Senior Design / BS Project
April - 2020

Business Intelligence at FEAM

Mizelle Hornilla, Maxwell Levin, and Robert Gadon

Dr. Jaime Buitrago and Dr. Nina Miville

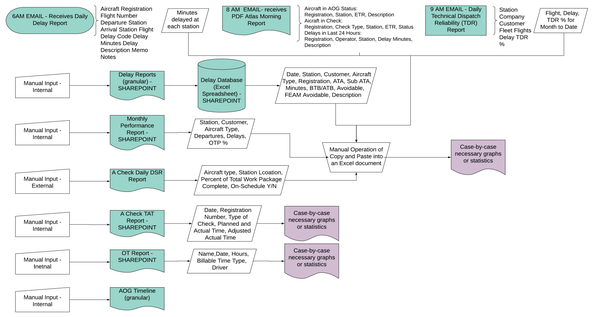
Department of Industrial Engineering

Abstract

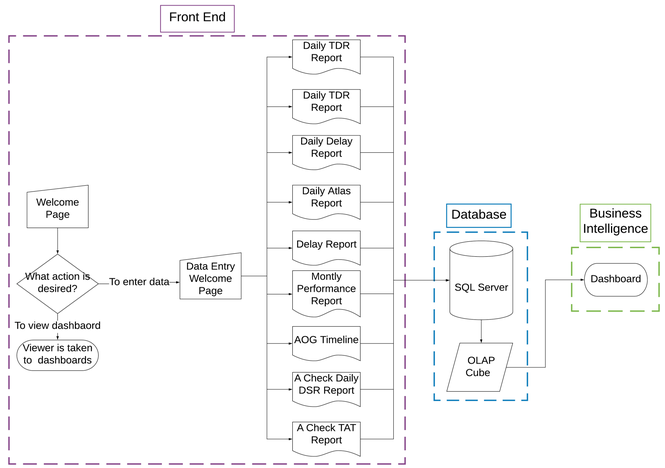
FEAM is a Maintenance and Repair Organization (MRO) in the aviation industry. FEAM needs to know the performance of their fleet and maintenance operations. Currently, their organization is undergoing a major digital transformation internally. Hence, there is a major need for data centralization and a technical performance dashboard. The main objective of this project was to centralize and build an infrastructure to capture data that will be used for the dashboard. FEAM currently uses ten data reports to record information on delays. Our team designed a solution so that FEAM can continue to capture the data from the ten reports that can then be used later for a dashboard. We designed the frontend forms and application users will interact with to enter data, along with the design and layout of the dashboard. When we handed off our project, we specified to FEAM how we see our application used and integrated in the future, so that a coder can put in the appropriate connections from our forms to their existing SQL Server database. We determined the necessary data fields from our application that can go into the database and later be used in a performance dashboard.

Introduction

FEAM has 27 operating locations in the United States. They serve airlines, Original Equipment Manufacturers (OEM's), and commercial customers. To find insights and get information on the performance of their organization, they look at ten data files to pull data and find metrics from.



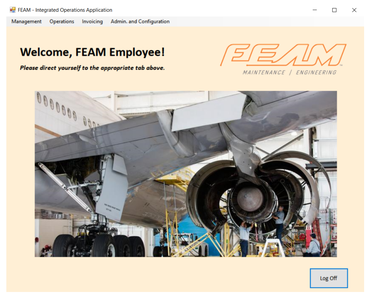
Design

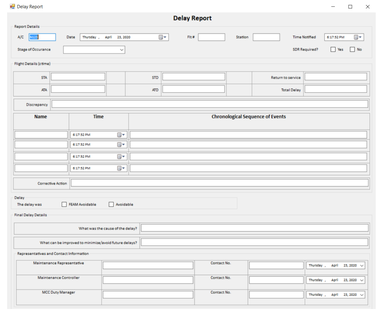


In order to centralize the data coming from the reports, we created the design above. There are 3 main parts of our design: 1. the Front-End, 2. the database, and 3. Business Intelligence (dashboard).

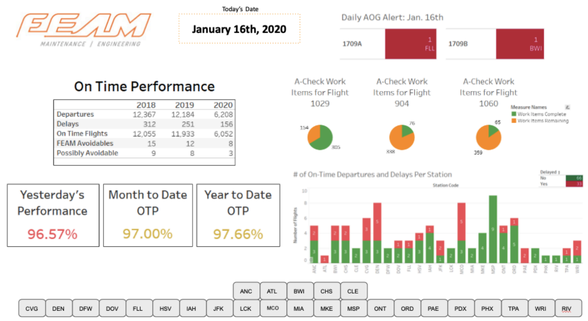
We created the Front-End application in Visual Studio where the user can navigate and perform 3 tasks:

- Add new data (new users, clients, positions, aircrafts)
- Add new work orders (AOG Timelines, A Check, TAT, and Delay Information
- View Reports or a dashboard





Results



We were able to design a technical performance dashboard. We also create views: Station performance, current A Checks and AOGs, On Time Perfromance of FEAM, On Time Performance of the clients, Delay information, and Overtime information.

Conclusion

Our design of the Front-End application and of the dashboards is a great starting point for FEAM to do the hard coding behind these two items and implementing it into their current systems.

- FEAM's data can now be centralized with a database that collects data from our Front-End application
- FEAM can create and use a technical performance dashboard with data from their created database

Acknowledgments

We would like to thank FEAM for allowing us to work with them on this project and Dr. Buitrago and Dr. Miville for the guidance.

FEAM MAINTENANCE | ENGINEERING