enorise

Simulate, Automate, Qualify

MORPHEE®

Energise your E-Mobility

Sleep well, MORPHEE® is working for you

For more than 30 years, MORPHEE® has been an established international reference for realtime automation of test cells under Windows. Being reliable, powerful, open and scalable, MORPHEE® controls the test cells as safely as it can be.

MORPHEE®4 Features

- **Windows 11** compliant
- New langage available: **Python**
- Remote Management of your tests from your web browser with **REST API**
- Enhanced real-time performance with **RTX4**

With MORPHEE®, energize your automation!

At the beginning, MORPHEE® was created to allow its creator to sleep well at night. Hence the name of the Greek divinity of sleep. MORPHEE® became the first test benches automation software developped under WINDOWS OS in real time. And it was a revolution compared to the big stations used at this time.

Now, world has changed. Today, the electrification became the major challenge of this time because of the environment awareness. The ENORISE AUSY has evolved to electrification. And today, as yesterday, MORPHEE® is a revolution.

What is MORPHEE®?

A unique system

- Real-time measurements acquisition, calculations and storage including Monitoring of parameters & post-mortem data
- Execution in real time of test sequences including control of actuators and management of external devices
- Real time execution of models
- MORPHEE® Lab and Lab-RT offer the flexibility of MORPHEE® for simple component and sub-component test beds

Automate your ideas

- Design your test sequences, acquisition schemes, dashboards
- Develop by yourself interfaces to external devices
- Customize the look and feel free to fit your exact need
- You can do most evolutions by yourself without spending more money for service

More than automation

- Simulation in real time with direct interaction with test cell input / output
- Calibration of ECU parameter based on UUT modelization (MBC)

MORPHEE® harmonizes with your benches

- Application based on ENORISE knowledge
- From Internal Combustion engine to Electric Drive Unit
- Integration of devices from the market
- Apply new features according to your new tests without losing the initial configuration

Five editions for all types of test cell

Desk
Dedicated to application development purposes. It can also be used to run Test Cell Simulators or non-real time application, using mainly serial or Ethernet interfaces.

Lab
The entry level of simple automation, featuring all standard MORPHEE functions as well as most of interfaces and protocols (including EtherCat). This Edition is not real time (windows based).

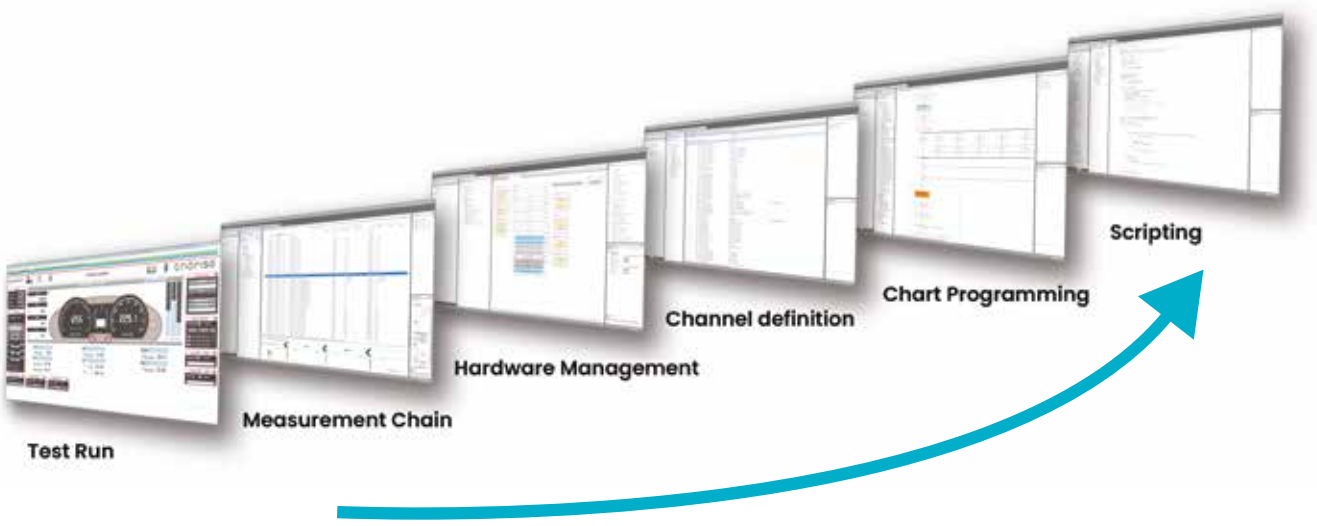
Lab-RT
Dedicated to application development purposes. It can also be used to run Test Cell Simulators or non-real time application, using mainly serial or Ethernet interfaces.

Bench
Hard real time for all kind of Engine, Transmission or Powertrain test cells, including dedicated automotive protocols and interfaces. > 5,000 RT channels @ 2 kHz

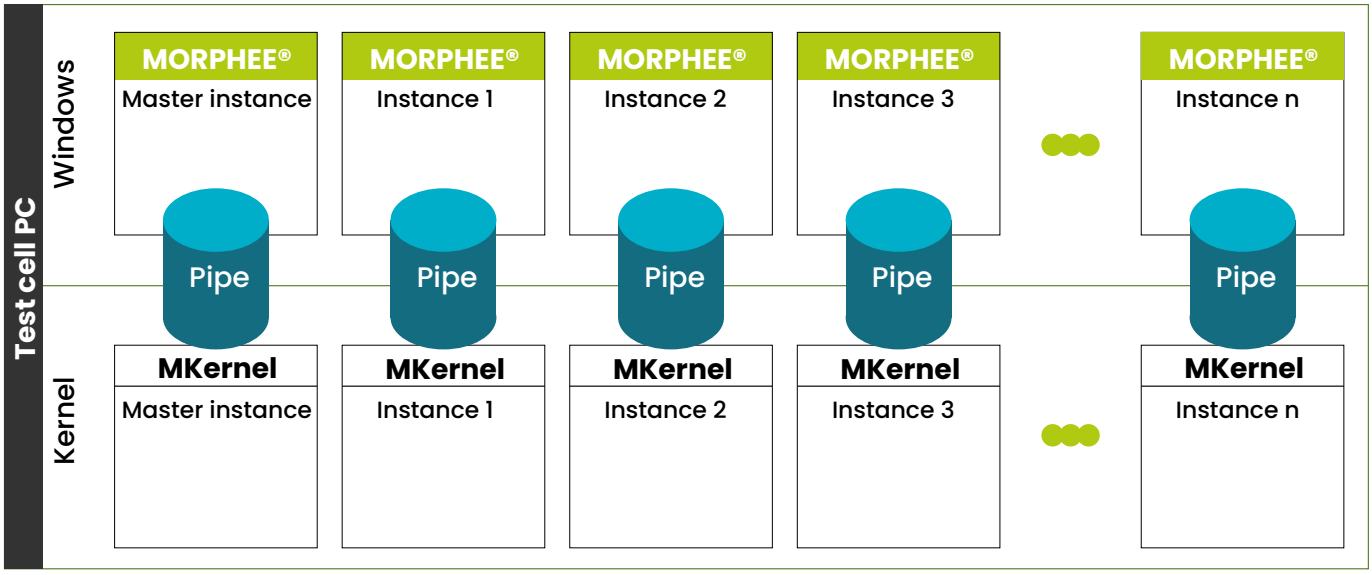
Bench-xCU
Dedicated to application development purposes. It can also be used to run Test Cell Simulators or non-real time application, using mainly serial or Ethernet interfaces.

More than automation

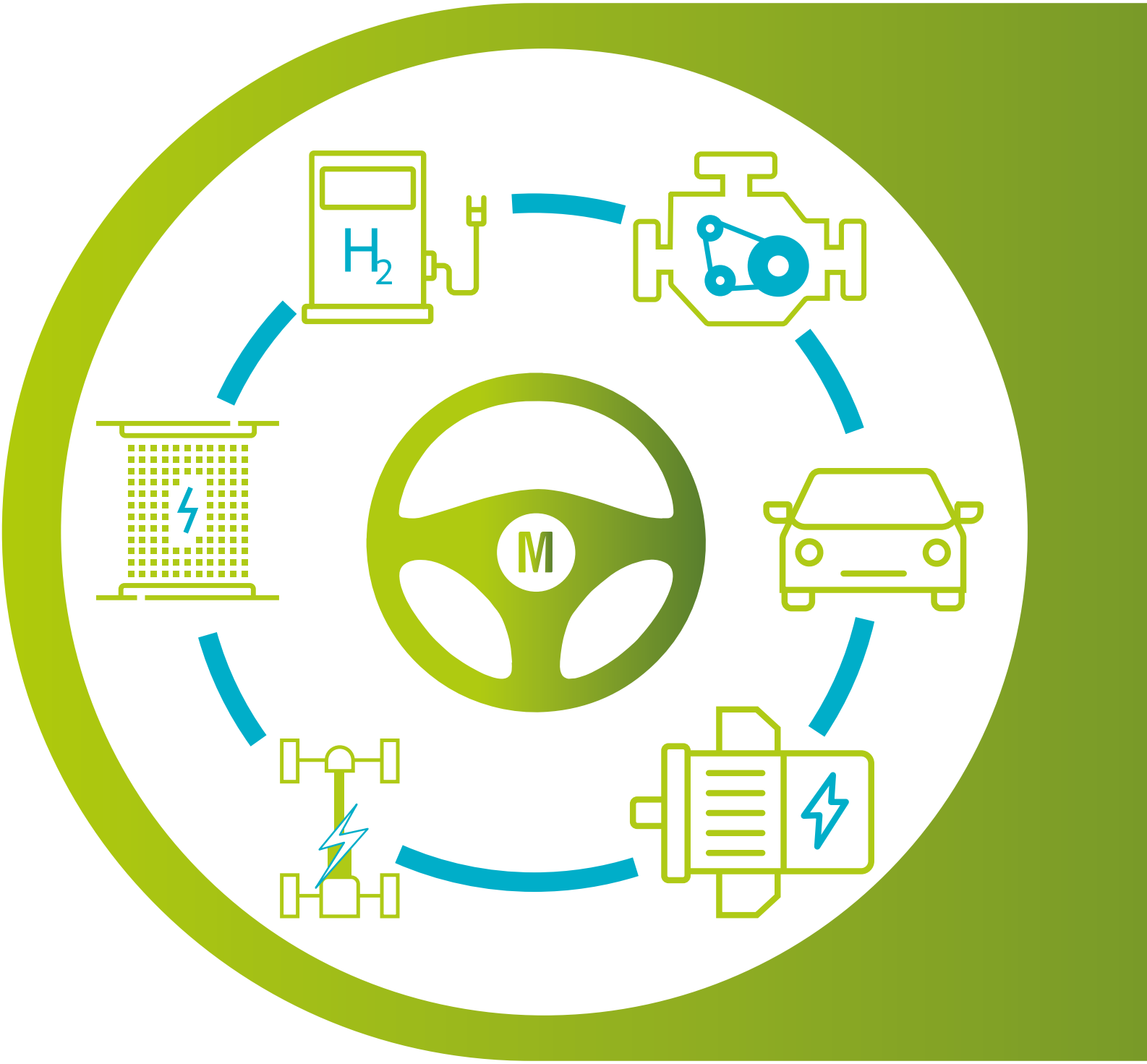
„MORPHEE® Software Edition is a unique suite of tools allowing to design and execute in real time all kind of automation process in a complete secure way under Windows 10“



In order to meet the growing need for multi-UUT testing, especially in the field of battery, and after many feasibilities, ENORISE has developed a MORPHEE® multi-instance concept.
Based on this, it is now possible to run several MORPHEE® on the same computer. The first instance is seen as the 'master instance' (or main instance). It can be used to orchestrate all the other instances, to centralize hardware, share channels and distribute events.
All others instances are completely independent and can perform test in real time using own channels, screens, alarms, methods, etc...



Still a revolution...



...MORPHEE® harmonizes with your test benches

The link between framework and test cell products

SCALE

Standard and **C**onfigurable **A**pplication for **L**aboratory **E**nvironment

SCALE is the condensed ENORISE knowledge integrated in a central State Flow, correpsonding to the most adapted way to manage UUT at the test cell in a complete secure way. It also manages all links and acquisition from SCALE equipment, whatever they are.
SCALE is adapting MORPHEE® to all types of test benches:

SCALE Battery

The essential element of new transportation area. In constant evolution, the battery testing has to be reactive!

SCALE E-Motor

Adapt your test benches and working methods to new market trends. E-mobility is more than ever a reality!

SCALE Engine

The state of the art for all of your thermal and hybrid engine test benches. From End-Of-Line to Research & Development solution.

SCALE Fuel Cell

The new trend for power generation in modern vehicles. Tomorrow's ideas have already a SCALE solution today.

SCALE Powertrain / E-Powertrain

Testing the complete powertrain in its conventional, hybrid or electrical configuration is now possible. From 2 to 4 outputs.

SCALE Vehicle

Whatever the type of propulsion, the complete vehicle test is the last step in the validation process. Keep the benefit of the previous SCALE configuration used and easily cross-check your results.

MORPHEE® features

Standard Features

	Desk	Lab	Lab-RT	Bench	Bench-xCU
>> Feature Manager Manage all feature to add in your MORPHEE configuration.	●	●	●	●	●
>> Hardware configuration Manager Connect graphically all equipments to your PC and configure them (type, speed, comport, etc...).	●	●	●	●	●
>> Software configuration Manager Access to all configuration tuner and make your application fitting your expectation.	●	●	●	●	●
>> Workspace Manager Design the development framework for all type of user. See only what has interest for you.	●	●	●	●	●
>> Channel Calibration Tools Channel configuration, from sensor/actuator to calibration at test cell.	●	●	●	●	●
>> Access Right Manager Define user level right and access to the different functionalities.	●	●	●	●	●
>> Channel editor The unique place to add/delete/modify channels, add securities.	●	●	●	●	●
>> Dashboard designer Define what you will finaly see on the screen!	●	●	●	●	●
>> Test sequence designer Design your test sequence, by operational code, graphically or through advanced editor.	●	●	●	●	●
>> Database connection FLEX LAB host connection (central database).	●	●	●	●	●

Additional Features

	Desk	Lab	Lab-RT	Bench	Bench-xCU
>> File format >> ASCII, CSV, MDF Storage of acquisition data on the disk on standard format in automotive world (CSV/MDF/ASCII).	●	●	●	●	●
>> Communication >> Custom Serial and Ethernet Open protocol definition on RS232 or Ethernet Management of STX/ETX/CRC and frame rasterization.	●	●	●	●	●
>> Communication >> Flexible Data Link Allow to exchange Data with any equipment on Ethernet by using UDP protocol.	●	●	●	●	●
>> Communication >> EtherCat Management of EtherCat protocol.	○	◉	◉	◉	◉
>> Communication >> SCPI Communication with instruments (oscilloscopes, HP devices...). RS232 and Ethernet compliant.	○	●	●	●	●
>> Communication >> FDX Fast Data Exchange protocol to exchange real time data with Vector CANoe tool.	○	●	●	●	●
>> Real Time Automation RTX64 - Professionnal 7 cores.	○	○	●	●	●
>> Real Time Model Execution in real time of various models such as Matlab/Simulink.	○	○	●	●	●
>> Communication >> CAN Management of Raw CAN, CAN FD, J1939.	○	○	◉	◉	◉
>> Communication >> Multi-protocols (Profibus, CANopen) Management of fieldbus such as Profibus DP, CANOpen, etc...	○	○	◉	◉	◉
>> Reporting tools UNIPLOT license for data evaluation and reporting synchronized with MORPHEE®.	○	○	○	●	●
>> Communication >> Devices Standard Connection with standard measuring devices through various protocols (AK, INDI, DCOM, etc...).	○	○	○	●	●
>> Communication >> ECU Standard Connection with development tools following MCD 3 protocol and based on A2L file.	○	○	○	●	●
>> Communication >> ECU Advanced Management of CCP and fast ECU access (EtherCat / iLink-RT) + second Application tool MCD3 link.	○	○	○	○	◉
>> Calibration >> ASAM ACI Connection ASAM ACI.	○	○	○	○	●

● Feature included

◉ Feature included but additional hardware or third parties software are required.

○ Feature not included

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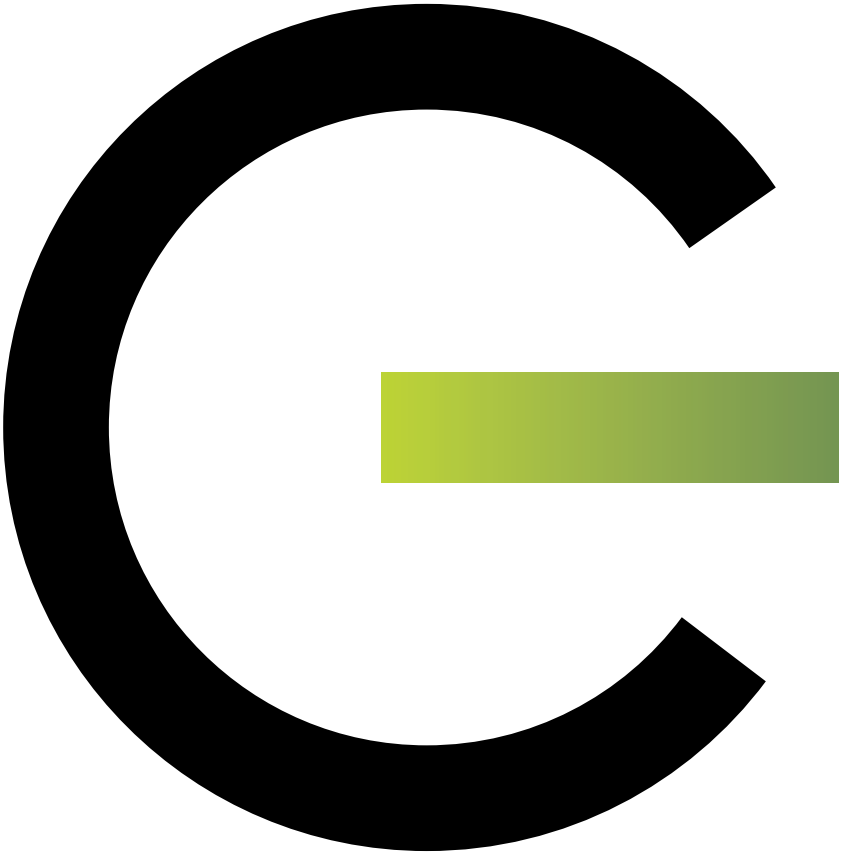

Are you interested in innovative, pioneering software solutions?

Contact us!

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