PEY 16 Month Positions Available

Start: May 2020

End: August 2021

Bombardier

1) Project #1-
   Title: Development and modelling of predictive performance tools (worldwide fleet-Theoretical model over life cycle)
   Description:
   At Bombardier, our employees work together to evolve mobility worldwide - one great idea at a time. We provide the environment where these ideas thrive and grow into great products or customer experiences.
   You will be part of the In-Service Maintenance Data team within Commercial Aircraft, working with a group of Engineering subject matter experts (SMEs) responsible for aircraft reliability, cost, maintenance, flight operations performance tools, methods and analyses. The team is dedicated to establishing the optimized performance requirements for all Commercial Aircraft, which includes the CRJ aircraft product lines. The Reliability and Cost Analysis team is responsible for assessing the reliability performance of the Bombardier Commercial Aircraft products and ensuring that the reliability performance does not degrade throughout the life cycle of the products. The team needs to develop tools to perform this assessment and to monitor the reliability performance in a quick and efficient manner, allowing for early detection of performance metrics deviation against a theoretical model and projecting future performance trends based on observed performance from Operator submitted data. The theoretical model will rely on engineering data (component and systems failure rates), on analysis of reliability performance degradation due to aging and environmental factors.

   Deliverables:
   • A theoretical model to characterise the reliability performance of the CRJ700/900/1000
   • A tool (or set of tools) on Bombardier's Business Intelligence platform (MicroStrategy) that allows for quick and efficient monitoring of the reliability performance of the CRJ700/900/1000 products.
   • Documentation associated with the tool(s)
   * Finalize annual CRJ expendables DMC analysis by using operator data - with trend analysis comparing previous year's DMC calculations

* Finalize heavy-check non-routine findings and aging analysis for CRJ by using service center data

Project #2
Title: Support the aftermarket spares sales dashboard development process
Project Description:
At Bombardier, our employees work together to evolve mobility worldwide - one great idea at a time. We provide the environment where these ideas thrive and grow into great products or customer experiences.
You will be part of the In-Service Maintencen Data team within Commercial Aircraft, working with a group of Engineering subject matter experts (SMEs) responsible for aircraft reliability, cost, maintenance, flight operations performance tools, methods and analyses. The team is dedicated to establishing the optimized performance requirements for all Commercial Aircraft, which includes the CRJ aircraft product lines. Reliability and Cost Analysis created an automated dashboard to consolidate all spares-sales related internal/external data into one tool - including market size and market capture estimations.
Additional support is required for the activities around developing/enhancing the current aftermarket spares sales dashboard - develop additional capabilities assigned, test and get approvals before finalizing.
Deliverables:
Get familiar with the previously completed tasks and aftermarket dashboard created
Gather inputs from various teams using aftermarket spares sales dashboard for additional capabilities required
Support creation of a development plan for additional functionalities
Execute the changes assigned/report progress

Project #3
Title: IT-Software Engineering
Project Description:
From day one, you will contribute to the delivery of real projects using the latest technology to solve business problems. Over the course of your internship, you will receive one-on-one training and coaching from a team of talented experts and take on increasingly, while learning in a challenging and rewarding environment.

The Program Investment office determines the strategy, definition and oversees the execution of the work to support in-service aircraft, maximizing in-service revenue. This

role is to also support to the organization to create mechanisms and structures to measure the program performance and investment.

With the transition of the CRJ into the aftermarket, the organization is in a stage of transformation. To become a world leader we require your expertise to develop tools and KPIs to measure the business performance, lead initiatives to improve efficiencies and support the governance of the program. You impact will bring great benefits to the organization.

Deliverables:

In your role, you will:

• Analyze project and create application to improve the efficiency, productivity of various groups.

• Use your unique engineering creativity to develop ingenious solutions.

• Work in different areas of Information Technology at the infrastructure level, application services and projects to support all of our manufacturing operations in the aerospace field

• Work with other IT departments to ensure customer satisfaction

• Develop your career in a challenging environment by leveraging your skills and innovativeness.

• Participate in the elaboration of our Achieving Excellence System

Project #4 (2 PEY Students Needed)

Title: Customer & Product Support-Software Developer

Project Description:

At Bombardier, our employees work together to evolve mobility worldwide - one great idea at a time. If you have a good idea, we'll provide the environment where it will thrive and grow into a great product or customer experience. Your ideas are our fuel.

You will be part of the Maintenance Data Management team, Customer & Product Support team within Bombardier Commercial Aircraft, working with a group of Engineering subject matter experts (SMEs) of various disciplines including aircraft reliability, cost and economics, flight operations performance tools, and methods and analyses. The team is dedicated to establishing the business intelligence, data management, technology requirements of the CRJ aircraft product line business teams with goal of maximizing revenue opportunities in the Aftermarket.

Your responsibilities will include:

* Support the development of key business performance metrics reports focusing on revenue generation
* Support of ongoing cloud transformation and business technology solution development activities
* Support the development and go to market strategy of software tools
* Support completion of Mitsubishi Heavy Industries (MHI) IT segregation activities
* Support the collection and maintenance of operator data, including automation opportunities

Deliverables:

• Delivering software ready to ship after every sprint by collaborating with business team and technical team members to design, implement and test smart repeatable solutions
• Take ownership of customer success by focusing on their needs when we design features, write code, write tests and fix bugs
• Be excited to learn and introduce the team to new technologies that improve performance, allow new features or improve our processes
• Build features optimized to work in both the cloud and on premise software
• Build your own server-side Python code and make use of open source to create a robust high performance backend
• Implement responsive front-end using HTML5 and open source CDN based JavaScript libraries
• Work with other amazing developers through code reviews and design sessions to create the best code possible

De Havilland 16 Months PEY Position

Project #1
Title: Dash 8-100/200/300 SCAP Development
Project Description:
Develop IATA Scap Take-off and Landing modules for all sustaining Dash 8 models. The SCAP software is an industry standard which allows the calculation of regulated take-off and landing weights, based on AFM data. SCAP modules for Dash 8-400 are complete and mature, they will be used as a model for the sustaining aircraft modules. The Dash 8-100/200/300 aircraft have fallen behind the Dash 8-400 in this capability, and definitely behind our competitors. SCAP is used by 1) DHC Flight Sciences, for ongoing customers' Flight Ops support; 2) DHC Marketing, to be incorporated into current (and potential future) Mktg performance analysis software (i.e. RAPIER); 3) airline customers

(a chargeable option), for their flight planning (in-house, or by a 3rd party under licence).

Deliverables:

Complete SCAP take-off and landing modules for each suataining Dash 8 model (or at least the most common models in each Series, e.g. 102, 202, 311, ++), to incllude source code, develoment documentation, data tables, compiled executables for various operating systems (Linux, Windows, etc.), and user manual.

Project #2

Title: Technical Publications Intern

Project Description:

The objective of the Data Relationships project is to establish a plan to collect, analyze, and organize data related to document relationships between technical publications manuals and service documents. As Service documents and maintenance manuals are delivered from different document stores to end-users, inefficiencies in the retrieval of these documents can delay the return to service of aircraft.

Intern will conduct in-depth analysis of related data types, service documents, and manuals to establish baseline document traversal metrics and recommend improvements in retrieval approach to reduce time spent in looking for documents.

Deliverables:

Expected deliverables for this project:

- Comprehensive report on types of documents referred to by Maintenance Manuals and Service Documents
- Identify typical document retrieval and traversal methods between document types
- Analysis of average amount of document traversals
- Recommend methods to improve retrieval efficiency

Project #3

Title: Development and Modelling of Predictive Performance Tools (Incident Rate Performance Prediction)

Project Description:

At De Havilland, our employees work together to evolve mobility worldwide - one great idea at a time. We provide the environment where these ideas thrive and grow into great products or customer experiences.

You will be part of the Business Performance team within De Havilland, working with a group of Engineering subject matter experts (SMEs) responsible for aircraft reliability, cost, maintenance, flight operations performance tools, methods and analyses. The

team is dedicated to establishing the optimized performance requirements for the Dash 8 series

The Reliability Forecasting and Life Cycle Management team is responsible for developing models that can predict the reliability performance of the product based on the current performance observed from Operator submitted data. Such models are used to understand whether the inherent reliability performance of the product is degrading and to provide insight to De Havilland Customer Services allowing this team to support the customers (airlines) proactively.

Modeling and predicting the aircraft incident rate (air turn backs, diversions, ..., as a result of technical problems) has become essential for understanding the system behaviors throughout its life cycle and defining corrective actions to mitigate or eliminate the technical problems.

The theoretical model will rely on engineering data (component and systems failure rates), on analysis of reliability performance degradation due to aging and environmental factors. As well, the model should integrate any pattern of events that will be identified from the existing data.

Deliverables:

• A theoretical model to characterise the incident rates for the Dash 8-400

• A tool (or set of tools) to predict the incident rate trends for the Dash 8-400

• Documentation associated with the tool(s)

Project #4

Title: Management of Customer Ad-hoc Maintenance Engineering Requests

Project Description:

De Havilland Dash 8 Maintenance Engineering provide support to customers' ad-hoc queries related to all aspects of Maintenance Engineering and respond to such queries timely and with highest quality. The identified candidate will be working with the Maintenance Engineering specialists to review, asses, analyze and respond to such queries under guidelines and directions of senior Maintenance Engineering team members.

Deliverables:

Under guidelines and support from Maintenance Engineering specialists, candidate will:

• identify and remove any hurdles while working to respond to customer queries

• Provide qualitative and timely maintenance programs / reliability / cost data and analyses to key supporting functions in Customer Services &Support, Sales & Marketing, Procurement, Engineering and other De Havilland teams

• Collaborate with many departments within De Havilland Customer Support