ApexLab User Manual

Trackside operating guide · V172 / 172.0.0

Reviewed against published V172 on 13 October 2026. Prepare the kart, record a run, analyse the evidence and save reliable session history.

Recommendations are starting points. Record actual fitted setup and measurements; leave unknown values unknown. Similarity, faster laps and repeated imports do not prove that a setup caused an improvement.

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START HERE

What should I do when I first open ApexLab?

1. Create or select your driver/kart profile and check the engine class.

2. Enter the setup you are actually running in Chassis, Tyres and Engine.

3. Select the circuit and check conditions. Review any suggested baseline before fitting it.

4. Run your session and note what was fitted and measured.

5. Import your logger session with Companion, or use Upload Folder in Telemetry if you have one.

6. Add Driver Feedback and the tyre readings you actually recorded.

7. Open Overview and review the findings, missing information and recommended actions.

8. Choose Save session to preserve the run in History; active post-run inputs reset for the next run.

9. Later, use History to compare runs, find comparable sessions or create a Controlled Test.

You do not need to use every ApexLab feature straight away. Start with Overview, Driver Feedback and History. The advanced tools are there when you need them.

Do not have logger data? You can still record your setup and Driver Feedback. Missing measurements stay missing; detailed traces and maps need suitable telemetry.

1. Getting Started

ApexLab supports two connected jobs. **Pre-session** asks, “What should I start with?” and uses the selected kart, class, circuit, weather, tyres and current setup. **Post-session** asks, “What happened, and what should I test next?” and adds telemetry, measured tyre data, temperatures and Driver Feedback.

You do not need telemetry for an initial recommendation. Telemetry improves the post-session evidence, and missing channels do not stop the analysis. ApexLab keeps measured facts, driver reports and interpretations separate.

Next: Select the correct profile and engine class in the top bar.

2. Understanding the ApexLab Workflow

1. Confirm profile, engine class, circuit and conditions.

2. Generate and check the pre-session baseline.

3. Run the session and record what was actually fitted.

4. Import the full logger folder through Companion or Upload Folder.

5. Use Telemetry’s **Post-Session Review** to record four-corner tyre measurements and what the driver felt. These are the same session-owned records shown in the dedicated Tyres and Driver Feedback tabs.

6. Review the immediate shared diagnosis, inspect Telemetry and Map & Strategy, then use Overview to decide the next test.

7. Save the completed session. ApexLab resets only the active post-session workspace.

3. Dashboard Orientation

Appearance

Use the header’s **Appearance** selector for **Dark**, **Bright** or **System**. Bright provides stronger contrast for outdoor use and strong ambient light. System follows your device’s appearance preference. The choice is saved on this browser and applies across profiles; it does not change setup or session data.

View	Why open it?
Tyres	Set starting pressures and record measured tyre readings.
Engine	Review engine settings and recommendations for this run.
Chassis	Record and review the setup fitted to your kart.
Map & Strategy	See where selected laps gained or lost time.
Telemetry	Inspect detailed data from the current session.
Overview	See the main findings and recommended actions.
Slip	Check gearing, rollout and calculated tyre slip.
Driver Feedback	Tell ApexLab what the kart felt like.
History	Open and review your saved sessions.
Test Plans	Find planned tests and review their progress or results.
Evidence	Review what your completed tests have shown.
Compare	Compare saved sessions, laps or drivers.
Wizard	Get guided help with setup changes.
Tips	Learn what each setup adjustment does.
Quick Guides	Follow short instructions for common tasks.
Send Product Feedback	Send feedback about ApexLab, rather than your driving.

View	Why open it?
Manual	Find explanations, workflows and answers to common questions.

Reference in the navigation is a section label for help resources, not a session-selection button. To choose a baseline run, use **History → Set as Reference**. On a phone, Compare is labelled **Compare Drivers** and offers both comparison routes.

Hover over a view or focus it with the keyboard for a short explanation. On touch screens, open **About this view**. Normal buttons still work with one tap; help is optional.

How do I choose the right profile?

Choose or create the driver/kart profile in the top bar before entering data. Check the engine class. Each profile keeps its own setup, saved sessions and plans.

What this is for

Profiles keep each driver or kart’s History, records and saved data separate.

If the current profile has an unsaved active session, changing profiles asks you to discard that session or cancel the switch so its telemetry, tyre readings and Driver Feedback cannot move to another profile.

Deleting a profile is device-local and removes that profile’s History, exclusively owned telemetry, track maps, tyre drafts, notes, records and Next-Session Plan. Shared telemetry still referenced by another profile and global preferences/circuit records are preserved. Deleting the active profile is blocked while it has an unsaved session, and a storage failure is reported without claiming successful deletion.

How to use it

1. Select the correct **Driver profile** in the top bar.

2. Select the fitted **Active engine class**: Rotax Micro Cadet, Rotax Inter, Rotax Junior Max or Rotax Senior Max. Rotax Inter uses the Mini MAX platform; older records may retain the Mini name.

3. Use **Manage profiles and backups** to add a profile, create a complete selected-profile ZIP, or import a validated profile package.

4. Use **Master setup** to review the current Tyres, Engine, Chassis and ballast values; **Print Document** creates the trackside sheet.

Imported or legacy profiles with no recognisable class remain **unresolved**. ApexLab does not silently turn them into another class: select the fitted class before using class-specific tyre, engine, gearing or chassis recommendations.

Export Full Profile (ZIP) includes the selected profile, its History, linked full-resolution normalised telemetry, profile map images, drafts and included custom-circuit records. The package lists record and sample counts and includes integrity checks. Import validates the complete package before offering a new profile, named copy, merge or replacement;

replacement is explicit and failed writes are rolled back.

The expandable **Legacy settings backup (JSON)** remains for older files. It restores compatible text-storage settings and History only; it never contained detailed telemetry or map images and is not a full-device backup. Back up before clearing browser data or moving to another device. Browser storage is device-local, and neither export format uploads data automatically.

Next: Select the circuit and update the atmospheric station.

Full Profile Backup: protect your work

Use **Manage profiles and backups → Export Full Profile (ZIP)** before clearing browser data, changing devices or making a major import. Keep the ZIP somewhere safe outside this browser. It backs up the selected profile, not every profile or the whole computer.

The package includes that profile’s History and corrections, stored telemetry, available original Alfano source assets, saved Test Plans and linked Evidence, notes and supported drafts/maps. Expanded telemetry is retained when it exists; a backup cannot recreate channels or files absent from an older record. Saved recommendations and their original provenance remain historical snapshots rather than being upgraded into new recommendations.

Import the ZIP through profile management, review its validation report and choose the offered import mode deliberately. A named copy keeps it separate; merge or replacement affects the selected destination and replacement requires explicit confirmation. Re-importing a backup does not create a new independent experiment. The legacy JSON settings route is useful for compatible older settings and History, but is not a substitute for a Full Profile Backup. Companion pairing and PC watched-folder state are managed separately.

5. Selecting Circuit & Conditions

Find a Nearby Circuit

Choose **Find Nearby Circuit** to use your device location to find a known circuit nearby. The distance is calculated on your device; this feature does not store your precise location or send it to a circuit-lookup service. If location access is already granted, ApexLab can check once at startup. Otherwise it waits for you to ask.

A nearby suggestion does not change your circuit or create a session. Choose **Use Circuit**, or **Start New Session** to use the normal new-session workflow. Existing sessions, saved reviews, tests and active Forecast scenarios take priority. If several circuits or layouts are close together, choose the one you are using. Manual circuit selection is always available.

The card shows only saved runs and References belonging to your active profile. Unknown run dates and track states stay labelled as unknown. **Get Current Conditions** selects that circuit and explicitly fetches circuit weather; it is separate from GPS weather and Forecast. Your last freely selected circuit is remembered for this profile on this browser. **Not now** dismisses the suggestion for this visit; Find Nearby Circuit lets you try again.

1. Choose the UK circuit or the closest generic layout.

2. Select **DRY** or **WET**.

3. Enter air temperature, measured track-surface temperature, pressure and humidity. Track temperature is optional; **Refresh now** supplies circuit weather but does not invent a track-surface reading.

4. Use **GPS** for current-location weather, particularly for a generic track.

5. Check the Sky Condition, RAD and DA outputs before reviewing Engine recommendations.

Circuit context affects weather, jetting, Tyres, gearing, Strategy and setup advice. RAD is environmental context; it is not a command to make an automatic richer or leaner change.

The visible atmospheric defaults are labelled assumptions. Clearing a field leaves it missing; ApexLab may use the labelled engineering assumption to keep a calculation available, but it does not save that assumption as a measured session value. Entered and live-weather values are labelled separately.

Automatic track detection

After a supported telemetry upload, ApexLab checks session/logger naming and GPS context. A strong match may update the active circuit automatically. If the match is uncertain or conflicts with a manual choice, use the confirmation shown in Strategy. The GPS trace frames the actual recorded route where coordinates exist.

Forecast Weather Scenarios and Planned Track State

Forecast Weather is the provider prediction for the forecast circuit/date/time. **Planned Track State** is your Dry or Wet setup scenario. They are separate: rain probability does not prove a wet circuit. New scenarios start Dry, never with a previous scenario’s Wet choice. A non-rain hourly weather code, zero precipitation and the existing low-risk rain assessment label Dry as **from forecast**; incomplete or daily data leaves a provisional Dry default. Existing rain-code/positive-precipitation guidance still asks you to choose Wet or explicitly keep Dry before planned Auto-Tune.

Choose **Forecast circuit**, date and approximate time in that circuit’s timezone, then fetch. Changing the target clears the old forecast from that target; refetch before saving or applying. The nearest available hourly timestamp is shown, with the earlier hour used for a tie. ApexLab does not interpolate between samples; provider model processing is not supplied. A daily fallback is labelled reduced precision, including any daily min/max temperature mean. The station’s short outlook uses actual hourly timestamps, not 15/30/45-minute predictions.

Manually choosing Wet creates a **user-selected contingency**. Refresh preserves that choice and explains a dry-forecast/Wet-plan mismatch. **Use Dry from forecast** is an explicit change; save or apply it afterwards. A saved scenario refresh offers Keep Existing, Update Values, Duplicate Scenario or Cancel. Update Values accepts the new weather but retains the chosen track state. A failed refresh retains the last successful forecast and marks it potentially stale. Retrieval time, target time, timezone, source, resolution, missing fields and user adjustments remain visible. Older-than-one-hour or past-target snapshots get a freshness reminder, not an engineering adjustment.

Save Weather Scenario stores profile-owned conditions, context and provisional tuning provenance. It is not an immutable snapshot of every calculated setup output. Selecting a saved scenario only inspects it: the active circuit, live conditions and setup stay unchanged. Choose **Reapply Forecast Setup** to rebuild the provisional setup through Auto-Tune Planned

Setup, using the saved scenario's effective conditions and Dry/Wet choice. It does not fetch new weather; retain any stale-forecast warning. **Save & Apply Conditions** explicitly sends the reviewed scenario to the existing recommendation workflow. **Auto-Tune Planned Setup** additionally applies the existing chassis/tyre baseline using those conditions and does not fetch current live weather. Reopening a legacy plan preserves its Dry/Wet choice and labels an unavailable track-state source honestly.

Forecast scenario ≠ completed run. Saving a scenario creates no driven History record, controlled-test result or calibration evidence. Applied forecast values remain planning inputs until actual conditions are confirmed; unknown actuals remain unknown. Manual edits made after a request starts win over its late response. Partial provider values remain missing, including pressure in hPa; the existing labelled engineering assumptions are separate from observations. RAD (%) and DA (m, with ft also retained) are projected by the unchanged atmosphere model only when all required inputs are present. Planned versus live comparison never rewrites a completed run.

The selected Dry or Wet choice is shown directly on its button, and saving both scenarios displays an immediate confirmation. Use **Delete Selected Plan** beneath the saved-plan selector to remove only that plan from the current driver profile. Deleting a saved plan does not reverse conditions already applied to the workspace.

Tyre setup and fitted rims

Open Tyres for Target Hot and all four recommended cold starting pressures. Fitted physical rim is shared with Chassis: changing either selector updates the same setup. Recommended rims remain separate until explicitly accepted after fitting. A generic pressure category never establishes an exact wheel model.

Open **Why these pressures?** for the rationale, **Advanced tyre setup** for simulator controls, or **Wheel details & recommendation reasoning** for fitment, observations, pressure category and manufacturer guidance. No verified named-wheel to pressure-volume mapping exists, so that category remains an independent advanced input. After the run enter the four hot pressures; **Add tyre temperatures & details** retains the complete evidence form. Save session preserves the completed run. Historical evidence remains read only.

Live weather map / rain radar

Select a known modelling circuit and open **Live weather map · Radar** beside the weather modes. The marker identifies that circuit. Use Play recent movement to watch actual observed composites, pause or scrub the timeline, and check the latest available composite's age. From the latest frame, Play starts within the latest available hour and stops at the newest frame. The visible Light → Moderate → Heavy legend is a qualitative colour guide, not a measured rainfall rate. The composite time is its generation time; contributing radar observations can be older. There is no future radar nowcast or ApexLab rain-arrival estimate.

Current at circuit shows Open-Meteo current model values, not direct local station observations. Forecast predicts future conditions; planning affects setup only through existing explicit apply actions. Radar showing rain nearby does not mean the circuit is currently wet. Viewing weather never changes Dry/Wet, setup, History or Evidence. Empty/transparent areas may mean no detected precipitation or missing radar coverage.

Radar starts paused, refreshes at most every five minutes while visible, and stops when closed, out of view or in the background. Refresh weather can check again after one minute. Provider rate limits may pause imagery on shared track Wi-Fi. Recenter returns to the circuit. If imagery is unavailable, do not infer that the track is dry. Data credits remain below the map.

Live, Forecast and Manual

Live retrieves current conditions for the chosen circuit, or your location when you explicitly choose GPS. **Forecast** prepares a future scenario. **Manual** lets you enter conditions yourself. Check the source and time: a fetched value, an entered observation, a forecast and a calculation assumption are different things.

Live weather auto-refresh

1. In Live mode, choose **Auto-refresh** and an interval of **5, 10, 15 or 30 minutes**. It is initially off, with 10 minutes selected.

2. Read the last successful update, next refresh and paused/error status. Enabling waits the selected interval; **Refresh now** requests an immediate update.

3. Choose a circuit with a known location. Automatic updates use that circuit; GPS weather is a separate manual request.

4. Turn auto-refresh off when you want to stop it. The preference stays on this browser across profiles and reloads.

Forecast, Manual, a hidden page or saved-session analysis pause automatic refresh. Failed or incomplete automatic requests leave the last captured values in place and display a failure/stale warning. Check the age and source before relying on them; a failure does not replace observations with assumed defaults.

Session-owned conditions

A run keeps its own recorded weather and track observations. Starting a session captures genuine available observations; unknown values remain unknown. Later automatic live updates can change the live station and current recommendations, but do not rewrite the run’s captured observations or completed History. Explicitly record a current-run observation when needed. A forecast or labelled calculation assumption is never silently saved as a measured historical fact.

For a genuine error in a saved observation, use **History → Correct Completed Run**, enter the supported factual weather correction and a reason. The original source and correction audit remain available. Merely opening a saved run or refreshing live weather cannot correct it.

6. Pre-Session Setup

Question answered: What should I start with?

Using Auto-Tune

1. Select the correct driver profile, Active engine class and circuit.

2. Confirm the **Track & Atmospheric Station** and DRY/WET mode. For a Generic / Custom track, use **GPS** first so the weather represents your location.

3. Press **Auto-Tune** in the top bar.

4. For a mapped circuit, ApexLab fetches current ambient temperature, atmospheric pressure, humidity and weather condition. If rain is detected, it asks before switching to WET.

5. Auto-Tune preserves an entered track-surface temperature; live weather does not fabricate one when it is unavailable.

6. Auto-Tune then applies the engine-class Chassis baseline and tyre selection, and recalculates Tyres, Engine and gearing recommendations from the selected circuit, conditions and current session context.

7. Review every applied value before going on track.

Auto-Tune changes the current starting setup. It reapplies the Chassis baseline, selects the class tyre and its default target, and updates the weather-informed recommendations. Record any existing setup you need to keep before pressing it.

Auto-Baseline is the separate Chassis-only control described in Section 7. It reapplies the Chassis starting values but does not fetch weather. With identical inputs, the baseline is deterministic rather than random.

Auto-Tune is a starting point, not a final setup. After the run, use Telemetry, Post-Session Tyre Readings, Driver Feedback, Engine analysis and Overview to answer what the kart actually did and what to test next.

Next: Review the generated Chassis, Tyres, Engine and gearing recommendations, then verify the actual kart matches the display before going on track.

7. Chassis How-To

Rotax Micro Cadet can select an eligible OTK 900 mm or OTK 950 mm chassis. Rotax Inter uses the eligible 950 mm family, not the 900 mm cadet-only family. Check the actual chassis homologation/registration: wheelbase alone does not establish eligibility. Junior and Senior profiles use ApexLab’s OTK 1045 mm engineering family; Motorsport UK does not mandate that make or wheelbase. For supported full-size OTK Junior/Senior profiles, Auto-Baseline applies either the verified **OTK Standard Dry Baseline** or the official **OTK Wet Baseline** from the explicit Dry/Wet session mode. Weather probability, telemetry and tyre temperatures do not select Wet automatically.

The Wet baseline is an official starting configuration, not a guarantee of the optimum race setup. Its major changes are 15 mm inside spacers with Long front hubs, 4 mm toe-out on each side, one click of positive camber on the upper adjuster, the increased-caster top-FRONT/bottom-BACK configuration, the Brown hard front torsion bar, a narrower 1340 mm rear track and aluminium AXP wheels. Middle ride heights, the Standard/Medium OTK N axle, Standard 92 mm rear hubs, no rear bar and one supplementary seat stay each side are retained. Overall front width remains unrecorded until measured. AXP model/material is stored separately from the tyre-pressure rim class, so the chassis baseline does not select an unverified pressure modifier.

Select the actual model, then record Rims, Axle, Rear Hub Length, Front Hub, Inside Spacer, measured Front/Rear Track, Toe, Caster, Camber, Ackermann and ride heights. Micro Cadet/Inter retain ApexLab's existing chassis-specific seat-stay and bar restrictions; these are model capabilities, not universal class rules. OTK 1045 mm profiles can record seat stays and front/rear bars manually; these values are preserved per profile. Missing entries remain Not recorded. Front Bar "Flat" records the installed flat bar; do not use it for a round chrome bar. Seat-stay count conventions in legacy records are not reinterpreted. The adult baseline records one supplementary stay each side without reinterpreting legacy numeric counts. With the Standard 80 mm front hub, 5 and 10 mm inside spacing are Narrower, 15 mm is the Standard dry reference and 20 mm is the Wider spacer-only setting currently verified in ApexLab. No 0 or 25 mm state is inferred. From Standard, a controlled wider recommendation uses 20 mm with the same 80 mm hub before considering the larger 95 or 110 mm hub change. The Narrower / Standard / Wider / Very Wide label is derived from the recorded physical hardware; it never replaces or fabricates an overall width. Existing overall-width measurements are preserved but marked for re-measurement after a hub or spacer change. A width-dependent simulation is unavailable until a current measurement exists. Wider front generally strengthens initial turn-in and inside-rear lift; when entry is already acceptable, a narrower front can increase outside-front loading through mid-corner. Very wide and longer-hub setups may suit wet or very low grip, but ApexLab recommends the smallest supported step and keeps hub and spacer changes separate. The Wet baseline remains 15 mm with Long 110 mm hubs. Wheel material is recorded separately from the rim pressure class; an unknown class uses no rim-specific modifier and does not imply wet, low-volume or high-volume rims.

Use **Medium** axle stiffness as the normal baseline. A softer axle can provide more rear compliance in low-grip conditions, while a harder axle can provide a more supported rear platform when built-up grip causes hopping or binding. These are contextual test directions, not universal grip rules.

Rear Hub Length includes **Short**, **Standard**, **Medium** and **Long**. The adult OTK magnesium mapping is 56 / 92 / 115 / 145 mm respectively; Standard is the adult dry baseline. Existing Micro/Inter baseline categories are unchanged; shorter hubs can help rear release, while longer hubs can add rear support. Do not read this as "longer equals more grip". Keep rear track width unchanged when possible so a hub-length test is not confused with a width change.

The Tips tab contains one combined, expandable **Camber & Caster HOW TO ADJUST** guide for the described OTK upper/lower eccentric-washer system. For that system, read the arrows upper then lower: FRONT / FRONT is the neutral reference, FRONT / BACK increases caster and BACK / FRONT decreases caster. Camber and caster can influence one another on this coupled system, so recheck both and recheck toe where appropriate. Other chassis or adjusters may use different hardware or markings, so follow the applicable manufacturer instructions. No universal tool size or torque is implied.

Next: Change one chassis variable at a time where practical, stay within the selected chassis specification and compare the result against the baseline.

For scales, enter all four corner readings with the equipped driver seated and steering straight. Driver + kit is entered separately only for the kart-only estimate. Enter the applicable event minimum before acting on ballast output; the UK 2026 class reference is shown separately. The blank input is intentional. Ballast calculations do not verify the separate driver minimum or

age/licence eligibility.

8. Engine & Jetting Before the Session

Main Jet is calculated from class, circuit layout and atmospheric inputs, with limited post-run evidence review. Needle and Air Screw retain the fitted/reference setting, or a disclosed class fallback. Air Screw values are turns out. Changing either Engine feedback view records the same observation; untouched Normal is not evidence. Fine-tune a candidate deliberately, then Apply candidate to fitted setup. Save session records the completed run.

On desktop, **Rotax Evo Jetting** is the main recommendation area and **Three-Point Mixture Controls** sits alongside it. The compact **2-Stroke Fuel Mixer** is below.

The Tips tab includes an expandable **Squish Clearance** UK regulatory reference with the class minimums, specified ROTAX tin wire, two-sided averaging method, sealing cautions and dated official-source links. It is a reference, not an engine adjustment recommendation or compliance certificate.

The pre-session recommendation considers the engine/class profile, fitted carburettor settings, atmosphere, circuit load and session context without requiring telemetry.

• **Main Jet:** strongest influence under full throttle and sustained high load.

• **Needle Clip:** strongest influence through progression and midrange.

• **Air Screw:** strongest influence around closed/low throttle and initial pickup.

These carburettor circuits overlap. Do not diagnose mixture from one throttle label alone.

UK 2026 regulation scope: Main jet, external air screw, throttle stop and the five needle grooves are adjustable. ApexLab models the first, second and fourth of these. Its jet/air-screw candidate ranges are engineering bounds, not legal limits. The fixed XS specification includes K57 needle, DP267 needle jet, choke and idle jets 60, idle emulsion tube 45, float needle valve 150, slide 45 and 4.0 g floats.

Standard gearing is Micro Cadet 14/80 and Inter 13/80. ApexLab excludes final-drive changes from their recommendations. Championship Regulations, Supplementary Regulations or an official bulletin may vary the rear sprocket requirement; check the event rules. ApexLab does not apply event overrides automatically. Junior/Senior gearing remains adjustable.

Recommended means what ApexLab suggests. **Candidate** means what you are considering for the next run. **Actual / fitted** means what was really used or recorded. A candidate is not an active Test Plan. Before-run recommendations are the starting point before telemetry; after-run recommendations use completed analysis when available.

Candidate setup for next run

1. Choose the Before-run recommendation or After-run recommendation. Fine-tuning from shows the effective source; an after-run baseline requires telemetry samples. Feedback-only review does not make that baseline available; a new selection falls back to before-run.

2. Move Closed / Low, Half / Midrange or Full / High Load by one supported step.

3. Read the candidate Air Screw, Needle Clip or Main Jet value. This is not a record of what was fitted.

4. Choose **Apply candidate to fitted setup** to copy it into the current editable run. Use **Edit fitted values** if the kart differs. Later candidate edits do not change fitted values until you apply again. Check the physical setup before Save session; unsaved engine inputs are not a durable backup.

5. Use **Reset to ApexLab Recommendation** to return all three controls to the selected baseline.

Centre 0 means the ApexLab recommendation. A moved slider creates a temporary **candidate setup for next run**; it does not rewrite ApexLab's recommended baseline. "Fixed by class regulations" means the control is not proposed as a solution. Always verify current regulations.

9. Tyres Before the Session

The tyre selector identifies the standard UK 2026 class tyre for DRY/WET mode. Other compounds remain available for engineering comparison and are labelled "comparison only", not eligible alternatives for the active class. Follow the tyre sidewall's direction of rotation. Pressure targets, pressure build and nominal rollout are ApexLab engineering estimates, not Motorsport UK mandated values. Historical tyre names are retained as recorded.

1. Select the fitted compound and rim type.

2. Set Surface Grip, Tyre Age and Handling Feel.

3. Set the intended **Target Hot** pressure.

4. Review the four Cold Start Pressures and the Directional stagger switch.

5. Use a stagger only when repeatable hot pressure and temperature evidence supports it.

ApexLab recommends the **cold starting pressure** needed to approach the selected **Target Hot** operating window. These are separate values: Target Hot describes the desired post-run operating pressure, while Cold Start accounts for the pressure build expected during that run.

In otherwise comparable dry conditions, warmer air and track temperatures normally increase expected pressure build, so ApexLab lowers the cold starting recommendation while retaining the same tyre-profile hot target. Colder conditions normally move the cold recommendation higher. The exact result can also change with compound, circuit load, rim, wet/dry mode, surface, tyre condition and measured evidence from a comparable saved session. Wet tyres keep their own lower-heating pressure-build profile rather than inheriting the dry rule unchanged.

Where a previous session for the same profile, circuit, compound and wet/dry context contains recorded cold, hot and target pressures, ApexLab can use that session-owned evidence cautiously. A run finishing above target pushes the next comparable cold recommendation lower; a run finishing below target can push it higher. Record track temperature when available to improve confidence. These are operational starting points rather than an absolute rule for every tyre or changing track condition.

10. Running the Session

• Record the setup actually fitted, not the setup you intended to fit.

• Keep conditions and fuel load as comparable as practical.

• Ask the driver to report where and when a symptom happens: entry, mid-corner, exit, early run or late run.

• Where practical, change only one major variable between comparable runs.

Next: On return, take tyre measurements promptly and import the complete logger folder.

How do I import a session?

Open Telemetry and use Companion or Upload Folder for the complete supported logger session. Check that the correct run and lap timing appear, then add measured tyre readings and Driver Feedback. If you have no logger data, you can still save the information you know.

Telemetry now brings together telemetry upload, post-session tyre readings, Driver Feedback, immediate analysis and session saving. The dedicated Tyres, Driver Feedback, Overview and History tabs remain available for preparation, deeper review and later inspection. They do not create duplicate records: the active views use the same session-owned information.

Competition logging is a separate question from imported-channel availability. The UK 2026 Rotax rules list RPM, engine water temperature, EGT, one wheel’s speed, X/Y acceleration, lap/split timing and permitted GNSS reception. They do not make throttle position, brake pressure, steering angle, AFR/lambda or extra wheel-speed sensors legal by default. Private testing/research is a separate context. ApexLab uses only supported channels actually present in an import; GPS/RPM do not create missing sensor measurements.

Manual fallback: Upload Folder

1. Open Telemetry.

2. Click **Upload Folder** and select the complete supported logger session folder. You can also select several related CSV files.

3. Review the imported session, detected circuit, lap count and warnings.

4. Confirm that each timed lap has its own official time and that only one lap is marked Fastest.

How an Alfano folder is used

The **SN… session-summary file** supplies authoritative lap numbers and official lap times. The related **LAP_1…, LAP_2…** trace files supply continuous RPM, GPS speed, coordinates, available temperatures and G-force channels. ApexLab associates them by exact session and lap identity.

An official Alfano value of **49270** is displayed as **49.270 s**. ApexLab uses authoritative session timing when available rather than counting trace samples.

If two official laps have exactly the same time, the earlier lap number is the single Fastest reference. For example, if Laps 3 and 5 are both 49.270 s, ApexLab marks **Lap 3 — 49.270 s** as Fastest while preserving Lap 5’s time.

An extra trace without a completed official timing entry can remain available for inspection, but it is excluded from Fastest, official averages and timed rankings. An isolated LAP_x file may not contain enough information to recover the exact official time, so always upload the full folder where possible.

Normal import or Follow-Up Run?

For an ordinary run, confirm the profile and choose **Import & Analyse** on the Companion card, or use **Upload Folder** in Telemetry. Finish the export first and review any session chooser. Importing telemetry does not itself save a completed run: complete Post-Session Review and choose **Save session**.

For a plan already showing **Test in progress**, use **Add Follow-Up Run**. Choose a Companion-detected run, or upload its complete folder within that follow-up picker. Review the source run, intended plan, profile/class and timing qualifications, then confirm **Attach & Analyse**. A normal upload outside this picker does not itself establish a controlled-test attachment.

Source session and saved record

Where provided, **Alfano source session** shows the exported date/time, driver, circuit and device. **Record date / time** is when the ApexLab record was created; **Profile / kart** identifies where it was saved. These can differ. Source timezone may be unspecified: do not infer a conversion or assume that import time is driving time. Import provenance and preserved source details stay with the recording.

How do I use Companion?

Companion reads supported Alfano exports from a folder on your Windows PC and offers them to ApexLab. You still confirm the import and save the completed run. Manual Upload Folder remains available.

Pair and choose the folder once

1. Use the Companion package matching your ApexLab build. It is a development package requiring **Node.js 24**, not a self-contained signed Windows installer. Extract it into a user-owned folder, run **Start-Companion.cmd** and keep its terminal open.

2. Open **Settings → Alfano Integration**. Enter the one-time code shown by Companion and choose **Pair Companion**. Allow local-network access if your browser asks. The code expires after ten minutes or successful use.

3. Choose **Choose Export Folder** and select a dedicated Alfano export folder. Keep your exports; do not select an entire Desktop or Documents folder.

4. Export the supported session-summary plus lap-file bundle from Alfano. Classic Excel CSV is not supported by this route. Finish exporting before confirming import.

5. Review the detected run and choose its profile, class and circuit context before **Import & Analyse**. Complete Post-Session Review and save the run normally.

Pairing persists for this browser and site. Reloading, reopening the browser or restarting the same Companion reconnects without routine re-pairing, and the chosen folder is retained. Companion must be running. A different browser/device/site or revoked trust needs explicit pairing. Do not remove Companion state or trust files as a routine update step.

Watched exports and review

Matching exports can be directly in the chosen folder or one immediate session subfolder. Deeper folders and links are not watched. Existing files are quiet when the folder is first chosen; use **Review existing / ignored exports** if you deliberately want to inspect them. **Check for exports** performs an explicit check. Incomplete or still-arriving exports remain pending rather than being imported as finished runs.

The active list shows new/action-required exports and unsaved imports. **Review completed / archived imports** contains saved receipts. After saving, Remove archives the detection receipt; Keep retains it in completed review. Neither deletes History, telemetry or source files. **Restore to import list** returns a receipt to presentation without importing it again. Optional **Always remove completed Alfano imports after saving** starts off and can be disabled.

Identical re-exports are suppressed even after archiving. A changed export requires review and does not automatically overwrite a saved run or correction. If telemetry loaded but acknowledgement failed, use **Finish pending import receipt**; inspect the existing run rather than importing it twice. A reserved interrupted import needs review, not blind deletion of receipts.

Unpair or Forget Companion Locally?

Use **Unpair Companion** when the old Companion is available: it revokes that pairing on the PC and removes local trust. If the PC is offline, revocation can remain pending until it reconnects.

Use **Forget Companion Locally** for recovery when the old Companion is permanently unavailable or local pending trust prevents pairing the replacement. Confirm the warning. This removes only this browser/site’s pairing; it cannot revoke trust on an unavailable PC. Start the replacement and pair explicitly with its new code.

Both routes preserve imported sessions, History, telemetry, profiles, Test Plans, Evidence, completed/archived receipts, preferences, watched-folder configuration and original Alfano files. **ApexLab does not modify Alfano source files.** To update the package, stop the old process, extract the matching package in a new folder and retain existing PC configuration and receipts. If Companion is unavailable, use Telemetry’s full folder upload or individual supported files.

12. Understanding the Telemetry Page

1. Select the active imported session.

2. Use **Post-Session Review** to enter measured tyre readings and structured Driver Feedback before or after the logger transfer.

3. Review the immediate shared diagnosis and save the completed session to History when ready.

4. Tick the laps to overlay.

5. Choose a **Reference lap**; Fastest is useful, but another lap may be selected.

6. Choose a Graph channel: Speed, RPM, Lateral acceleration, Longitudinal acceleration, Water temperature, EGT or Delta time only when that channel exists in the import.

7. Move across the Lap Trace Analyser to inspect the point at the same lap distance.

8. Use the linked Strategy map to inspect the corresponding GPS location.

Lap overlays are aligned by lap distance where that data is available. Missing EGT or throttle position is not an import failure. The supported Alfano data used by ApexLab may not include EGT, and ApexLab never labels inferred throttle/load regions as measured throttle position.

Lap-Time Delta

Choose one **Reference lap**, then tick the comparison laps you want to see. The zero line represents the reference. A negative delta means the comparison lap is ahead at that distance; a positive delta means it is behind. The curve is cumulative, so it shows where time was gained, lost or recovered around the lap.

Move or drag across either graph to update the same shared cursor, telemetry values and GPS marker. **Official final delta** uses the logger’s authoritative lap times. The plotted trace delta uses telemetry elapsed time aligned by distance, so the two may differ slightly and ApexLab does not stretch the trace to force them to match.

The shared telemetry feature engine interpolates clean laps onto a common lap-distance axis, rejects incomplete laps from trend claims, and searches for contiguous differences that repeat across comparisons. It grades evidence as **Good**, **Usable**, **Limited** or **Unreliable** from distance/GPS continuity, missing channels, dropouts and usable lap count. Small isolated sample noise is not reported as a performance region.

Tyre readings and Driver Feedback belong to the current session, not the selected lap. Changing a selected or reference lap updates lap inspection only. Draft persistence keeps current work available on this device; it does not create a completed History record.

When a diagnostic includes **Inspect Telemetry Evidence**, click it to open this existing Lap Trace Analyser and GPS map with the relevant laps, channel and distance region selected. ApexLab does not create a separate diagnostic graph.

Telemetry Tyre Status

The Tyre Status box shows Hot, Target and **UNDER TARGET**, **TARGET MET** or **OVER TARGET** for each corner. These values come from Post-Session Tyre Readings, not from fabricated telemetry.

What does Available telemetry tell me?

Open **Available telemetry** for the selected imported or saved recording. ApexLab can preserve more channels than it currently graphs, analyses or uses in recommendations.

Expand **View channels** and a channel for its source, range and sample details. Groups cover Core telemetry, Driver inputs, Vehicle dynamics, Engine & auxiliary sensors, Tyres and Environment. Their presence depends on the actual export.

State	How to read it
Available / usable	The existing supported conversion supplies usable recorded values. A Graphable badge means it is offered by the existing graph selector.
Exported · no usable samples	The export includes the channel but no usable measurements under its recorded state. Presence alone does not prove a working sensor.
Raw · scaling unverified	Original values are retained, but engineering units/scaling or sensor activity are not verified. Do not treat a raw number as a calibrated measurement.
Not present	The current preserved export does not provide this channel.
Historical membership unknown	An older record retains supported telemetry but not the original complete channel inventory.

Canonical versus raw values: canonical means the supported working values ApexLab already uses, such as GPS speed in its verified unit conversion. Raw means original exported numbers. Where both are shown, the raw range is source information, not an alternative recommendation input. A retained throttle, brake, steering or extra temperature column is not automatically graphable or analysed.

Advanced source details

Expand **Advanced source details** for session source metadata, original summary rows, device/driver context, projection information and source assets when supplied. The theoretical/reference lap and auxiliary software/wireless files are preserved source information; they are not another official driven lap or a setup recommendation.

Environment/meteo fields are labelled imported observations. Their source time may be unavailable; they do not silently replace session-owned conditions. Tyre measurement timestamps retain exported tyre identifiers and time information; uncertain corner mapping or timezone is disclosed. Engine runtime counters retain raw values and states with unverified units rather than being guessed into engine hours.

Auxiliary files belonging to a recording are retained where the importer can establish their association. Shared collection assets stay collection context, not that run’s measured weather or tyres. Full Session and Full Profile exports preserve available source assets. **Preserved does not always mean analysed or used in recommendations.**

Gear Ratio Calculator & Slip

Pre-session circuit recommendation

For Junior and standard-weight Senior, the pre-session result starts from the selected circuit/class **baseline**, then applies only the current condition and evidence modifiers. The baseline is shown separately from **fitted gearing** and any **previous matching session**; neither a manual fitted value nor History silently redefines the circuit reference. Evidence status is shown as Verified, Provisional, Generic estimate or Unverified. A Generic estimate is only a layout-based fallback for an unknown circuit; use a named circuit baseline where available and confirm it with RPM and track conditions. These are starting recommendations to confirm against terminal RPM, limiter position, corner-exit RPM, rollout, grip, wind, engine condition and current event rules.

Front sprockets are stored explicitly, so a research or calculator reference such as **13/80** remains 13/80 rather than being converted to a 12-tooth approximation; that does not make it an active circuit baseline without sufficient evidence. ApexLab currently models standard Senior only: Senior 177 research is kept separate and is not used by the standard Senior recommendation. Tyre rollout remains in the calculator below; it is not silently used by the pre-session recommendation because the circuit dataset does not provide sufficiently consistent target speed, target RPM and rollout evidence.

Dry baseline and Wet adjustment

The named or generic **circuit baseline is always the Dry starting reference**. For adjustable Rotax Junior Max and standard Rotax Senior Max, an explicit Wet session applies a separate, traceable shorter-ratio starting adjustment while retaining the Dry baseline front sprocket. Lower wet corner speeds can reduce exit RPM and make engine recovery more important, but excessive shortening can increase wheelspin and reduce straight-line headroom. ApexLab therefore uses a conservative provisional Wet starting treatment, then allows valid RPM and limiter evidence to refine it within a narrow bound.

Wet is selected by the session’s authoritative **DRY / WET** control. Forecast precipitation, rain probability and a surface label do not silently convert a Dry session to Wet. Flooded, Raining and Damp describe the selected Wet session but do not add the Wet adjustment twice. Switching Dry → Wet → Dry always returns to the original Dry baseline calculation; repeated calculations do not accumulate teeth.

Fitted gearing remains what is physically installed, **previous-session gearing** remains historical evidence, and **Candidate Gear** remains a temporary what-if. None replaces the Dry circuit baseline or becomes the next Wet starting point. Micro and Rotax Inter remain fixed by their applicable class profile in both Dry and Wet conditions, so ApexLab does not offer an adjustable Wet gearing change for those classes.

Always confirm the recommendation with actual corner-exit RPM, maximum RPM, limiter position, lap time, grip and driver control. A shorter Wet ratio is a starting direction, not an instruction to maximise acceleration regardless of wheelspin or track drying.

Gear Ratio Calculator

Open **Slip** for the **Gear Ratio & Speed Calculator**. **13/80** means 13 front and 80 rear teeth; the numerical final-drive ratio is rear ÷ front (6.154). Ratio change is (candidate ratio ÷ current ratio − 1) × 100. “Very similar” means within 0.10%; matching ratios use a relative numerical tolerance of 10^{-12}.

A **higher numerical final-drive ratio** is **shorter gearing**: higher RPM at the same road speed and lower theoretical speed at the same RPM. A **lower numerical final-drive ratio** is **longer gearing**: lower RPM at the same road speed and higher theoretical speed at the same RPM. Equal ratios are unchanged. These are mathematical comparisons, not a recommendation that a candidate will be faster.

With the same tyre rollout and drivetrain reduction, RPM at the same road speed changes by candidate ratio ÷ current ratio; speed at the same RPM changes by the inverse. These relative comparisons need no rollout. Absolute theoretical speed and its RPM inverse require an effective driven-rear **tyre rollout** in millimetres. ApexLab uses the supported non-gearbox Rotax MAX model: 1:1 from crankshaft to sprocket with the clutch fully engaged, then chain reduction. No limiter-speed or achievable-speed prediction is made.

The selected tyre supplies an **ApexLab nominal engineering estimate**, not an official regulatory circumference. Enter a measured/manual rollout to override it. Clear the field for no rollout; relative calculations still work. **Use nominal rollout** restores the estimate. Rollout affects theoretical drivetrain speed; it does not alter actual GPS/logger speed. Calculator overrides are temporary and do not change tyre readings.

Current Drivetrain Slip Analysis

Current Slip compares theoretical drivetrain speed with actual measured road/logger speed using the fitted front sprocket, fitted rear sprocket, RPM and relevant tyre rollout. Check **Current gearing**, **Current RPM**, **Current speed** and **Speed unit**, then select **Calculate Slip**. Use the actual fitted gearing and RPM and speed from the same moment or operating point.

Slip remains (theoretical speed − actual speed) ÷ theoretical speed × 100. It is distinct from gearing-change percentage and is not a measured power-loss percentage. The existing 2.5% and 5.5% inspection bands remain, but a speed discrepancy alone cannot establish clutch slip, binding or wheelspin. KPH/MPH follows the existing shared speed-unit control.

Use Session Data copies available session maxima from the existing telemetry statistics, excluding invalid laps and reusing existing plausibility bounds. Missing channels stay blank. The imported recording stores a speed channel but does not always retain whether it came from GPS or wheel sensing, so confirm the logger source. RPM and speed peaks may occur at different instants: avoid comparing unrelated peaks. For meaningful Slip analysis, enter paired observations where possible.

Candidate Gear Comparison

This is a deterministic **what-if** gearing tool, separate from current measured Slip analysis. Compare **Current fitted gear** with **Candidate gear** without modifying the fitted setup. Under **Temporary candidate**, edit **Candidate front · teeth** and **Candidate rear · teeth**. **Match current gearing** copies the current pair into the candidate. The comparison uses the current RPM, tyre rollout and measured speed where applicable.

• **Final drive ratio**: current and candidate rear ÷ front ratios.

• **Gearing change**: percentage ratio change, labelled shorter, longer or unchanged.

• **Candidate theoretical speed at current RPM**: the theoretical speed for the candidate at the entered RPM and rollout.

• **Candidate RPM at current actual speed**: the theoretical RPM needed for the candidate at the entered road speed and rollout; this is not a measurement of candidate engine RPM.

• **Ratio-only RPM at same road speed** and **Ratio-only speed at same engine RPM**: relative changes for the gearing pair.

• **Conditional candidate speed at current RPM**: an assumption-based estimate available only after current Slip is deliberately calculated.

Illustrative example only: current **13 / 80** gives 6.154; candidate **12 / 80** gives 6.667, approximately **8.33% shorter**. This increases mathematical RPM at the same speed and reduces theoretical speed at the same RPM; it does not establish better acceleration or a lap-time gain.

Conditional candidate speed: assumption, not a future Slip result

The result initially says **Unavailable until current Slip is calculated**. Once current Slip has been calculated, it estimates candidate speed at the same RPM if the current observed discrepancy persisted. This is a conditional comparison estimate, not predicted future Slip, guaranteed actual speed, predicted acceleration, predicted lap-time gain or proof the candidate gearing will be faster. ApexLab does not predict candidate Slip before a run; a candidate only has measured Slip after it is fitted and run with paired RPM and speed evidence.

Does not change fitted gearing: changing candidate inputs does not change fitted front or rear sprockets, saved session setup, History or a Next-Session Plan. Candidate values remain temporary what-if values unless you use a separate, explicit existing setup workflow. Current gearing comes from editable setup or the selected saved session. A saved session uses its effective recorded gearing and tyre identity without modifying History. Editing comparison inputs never applies a setup change, creates a plan or changes recommendations. Changing profile/session resets the temporary comparison.

Fixed-gearing classes

Where gearing is fixed under the selected class configuration, Candidate Gear Comparison is **mathematical / reference only**, not a setup recommendation. The calculator accepting a combination does not establish that it is legal. Micro and Inter use the shared **standard MSUK 2026** gearing reference. Championship Regulations, Supplementary Regulations and official bulletins take precedence for the event. In historical analysis this is a current reference only, not a retrospective legality judgement.

How do I use Map & Strategy?

Map & Strategy shows where one lap or session gained or lost performance around the circuit. Satellite shows telemetry over circuit imagery. Analysis uses a clean background so traces are easier to compare. Choose the Reference Lap that other selected laps are compared against, then choose a measured channel such as speed or RPM for the telemetry layer.

Open **Map & Strategy** for the shared GPS Track Studio. Traces follow actual logger coordinates without road or centre-line snapping.

1. Select the laps and telemetry layer to display.

2. Use **Fit circuit** when you want to frame the recorded route.

3. Drag the telemetry marker along the recorded line to inspect it; the graph cursor and map marker stay linked.

4. Drag empty map space to pan and use the map controls to zoom.

5. Choose Trace thickness and **Expand map** for more space; X or Escape restores the normal view.

Satellite and Analysis

Satellite combines aerial imagery with telemetry traces. **Analysis** provides a clean, tile-free background with those same traces; no external CARTO configuration is required. Switching Display restores the selected overlays as soon as the style is ready. No lap toggle, channel change or Fit circuit action is needed.

Style switching and expansion retain selected laps, reference, channel, thickness, cursor/markers, camera and pan/zoom. A style switch does not automatically reframe the circuit. **Go to circuit** changes the view only, not the session's circuit association.

Two saved sessions

From Compare, choose **Open in Map & Strategy**. Both sessions and their selected laps enter the shared multi-lap view. Session A/B labels, T numbers, colours and the Reference marker identify the actual laps. Choose one Reference Lap, the measured channel, shared cursor and Both sessions / Session A only / Session B only visibility. The same Display, trace thickness, pan/zoom and expansion controls apply.

Incompatible or unresolved tracks/layouts are blocked from overlay. Missing full-resolution telemetry or GPS is explained; available saved timing and context remain useful. Without

WebGL, interactive map rendering is unavailable. Satellite imagery also needs its network tile service; Analysis uses no background tile service.

Expanded mobile GPS Track Studio

Choose **Expand map** for a larger portrait or landscape view. Open **Map controls** for lap selection, Reference Lap, display, layers and alignment without covering the map permanently; close the controls to return to the circuit. Use **Fit circuit** to frame the visible recorded route. Pan empty map space and use zoom controls for detail.

The compact see-through HUD follows the pointer and shows **lap, distance, elapsed lap time, speed and RPM**. In comparison mode it also shows a named live **delta** at the same lap distance: **negative means the comparison is ahead; positive means it is behind**. With one lap there is no comparison delta. Missing or out-of-coverage time remains unavailable; this readout is distinct from official final lap-time difference.

Scrub continuously along the telemetry graph or distance control to move the shared pointer, readout and markers. Reverse direction to inspect an earlier point. Touch scrubbing does not require repeated taps; map pan/zoom remains available on the map. Open **More telemetry** (the compact mobile details control) for further available values and selected comparisons. X or Escape closes the expanded map.

Raw GPS or aligned display?

Open **Align telemetry to map**, select the recording and choose **Raw GPS** or **Aligned display**. Use the direction controls and adjustment step to move all that recording’s laps together over the imagery; reset when needed. This is a browser-only display preference. It does not change GPS samples, timing, distance alignment, exported coordinates or recommendations. Full Profile transfer retains raw coordinates. Check the displayed alignment state before interpreting a visual offset.

How do I record what the kart felt like?

Open Driver Feedback, or use Post-Session Review in Telemetry. Choose the symptoms you noticed and add short notes about when they occurred. Both views describe the same run. An untouched default is not a confirmed answer.

1. Use Driver Feedback in Telemetry’s **Post-Session Review** immediately after the run, or open the dedicated Driver Feedback tab.

2. Select the handling symptom and Tyre Feel.

3. Open the compact Engine Behaviour / Delivery selector, choose one or more compatible symptoms, or choose Normal, then close it with **Done**, the trigger or Escape.

4. Select when the problem occurs: first lap, after a few laps, late in the run, intermittent or unsure.

5. Add Driver notes describing where the issue happened and whether it changed through the run.

6. Click **Analyse Driver Feedback**.

Record what the driver felt, not the change they want. Good: “Exit oversteer worsened after four laps.” Less useful: “Fit a longer rear hub.”

Handling categories cover entry, mid-corner and exit understeer/oversteer, hopping, jacking and binding. Engine options include bottom-, mid- and top-end weakness, bogging, flat acceleration, poor throttle response, fading, early limiter, low maximum RPM, hesitation and abnormal temperature.

The page shows the driver report separately from the ApexLab interpretation and preserves the corner phase, symptom timing or engine region. Resulting setup actions are consolidated once in Overview under **Prioritised Recommended Actions**.

The Telemetry and dedicated Driver Feedback views update the same current-session record. Existing selections remain visible when the selector is reopened. An untouched default is not treated as driver-confirmed Normal or No issue; opening or closing the selector does not confirm anything.

Feedback remains associated with the current session while you review it. It becomes part of the historical record only when the completed session is saved to History.

Next: Enter measured tyre data, review the immediate shared diagnosis, then use Engine and Overview for deeper inspection.

Feedback, confirmed input and suggestions

Driver Feedback not recorded means no driver observation has been entered for that domain. It does not mean Normal. **DRIVER_REPORTED** identifies actual recorded feedback; **USER_CONFIRMED** identifies a symptom you explicitly confirmed for a diagnostic investigation; **TELEMETRY_DERIVED** identifies existing measured telemetry support.

Wizard’s collapsed **Possible areas to investigate** offers generic condition-based topics. They are not circuit-specific findings, Driver Feedback or measured symptoms. Browsing a topic is a hypothesis; **Use this symptom** requires confirmation before it becomes scoped diagnostic input and does not rewrite the source run’s Driver Feedback. Loading another saved session clears the prior Wizard selection and confirmation so stale symptoms do not carry into the next run.

15. Recording Post-Session Tyre Data

1. Before the run, complete the Tyres setup and retain the displayed cold starting pressures and Target Hot pressure for the session.

2. After the run, use the pressure table in Telemetry’s **Post-Session Review**. Open the dedicated Tyres tab when you need the fuller Post-Session Tyre Readings view.

3. When the active session is established, ApexLab prepares its draft once without inventing a Target Hot value. Recommended starts and the nominal compound target remain separate until you explicitly confirm they were used or enter the session target manually.

4. Enter the actual measured Hot PSI for each corner. A fresh draft never invents these values.

5. Optionally enter manually measured Inner, Centre and Outer temperatures, plus condition, age, heat cycles, track temperature and measurement timing.

6. Review **UNDER TARGET**, **TARGET MET** or **OVER TARGET** as the hot readings are entered.

The draft belongs only to the active session. Telemetry and Tyres show the same session-owned record; they do not create duplicates. **Draft for Current Session** remains available in Tyres and safely reopens that record without erasing measured hot pressures, temperatures or notes. If the run has no recorded cold or target value, the field stays blank for manual entry. Do not invent optional measurements.

Take readings promptly and consistently because surface temperatures change after stopping. ApexLab does not impose an invented exact time; record the actual measurement timing. Target status uses a tolerance window, so TARGET MET does not require exact decimal equality.

Example: RF above target plus increasing late-run oversteer is stronger evidence for controlling tyre pressure before making several chassis changes.

16. Engine Post-Session Analysis

After telemetry and Engine Behaviour are available, Engine uses the shared distance-aligned feature engine to compare repeated low-speed recovery, midrange progression, high-load speed/RPM growth, limiter location, water-temperature movement and early-versus-late valid-lap behaviour. The same derived evidence is used by Wizard, Driver Feedback, Map & Strategy and Overview.

Bottom-end reports prioritise the Air Screw/early progression region, midrange reports prioritise Needle progression, and top-end reports prioritise the Main Jet/high-load region. The baseline remains unchanged unless evidence supports a controlled adjustment. Missing EGT, AFR or throttle position limits evidence and may cap confidence; ApexLab can identify the region to investigate without pretending it knows whether the mixture is rich or lean.

RPM/speed recovery is an observed trace feature, not a direct torque measurement. Weak exit acceleration can also come from traction, line, load or mechanical drag. A performance fade with repeated late-run loss and rising water temperature moves thermal/cooling and mechanical checks ahead of mixture tuning.

Enter **Engine Hours (if known)** as hours since rebuild. ApexLab uses the value as context, but the current dashboard does not provide a universal automatic rebuild interval or full rebuild tracker. Follow the configured engine profile, manufacturer and event guidance.

In **Telemetry**, **Map & Strategy** or **Compare**, select **Analysis Workspace**. The optional dense view keeps sessions/laps, stacked measured channels, map and context together. Your dashboard, session ownership banner and navigation remain available. Select **Exit Analysis Workspace** to return; Escape restores a maximised pane first, then exits.

Drag the column dividers to resize panes, the map/context divider to change their split, or the handle beneath the telemetry stack to change chart height. Focus a divider and use arrow keys, Home or End for keyboard resizing. Minimum sizes prevent unusable panes. The workspace Map keeps its primary controls in a compact toolbar. The cursor readout, lap strip and circuit notice are below the enlarged interactive map; scroll the Map pane to reach them. Open **Map options** for map type and trace thickness. **Map Focus** gives the map the largest preset area. Tablet uses two columns; phone uses the **Sessions & laps / Telemetry / Map /**

Context & Strategy focus buttons instead of drag resizing.

Use **Layout & channels** to show/hide available Speed, RPM, cumulative delta, Water temperature, acceleration or EGT channels, and the up/down controls to change their order. Only recorded channels are offered. Delta requires usable elapsed-time comparisons. Channel changes never alter measured data or official timing. Every actual lap trace is solid; stable colours, lap labels and Reference badges identify it across charts and maps.

Each pane has **Collapse**, **Maximise** and arrow controls to change pane placement. Restore collapsed panes with the pane buttons. Restore a maximised pane to its previous proportions. Charts and maps retain their shared cursor, selected laps, Reference, saved-session selection and comparison participants.

Choose **Balanced**, **Telemetry Focus**, **Map Focus** or **Driver Compare**. Changes are kept locally on this device, separately for each view. Name and **Save layout** to keep one custom layout per view, then **Load custom** to recall it. **Reset layout** restores the default. Invalid or outdated preferences safely fall back to defaults; missing panes are discarded and new panes receive default placement. Layout is never part of History, Full Session exports or engineering evidence. Workspace mode itself is always opt-in.

In Compare, **Open in Map & Strategy** still opens the existing cross-profile multi-lap analysis. Select its Analysis Workspace for a dense six-trace view. Old sessions without verifiable telemetry ownership remain unavailable; layout controls do not repair or bypass ownership checks.

17. Using Strategy

Strategy is not a separate telemetry engine. It uses the same active session, selected laps, reference, cursor and normalised samples as Telemetry, then places them beside the GPS map, circuit notes, current rear hub and tyre status.

1. Review the racing line and trace for the chosen reference lap.

2. Overlay comparison laps to locate repeatable speed, RPM or line differences.

3. Add Track & Sector Notes for corner-entry, apex or wet-line observations.

4. Return to Overview before deciding the next setup change.

What should I look at in Overview?

Start with the main findings and Prioritised Recommended Actions. Read what is missing or uncertain before choosing the next change. Overview brings the session together; you do not need every advanced view to use it.

Overview is where you find the answer. After a run, use it before changing the kart.

A symptom is not automatically a diagnosis. ApexLab compares the report with recorded setup, tyres, class restrictions and relevant telemetry before deciding what deserves testing first.

It combines Session & Conditions, Telemetry Highlights, Driver Feedback, Tyres, Engine, Chassis, Overall Diagnosis and Prioritised Recommended Actions. The completeness bar shows how many major evidence groups were supplied; it is not the same as confidence.

• **Driver reported:** the handling, tyre, engine and notes entered by the driver/team.

• **ApexLab interpretation:** what those reports may mean when checked against the available measurements.

• **Overall Diagnosis:** the most important current problem, secondary issue and supporting context.

• **Candidate cause card:** the leading cause, first controlled test, expected effect, evidence confidence and what would weaken the diagnosis.

• **Prioritised Recommended Actions:** structured cause-and-test results, merged by cause family, action family and affected parameter rather than recommendation wording.

ApexLab does not force a setup change for every symptom. It may return **Recommend Change** when relevant evidence agrees, **Investigate / Test** when a cause is plausible but unproven, or **No Change Yet / Retain** when the evidence cannot safely distinguish the causes. This is deliberate: one controlled change, run, measure and compare is more useful than several simultaneous guesses.

19. Reading Actions, Confidence & Evidence

Priority 1 is the first change or check to test. Each structured action separates the potential cause from the recommended first test, explains why it comes first, states the expected effect and tells you what to watch on the next run. Work down the list rather than applying everything together.

Confidence describes how strongly the available evidence supports the conclusion. Labels can range from Low through Medium to High. More telemetry does not automatically create higher confidence: evidence can agree, conflict or be incomplete.

Evidence coverage/completeness describes how much relevant information was available. A session can contain useful telemetry but no EGT, giving good coverage in some areas while limiting an engine conclusion.

How do I save a session?

Check the current run, actual setup, tyre readings and Driver Feedback, then choose Save session. Your completed run becomes a saved record. A new setup change belongs to the next run.

1. Confirm the fitted settings and supported observations that were actually recorded. Optional missing measurements may remain blank.

2. Review Overview and its Prioritised Recommended Actions.

3. Click **Save session** in Telemetry’s Post-Session Review or in Overview. The older Telemetry action uses the same complete save path.

4. Wait for the confirmation that the session and Full Post-Session Summary were stored.

The History record stores session metadata, lap summaries, raw structured telemetry where imported, tyre readings, engine evidence, chassis setup, Driver Feedback, diagnostics, prioritised actions and the Full Session Summary snapshot.

After a successful save, ApexLab clears the active telemetry, selected laps/cursor, post-session tyre readings, Driver Feedback, session notes, current diagnostics/actions and temporary mixture candidate. Profiles, engine class/setup, chassis baseline, circuit database, engine-hours value, preferences and History remain.

If saving fails, the active data stays available and you can retry. Repeated clicks are blocked while a save is in progress.

Starting without saving

Start New Session checks for unsaved data and offers Save session, Discard or Cancel. Cancel returns without clearing anything.

Feedback recording state: untouched defaults mean Not recorded. Choose a field to record that domain, or Confirm displayed feedback to intentionally confirm all three shown domains. Confirmed normal is positive feedback; suggestions remain unconfirmed. Save session preserves the run in History and resets active post-run inputs. Open saved Overview from the confirmation to review the saved run.

How do I reopen or correct a saved session?

Open History and find the run you want. Open Saved Session Overview shows the saved findings. Analyse Telemetry opens available detailed data. Set as Reference selects a baseline for comparisons. Use Correct Completed Run only to fix a recording error; it preserves the raw data and the original diagnosis and labels the correction.

1. Open History to see saved sessions and their lap lists.

2. Click **Open Saved Session Overview** to reopen the exact evidence and recommendations stored at save time.

3. Choose **Analyse Telemetry** to load that session's exact stored telemetry into the shared read-only analysis workspace. No logger re-import is required.

4. Expand the lap list to select individual laps for comparison.

5. Use **Correct Completed Run** to correct descriptive or fitted-setup metadata while preserving the originally saved evidence. **Export Selected CSV** creates a compact table; **Export Full Session** creates a portable one-session ZIP containing available full-resolution normalised telemetry and saved session data for backup, transfer, archiving or external analysis.

Correct Completed Run stores a correction overlay. History, saved Overview, comparisons and linked plan views apply that overlay as the effective historical view without destructively rewriting the original imported telemetry evidence.

Full Session export never uploads data. Current preserved Alfano imports include preserved original source assets and exported driver/device metadata when available. Earlier imports may contain only normalised telemetry. Select exactly one saved session with stored telemetry. Review the resulting ZIP before sharing. Exporting does not recalibrate ApexLab.

The correction form supports recorded session name/type, circuit/date/time, engine/class, tyres and condition, permitted gearing, fitted Main Jet/Needle Clip/Air Screw, supported chassis/cold-pressure fields, conditions/weather, engine feedback and notes. Profile/kart ownership is shown read-only; original handling, tyre and timing feedback remains preserved rather than becoming new retrospective diagnosis. Raw imported telemetry, GPS samples, speed, RPM and recorded temperatures are protected from editing.

Historical recommendations, ranked causes, feature quality and distance regions show what ApexLab calculated when that session was saved; they do not change when the current active setup changes. **Inspect Telemetry Evidence** reopens the stored full-resolution trace from this device when available. If the raw trace has been removed, the derived evidence remains visible but must not be presented as an inspectable measurement.

Use **Compare with Another Session** on a row to pin that run as Session A in Cross-Session Comparison. **Create Controlled Test** pins it as the source for a new Controlled Test contract. Retrieve saved plans quickly in **Test Plans**; source-linked History remains another entry point.

Missing historical setup fields remain **Not recorded**. ApexLab does not fill a legacy Ackermann, axle, caster or Wet/Dry value from the current profile, the visible controls or a hard-coded default.

Use favourites to keep useful runs easy to retrieve, and check whether stored telemetry is available before expecting traces or GPS. **Find comparable sessions** opens Historical Similarity from the saved/current context; select the saved run under Compared with when needed. Completed records remain read-only for ordinary analysis and reports.

How do I correct a completed run?

Use **History → Correct Completed Run** only for a factual recording error, not to describe a setup you intend to try next.

1. Check the saved run and its recorded profile/kart. The form loads that run’s saved values, not current profile defaults or today’s weather.

2. Expand Session & Conditions, Tyres, Engine & Gearing, Driver Feedback or Chassis & cold pressures as appropriate. Correct only the supported factual fields you know. Blank means Not recorded.

3. Enter a **Correction reason**, then choose **Save corrections**. Cancel leaves the saved record unchanged.

4. Open **Saved provenance & correction audit** to review original and corrected values, source information, reason and time.

Historical weather correction records an explicit factual correction. It does not fetch live weather or regenerate the old recommendation. Profile/kart identity and original recording relationships are protected. Unknown actuals stay unknown; do not fill a blank from the current

setup, an assumption or a plan.

History, comparisons and linked plan views use the corrected factual view where supported. The original completed record, raw telemetry, original diagnostics/recommendations and correction history remain preserved. Corrected values are not a second run or a new experiment.

22. Comparing Laps & Sessions

1. In History, select between two and five whole sessions or individual laps.

2. For the same outing, compare entries such as Lap 3 and Lap 7.

3. For different outings, select a lap from Session A and one from Session B.

4. Click **Setup Comparison (2–5)**.

History compares recorded lap time, average lap time, maximum/minimum RPM, top/average speed, gearing, limiter behaviour, temperatures, tyre data, conditions, chassis, engine behaviour and notes when those fields exist. It labels comparisons **Strong**, **Confounded** or **Weak**. A Strong result normally keeps circuit and conditions comparable with one relevant controlled change. Confounded means several meaningful variables changed. Weak means circuit or conditions differ substantially. None of these labels turns correlation into proof of causation.

Use **Analyse Telemetry** for one saved session at a time. ApexLab marks this as read-only historical analysis and restores its exact stored laps, traces, map and shared cursor. For two saved runs, use **Compare with Another Session** to open Cross-Session Comparison, or choose Cross-Profile in Compare for two drivers. Compatible stored telemetry enables full traces and **Open in Map & Strategy**; summary-only records retain timing and context with explicit unavailable detail.

Historical Similarity’s **Compare with query session** hands the selected saved pair to this existing Compare workflow. A current-workspace query has no saved reference: its action asks you to select one. The handoff does not apply a setup or change either saved run. Review the same circuit/layout, timing and telemetry warnings as any other comparison.

How do I find comparable sessions?

Historical Similarity retrieves saved recordings with comparable context. It is read-only lookup, not a recommendation or a ranking of the best setup.

1. Choose **Find comparable sessions** in the current context header, History toolbar or saved Full Session Summary.

2. Check **Compared with**: use Current workspace context or choose a saved run. A saved query uses its own recorded/corrected facts, never today’s live weather.

3. By default inspect the current profile. Choose **Include other profiles** explicitly when needed. Optional **Same tyre compound only** and **Telemetry body present only** narrow the results; a stored body alone does not guarantee verified full telemetry.

4. Read the compact title, **Context match**, **Completeness**, matching reasons and warnings. Use **Show 10 more recordings** for further results.

5. Open **Why this recording matches** for full comparisons and provenance, or **Setup & performance** for saved actuals and separate historical outcomes.

6. Choose **Open Session** for the saved read-only report in the card. **Compare with query session** opens the existing saved pair in Compare. With a current-workspace query, choose the saved reference in Compare first.

What is being matched?

Known incompatible circuit, physical layout/direction, class or Dry/Wet/transitional conditions exclude a recording. Unknown details are disclosed as limited context, not guessed. Ranking considers recorded identity relevance, known layout, tyre compound, shared known context and distance between usable weather observations. Fast lap time and evidence badges do not determine this context order.

Tyre compound and tyre age/condition are separate. The same MOJO product on old and new tyres can show compound Same and condition Different. A display suffix such as (New) is not another compound. Track condition is separate from Dry/Wet. Missing layout, weather or actual setup remains unknown.

Weather matching uses mutually usable recorded air/track temperature, pressure and humidity with their provenance. Forecasts, calculation assumptions, unqualified observations and conflicting saved context cannot quietly become measurements. Expand Why for the missing context, observation/source times and weather comparison explanation.

Recording groups and completeness

Results are **comparable recording groups**. Proven duplicate copies are grouped before ranking; the query and its copies are excluded. Group members and duplicate qualifications remain inspectable. Some summary-only overlaps are qualified candidates rather than certified independent recordings. More imports of one recording do not add experiments.

Completeness counts shared known matching dimensions out of eleven, not how many agree and not a similarity percentage. A known old/new tyre difference can remain complete for that dimension. Context match Limited and warnings explain uncertainty. **Identity unresolved** keeps uncertain legacy physical driver/kart identity visible; a profile name does not prove it.

The telemetry badge describes the available current state, such as **Core telemetry**, **Summary only** or **Capability unverified**. Summary-only sessions can still show useful context and saved timing. Detailed analysis and maps need compatible stored data. Evidence labels such as **Historical observation** or **Confounded test** keep the existing qualification; similarity never promotes an observation to controlled evidence.

Detail when you need it

Why this recording matches keeps exact dimension states, weather provenance, missing context and full owner explanation. **Setup & performance** separates actual fitted setup from historical lap statistics. **Advanced provenance** is collapsed by default and retains exact recording/History/telemetry identities and group membership for audit.

Similarity is not recommendation. Similarity is not performance. Fastest lap does not define the best setup. Historical Similarity does not alter ApexLab recommendations. It cannot Apply setup, learn a baseline, change fitted settings or rewrite History. Refresh results re-reads current saved facts and corrections without changing them.

When should I use Wizard?

Use Wizard when you want guided help investigating a setup problem. Select the saved run and a symptom, read the proposed checks, then save a Next-Session Plan if useful. A general plan is not automatically a Controlled Test.

Use Wizard when a clear symptom needs a structured diagnostic path. Choose **Diagnose Current Session** for the current workspace, or **Load Saved Session** to investigate an immutable copy of a historical session without making it active.

1. For saved evidence, search Session History by circuit, date, session type, kart, driver, class or engine, then load the exact session.

2. Confirm the Troubleshooting Session card. It reports evidence completeness and clearly marks missing telemetry, tyre, feedback, conditions or setup fields.

3. ApexLab suggests a category and issue from stored driver feedback, tyre evidence or engine behaviour. Choose another issue at any time; that override exists only inside the Wizard.

4. Use the fastest-lap, Session Average, Selected Lap or Compare Two Laps options. The fastest official lap and official lap times come from the saved record and are never recalculated.

5. Read Observed Problem, Evidence, ranked Likely Causes, Recommended First Test, Expected Effect, What To Watch and What Would Weaken This. Previous recommendations appear only as historical context.

6. If the result is useful, click **Save Next-Session Plan**. ApexLab opens the review panel immediately and keeps it available in **Test Plans** as well as its source-linked views. Review the intent and proposed value, mark it Ready, then explicitly choose **Start Session From This Plan** when the next run is ready. A general or investigative plan remains distinct from a Controlled Test contract. The historical source session remains unchanged.

Measured hot-versus-target tyre pressure and abnormal temperature evidence are prioritised before chassis attribution. Pressure changes are controlled 0.2–0.5 PSI steps based on the measured deviation. Fixed/restricted gearing is displayed for context and excluded from change recommendations. A faster lap can correlate with a setup but does not prove causation.

Saved-session mode reranks causes using preserved telemetry features, Driver Feedback, tyre readings, setup, conditions and Engine data. Manual mode remains conservative and never fabricates Phase 2 telemetry evidence.

Next-Session Plan lifecycle and validation

A plan moves through **Draft**, **Ready**, **Active Test** and **Completed**, or you can explicitly choose **Cancel Plan** from Draft, Ready or Active Test. Cancellation preserves the plan for review and asks before discarding its active unsaved test session. **Delete Plan** also discards an unsaved session owned by that plan, with an explicit warning when it contains new data. Saved History and telemetry are preserved by both actions. Closing the dialog does not cancel or delete anything. Completed plans cannot be cancelled. The comparison table keeps the saved source value, the planned value and the actual value recorded in the completed test session separate: **Source → Planned → Actual**.

Starting from a plan does not by itself prove that the test was controlled. When the result session is saved, ApexLab checks the actual stored value and any additional unplanned setup changes. **Execution** reports whether the planned value was carried out; **Comparison quality** separately reports how comparable the source and result sessions were. Extra changes are shown as confounding evidence rather than hidden.

Isolation guarantee: Choose Another Session, Clear Saved Session, lap selection, issue overrides and Wizard reset affect only the Wizard's local working state. Loading a session into the Wizard does not replace active analysis. The separate **Analyse Telemetry** action explicitly loads a read-only historical analysis context. Legacy sessions remain usable with explicit unavailable-data states.

24. Common Workflows

First session at a circuit

Select circuit and conditions → confirm profile/class → Auto-Baseline → check Tyres, gearing and pre-session jetting → run → Upload Folder → verify Fastest → complete tyres and Driver Feedback in Telemetry's Post-Session Review → review its immediate diagnosis → use Engine, Map & Strategy and Overview for deeper inspection → test Priority 1 → save the completed session.

Testing a setup change

Open the previous Full Session Summary → note the last recommendation → make one controlled change → run and upload the new session → compare laps/sessions → review the new Overview → decide whether the evidence improved.

Jetting investigation

Review the pre-session recommendation → run → upload telemetry → enter Engine Behaviour → review Post-Session Engine → use the relevant mixture slider only for a temporary supported candidate → check Overview → make one controlled test.

Handling problem

For "exit oversteer worsening after five laps," record Driver Feedback → enter hot pressures/temperatures → upload telemetry → review Overview → follow Priority 1 before changing several chassis parameters.

Shortest practical trackside routine

Before run: check live weather and recorded conditions → review actual fitted setup → start the session or ready Test Plan.

After run: export Alfano → Companion detects it or Upload Folder → analyse (for a test, Add Follow-Up Run → Attach & Analyse) → record actuals, Driver Feedback and tyre readings → Save session.

On a phone, use expanded GPS Track Studio for detailed pointer inspection and close Map controls when reading the circuit. Historical Similarity summary cards give quick context; expand reasons only when needed. A missing logger or measurement is not a reason to invent data. Back up the profile before clearing browser data.

How do I compare two sessions?

Use Compare when you want to see what changed between two runs. In History, choose Compare with Another Session, then choose the second run. Review timing, setup, tyres and conditions, select laps, and open Map & Strategy if detailed telemetry is available. Summary-only sessions still have useful saved timing and context.

In History, choose **Compare with Another Session** beside Session A, then choose Session B. Or select Cross-Session in Compare. Best matches share recorded circuit identity, class and Dry/Wet conditions. **Compare to Best Matching Session** chooses the fastest authoritative valid saved lap among those matches; it makes no claim that the sessions were driven today. This existing fastest-match shortcut is separate from **Historical Similarity**, which retrieves context without ranking by lap time.

Session Comparison shows whole-session timing and recorded metrics. Lap Comparison shows the selected lap from each session. Both start with each session’s best valid official lap, and either lap can then be changed. Invalid and untimed laps never become a best lap through trace duration. Missing validity or timing remains a limitation.

The picker prefers a validated logger recording date/time where retained. Logger time has no inferred timezone. Otherwise it explicitly labels the saved/display date and the unknown recording date. Import and save dates are not evidence that a historical recording was driven today.

Review actual saved setup, tyre age and cycles, cold/hot/target pressures, fitted engine/gearing, conditions and Driver Feedback in SAME / DIFFERENT / MISSING rows. Differences and missing values can be shown without unchanged rows. Multiple changes confound a performance comparison; none proves causation. A shared logger-origin warning identifies possible reimports without merging or deleting anything.

Open in Map & Strategy carries both sessions and selected laps into the existing shared map and multi-lap workspace. A/B text labels supplement colour. Select more laps with the existing controls, choose one Reference Lap, inspect genuine channels and the shared distance cursor, or show A only, B only or both map traces. Expand/restore keeps the comparison and camera. Return through Compare preserves reference, channel, cursor and map view.

Full-resolution telemetry must resolve through the saved profile/session ownership chain. Summary-only sessions retain saved timing and context; detailed telemetry, cursor and map actions explain why they are unavailable. Different or unresolved circuits/layouts cannot be overlaid. Class and Dry/Wet differences remain visible cautions. Your active profile, session, setup, History and plans remain unchanged. Session Comparison does not persist calibration learning.

How do I compare two drivers?

Open Compare, choose Cross-Profile, select two driver profiles and a saved run from each. Compare timing and recorded setup first. Select laps and open Map & Strategy for detail. Different setups or conditions mean a faster lap cannot be attributed only to the driver.

Open **Compare**, choose exactly two distinct driver profiles (Reference and Compare), and choose one saved historical session from each. This temporary, read-only workspace excludes the unsaved active session. Selecting profiles here never switches your normal active profile, changes the active session, saves a setup, or edits History, corrections, telemetry or plans.

Lap vs Lap

Choose an individual lap or use Fastest lap. Only valid official lap timing determines the fastest; exact ties select the earliest lap. Untimed traces remain Untimed. Filename suffixes and trace duration are never official timing. Selectors show date/time, circuit, conditions and stored timing; a telemetry link is checked on selection.

Session vs Session

Compare official timed-lap count, best, mean, median, best-3 and best-5 averages, and population standard deviation (lap-time spread). Best-3 needs three timed laps; best-5 needs five; spread needs two. Untimed and invalid laps are excluded; no outliers are automatically removed. Lap progression is within each session, not simultaneous track time. Telemetry uses each session’s fastest official lap. Switch to Lap Comparison for arbitrary laps.

Understanding Comparison Metrics

Tap the help button beside a Session Comparison metric, or expand **How to read this report**. Best is the fastest valid official lap. Mean averages every valid lap and is pulled upward by unusually slow laps. Median is the middle sorted time (or the average of the two middle times), so it is less affected by slow laps.

Best-3 and Best-5 average the three or five fastest valid laps, not necessarily consecutive. They require at least three or five laps. Spread (σ) describes variation around the mean, in seconds, and needs two laps. Lower spread means tighter grouping, not greater speed or driver skill. Missing lap detail may leave metrics unavailable.

In lap-time rows, Compare − Reference is positive when Compare is slower and negative when faster. For lap count, it means more or fewer laps; for spread, more or less variation. All valid official timed laps remain included, even traffic, spins or unusually slow laps; there is no automatic outlier removal. Use the metrics together: a faster session can be more variable. Descriptive statistics alone do not prove a setup change caused an improvement.

Two separate deltas

Compare − Reference is the convention throughout: negative means Compare faster/ahead; positive means Compare slower/behind. Official lap-time delta uses the two official times. Telemetry cumulative delta uses elapsed time at the same recorded lap distance. Terminal telemetry delta need not match the official result. Traces are never rescaled, warped, stretched or extrapolated; incomplete traces use only common recorded coverage.

Traces, GPS and evidence quality

Reference and Compare use distinct solid colours, driver/lap labels and R/C map markers. Drag a graph, use arrow keys, or move the shared distance cursor to inspect both traces. GPS speed, RPM and other genuinely common measured channels are available where saved. Missing throttle, brake pressure, EGT and AFR are never inferred. GPS uses the existing map provider; map/WebGL failure leaves graphs, timing and statistics available.

Full comparison needs the same recorded circuit identity and compatible recorded layout/direction. Unknown or generic circuits, conflicting or one-sided layout/direction, and duplicate physical sessions disable equivalent-lap timing and telemetry overlays. Metadata and individual session statistics remain readable. Legacy sessions without safe telemetry linkage can still supply saved context and timing.

Context and read-only controls

Review SAME, DIFFERENT and MISSING class, weather, recorded RAD/DA where saved, tyres, pressures, temperature readings, gearing, fitted Main Jet, chassis and Driver Feedback evidence. Effective historical corrections are honoured. Missing remains missing; current recommendations, setup defaults and live weather never replace historical evidence. Different conditions and setups are allowed, but performance differences cannot be attributed solely to the driver. Compare produces no driver ranking or engineering recommendation; Historical Similarity is a separate context lookup.

Swap exchanges the driver/session/lap selections and reverses delta signs. Clear comparison clears only this temporary analysis. Use Open in Map & Strategy to carry the selected pair into the shared analysis workspace; Clear comparison explicitly clears the temporary selection. Removed profiles, sessions or telemetry become unavailable rather than being guessed or silently substituted. Full Profile imports use their existing saved identity and telemetry links.

Multi-Lap Saved-Session Telemetry

Open Map & Strategy and choose **Cross-Profile Multi-Lap**, or select two drivers in Compare and choose **Open in Map & Strategy**. For Cross-Profile, choose two distinct saved profiles and one session for each. For two sessions belonging to one profile, start with Cross-Session Comparison and use Open in Map & Strategy. Sessions must have a compatible saved circuit identity and direction. The active engineering workspace stays separate.

Select multiple actual laps for each driver. **Fastest lap**, **Best 3** and **Best 5** use valid official lap times and the existing deterministic tie order. If there are too few valid timed laps, the shortcut explains why and keeps your selection. **Select All** includes usable untimed telemetry laps; their official timing remains unavailable. **Clear Laps** affects only that driver.

There is one **Reference Lap** among the selected laps. It initially comes from the Reference driver where possible. Change it with the Reference lap selector or Set Reference. Every cumulative delta is **selected lap − Reference Lap**: negative means ahead/faster; positive means behind/slower. Removing the reference selects a deterministic replacement. Swapping drivers keeps each session and lap set together and chooses a reference from the new Reference side.

Official lap-time delta and telemetry cumulative delta are separate. Official time ranks valid timed laps. Cumulative delta uses recorded elapsed time at the same distance and is never rescaled to match the official result. Partial laps stop at their recorded coverage; missing elapsed origins, channels or gaps remain unavailable. No synthetic, averaged or composite driver trace is created.

The existing Lap Trace Analyser displays every selected lap for the measured channel; its delta graph compares each non-reference lap with the one reference. Every actual trace is solid. T numbers, stable colours, driver/lap labels and the Reference marker identify traces without relying only on colour. The shared distance slider, graph pointer or keyboard arrows/Home/End update speed, RPM, available channel values, cumulative deltas and map markers together.

The GPS Track Studio overlays each valid lap's measured coordinates without road snapping or geometry warping. Click a trace to inspect distance. Missing GPS does not remove timing or other recorded channels. If WebGL is unavailable, charts and cursor values remain usable. Fit circuit, trace thickness and the expanded map apply to this temporary view. Display switches between Satellite imagery and tile-free Analysis while retaining the selected traces, reference, channel, cursor, layer visibility and camera.

This workspace is **read-only**: it does not change saved profiles, History, corrections, telemetry, active setup, tyres, gearing, engine, Driver Feedback or Next-Session Plans. **Clear overlay** clears selected laps and traces while retaining the selected drivers/sessions. **Open Compare context** returns to the Session Comparison summary; switching to normal analysis exits the overlay.

Check saved setup, tyre, gearing, class, weather and session differences in Compare. Conditions may be incomplete or different, so performance differences cannot be attributed solely to the driver. The telemetry overlay provides no driver ranking or automatic setup recommendation.

Where do I find my saved Test Plans?

Open Test Plans and choose All, Draft, Ready, Active, Completed or Cancelled. Open a plan to see what you intended to change and which saved run it uses. A completed plan also links to its result.

Open the top-level **Test Plans** tab (also available in mobile navigation) for the fastest retrieval of current and retained plans belonging to the selected profile. Use **All, Draft, Ready, Active, Completed** or **Cancelled**. Active means the lifecycle status Active Test.

Open the exact plan to review its pinned source, intended change and, when completed, result and evidence. Available Edit, Mark Ready and Start actions follow the existing lifecycle; opening completed or cancelled plans is a historical review, not permission to rewrite them. The index also distinguishes general and legacy plans. Source-linked History access remains

available.

Create a new Controlled Test from its source row in History. The index retrieves existing plans; it does not duplicate plans or create a second plan store. Switching driver profiles changes the visible plan list. A new draft must not displace an Active Test silently.

After the run: Add Follow-Up Run

Starting a plan opens its own active test workspace and shows **Test in progress**. After driving, choose **Add Follow-Up Run**. Select a Companion-detected Alfano export or use the manual full-folder upload inside that picker. Confirm the run, profile, class and timing qualifications, then choose **Attach & Analyse**.

Attachment stores the follow-up telemetry and preserves the plan’s source/result relationship; it does not prove the intended change was fitted. Review actual engine/chassis settings, measured tyre readings and Driver Feedback, then **Review actuals & save session**. Confirm known actuals or retain the explicit unverified state. The completed plan, Evidence and report link to the saved result.

Cancel Plan retains cancelled planning history and asks before discarding its active unsaved test. Delete Plan removes the available plan record and warns before discarding its plan-owned unsaved session; it does not delete saved History or telemetry. Completed plans are reviewed rather than cancelled or deleted through those controls. Closing a dialog is not cancellation.

Changing Default Units

1. Open Settings next to Profile.

2. Choose your preferred units.

3. Compatible displays and inputs update without changing their physical values.

4. Saved evidence and its original narrative remain unchanged.

5. Manufacturer setup dimensions retain their standard engineering units.

Telemetry and Slip speed controls change the same default. Preferences stay on this browser across profiles and reloads; backups and machine-readable exports preserve their schemas.

Available defaults: **speed** km/h or mph; **temperature** °C or °F; **tyre pressure** psi, bar or kPa; **atmospheric pressure** hPa or inHg; **altitude** original units, ft or m; **analysis distance** metric (m/km) or imperial (ft/mi). These are display/input preferences for this browser, shared across profiles, rather than physical setup changes. Portable records keep their original supported units and original saved narratives.

What is the difference between Planned and Actual?

Planned is what you intended to use. **Actual** is what was really fitted or measured.

Example	Planned	Actual
LF cold pressure	11.6 psi	11.8 psi

ApexLab uses the actual value when judging the test. It never assumes the planned setting was definitely fitted. Leave a value missing if you do not know it. Starting the plan makes it an Active Test, not Controlled evidence.

What should stay the same? Review the other fitted settings, tyre set and comparable conditions before you run. An unexpected important difference may change the evidence classification even if your planned change was fitted.

What do Controlled and Confounded mean?

Controlled

The planned change was carried out and no important unexpected change was detected. Read the reasons and limits; this does not prove the change caused a faster lap.

Near-Controlled

The test is useful, but a small uncertainty or difference limits how strongly you can interpret it.

Confounded

More than one important thing changed, so ApexLab cannot isolate one cause.

Insufficient Evidence

Important information is missing, so ApexLab cannot judge the test reliably.

Not Executed

The actual setup did not carry out the planned change; read the execution details.

Incompatible

The sessions do not meet the requirements for a fair test comparison.

Duplicate / Reimport

This is the same underlying recording and does not add another independent experiment.

Observational

These saved runs can be compared, but they were not recorded as an explicit Controlled Test.

The label describes how safely you can interpret the comparison, not whether the kart was faster. Always read the individual reasons, missing values and sensor limits. Completed describes a plan's progress; it does not mean Controlled.

How do I read session and Evidence reports?

Source and Result are named with saved session information, for example **Heat 2 · Kimbolton · 11 Oct 2026 14:32** and **Test Session · Kimbolton · 11 Oct 2026 14:48**. A profile/driver label is added where useful; missing names, dates or circuit facts are not invented. Source means the earlier reference run; Result means the saved follow-up.

Normal Evidence, Test Plan and comparison reports are read-only review views. **Advanced provenance** stays collapsed by default and contains exact History, session, telemetry and plan identities when available. Expand it for an audit or support investigation; you do not need to interpret long identifiers to read a report. They remain preserved internally and linked to the original evidence.

An ordinary historical comparison is **observational**. Controlled, Near-Controlled or Confounded classification belongs to the existing test source/result assessment and its displayed reasons, not a faster lap or similar conditions alone. Corrections remain labelled, and neither reading a report nor opening Similarity changes recommendations or creates new evidence.

Why does Evidence say No usable evidence?

This is normal when you first start using ApexLab. Evidence builds as you complete Controlled Tests. Your normal saved sessions are still useful for analysis and comparison. A missing or unsuitable result may also explain this label; read the listed gaps.

No usable evidence

No suitable result is available for this area yet. A test may be missing or its information may be incomplete.

Observational only

Saved runs provide observations, but no qualifying independent Controlled Test is available yet.

Experimental evidence available

At least one independent Controlled or Near-Controlled test is available.

Evidence accumulating

Several qualifying tests exist in this area, but their exact changes or conditions may differ.

Repeated experimental evidence

At least two independent qualifying tests repeat the same change in comparable conditions.

Candidate for future calibration review

Repeated Controlled results may justify a future review. Evidence review does not apply a calibration update.

Evidence review does not automatically change ApexLab's calibration or recommendations. These labels help you decide what to investigate next.

What counts as an independent experiment?

One before-and-after test counts once, even if the sessions contain many laps. Importing the same recording twice does not count as two experiments. Tests that reuse a run are marked shared-run/dependent and do not add another independent repetition.

“Calibration” means the rules and numerical settings behind recommendations. “Readiness” means information for a future human review, not permission to change them. The exact counts, grouping limits and current evidence maturity levels remain in the Evidence reference section below.

How do I use Forecast without changing my current setup?

Forecast Weather is what the weather service predicts. **Planned Track State** is whether you are preparing a Dry or Wet setup. You can deliberately prepare a Wet backup even when the main forecast is Dry.

1. Choose **Forecast** in Track & Atmospheric Station.

2. Choose the circuit, race date and approximate session time, then **Fetch Forecast**.

3. Check the forecast timestamp, circuit timezone and hourly or reduced-precision daily label. Review the Dry/Wet choice and any warning.

4. Use **Save Weather Scenario** to retain the plan. Opening a saved scenario only lets you inspect it; it does not change the active circuit or setup. Choose **Reapply Forecast Setup** to rebuild the planned setup from those saved conditions, including user-adjusted values and a saved Wet contingency. This uses Auto-Tune Planned Setup, not a historical setup snapshot or a fresh weather fetch.

5. Use **Save & Apply Conditions** to apply the reviewed conditions, or **Auto-Tune Planned Setup** to apply the planned baseline too. These are deliberate actions.

When a saved forecast is refreshed, choose whether to keep it, update it or duplicate it. On race day, record actual conditions. A forecast is not a completed session and cannot replace missing actual evidence.

Read forecast timestamps, resolution, missing values and saved-scenario details.

What is Evidence?

Evidence is ApexLab's record of what happened when setup changes were tested. It helps you see whether results have been repeated enough to trust more strongly. It does not automatically change your setup recommendations.

1. Choose your profile and open **Evidence**.

2. Check the overview for the area you are investigating, such as tyre pressure.

3. Open a row to see the run before the change, the run after it, what changed and the reasons for its label.

4. Use **Review Comparison** or **Open Map & Strategy** for more detail.

5. Use **Create Follow-Up Controlled Test** to plan another run from the result.

No usable evidence? Start here. What do the quality labels mean?

Advanced Evidence reference: counts, reasons, sensors and saved-record checks

Open **Evidence** in desktop or mobile navigation. The read-only workspace reads the selected driver's saved runs and Controlled Tests. It never changes production recommendations, engineering priors, calibration tables or adaptive state. A historical observation is a pattern or hypothesis, not a controlled experiment.

Quick task guide

1. Choose the profile and open Evidence. Check domain readiness, then filter the ledger by domain or quality.

2. Open a row to review the exact source/result, planned and actual changes, held constants, outcomes and qualification reasons.

3. Check independence before counting repetitions. Duplicate recordings and shared baselines cannot add independent trials.

4. Use Review Comparison for the existing Cross-Session workspace, or Open Map & Strategy when compatible full telemetry is available.

5. Choose Create Follow-Up Controlled Test to enter the existing plan workflow from the result run. Define the next intervention yourself, review hold constants, save, Mark Ready and explicitly start. Retrieve it in Test Plans.

Quality, execution and outcome are different

The Controlled Test qualification rules remain authoritative for Controlled, Near-Controlled, Confounded, Not Executed, Insufficient Evidence, Incompatible and Duplicate / Reimport. Starting a plan is not executing a test. Evidence review does not upgrade a Confounded result because it looks faster. Historical comparisons without an explicit controlled-test contract remain Observational, even if they look convincing. Multiple unrelated fitted changes retain a Multiple Domains label and an explicit confound reason.

Best lap, mean, median, best-3, best-5 and lap-time standard deviation use the existing saved comparison metrics. Lower timing/standard deviation is an observed improvement. RPM, speed, water and tyre-temperature changes have no assumed favourable direction. A measured hot pressure can be closer to the same recorded target, but that target is not a proven optimum. Target changes are not ranked as improvement. Unknown channels remain unavailable.

Favourable means visible directional metrics improved without a regression; unfavourable is the reverse; mixed includes both. No clear change means equal available directional metrics. Exact numeric differences are descriptive: Evidence review does not invent a significance threshold or a weighted score. Outcomes are observed after the test, not proof the

intervention caused them. Driver Feedback is shown alongside telemetry as aligned, partially aligned, contradictory or insufficient; neither overrides the other.

Independence and exact intervention identity

One experiment is a source/result pair, not one experiment per lap. Copies of the same recording are grouped using their saved-record and source relationships. Reimported pairs stay visible but do not increase independent counts. Tests sharing a source or result are labelled shared-run/dependent. A/B/A links are preserved for future review, without claiming three independent trials.

Absolute source/result values, delta, direction, domain and corners are retained. LF -0.2 psi, all four corners -0.2 psi, and fronts -0.2 / rears -0.4 are different interventions. A defined cold-pressure vector remains distinct from separate independent changes. Jet 118 to 117 does not group with 120 to 119. Pressure inputs, measured hot outcomes and target hot context stay separate.

Scope, repetition and readiness

Groups retain driver/kart, circuit/layout/direction, class/configuration, Dry/Wet, compound, rim and recorded engine identity. Tyre-set, age, cycle and environmental differences stay visible. Results at Whilton Mill are not merged with Kimbolton, and copied profiles do not create new recording origins. Profile-specific evidence is never merged into the global engineering prior.

Readiness uses transparent counts: no usable evidence, observational only, experimental evidence available, evidence accumulating, repeated experimental evidence, or candidate for future calibration review. Repetition requires at least two independent Controlled/Near-Controlled experiments in the same exact intervention and scope. A review candidate requires at least three independent Controlled favourable repetitions, consistent direction and at least two recorded days. These are descriptive review gates, not engineering thresholds or calibration activation.

Level 0 means insufficient evidence; Level 1 directional evidence; Level 2 potential controlled numerical evidence. Level 3 repeated calibrated adaptive evidence is not established or activated. Consistency labels are insufficient repetition, consistent direction, mostly consistent, mixed, contradictory or no clear change. Inspect the constituent counts instead of a confidence percentage.

Conditions, sensors and gaps

Only recorded completed-run conditions are used. Forecast scenarios, planned weather and current live weather are never substituted. Controlled Test comparability rules remain unchanged. Missing stays missing. A Controlled jet-step performance observation without EGT, Lambda/AFR or throttle cannot establish rich, lean or ideal mixture, even when the lap improved.

Domain gaps identify missing actuals, sensors, independent repetitions, recording dates and tyre sets. Suggestions ask for better data or another comparable experiment; they never prescribe a numerical setup change. All tests from one day or one tyre set retain those limitations.

Corrections, transfers and performance

Evidence is rebuilt from current effective History plus correction provenance. A deleted, ambiguous or broken source/result reference fails closed; it is never rebound to another run. The original completion classification remains visible separately. Derived projections are cached in memory with evidence rule version 138.1 and invalidated when relevant metadata changes.

Full Profile transfer preserves the authoritative sessions, plans, result links and provenance through the existing format. Evidence review exports no extra telemetry or parallel evidence database. Legacy profiles remain observational unless they already contain an explicit valid controlled contract. Candidate discovery uses explicit tests and bounded consecutive same-circuit/class comparisons, plus a deliberate current same-profile comparison; it does not construct every possible pair or reparse telemetry on each render.

How do I test whether a setup change helped?

Want to know if a setup change actually helped? Use a Controlled Test to change something deliberately and compare the result with the run before it.

1. Choose a saved session in History.

2. Choose **Create Controlled Test** and decide what to change.

3. Review what ApexLab expects to stay the same.

4. Save, Mark Ready, then start when you are ready to run.

5. Drive the new session and save what you actually used.

6. Review the comparison and the reasons for its evidence label.

Planned versus Actual · Evidence labels explained

Completed Run and Next-Run Draft

A **Completed Run** is historical evidence of what was actually used. A **Next-Run Draft** is editable setup intended for the next run. Changing the draft must not rewrite the completed session. For a genuine recording error use **History → Correct Completed Run**; the correction retains provenance without changing raw telemetry.

Create and prepare a test

1. In History, choose **Create Controlled Test** on the intended source run. Its profile, session and available telemetry identity are pinned.

2. Review the parameter, Source/Current Value and Proposed Value. Keep **Plan intent: Controlled test** when creating a controlled experiment.

3. Choose the **Intervention definition** and review **Expected unchanged setup**. Add a recognisable Plan label and notes.

4. Save the draft, then choose **Mark Ready** after reviewing the contract.

5. Choose **Start Session From This Plan** when ready to run. If fitted setup has drifted, explicitly restore the plan or return to edit/cancel it.

Hold-constant values are other fitted settings and comparable context expected to remain unchanged: for example chassis, engine, gearing, rims and physical tyre set. Record the optional **Tyre Set ID / Label** on both runs and check age/heat cycles separately. Weather and track conditions must be measured again; they cannot literally be promised constant. Unknown physical tyre identity limits strict evidence qualification.

Planned is not Actual

A proposed value is not proof it was fitted. Starting a plan means a planned test, never Controlled evidence. After driving, enter the actual fitted values, measured outcomes and Driver Feedback. On saving, explicitly confirm the actuals or save unverified. Unknown actuals remain unknown; recommendations and plan values are not substituted as measurements.

Review **Source → Planned → Actual**, where Actual is the saved result. Execution asks whether the intended intervention happened. Additional unexpected material changes can downgrade the evidence even when the intended setting was fitted.

Three separate meanings

Concept	Current terminology	Meaning
Plan lifecycle	Draft, Ready, Active Test, Completed, Cancelled	Where the plan is in its workflow. The index uses Active as its filter label.
Execution	EXECUTED, PARTIAL, NOT EXECUTED, UNKNOWN	Whether actual fitted settings match the intended change. Individual parameter rows additionally show EXECUTED AS PLANNED, PARTIALLY EXECUTED or ACTUAL UNKNOWN.
Evidence quality	CONTROLLED, NEAR-CONTROLLED, CONFOUNDED, NOT EXECUTED, INSUFFICIENT EVIDENCE, INCOMPATIBLE, DUPLICATE / REIMPORT	How safely the source/result pair can support interpretation.

Controlled requires compatible independent recordings, known actuals, the intended single intervention and no material conflicting change. **Near-Controlled** permits limited documented context uncertainty. Material additional changes are **Confounded**; missing essential evidence gives **Insufficient Evidence**. An unchanged intended setting is **Not Executed**. Incompatible circuit/class or duplicate recordings cannot become Controlled. Always read the displayed reasons, not just the category.

How do I choose the Intervention definition?

Separate independent changes: use this when each setting change should be treated as a separate change. Several important independent changes make it harder to isolate one cause.

One defined cold-pressure vector: use this when several corner pressures deliberately change together as one pressure setup. For example, LF −0.2, RF −0.2, LR −0.2 and RR −0.2 psi form one coordinated pressure change. “Vector” simply means that full pattern. It is different from LF alone −0.2 psi.

Pressure experiments: details

Cold pressure is the intentional input, **hot pressure** is the measured outcome and **target hot** is contextual target information. LF only −0.2 psi is one independent change. LF/RF/LR/RR each −0.2 psi may instead be one deliberately coordinated intervention: choose **One defined cold-pressure vector** and specify the complete corner pattern. A vector means that pattern is the single thing being tested. Under **Separate independent changes**, changes are evaluated independently; combining pressure with caster remains a multi-change test.

Review the result

Open the completed plan in Test Plans or the test-evidence action in History to inspect actuals, reasons, corrections, pressure outcomes and Driver Feedback. **Review Test Comparison** opens the pinned source/result pair in Cross-Session Comparison; **Open Map & Strategy** uses its existing compatibility and telemetry controls. Repeat from a chosen saved baseline to create a separate test.

General/investigative Next-Session Plans and legacy plans remain valid plans. Loading them does not manufacture controlled evidence or retroactively classify them as controlled experiments. Completed and cancelled plans retain their historical identities.

Evidence records do **not** automatically learn or alter calibration coefficients, and correlation does not prove causation. Missing EGT, Lambda/AFR or throttle limits mixture interpretation; RPM and water temperature alone do not prove rich/lean direction.

Use **Add Follow-Up Run** after the test returns, then **Attach & Analyse** through Companion detection or the picker’s manual folder fallback. Finish Post-Session Review and save confirmed actuals. **Starting a plan does not itself create controlled evidence.** The result is classified only from the saved source/result facts, execution and available context.

25. Troubleshooting

My lap times look wrong

Upload the full logger folder and make sure the SN… session-summary file is included. Isolated LAP_x files may not contain authoritative official timing.

A lap has no official time

It may be an incomplete or untimed trace. ApexLab can retain the trace for inspection while excluding it from official rankings and averages.

The Fastest lap seems wrong

Check the official session timing. ApexLab selects the lowest authoritative timed lap and uses the earlier lap number only when times are exactly equal.

The map does not show my route

Confirm the active import contains valid GPS coordinates, choose Interactive GPS Map, then use Fit circuit. The map expands from Strategy with Expand map and closes with X or Escape.

Post-Session Engine is missing evidence

Confirm a session imported successfully and remains active, then enter Driver Feedback and available temperature/RPM fields. EGT is optional.

Overview is missing information

Overview reflects the specialist pages. Check Tyres for measured readings, Driver Feedback for symptoms/notes, Engine for fitted values and Telemetry for the active session.

The session did not save

ApexLab retains the active workspace after a failed save. Review the error, confirm the information that is available, then retry. Optional missing measurements do not need to be invented. Make a Full Profile Backup regularly.

26. What ApexLab Knows—and What It Does Not

ApexLab uses only supplied or supported evidence. It may not directly measure throttle position, EGT or tyre temperature. Tyre Inner/Centre/Outer values are manual unless a supported source explicitly provides them. Missing data lowers coverage and can limit confidence; it is not silently fabricated.

Recommendations explain the inputs and general engineering reasoning without exposing proprietary formulas, coefficients, thresholds, scoring weights or optimiser internals. Future reduced-order tyre/engine/chassis models are not presented as current capabilities.

What do these terms mean?

Technical words in everyday language

Saved-record linkage

The link that keeps a run, its telemetry and any test result associated with the correct saved record.

Provenance

Where a value or recording came from, and what was corrected later.

Immutable completed run

A saved run is protected from later setup edits. Genuine corrections are labelled; the original diagnosis is preserved.

Telemetry ownership

Logger data must belong to the selected run and profile before ApexLab uses it.

Intervention

The deliberate setup change you are testing.

Calibration readiness

Evidence for a future review of recommendation rules; no automatic calibration update.

Baseline

The recommended starting setup for the current inputs.

Reference Lap

The lap used as the comparison anchor.

Fastest Lap

The single lowest authoritative timed lap; exact ties use the earlier lap number.

Official Lap Time

Authoritative logger/session timing when available.

Telemetry Trace

Continuous recorded values plotted through a lap.

Driver Feedback

What the driver actually felt during the run.

Post-Session

Analysis performed after recorded run evidence is available.

Main Jet

The carburettor setting with strongest influence at sustained high load.

Needle Clip

The setting with strongest influence through progression/midrange.

Air Screw

The setting with strongest influence around low throttle and pickup.

Richer / Leaner

The next supported fuel-mixture candidate in that direction, not a percentage.

Target Pressure

The intended post-run operating pressure window.

Heat Cycle

One heating and cooling cycle of a tyre set.

Final Drive Ratio

Rear sprocket teeth divided by front sprocket teeth.

Confidence

How strongly the available evidence supports a conclusion.

Evidence Coverage

How much relevant information was available.

Full Session Summary

The immutable session evidence and recommendations saved to History.