

# GEMS Data Analysis

## 0.0.25


## 1 Introduction

Welcome to the quick start guide for GEMS Data Analysis (GDA). This document outlines the first steps required to get up and running with the software.

## 2 Loading Data

The first time GDA is loaded the Quick Start window will be shown. Click on 'Load Data for New Project'. Select the data you wish to view.

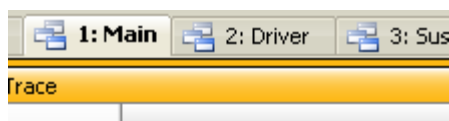
When the file has been loaded a default template will be displayed, with the data loaded in. This will show a Log Trace and a Channel List. The configuration window for the Log Trace will display automatically.

Data can be loaded in at any time using the  button from the main menu or from the Project Explorer

PC logs from from GWv4 (GLO files) may loaded in addition to regular log files (STF format).

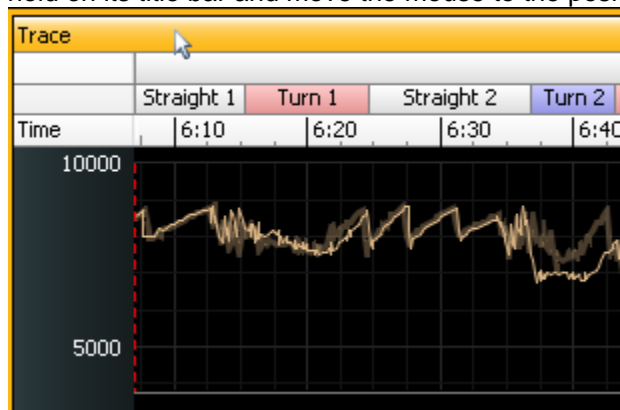
## 3 Setting the Layout

GDA has a multi-tabbed layout, which means you can have multiple pages or 'tabs' available in a single project. Tabs are displayed at the top of the workspace.



To add a new tab or to rename a current tab, right click on the tabs area (shown above) and select from the options that are displayed.

Objects or 'Views' in the workspace can be moved around and resized. To move a view, click and hold on its title bar and move the mouse to the position required:



To resize a view, move the mouse to the edge of the view, then click and drag to change the size.

Document Details			
Document Name: GDA Quick Start Guide		Document No: 102510	
Author: GEMS		Revision: 2	

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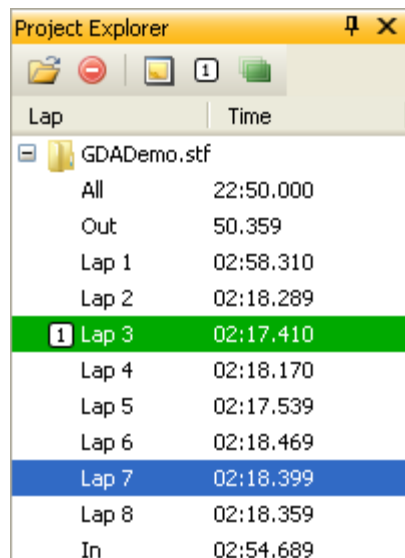
### 4 Adding Views

Numerous views can be added to the workspace. To add an object, right click in an empty area in the workspace, and select the required object from the 'Add Views'; section of the provided menu. Available views are:

View Object	Function
Log Trace	Displays channel values in a graph or 'Trace' view.
Log Trace Overview	Same as the Log Trace, but is used to show the complete log file. This trace does not follow the global view area.
Channel Values	Display a list of the all the available channels in the current data.
XY Plot	Displays a scatter graph of two channels plotted against each other.
Time Report	A report showing all the times for all sectors in the current data.
Channel Report	Report to display the min, max and many other values of channels in the data.
Track	A visual representation of the track or stage that the data was collected from. (Requires speed and G or GPS channels).
Tacho	A tachometer view of the value of a single channel.
Number View	A large number view of the value of a single channel.
Status Light	A configurable box which can be set to different colours depending on the value of a channel.


### 5 Project Explorer

The Project Explorer shows the current data sets and the laps/stages contained in that data, for the current project. By default the Project explorer is available to the left of the workspace:



Lap	Time
GDA Demo.stf	
All	22:50.000
Out	50.359
Lap 1	02:58.310
Lap 2	02:18.289
<b>1 Lap 3</b>	<b>02:17.410</b>
Lap 4	02:18.170
Lap 5	02:17.539
Lap 6	02:18.469
Lap 7	02:18.399
Lap 8	02:18.359
In	02:54.689

The highlighted green lap is the fastest lap in the data.

To select a lap as the primary view, select the lap and press the  button in the project explorer. To select laps as Overlays double click laps to turn them on or off as overlays.

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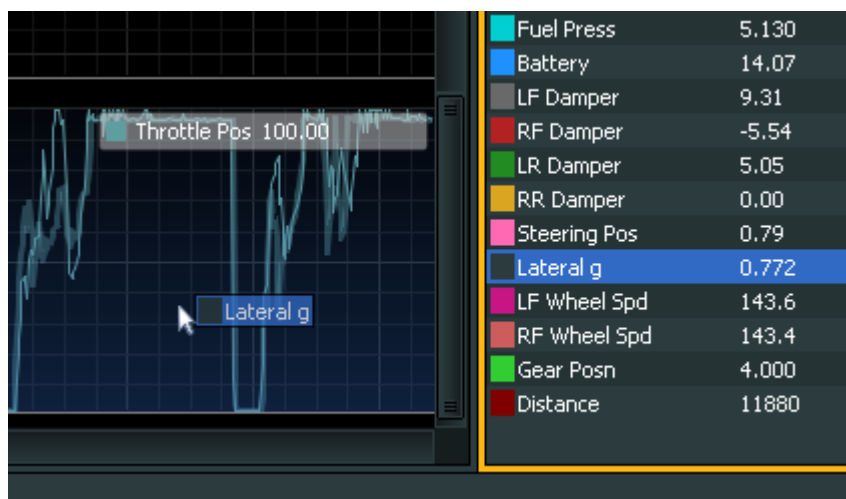
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### 6 Log Trace

The log trace is a graph of one or more channels:



Setting up the trace can be done in two ways. Firstly by dragging channels from the Channel List. Click and hold, on a channel in the Channel List then move the mouse over the trace:

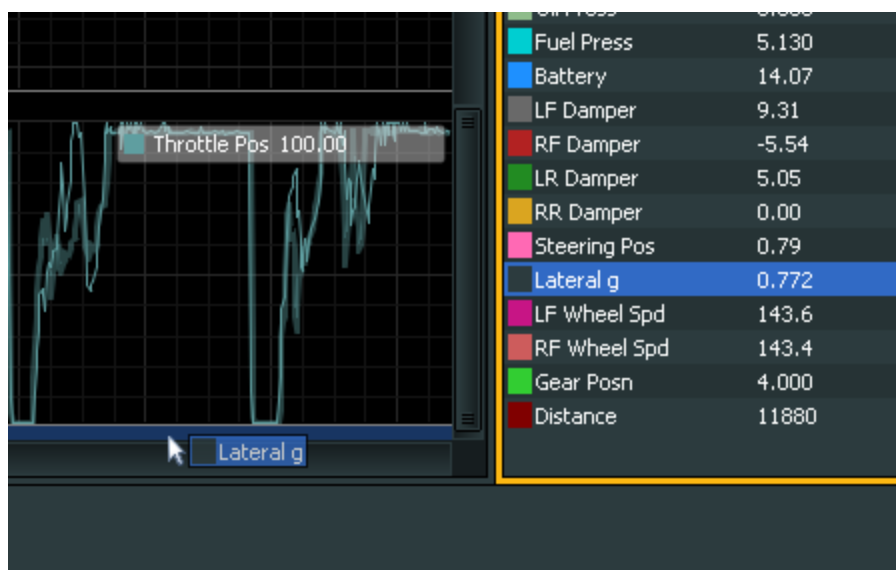



To place the new channel on top of another channel, as above, simply release the mouse when over the channel. To place the channel in a new lane, drag and drop the channel into an area below or between the existing lanes:

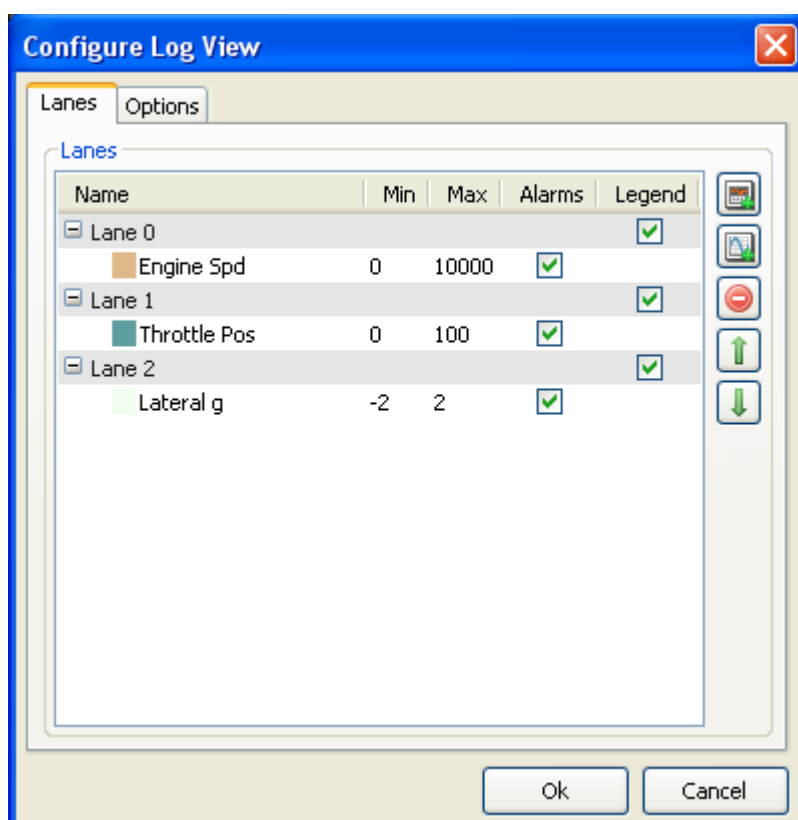
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The Log Trace also can be configured by its configure window. Access this by clicking the  button at the top right of the log trace:



Use this window to add/remove and move channels within the Log Trace.

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### 7 Channel List


The channel list displays all channels in the data and the values of each channel at the current cursor position.

Channel Values	
Channel ▲	Lap 3
Air Inlet T	24.8
Battery	14.35
Distance	0
Engine Spd	1536
Fuel Press	5.130
GBox Temp	26.4
Gear Posn	-0
Lambda	14.58
Lateral g	-0.003
LF Damper	5.26
LF Wheel Spd	0.0
Load	968.0
LR Damper	5.10
Oil Press	4.609
Oil Temp	34.4
RF Damper	2.54
RF Wheel Spd	0.0
RR Damper	0.00

From this list it is possible to change channel properties, add channels to a trace, add a gauge for a channel and more. To add a channel to a log trace, click and drag the channel to an open log trace. Right click on the list to bring up all available options.

### 8 Overlays

Overlays allow a lap or stage to viewed on top of another.

Firstly you need to set your primary view or reference lap. To do this, Open the Project Explorer, select the lap/stage you wish to be the primary and click the  button:

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Project Explorer	
<div> <div></div> <div></div> <div></div> <div>1</div> <div></div> </div>	
Lap	Time
GDADemo.stf	
All	22:50.000
Out	50.359
Lap 1	02:58.310
Lap 2	02:18.289
1 Lap 3	02:17.410
Lap 4	02:18.170
Lap 5	02:17.539
Lap 6	02:18.469
Lap 7	02:18.399
Lap 8	02:18.359
In	02:54.689

To set a lap as an overlay simply double click on the lap. You can add as many overlays as you wish:

Project Explorer	
<div> <div></div> <div></div> <div></div> <div>1</div> <div></div> </div>	
Lap	Time
DA99Demo.stf	
All	22:50.000
Out	16.289
Lap 1	03:32.380
Lap 2	02:18.289
1 Lap 3	02:17.410
Lap 4	02:18.170
2 Lap 5	02:17.539
Lap 6	02:18.469
Lap 7	02:18.399
Lap 8	02:18.359

To setup how the overlays are displayed i.e. what colours/transparency is used, from the main menu, select Configure > Overlays.

Overlays can be time or distance shifted. Right click on the relevant item in the project explorer and select 'Set Offset' from the menu.

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