Test Information Management

APPROACH

Since the beginning of networking testbeds in the early eighties, AVL has been working on optimized solutions to support specialists in the fields of planning and preparation of test jobs, including support at the testbed and further processing of test results. The continuity between individual components form a highly efficient information chain from development to test facilities, making an important contribution to increasing the efficiency of the overall development process.

A significant productivity gain in testbed utilization can be achieved by integrating all test systems in a central data management system, minimising delays and downtimes at the testbed. An unique balancing of standardization and flexibility is the key to increased productivity.

BENEFITS AT A GLANCE

- Enhanced utilization of testbeds (according to an AVL study, an average potential increase of 20 percentage points)
- Optimization of the productive test time
- Reduced time and costs for administrative activities due to central data management
- Fast response times due to remote monitoring of the entire test facility

PORTFOLIO

Central Data Storage for Testbeds
Using the AVL SANTORIN HOST™ system (more than 300 installations worldwide), all data is organized centrally within the test facility in a shared database and provided to testbeds across several applications, from engine tests and transmission systems to component tests.

Testfield Management
AVL TFMS 1™ enables standardization and automation of core processes within the test field. The central tasks of the system are to manage all data in an efficient manner and handle all activities related to test jobs, test equipment and units under test.

Remote Monitoring of Testbeds
AVL TESTGATE™ provides users within a test facility with efficient remote access to the online data of the testbeds and HOST systems via a web browser, offering a real-time overview of the status of all testbeds.

Global Data Management
AVL SANTORIN MX 2™ is an intelligent central data management system that meets today’s and future challenges of OEMs. No matter where data come from, the system stores heterogeneous data in a consistent and synchronized way. It logically connects data from various sources and enables a harmonized data view. The unique combination with AVL CONCERTO 5™ offers the possibility for detailed result visualization and reporting.
Individual automation systems are networked with a productive test facility in an ideal manner. Parameters and results are centrally stored in a database, standardized in accordance with the ASAM-ODS standard, and the data is available for all users at any time. AVL HOST systems are designed for test facilities with between 1 and 70 automation systems.

APPLICATION

To achieve continuous utilization of testbeds, all activities impairing continuous test operation have to be kept away from the testbed. These activities include, for example, the definition of the test run parameters and the analysis of the result data.

Furthermore, efficient test facility operation is only guaranteed when the data can be applied and compared to several testbeds. For this, all data, such as variables, units, dimensions, fuel data, calibration data, formulae, etc., are stored on the central data server and made available to the testbeds. As a result, centrally created test runs can be executed on different testbeds and the result data can be compared between different testbeds. The results are analyzed either locally at the testbed or at the office workstation.

The integrated interfaces, standardized in accordance with ASAM-ODS, provide many third-party suppliers with access to information within the test facility by means of open, defined programming interfaces and file formats.

BENEFITS AT A GLANCE

- Comparable measurement data throughout the test facility thanks to a central database containing all measurement data and variables for testbeds from AVL and other suppliers
- Shorter setup times with parameterization from the office
- Shorter downtimes with data analysis in the office
- Reduced costs and time for administrative activities due to central data management for parameters and result data
- Efficient user management due to centrally managed access rights for testbeds and analysis
- Simple data exchange with external systems through open interfaces standardized in accordance with ASAM-ODS
AVL SANTORIN MX 2™ is an intelligent central data management platform. No matter where the data comes from, MX stores heterogeneous data in a harmonized, unified and synchronized way. It shows logical connections between the contents as well as providing a uniform access mechanism. With AVL SANTORIN MX 2™ the processing task is given a new dimension: users can trigger one or more real time processing. AVL SANTORIN MX 2™ is a unified and all time accessible data platform for users complying with the globally-approved ASAM-ODS standard.

APPLICATION
Within the framework of the engine and powertrain development process, there is an increasing need to link information between different test applications. The sources of this information are test facilities of different generations and manufacturers. The testbeds for applications such as engine development, transmission testing, endurance tests, noise and vibration tests or crash tests provide non-compatible results in different file formats. Therefore, a significant gain in terms of testing productivity can be achieved by integrating all the systems into one single platform.

AVL SANTORIN MX 2™ represents a new dimension of data management

BENEFITS AT A GLANCE
• Central data storage of heterogeneous data from different test facilities or locations (AVL or 3rd party testbeds)
• Easy, fast and secure data access within AVL Navigator
• Reduction of time and cost of administrative activities due to standardization and centralization of test data
• Easy integration of data analysis platforms such as AVL CONCERTO 5™
• Intelligent and high quality data integration
AVL CONCERTO 5™ is the generic data processing platform for visualizing, analyzing and reporting many measured and simulated data types. Its open interfaces and integrated comparison mechanisms empower it to be the data correlation tool for automation, simulation and measurement systems. What is more, the platform offers toolboxes with application-specific functionalities and Pro Apps for complete data pre- and post-processing solutions. This makes AVL CONCERTO 5™ the smartest way to turn data into decision-relevant information.

APPLICATION
Due to its modular concept consisting of toolboxes and Pro Apps, AVL CONCERTO 5™ ideally supports dedicated application fields such as evaluation of testbed data, detailed combustion analysis, evaluation of emission data, reporting of engine calibration data, visualization of hybrid testbed data and much more.

AVL CONCERTO 5™ builds a common platform for all data processing tasks within one tool:
- From generic data management (including search, filtering and navigation options)
- Through interactive analysis (e.g. advanced cursor functionalities)
- And calculation possibilities (integrated calculation tools from simple calculator to advanced programming environment and formula editor, including pre-defined libraries for application-specific calculations)
- To sophisticated reporting functions (from simple diagrams to reduction of data evaluation time due to fully automated advanced reports)

BENEFITS AT A GLANCE
- One platform for harmonization, standardization and applications
- Highest data performance, intuitive data search and interactive calculations
- Consistent pre- and post-processing
- What-You-See-Is-What-You-Get reporting
- Fully automated evaluations and integration of third-party algorithms

AVL CONCERTO 5™ as software platform meets today’s and future challenges for toolboxes and Pro Apps. Within the platform, all standard file types as well as a broad range of graphical diagrams for different visualization needs and styles are available.
AVL TFMS 1™ is the first modular system to standardize and automate the core processes within the test facility. The core tasks of the system is to manage all data in an efficient manner and activities related to test jobs, test equipment and units under test. Traditionally, this is implemented by different people with the help of different systems.

APPLICATION
While there is a trend towards increasing the complexity of the processes and diversity of systems in test facilities, the test costs must be dramatically reduced. Simultaneously, the reliability, reproducibility and quality of the process need to be improved. AVL TFMS 1™ supports users in achieving these seemingly contradictory objectives.

To support the seamless implementation of test processes, the system controls the work steps and provides all data and documents that are relevant in the corresponding step. In this way, the planning, definition and implementation of test jobs, as well as inventorying, maintenance, and calibration of test equipment are managed and optimized with the help of the AVL TFMS 1™. The existing system environment within the test facility is not replaced, but the AVL TFMS 1™ integrates and interacts with the existing systems, such as project management, unit under test and calibration data management. Thus, the system taps into the unused productivity potential of a test facility through cross-networking and providing the corresponding information at the right time and place.

BENEFITS AT A GLANCE
- Higher utilization of testbeds (typically an increase of 20 percentage points, according to an AVL study)
- Reduction of non-productive time (e.g. test repetition due to incorrect methodology or erroneous parameters)
- Reduction of the time and costs of administrative activities and redundant, manual data transfers
- Continuous utilization optimization through comparison of planned and actual utilization
- IT-supported standardization and continuous optimization of the workflow
You can easily gain an overview of the status of the entire test facility through the internet and web browser from your office, while traveling or from any other location with internet access. You can retrieve the current status of all testbeds, loaded parameters and online measurement values at any time.

APPLICATION

Within the test facility, AVL TESTGATE 1™ supports users of different fields in monitoring, managing and diagnosing testbeds.

• The testbed operator can retrieve data from AVL PUMA testbeds (PUMA 5.5, PUMA 5.6 or AVL PUMA Open 2™), from 3rd party testbeds and from HOST systems to obtain a detailed status overview
• Testbed administrators receive an overview of the entire test facility and can determine the status of the overall test facility in a very efficient manner. Thus, they can quickly diagnose malfunctions by navigating to a certain testbed from the overview and retrieving details
• The development engineers can use AVL TESTGATE 1™ to observe the status of their testbed. Furthermore, they can support testbed operators from their office or home office by means of internet connection

Furthermore, AVL TESTGATE 1™ makes use of the existing security mechanisms of the test facility, thus avoiding additional user management tasks within AVL TESTGATE 1™.

BENEFITS AT A GLANCE

• Fast and safe remote access to testbeds with any internet connection
• Clear, graphical status representation of all testbeds within the test facility
• Reduced response times for support activities
• Improved and simple access to test information and administrative information
• Simple company-wide roll-out without software installation on the office computer: AVL TESTGATE 1™ requires a standard web browser