



STARS VETS

The best VETS ever

We have committed ourselves to developing a Vehicle Emission Test System which cannot be topped, and we found support from our customers who demand the utmost from their automation systems.



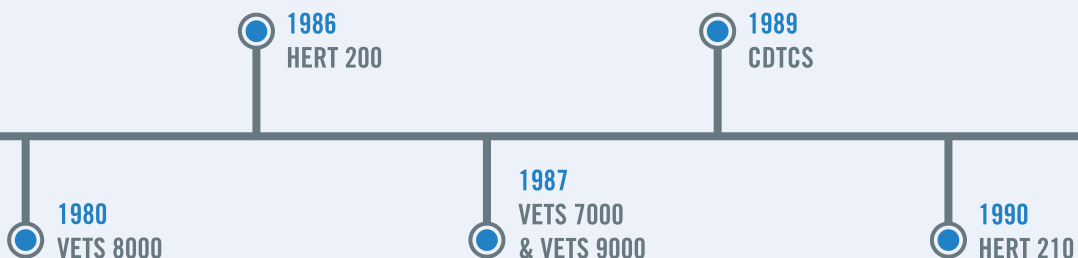
EXCELLENT USABILITY

The STARS VETS user interface has been optimized to your everyday needs. It is easy to learn and intuitive, thereby reducing user errors and helping your users to solve problems independently. As a result, you save time and costs for training.

With the Open & Locked feature, you receive maximum operational security via the Locked mode, and optimal flexibility via the Open mode. By switching from the Locked mode to the Open mode, you are able to extend the functional scope of STARS VETS even without programming knowledge. No special knowledge is required to work efficiently with the software. You profit from significantly reduced training time and costs and you can flexibly assign your staff and resources to get maximum return. This gives you and your team more independence and lowers your personnel costs.

BENEFITS

- » Optimal staff deployment and low training costs and time
- » Lower operational error rate
- » Autonomous troubleshooting by users
- » Reduction of users' frustration, increase of users' motivation, higher sense of achievement, boost of personal productivity





FLEXIBILITY

Test Procedures Editor and Configurable Workflow

The HORIBA Test Procedures Editor is the most user-friendly editor on the market for individual driving trace creation and visualization of test sequences. With its open and stable design, the Test Procedures Editor guarantees the security of investment at maximum flexibility for future requirements in hybrid electric vehicle and RDE testing.

The test procedures and measurement configurations can be viewed and modified on any workstation independently of the current test cell operations. Your users may add events and gear shift points themselves. The Test Procedures Editor offers numerous content elements giving your users optimum flexibility to create and configure their desired vehicle tests. The editing functions are very intuitive, which allows those without programming language to add or modify their own test procedures.

BENEFITS

- » Maximum flexibility for future requirements in hybrid electric vehicle and RDE testing
- » Higher net utilization due to centralized test preparation
- » Security of investment due to low update costs



TRANSPARENCY

Analysis Inspector

As a STARS VETS user, you will benefit from this very unique and powerful audit tool. The result calculation tracer helps you ensure regulatory compliance and provides you with detailed insights into the whole post-processing path. With fast and efficient detection of faulty measurement values, you can avoid operational downtime, error propagation, and considerably reduce aborted tests due to errors. You save unnecessary costs and time through early identification and correction. This leads to an increase of valid tests and improves test facility utilization and capacity. The self-explanatory feature has a positive impact on your support and training costs as well as on your staff deployment.

BENEFITS

- » Interactive proof of regulatory compliance
- » Securing operation uptime in line with higher capacity utilization
- » Time savings due to fast error identification
- » Avoidance of error propagation (system errors, measurement errors, localization of faults)
- » No expert operator required – smooth job handover when staff changes



STARS VETS has a user-oriented application framework with a modern look. It stands out with its optimized user environment. No special application knowledge is required, which reduces the training period for new users.

FEATURES

1 NAVIGATION

Explorer Bar – Common navigation concept across all STARS Apps.

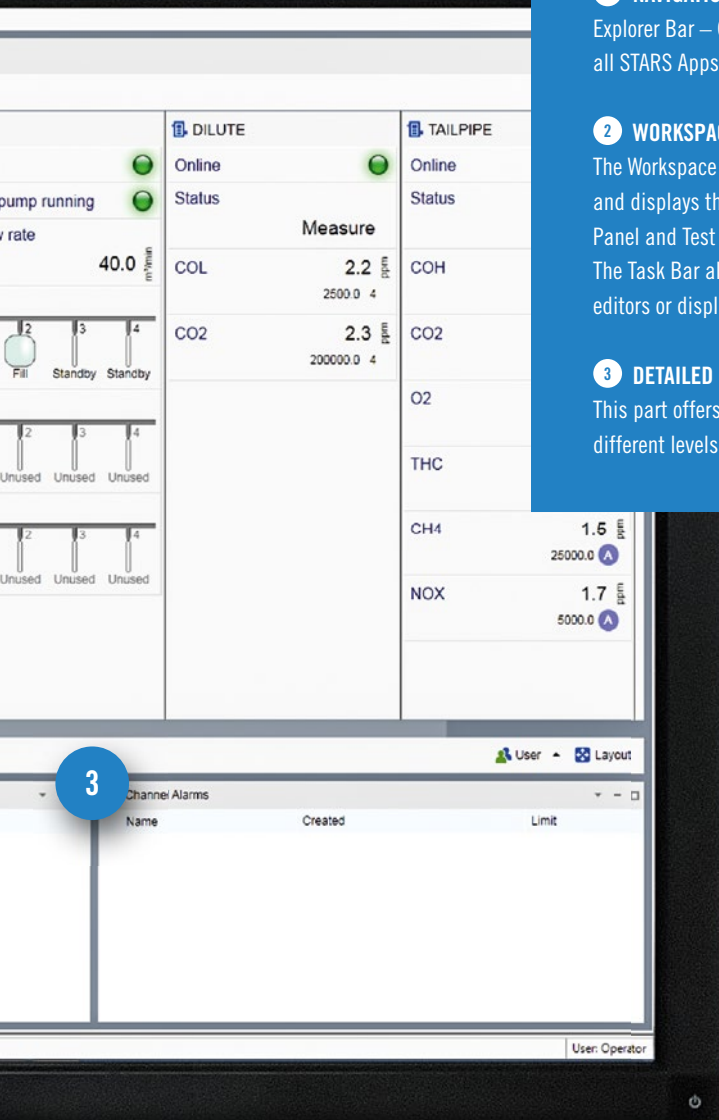
2 WORKSPACE & TASK BAR

The Workspace occupies the main area of the application and displays the current editor or view such as Test Status Panel and Test Procedure Panel.

The Task Bar allows rapid navigation between any open editors or displays.

3 DETAILED LOGS & ALARMS

This part offers transparency and diagnostic aids at different levels of details.

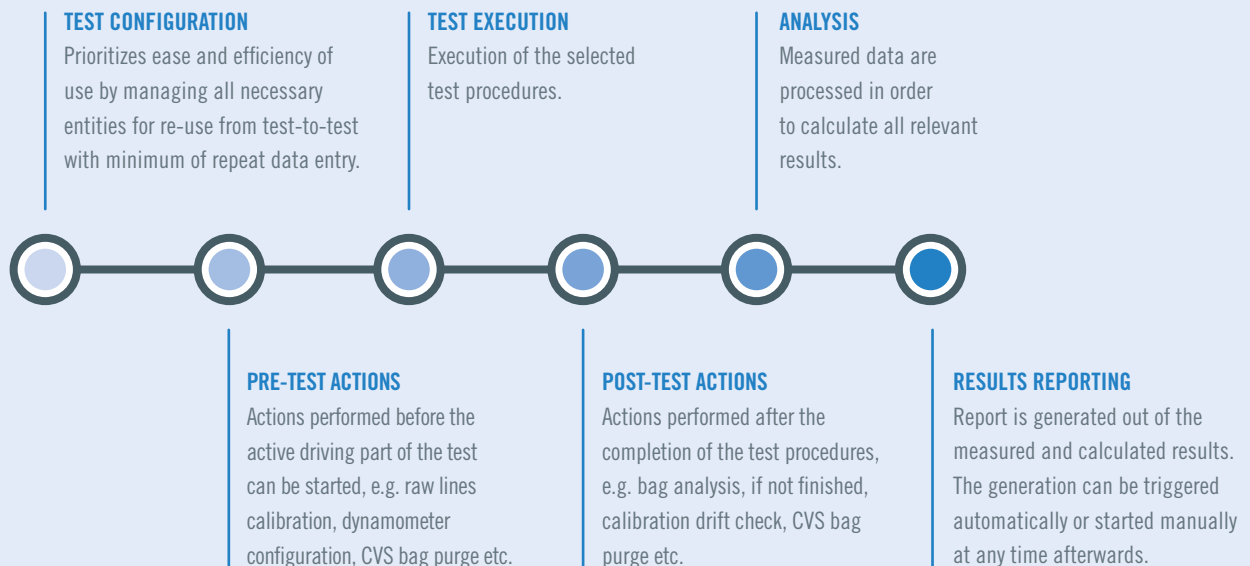




MAIN STEPS OF STARS VETS TEST PROCESSING

An open and flexible workflow

In combination with quick and flexible function extensions, the workflow can be adapted individually, which increases each user's individual productivity.



PLUG & PLAY DEVICE DRIVERS

Easy expandability

STARS VETS OFFERS A COMPREHENSIVE SET OF AVAILABLE DEVICE DRIVERS SUCH AS

- » dynamometer controllers
- » standard and non-standard emission equipment
- » third-party emission equipment
- » exhaust-flow measurement equipment
- » process I/O systems and modules



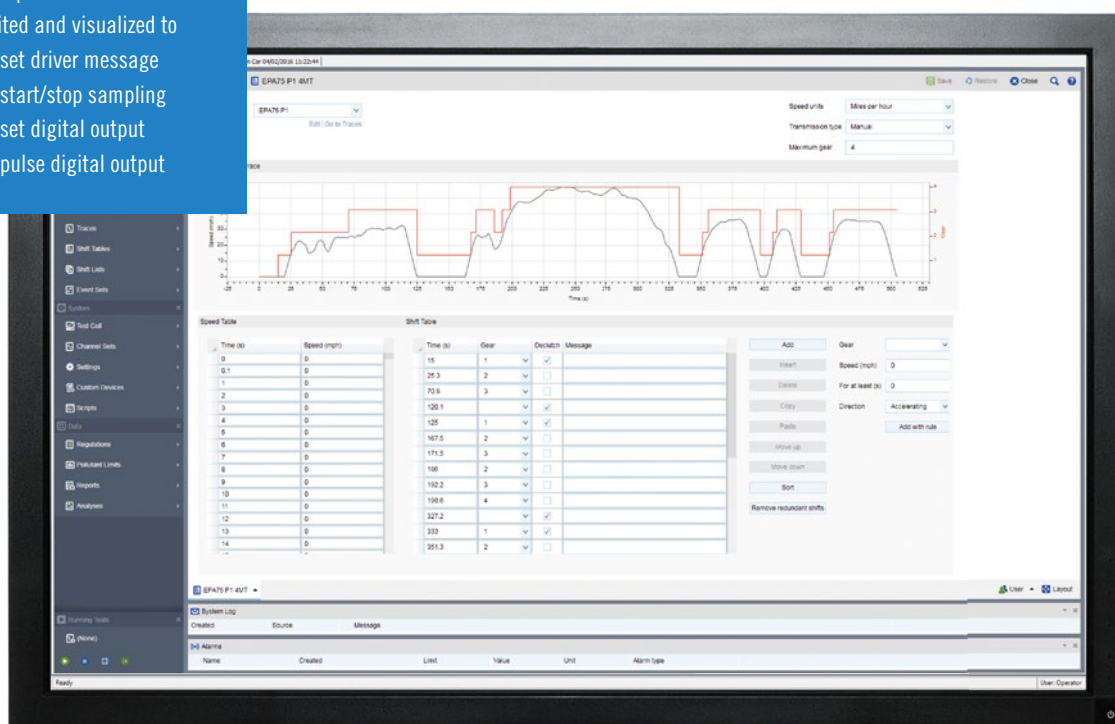
NEW INTEGRATED EDITORS

Creation of individual test procedures

FEATURES

Test procedures can be edited and visualized to

- » set driver message
- » start/stop sampling
- » set digital output
- » pulse digital output



TEST PROCEDURES EDITOR

Configure new or existing test procedures by chaining together one or more “blocks” of Drive Unit, Soak, Coastdown, etc. types. For example, custom hybrid vehicle testing procedures and RDE traces.

TRACE/SHIFT EDITOR

Configure new or existing traces specifying a table of speed versus time, which describes the speed profile that the vehicle will have to follow. Add the shift points associated with the trace. Traces and Shift Tables can be imported from Excel using Cut & Paste.



DRIVER'S AID

A configurable test cell resource

The STARS VETS Driver's Aid provides the driver with a graphical display of scheduled and actual speed, gear shift points and user-defined events. The permitted tolerance for speed deviations may be displayed as well as an out-of-tolerance count. For better visualization of cursor and tolerances, a magnifying function is available. Flexible screen layouts can be easily designed, including full-screen drive trace (the entire screen is filled with the drive trace) or partial-screen drive trace (part of the screen is reserved for user configurable displays).

FEATURES

- » Interface to any dynamometer, with support for analog or frequency-based speed feedback signals
- » Display chart-based target and actual speed
- » Acquire data from an optional weather station
- » Select signals to display and customize their appearance as alphanumeric text or as dial gauges

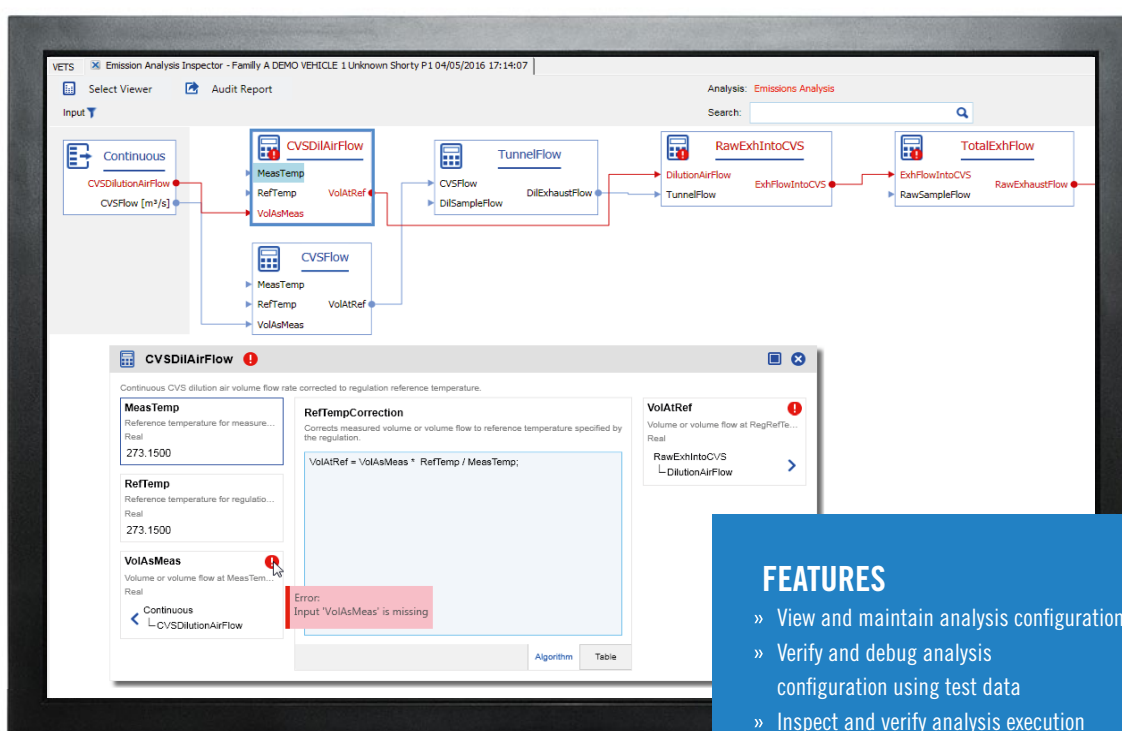




ANALYSIS INSPECTOR

Comprehensive support for advanced test result analysis

For every executed test, the Analysis Inspector provides a graphical representation of the input data, calculation paths, intermediate calculation steps, results and errors. The Analysis Inspector provides filtering and search mechanisms to inspect specific calculations and results.



FEATURES

- » View and maintain analysis configuration
- » Verify and debug analysis configuration using test data
- » Inspect and verify analysis execution results (generated by the execution of an analysis configuration)



REGULATORY COMPLIANCE

Compliant with the latest legislations **1066** and **WLTP**

ALWAYS UP TO DATE

- » UNECE: Regulation No. 83, No. 101, WLTP GTR 15
- » USA: 40 CFR Part 86, 600 and 1066
- » Europe: Commission Regulation (EC) No. 692/2008
- » Japan: TRIAS 60-4, TRIAS 5-9
- » Future regulations



ANALYSIS AUDITOR

Generation of complete test reports

Similar to the Analysis Inspector, the Analysis Auditor produces a formatted report of all inputs, calculation steps, and outputs from a completed test. The generated report can be distributed and opened in any web browser without STARS VETS running. This is particularly useful for verifying calculations, customer understanding, training, result confirmation and system auditing.

The screenshot displays the HORIBA Analysis Auditor web interface. The top navigation bar includes 'HORIBA', 'Input', 'Calculation', and 'Output' tabs, along with a search bar. The main content area is titled 'BagEmsConc[Bag][CO2]' and describes its function: 'Corrects bag emissions concentrations for ambient emissions.' It details the 'Calculation' process, including the 'AmbEmsCorrection' step and the 'Algorithm' used. The algorithm code is as follows:

```

DilEms = CVSEms - AmbEms * (1 - 1/DF);
if (ZeroNegEms)
{
    if (AmbEms < 0)
    {
        Warning("Negative ambient emissions concentration has been ignored.");
        DilEms = CVSEms;
    }
}
  
```

Below the algorithm, the 'List of Output Ports' section shows the 'DilEms' output. It includes a description: 'Ambient corrected dilute concentration.' and a table of values:

#	Value
1	0.0030007197348273697
2	0.00690038679420707



A MODULAR PRODUCT STRATEGY

STARS Platform

STARS PLATFORM – WIDE RANGE OF APPS

The STARS Platform is an automation platform for a variety of testing applications in the field of vehicle, engine, powertrain, component and brake testing (Domains). These applications are designed for different types of laboratories, but using the same STARS Platform you can profit from the direct exchange and easy comparison of tests and results obtained from different STARS Apps. Your specific benefits of the STARS Platform are a boost of productivity due to short training time and flexible and optimal staff deployment.



BENEFITS

- » On the market for over 10 years with more than 1000 automation installations worldwide
- » Rich experience gained from predecessor systems, e.g. legacy VETS systems, X-ONE, and ADACS
- » Sustainable software architecture
- » High system stability, real-time capability
- » Security of investment due to reliability

STARS PLATFORM – ROCK SOLID

With more than 1000 STARS installations at OEMs and Tier 1 suppliers worldwide, you profit from HORIBA experience and can improve your competitiveness significantly. Over 35 years, we have developed, together with our customers, a system that provides high reliability and accuracy. As an example, the independent controller provides a secure fallback level and increases the system's stability. The STARS Platform has been growing for over 10 years continuously along with the requirements of our customers. Our main goal is compatibility and continuity – you will always be up to date with the latest technology.

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