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New equipment in the Electrical Test Centre

CRITTM2A and its C2E department has been equipped with **3 climatic chambers** for storage ageing capable of regulating the temperature between 0 and 300 °C.

Their large dimensions allow **storage of several modules or a twenty cells pouch or more**, depending on their design.

These new test means are complementary to the electrical test benches for current electrical cells and modules. They meet a real need because the ageing of batteries in storage depends directly on the environmental conditions (temperature, hygrometry, state of compression...) and their charge state.

These climatic chambers allow us to accurately **track the impact of battery storage in the long term**.

Hence, 2 types of tests are possible :

- **Self-discharge** : a regular voltage measurement allows monitoring of its behavior in storage, without modifying the electrochemical properties of the battery by the slightest electrical intervention.
- **Storage ageing** : CRITT M2A periodically controls on a test bench the physico-chemical properties of the battery by checking for example its capacity and its internal resistance. The extent of this test can also be completed by impedance measurements. »

By adapting its resources CRITT M2A also makes **specific tests** for some customers.

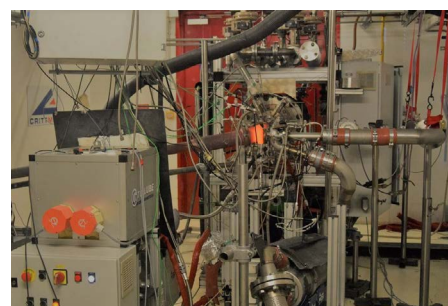


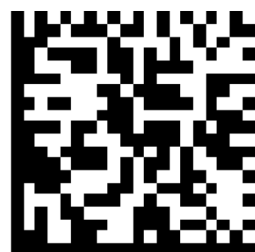
Specific tests on the turbocharger test bench

The automobile industry has been evolving for several years to comply with the new environmental rules.

One of the challenges in reducing polluting emissions is to **reduce the oil consumption of turbochargers**.

CRITT M2A carried out a test campaign for one of its customers in order to obtain real time measurement of turbo oil consumption.





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The oil is identified with a **radiotracer**. With this tracing, CRITT M2A is able to measure the consumption of the turbo oil more accurately and faster than a conventional weighing system, saving time and cost for the customer.

This methodology may be applicable in order to **analyze the wear of friction parts**.

Ecobex : a project successfully completed

CRITTM2A participated in the **ECOBEX** project (Optimised engine acoustic package for vehicle exterior noise) which aims to reduce the pass-by noise of vehicles by 2024. Certified by the **I-Trans** and **LUTB Transport & Mobility Systems clusters**, this project brings together several partners: CRITT M2A, Vibratex, ESI Group, Matelys, Novares, MicroB SA, Saint-Gobain Isover, Renault SAS, RJP Modeling and UTC.

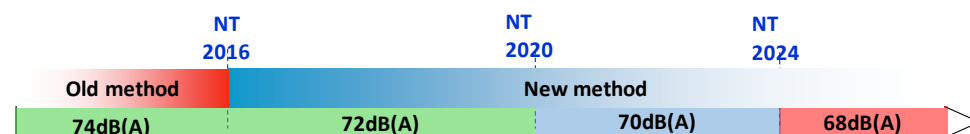
The project allowed the **characterization of the acoustic sources** of the vehicle using the different test means of **CRITT M2A** (GMP bench, roller bench, track). In parallel, new materials, and assembly concepts and calculation tools have been developed to **optimize vehicle noise**. **Industrialization** allowed a compromise to be found between the weight, the performance and the cost of manufacturing and the assembly of parts.

In the end, the validation of the optimized vehicle on the CRITT M2A test track took place in November 2017. Two optimized and complete vehicle versions were compared to the reference vehicle. The objective of the project was to **reduce the engine source by 5dB (A) to reach a regulatory level of 68 dB (A) by 2024**.



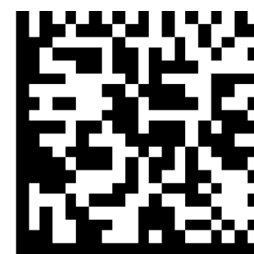
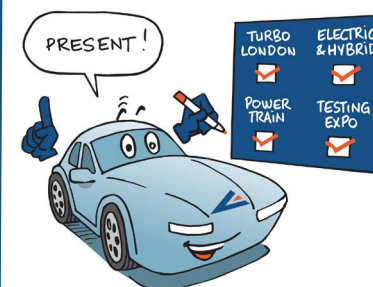
Here are the results:

| | |
|--|---|
| Version 1 : Reduction of the total level: 2,2 dB(A) <ul style="list-style-type: none">engine contribution: -4,6 dBregulatory level: -0,8 dB | Version 2 : Reduction of the total level: 2,6 dB(A) <ul style="list-style-type: none">engine contribution: - 8,4 dBregulatory level: -1,6 dB |
|--|---|



The **calculation and acoustic synthesis software** developed will simulate the acoustic radiation of the Powertrain in its compartment taking into account the innovative acoustic screens with an optimization functionality.

As part of this project, the CRITT M2A has updated its **pass-by measurement test means** and has renovated its test track. Moreover, the staff was trained in specific skills that now allow the CRITT M2A to offer **new tests for its customers**.



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Forthcoming events

16-17 May 2018: CRITT M2A will attend the 13th Conference on Turbochargers and Turbocharging, in London, stand 11.



15-17 May 2018: CRITT M2A will attend the Electric & Hybrid Vehicle Technology show, in Hannover, stand 332.



16-17 May 2018: CRITT M2A will attend the SIA Powertrain Conference in Rouen, stand A07.



05-07 June 2018: CRITT M2A will attend the Automotive Testing Expo Europe show in Stuttgart, stand 1024.



Save the
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Name _____

First name _____

Company _____ Email _____

I will attend the SyTec18 only on October 15th 2018 (afternoon)
I will attend the SyTec18 only October on 16th 2018
I will attend the SyTec18 on October 15th and 16th 2018 (included diner)