



Integrated Rig Instrumentation System

iRIS DRILLER’S INTERFACE

Quick Start Guide for *JOIDES RESOLUTION*

READ IN CONJUNCTION WITH THE FOLLOWING MANUALS:

- iRIS General User’s Quick Start Guide
- iRIS General User’s Manual
- iRIS Operations Superintendent Quick Start Guide
- iRIS Operations Superintendent Manual

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iRIS – DRILLER’S Interface, the TL;DR version

The iRIS Driller’s interface communicates with the iRIS central processing system that is based on a NI cRIO processor in the subsea shop which collects drilling sensor data and input from the driller for depth and weight calculations. The program runs continuously and will automatically run when powered up.

Unlike the current RigWatch system on the JR, there is no master or remote computers to start, the iRIS program is the master computer in this system, and any computer (called clients) on the internal JR network that has the application installed, either the Driller’s Interface or the General User’s Interface for other users, can access the data streams broadcast by the cRIO. The interfaces allow the user to customize their own Rig Instrumentation Systems and collect individual data for their own analysis.

The Driller’s interface has two jobs, 1) display real-time sensor data and 2) receive the driller’s input for depth and weight calculation.

Input from the driller falls into two categories. The first is setup data that is entered before coring operations begin. This includes...

- Weights and length of BHA, knobbies, etc
- Water depth as measured from drill string sea floor tag
- Trigger weights for SLIP and ON BOTTOM indicators

The second type of data is dynamic and requires frequent updates/corrections from the driller. This includes...

- Drill pipe lengths as stands and singles. Also, the drillers must indicate which stand/singles currently make up the drill string.
- Kelly offset correct as calculated in the Drill 2 spreadsheet.
- Indicate what knobbies/subs are in use
- Set the static weight (or use the calculated weights) for WOB
- Indicate when they are ON BOTTOM (ACTIVE).

In addition, the driller can apply corrections to the block position and bit depths.

Drill Pipe Management

Pipe Tally Table Control

Drill pipe tally tables for both 5” and 5-1/2” pipe are provided on the interface tab marked **PIPE**. The values in either table can be loaded from a comma delimited spreadsheet or can be entered manually using the **Load** function. Note, the **Insert** function will automatically open the **Pipe-Tally Edit** window when you are at the end of table and you select a single from a stand not defined.

	5" PIPE			5 1/2" PIPE	
	TOP	MID	BTM	STAND	TOTAL
1	9.68	9.68	9.68	29.04	29.04
2	9.62	9.62	9.62	28.86	57.90
3	9.68	9.68	9.68	29.04	86.94
4	9.73	9.73	9.73	29.19	116.13
5	9.55	9.55	9.55	28.65	144.78
6	9.68	9.68	9.68	29.04	173.82
7	9.66	9.66	9.66	28.98	202.80
8	9.58	9.58	9.58	28.74	231.54
9	9.73	9.73	9.73	29.19	260.73
10	9.73	9.73	9.73	29.19	289.92
11	9.61	9.61	9.61	28.83	318.75
12	9.67	9.67	9.67	29.01	347.76

- Edit Selected
- Insert After
- Delete Selected
- Save
- Load

Single click on any row for Edit, Insert or Delete functions. (Blue highlighted)

Double click to select the current stand just added to the drill string. (Red highlighted)

Use the TOP, MID and BTM check boxes to select singles in the next stand

Will open the **Pipe-Tally Edit** window for the selected stand (Blue)

Insert a new stand after the selected stand (Blue)
This will open the **Pipe-Tally Edit** window

Delete the selected stand (Blue)

Click save data to a comma delimited spreadsheet

Click to load data from a comma delimited spreadsheet

STAND 28.98^M

TOP 9.66 ^M

MID 9.66 ^M

BTM 9.66 ^M

When you select the third checkbox, then the current stand will advance and all check boxes will be cleared.

- APC
- XCB
- RCB
- TRIP**
- WASH
- CASING
- OTHER

In **TRIP** mode, the current stand will advance when the pipe counter sensor is triggered. For this feature to work correctly you must have the correct pipe size table selected.

NOTE: If you miss or have a false double trigger the current stand can be corrected by double-clicking the correct row.

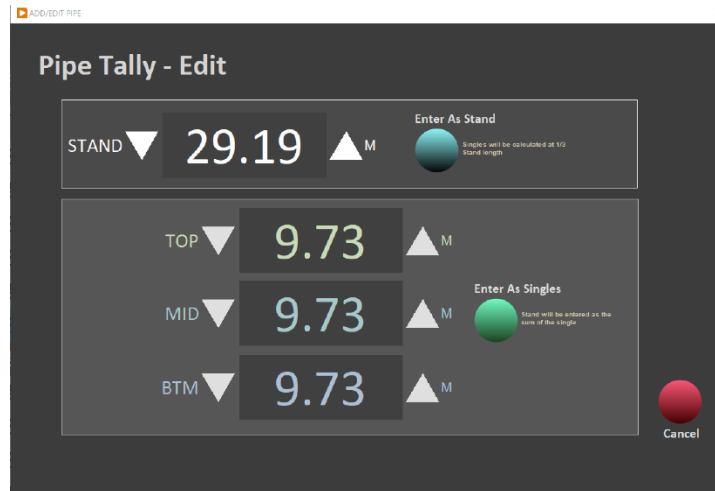
If the pipe counter is triggered and you are at the end of the table, the **Pipe-Tally Edit** window will automatically open so you can define the length of the next stand. When not in TRIP mode the pipe counter is ignored and the selected stand must be advanced manually by either full stands (select row) or by singles using the check boxes.

Pipe Tally Editor

This window is used to edit existing stands or for adding new stands to the pipe tally table.

Stands can be entered as just a full stand length by entering the length and clicking **Enter As Stand** button. The values for the singles will be calculated as the average length of the three singles.

Alternatively, you can enter the individual single length and click the **Enter As Singles** button. The stand length will be the sum of the singles.



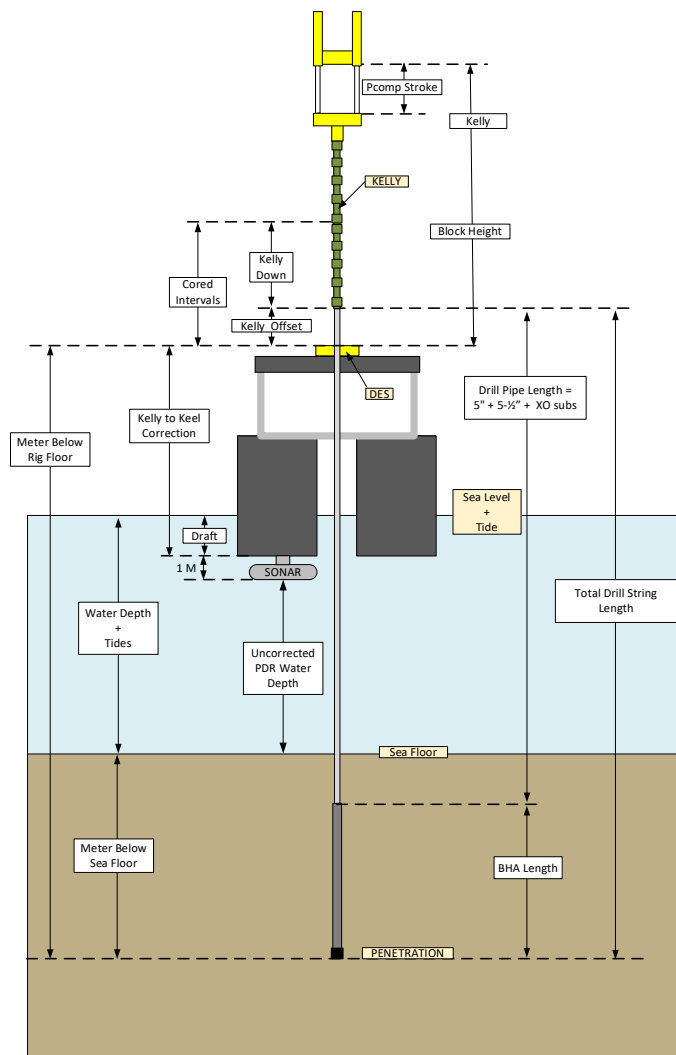
Depth Control

Where did this core come from? Knowing the depth below sea floor of recovered core is critical to a scientific coring operation. Over the years the drilling team aboard the JR have perfected the process using the **Drill2** spreadsheet. Currently iRIS still requires the use of this spreadsheet for calculating Kelly offsets.

Depth control starts with knowing bit depth below rig floor (MBRF). **MBRF** is measured from the top of the **Dual Elevator Stool (DES = 0)**.

Total Drill String Length: This is the sum of all drill pipe in the string (from the 5" and 5.5" pipe tally tables) + BHA length + Cross-over subs. Also, any knobbies not used in the Kelly but as part of the drill string need to be included.

Kelly Down, Kelly Offset and the Cored Interval:



If the length of singles equaled the cored interval, then each connection would end up at the DES. But they do not because singles vary in length and can either longer or shorter than the cored interval. Also, the initial mud line core can result in the Kelly-drill string connection ending above (+) or below (-) the DES. This difference is the **Kelly Offset**. The **Kelly Down** is a position on the Kelly the drill will advance to (rotary coring) or shoot (piston coring) to advance the **Cored Interval**.

NOTE: changes in knobbies or adding a double will affect the Kelly Down value as well

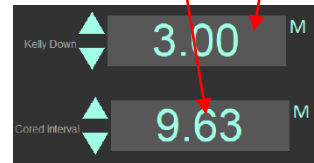
On the interface, go to the **KELLY** tab and copy/paste the values into the controls as shown. The **Kelly Offset** will be calculated used to correct the **Total Drill String** length for the **MBSF**.

Bit depth as meters below sea floor (**MBSF**) is calculated as follows based on the **MBRF** when the sea floor was tagged.

$$MBRF@_{sea\ floor} = MBRF - (Kelly\ to\ Keel\ Correction - Draft)$$

$$MBSF = MBRF - MBRF@_{sea\ floor}$$

Std #	Total DP	DP + BHA	Kelly Dwn	Sub Bttm	Core
	9.62	9.62	3.00		
X	2185.72	2257.73	2260.73	44.83	2-1
	9.63	9.63	3.00		
XX	2195.35	2367.36	2370.36	54.46	2-1
	9.62	9.62	3.00		



Copy the values from the Drill2 spreadsheet to iRIS (control found on the KELLY tab).

Coring Advancement

iRIS updates bit depth by tracking the relative movement of the draw works blocks (**BLKH**). For this to work, iRIS must capture the block position prior to coring (RCB/XCB) or shooting (APC) by setting the **ACTIVE** control to the **START** state. The **ON BTM** control must remain set to the **START** state until cutting the core interval is completed (RCB/XCB) or until the APC has shot and the pressure has bled down.

$$ADV_{ancement} = (MBRF - Kelly\ Offset) + BLKH_{current} - BLKH_{@start}$$

$$Rate\ of\ Penetration = ADV/time$$

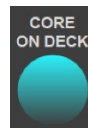


While **ACTIVE** control is set to **START**, iRIS will continuously record coring parameters. These values can be seen on the **CORE SUM** tab of the iRIS interface.

When the **ACTIVE** control is set to **STOP** these values are frozen.

CAUTION! Setting ON BTM to ACTIVE will erase the values and begin the recording process (be careful!).

When the driller clicks the **CORE ON DECK** button these values are copied to the **Core Entry** window and will be used for entering a new core into the LIMS database.

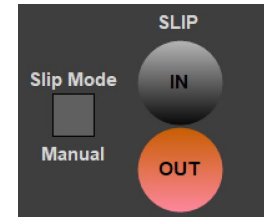


START 00:00:00 - DD/MM/YY		END 10:10:41 - 10/10/22	
ON DECK	10:10:41 - 10/10/22	TOP	0.0 M
ACTIVE HKLD MEAN	126.8 KLB	BTM	-3237.9 M
STATIC HKLD MEAN	18.5 KLB	ADV	-3237.9 M
WOB MEAN	-126.8 KLB	WOB MAX	-122.4 KLB
PENETRATION	0.0 M		
ROP	0.000 M/MIN		
TD TRQ MEAN	-70.5 A	TD TRQ MAX	-64.7 A
TD RPM MEAN	-0.8 RPM	TD RPM MAX	1.2 RPM
STNDP MEAN	24.3 PSI	STNDP MAX	57.9 PSI
		STNDP MIN	-11.9 PSI
MUD STRKS	0 STK		
SPM MEAN	0.0 STK/M	SPM MAX	0.0 STK/M
		SPM MIN	0.0 STK/MM
HEAVE MAX	3.0 M		

SLIP Control

The **SLIP** state can operate in manual where the driller must set the value or automatic where the trigger weight values determine the state. (See Setup section).

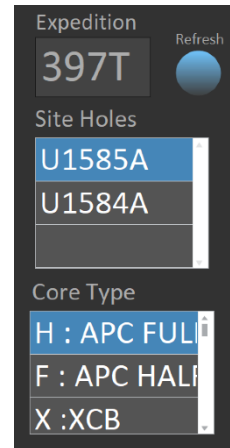
When the **SLIP** state is *IN*, the **ON BTM** control is set to **STOP** and disabled.



Core On Deck (CoD)

On the CORE SUM tab of the interface the driller can set the current expedition, hole, and core type. Both must already be defined before they will show on these controls. Clicking the **Refresh** button will update values from the LIMS database.

The current core number can be set in the **Next Core** control. *Both the core number and type can be changed in the Core Entry window before saving.*

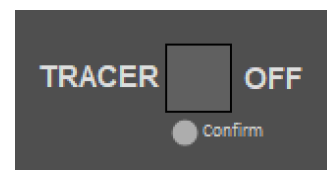


Values with the lighter background color must be filled in by the driller. Values entered from a previous entry will be copied to the next entry. Values with the darker background are initially filled in by iRIS but can be edited by the driller before submitting the new core to LIMS.

TRACER PUMP Control

The Tracer pump rate is set by the technical staff in another application. Also, in the application the tracer pump can be configured to adjust its rate to the SPM rate of the pumps.

NOTE: Drillers should discuss with the IODP technical staff regarding the pumping mode.



The driller can start or stop the pump using the TRACER check box. The technical staff can also turn on the pump. The **Confirm** indicator will show the pump status regardless of who turned the pumps on (**NOTE: Green is ON**).

Setup

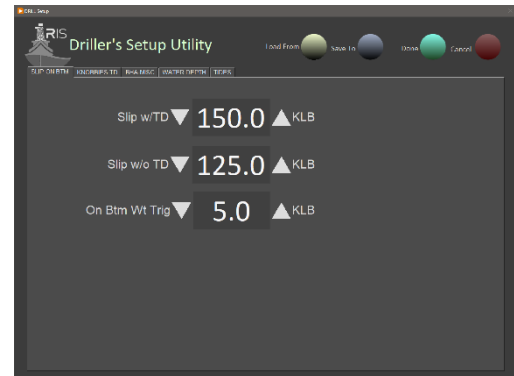
Prior to drilling operations on a hole, the following values must be entered. From the Driller's Interface click the **Setup** button. This will open the **Driller's Setup Utility**. In the window. There are multiple tabs for entering data used by iRIS for depth and weight calculations.



SLIP-ON BTM tab

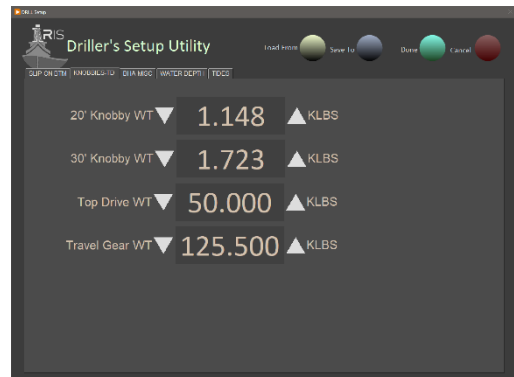
The values entered in **Slip w/TD** (top drive in use) and **Slip w/o TD** are used for automatically setting the slip in and out states.

The **On Btm Wt Trig** can be ignored and will be removed in future versions. The **ON BTM (Active)** state must be set manually.



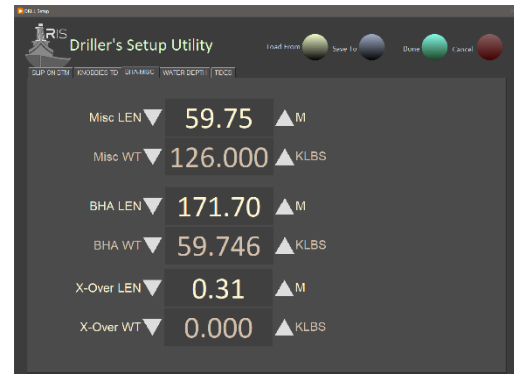
KNOBBIES-TD tab

Enter the weights for the drilling components lists. This is critical for determining **WOB** when using the calculated values for **Static Weight**.



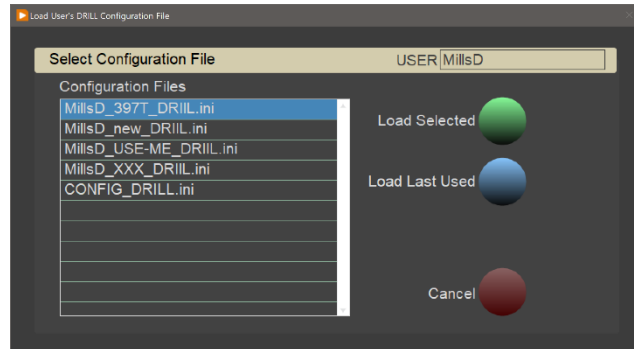
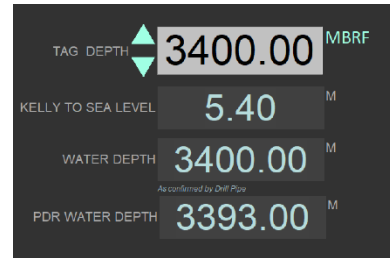
BHA-MISC tab

Enter the weights and lengths for the components listed. These are components installed below the Kelly. **"Misc"** is a catch-all for anything not listed or for unique drill string setup.



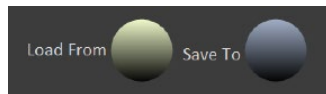
Water Depths

Through another iRIS-integrated application, the technical staff will enter the PDR water depth. When they are done, two values will automatically show up on the **LEN-DEPTH** tab. **PDR WATER DEPTH** value is the corrected water depth from sea level and **WATER DEPTH** value is the corrected water depth from rig floor (DES). While tripping the Driller should copy the **WATER DEPTH** value into the **TAG DEPTH** control this will allow the **BIT MBSF** to show the distance to sea floor. Once you have tagged the sea floor and have the depth by drill pipe, update the **WATER DEPTH** control with the next value. **BIT MBSF** and **PENETRATION** will now show the correct values.



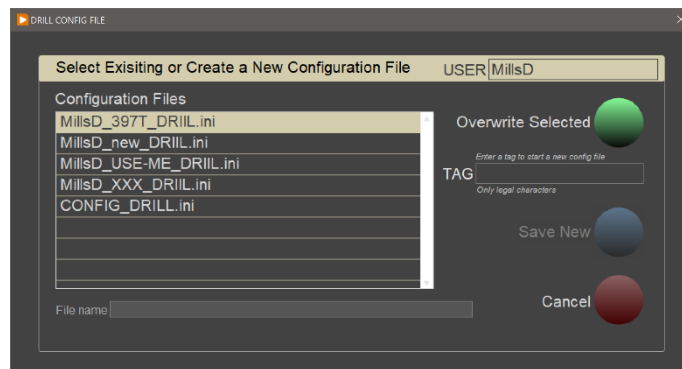
Tides tab (future development)

Loading/Saving Personal Configurations



In the setup window the driller can load a personal configuration file by clicking the **Load From** button. Current configuration can be saved to a personal configuration file clicking the **Save To** button.

NOTE: Personal configuration files are saved to the C:\IRIS\username folder



Navigation Display

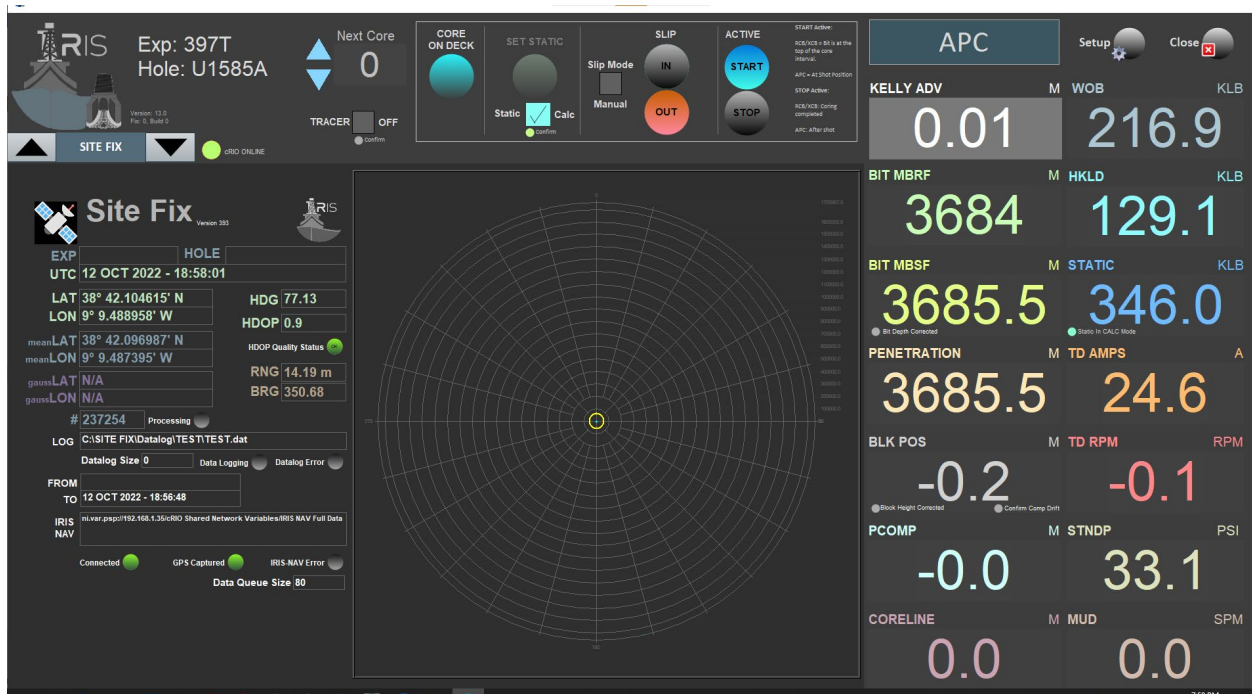
On the **SITE FIX** tab, the ship's position is displayed. This display is only available if the technical staff have the program SITE FIX running. The SITE FIX application collects and calculates the GPS fix for the moonpool location on the ship. After enough fix points have been collected, the values in the **meanLAT** and **meanLON** will be considered the holes final position. On the plot:

- The range values are in meters.
- The red circle is 4m diameter the as the moonpool.
- The last 30 fixes are plotted as a trail showing the ship's recent movement history.
- The fix with the yellow circle is the current gps fix.

- Ship outline (not to scale) shows the ship's heading

Values displayed on the left:

- LAT and LON: current GPS fix
- meanLAT and meanLON: current mean values of all GPS fixes displayed
- gaussLAT and gaussLON: current ship's position as a gaussian curve fit. Takes more data but provides a better estimate for final hole location.
- HDG: current ship's heading
- HDOP: The quality of the current fix
- RNG: Distance from the current fix to the mean values
- BRG: Direction from the current fix to the mean values



iRIS Driller's Interface

The iRIS driller's interface consists of three (3) sections:



The red section are the “tab” displays. There are 11 separate displays that can be selected by clicking the arrow or clicking on the control and selecting the display in the drop-down list. Details of each display discussed in the following sections

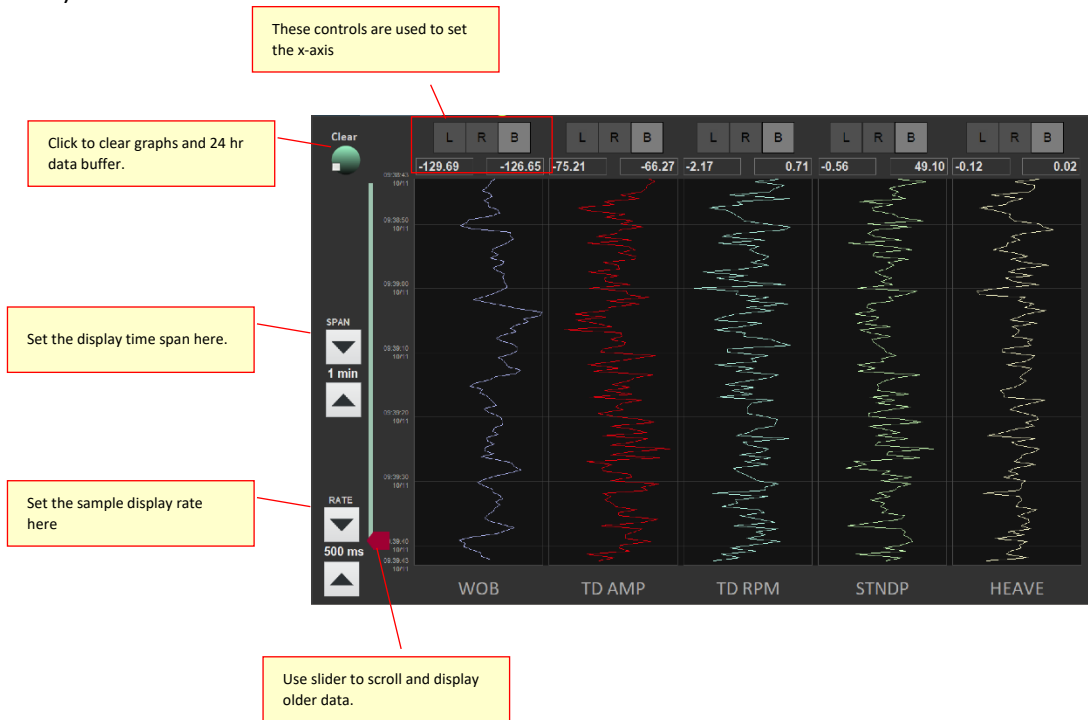


THE yellow section is the static data displays of drilling data. These are always visible.

The blue section is the driller's input. The use of these controls **is critical** to having accurate depth and weight data, and for entering coring information

DRILL 1 Tab

These first of two displays are used by the Driller during normal operations. It provides a graphical view of Weight-on-Bit (WOB), Top Drive Amps (TD AMP), Top Drive RPM (TD RPM), Stand Pipe Pressure (STNDP) and HEAVE.



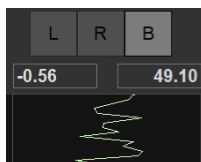
The plots store the last 24 hrs of data but only display the last interval set by the SPAN value. To see older data, the user can scroll back using the red slider. Data plotting rate is set in the RATE control (100ms to 2 sec). Increasing the plotting rate will result in less data being shown, and a “jerkier” plot.

CAUTION! Clicking the Clear button will delete all data in all plots!

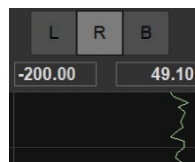
X-Axis range scaling.

There 4 options:

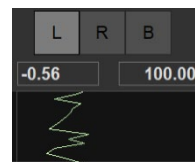
1. Auto scale (**B**)oth the left and right click on the **B** control.
2. Auto scale only the (**R**)ight and the user sets the left value, select **R** control.
3. Auto scale only the (**L**)eft and the user sets the right value, select **L** control.
4. Users sets both right and left values, deselect all.



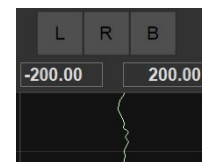
Auto scale both Right and Left values



Auto scale Right and user sets the Left value



Auto scale Left and user sets the Right value



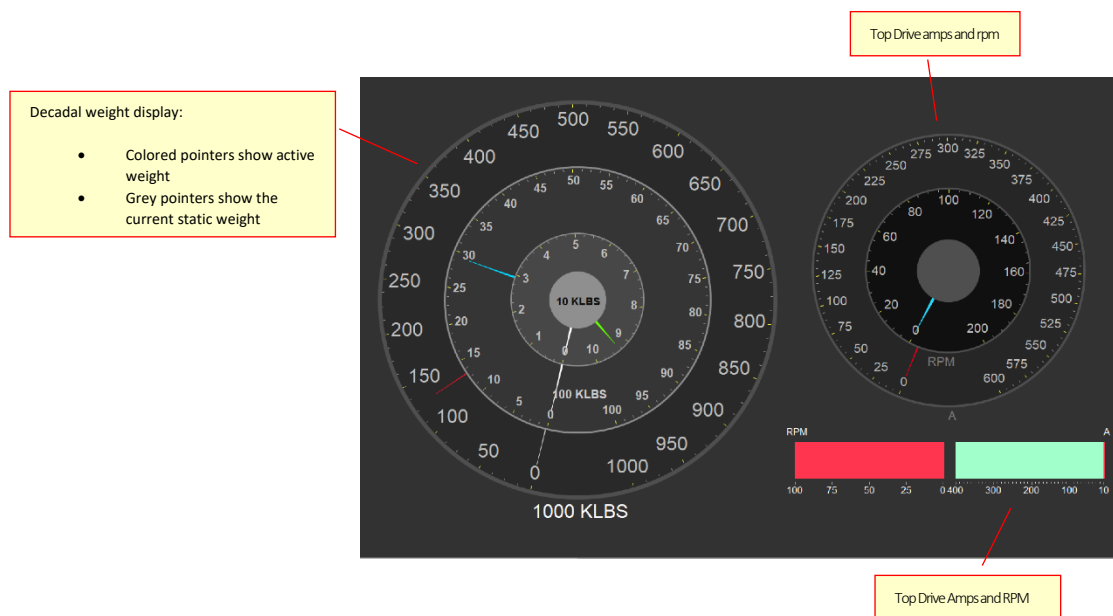
User sets both Right and Left values

Notes:

- Don't see data in plot? Select **B** first.
- Auto scaling is based on all of the data in the buffer.
- To change a value just select the number and type in the new value.
- To export plot, right click plot and select either:
 - Export to clipboard
 - Export to Excel
 - Export to Image

DRILL 2 Tab

On this display, only Weight, Top Drive Amps, and RMP are displayed as analog indicators.



On the left is a decadal weight display at 10-KLBS, 100-KLBS and 1000-KLBS focus. The colored points show the active weight and the grey pointers the current static weight value. For controlling the weight on bit, the 100-KLBS gauge provides the best visual reference. All weights are dampened to remove the influence of ship's heave. The averaging window is 5 seconds.

KELLY Tab

See Depth Control section. Note the **BKLH height at Kelly Zero** and the **PCOMP stroke at Kelly Zero** capture the **BLKH** and **PCOMP** values at the moment the **ON BTM** control is set to *ACTIVE*.

PIPE Tab

Drill pipe tally tables for both 5" and 5-1/2" pipe are provided on the interface tab marked **PIPE**. This utility recreates the functions in the DRILL2 Spreadsheet in use by the Drillers' during operations. Use of this utility can be found in the [Pipe Tally Table Control](#) (Click to go to section).

	5" PIPE			5 1/2" PIPE	
	TOP	MID	BTM	STAND	TOTAL
1	9.68	9.68	9.68	29.04	29.04
2	9.62	9.62	9.62	28.86	57.90
3	9.68	9.68	9.68	29.04	86.94
4	9.73	9.73	9.73	29.19	116.13
5	9.55	9.55	9.55	28.65	144.78
6	9.68	9.68	9.68	29.04	173.82
7	9.66	9.66	9.66	28.98	202.80
8	9.58	9.58	9.58	28.74	231.54
9	9.73	9.73	9.73	29.19	260.73
10	9.73	9.73	9.73	29.19	289.92
11	9.61	9.61	9.61	28.83	318.75
12	9.67	9.67	9.67	29.01	347.76

- Edit Selected
- Insert After
- Delete Selected
- Save
- Load

Single click on any row for Edit, Insert or Delete functions. (Blue highlighted)

Double click to select the current stand just added to the drill string. (Red highlighted)

Use the TOP, MID and BTM check boxes to select singles in the next stand

Will open the Pipe-Tally Edit window for the selected stand (Blue)

Insert a new stand after the selected stand (Blue)
This will open the Pipe-Tally Edit window

Delete the selected stand (Blue)

Click save data to a comma delimited spreadsheet

Click to load data from a comma delimited spreadsheet

STAND 28.98^M

TOP 9.66^M

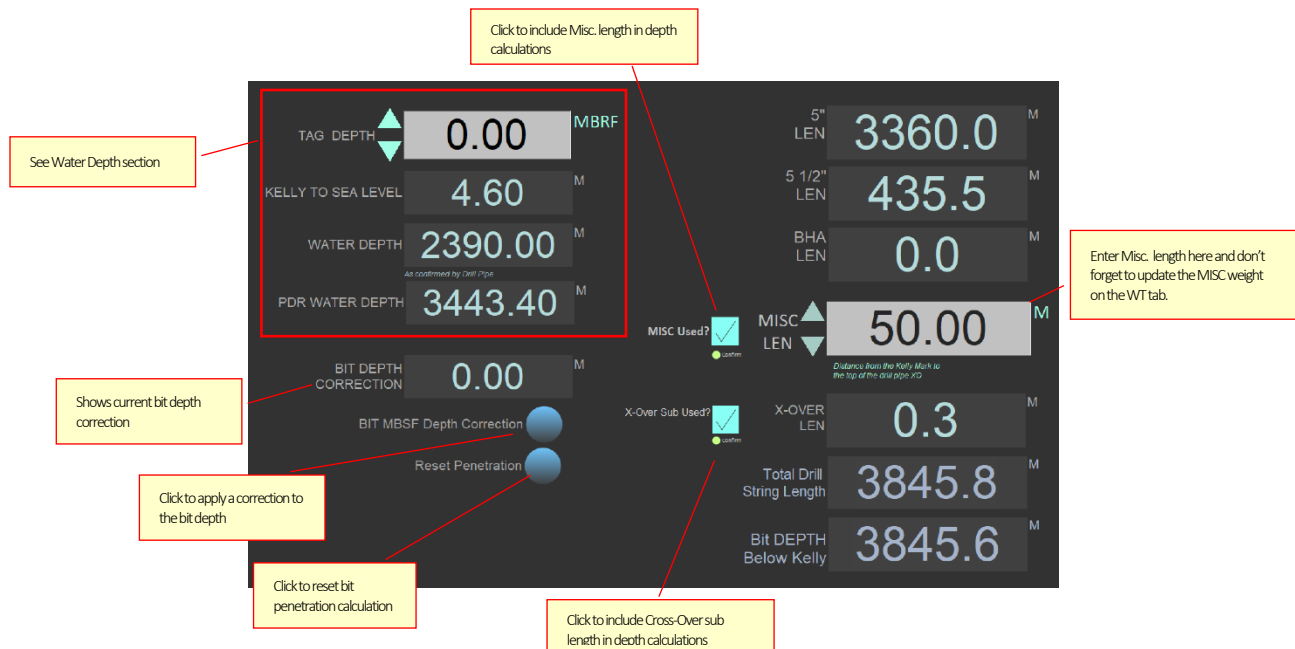
MID 9.66^M

BTM 9.66^M

When you select the third checkbox, then the current stand will advance and all check boxes will be cleared.

DEPTH Tab

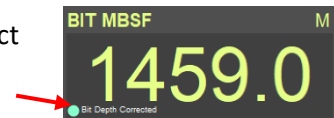
This tab provides a summary of the values used in depth calculations.



This includes water depth values (see Water Depth section), pipe lengths (see Drill Pipe management section). Penetration and Bit Depth corrections and the ability to use and enter dynamic drilling components and their lengths on the fly.

Bit Depth Correction

A correction can be applied to the bit depth value by clicking the **BIT MBSF Depth Correction** button. In the dialog box that opens just enter the correct depth value. A correction offset will be calculated and displayed in the **BIT DEPTH CORRECTION** indicator. When a correction is applied a small indicator turn green on the **BIT MBSF** display.



Penetration Reset

Clicking the Reset Penetration button will cause the current value to be discarded and replaced by the current bit depth.

Using a Miscellaneous Drilling Component

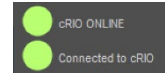
This is a catch-all for drilling components not included in the BHA list. Any value at any time can be entered and added or removed from the depth calculation by checking the check box.



About checkbox controls and confirmation indicators...

There are several reasons why the Driller's interface and the cRIO can de-sync'd. For real-time indicators, just one cycle (100ms) and the indicator will update to the cRIO values.

This is not true for control inputs. To help detect this situation, these controls will display a small indicator just below the control marked "confirm". If the checkbox is checked (true), the indicator should be green (true). If the checkbox is unchecked (false) then the **confirm** indicator should be grey (false). If not, you are de-sync'd. To fix this situation just cycle the input control. If they remain de-sync'd you may have a communication problem.



Check that the cRIO is online and connected. The IODP Marine Computer Specialists (MCS) can assist.

WEIGHT (WT) Tab

This tab provides a summary of the values used in weight calculations.

The screenshot shows the WEIGHT (WT) tab interface with the following components and callouts:

- 5" WT:** 243.498 KLBS. Callout: "Click to include Cross-over sub weight in calculations".
- 5-1/2" WT:** 45.573 KLBS. Callout: "Click to include 20' Kobby weight in calculations".
- BHA WT:** 0.000 KLBS.
- TRAVEL WT:** 0.000 KLBS.
- MISC Used?** Confirm. Callout: "Click to include MISC weight in calculations".
- Misc WT:** 0.000 KLBS. Callout: "Enter MISC weight here and don't forget to update the MISC weight on the DEPTH tab." Below the input: "Other pipe/size below the Kelly Mark Added to the total ch' string length."
- X-Over Sub Used?** Confirm. Callout: "Click to include Cross-over sub weight in calculations".
- X-OVER WT:** 637.561 KLBS.
- 20' KNOBBY Used?** Confirm. Callout: "Click to include 20' Kobby weight in calculations".
- 20' KNOBBY WT:** 1.484 KLBS.
- 30' KNOBBY Used?** Confirm. Callout: "Click to include 30' Kobby weight in calculations".
- 30' KNOBBY WT:** 1.723 KLBS.
- TOP DRIVE Used?** Confirm. Callout: "Click to include TOP DRIVE weight in calculations".
- Top Drive WT:** 50.000 KLBS.
- Total WT:** 637.561 KLBS.

This includes pipe, BHA, Traveling Block, Top Drive, Knobbies, Cross-Over Sub(s) and Miscellaneous Weight. This function gives the driller the ability to use and enter dynamic drilling components and their weights on the fly.

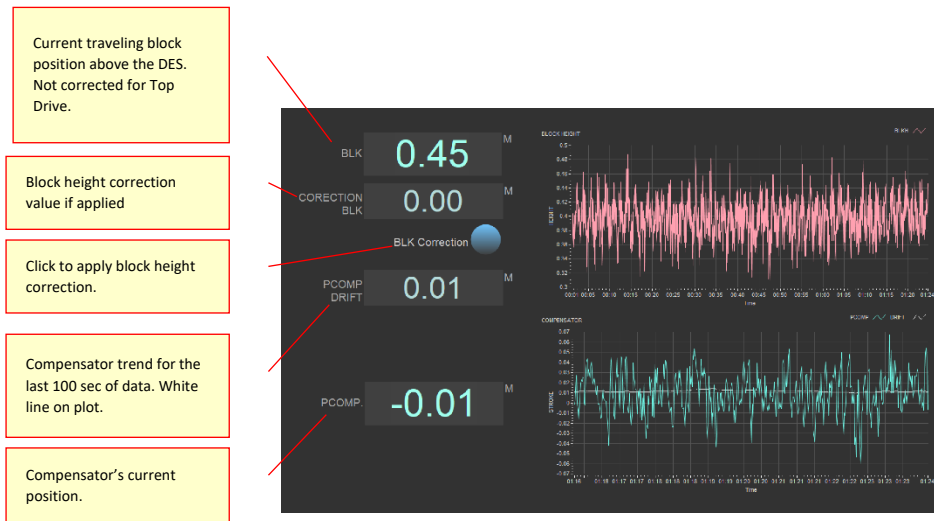
Using Miscellaneous Drilling Component

This is a catch-all for drilling components not included in the BHA list. Any weight value at any time can be either added or removed from the depth calculation by checking the check box.



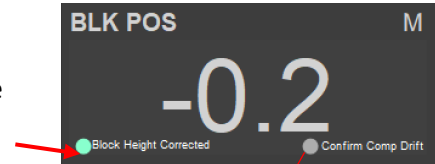
BLOCK-COMP Tab

This tab shows the real-time position of the Drawworks Traveling Block (**BLK**) and Passive Heave Compensator (**PCOMP**) stroke.



These values are measured and calculated from the radar distance sensor, or alternatively the laser range finder. Currently we are using the analog output which requires calibration when sensors are installed but **do not** need to be recalibrated after a cut and slip.

A correction can be applied to the block position data by clicking the **BLK Correction** button. In the dialog box that opens just enter the correct position value. A correction offset will be calculated and displayed in the **CORRECTION BLK** indicator. When a correction is applied a small indicator turn green on the **BLK POS** display.



Currently not used, future development.

Compensator drift is calculated by taking a running mean of the last 100 secs of stroke distance and displayed as a white line in the plot. In the future we hope to use this to correct for compensator errors in the block position while coring. Currently no correction is applied.

CORE SUM Tab

On this tab the current expedition is shown as defined in LIMS.

Current expedition as set in LIMS

Current defined holes for the expedition

Core types

Expedition	START 00:00:00 - DD/MM/YY		END 07:45:27 - 11/10/22	
397T	ON DECK 07:45:27 - 11/10/22	TOP	0.0	M
Site Holes	ACTIVE HKLD MEAN	127.5	KLB	BTM -3440.4 M
U1585A	STATIC HKLD MEAN	0.0	KLB	ADV -3440.4 M
U1584A	WOB MEAN	-127.5	KLB	WOB MAX 0.0 KLB
Core Type	PENETRATION.	0.0	M	
H : APC FULL	ROP.	0.000	M/MIN	
F : APC HALT	TD TRQ MEAN	-70.5	A	TD TRQ MAX -64.3 A
X :XCB	TD RPM MEAN	-0.8	RPM	TD RPM MAX 1.1 RPM
	STNDP MEAN	24.9	PSI	STNDP MAX 57.6 PSI
				STNDP MIN -8.9 PSI
	MUD STRKS	0	STK	
	SPM MEAN	0.0	STK/M	SPM MAX 0.0 STK/M
				SPM MIN 0.0 STK/MM
	HEAVE MAX	0.9	M	

Coring summary data collect while the ACTIVE indicator is set to START

The **Site Hole** in displays the current defined holes. The **Core Type** list shows the possible core types. Selections made in these lists will be the default values when the

Driller enters a new core into LIMS from the **Core Entry** window. See the *Core On Deck* section of this document for more information.

The data displayed to right is the Core Summary data. See the *Core Advancement* section of this document for more information.

PUMPS Tab

On this tab indicators for monitoring pump activity are displayed. For the Mud pumps, the Driller can display either pump 1 (**MUD1**), 2 (**MUD2**), or both (**MUD1 & MUD2**). For the cement pump, the Driller can select to display either pump 1 (**CEM1**) or pump 2 (**CEM2**).

Select which mud pump (or pumps) is shown in the indicators on the right

Click to zero values on the right.

Select which cement pump is shown in the indicators on the right

Click to zero values on the right.

Strokes, volumes and rates			Pump Pressures			
Track MUD 1	MUD_STRK	0	STRK	MUD1_PRESS	-21.6	PSI
MUD 2	MUD_RATE	0.0	SPM	MUD2_PRESS	73.1	PSI
MUD 1 & 2	MUD_VOL	0.0	BRLS			
Zero MUD 1	MUD_VOL_RATE	0.0	BRLS/MIN			
Zero MUD 2						
Track CEM 1	CEM_STRK	0	STRK	CEM_PRESS	25.7	PSI
CEM 2	CEM_RATE	0.0	SPM			
Zero CEM 1	CEM_VOL	0.0	BRLS			
Zero CEM 2	CEM_VOL_RATE	0.0	BRLS/MIN			

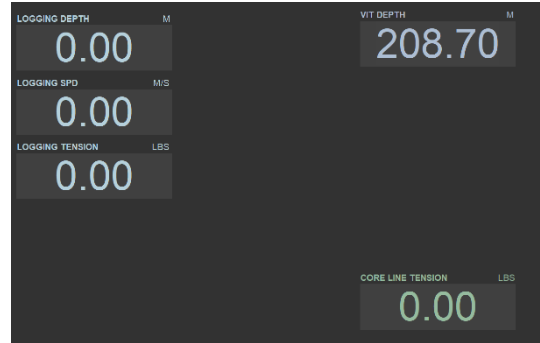
Controls are provided to zero the pump counters.

CAUTION! If you are actively coring and zero a pump, it will affect the data collected in the core summary.



WIRELINE Tab

This tab displays the wireline information from the Schlumberger logging winch, VIT winch and Core Line winch. (Core Line depth shown in indicators on the right-hand side of display, at bottom.)



SITE FIX Tab

The iRIS GUI offers the User to view real-time GPS location during drilling/coring operations, and during transit periods. The SITE FIX display consists of two separate panels

- GPS Information: This panel displays current Expedition and Hole information, UTC time, Latitude/Longitude, and ship's heading
- The compass shows the current heading of the JR

NOTE: FEATURES ON THE SITE FIX FUNCTIONAL PAGE ARE CURRENTLY IN "READ ONLY" MODE AND FUTURE FEATURES WILL BE ADDED.

