# MRO IT as a key enabler of your vision

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## MRO IT as a key enabler of your vision

Ethiopian Airlines, the fastest growing airline in Africa, has developed an international reputation for innovation, technology leadership, and its commitment to becoming a world-leading aviation group according to its Vision 2025 strategic roadmap. To support the Maintenance Repair and Overhaul (MRO) function as one of the business's profit centers, Ethiopian is upgrading its MRO operations with state-of-the-art facilities and capabilities.

In this case study, Ethiopian details how its commitment to standard processes, coupled with the use of IFS Maintenix™ across the full maintenance footprint including engineering, planning, execution and materials, will enable a "best-in-class" maintenance unit for both its mixed fleet and rapidly expanding MRO operations.

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## Strategic planning through visionary thinking

Organizational vision underpins the long-term business strategy of many aviation organizations. Ultimately, it is commitment that differentiates those airlines that turn their vision into a reality from those that barely progress beyond the formulation of the idea. By 'commitment', we at Ethiopian Airlines do not only mean in the sense of ambition or dedication–there is no shortage of either in aviation–rather, in the sense of actually understanding and accepting what that commitment requires of the entire organization. And, more often than not, what that commitment requires is change.

## Ethiopian Airlines–at a glance

### Vision 2025

To become the most competitive and leading aviation group in Africa by providing safe, market driven and customer focused passenger and cargo transport, aviation training, flight catering, MRO and ground services by 2025.

### Facts about Ethiopian

- Founded in 1945
- Flag carrier of Ethiopia
- Star Alliance member on December 13, 2011
- **Fleet:** 69
  - B787 Dreamliner, B777-200LR, B757-200, B767-300, B737-700, B737-800, B777F, B757F, MD-11F, Q400 and DA40/42 training aircraft
  - 35 on order
- **Hub:** Addis Ababa and Lome
- **Destination:** 70 international and 17 domestic
- **2011/12 Total Revenue:** USD 1.9 Billion Net Earning USD 41.8 Million

In many ways, airlines embrace change. The economy is no more predictable than the weather, but both impact operations and exist beyond human influence. However, aviation organizations adapt quickly and repeatedly. This constant force of change on the business can explain why many commercial operators often stagnate when it comes to the areas of their business that can be controlled. However, by avoiding change, airlines may miss out on the significant opportunities of evolving and proactively driving change throughout the organization.

In the spirit of embracing change, in 2010, Ethiopian Airlines outlined Vision 2025, a fifteen-year strategic plan that would support the organization's evolution into Africa's most competitive and leading aviation group.

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## Defining Objectives for MRO IT Replacement

With Vision 2025 in place, the project team tasked with developing the MRO IT replacement plan was asked to translate this future vision into tangible, present-day objectives. The team identified three key goals:

1. **Support fleet modernization.** Fleet modernization and growth are at the core of Vision 2025, and, as a result, the team identified the aging Maxi-Merlin installation as a barrier to short and long-term success. The dated legacy solution would be inefficient in supporting short-term plans for the receipt of the Boeing 777 and the Bombardier Q-400 Besides, it would be absolutely incapable of supporting the receipt and ongoing operation of the Boeing 787 and Airbus A350 fleet.
2. **Support the modernization of MRO practices.** The company's growth plans rely heavily on implementing efficient best practices throughout MRO operations. Evaluating business processes and implementing best practices across the maintenance function also demanded a more modern MRO IT solution that reinforced and supported IT-driven business transformation.
3. **Drive efficiencies across the MRO organization.** In a highly competitive industry marked by rising fuel prices, Ethiopian recognized that success would be hinged solely on factors that could be controlled, namely driving greater operational efficiencies. By implementing an MRO IT solution that offered an integrated view of operations from flight scheduling

### Standard processes

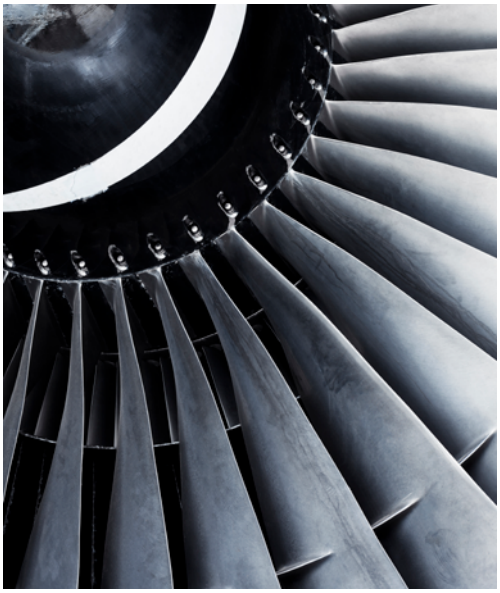
Ethiopian Airlines details how its commitment to standard processes, coupled with the use of IFS Maintenix across the full maintenance footprint including engineering, planning, execution and materials, will enable a "best-in-class" maintenance unit for both its mixed fleet and rapidly expanding MRO operations.

**3 key goals:**

1. Support fleet modernization
2. Support the modernization of MRO practices
3. Drive efficiencies across the MRO organization

through to maintenance execution and materials management, the company can drastically improve productivity during all maintenance visits, both scheduled and unscheduled.

The search for an MRO IT solution extended beyond the simple selection of a system to collect and store transactional maintenance activity; of utmost importance was a system that was transformational–one that could help optimize asset lifecycle management and drive continuous improvements across the business. In evaluating a number of vendors, it became apparent that the IFS Maintenix software was the best solution capable of supporting the increasing sophistication of the Ethiopian fleet, expectations for best practices and efficiency, and rigorous demands for compliance control.



## Key Success Factors

With MRO IT objectives in place, the team then directed its focus to articulating what key factors would play a prominent role in the ultimate success of the IFS Maintenix software:

1. **Standardized processes.** IFS Maintenix's commercial off-the-shelf (COTS) system, applied against Standard Aviation Solution (SAS) business processes and use cases, set the stage for Ethiopian to deliver an MRO function that could capitalize on standardized industry best-practices. The project team evaluated existing processes, identified the details, and made the necessary adjustments to conform to the new SAS. In the event that variations of processes were required as part of routine operations, these were easily addressed through minor configuration changes to the software.
2. **Good data.** Ethiopian's detailed data migration strategy balanced the demands of the implementation timeline against the availability of human capital and the substantial amount of information that needed to be cleansed, transformed, and imported to ensure the successful ongoing operation of IFS Maintenix. To mitigate the amount of data being migrated at any one time and support a strong organizational change management approach, the team chose a phased implementation and organized system go-live by fleet and functionality. The variety of data sources included:
    - Manufacturer source documents (IPC) to derive the majority of the equipment baseline;
    - Data extracted from Maxi-Merlin for job cards, part serial numbers, and last-done dates for maintenance tasks;
    - Spreadsheets that were used to track other data elements that existed outside of Maxi-Merlin.

**Key success factors:**

1. Standardized processes
2. Good data
3. Organizational buy-in

3. **Organizational buy-in.** Beyond executive sponsorship, the project team recognized that the success of the IFS Maintenix implementation would hinge on securing the unwavering support of middle management and ultimately, the end user community. Demystifying the new system goes a long way here. Ethiopian's IFS Maintenix training strategy was structured around the skill level of the user community and the difference in the user interface between IFS Maintenix and the legacy Maxi-Merlin system. Because IFS Maintenix is a real-time system, versus the previous postwork capture system, the team identified that users may need to be closer to workstations and that expectations of when system work needed to be completed relative to shift start times and end times also had to be reset.

To protect the company's investment in the IFS Maintenix software and drive maximum value from the system, the MRO organization was tasked as the business owner of the new system, with the IT organization in a key supporting role. In addition, Ethiopian instituted ongoing monitoring for indicators of nonadherence to process, identifying training improvements, and to drive enduser community engagement. The organization also identified key performance indicators which would be assessed over time to measure returns and demonstrate value.

## Organizing the Project Team

Identifying the appropriate project team was acknowledged as an important next step in guaranteeing an implementation that would be delivered on-time and on-budget. Consequently, leaders from across the organization from C-level executives to end users were engaged as part of the project team and shared in the responsibility of delivering on the project's success. This shared responsibility also encouraged full ownership of the project across the whole of the organization where the result was not solely an MRO project or an IT project, but an 'Ethiopian Airlines project'.

Ultimately, the IFS Maintenix implementation project team was comprised of the following representation:

**Executive representation**

- Lead sponsor–Chief Operating Officer, formerly the Vice President of MRO
- Co-sponsor–Senior VP of Ethiopian MRO Division
- Co-sponsor–Chief Information Officer

**MRO organization representation**

- Internal Project Manager
- SMEs representing major business areas–Engineering, Planning, Line Maintenance, Hangar Maintenance, Shops, Quality Assurance, Materials–for business-process analysis, testing, baseline development, data migration, policy and procedure development, and end-user training.

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**IFS Maintenix implementation project team:**

- C-level executives
- MRO organization
- IT organization

This collective accountability and cross-functional expertise was supremely valuable in ensuring the success of the IFS Maintenix implementation.

**IT organization representation**

- Legacy system technical expertise
- Data migration support
- Integrations and reports development
- IT operations
- Administrative management

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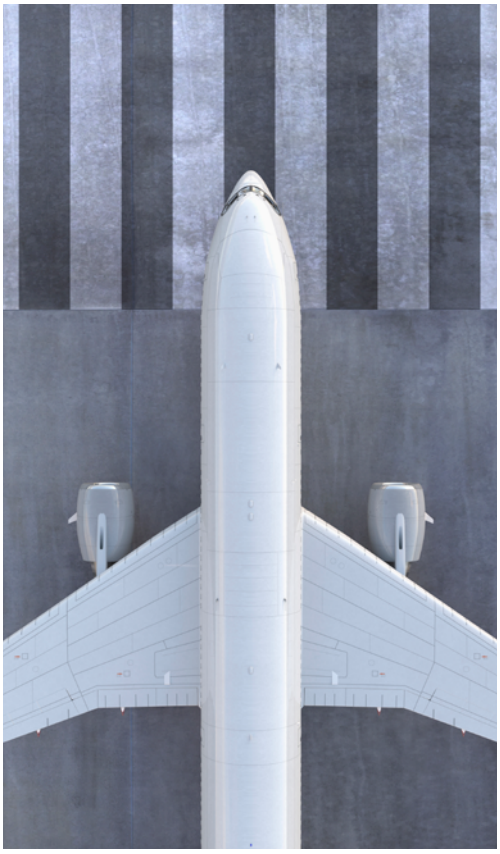
In the first half of 2012, Ethiopian completed the implementation of IFS Maintenix across the entire fleet, shops and customer MRO operations.

## Conclusion

In 2011, Ethiopian went live with the IFS Maintenix software and has succeeded in using the system for its next generation 777-200LR and Q400 fleets. The system is fully operational with engineering, planning, execution, materials, and technical records. In the first half of 2012, Ethiopian completed the implementation of IFS Maintenix across the entire fleet, shops and customer MRO operations. On August 14th, 2012, the scope of the implementation grew to include Ethiopian's first Boeing 787 Dreamliner, a historic entry into service with a direct, non-stop flight from Washington DC to Addis Ababa.

Using the IFS Maintenix solution, Ethiopian Airlines is confidently managing the maintenance requirements of 'classic', 'next-generation', and 'advanced' fleets while enjoying the organizational transparency and real-time visibility afforded by a modern and holistic maintenance management solution. Improved decision-making, faster response to maintenance requests, and continued return-on-experience are just a few of the benefits the company has realized and will continue to realize through the IFS Maintenix implementation.

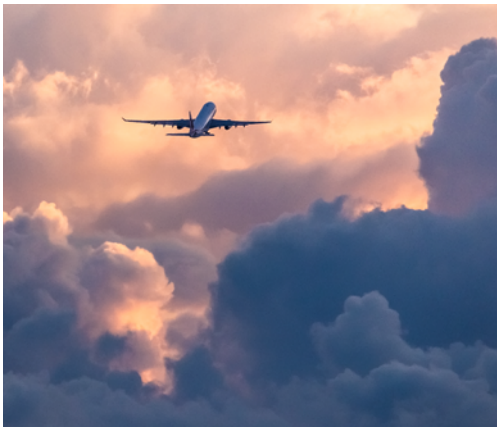
These benefits and the future receipt of additional Boeing 787 and Airbus 350 aircraft have positioned Ethiopian Airlines for accelerated future growth. In addition, the ongoing extension of the company's third-party MRO service offering to other carriers will constitute a sizeable part of the organization's future revenues.



By connecting success with its inner purpose through Vision 2025, Ethiopian has realized continued profitability and global recognition.

**Vision 2025** is the driving force behind the complete modernization of the maintenance unit, an ambitious fleet renewal strategy, and the induction of Africa's first Boeing 787 fleet into service. By connecting success with its inner purpose through Vision 2025, Ethiopian has realized continued profitability and global recognition.

With the next stage of Vision 2025 just around the corner, Ethiopian is bolstered by the successful achievement of these milestones and the knowledge that they can serve as a model for the industry.



## Maintaining the Boeing 787

### Business Drivers

The induction of the Boeing 787 is core to Ethiopian Airlines' **Vision 2025** and its objectives for fleet modernization. In addition to enhancing the customer experience, this next-generation aircraft provides the sustainable fuel and maintenance efficiencies necessary to help the company remain competitive in a highly volatile industry. Within weeks of initial induction, Ethiopian took delivery of four 787 aircraft and flew over 5,500 hours on revenue-generating routes, serving as an ongoing symbol of the company's African and global leadership. Using IFS Maintenix, Ethiopian was able to reduce the time from receipt to revenue-generating route to 24 hours, with more than 60 scheduled passenger flights taking place within the two weeks following delivery of each aircraft.

### The IFS Maintenix Solution

The volume of software parts, coupled with Boeing's own concept-of-operations for maintenance of software, posed unique configuration, process, and tool challenges for Ethiopian's MRO organization. A data migration strategic assessment highlighted and informed the project strategy and implementation plan, with several data sources used to set system configuration and aircraft baselines, including the Illustrated Parts Data (IPD) based on the new SPEC1000D messaging standard.

The IFS Maintenix software has allowed Ethiopian to confidently manage the technical complexity inherent in the efficient and profitable operation of the 787 fleet. With the airplane generating the As-Flying Configuration Report and IFS Maintenix generating the allowable Configuration Report, our Engineering department is able to identify non-compliance at the point of maintenance execution, and track the allowable software configuration per Airworthiness Directive (AD), Service Bulletin (SB), Engineering Order (EO), or scheduled maintenance activity. While applicable to the successful operation of any aircraft, this transparency is particularly important in the operation of a next-generation fleet due to the exponential increase in compatibility rules caused by an increase in the number of software components and the significant revenue impact of maximizing the use of next-generation fleets.

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## Find out more

Further information, e-mail **info@ifs.com**, contact your local IFS office or visit our web site, **ifs.com**

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