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RS BasLab – A module of RS LabSite®

Platform to Launch Applications and Manage Test Results

INSTRON STRUCTURAL
TESTING SYSTEMS

RS BasLab – the Foundation for Your Laboratory Testing Needs

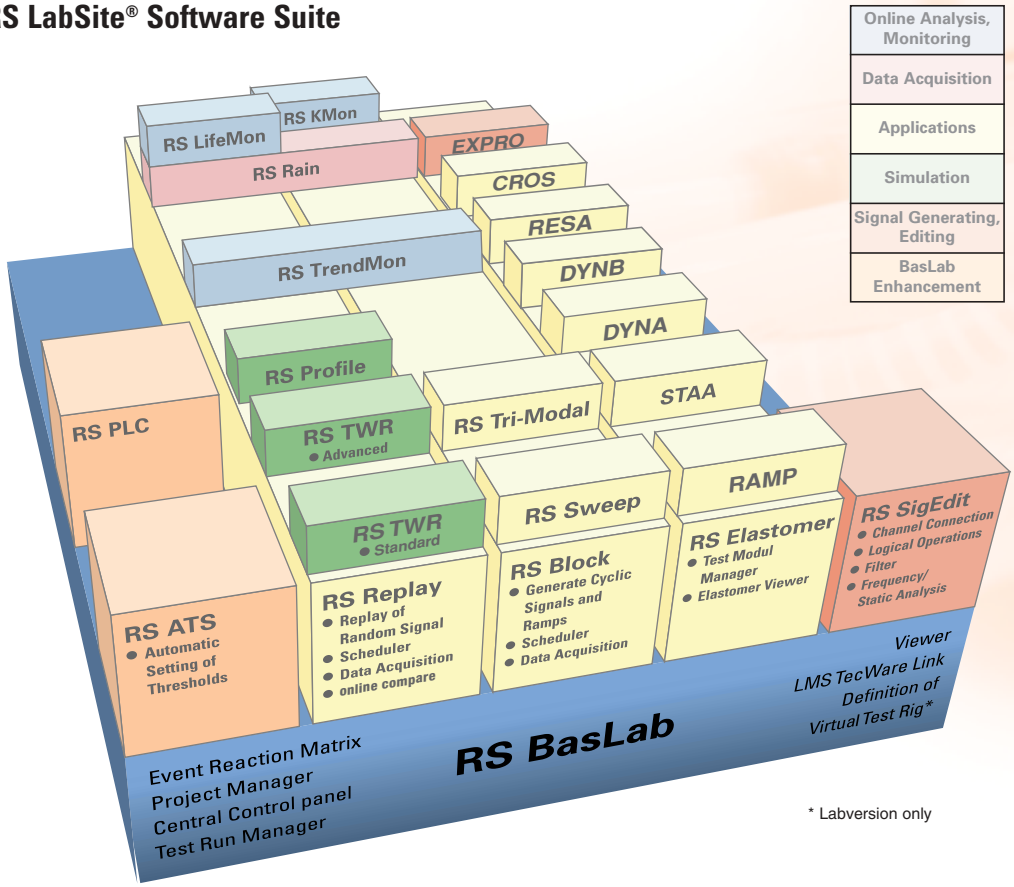
RS BasLab modules provide the environment from which all RS LabSite® tests are performed. RS LabSite® Project Manager provides the launch pad for these modules as well as a structure for the way all RS LabSite® modules work.

Through use of a database, Project Manager organizes all aspects of a testing laboratory, from designing tests through to storage of results. It also manages the users of the test rig, enabling new users to log-on easily and take over from other users. Data security is ensured through consistent storage, making it readily available and easy to find.

The RS BasLab package is available in two versions, a Local version and a network Server version. Using the Local version, tests are designed, stored and run from a computer local to the test rig. The Server version enables engineers to design tests from office computers. These tests are stored in the database on the file server.

The Server version includes software for the network file server as well as distribution for an unlimited number of office computers. In addition, each rig computer has software installed for designing and running individual tests.

RS LabSite® Software Suite



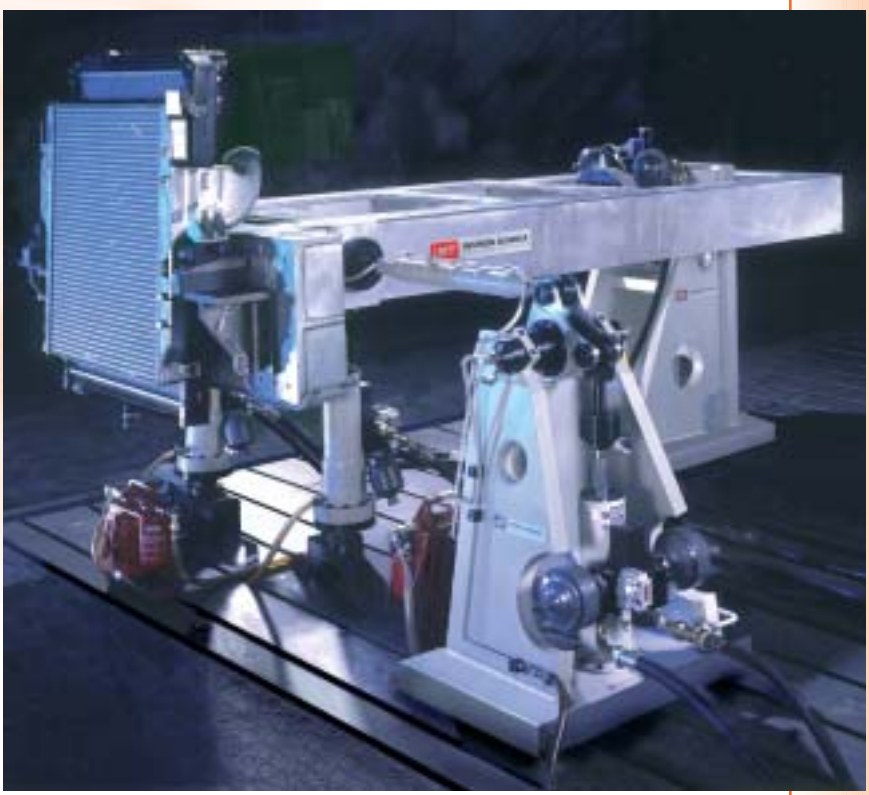
* Labversion only

The testing process starts by defining a Virtual Test Rig (VTR) which specifies all hardware required on the real test rig. The RS LabSite database creates a library of Virtual Test Rigs and designed test methods for later use. When the time comes to run a test, any authorized engineer can log-on to the system and the test to be performed is "checked-out" from the server to the test rig computer. Once testing is complete, test results are "checked-in" to the server. If changes have been made to the test method, it can be updated.

Project Manager provides the launch pad for the RS LabSite® modules associated with setting up and running a test, as well as post test analysis. These modules include:

- User Manager
- Virtual Test Rig Editor
- Specimen Handler
- New Project Definition
- Event Reaction Matrix Editor
- Signal Preparation
- Schedule Editor
- Test Run Manager
- Test Analysis

The complete RS LabSite® suite includes testing applications and programs for data acquisition, analysis and monitoring, simulation testing, signal generation and editing. RS PLC and RS ATS, the enhanced RS BasLab programs, are launched from Project Manager as are all RS LabSite® application test programs including RS Replay and RS Block. Off-line signal generation and editing programs are also launched from Project Manager.



RS LabSite® Project Manager

Project Manager provides the operating environment for RS LabSite®.
It offers a graphical user interface for all projects, with associated signals, test definitions, results data and Virtual Test Rigs, and shows a hierarchical view of all project elements.

Project information is stored in a database, with a filter module allowing quick and easy searching of projects based on a wide range of criteria. Search options include project name, project owner, creation date, rig name, specimen type and project status. In this manner, for example, all projects for ball joint tests performed between certain dates can easily be selected.

With the Local version of RS BasLab, the database is stored on the test rig computer. The Server version has two modes: *Local* mode used for running tests, which looks at data stored on the test rig computer, and *Laboratory* mode which looks at data stored on the file server. A control button enables easy toggling between the two modes.

The Check In/Check Out Assistant transfers test data from the server to the allocated test rig PC and copies test results back to the server. It also provides information about runs already checked in. All runs except for the last one are moved to the server during check in. The local runs are then deleted, but the last one is always kept.

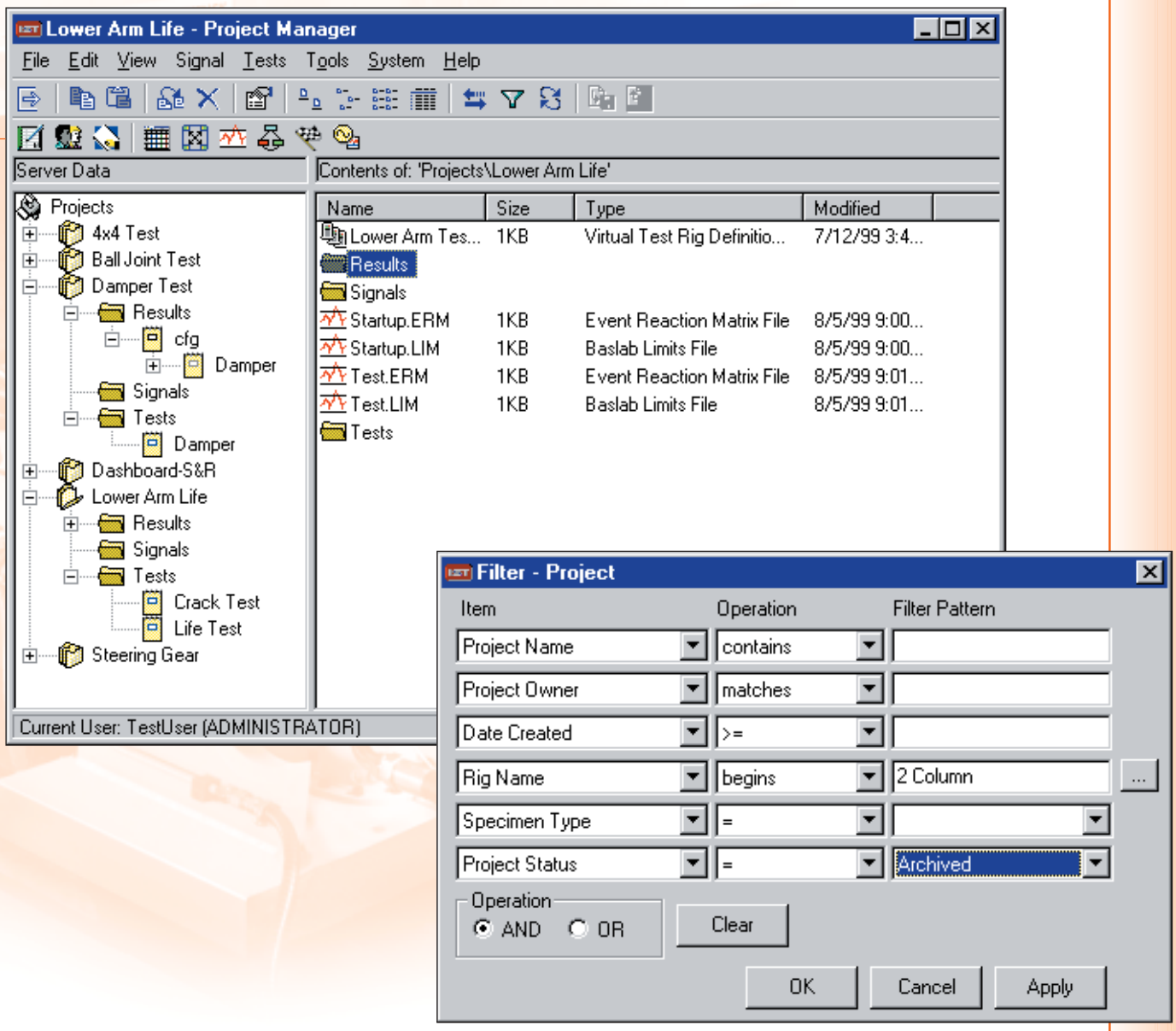
RS LabSite® projects are archived, backed up and restored. Data files and directories of a project are copied to backup media, which is represented by a drive letter. Optionally the data files and directories may be deleted to free space on the server disk.
The status of a project is updated accordingly to either "archived" or "backup". Project data on a backup media may be restored. If the project was "archived" all data files and directories are recreated. A "backup" project stays as backup, but is reset to the status at the time of the backup.

The Project Manager structure supports general working areas known as Workspaces. These are provided as an area for users to perform tasks such as signal analysis and manipulation. Once a task is complete, it is recommended that data be copied back to the signals folder.

Project Manager can display data with different views, either by project or by specimen type. For example, it is possible to display all test runs in a hierarchy, with specimen types on the top level, then the individual specimens and then the runs. The run number is labelled in the tree view on the left hand side. An option to append the test run number with the run comment simplifies identification of runs in the tree view.

The graphic below highlights the main functions of RS LabSite® Project Manager. Project Manager can also launch other applications such as:

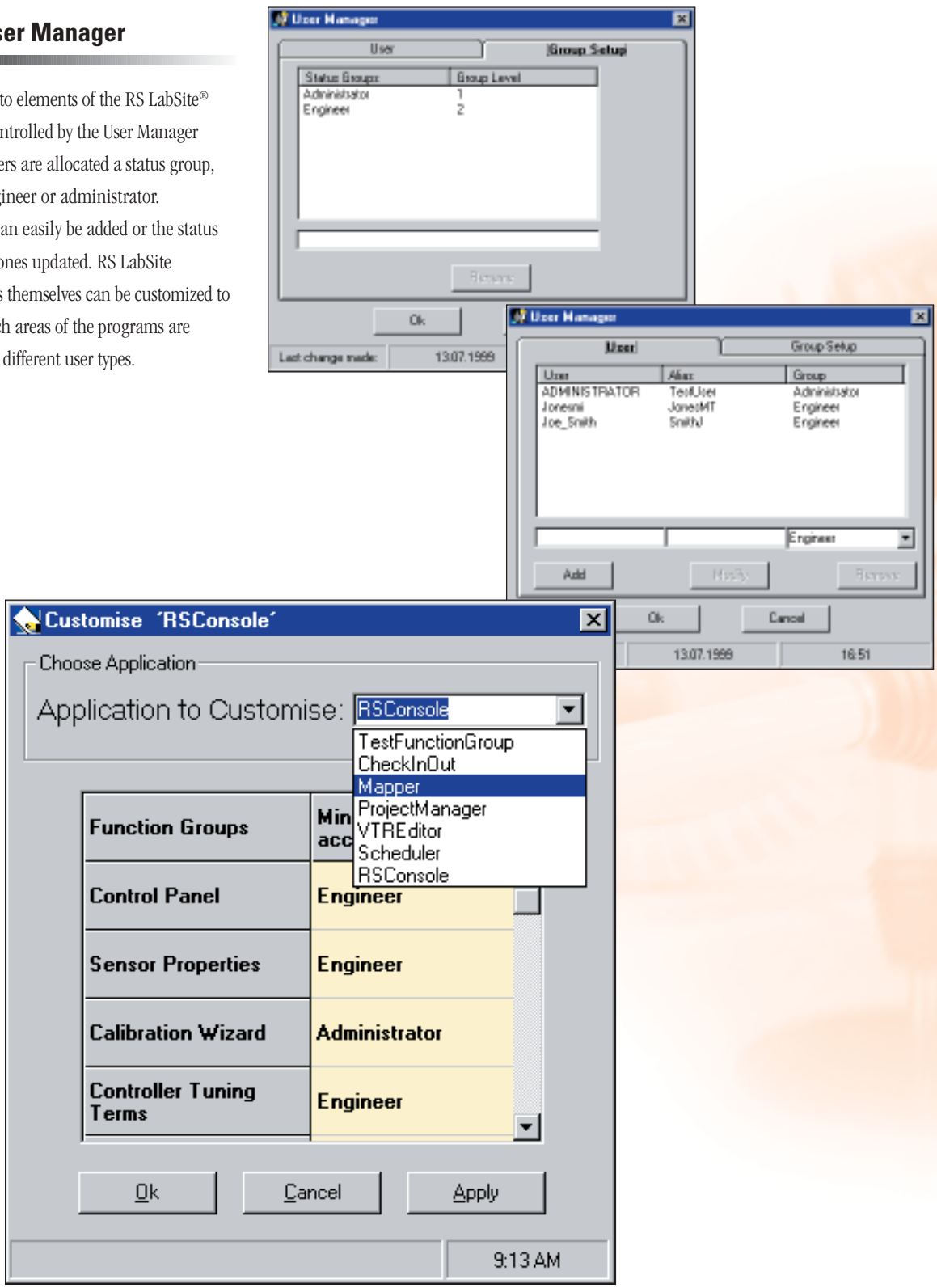
- RS BasLab enhancements
- Test method applications
- Signal generation and editing
- Simulation testing applications
- Data acquisition



User Manager

User Manager

User access to elements of the RS LabSite® system is controlled by the User Manager module. Users are allocated a status group, such as engineer or administrator.
New users can easily be added or the status of existing ones updated. RS LabSite applications themselves can be customized to specify which areas of the programs are available to different user types.



Virtual Test Rig Editor

Virtual Test Rig Editor

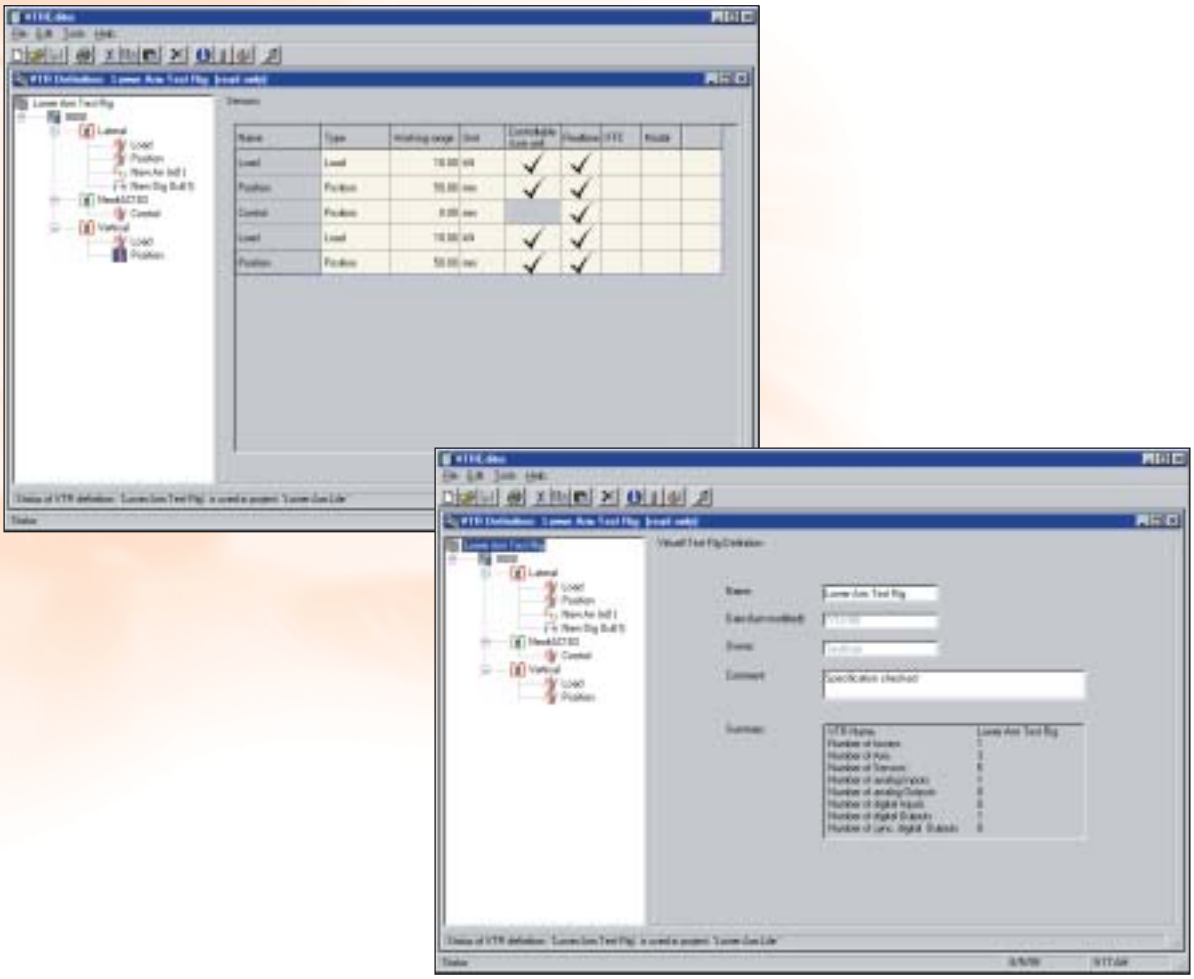
This function defines a Virtual Test Rig (VTR) used when the software is not connected to a physical test rig. It allows the characteristics of the physical test rig that will be required to perform a test, to be defined in advance, even when the physical hardware is not present. This enables tests to be defined from a computer which is situated remotely from the test floor, such as in an office.

Each VTR is given a name, and the following hardware items are defined, named and configured:

- Labtronic 8800 towers
- Integrated axis controllers (IACs)
- Cyclic rig data managers (CRDMs)
- Data acquisition cards
- Sensors
- Analog inputs
- Analog outputs
- Digital inputs
- Digital outputs
- Sync digital outputs

The RS LabSite® database stores information on all defined Virtual Test Rigs. When a new RS LabSite® project is set up, a VTR is assigned to the project. Once a test is defined and ready to run, the Test Run Manager maps the VTR to an available physical test rig with matching characteristics. The Virtual Test Rig Editor is only required with the Server version of RS BasLab.

In the "New Project" dialog the VTR selector box shows all existing Virtual Test Rig configurations. Using the right mouse click you can add a new VTR by reading and saving the current setup from RS Console.

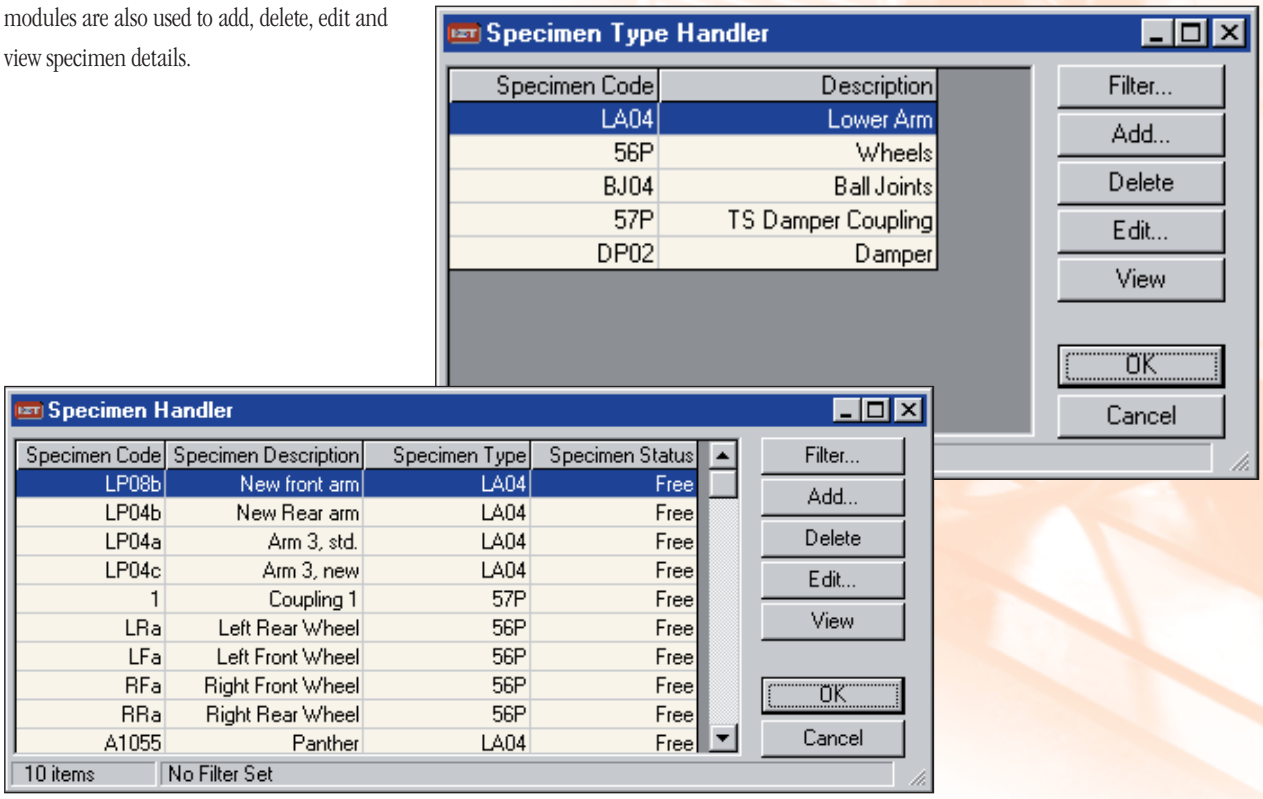


Specimen Handler

Specimen Handler

The type of specimen to be tested is specified by the Specimen Handler modules. The modules allocate a specimen code along with a brief description. Individual specimens of the same type are given a unique code and descriptive text.

Information on defined specimen types and individual specimens is stored in the RS LabSite® database. Details can be examined using the Specimen Handler and Specimen Type Handler modules. The modules are also used to add, delete, edit and view specimen details.

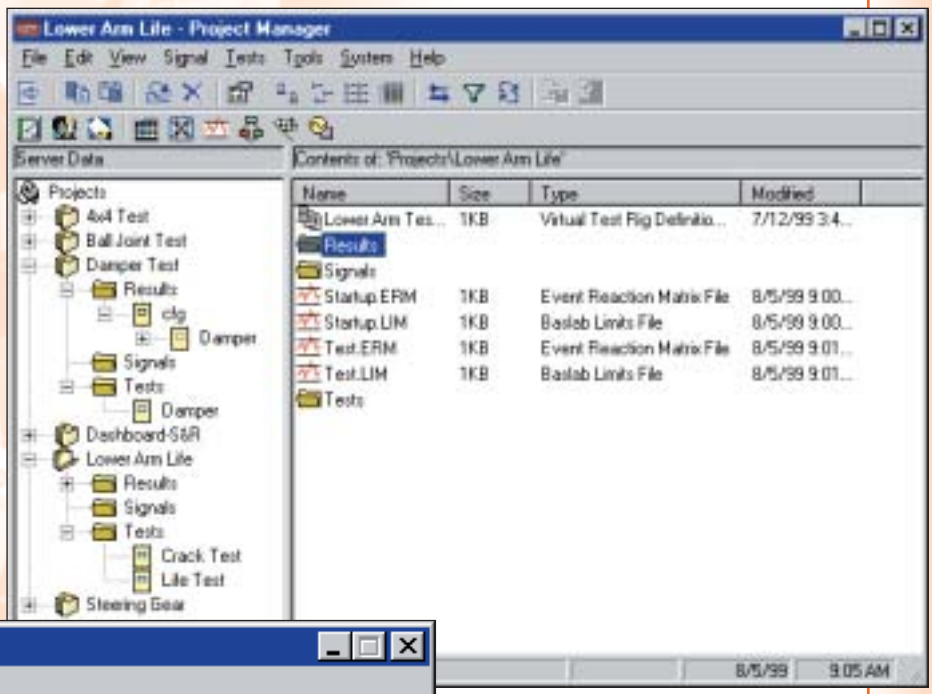


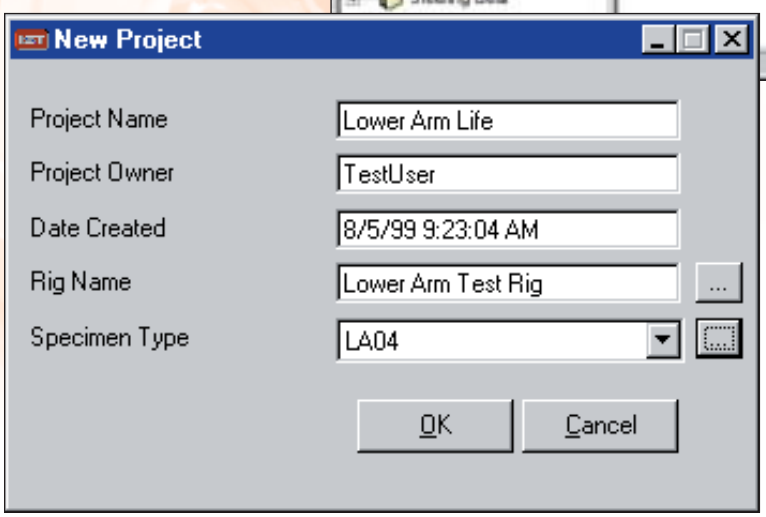
New Project Definition

New Project Definition

This function is used to create a new project within the RS LabSite® database, allocating a project name for it. The project owner (who is always the current user), and the date created are read from the system. A previously defined Virtual Test Rig is allocated to the project, and a specimen type is then selected from those available in the database.

When a new project is defined, a new folder is generated in the Project Manager window. All data relating to that particular project can be stored in the folder, with sub-folders created for signals, results and test definition information.

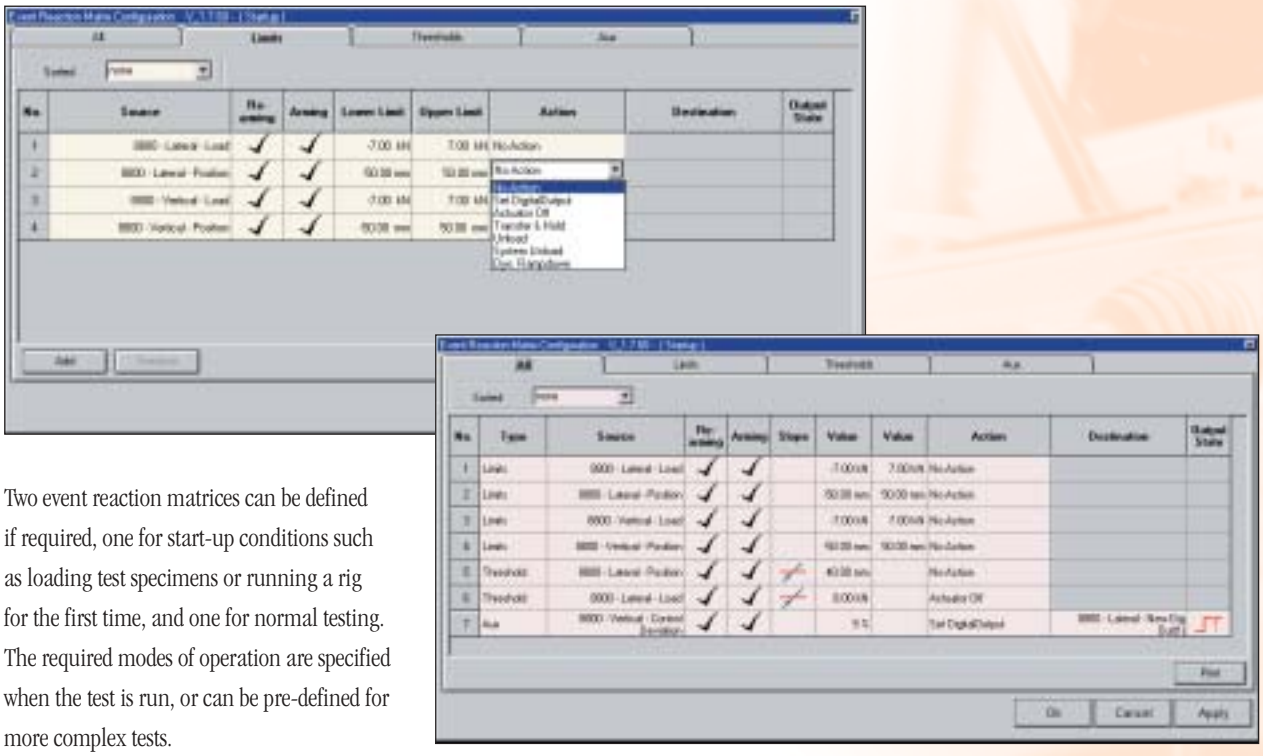




Event Reaction Matrix Editor

Event Reaction Matrix Editor

The Event Reaction Matrix (ERM) Editor defines limits and thresholds that can be applied to sensor channels to protect a component while a test is running. Events can be defined for limits, thresholds and digital inputs. Available actions include stopping a test, digital output or simply providing a visible warning.



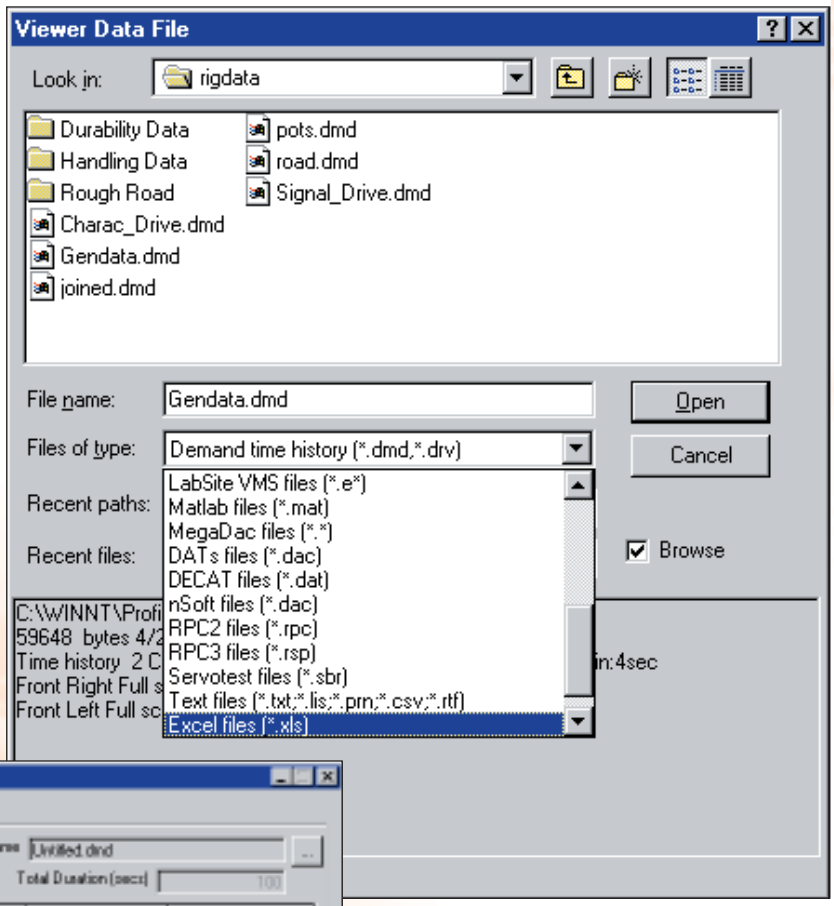
Two event reaction matrices can be defined if required, one for start-up conditions such as loading test specimens or running a rig for the first time, and one for normal testing. The required modes of operation are specified when the test is run, or can be pre-defined for more complex tests.

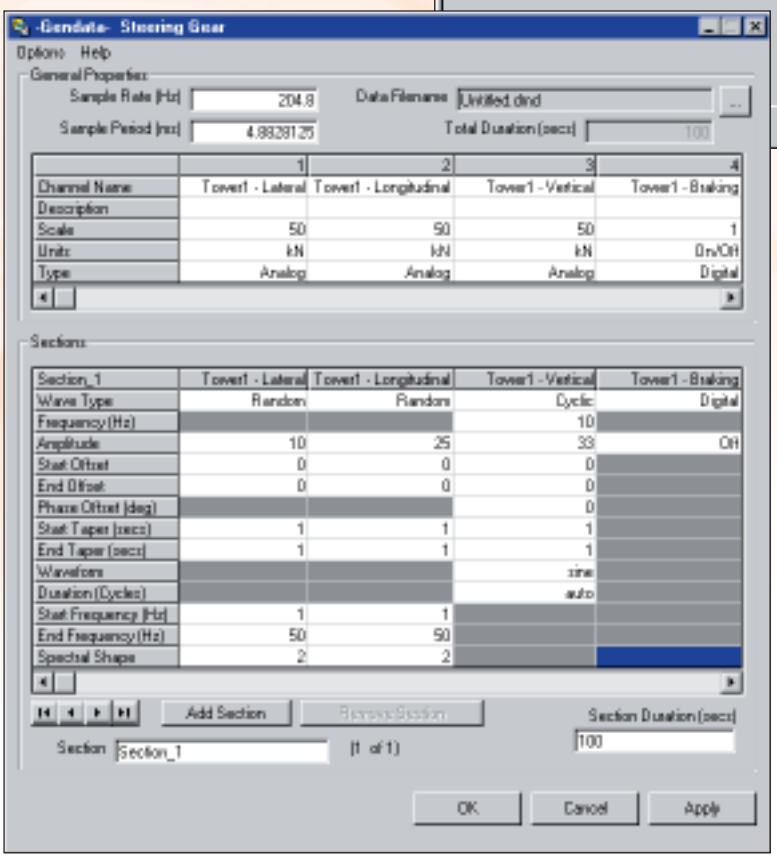
Signal Preparation

Signal Preparation

The RS LabSite® database contains an area to store signals for use in test methods. Such signals can be obtained from a wide range of sources:

- Copied from previous projects.
- Imported from other software packages such as signal processing software, spreadsheet programs, data acquisition suites and third-party testing programs.
- Generated by RS LabSite®. Typically these will be random or sinusoidal data files with pre-defined frequency ranges.

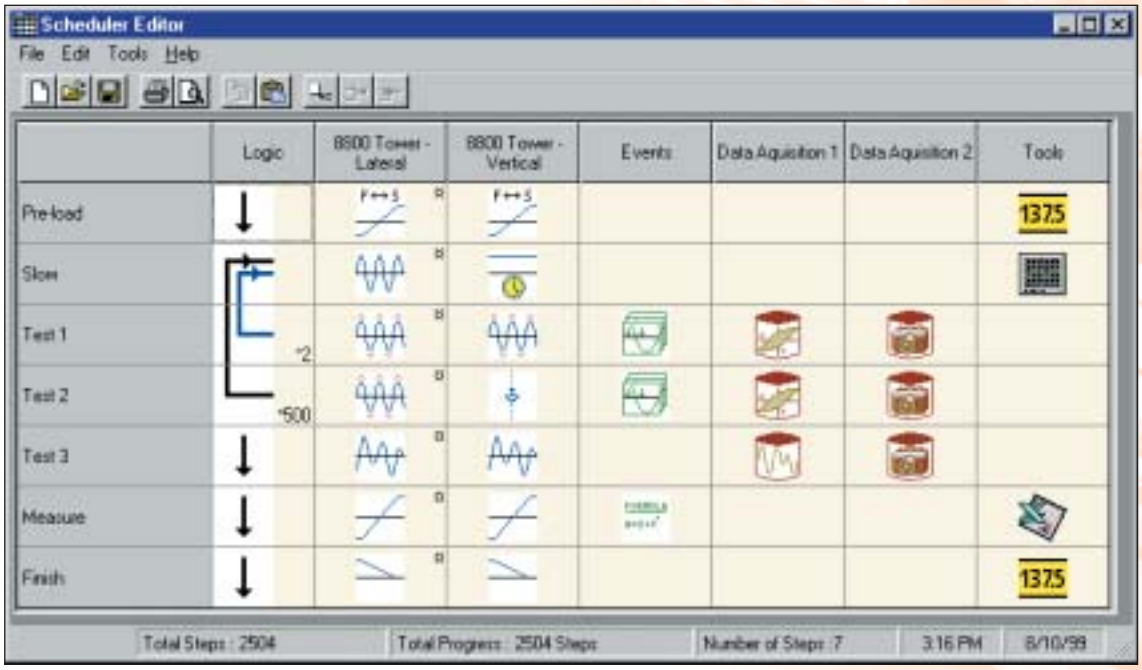




Schedule Editor*

Schedule Editor

Available test application programs such as RS Block and RS Replay can be launched from within Project Manager. Test methods are stored in the RS LabSite® database, where Project Manager ensures that they are handled correctly, allowing for easy viewing. Tests can be defined in conjunction with either a real test rig, if working on a test rig computer, or alternatively in conjunction with a Virtual Test Rig.

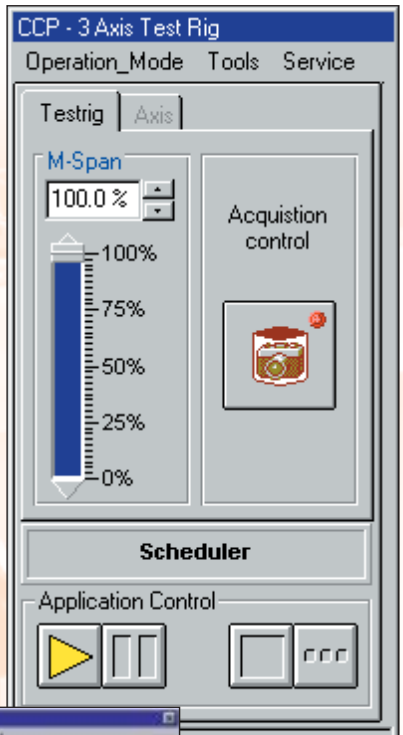


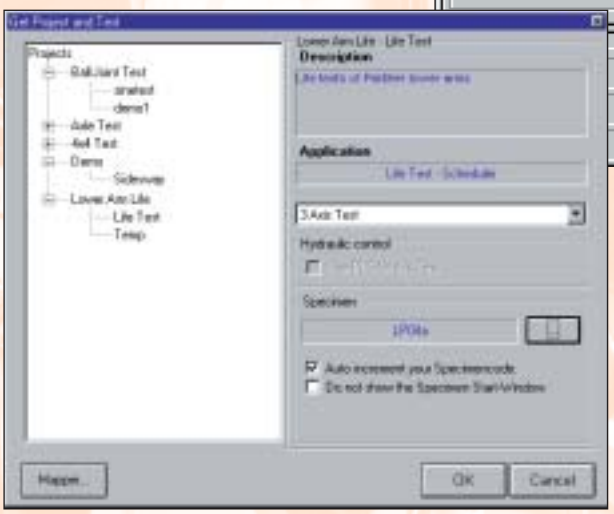
*Scope of supply for RS Block/RS Replay

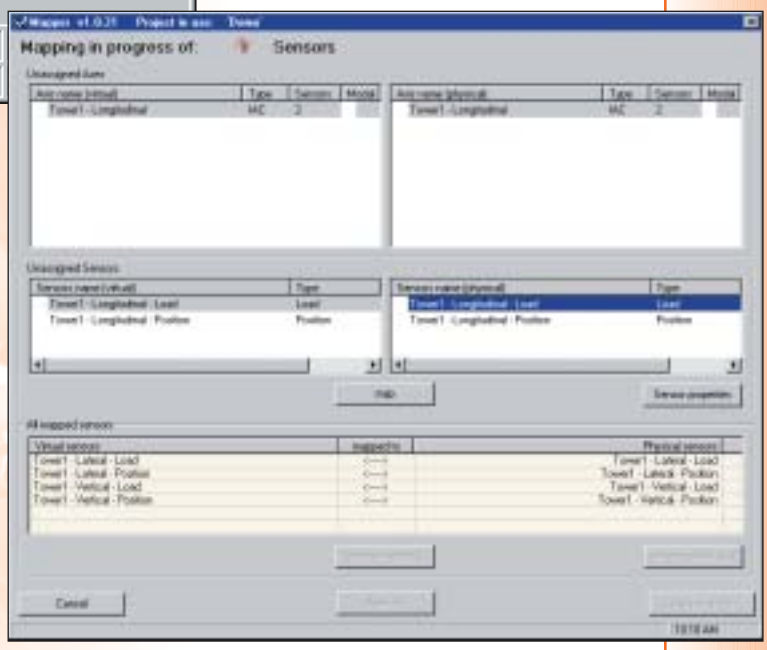
Test Run Manager

Test Run Manager

Control over which tests are run on which test rigs is provided by Test Run Manager and invoked from Project Manager. The engineer selects the test method to be performed and the test rig to be used. The Virtual Test Rig associated with the test is then mapped to the actual test rig, and Labtronic 8800 axes' sensors and digital I/O channels are matched to each other. The specimen is identified by its code, and the central control panel (CCP) is then run.







The CCP controls operation through the following functions:

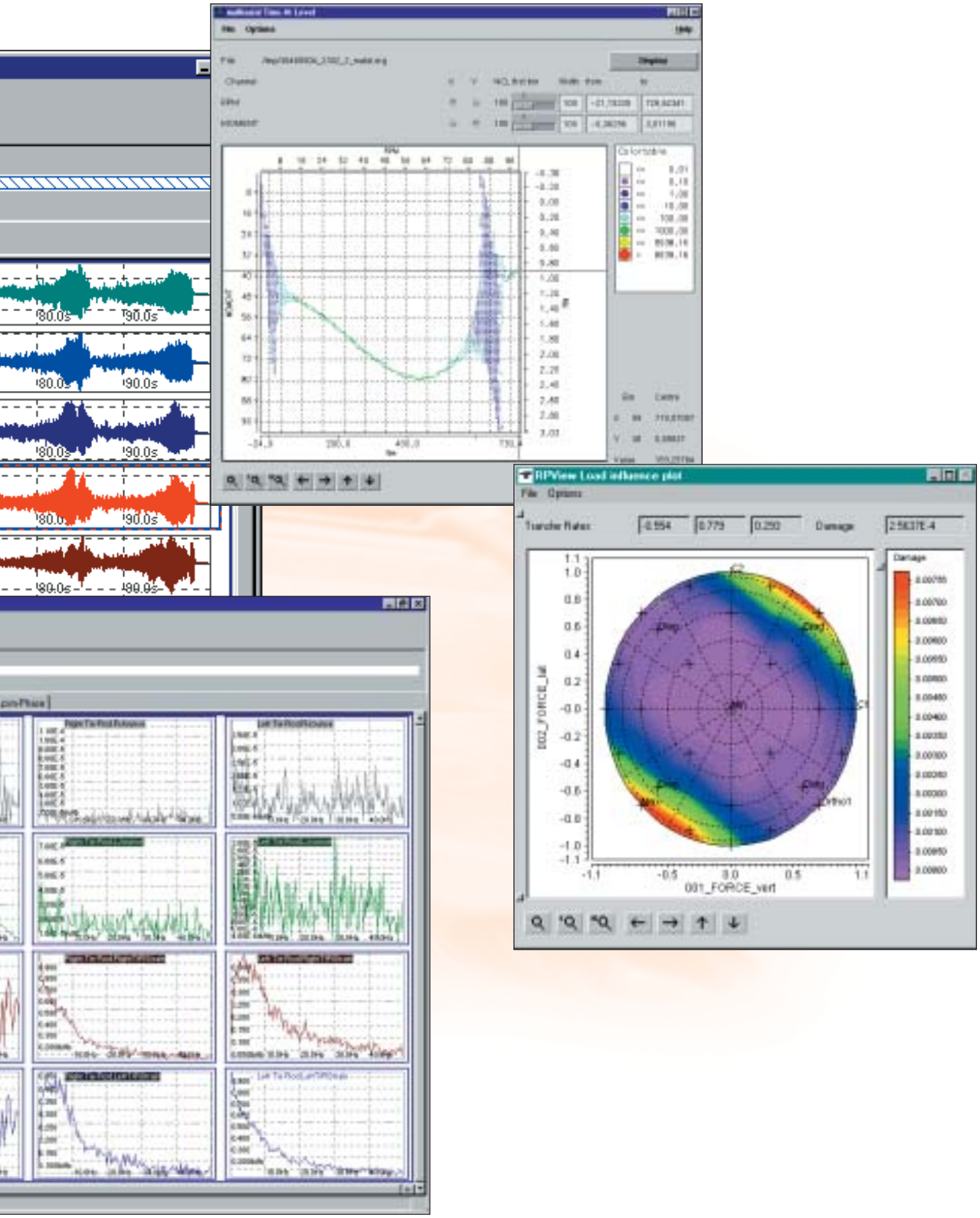
- Test start, stop, pause and continue.
- Master span control over all channels.
- Automated termination of a test and switch-off of hydraulics at pre-set times.
- Display of elapsed time and test progress in terms of km or cycles.
- Re-start test after abort or power failure.

Test Analysis

Test Analysis

When a test is complete, results are stored in the RS LabSite® database, and Project Manager displays them in the Results sub-folder. Results data files can be studied using the Viewer module, and files can be displayed, edited, printed or exported to a wide range of third party software packages. Data can be easy and quickly analyzed.

Data can be transferred seamlessly to the LMS TecWare software for complex fatigue analysis through the TecWare link. This allows the TecWare software to call RS LabSite's Project Item Selector to open and save data files, while maintaining the correct database structure. In a similar manner, Project Manager can copy groups of files to form a valid TecWare data set.


RPView Load influence plot
File Options
Transfer Rates:
Damage
001_FORCE_lat
001_FORCE_vert

The Durability Alliance

ACCELERATING THE DEVELOPMENT PROCESS

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