

# CUSTOMER e-NEWS

TEST CELLS



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## Some Background

To those of you who are not familiar with our organization, we are Safran Aero Boosters (SAB). We have a Safran Aero Boosters Test Cell Division in Liege, Belgium and a US based company, Safran Test Cells, in Minneapolis. We also have a team located in Singapore and will soon have a team in China...because we want to be close from our customers. Going forward we will refer to our Test Cell business simply as Safran Test Cells...to keep life easy.

Now, let us tell you our story of LEAP.

When Safran Aero Boosters (SAB) initiated development of the booster module for the next generation LEAP engines, Safran Test Cells immediately began efforts to upgrade our Test Cells (located in Liege) and their DACS in order to prepare for the first tests of development engines. During this same period, Safran Test Cells started an effort to stand up a completely new site to assemble test hardware. This new site was completed in January of 2019 and includes a **one-of-a-kind** capability to perform a pre-installation fit-up of the adapter, cowls (also known as STRs) and boat tail (using a dummy engine)...thus avoiding installation issues and saving the customer critical downtime.

Today Safran Test Cells is the **only** company to have CFMI (General Electric and Safran Aircraft Engines Joint-Venture on CFM56 and LEAP engines) approved designs for **all** LEAP 1A and 1B test hardware. Additionally, we are the **only** company to manufacture and deliver complete hardware sets (Test Nacelle Equipment + Adapter), and as noted above, we are the **only** company with the capability to perform a pre-installation integration.

Taking into account all LEAP test hardware delivered to date, SAB has significantly more experience (all of it successful) than any other licensed supplier. General Electric and Safran Aircraft Engines were the first to receive our LEAP products and services, but SSAMC (the first non-OEM MRO center to test LEAP) and MTU Zhuhai have since followed. Today, our LEAP footprint is expanding quickly and we see growth continuing into the future. In addition to supplying new-make hardware, we also support the aftermarket with **best-in-class** service, repairs and spares

Please view the following pages for more detail concerning our experience, facilities and capabilities. We hope it will entice you to visit us in the future...we would be honored to host such a visit when you could tour our facilities, meet our experts, and have interesting discussions on ways we may be able to assist you in attainment of your goals.



## Some LEAP figures within Safran Test Cells

33

Adapters  
delivered and installed

46

TNE kit  
delivered and installed

10+

Test Cells  
LEAP upgrades  
(including DACS)



**100%** of MRO shops testing LEAP engines  
operate with **Safran Test Cells LEAP test equipment**

## Voice of Customer



**Pierre Fernandes**  
Engineering Department  
Manager  
SSAMC

“

We have recently upgraded our test cell for LEAP-1A & LEAP-1B engines. This upgrade project included a 3D-aero study to confirm project feasibility (and associated aerodynamic modification of the test room), the supply of all mechanical assemblies (adapters, engine cowls, bellmouths, etc.) and the upgrade of the DACS (new hardware as well as upgrade of Cyres software to the latest version) by STC.

This project was overall very well managed by STC teams in the USA & in Belgium and the installation, commissioning on-site was also **very successful** (less than 3 days of test cell downtime for our LEAP-1B correlation for example). ”



**Marcelo Geraldo da Silva**  
New Product Introduction Leader  
GE Aviation – Celma

“

I would like to thank the entire SAFRAN team for the excellent service and products provided to LEAP-1A. Safran Test Cells Team, as usual, worked very well during the installation always demonstrating **commitment, professionalism, safety and competence.** ”



Guillaume Gaillard  
TNE Project Manager

## Safran Test Cells TNE\* Shop

(\*) Test Nacelle Equipment

*#Knowhow*

### Can you present us Safran Test Cells TNE shop in a few words?

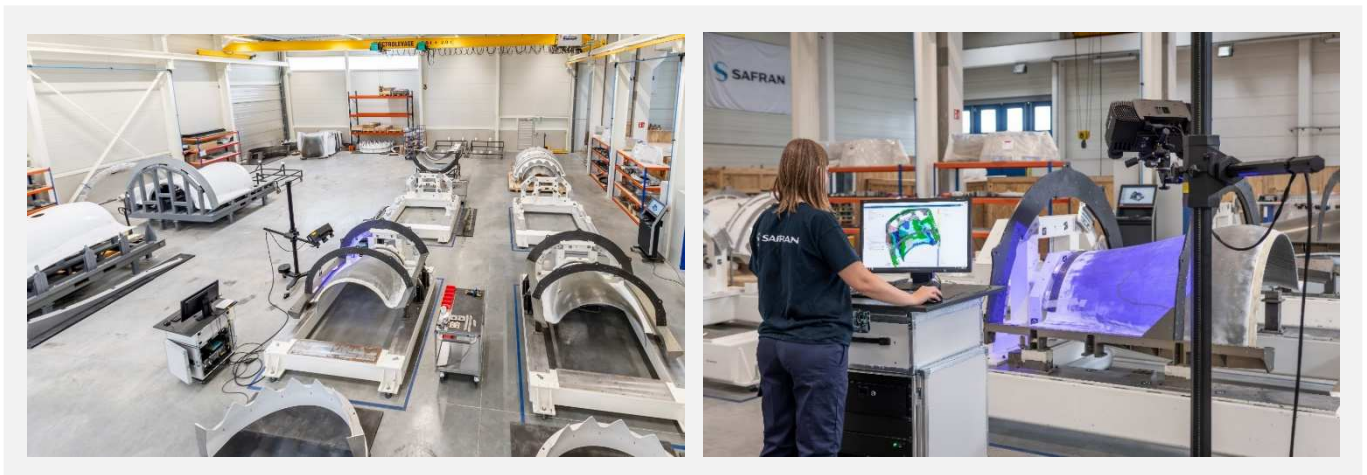
In January 2019, we started our own TNE assembly line including the final inspection in a 900sqm shop. We are using latest generation 3D control and also performing integration on adapters.

### What are the major benefits to our Customers?

Our Customers are ensured to receive their TNE kit at the expected time and with the highest degree of quality. Operating our own TNE assembly line has indeed enabled us to reach a 100% OTD (on time delivery) and improve our compliance up to 99,7%.

### A last word...?

Do not hesitate to come to visit it! It is located only few kilometers from Safran Test Cells offices in Belgium and I will be very pleased to receive you and show you our expertise. You won't know if you never take the LEAP!



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**POWERED  
BY TRUST**

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