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RS LabSite®

A Complete Testing Environment that's as Scalable as you Want It



INSTRON STRUCTURAL
TESTING SYSTEMS

A Digital Test Environment to Suit Your Current and Future Needs

RS LabSite® is a suite of software modules that gives you unparalleled testing performance. Combining physical testing and virtual prototyping, it provides the ultimate integrated digital test environment. RS LabSite® incorporates all tools required in the testing process, including:

- Visualizing and preparing target data
- Configuring test rig hardware
- Generating drive files
- Durability sequencing and monitoring
- Results and damage analysis and much more, such as specific applications for damper and elastomeric components.

All RS LabSite® modules are managed through a database structure which is scalable for your requirements.

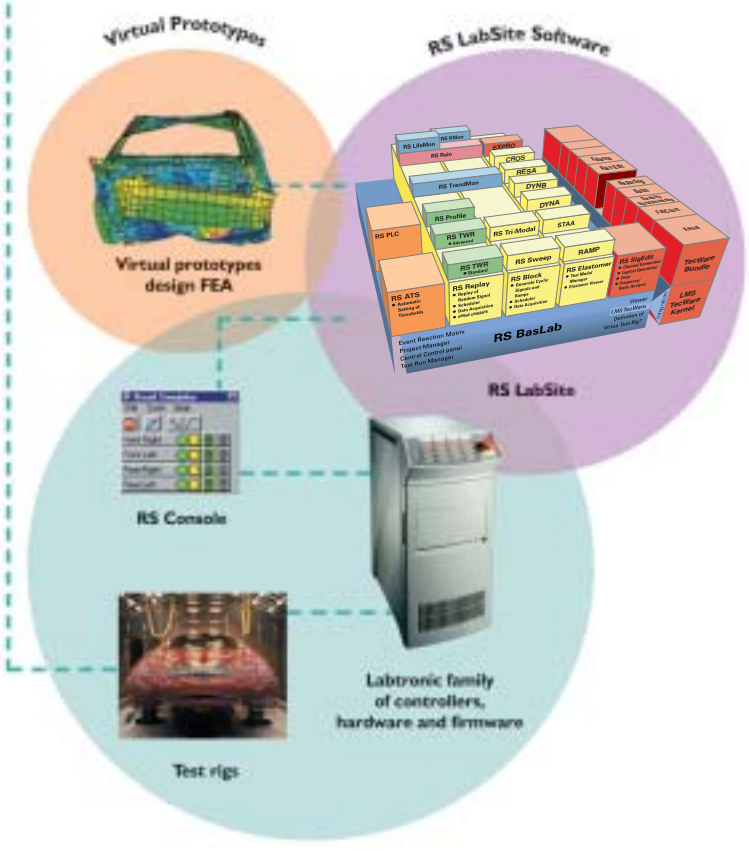
Ultimate Productivity through Compatibility

At Instron Structural Testing Systems we have a product development strategy which gives you ultimate compatibility. Regardless of the application, our products are always planned around a single controller type and a single software suite. RS LabSite® embodies and encapsulates this strategy.

We were the first company to produce fully digital closed loop controllers and have always been consistent in our philosophy to digitally integrate testing within your overall engineering process.

By simplifying the testing process, providing a common user interface and allowing forward and backward compatibility, you get substantially improved productivity with reduced training needs.

The Digitally Integrated Test Environment



The Integrated Digital Test Environment

Whether you are in the office or the test laboratory, tests can be designed and configured using valuable data from previous scenarios stored in the RS LabSite® database. Virtual tests developed offline can be mapped to any of the physical rigs available in the laboratory. Load data, rig type, specimen type and calibration data are all available within the database environment of RS LabSite®. RS BasLab manages all data through the integrated database, providing:

- Unparalleled flexibility and scalability
- Ease of use
- Testing that is right the first time
- Investment protection and value

Together, these attributes reduces all-important time to market.

Open Standards

RS LabSite® and the Labtronic family of controllers have been designed to operate with third party products. Windows® is the operating system of choice. The interface to the Labtronic family of controllers is the industry standard GPIB (IEEE488), and the RS LabSite® architecture is designed for integration with propriety software products. All fatigue and damage analysis is done with market leader LMS International's TecWare modules, which are seamlessly integrated into RS LabSite®.

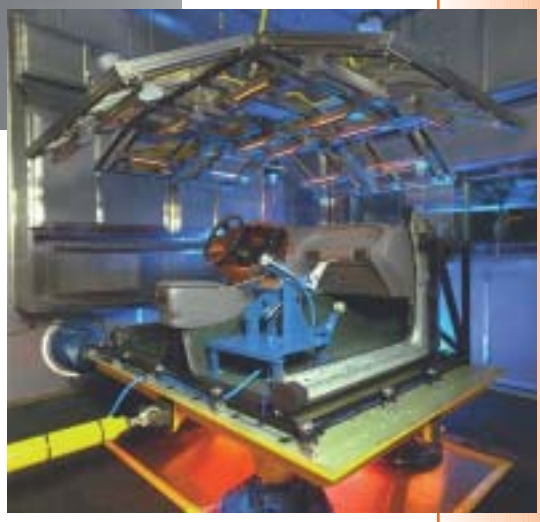


Scalability

The system offers wide scalability to grow with the customer. User can go from the simplest single axis block cyclic tests all the way through to complex full vehicle simulations, and all applications in between.

Virtual Prototyping

The system is designed to align with the customer's product development process to shorten development times. When implemented correctly the combination of virtual and physical testing substantially reduces the time to market for new vehicles.



The RS LabSite suite integrates with virtual prototyping software tools, an advantage highlighted by our commitment to The Durability Alliance™ and software products from LMS International.

RS LabSite® Overview

By selecting specific RS LabSite® modules, the user can develop the test environment to suit application needs, with the option of adding extra modules in the future. You are safe knowing that each module can be fully integrated with other modules, both in terms of interoperability and database processing.

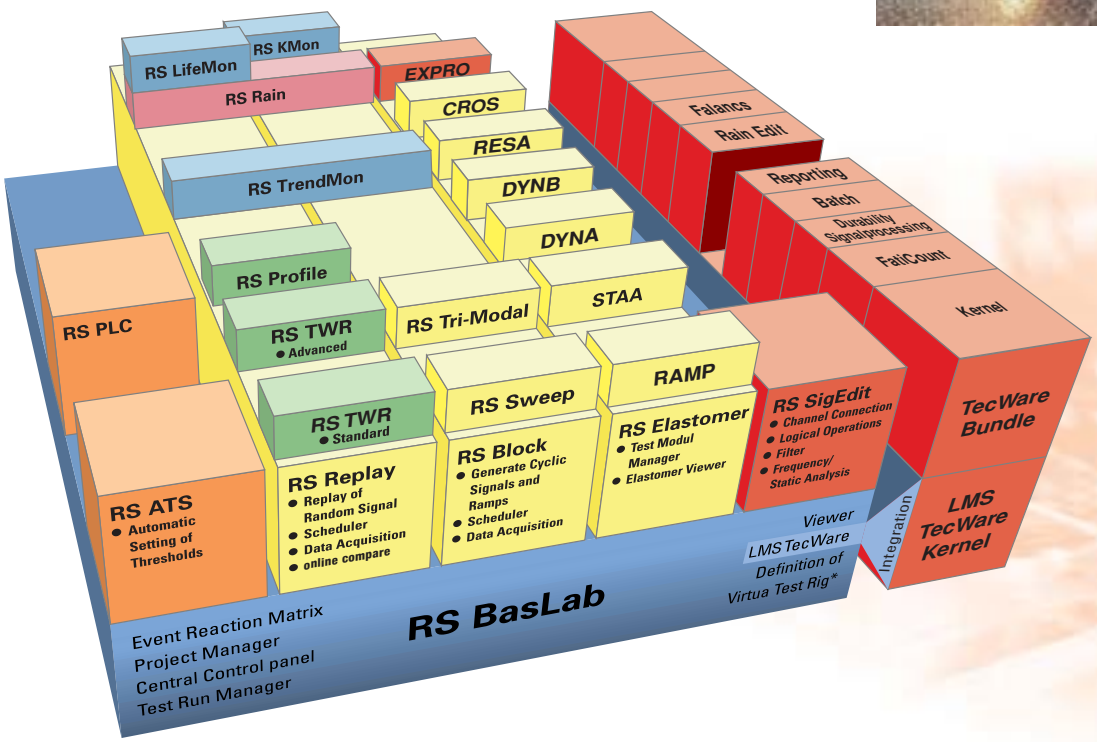
RS BasLab is the foundation of the RS LabSite® concept and provides the operating environment for managing all tests and test components. It can be used in both local non-networked mode as well as fully integrated networked laboratory mode.

RS BasLab also provides additional advanced functionality for complex test rigs:

- Automatic Threshold Setting (ATS)
- Programmable Logic Control (PLC) – automatic sequenced start-up and shut-down procedures.

With this system architecture built on the RS BasLab platform, the user has total freedom to extend capabilities and add applications, which may be different and selectable for the same test rig.





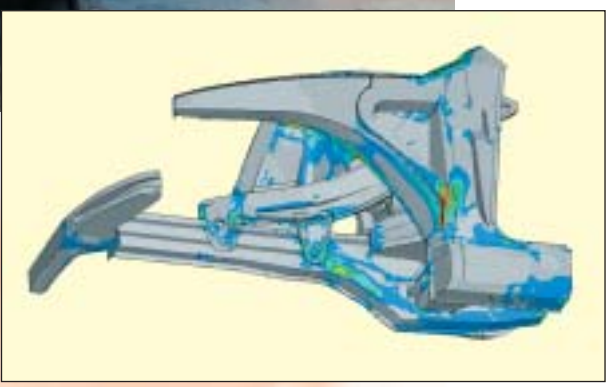


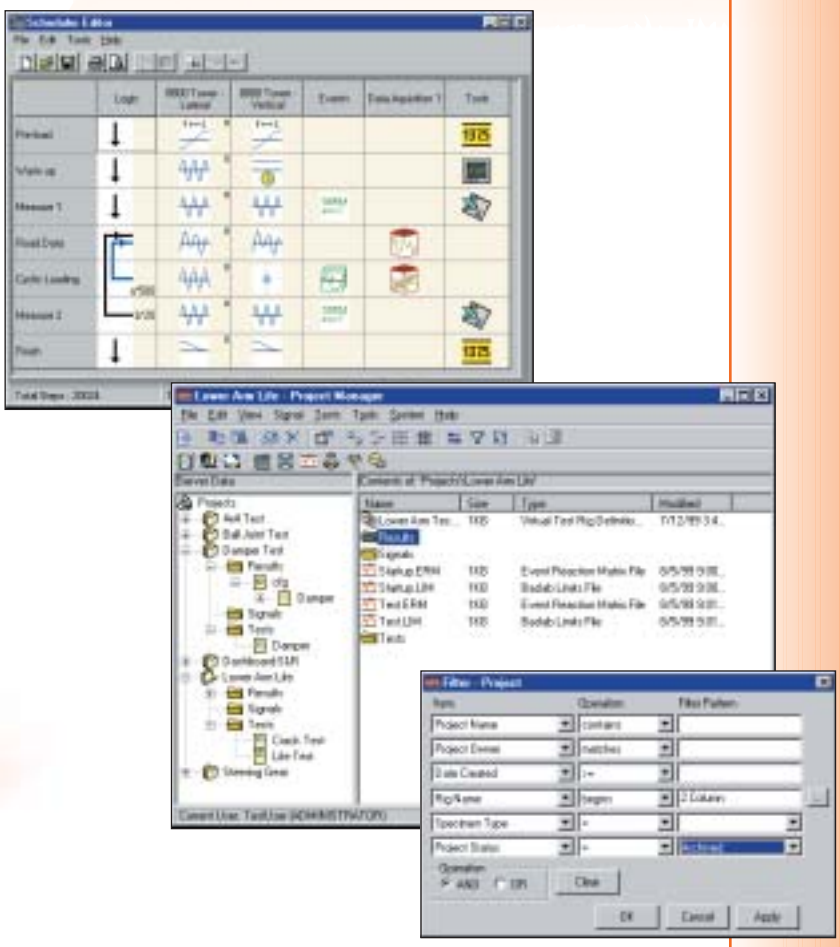
State-of-the-Art Drive File Generation

Utilizing advanced technologies from related fields, IST, together with its partner LMS International, has developed an iterative control package which offers levels of simulation accuracy and automation unachievable with other systems. This control package for time waveform replication is called RS TWR. Benchmark tests with RS TWR have shown dramatic improvements in both test development time and final simulation accuracy.

RS LabSite® Benefits

- Ease of use through a common user interface
- Ease of configurability
- Error reduction and "first time right" tests re-using previous data and configurations
- Greater productivity through process automation





The Labtronic Family of Controllers

Firmware

The Labtronic family of controllers performs all real time signal generation, data acquisition, loop closure, monitoring, and similar functions. The controller firmware has evolved over the past ten years, representing more than one hundred man years of research & development. It is the most robust, technically advanced firmware available, and is tightly integrated with the RS Console software.

RS Console is the user interface that unleashes the power of this firmware.
Its advanced features include:

- Modal, cascade and other advanced control
- Digital notch filtering
- 40 KHz sampling on all channels

RS LabSite® combines the digital Labtronic family of controllers with unique PC-based Windows® applications software.
The controllers are available as a single axis 8400 unit, a compact 6-axis tower, or a standard 19 inch rack mount version providing extra protection in harsh environments and space for any additional instrumentation.

Reliability

The versatile Labtronic family of controllers uses second generation technology with an impeccable track record. Based on a decade of proven performance with its first generation fully digital controller, the new Labtronic family of controllers incorporates the latest component and manufacturing technology to take the performance and reliability of digital controllers to new heights.

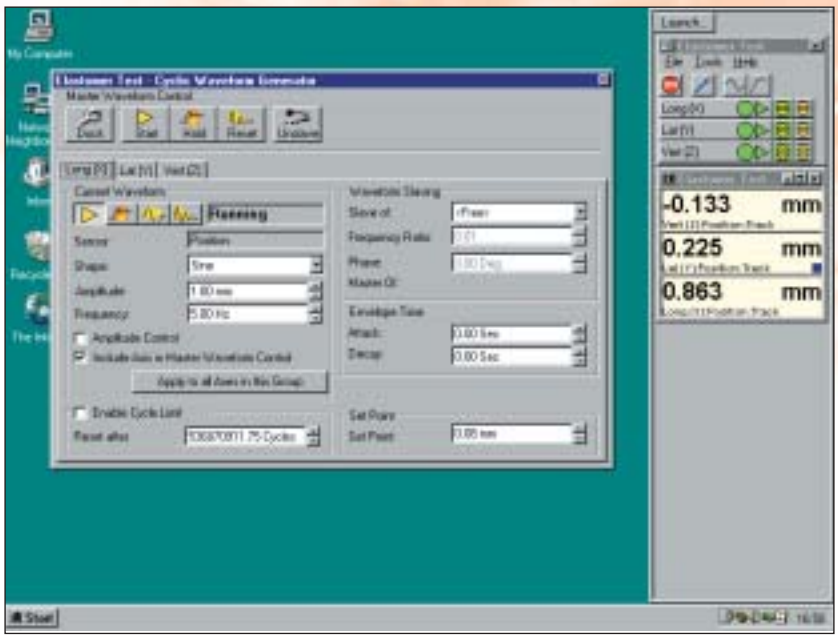
Ease of Use

Operating procedures of the Labtronic family of controllers have evolved through years of research into improving the user interface to our testing systems. Among the many "friendly" features integrated into the Labtronic family of controllers are IST's new and unique "Wizards" – step-by-step guides to help new and occasional users with the system.



RS Console

The RS Console software provides the digital front panel for setting up and tuning the test rig prior to operation. The main features of the package are:



Test Configuration

Flexible controller set-up and test system tuning through a Windows® interface, with no jumper and cable swapping required.

Calibration

Easy to use calibration wizard which guides the user through the calibration procedure step-by-step. After calibration, the configuration details are written to file.

Test System Tuning

All set-up and diagnostic tools are provided in the software. No oscilloscope or DVM is required to configure and tune the system. Both manual and automatic loop tuning options are provided.

Test System Control

RS Console provides a set of tools that allow the user to control tests and generate command signals for a numerous tasks including group set point, ramp waveform generator and cyclic waveform generator.

Access to Digital Controller Features

RS Console provides the user interface to all features in the Labtronic family of controllers, including analog output, digital I/O, servo valve, operation transducer limits, load protect, adaptive control (optional) and modal control (optional).

Test Log

Integral to RS Console is a test log capability where all significant control, hydraulic and status messages are logged along with a time stamp. Individual time stamped comments can also be entered.



The Durability Alliance

ACCELERATING THE DEVELOPMENT PROCESS

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