MIDWAY
INTERNATIONAL
AIRPORT

RAXAR
TECHNOLOGY CORPORATION

Case Study

One Year On:

A Post-Implementation Analysis of the GRAiT System™

Powered By:

CHICAGO CDA DEPARTMENT OF AVIATION

SMG SKYLINE MANAGEMENT GRO

RAXAR™
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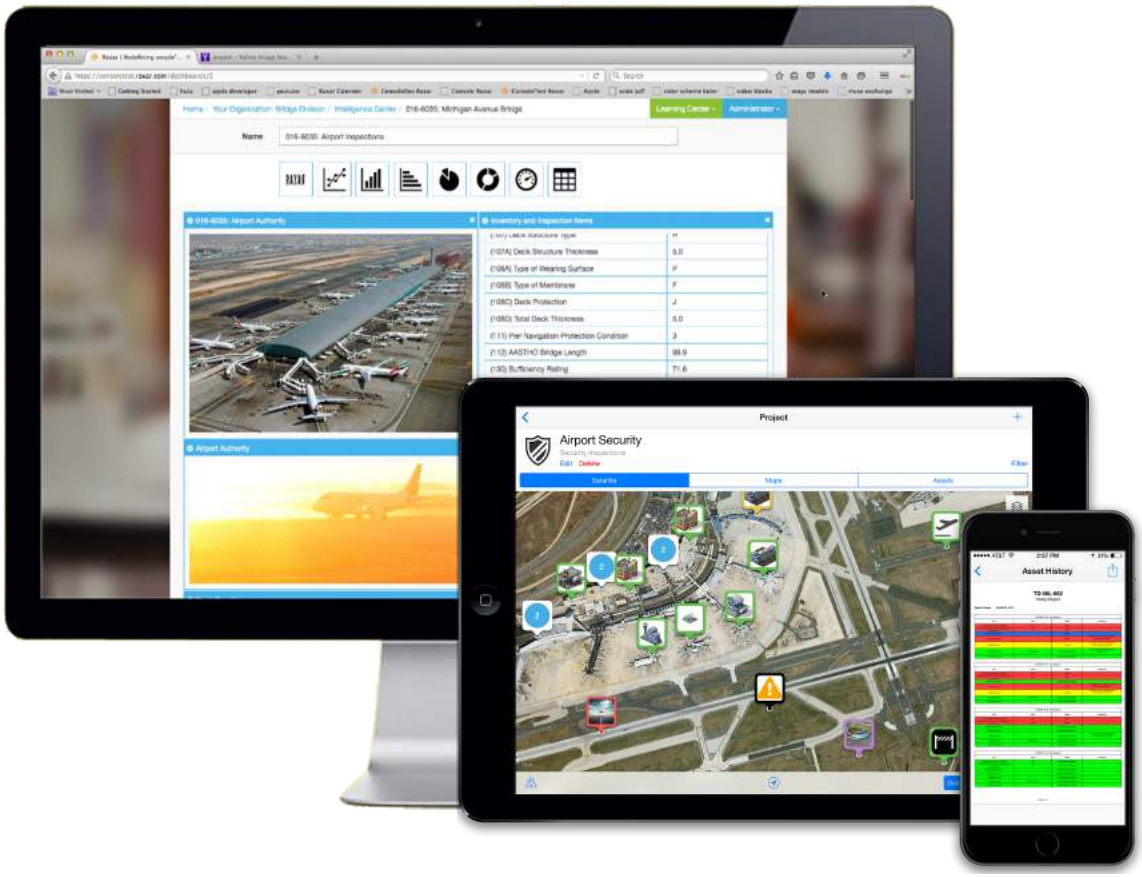
Executive Summary

Just over one year ago, Chicago's Midway International Airport implemented Raxar Technology Corporation's GRAiT (Graphical Real-time Asset Inspection and Tracking) System™ during a complete overhaul of their legacy asset management and data reporting system. This case study explores how Raxar's GRAiT System helped Midway International Airport, Chicago Department of Aviation and Skyline Management Group overcome a variety of challenges, such as managing airport-wide inspections, data reporting and overall condition assessments. Chicago Midway International Airport saw certain benefit with improvements shown in ticket response time, staff engagement, asset visibility, and streamlined responsibility assignment, which ended up leading to savings in time and resources.



About the client

Chicago Midway International Airport is one of North America's 30 busiest airports. 2015 saw a 4.9% increase in passenger volume from the previous year, with an average year-on-year growth of 5.4% since 2010. 2015 was the airport's highest traffic year ever, serving 22.2 million passengers compared with 2010's volume of 17.6 million.

Responsibility for Midway International Airport is ultimately the purview of the Chicago Department of Aviation (CDA), who perform airport-wide inspections of conditions and safety. Overall airport conditions are managed and maintained by the Skyline Management Group (SMG).

The legacy system in place for reporting and consolidating data regarding airport assets, comprising multiple, linked sub-systems, was inefficient and difficult to maintain under the increasing amount of passengers. Working together, CDA and SMG sought to replace their legacy system with a cohesive, flexible, and completely digital platform to consolidate asset management and data reporting activities.

Challenges

The primary challenge facing Midway International Airport was the consolidation of the existing asset management and data reporting systems into one cohesive platform. Legacy systems were not automatically inter-connected, and consolidating data involved significant paper tracking along with manual data entry and number manipulation. This process was extremely taxing on time and resources, and prone to manual input errors.

Several complex sub-challenges were intertwined among the primary dilemma. There are hundreds of groups operating in Midway International Airport. Along with the Chicago Department of Aviation (CDA) and Skyline Management Group (SMG), multiple airlines, car rental companies, and stores all have their own facilities and hire their own contractors to carry out day-to-day maintenance and activities. Developing a centralized system of tracking and managing tickets, data collection from inspections and automatically generated reports from these myriad groups was essential.

As a direct result from this desire for improvement, these groups analyzed their own processes to see where the gaps really were. Quickly the team discovered the poor time-gap between inspecting an asset, raising a ticket, and response time, which turned out to be derived from the lack of communication and that data collected was non-existent or highly inaccurate. Due to this discovery, the organization leaders at Midway wanted to improve the often severely delayed ticket response times and even the completely halted tickets caused by the misplacement of information.

Along with ticket response times and data collection, Midway International Airport also wished to greatly increase its capacity for trend and causal analysis. It was obvious that without a cohesive asset management/data reporting system, response to tickets and incidents was going to remain highly reactive. CDA and SMG strongly desired to target issues proactively, but the legacy system did not give management the tools it needed to efficiently remedy these exposed issues.

Most companies can benefit from increased asset visibility, better response times, and causal/trending analysis of assets. But Midway International presents a more unique challenge because of the highly complicated and widely varied services provided by numerous different organizations within the airport. The wide range of assets requiring tracking further complicates operations and finding a solution that meets the needs of these various organizations proved to be difficult. All of these organizations needed a solution that could be customized to fit the specific responsibilities and reporting requirements of each sub-group.

The ultimate challenge facing Midway International Airport was the need to implement new platforms, systems, and processes while producing several subject matter experts, all with minimal downtime and without compromising airport security.

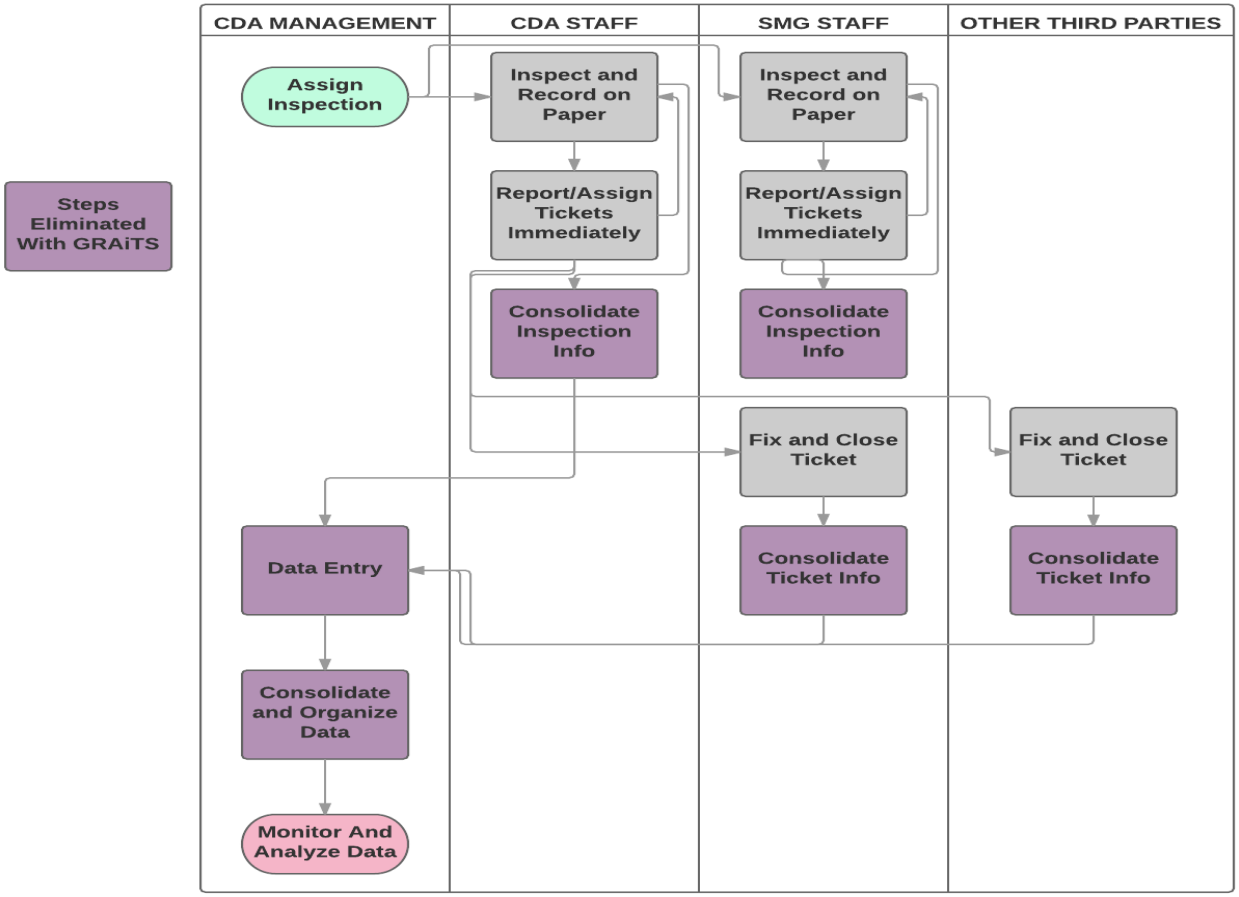
Solutions

The Management at Chicago Midway International Airport chose Raxar Technology Corporation's GRAiT System™ as their new asset management/data reporting platform. The support and feedback received from the Chicago Department of Aviation (CDA) and Skyline Management Group (SMG) throughout the project was instrumental to the successful implementation of the system.

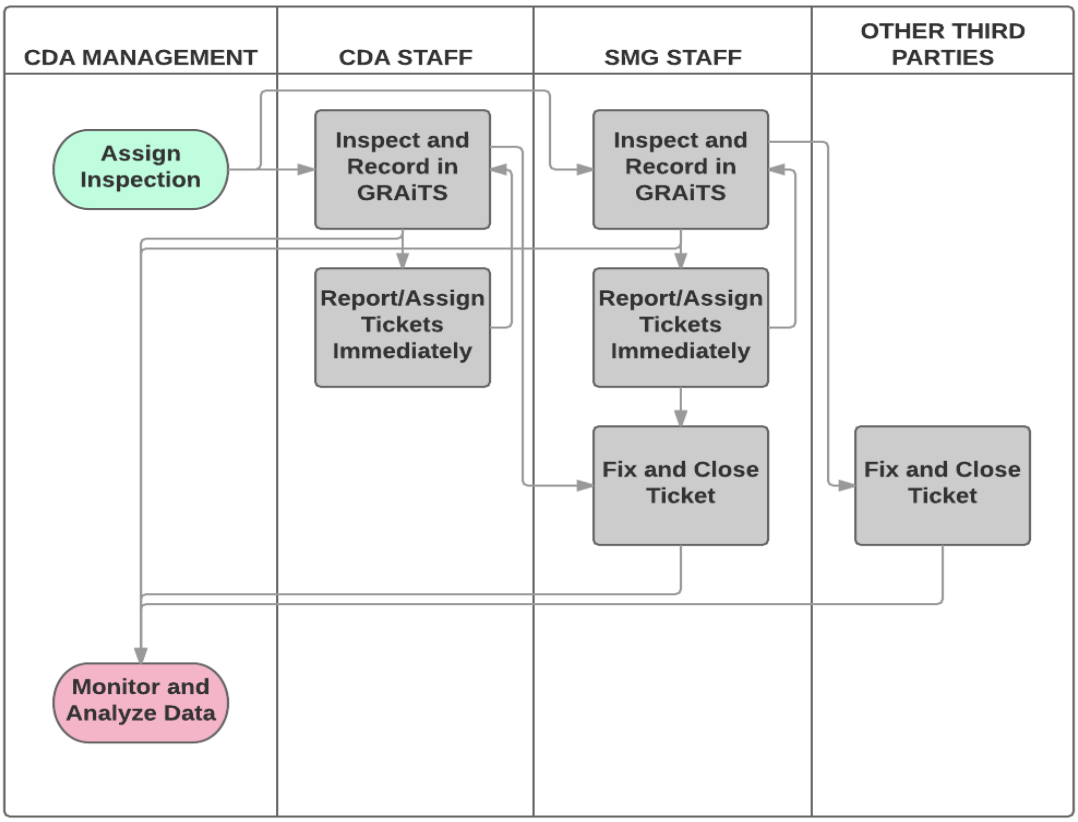
Consolidation of Asset Management and Data Reporting Systems

Implementation of the GRAiT System™ consolidated the existing legacy asset management and data reporting systems into a single digital platform. This immediately reduced the amount of time and resources committed to managing the system by eliminating several steps—certainly including those carried out on paper—of the process.

Original Process:



Improved Process:



Centralized Tracking of Multiple Vendors and Tenants

Due to its design around a hierarchical database model, the GRAiT System™ has been a smooth fit for Midway's complex organizational structure. At the upper level, the Chicago Department of Aviation (CDA) and Skyline Management Group (SMG) management teams are now able to monitor inspections and overall conditions throughout the airport. For management this tool provides clarity and control, while each level of the organization hierarchy benefits from other features that include but are not limited to managing permissions, assigning work to personnel, geo-locating requests, and raising tickets according to their requirements. A clear audit trail is now created and maintained regarding which personnel have raised, inspected, and resolved any issues. These tools and features have helped these groups clear up some of the workflow challenges that they previously faced.

Increased Real-Time Visibility of Assets for Decreased Response Times

The first step in decreasing response times and increasing asset visibility is the move to a completely digital platform. Midway International was able to consolidate the asset management and data reporting systems into a single platform through the GRAiT System™, so now tickets when raised are instantly assigned to the correct responsible party. By utilizing the mobile solution, Midway has completely cut out the manual process of submitting on paper and then reporting when back at a desk, which has lead to response times being drastically reduced.

The GRAiT System's™ built-in barcode functionality allows identification of any asset through custom or manufacturer barcodes, which simplifies asset identification, particularly for similar or identical asset types (i.e. Fire Extinguishers, Comm. Rooms, etc.). Documents and photos have a repository in the organization's digital library, and customizable fields allow users to enter any additional data points they deem relevant to the asset in question, such as maintenance history, previous locations, and raised tickets. All of this information can be accessed quickly from one central location throughout the lifecycle of any individual asset.

To improve visibility, Raxar was able to create two dashboards in the GRAiT System™ Administrative Console at the time of implementation around some key metrics identified by SMG and CDA: carpet condition dashboard and overall health dashboard. Thanks to the hard groundwork by SMG and CDA staff, these dashboards effectively and immediately demonstrate the results of every inspection performed. Other inspection data is consolidated into text or table based reports that can be automatically generated when needed and even scheduled for automatic delivery to the appropriate team members. With these tools, Midway International Airport's management staff are empowered to make crucial decisions more quickly and with more assured knowledge.

Trend and Causal Analysis Facilities

By reporting inspections immediately through a field data collection solution there are dramatic streamlined improvements in an organization's workflows and directly leads to significant reductions in response times to issues. But in the pursuit of excellence, Midway leaders sought to identify root causes rather than papering over cracks. By now tracking asset data at a granular level throughout its lifecycle, Midway Airport management can not only respond immediately to problems as they occur, but begin to identify patterns in defects and deal with them proactively. The GRAiT System™ platform retains all asset, ticket and inspection history information and ties everything together behind the scenes allowing for unimpeded analysis and decision making—all without affecting the user experience.

Complex Reporting Facilitation

Raxar was able to implement flexible reporting instruments that could be customised to each group or hierarchical level. SMG and CDA were very flexible and knowledgeable during this discovery process, leading to an optimized reporting platform, which captures not only all required data, but also the complex relationships between entities, assets and employees.

As this project has grown, so has the GRAiT System™ because of Midway International, SMG and CDA's key input and experience. With this support the recent rollout of an extremely powerful and robust reporting tool within the solution has exponentially improved the already elite reporting capabilities available to the airport's staff. Through the use of this new tool, Raxar was able to seamlessly replicate Skyline Management Group's quality control inspection report within the new platform. Moving forward, handling these complex queries and replicating unique reports will only become simpler for Midway International's staff.

Efficient training processes to minimize downtime

Minimal downtime is crucial to the continued smooth operation of airport processes. To effectively train users in the efficient manner required, a system of 'power-user' training was adopted. 20 new users were chosen to be 'power-users', and received a rapid, intensive training lasting just one hour. The intuitive and simple interface of the GRAiT System™ allowed Midway International staff to train with such a quick and effective method that after that single hour these power-users were up doing inspections, taking photos, and opening tickets without any assistance. These power-users then brought other personnel up to speed, which created team collaboration and reduced training costs.

Results

Adopting the GRAiT System™ has resulted in the following clear and quantifiable benefits for Midway International Airport. Regardless of the GRAiT System™'s strengths, these results would not have been possible without the strong engagement and initiative shown by the staff of both Skyline Management Group (SMG) and the Chicago Department of Aviation (CDA). Staff engagement has been consistently high throughout the year following implementation, and CDA and SMG personnel have completed the inspection of 86,221 items and taken over 30,000 photos.

- **Completely digital asset tracking and data reporting on a single platform**
  Moving to the GRAiT System™ has completely removed the need for wasteful and error-prone paper tracking systems, manual data entry, and manual number reporting. All data is centralized in a single system. This has saved time and money for the airport, both in inputting data and locating and correcting errors.

- **Drastic increase in quality and amount of data throughout the complete asset lifecycle**
  The information assigned to each particular asset has increased, with customizable fields allowing users to add and track new data points. Responsible party information, current and previous locations, maintenance history, ticket history, inspections, photos, and more can all be assigned, tracked, and referred to for any asset instance throughout its lifecycle.

- **Clear, hierarchical assignment of asset ownership and responsibility**
  The power of hierarchy in the GRAiT System™ has not only allowed the raising of tickets on individual asset instances, but also to associate several asset instances and their tickets with a gate, group, or contracting company.

- **Reduction in ticket response time and contractor request response time**
  Whereas previous raised tickets could be left open for weeks or months, now ticket notifications are sent immediately to the correct person, reducing ticket response times to days or even hours.

- **Increased transparency and visibility for contractor performance**
  As the responsible party is identified for each asset, related information can be used to review contractor performance and make decisions during contract renewal.

- **Consistently defined ratings for asset conditions across multiple data reporters**
  The introduction of clearly defined ratings for asset conditions, including visual references, have improved data reporting consistency between groups and throughout the airport.

- **Increased visibility of data trends**
  The increase in reporting frequency, reporting consistency, and the use of visual dashboards have worked together to make trends in data much more visible to users, especially to management. Problem areas can be identified, anticipated, and addressed.

- **Increased reporting flexibility and complexity**
  Reporting options have been tailored to each group and hierarchical level. CDA now have the potential to track metrics such as number of defects per gate, or number of times one particular instance has failed inspection.

- **Shorter reporting and ticketing processes**
  Several steps of the old reporting process have been completely eliminated, reducing the time and staff resources needed to raise and respond to tickets.

Most importantly, due to the efficient training process, Midway International Airport received all these benefits with little or no disruption to its normal scheduling and without compromising its security - all of utmost importance with such a high volume, fast-paced, and time-sensitive industry.