

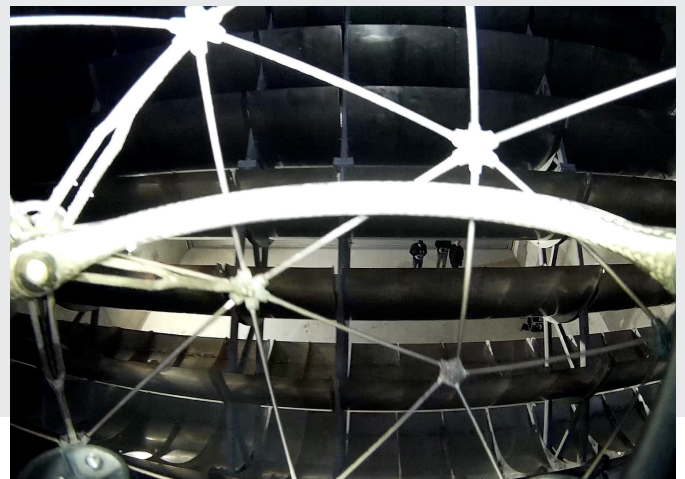
ELIOS IN ACTION | AERONAUTICAL INDUSTRY

INSPECTION OF A JET ENGINE TEST FACILITY



INTRODUCTION

The jet engine test beds used in the aeronautical industry for Quality Control and R&D require strict maintenance. Traditional methods of inspection involve lengthy and inefficient operations, which in turn result in high costs and downtime. Elios offers a cheaper, quicker and safer way of inspection by capturing quality data of all the key elements within minutes.



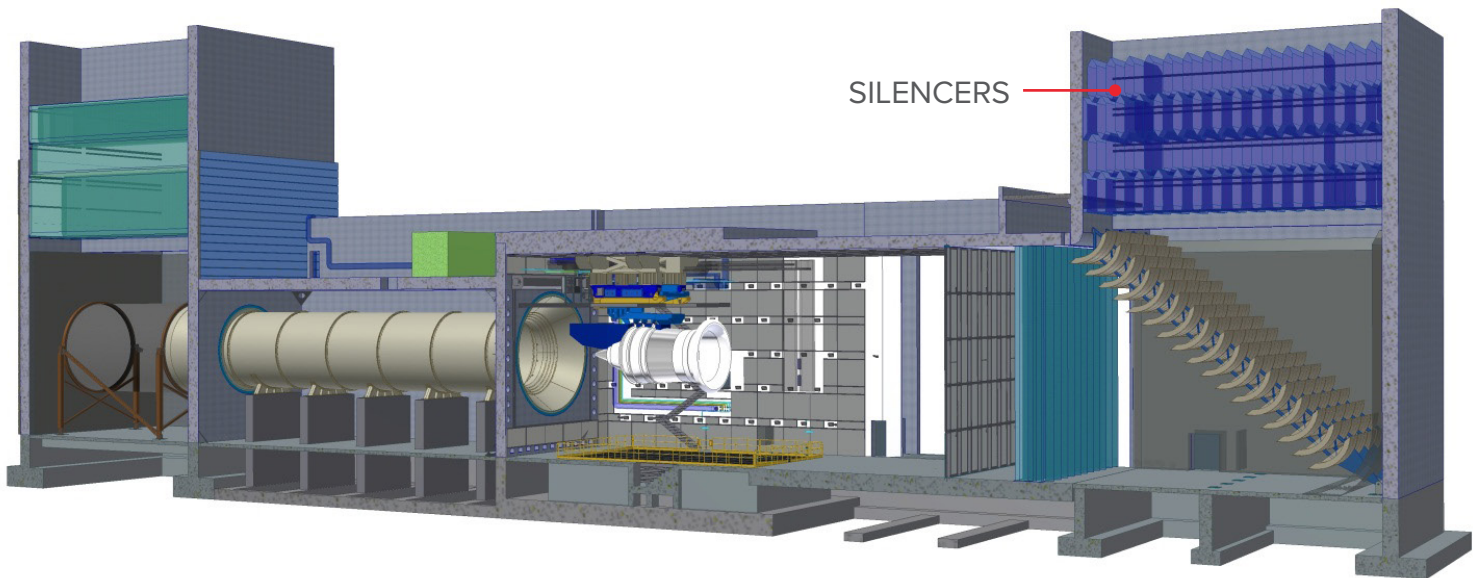
CUSTOMER NEED

A world-leading manufacturer of jet engines together with its equipment supplier required a general visual inspection of metallic supports in one of their test facility. A jet engine test cell is essentially composed of three sections: the air inlet stack, several stories high; a large central room where the jet engine is tested; and the air outlet stack, also several stories high. To stabilize the airflow and reduce the noise level, silencers are placed at a height of approximately 15 meters, both at the inlet and the outlet stack, in a staggered manner. Control vanes are also installed at the bottom of the inlet stack to control the air flow. The presence of those vanes represents a significant obstacle to easily access the silencers. Traditional inspection methods would require a complete disassembly of this structure to allow the use of a crane or ropes to access the silencers. This process would typically take several days if not weeks and is not foreseen as an alternative by the jet engine manufacturer.

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The major concern for the operators of this type of construction is the risk of having any debris, bolt or nut being sucked in by the engine during testing. This may cause serious damages to the latter and the test facility itself. Additionally, the resulting downtime would have a huge financial impact, especially during the final quality checks of a production batch.

With these critical issues in mind, and no time and cost efficient solution, Elios seemed to be a good alternative for the jet engine manufacturer.



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SOLUTION AND PROCESS

The inspection took place in one of the test cells of the world-leading manufacturer and was performed by a dedicated and experienced Flyability pilot. Flyability was appointed to fly through the control vanes and check the structural integrity of the metallic brackets holding the silencers together.

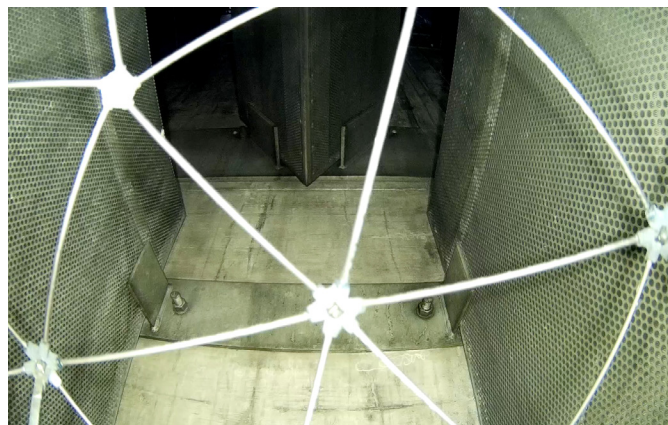
Ten flights of 10 minutes each were carried out for the inspection in various parts of the facility.

Most of the flights were performed beyond line of sight (BLOS) with the camera looking at 90° up. The inspection could easily be carried by Elios with its ability to navigate around unknown, complex and very reduces spaces.



CONCLUSION

All the key elements were inspected in less than 4 hours at the cost of only one drone operator. The test cell was quickly back to operation after the inspection, allowing for an optimized maintenance operation minimizing downtime and an increase of quality assurance. The customer and its supplier were very pleased with the collected high-definition footage. Elios revolutions the industrial inspection market as well in the aeronautic industry by allowing access to inaccessible places.



TIME

Only 4 hours. The facility got back to operation shortly after the inspection.

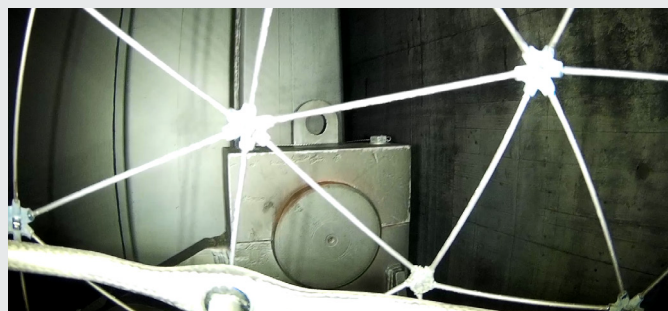
COSTS

Only one drone operator needed for the inspection. No means of access to deploy.

SAFETY

No work at height during the inspection. Preventing risks of damage to the jet engine under test and the facility.

MISSION PICTURES TAKEN BY ELIOS



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TIME – COSTS – SAFETY

Flyability builds **safe drones for the inspection of inaccessible, confined, and complex places**. Focusing on the Energy, Oil & Gas, Chemicals & Maritime industries, Flyability enables end-users to save time, costs and reduce risks during visual inspections.