Scripting Functions

The Polaris Logging System incorporates scripting for user defined functions that can generate values for WITS IDs based on other data that has been received. This document will describe how to use scripting functions.

New WITS ID configuration layout

Two new sections have been added to the WITS ID configuration

Data Source defines how the data for this WITS ID is retrieved.

By default the Data Source is **"Serial Port WITS"** indicating that the data is received through a serial port as normal

Alternately you can choose among various predefined scripts which will use other data to calculate the value for this WITS ID.

"Current Value" allows the user to input a value for this WITS ID.

This is useful for creating user-defined constant values for input to other script functions.

Example #1: ECD calculation

This simple example will help to quickly understand how scripting works. In this example we will use a script to generate an ECD value.

To calculate ECD the script will require 3 input values:
- Annular pressure loss (APL)
- True Vertical Depth (TVD)
- Current mud weight (MW)

In this example the WITS IDs for each input are:
- APL (0122)
- TVD (0709)
- MW (0132)

Also, APL and MW are received from the serial port connection to the rig WITS system. (Pason/Totco) However, TVD is not received from the serial port data and will be calculated each time a survey has been entered into the system.
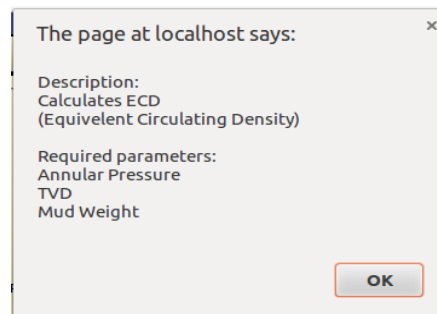
Start by creating a WITS ID for each of the inputs. (0122, 0709, 0132)

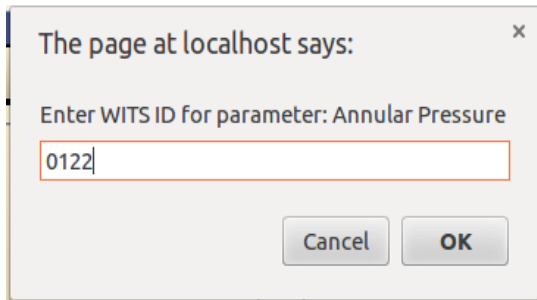Ensure that you are receiving data for 0122 and 0132 from the serial port.

Next, create WITS ID 0231 for the ECD calculation.
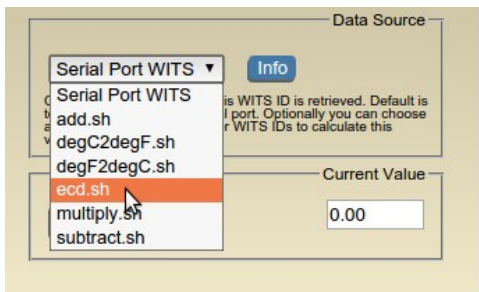
Edit WITS ID 0231 and change its Data Source to the ECD script "*ecd.sh*".

For information about the selected script click the "*Info*" button

The page at localhost says: After clicking the "**Save Changes**" button the program will
                                               prompt you for the WITS IDs of each input data.

Enter WITS ID for parameter: Annular Pressure

0122

Cancel   OK

Example #2: Depth remaining to TD

For a really easy example we will create a WITS ID that calculates the distance to TD. In this example
we will skip the pictures and simply describe the details.

1. Create a WITS ID for "***TD Depth***" using an ID that is unique (9101 is a good example)

2. Edit that WITS ID and change the "***Current Value***" to the expected TD value (For instance if
   TD is expected to be at 12590)

3. Create a WITS ID for "***Distance Remaining***" using an ID that is unique (9102 is a good
   example)

4. Edit that WITS ID and set it's Data Source to "***subtract.sh***"

5. After clicking "***Save Changes***" enter the WITS ID for the TD value (9101) then the current hole
   depth value (0110)

The "***subtract.sh***" script will now display the depth remaining to TD. This calculation will execute
every 5 seconds and the value can be displayed on the main monitoring screen's digital data boxes.

More information

- All WITS IDs used for input to the scripts must be defined in the database. Missing WITS IDs
  will result in a -9999.0
- All WITS IDs used for input to the scripts must have logging enabled or the result will be
  -9999.0
- All scripts are executed every 5 seconds
- Results from one script can be used to calculate other values (ex: The script results from 9101
  can be used to calculate the value for WITS ID 9102)
- Script calculations are executed in order of the value of the WITS ID (ie: 9101 will be
  calculated before 9102)
- **IT IS VERY IMPORTANT TO USE WITS IDS THAT ARE UNIQUE** (do not choose a
  WITS ID that is being received from the serial port(s))
- There are a standard set of scripts installed including basic math functions. More scripts can be
  added upon request. ***Please contact your Polaris representative for more information***.