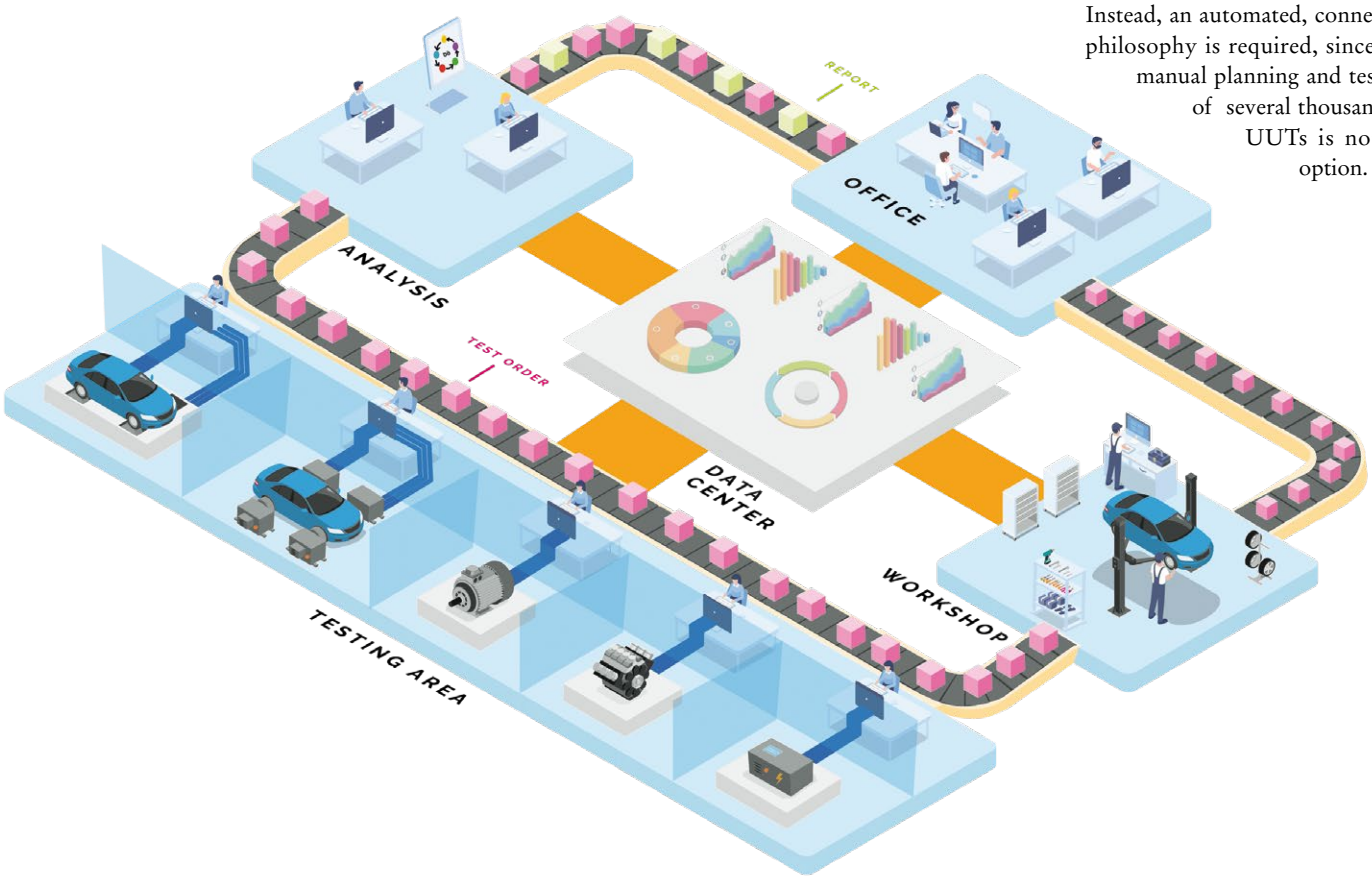
Realizing the Potential of Your Test Field

AVL Lab Management™ helps you get the most out of your test environment

— Vehicle development is vastly complex and expensive. To ensure the products that get to market meet the requirements of the end-user, legislation and cost of ownership, every aspect of development and validation must be optimized for the best performance and productivity, and maximum overall equipment effectiveness (OEE). Yet even in modern testing labs, it's not uncommon for OEE to be just 30 % of its capability. From downtime losses due to maintenance, for example, to productivity losses due to idle and empty channels in cell testing, quality losses due to data issues and test repetition due to unclear test requests, most development environments are not working to their full potential.

It is precisely because these environments are so complex that these losses occur. Simply put, vehicle development and testing are too complicated to be done manually. Instead, an automated, connected philosophy is required, since the manual planning and testing of several thousand of UUTs is not an option.



INTRODUCING AVL LAB MANAGEMENT™

Productivity must therefore be optimized, data must deliver maximum value, energy and resources must be managed, and maintenance, bottlenecks and other downtime must be avoided or carefully scheduled.

At AVL, drawing on our decades of experience and deep understanding of our customers' needs, we have developed AVL Lab Management™ to make this a reality. It includes three extendable and customizable base configurations:

- AVL Lab Management™ for Battery
- AVL Lab Management™ for Propulsion
- AVL Lab Management™ for Vehicle

Each addresses specific customer needs, and each is designed to maximize OEE and deliver high quality data for your Design Validation Plan (DVP).

SIMPLE SOLUTIONS FOR COMPLEX CHALLENGES

AVL Lab Management is designed to deskill your development or test environment. Rather than requiring an engineer for every lab-based task, it automates nearly everything that can be standardized, and allows flexibility where required, leaving the engineers to focus their efforts where they are most useful.

Whether it's the management of test orders, the planning and scheduling of test activities, the linking of required data such as data sheets or test documentation, or even the management of test resources and UUTs, AVL Lab Management does it all.

The concept is modular and open, allowing it to be tailored to your unique needs. And it supports both AVL and 3rd party systems with modern, easy-to-use container and web-based software.

FROM LAB TO DATA, AND EVERYTHING IN BETWEEN

To understand how comprehensive this solution is, let's take Lab Management for Battery as an example. Modern battery test labs can include thousands of test channels in hundreds of climatic chambers, each accommodating hundreds of cells. As some tests can run for over a year, it's vital that each chamber is optimally filled, and the only way to do this is to combine test activities and programs. But in a facility that might be testing tens of thousands of cells at any one time, it's impossible to do this manually. This is where our solution steps in.

Optimizing schedules, channel availability, resources and throughput, and then making the resulting data available for analysis, it takes the heavy lifting out of testing. But there's more to it than just throughput.

Battery testing requires cells to be charged and discharged repeatedly. When this happens at scale, electrical power requirements can be staggering. Exceed the maximum connection line and all tests will shut down, requiring costly and time-consuming resumption. Lab Management for Battery manages your energy use, by planning according to the capabilities of test systems in order to balance charge and discharge tests at the same time, using the electricity discharged from some cells to charge others. This protects your operations and increases lab efficiency.

SELF-SERVICE DATA FOR SUPERIOR ANALYTICS

Whether you're using our Battery, Propulsion or Vehicle reference solutions, Lab Management also offers advanced contextual data management. You can choose your own best approach for analysis of data from the data lake, using your preferred tools such as Python. Or alternatively, to save time, data can be interrogated using standardized evaluations that require no programming.

Whatever your needs, AVL Lab Management is here to help you realize your development goals by maximizing OEE.