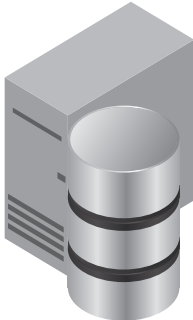


Test Center Use Case

Central monitoring Engineering office



Data Base Server

Live monitoring,
Metrics, KPI,
Dashboard & logbook



Equipment
Parameter set
Test results data,
reporting & analysis
Test order
management

Unit Under Test
Access rights
management
Interface with
3rd-party systems
Central data
storage and retrieval

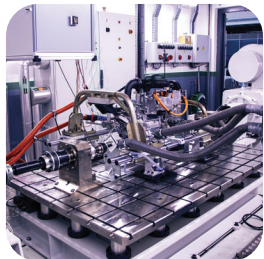
Test Control Room



Other AUSY

Other AUSY

Testing field - Test cells



E-Axle E-Motor



Chassis Dyno



Powertrain



Engine EOL



FLEX-LAB

A web collaborative framework
for your test cell data



Are you interested in innovative,
pioneering software solutions?

Contact us!

ENORISE
<https://www.enorise.com> | contact@enorise.com





FLEX-LAB

A web application for test cell data management

With FLEX-LAB, Streamline your Test Center Operations

FLEX-LAB is designed to be versatile and adaptable to different types of applications: Whether you're testing vehicles, engines, batteries, or any other type of components, our LIMS (Laboratory Information Management System) can handle it all. Every business has its unique workflow requirements: our solution is flexible enough to be adapted to meet your specific evolving needs for years to come. Multiple dashboard views, tailored to each user's unique requirements. This allows users to quickly access the information that is most relevant to them, enabling them to make better decisions. Open to third party systems and applications, FLEX-LAB provides an Application Programming Interface (API) that enables seamless integration with third-party automation systems and software. Finally, our solution includes enhanced security features that ensure your data is always safe and secure. With FLEX-LAB system, you can restrict access to data based on user roles, implement LDAP or MFA authentication, and monitor user connections to prevent unauthorized access.

The challenges:

Managing a test center presents multiple challenges. Test data is often scattered across various systems and stored in inconsistent formats, making it difficult for engineers to locate the right information or test results when needed. Each user may define and store data using their own naming conventions, creating confusion and hindering collaboration between teams. Preventive maintenance operations must be planned in advance and coordinated with test cell operators to minimize downtime, but maintenance teams are rarely alerted in time to prepare. Altogether, these issues result in high operating costs, poor operational efficiency and data quality and significant risk of system obsolescence.



The solution:

- FLEX-LAB is the ENORISE LIMS (Laboratory Information Management System) based on over 25 years of experience, with regular updates and new features. Each module is designed to integrate with the others, creating a seamless and efficient workflow. Whether you need to:
- Define test requests or UUT specifications,
 - Define alarms thresholds and set points,
 - Manage libraries (quantities, calculations, scripts...)
 - Manage resource allocation,
 - Search for your measurement data,
 - Follow testing equipment's maintenance operations,
 - Track tasks progress or monitor key efficiency indicators,
 - Our solution can be tailored to meet your requirements.
- With the FLEX-LAB system, and from anywhere:
- The test engineer can define preparation tasks, test requests and have access through extensive search capabilities to measurement data.
 - The administrator manages test cell data from a single location: Norm-name, formula, libraries, unit under test specifications, testing equipment...
 - Support personal can have remote access to test cell statuses and logs data to troubleshoot issues.
 - Managers can have access to lab operations status and extract all metrics.
 - The technician can operate remotely lab operations.

Technical Data

| | |
|---------------------------------------|--|
| Administration | <ul style="list-style-type: none">• License assignment• Definition of user and permissions• LDAP, OpenID, Google authentication |
| Dashboards | <ul style="list-style-type: none">• Customized GUI• User / Object dashboard (Project, Campaign, UUT...)• Multiple KPIs / Charts |
| Remote operations | <ul style="list-style-type: none">• Load / Unload / Start / Pause / Interrupt or stop tests• Monitor on going tests |
| Centralizing MORPHEE data | <ul style="list-style-type: none">• Norm-names• Test cell configuration data• Libraries (A2L, dbc, Controllers...)• Test Procedures |
| Equipment Management | <ul style="list-style-type: none">• Equipment specification, documentation, attachment and reports• Historic log and maintenance operations• Maintenance Plan |
| Tasks management | <ul style="list-style-type: none">• Management of work orders, testing operations• Customer specific data model with properties, parameters & state flows |
| Unit under Test management | <ul style="list-style-type: none">• Support of multiple types of units under test• UUT alarms definition |
| Measurement plans | <ul style="list-style-type: none">• Measurement plans definition including calculation, alarms and channel log• Assignment of measurement plans to test request |
| Parameter sets Management | <ul style="list-style-type: none">• Definition of parameter sets on various levels and context (test requests, UUT...)• Different type of parameters (Numeric, text, files, ...)• Use of custom application to view or modify complex data type (file): Test schedule file, controllers data,... |
| 3 rd party systems support | <ul style="list-style-type: none">• Application Programming Interface (API) that enables seamless integration with third-party automation systems and software |
| Scheduling module | <ul style="list-style-type: none">• Resources assignement• Gantt reports• Customized scheduling process |
| Test monitoring | <ul style="list-style-type: none">• Test cell live data, including statuses, live variables, log files and charts |
| Results data | <ul style="list-style-type: none">• Multi-search criteria combining descriptive data, parameters and measurement channels• Load manually new test data• Secure access to mesurement data |
| Metrics & Statistics | <ul style="list-style-type: none">• Track/follow-up operations on equipments, test bed or UUT• Data export capability• Open access by specialized reporting tools (Tableau, Power BI) |
| Part monitoring & Counters | <ul style="list-style-type: none">• UUT operation by tracking counters (i.e. engine hours, vehicle hours, testing equipment hours, electric consumption, ...)• Various type of counters (Numeric, Text, Date time, Matrix) |
| Maintenance plan | <ul style="list-style-type: none">• Multiple type of maintenance operations for testing equipment, test cell or UUT• Provide an outlook regarding resource availability for a better scheduling• User alerts for maintenance operations |