About Us

Joseph Ikuss will be graduating with a Bachelors of Engineering in Engineering Management. After graduation he will be working for Avanade as an Infrastructure Business Analyst.

Laura Roberts will be graduating with a Bachelors of Engineering in Engineering Management and a Minor in Economics. Post-graduation she will be working for Dixon Advisory as an Assistant Project Manager.

Noelle Scanno will be graduating with a Bachelors of Engineering in Engineering Management with a focus on Systems Engineering. After graduation she will be working at the Mile Square Theater as a Set Designer.

Julian Taborda will be graduating with a Bachelors of Engineering in Engineering Management and a Graduate Certificate in Logistics and Supply Chain.

Armando Vazquez will be graduating with a Bachelors of Engineering in Engineering Management. Post-graduation he will be working for Gilbane Building Company as a Project Engineer.

MTA Asset Management

Improving Reliability through Business Process Analysis

The Team:
Joseph Ikuss
Laura Roberts
Noelle Scanno
Julian Taborda
Armando Vazquez

Advisor:
Eirik Hole

Sponsor:
Metropolitan Transportation Authority
Background
The Metropolitan Transportation Authority (MTA), founded in 1953, is one of the largest infrastructures in the world and has a constant need to provide safe, reliable, and efficient transportation to the city of New York. They face many problems daily, however, and one of the biggest is that the technology and processes they use are quickly becoming outdated. They are in need of a system that not only supports running day-to-day operations, but also lays the foundation for continuous improvement, through the use of reliability engineering.

Reliability Engineering
Reliability Engineering applies traditional engineering principles and techniques throughout the lifecycle of a product. It ensures that a product performs its intended function under stated conditions and specified time, without failure.

Current State
The current daily processes of the MTA differ from hub to hub and have no set practices. This is caused by a gap between their top-down objectives and bottom-up operations in their Asset Intensive Business Architecture.

Components of the Solution
Our solution combines data from process maps created in Microsoft Excel, Microsoft Visio, and different components from the One MTA Framework, MTA Asset Management Framework, and MTA Capabilities Model into useful and consistent models, for the desired future state of day-to-day processes. These models will enhance the Reliability Engineering for the MTA Bus Division.

Desired Future State
To provide the MTA with organized and streamlined process flow maps for seven different processes:
- Reliability Based Maintenance Hand Off
- New Asset Process
- Root Cause Failure Analysis
- Failure Modes and Effects Analysis
- Preventative Maintenance Optimization
- Maintenance Strategy Development
- Bad Actor Process

ARIS Architect & Design Software
ARIS models, analyzes, and optimizes business processes, for better productivity, to achieve continuous process improvement.