

# TAP MAINTENANCE & ENGINEERING

WITH SOLIDWORKS TAP M&E HAS REDUCED MANUFACTURING COSTS AND ERRORS  
AND INCREASED THE QUANTITY AND COMPLEXITY OF THEIR PROJECTS



TAP M&E is Tap Portugal's Maintenance and Engineering company. There are currently 3,900 technicians employed across their Portuguese Headquarters and Branch Facilities in Brazil. Delivering top quality maintenance engineering services to airplanes and the associated components is an extremely demanding market, and safety is key.

**TAP** MAINTENANCE  
& ENGINEERING



### Challenge:

Increase productivity without compromising quality and safety standards.

### Solution:

In 2010 TAP M&E implemented SOLIDWORKS Premium and Professional.

### Results:

- 93% reduction in design errors.
- Ability to check part and assembly behavior.
- Confidence growth when delivering parts.
- Development costs reduced by 50%.
- Part per year increase by 70%.

In 2007, TAP M&E received a diploma recognizing it as the best maintenance company for reactor bases and airplanes of the Nato AWACS program (Airborne Early Warning and Control) Relative to 2006.

TAP M&E performs several maintenance operations not only for its own fleet but also in several other national and international operators.

What distinguishes TAP M&E from several other competitors is the permanent high quality and security maintenance, and very competitive delivery times and costs, this allows the company to keep credibility and acquire client trust.

## SPECIAL PROJECTS

TAP was the first airline in Europe and the second in the world to begin modifying their midcourse fleet with the introduction of the Airbus "Sharklet" Technology in twelve A320 kind airplanes in their maintenance center in Lisbon, the Airbus sharklet improves the airplanes air worth.

TAP M&E used SOLIDWORKS to see if their modified A320 using the sharklet technology would have issues parking next to an A330 airplane, after some testing they verified that it was impossible to park the airplanes next to each other without physical contact, this allowed the creation of safety measures to resolve a high-risk situation.

**"Quality and security, always hand in hand"**

— Pedro Gozalez, Head Designer

## ABOUT TAP M&E

Since TAP Portugal's Creation, in 1945, TAP M&E was always responsible for its fleet maintenance. In the 70s, TAP started its maintenance activities for third-party clients, a segment that quickly reached a significant part of its practice, representing today about 40% of total profits of this business unit.

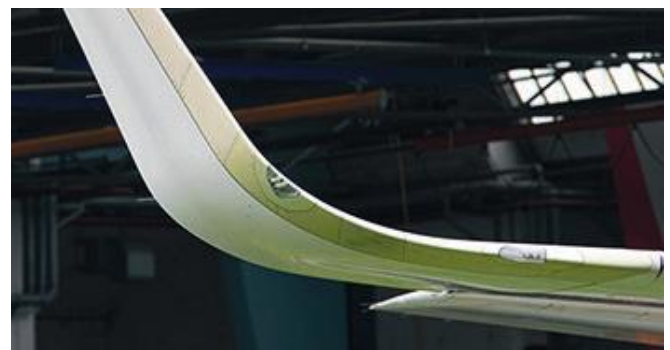
The long-term association of a maintenance Organization like TAP M&E to an international air operator like TAP Portugal allowed TAP M&E to strengthen its intervention capability and innovation over the challenges of improvement on operational and management of the fleets airworthiness. This is the rich and matured experience of refinement that allows TAP M&E to commit to its clients offering a full range of services of the utmost quality, at competitive prices and respecting delivery deadlines, ensuring not only the highest standard maintenance inherent to the aeronautic industry but also to the environment protection and safety of people and goods.

The Quality of TAP M&E's services has been recognized internationally by clients and manufacturers during the years. In 2005, TAP M&E was invited by Airbus to integrate on the first Maintenance organizations Network ( Airbus MRO Network), is 1 of 6 companies certified worldwide by Airbus to do maintenance tasks in airplanes of this manufacturer for any client. In the same year, TAP Portugal was distinguished by Airbus with the "A310 Operational Excellence Award" for the best use of the Airbus A310 fleet in the world in the period between 2003 and 2005.

All these distinctions translate to the exceptional acknowledgment level reached by the company in optimizing and use of the fleet and maintenance of its operational reliability.

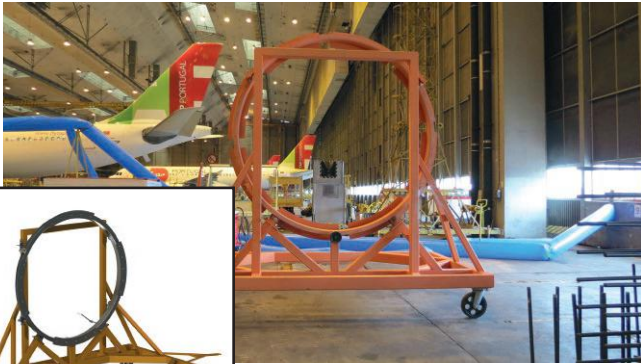


A320 With the Wing Sharklet



Wing Sharklet

Another project named "Engine Air Intake Support" was entirely designed in SOLIDWORKS and completely built by TAP M&E, this support allows workers to move the engine around and rotate it with ease increasing overall worker productivity.



Engine Air Intake Support



Case study Supported by:  
Pedro Gonzalez (Head Designer), Pedro Santos (Designer),  
Cheila Caetano (Designer), Mário Araújo (VP Engineering)

**"We reduced design errors by 93%. It's almost like they ceased to exist! What we see in SOLIDWORKS is a mirror of what reality will look like."**

— Pedro Gozalez, Head Designer

## GREAT GAINS WITH SOLIDWORKS

The design team investigated CAD software and attended a live demonstration held by an ISICOM technician showcasing SOLIDWORKS capabilities. These proved to be very helpful.

SOLIDWORKS seemed more intuitive and had a lower learning curve. The graphical interface itself led to a great gain in performance and in time savings.

Switching to SOLIDWORKS CAD tools resulted in a 93% reduction in design errors. Modeling and planning took less time and observing part behavior and interaction was now a possibility.

Thanks to SOLIDWORKS, most design errors were eliminated, helping to shorten development costs up to 50%. This allowed the team to send parts with added confidence while meeting the demanding requirements of the aerospace industry.

TAP M&E is now able to create more designs per year (from around 100 projects to 340) with greater complexity. The design team's speed and execution saw a significant increase in optimization since adopting SOLIDWORKS.

The eDrawings Viewer is used in tablets, allowing an easy and immediate access to products and functions during meetings. This expedites the passage of information, resulting in efficiency gains.

### TAP MAINTENANCE & ENGINEERING

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