

# GDSL LAB V2024

GDS

GDSL  
LAB SOFTWARE  
FOR SOIL AND ROCK

# WHY GDSLAB v2024?

I am extremely excited to be introducing GDSLAB v2024 to all our worldwide users.

This has been a project that I have been personally involved in driving forward. I am delighted to see our hard work come to fruition and the benefits this will bring to each and everyone using our software. We have been working closely with users to understand what drives their testing needs and how we can make GDSLAB v2024 exactly what you require.

Written from the ground up and building on our 30 years of experience of developing control software at GDS, we have ensured it retains a familiar feel for all of you who have used GDS software in the past.

This brochure will highlight a host of new software features and functionality we are excited to share. Custom calculations and user defined test scripting is something we have longed to release for many years, and can now be used to perform exciting new tests that are outside of the limits of standards or what has

been performed in laboratories before. I am pleased to announce that for the first time the software is available in multiple languages.

The good news is we are not going to stop there. GDSLAB will continually develop with new features added bi-annually based around your feedback and needs.

This brochure outlines the many features and functionality and I hope by the end of it you'll be as excited about the benefits and possibilities GDSLAB v2024 will bring to you as we at GDS are.

I firmly believe that GDSLAB v2024 is the new software standard for Geotechnical testing.



**Karl Snelling**  
Managing Director at GDS Instruments

# Evolution of GDSLAB

GDS launched GDSLAB v1. The control and acquisition software allowed geotechnical testing systems to be configured using a range of different equipment, comprising of both GDS and other manufacturers hardware.

The next generation of GDSLAB v2 was launched in 2010 to continue to enable advanced laboratories and researchers to be at the forefront of geotechnical innovation.

GDSLAB v2024 pre-release sent to selected commercial and research-focused users for beta testing. Their feedback was crucial for making changes to the software ahead of the full launch and for developing our roadmap for the next three years.

2001

2010

2023

## Continuous Evolution

GDS remains committed to being at the forefront of geotechnical testing equipment, a commitment that extends to our software. We will be providing continuous updates to GDSLAB throughout the years, allowing our licences to always utilise the latest in geotechnical software innovations. These updates are highlighted in a roadmap that was developed to ensure we are adding features that best benefit our end users.

## Annual Licence

Our new annual licensing model and web based installation (no more dongles) means it's easier and more cost effective to maintain GDSLAB than ever before. Users who purchase an annual licence are able to utilise the latest version with the newest features and functionality, as laid out in the GDSLAB roadmap, without having to worry about upgrade fees.

## Futureproofing

Software and programming evolves at a fast pace. The infrastructure of GDSLAB v2 limited our ability to create new and innovative features for our users. In order to ensure GDSLAB can continue to provide the strongest solution for our users, now and in to the future. GDSLAB v2024 is built using the latest technology and development frameworks.

BI-ANNUAL SOFTWARE RELEASES

PRODUCT ROADMAPS

MULTIPLE LANGUAGES

WEB BASED INSTALLATION

With the upcoming launch of GDSLAB v2024 we have created a timeline to help you plan your upgrade.

GDSLAB v2024 launches for users looking to take advantage of the advanced functionality and feature set available in the new software.

GDSLAB v2024 will become the default software for users receiving new equipment. Those who wish to stay on the old version can request this from their account manager.

GDSLAB v2 will end of life meaning that end users will be able to continue using the software, but it will no longer be supported or updated by GDS. GDSLAB v2025 will be the default software for all new purchases.

Q1 2024

Q3 2024

Q1 2025

# WHAT'S NEW IN GDSLALB v2024

GDSLALB v2024 has been designed with end users in mind. Driven by user feedback to create a system that is not only simpler and more intuitive to use, but also makes data collection and manipulation a faster, more accurate and more enjoyable experience.

Part of our promise to users is to maintain continued development of GDSLALB, supported by our annual licence model and ensure end user benefits, like those outlined here, are continuously added and improved on year by year.

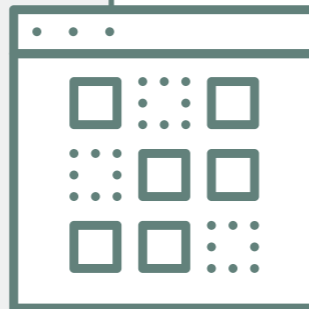
## MULTIPLE LANGUAGE USER INTERFACE

The ability to instantly switch between multiple languages, within the same laboratory. This ensures users can get support from their colleagues even if their preferred language is different – facilitating collaboration anywhere in the world.



## GRAPHICAL SYSTEM BUILDER

Giving end users the ability to configure their own setup saves valuable time. GDSLALB v2024 graphical system builder puts end users in control of setup changes making them easy to implement within the laboratory, without the need for technical assistance & knowledge. The ability to make quick and easy changes, and the removal of ini files means GDSLALB v2024 puts the power back into your hands.



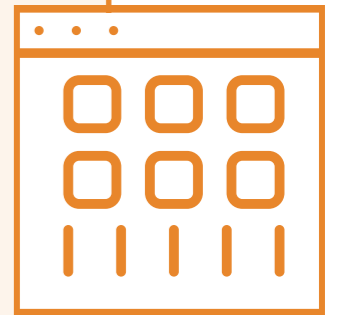
## REAL TIME GRAPHS FOR DYNAMIC TESTS

With GDSLALB v2024 end users can recover dynamic data in true real time even when testing at significant speed, exactly in synch with the test. Our new high speed dynamic data capture can be plotted on screen in real time, so end users no longer need to worry that data capture will continue after the test has completed – saving valuable time and removing confusing data-lagged information.



## DATASTORE FOR TEST DATA

The accuracy of test data is a key reason our users use GDS equipment and software. Data rates that are too slow can have a significant impact on the end user's ability to interpret vital information from a test. GDSLALB v2024 stores all test data at the maximum rate. Using the datastore end users can export the data as many times as they want at any point during or after the test, with the data columns and data saving intervals of their choosing. No data is ever missed so no data is ever lost to the end user.



## GENERATE CUSTOMISABLE OUTPUT FILES (.gds)

Matching software output files to user's own data analysis eats away at valuable time and resource. GDSLALB v2024 allows user flexibility in formatting the layout of the export data, making it easier than ever to compare and analyse results.



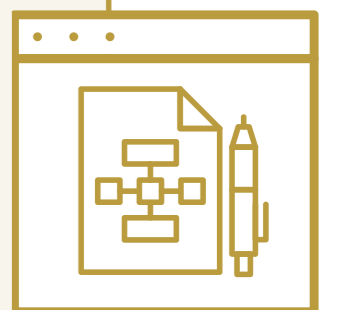
## USER DEFINED TEST SCRIPTING

Being limited to standard functionality within test modules can have significant impact on project deliverables within a research or advanced laboratory environment. GDSLALB's user defined test scripts allow the end user to perform tests that are outside the standard functionality, giving users the ability to control and acquire their data in their unique ways with unique workflows.



## CUSTOM DEFINED CALCULATIONS

Combining user defined calculations with user defined test scripting opens up a world of possibilities and removes the normal constraints of testing software. This combination ensures end users can always control based on their user defined calculations; either from standards that have not been published or unique experimental research based tests outside the usual scope of geotechnical testing.



# BENEFITS OF AN ANNUAL LICENCE

## YEAR ON YEAR INNOVATION

Our annual licence and product roadmap means users can benefit from year on year product development from GDS – ensuring our users always have the latest functionality and features needed in their lab.



## LATEST PRODUCT FEATURES

Users on our new annual licence model receive all new features in GDSLAB; at a much lower cost than having to upgrade to the latest version. Annual licences can be purchased on a single or multiple year basis.



## TECHNICAL UPDATES

Technical updates will be deployed via the software as they become available. Users who have purchased an annual licence will receive these at no additional cost.



## FUTUREPROOFING

GDSLAB v2024 is built using modern architecture and the latest in software development tools, meaning we are able to deliver user driven updates free from the restrictions of older platforms.



## TECHNICAL & SOFTWARE SUPPORT

Technical support is available to all our users. However if a software update to solve a technical issue is required, users will need to upgrade. Those with an annual licence will receive software updates at no additional cost.



# GDSLAB PRODUCT ROADMAP

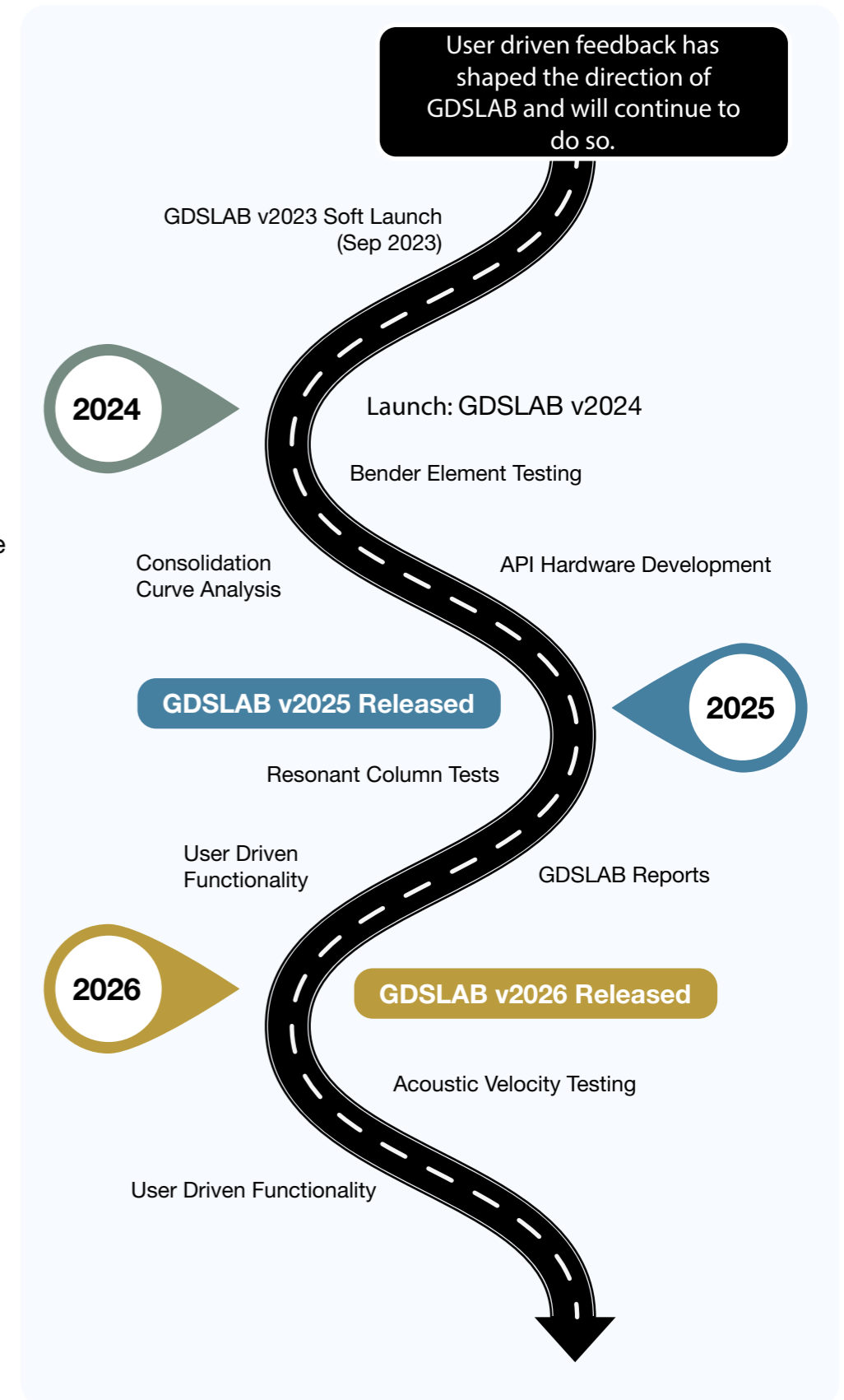
## Product Roadmap

The product roadmap will dictate the direction of software development allowing the technical team to focus their resources on delivering the best experience for the user.

A new version of the software will be released containing added features, functionality and technical updates. This will be focused on our users' needs to ensure GDSLAB continues to deliver the best results and most accurate data.

Users that have an active annual licence will receive these updates at no extra cost and will be able to take full advantage of the latest innovations GDSLAB has to offer.

*Note: Product Roadmap subject to change.*





# GDSLAB v2024 SOFTWARE TIERS

GDSLAB is structured into a number of tier levels to make selecting the test functionality fit your requirements. The modules are Core, Standard, Advanced, Dynamic and

Research as described below. The higher level tiers include all of the modules of the previous tiers.

	CORE	STANDARD	ADVANCED	DYNAMIC	RESEARCH
Logging (All)	✓	✓	✓	✓	✓
Incremental Loading (Oedometer)	✓	✓	✓	✓	✓
Swelling (Oedometer)	✓	✓	✓	✓	✓
Monotonic Loading (Consolidometer)	✓	✓	✓	✓	✓
Saturation / Automatic Saturation (Triaxial)		✓	✓	✓	✓
B-Check (Triaxial)		✓	✓	✓	✓
Consolidation (Triaxial)		✓	✓	✓	✓
Monotonic Loading (Triaxial & Shear)		✓	✓	✓	✓
Custom Calculations			✓	✓	✓
Unsaturated Testing			✓	✓	✓
Advanced Loading (Triaxial)			✓	✓	✓
Advanced Loading (Consolidometer)			✓	✓	✓
Advanced Loading (Shear)			✓	✓	✓
Advanced Loading (Hollow Cylinder)			✓	✓	✓
Advanced Loading (True Triaxial)			✓	✓	✓
Advanced Loading (VDDCSS)			✓	✓	✓
Stress Paths: (Triaxial & Hollow Cylinder)			✓	✓	✓
K-zero Consolidation (Triaxial & Shear)			✓	✓	✓
Permeability (Triaxial & Consolidometer)			✓	✓	✓
Dynamic Cyclic Loading (Triaxial)				✓	✓
Dynamic Cyclic Loading (Shear)				✓	✓
Dynamic Cyclic Loading (Hollow Cylinder)				✓	✓
Dynamic Cyclic Loading (True Triaxial)				✓	✓
Dynamic Cyclic Loading (VDDCSS)				✓	✓
Advanced Loading: (Resilient Modulus )				✓	✓
Dynamic Cyclic Loading (Resilient Modulus)				✓	✓
User Defined (All)					✓

# USER DRIVEN UPGRADES NEW IN GDSLAB v2024

Multiple languages	Customisable graphical user interface (colour / scaling)	Station tabs can be shown in different windows or monitors	Test stages can be given a user defined name for easy identification	Graphs and UI have the capability to keep up with dynamic data in real-time
Users can lock the station configuration from being modified	Ability to assign custom names to parameters	Test data & transducer details are saved in a datastore	Custom user defined calculations	Unlimited user-definable live data boxes are displayed, ability to order live data boxes via drag and drop
Ability to reload previous test datastore without needing system hardware present	Ability for the user to graphically set up their own station	Remember the transducer auto-read state between sessions	Custom user defined control based on a user defined calculation	No hardware key so simpler licencing distribution
Custom user defined test control scripts, allowing the user to build up their own test control flow	“Device View” and “Parameter View” options as well as the traditional “Object Display” view	Transducer cards can be moved via drag and drop, and the ability to specify a background image	Custom user defined termination conditions	Actively block Windows from restarting / applying updates whilst a test is running
Additional information shown in each Transducer / Control card, including range and last target	Transducer and control cards linked together for ease of use / view	Universal status bar showing test status and configuration /datastore file locations	Fully configurable datasets on all graphs	User definable results file. User can specify columns to be displayed and rename the column headers
Ability to see all parameters that were used for a test after a test has been completed	Ability to re-run a test without re-entering the test setup information	Test stage list has the ability to insert / delete / reorder test stages	Updated aesthetics	Ability to specify as many graphs as desired
Ability to track new data on graphs	Ability to view any stage individually on the graphs	64 bit architecture has the ability to handle more data	Ability to load and save graph and live data configurations	Improved User Experience

# TIER 1: CORE

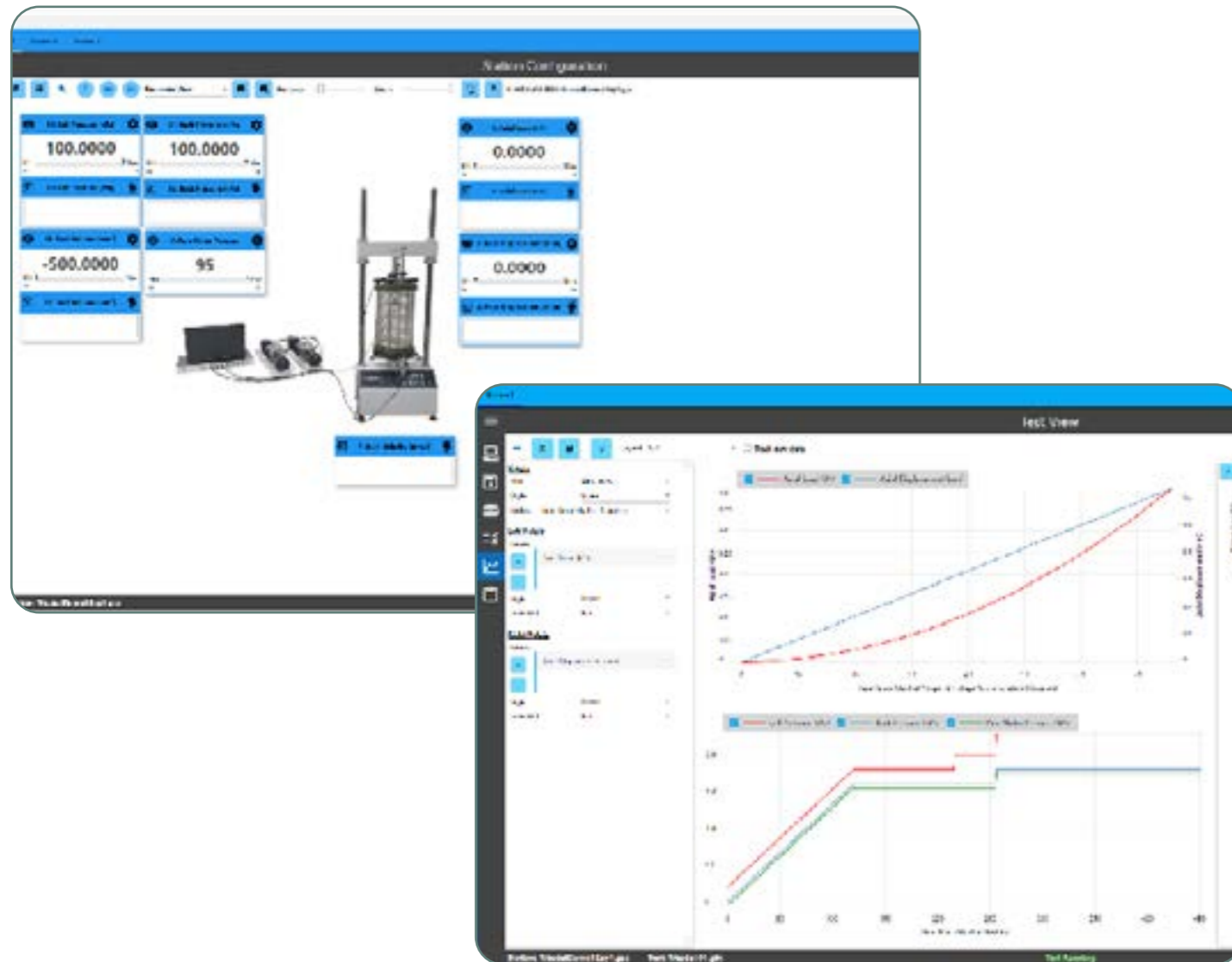
## TIER 1: CORE

Tier 1 has all of the powerful features of GDSLAB such as the ability to create and adjust station configurations, advanced graphing features and live data view (as shown below) and the ability to customise your output file.

Tier 1 is designed to cater for tests that require only basic logging, data acquisition and control. For systems such as automated or manual oedometer testing and manual shear boxes.

### MODULES:

- Logging (All)
- Incremental Loading (Oedometer)
- Swelling (Oedometer)
- Monotonic Loading (Consolidometer)



# TIER 2: STANDARD

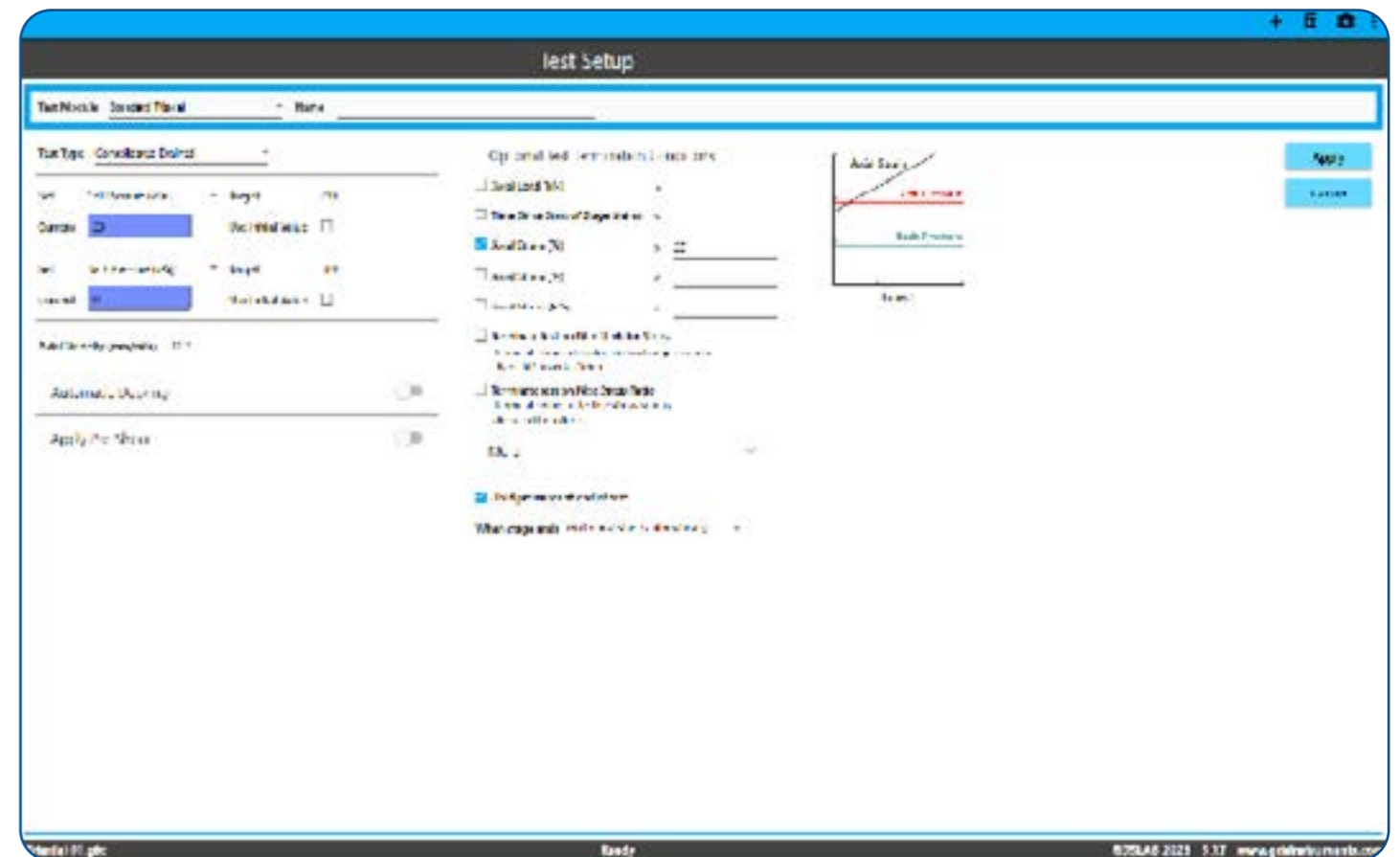
## TIER 2: STANDARD

Tier 2 is for test control and acquisition of triaxial and shear box tests. Ideal for testing to national standards in a commercial laboratory, or for education establishments teaching in a soils laboratory. Saturation can be completed by means of a ramp, or by automated stepped B-check / equalisation stages. It is possible to run a triaxial or shear box test from start to finish without user interaction, using the built in array of user selectable termination conditions.

NOTE: Includes all modules from Tier 1.

### MODULES:

- Saturation / Automatic Saturation (Triaxial)
- B-Check (Triaxial)
- Consolidation (Triaxial)
- Monotonic Loading (Triaxial & Shear)



# TIER 3: ADVANCED

## TIER 3: ADVANCED

Tier 3 is for the control and acquisition of advanced soil and rock tests. Tests include stress path testing (in either p, q or s, t space), unsaturated testing, K0, and those advanced tests expected for complex systems such as the GDS True Triaxial Apparatus, Hollow Cylinder or Variable Direction Simple Shear.

Advanced enables feature to allow user defined calculations. The user is able to define a custom test parameter, name this parameter, and supply a formula that includes read and calculated parameters as variables. This feature ensures GDSLAB is future proof to all national standards, as well as allowing research fellows the ultimate in flexibility to observe non-standard calculated parameters during a test.

NOTE: Includes all modules from Tier 1 and 2.

## MODULES:

- Custom Calculations
- Unsaturated Testing
- Advanced Loading (Triaxial)
- Advanced Loading (Consolidometer)
- Advanced Loading (Shear)
- Advanced Loading (Hollow Cylinder)
- Advanced Loading (True Triaxial)
- Advanced Loading (VDDCSS)
- Stress Paths: (Triaxial & Hollow Cylinder)
- K-zero Consolidation (Triaxial & Shear)
- Permeability (Triaxial & Consolidometer)

# TIER 4: DYNAMIC

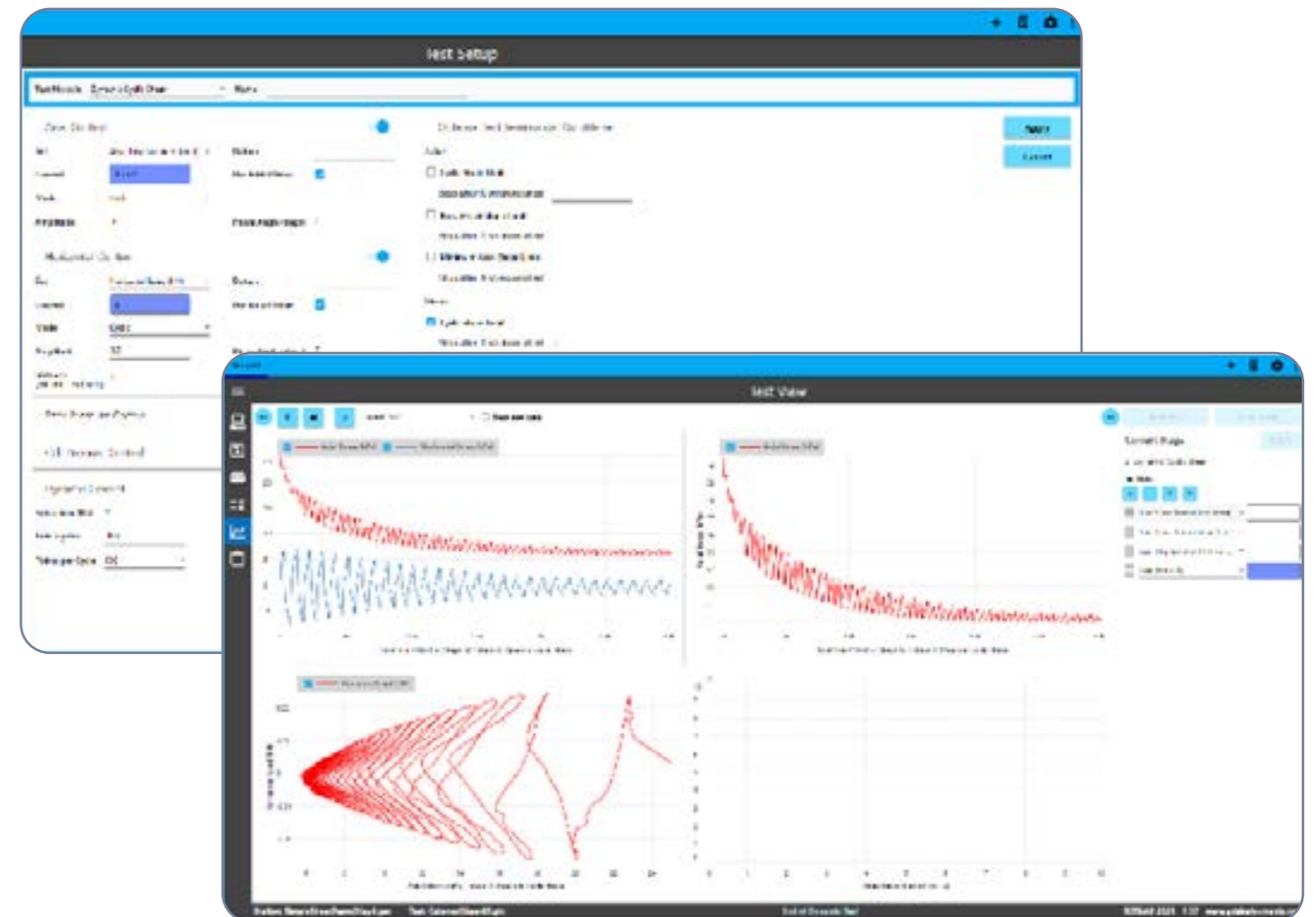
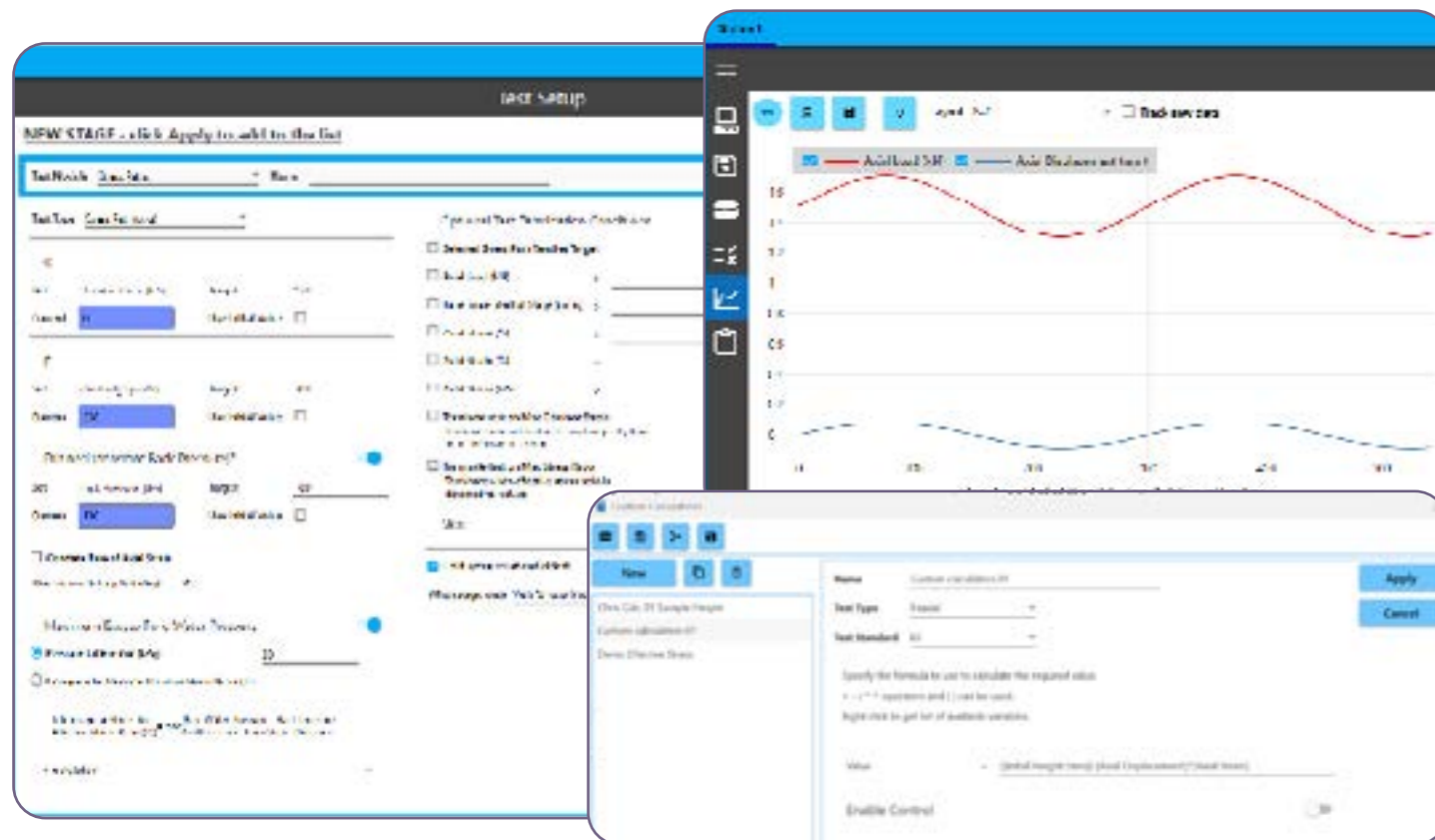
## TIER 4: DYNAMIC

Tier 4 is for the control and acquisition of all GDS systems that are cyclic / dynamic. Graphs are displayed in real time as standard. This is the default software module for GDS' DYNTTS, ELDDYN, TTA, VDDCSS and TTA.

NOTE: Includes all modules from Tier 1, 2 and 3.

## MODULES:

- Dynamic Cyclic Loading (Triaxial)
- Dynamic Cyclic Loading (Shear)
- Dynamic Cyclic Loading (Hollow Cylinder)
- Dynamic Cyclic Loading (True Triaxial)
- Dynamic Cyclic Loading (VDDCSS)
- Advanced Loading (Resilient Modulus)
- Dynamic Cyclic Loading (Resilient Modulus)





# TIER 5: RESEARCH

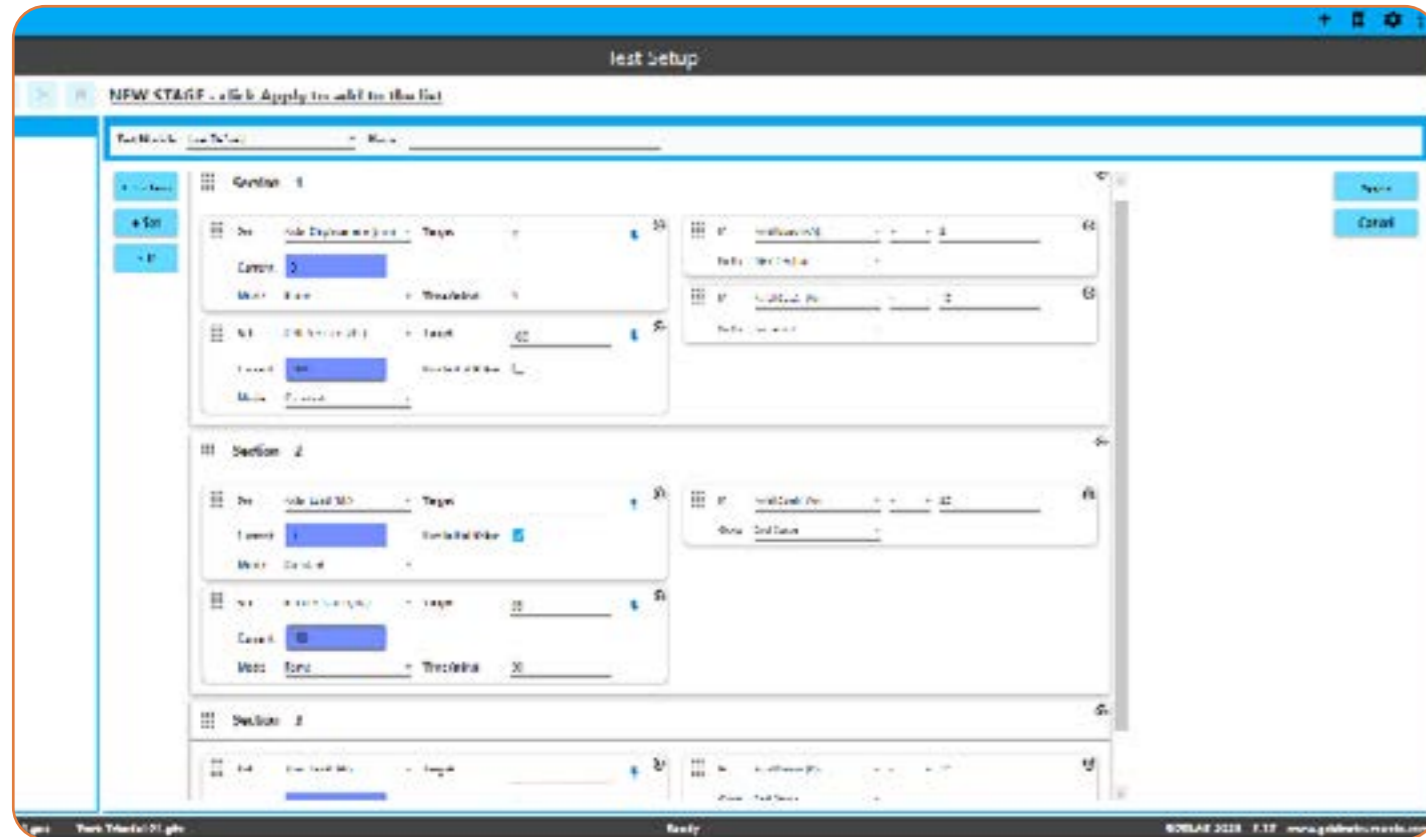
## TIER 5: RESEARCH

Tier 5, the Research tier is the highest tier with the highest level of functionality. User defined test control scripts is the ability to custom script your test using any parameter that has been set up in the system, and apply logic for termination conditions using any parameter either read or calculated in the system, including user defined customer calculations. With this module control may even be applied to custom calculations. For the ultimate in flexibility, logic can be applied with IF statements such that depending on various outcomes of the stage, any stage in the section list can be run as the next stage.

NOTE: Includes all modules from Tier 1, 2, 3 and 4.

### MODULES:

- User Defined (All)



# ABOUT GDS:

## Learning Zone

On the GDS website you can find the Learning Zone, in which are many white papers, technical papers, and case studies. Learn about how our other customers have utilised GDS systems for their research and commercial laboratories.



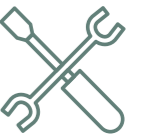
## Technical Support

GDS understands the need for ongoing after sales support, so much so that we have our own dedicated customer support centre. Alongside this, GDS provides a range of support methods including remote PC support, helpsheets and video tutorials.



## Training and Installation

All installations and training are carried out by qualified engineers. A GDS engineer is assigned to each order throughout the sales process. They will ensure the system is quality checked prior to shipping and install the system at the customer's site when delivered.



## Extended Warranties

All GDS systems are covered by a 12 month manufacturer's warranty. In addition to the standard warranty, GDS offers comprehensive extended warranties for an additional 12, 24 and 36 months.



## Made in the UK

All GDS products are designed, manufactured and assembled at our offices in Hook, UK. All products are checked for their level of quality before they are dispatched.

GDS is an ISO9001:2015 accredited company.





# LABORATORY SYSTEMS FOR SOIL & ROCK

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