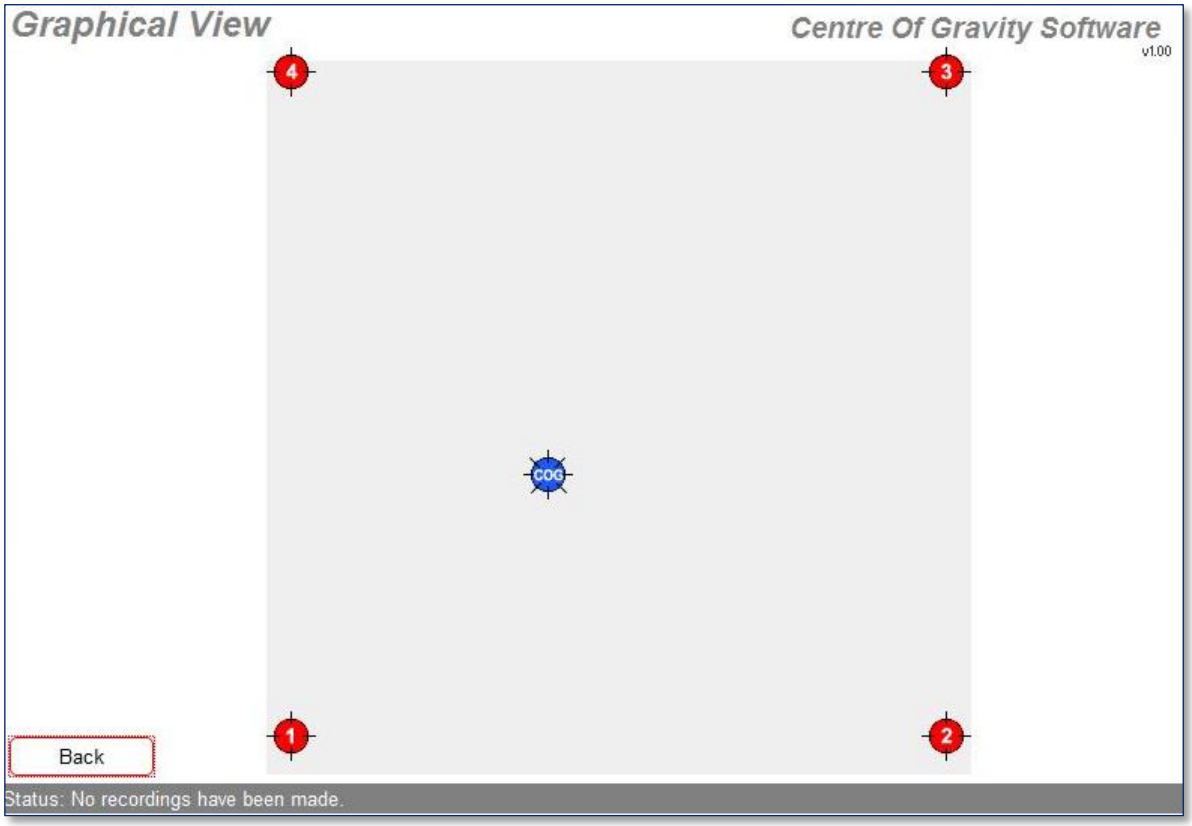
2. This screen will show each of the loadcells by serial number, their local or global position, and the load on each load cell in the chosen units.
3. The readings on the right side of the screen show the centre of gravity co-ordinates, locally and globally. At the bottom, the total weight of the item under test is given.

Graphical View

1. Once the load has stabilized on the loadcells, the live centre of gravity can be viewed graphically. This is a useful visual realtime check of the centre of gravity in relation to the loadcells
2. To do this, click on the ‘Graphical View’ button.

Graphical View

This will reveal the screen shown below.



3. To revert to viewing realtime data, click the ‘Back‘ button.

Back

This will return you to the View Realtime screen.

Weighing Report

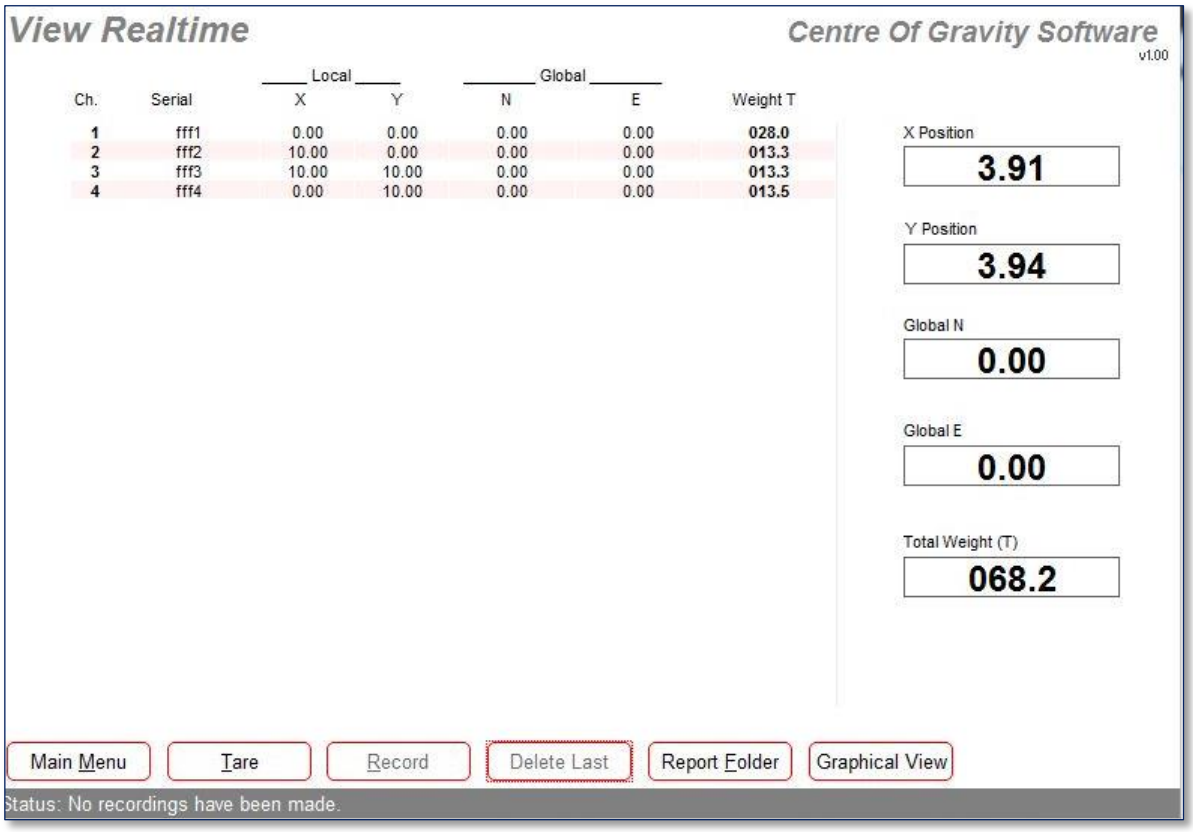
1. A weighing Report can be generated from the View Realtime Screen.
2. A minimum of three readings need to be taken to generate the report. The status bar at the bottom of the screen will inform you how many recordings have been made.
3. To store a weighing, click on the ‘Record’ button

   Record

4. If the last reading is erroneous, due to high winds or similar, it can be deleted by clicking on the ‘Delete Last’ button.

   Delete Last

5. A further reading can then be taken.



6. Once all three weighings have been completed, click on the ‘Report Folder”.

   Report Folder

7. All reports generated will be listed in the window.
8. Open the last, or required report to view and print if required.

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Date:	27 November 2015
Operator:	1
Project:	test project
Project Number:	1
Client:	Straightpoint

WEIGHING RESULTS
test project

Environmental Conditions

Temperature	Wind Speed	Wind Direction
20	10	Wind Dir

Global Coordinates			Local Coordinates			Load Cell Input (T)				
Cell Position	N	E	Cell Position	X	Y	Cell Position	Weighing 1	Weighing 2	Weighing 3	Mean
1	0.00	0.00	1	0.00	0.00	1	028.0	028.0	028.0	028.0
2	0.00	0.00	2	10.00	0.00	2	013.3	013.3	013.3	013.3
3	0.00	0.00	3	10.00	10.00	3	013.3	013.3	013.3	013.3
4	0.00	0.00	4	0.00	10.00	4	013.5	013.5	013.5	013.5
						TOTALS	**068.2**	**068.2**	**068.2**	**068.2**

Global COG Result

	Weighing 1	Weighing 2	Weighing 3	Mean
COG N	0	0	0	0.00
COG E	0	0	0	0.00

Local COG Result

	Weighing 1	Weighing 2	Weighing 3	Mean
COG X	3.91	3.91	3.91	3.91
COG Y	3.94	3.94	3.94	3.94

				Global	Local
MEAN TOTAL WEIGHT (T):	068.2				
Standard Deviation Weight:	0.01		Mean Centre of Gravity COG X and N	0.00	3.91
Standard Deviation in Percent:	0.01		Mean Centre of Gravity COG X and E	0.00	3.94
			Standard Deviation COG N	0.00	
			Standard Deviation COG E	0.00	

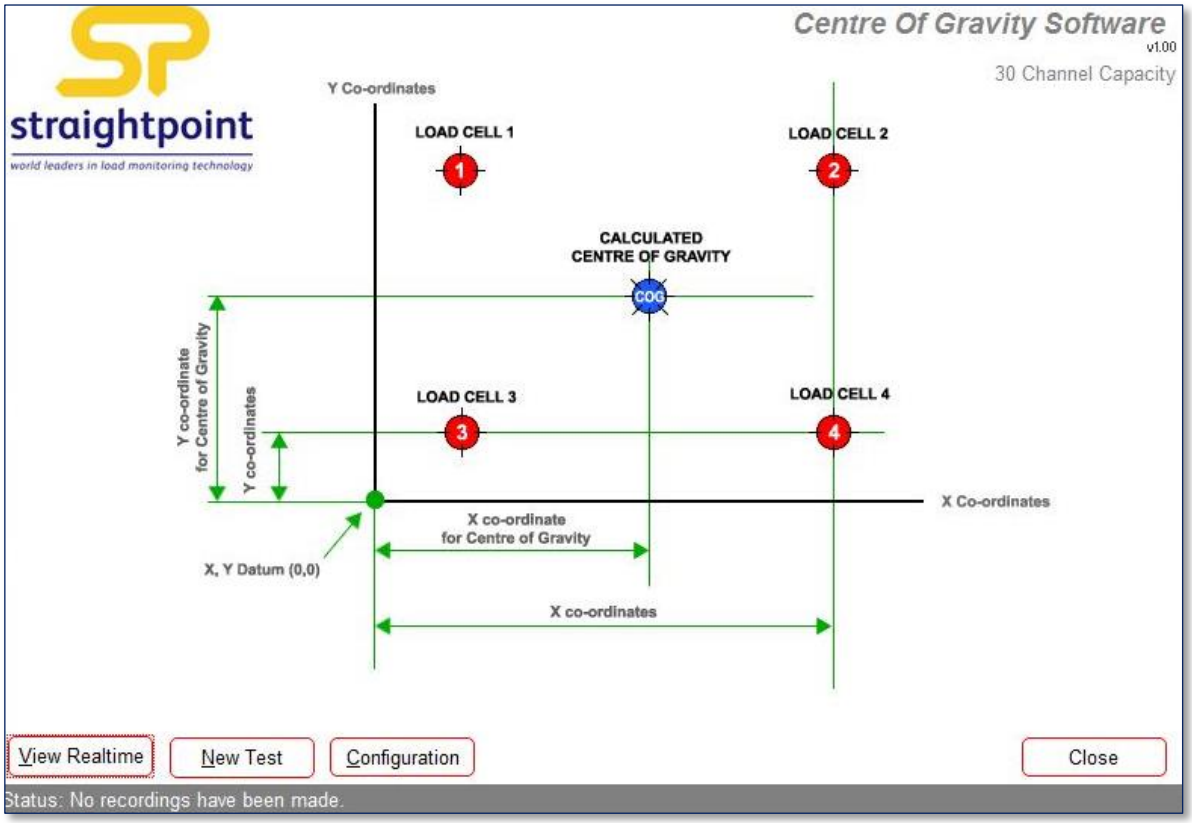
	Name	Signature	Date
Straightpoint Representative			
Client Representative			
Customer Representative			

Sample Weighing Report

Test Completion

1. To finish weighing, click on the ‘Main Menu’ button.

Main Menu



2. Close the program by clicking on the ‘Close’ button.

Close