

Pi Toolbox 13

Toolbox 13, our ground breaking Motorsport Data Viewer: the ultimate tool for engineers, coaches, and analysts alike. Engineered to provide an immersive and comprehensive interface, our software redefines how you interact with data. Using Toolbox 13 you can analyse minute details of every lap, every corner, and every event with precision. From Formula 1 to endurance racing and everything in between, our analysis viewer supports displaying data in a wide range of formats, delivering insights of real-time telemetry and logged data at your fingertips.

Key features include:

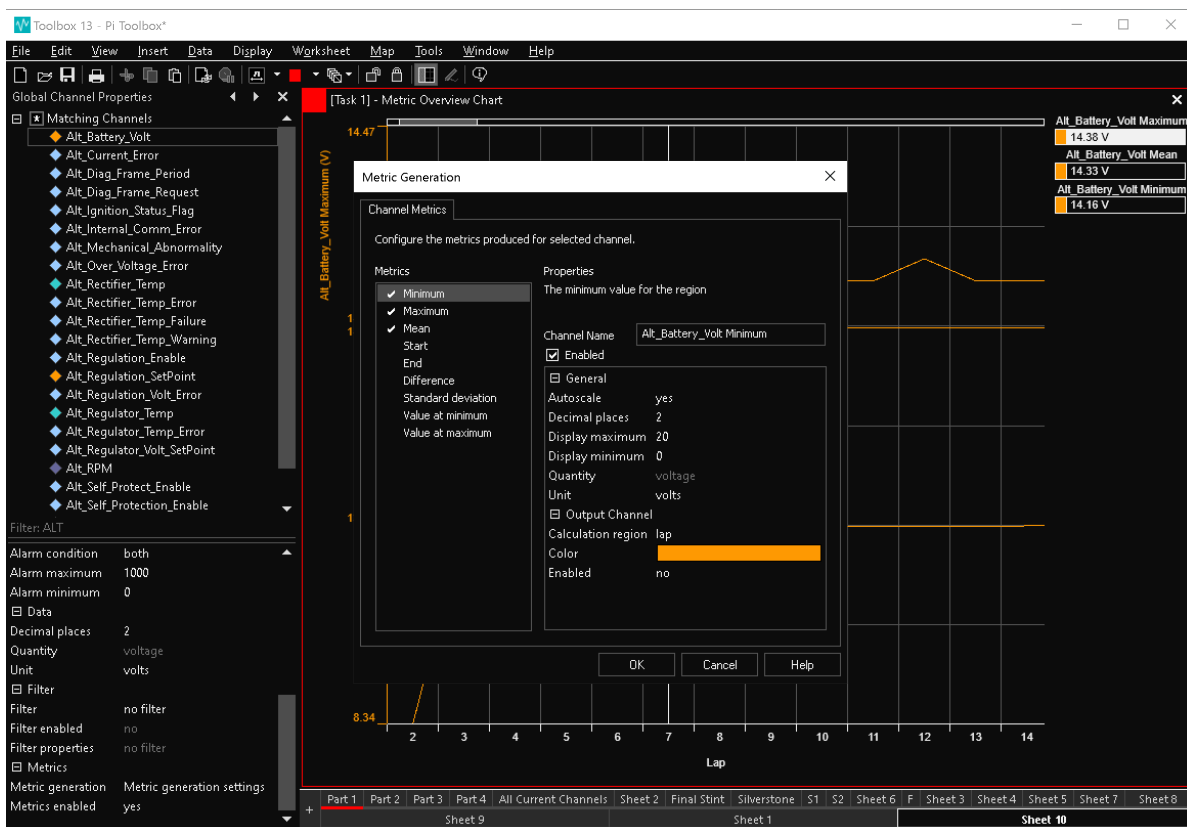
- Live race tracking with real-time telemetry data.
- Detailed performance metrics for drivers, teams, and car systems.
- Interactive circuit maps for in-depth analysis.
- Off load data for post event analysis and performance comparison.
- Customisable dashboards and reporting tools for personalised KPI reports.
- Seamless integration with data sources such as race APIs and telemetry feeds.

Whether you're a student following your course, a team optimising race strategies, marine scientist, wind tunnel operator, esports racer or a data analyst seeking to unravel dynamic insights, Toolbox 13 is your ultimate go to application.

New Features for 13

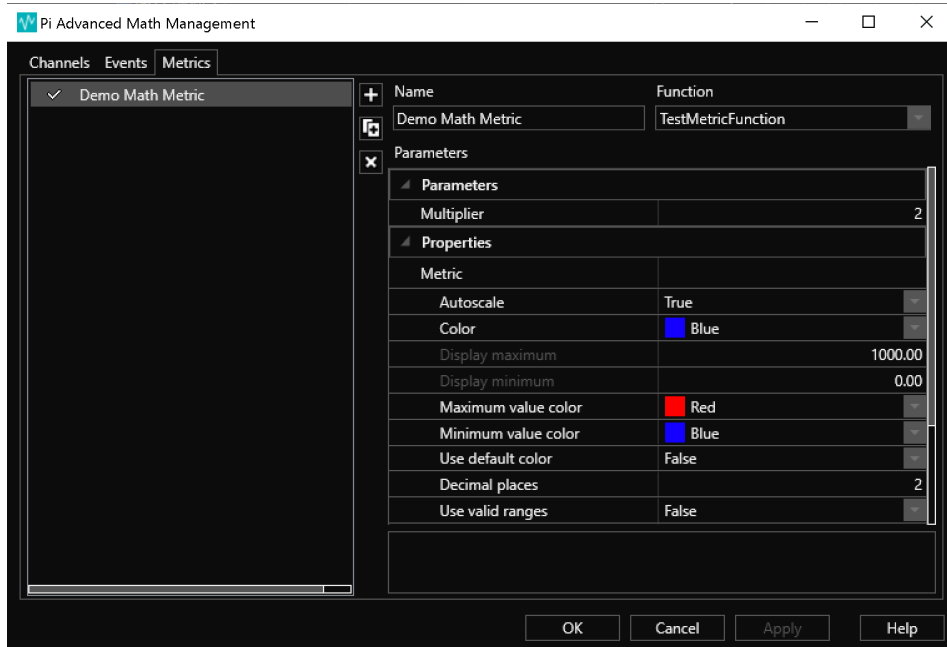
Enhanced KPI

Channel Statistic Metric Creation - Quickly and easily generate KPI metrics from channel data. The Metric generation dialog is located on the Global Channel Properties explorer. The following metrics can be generated; Minimum, Maximum, Mean, Start, End, Difference, Standard deviation, Value at minimum and Value at maximum.

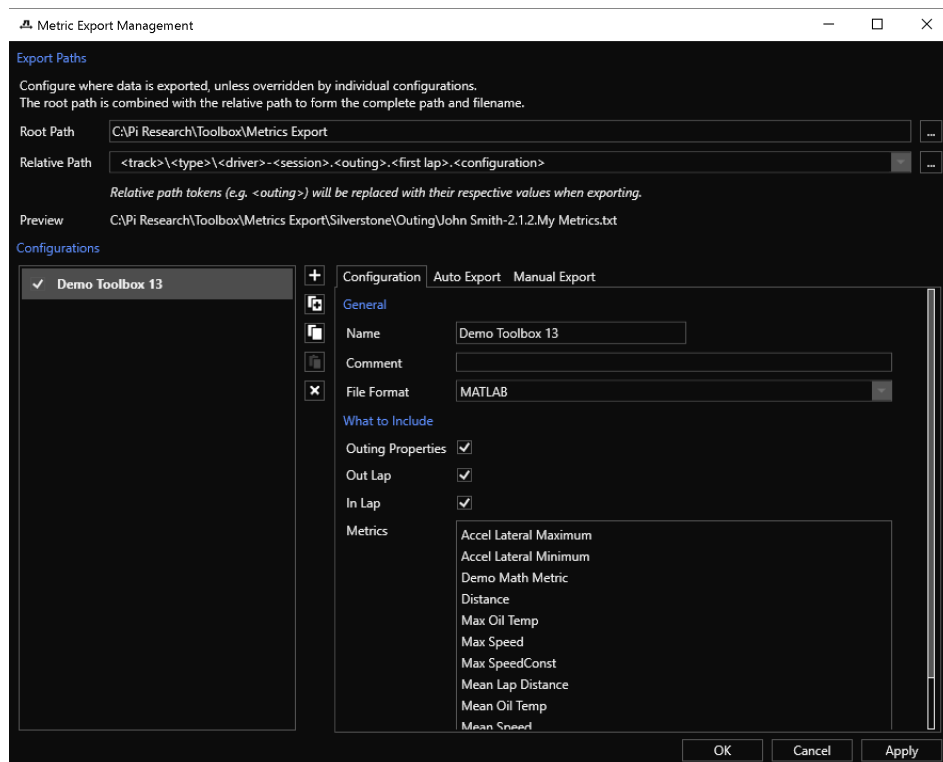




Metric Definition Extensions - Metrics can be used to generate output channels, which can then be consumed in the same way as all other channels. Extensions can be configured both for Basic Function Editor metrics, and script generated metrics. The Metrics tab can be found under Tools > Advanced Maths > Basic Function Editor.



Automatic Export – Automate the export of KPI metric results for both real-time, and auto-update outings. Support for ASCII/Excel/MATLAB/XML file formats is provided. Fully configurable triggers to export on outing number change/lap marker/events. A brand-new Metric Export Status display shows the export progress.

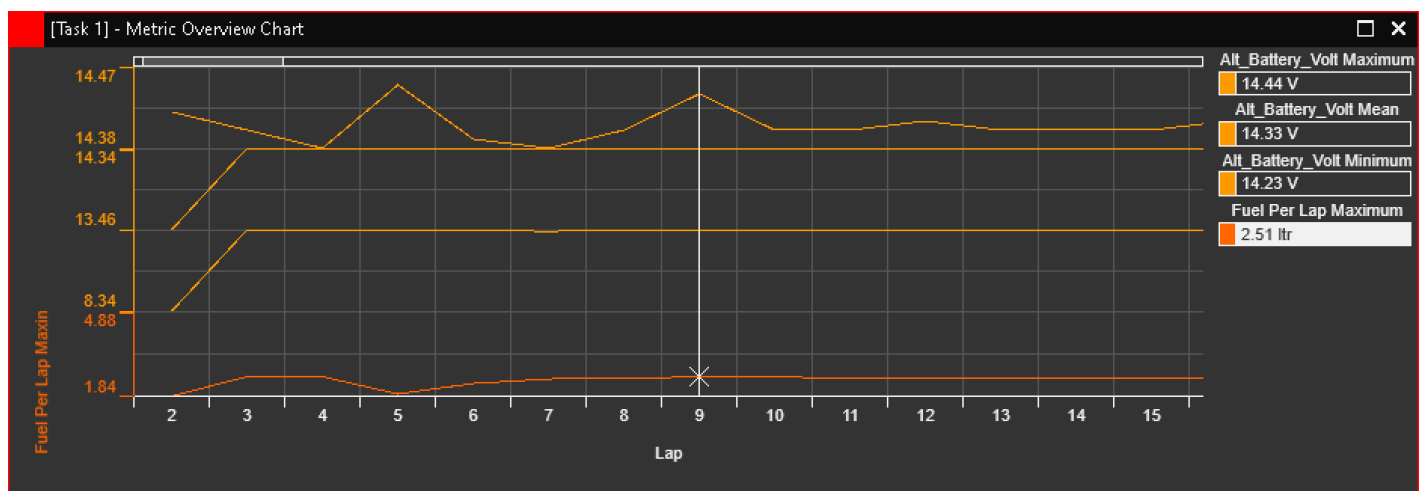


Metric Overview Report Extensions – This feature now provides all the same functionality as the Tabular Outing Report plus some additional features, including:

- Displaying overall lap performance.
- Customisable colour highlighting of min and max values.
- Filtering out in laps, out laps and slow laps.
- Order laps by ascending or descending order.
- Horizontal or vertical mode.
- Exporting the contents of the display to Excel, ASCII, MATLAB or XML.
- Increased metric limit to 64.
- Auto scrolling to the selected region when not a real time outing.
- Auto scrolling to the newest region when a real time outing.
- Global and local pause options for real time outings.

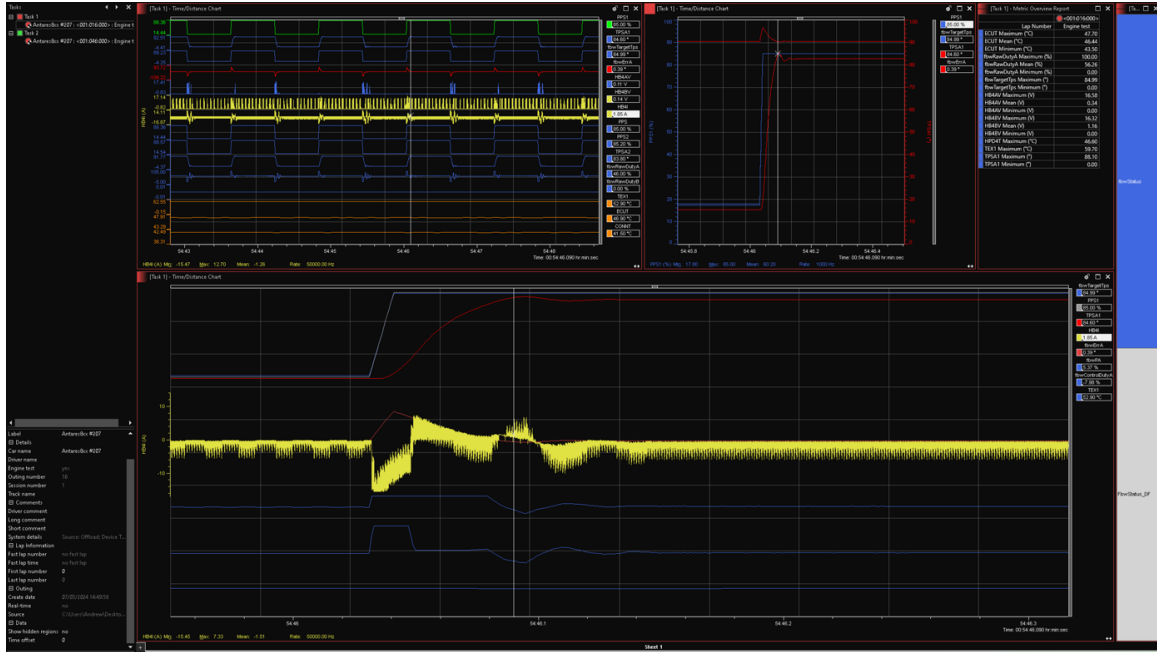
| [Task 1] - Metric Overview Report | | | | | | | | | | |
|--------------------------------------|----------|--------------|--------------|--------------|--------------|---------|-------|-------|-------|-------|
| Lap Number | Lap 104 | Lap 105 | Lap 106 | Lap 107 | Lap 108 | Lap 109 | Min | Max | Avg | Mean |
| Lap Time (hr:min:sec) | 1:33.500 | 00:01:36.000 | 00:01:35.300 | 00:01:34.999 | 00:01:34.701 | - | | | | |
| Alt_Battery_Volt Maximum (V) | 14.40 | 14.40 | 14.40 | 14.40 | 14.40 | 14.40 | 14.38 | 14.47 | 14.40 | 14.40 |
| Alt_Battery_Volt Mean (V) | 14.33 | 14.33 | 14.32 | 14.33 | 14.33 | 14.32 | 13.46 | 14.34 | 14.31 | 14.27 |
| Alt_Battery_Volt Minimum (V) | 14.22 | 14.23 | 14.13 | 14.22 | 14.24 | 14.23 | 8.34 | 14.28 | 14.03 | 13.69 |
| IPS26 Injectors Amps Maximum (A) | 3.48 | 3.44 | 3.47 | 3.49 | 3.44 | 3.37 | 3.34 | 3.59 | 3.46 | 3.46 |
| IPS27 ECU Amps Maximum (A) | 6.33 | 6.28 | 7.07 | 6.32 | 5.65 | 6.60 | 4.39 | 7.41 | 6.17 | 6.18 |
| IPS32_Total_Current_Used Maximum (A) | 54.94 | 55.80 | 54.70 | 54.91 | 54.94 | 53.84 | 44.88 | 66.83 | 52.93 | 52.55 |

Metric Overview Chart – Provides the ability to graph metric data over the course of an outing (or multiple outings). Supports both logged and real-time outings, with the ability to pause real-time data. Chart functionality similar to the Time/Distance chart and Real-Time chart recorder. Presentation and layout configuration supported. Supports slow lap and out of range data filtering. Metric Properties can now be configured in the Explorer Bar similar to channels (colours, decimal places etc).

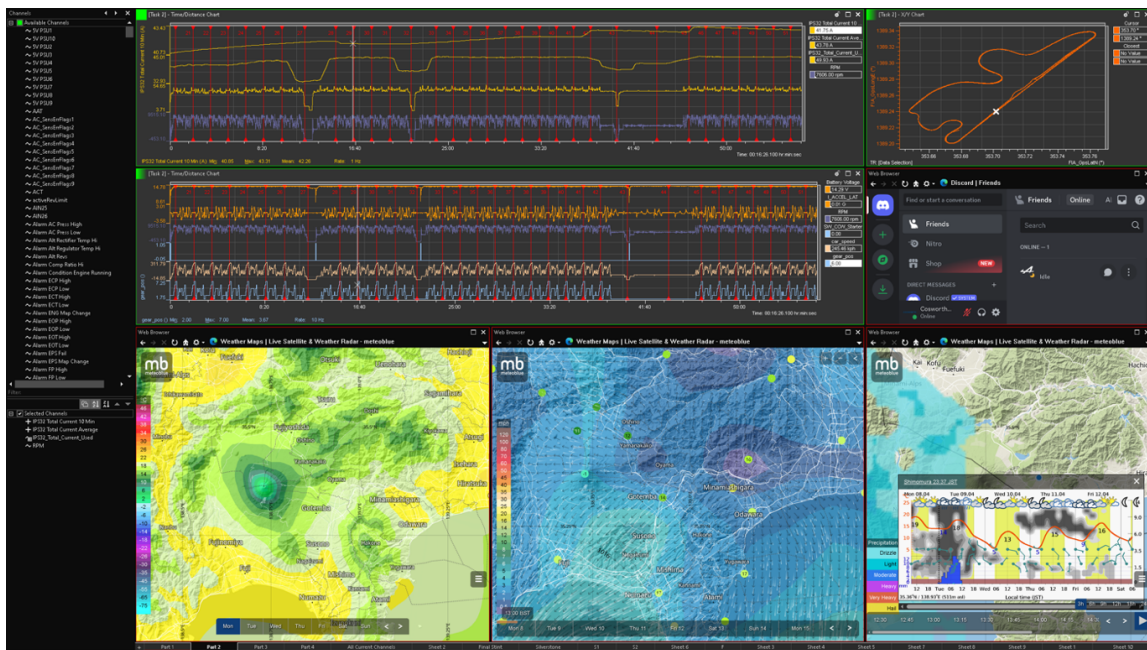


New Additional Toolbox 13 Features

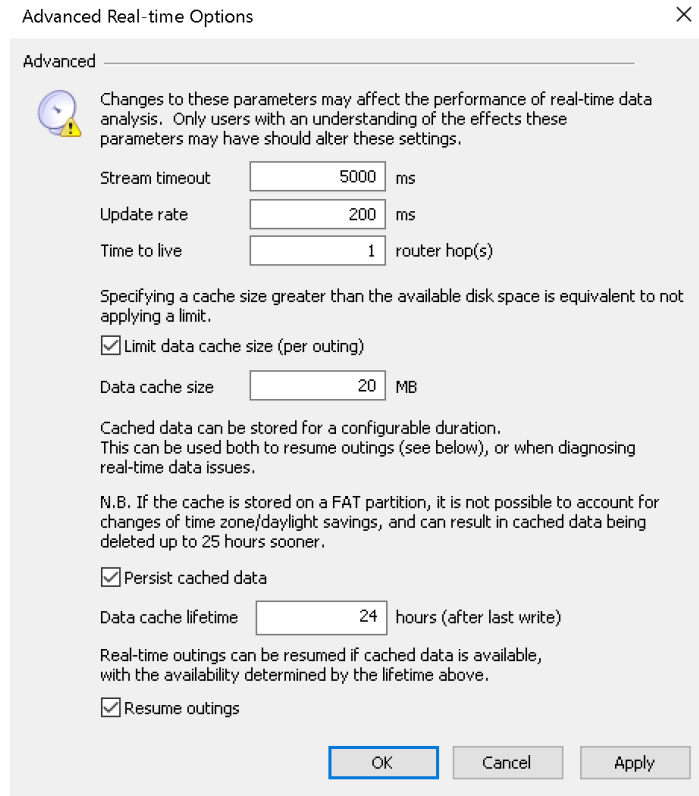
Background data loading - Large workbooks and outings will load significantly quicker. When opening a workbook or adding a channel to a display only the data that is needed will initially load. Once all the visible data is loaded the rest of the data loads in the background so it's ready for when you want to change regions. This particular performance enhancement is useful during development phases where channel data is logged at ultra-high speeds of 50-200kHz and take longer to open in comparison to low-speed channels.



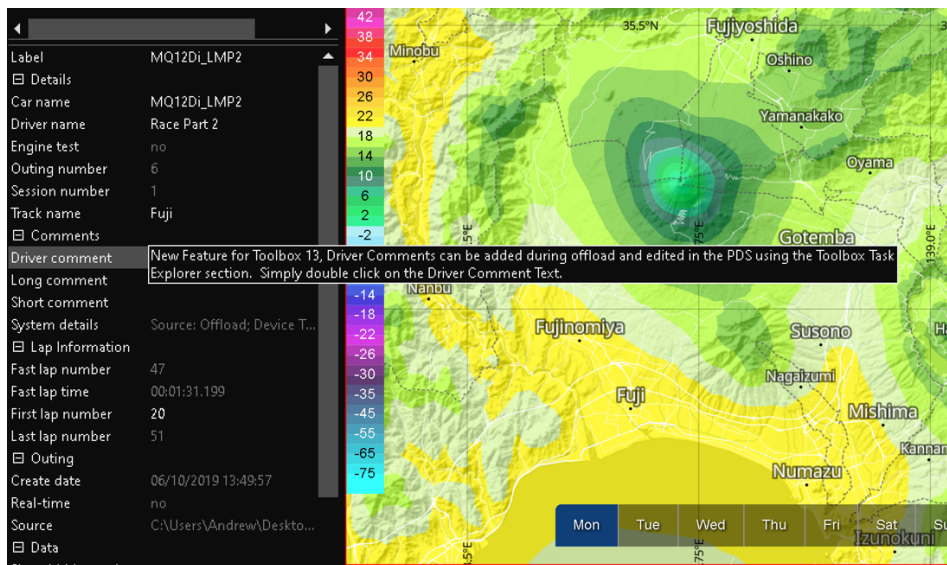
Redesigned Web Display - The all new Web Browser display uses the latest Microsoft Edge technology, offering the best web page compatibility and loading performance. Users can now run advanced cloud applications, Discord, Weather Radar, Timing, VOIP and Emails to name a few all inside the Toolbox interface.



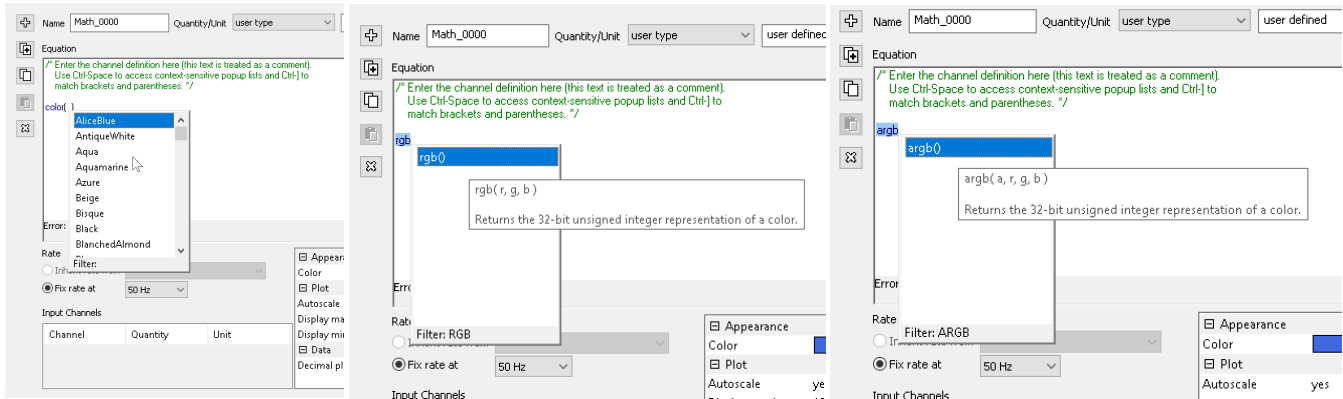
Recovery of real-time data – Toolbox 13 Advanced Real-time Options now allow real-time data to be configured and cached to disk. Data can be retained for a configurable number of hours, it is then possible to configure real-time outings to load any available cached data when reconnecting (following app closure), which also then enables all previous data to be viewed, and metrics to be calculated from that data. Cached Data is loaded automatically when the workbook is reopened.



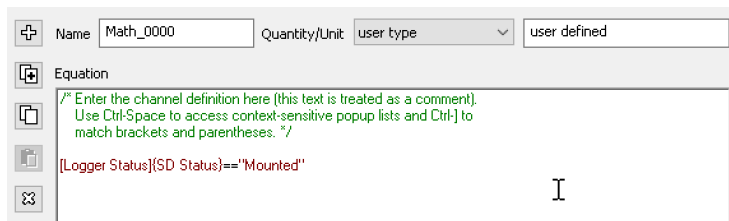
Display of driver comments and channel/event descriptions – Driver comments are now shown, and editable in the task explorer. Simply add them to the new field when offloading data from a Cosworth device and they will be automatically embedded in to the pds file.



Pi Math Syntax extended to add colour functions, and to reference Bit-Fields – Colour values can be generated for named colours, or by supplying RGB/ARGB values to the appropriate functions. The values supplied to RGB/ARGB functions can be any valid Pi Math values, i.e. can be sourced from other functions/registers etc.



With Toolbox 13 Bit-field values can now be extracted from channels directly. It is possible to compare extracted values against bit-field strings, or for them to be consumed as per any other value in a math equation.



Colour Display – A display allowing the user to view the colour values of user type channels rather than having to decode the numeric values. Can be switched between horizontal and vertical modes. Other customisable features include the ability to reduce the space the content of the display requires by not showing the channel or outing names and having them in tooltips instead.



Enable Hardware Acceleration for Media Display – Re-engineered video playback to use supported Microsoft frameworks. This enables hardware acceleration and smoother video playback. More video formats supported out of the box. Video codecs are available in the Windows Store. Changing laps and modes is quicker and no longer results in display flicker. Extra information added to diagnostics. Code has been simplified and is more maintainable.



Licence Formats for Toolbox 13

- **Software Key Licence, Fixed Node** – this licence is a single licence tied to a single PC or Laptop. It is possible to transfer a licence from user to user following a quick 5-minutes process.
- **Software Key Licence, Floating** – this licence introduces server-based licences. A floating licence is stored on a server and is managed by an appointed customer administrator. Licences can then be checked in and out by personnel who have access. The period the licence is checked out for before being auto recalled is set by the administrator. If the checked-out time expires the licence is auto-recalled, the user does not have to be on the server for this to happen.
- **Hardware Key, USB Dongle Licence** – This operates the same as previous dongle licences. A single licence is stored on a USB dongle.
- **Education Licences** – Two brand new licences for Tutors and Students at discounted prices, available in Software Key, USB Dongle and Floating Site licences.

Please note, Cosworth ECUs that use Toolset and CalTool security features are not yet available on the new dongle licences or soft keys. The Purple Cosworth Dongles must be used

Maintenance Licences

Annual maintenance for Pi Toolbox entitles the customer to receive major version updates as and when they become available through-out a 12-month period. This means that when the next major version is released the customer is entitled to receive this as part of the annual maintenance agreement. Annual maintenance will operate from January to January and is to be pro-rata from time of purchase. This is to ease admin and management of annual maintenance as all users will be aligned to January each year. Users without annual maintenance are only eligible for minor updates. These are likely to be small improvements and bug fixes. For example, 13 to 13.1, 13.2 etc.

If a customer opts not to adopt annual maintenance for several years and would like to update to the latest major version of Toolbox, then the annual maintenance is backdated. For example, if they purchase V13 and over 3 years Toolbox has been developed to V16 they would be required to purchase the value of 3x annual maintenance fees.

Pricing

Pi Toolbox Lite 13

| Part Number | ID | Description | Licence Type | Price |
|---------------|----|--|-----------------------------|-------|
| 01P-099150-NL | 93 | Toolbox Lite Hardware Key (USB) Fixed Node | USB Dongle Licence | £150 |
| 36P-099150-NL | 93 | Toolbox Lite Software Key, Fixed Node | Individual Software Licence | £0 |

Pi Toolbox Plus 13

| Part Number | ID | Description | Licence Type | Price |
|-----------------|----|--|--|-------|
| 01P-099151-NL | 95 | Toolbox Plus Hardware Key (USB) Fixed Node | USB Dongle Licence | £850 |
| 36P-099151-NL | 95 | Toolbox Plus Software Key, Fixed Node | Individual Software Licence | £700 |
| 36P-099151-FL | 94 | Toolbox Plus Software Key, Floating Licence | Server Based Floating Software Licence | £1500 |
| 36P-099151-NL-M | - | Toolbox Plus Fixed Node (Hardware or Software Key) maintenance | Annual Maintenance for Fixed Node Licences | £150 |
| 36P-099151-FL-M | - | Toolbox Plus Floating Licence Maintenance | Annual Maintenance for Floating Licences | £150 |

Pi Toolbox Pro 13

| Part Number | ID | Description | Licence Type | Price |
|-----------------|----|---|--|-------|
| 01P-099152-NL | 99 | Toolbox Pro Hardware Key (USB) Fixed Node | USB Dongle Licence | £1400 |
| 36P-099152-NL | 99 | Toolbox Pro Software Key, Fixed Node | Individual Software Licence | £1250 |
| 36P-099152-FL | 98 | Toolbox Pro Software Key, Floating Licence | Server Based Floating Software Licence | £2200 |
| 36P-099152-NL-M | - | Toolbox Pro Fixed Node (Hardware or Software Key) maintenance | Annual Maintenance for Fixed Node Licences | £250 |
| 36P-099152-FL-M | - | Toolbox Pro Floating Licence Maintenance | Annual Maintenance for Floating Licences | £250 |

Pi Toolbox Ultra 13

| Part Number | ID | Description | Licence Type | Price |
|-----------------|-----|---|--|-------|
| 01P-099153-NL | 103 | Toolbox Ultra Hardware Key (USB) Fixed Node | USB Dongle Licence | £1800 |
| 36P-099153-NL | 103 | Toolbox Ultra Software Key, Fixed Node | Individual Software Licence | £1650 |
| 36P-099153-FL | 102 | Toolbox Ultra Software Key, Floating Licence | Server Based Floating Software Licence | £2800 |
| 36P-099153-NL-M | - | Toolbox Ultra Fixed Node (Hardware or Software Key) maintenance | Annual Maintenance for Fixed Node Licences | £300 |
| 36P-099153-FL-M | - | Toolbox Ultra Floating Licence Maintenance | Annual Maintenance for Floating Licences | £300 |

Pi Toolbox 13 Education

| Part Number | ID | Description | Licence Type | Price |
|---------------|-----|---|--|-------|
| 01P-099171-NL | 101 | Toolbox Tutor Hardware Key, Fixed Node USB Dongle | USB Dongle Licence | £350 |
| 36P-099171-NL | 101 | Toolbox Tutor Software Key, Fixed Node | Individual Software Licence | £200 |
| 36P-099170-FL | 100 | Toolbox Tutor Software Key, Floating Licence | Server Based Floating Software Licence | £350 |
| 36P-099170-NL | 97 | Toolbox Student Software Key, Fixed Node | Individual Software Licence | £150 |
| 36P-099171-FL | 96 | Toolbox Student Software Key, Floating Licence | Server Based Floating Software Licence | £150 |

Upgrading from older Pi Toolbox versions

If a current user of Pi Toolbox would like to upgrade to 13 to take advantage of the new features and soft keys, then the following pricing is applied.

12 to 13

| From | To | Order Part Number | Price |
|-----------------------|--|-------------------|-------|
| 12 Plus Software Key | 13 Plus Licence Softkey | 36P-099159-NL | £100 |
| 12 Plus Hardware Key | 13 Plus Hardware Key, Fixed Node USB Dongle | 01P-099159-NL | £100 |
| 12 Pro Software Key | 13 Pro Licence Softkey | 36P-099160-NL | £250 |
| 12 Pro Hardware Key | 13 Pro Hardware Key, Fixed Node USB Dongle | 01P-099160-NL | £250 |
| 12 Ultra Software Key | 13 Ultra Licence Softkey | 36P-099161-NL | £350 |
| 12 Ultra Hardware Key | 13 Ultra Hardware Key, Fixed Node USB Dongle | 01P-099161-NL | £350 |

11 to 13

| From | To | Order Part Number | Price |
|-----------------------|--|-------------------|-------|
| 11 Plus Software Key | 13 Plus Licence Softkey | 36P-099155-NL | £250 |
| 11 Plus Hardware Key | 13 Plus Hardware Key, Fixed Node USB Dongle | 01P-099155-NL | £250 |
| 11 Pro Software Key | 13 Pro Licence Softkey | 36P-099156-NL | £450 |
| 11 Pro Hardware Key | 13 Pro Hardware Key, Fixed Node USB Dongle | 01P-099156-NL | £450 |
| 11 Ultra Software Key | 13 Ultra Licence Softkey | 36P-099157-NL | £550 |
| 11 Ultra Hardware Key | 13 Ultra Hardware Key, Fixed Node USB Dongle | 01P-099157-NL | £550 |

10 or older to 13

| From | To | Order Part Number | Price |
|-------------------|--|-------------------|-------|
| 10 Plus or older | 13 Plus Licence Softkey | 36P-099163-NL | £550 |
| 10 Plus or older | 13 Plus Hardware Key, Fixed Node USB Dongle | 01P-099163-NL | £700 |
| 10 Pro or older | 13 Pro Licence Softkey | 36P-099164-NL | £950 |
| 10 Pro or older | 13 Pro Hardware Key, Fixed Node USB Dongle | 01P-099164-NL | £1100 |
| 10 Ultra or older | 13 Ultra Licence Softkey | 36P-099165-NL | £1300 |
| 10 Ultra or older | 13 Ultra Hardware Key, Fixed Node USB Dongle | 01P-099165-NL | £1450 |

*** Please contact your Cosworth representative to arrange a Pi Toolbox update. You will require your Licence Number which can be found using the Cosworth Software Licence Configuration Tool. ***

Licence Management

It is important for customers to maintain a database of soft key licence numbers issued.

Cosworth Electronics understand that it is possible for laptops/computers to experience terminal issues which would mean the loss of a soft key licence. If a floating licence is in use when a user's laptop/computer experiences terminal issues, then the licence can be recalled by the licence administrator. If a fixed node soft key licence was in use, then the following procedure would apply:

1. The customer must supply the licence number which can no longer be used.
2. Cosworth will mark the licence number that can no longer be used so that it will no longer receive annual updates to the expiry date.
3. Cosworth will generate a new licence to the customer matching the same expiry date and specification as the licence which is no longer accessible. For this reason, it is important that customers can supply the licence number if laptop/computer issues arise.

API and Auto Coding Toolchain Options

| Part Number | ID | Item | Description | Price |
|-------------|----|-------------------------------|---|---------|
| - | 25 | PDS File Creator Basic | Create PDS files that can be read with a reader licence | £3,000 |
| - | 26 | PDS File Creator Read | Read PDS files that have been created with a creator licence | £1,000 |
| - | 27 | PDS File Creator Full | Create unlocked PDS files | £5,000 |
| - | 28 | PDS Real-Time Reader | Receive PDS data which has been broadcasted | £3,000 |
| - | 29 | PDS Real-Time Server | Broadcast PDS data live | £3,000 |
| - | 30 | PiDO Wrapper Read Access | Read manipulated PDS file data from PiDO Full access | £3,000 |
| - | 31 | PiDO Wrapper Full Access | Ability to access and manipulate PDS file data outside of Toolbox | £5,000 |
| - | - | IPS48 Auto Coding Licence | Cosworth Seat Licence for IPS48 auto coding | Request |
| - | - | Omega L2 Auto Coding Licence | Cosworth Seat Licence for L2 auto coding | Request |
| - | - | CLU Auto Coding Licence | Cosworth Seat Licence for CLU auto coding | Request |
| - | - | MQ12Di Auto Coding Licence | Cosworth Seat Licence for MQ12Di auto coding | Request |
| - | - | Antares Auto Coding Licence | Cosworth Seat Licence for Antares auto coding | Request |
| - | - | Badenia Auto Coding Licence | Cosworth Seat Licence for Badenia auto coding | Request |
| - | - | Centaurus Auto Coding Licence | Cosworth Seat Licence for Centaurus auto coding | Request |

Pi Toolbox Features Matrix

| Category | Feature | Lite | Plus | Pro | Ultra | Tutor | Student |
|-------------------------------|---|------|------|-----|-------|-------|---------|
| User Interface Limits | Tasks | 2 | 4 | 8 | 16 | 16 | 8 |
| | Outings | 6 | 16 | 32 | 255 | 255 | 32 |
| | Worksheets | 9 | 12 | 24 | 32 | 32 | 24 |
| | Displays | 16 | 16 | 24 | 32 | 32 | 24 |
| | Canvas Worksheets | | | 4 | 10 | 10 | 4 |
| | Displays on Canvas Worksheets | | | 64 | 96 | 96 | 64 |
| | Additional Windows | | | | 3 | 3 | |
| Supported File Types | Open .PDS | x | x | x | x | x | x |
| | Open .TXT | | | x | x | x | x |
| | Open .MAT (MATLAB) | | | x | x | x | x |
| | Open .MPEG4 (PDR) | x | x | x | x | x | x |
| | Export data to .PDS | x | x | x | x | x | x |
| | Export data to .XLS | | x | x | x | x | x |
| | Export data to .TXT | | | x | x | x | x |
| Export data to .MAT | | | x | x | x | x | |
| Maths and Analysis Tools | Pi Math | x | x | x | x | x | x |
| | Advanced Maths | | | | x | x | |
| | Constants (Add/Edit/Delete) | x | x | x | x | x | x |
| | Soft Events (Add/Edit/Delete) | x | x | x | x | x | x |
| Video Analysis | Import & Sync Video ('Add Media') - 3rd Party | | x | x | x | x | x |
| | Media Display | x | x | x | x | x | x |
| Telemetry | Real-time Data | | | | | | |
| | Real-time Chart Recorder Display | | x | x | x | x | x |
| | Pop-up Alarms | | | | | | |
| | Auto-Export of Metrics | | | | x | x | |
| Graphical Displays | Aerial Map Display | x | x | x | x | x | x |
| | Bar Display | x | x | x | x | x | x |
| | Bit Indicator Display | x | x | x | x | x | x |
| | Channels Display | x | x | x | x | x | x |
| | Colour Display | | | | x | x | |
| | Dash Display | x | x | x | x | x | x |
| | Dial Display | x | x | x | x | x | x |
| | Events Display | x | x | x | x | x | x |
| | Histogram Display | x | x | x | x | x | x |
| | Image Display | | | x | x | x | x |
| | Label Display | | | x | x | x | x |
| | Map Display | x | x | x | x | x | x |
| | Marine Map Display | | | x | x | x | x |
| | Navigator Display | x | x | x | x | x | x |
| | Power Spectral Density Display | | | x | x | x | x |
| | Time Displays | | | | x | x | |
| | Time/Distance Chart Display | x | x | x | x | x | x |
| Web Browser Control | x | x | x | x | x | x | |
| X/Y Display | x | x | x | x | x | x | |
| Reporting Displays | Excel Reports Display | x | x | x | x | x | x |
| | Split Report Display | x | x | x | x | x | x |
| | Summary Display | x | x | x | x | x | x |
| | Tabular Outing Report Display | x | x | x | x | x | x |
| Advanced Math Metric Displays | Metric Between Event Report | | | | | | |
| | Metric Outing Report | | | | | | |
| | Metric Overview Report | | | x | x | x | x |
| | Metric Segment Report | | | | | | |
| Stacked Outings | | | x | x | x | x | |

Contact our sales team to purchase Toolbox 13

Cosworth Electronic Sales, UK

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E: sales@cosworth.com

Cosworth Electronic Sales, USA

E: salesUS@cosworth.com

Contact our education team to enrol your academy!

To enrol email us on: education@cosworth.com

Downloads

Motorsport Car – http://download.cosworth.com/downloads/Software/Toolbox/13.0/Pi_Toolbox_Motorsport_Car_13.0.2487.2.zip

Motorsport Bike – http://download.cosworth.com/downloads/Software/Toolbox/13.0/Pi_Toolbox_Motorsport_Bike_13.0.2487.2.zip

Marine – http://download.cosworth.com/downloads/Software/Toolbox/13.0/Pi_Toolbox_Marine_13.0.2487.2.zip

Generic – http://download.cosworth.com/downloads/Software/Toolbox/13.0/Pi_Toolbox_Generic_13.0.2487.2.zip

Free Lite Licence

<https://www.cosworth.com/motorsport/products/pi-toolbox/>

System Requirements

Microsoft Windows 10 (64-bit)

Microsoft Windows 11 (64-bit)

Cosworth Toolset V7 or later for Offloaded Data

Cosworth Toolset V10 or later for Real Time Telemetry