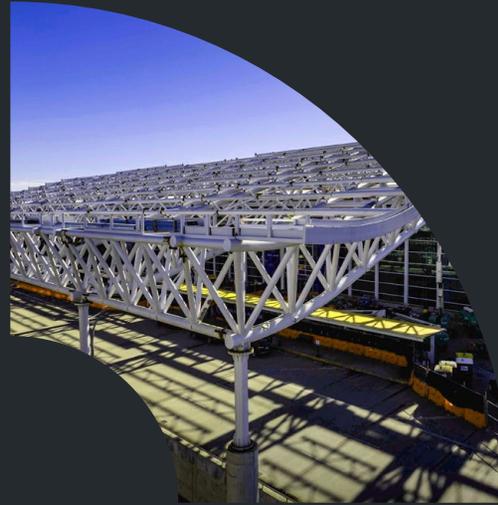


# Statement of Qualifications



Asset lifecycle  
management.  
Solution for  
airports.



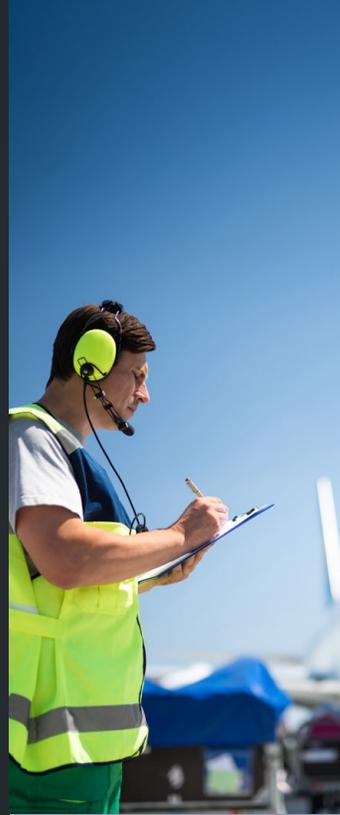
# 01 About Trimble

- 01 Corporate Overview
- 02 Technology and Services
- 04 How Trimble Is Different
- 05 Why Trimble for Airports?



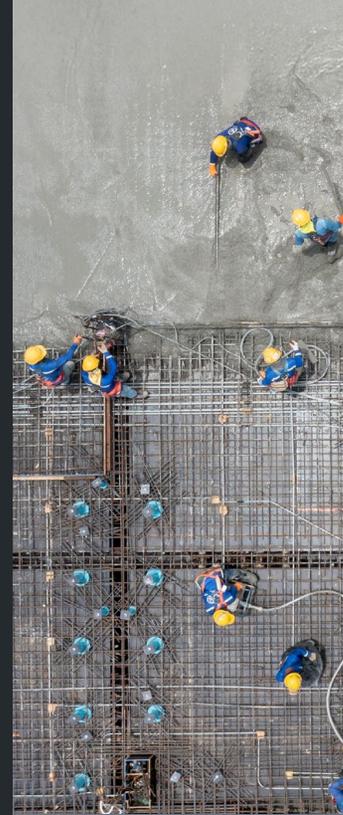
# 02 Airport Asset Lifecycle Management

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# 04 Case Studies

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# 05 Teams

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# About Trimble





# Fast Facts About Trimble

S&P 500 stock symbol:

**TRMB**

**3 Main business units**

AECO, Transportation and Logistics,  
Field Technology (Geospatial)

Headquarters

**Westminster,  
Colorado, USA**

**14,000+**

employees operating in **34 countries**

# Overview

Trimble is the trusted partner of airport owners and operators across the United States and internationally, providing infrastructure technology software for design, construction, operations, and maintenance.

While being well known for our iconic yellow survey hardware often seen at construction sites, today's Trimble® organization centers on **delivering mission-critical software applications in the categories of capital program management, enterprise asset management, and design model collaboration.**





Recognizing the escalating demand for digital technology in the public sector, Trimble has collaborated with forward-thinking stakeholders, partners, and industry leaders to establish a purpose-driven **Asset Lifecycle Management (ALM)** vision. This vision is supported by a unified suite of capabilities that support every phase of the asset lifecycle, from planning and design to construction, project management, operations, and maintenance.

These capabilities' game-changing benefit is that they enable unprecedented efficiency improvements by centralizing data and connecting workflows across the lifecycle. This holistic approach to asset lifecycle management empowers airport owners and operators to **reduce the total cost of ownership (TCO)** of airport infrastructure assets.





# A Leader in Airport Technologies

## Trusted by Airports Worldwide

- Some of the world's most iconic airports are constructed using Trimble technology.
- Trimble project and asset management solutions help manage some of the world's busiest airports.
- More than 100 airports are doing business with Trimble in 15+ countries.
- Among our customers are the world's second-largest airport operators, VINCI Airports, and top airline companies.
- Trimble has won prestigious awards for digital innovation and transformation in the airport sector.

# Uniquely Positioned to Enable Airports' Success

The Trimble organization is optimized to help airports benefit from connected and comprehensive capabilities that help drive success across many areas of operation.

All Trimble construction and asset management solutions are now governed by a unified organizational sector dedicated to Architecture, Engineering, Construction and Owners (AECO). Trimble AECO sector is the largest business unit at Trimble in terms of revenue. By organizing in this way, we are committed to executing the vision of "Transforming the Way the World Works" and the strategy we call "Connect and Scale."

"Connect and Scale" means connecting Trimble internal business functions to optimize their work together to produce the best outcomes for our customers. It's an ambitious goal, and we are already executing on this vision. Our main goal with Connect and Scale for airports is to bring you closer to your contractors and consulting partners using technologies that make data exchange easy — technologies that are fully interoperable with the tech stacks that airports already use.





# Trimble Technology at a Glance

Trimble software offerings support a wide range of critical airport functions. Here is a quick-glance guide showing typical workflows and applications of our solutions.

## Trimble Asset Lifecycle Management Technology

### DIGITAL PROJECT DELIVERY



1. Project and Program Management
2. Cost Management
3. Construction Management
4. Field Data Collection
5. Document Management
6. Time Tracking
7. Capital Planning
8. Vendor Management
9. Project and Program-Level Reports and Dashboards
10. Workflow Management
11. STIP and Funding Management
12. Quantity Management
13. Dispute Resolution
14. Materials Management
15. Submittals Management
16. Critical Path Schedule Management
17. Forms Management and Creation

### CONNECTED DATA ENVIRONMENT



1. Task Management
2. Document-Based Workflows
3. Object-Based Workflows
4. Digital Signature (Maldelo Partnership)
5. Data Connectivity via Connector Portfolio
6. Design Model Management
7. Construction Model Management
8. Digital As-Built Engine
9. As-Maintained Model Management (Digital Twin)
10. Deep BIM Integration

### ENTERPRISE ASSET MANAGEMENT



1. GIS-centric EAM technology (Esri's ArcGIS®)
2. Safety Management
3. Inspection Compliance
4. Mobile Focus
5. Maintenance Management
6. Facilities Management
7. Pavement Management
8. Fleet Management
9. Work Order Management
10. Field-to-Office Workflows

Note: Digital Project Delivery (DPD): It is commonly referred to as Project Management Information System or Construction Management System.



# Customer Locations



# How Trimble is Different

Trimble provides three unique advantages for airport asset lifecycle management in the software market.

## 01 Continuous Data Access:

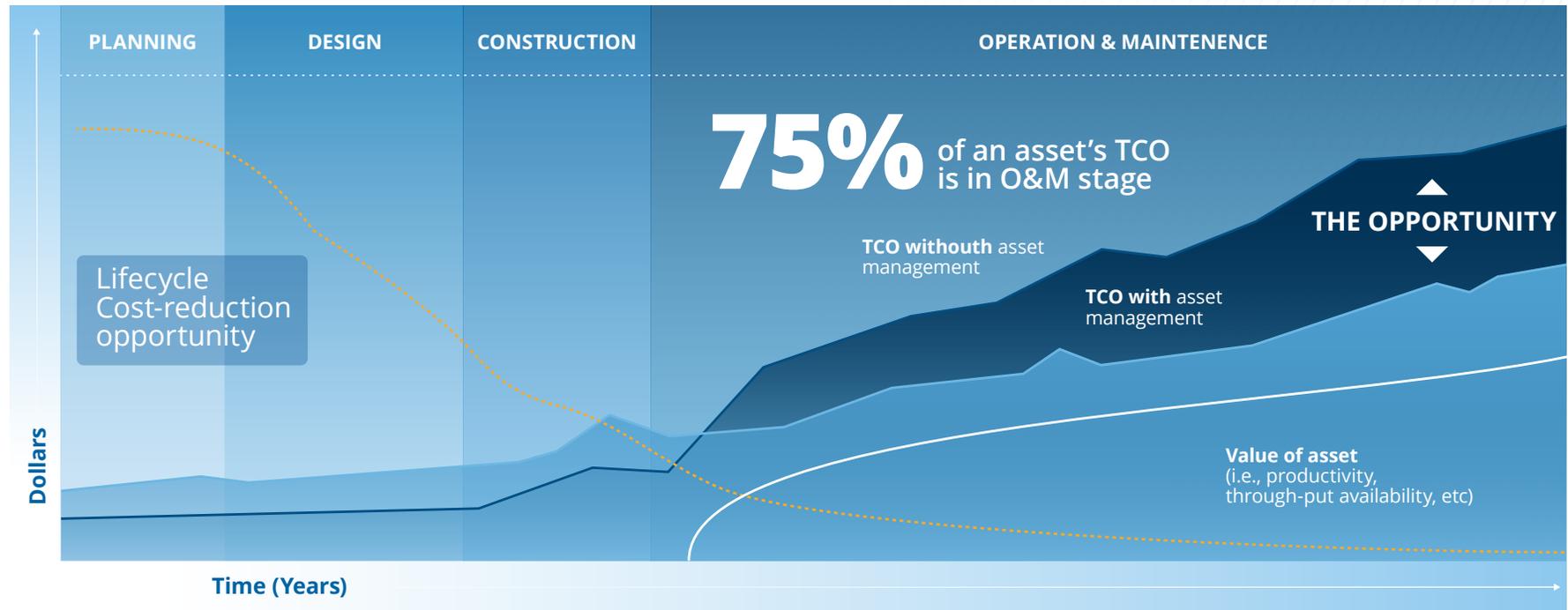
The Trimble Asset Lifecycle Management Solution helps lower the **total cost of ownership of airport assets by up to 40%**. Using data from the entire asset lifecycle, you can make better decisions from planning and design to construction, operations, and maintenance. Centralized data and connected workflows across all lifecycle phases improve efficiency and save costs, even when using a combination of Trimble and non-Trimble solutions. Instead of accessing less than 10% of relevant asset data, connected workflows enable access to a more complete dataset at every lifecycle phase.



▼ **40%**  
lower total  
cost of asset  
ownership



# Continuous Access to Data Helps Lower The Total Cost of Ownership (TCO) of Assets



## 02 Ease of Procurement:

The Trimble Unity Asset Lifecycle Management Subscription simplifies doing business with Trimble. With a subscription model, purchasing one solution entitles your airport to all of them, allowing you to pilot, scale, and deploy without repetitive, costly, and time-consuming RFX procurement processes. Additional systems of record lead to discounts, **reducing total licensing investment by up to 15%**. Owning one system of record eliminates the obstacles of single-source procurements and accelerates your organization's digital transformation.



## 03 Interoperability:

Effective airport asset lifecycle management depends on accurate, trusted data for consistent decision-making. Trimble provides a curated business intelligence solution with Trimble Analytics, promoting confident decision-making across every lifecycle phase. Trimble connected integration services securely **connect systems of record**, leveraging open data standards to streamline workflows and create the transparency needed for informed decisions. Trimble Digital Services and business partners enable a unified technology ecosystem, eliminating process bottlenecks and mitigating security threats through SOC2 and FedRAMP compliance standards.

# Your Digital Transformation Journey

### Lifecycle Platform

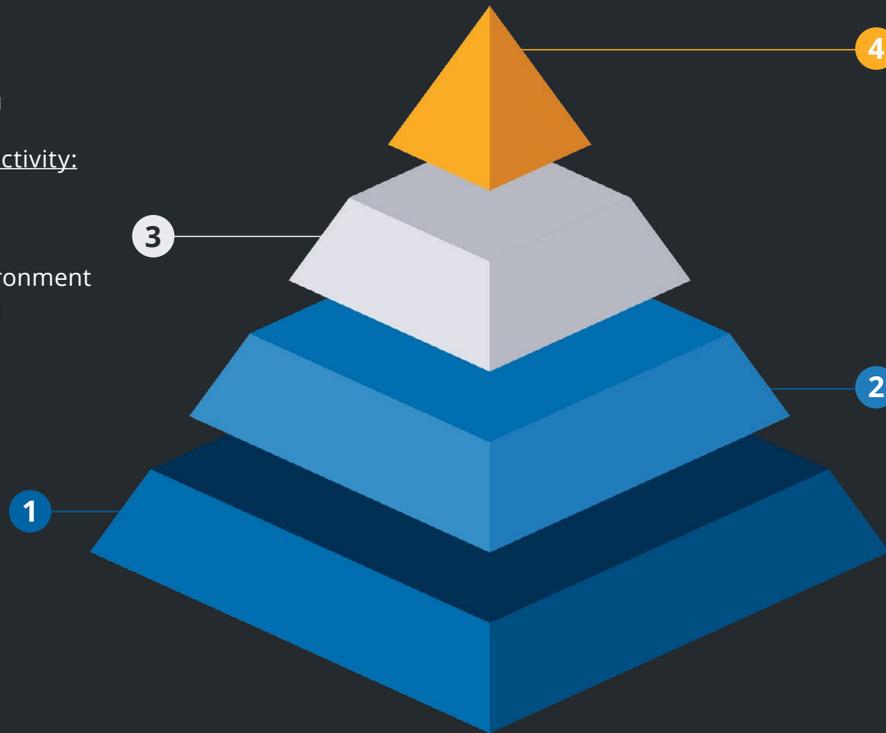
Next Generation Productivity:

- Modular
- Open
- Common Data Environment (Connected Models)
- Digital Twin

### Silo'd Dept. Apps

Past:

- Departmental
- Proprietary
- 2D, File Centric



### Predictive Platform

Artificial Intelligence (AI) Informed:

- Predictive Modeling
- Augmented Inspection
- Sensorized Feedback

### Connected "Systems of Record"

Table Stakes Today:

- Core systems & workflows for:
- Design (3D, Data-based)
  - Construction
  - Assets

DIGITAL MATURITY



**04 Cybersecurity and Compliance:**  
Trimble connected integration services provide the strategic and operational expertise to connect systems of record securely. Leveraging open data standards, Trimble ensures streamlined workflows and the transparency needed for informed decisions. Compliance with SOC2 and FedRAMP standards mitigates security threats, providing peace of mind for airport asset owners.

**05 Accelerated Digital Transformation:**  
Trimble technology accelerates digital transformation with connected workflows and scalable functionality. Collaborating with consulting partners, Trimble provides technology that aligns with your schedule and produces measurable, quantifiable results. Trimble uses open platforms, non-proprietary file formats, and API-level connectors to third-party systems, ensuring you always work with the most recent and best data set possible. The AECO sector at Trimble helps airports leverage interoperability points, building future digital workflows with consultants and partners. Imagine a CAD-neutral environment where all applications can leverage data, ensuring collaboration and optimized outcomes. Connected workflows are effective with or without a digital twin, and Trimble focus on interoperability makes the benefits of digital twins achievable now.

## Use cases of ALM

### Outcomes of a Connected Asset Lifecycle Management Solution

▲ **30%** Cost Recovery of Repair / Replacement of Warranty Items

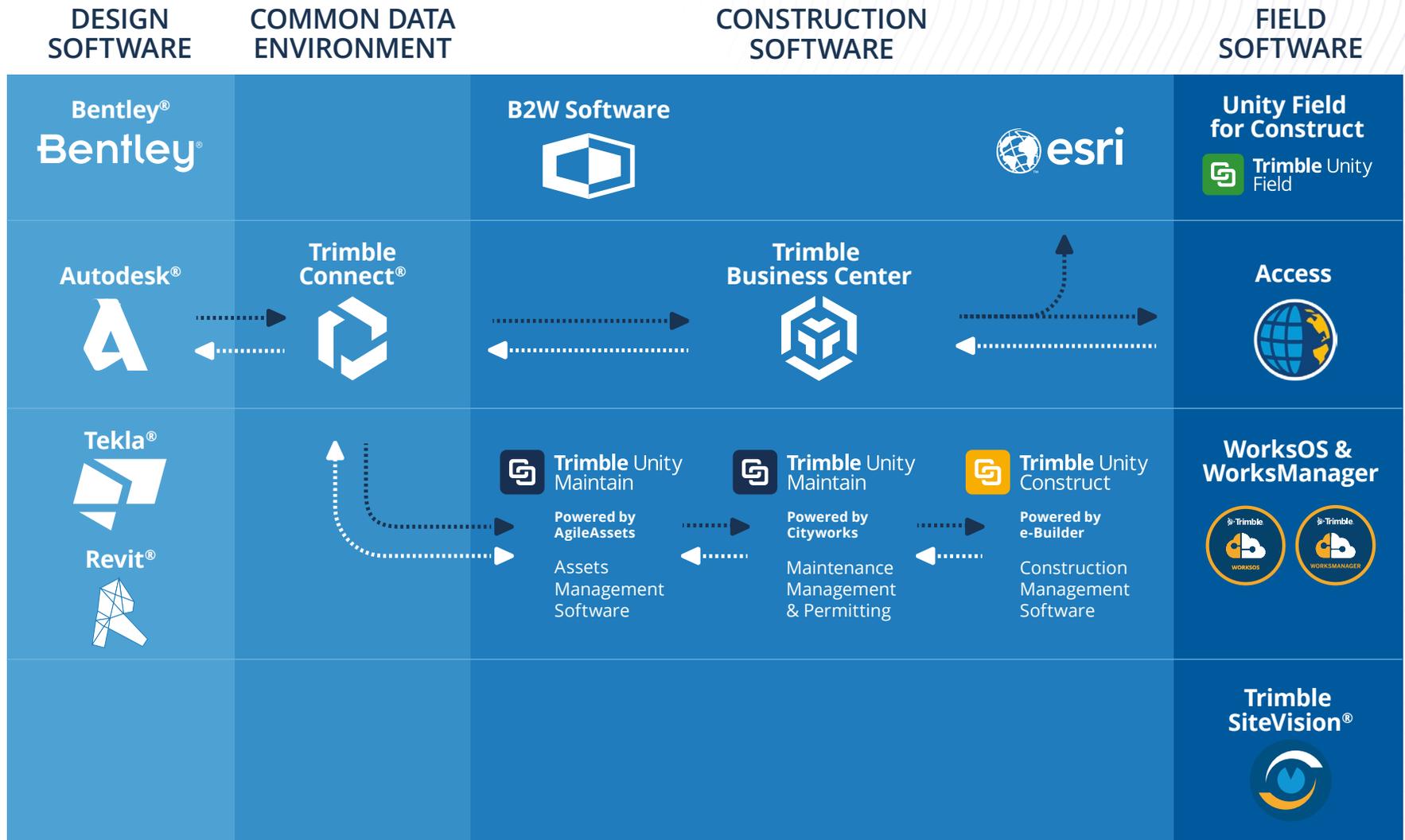
▼ **75%** Decrease In Days To Process Vendor Invoices

▲ **3X** First Time Inspection Accuracy and Status

Single Source Of Truth For Capex and Opex of Assets



# Asset Lifecycle Management Workflow



AS-BUILT DATA DESIGN DATA



# Why Trimble for Airports?

Airport teams generate more asset data than ever before.

Every airport needs an efficient method to access, share, analyze, and report on this data and use it to make informed decisions. Instead, data typically exists in siloed systems and various inconsistent formats, rendering it inaccessible and/or unusable. The data loss that occurs between these silos leads to data redundancy when duplicate data is created. Data loss also leads to recurring losses in productivity because necessary information is missing at critical points in the asset lifecycle.

Digital technologies are enabling a new approach to designing, building, operating, and maintaining airports that can serve large volumes of travelers for decades. Trimble is leading this [airport asset lifecycle management](#) approach. Trimble Unity helps airport owners, operators, and contractors build public trust by delivering better project outcomes while lowering the total cost of airport assets. The result is airport infrastructure that is safer, more reliable, more cost-effective, and more sustainable.

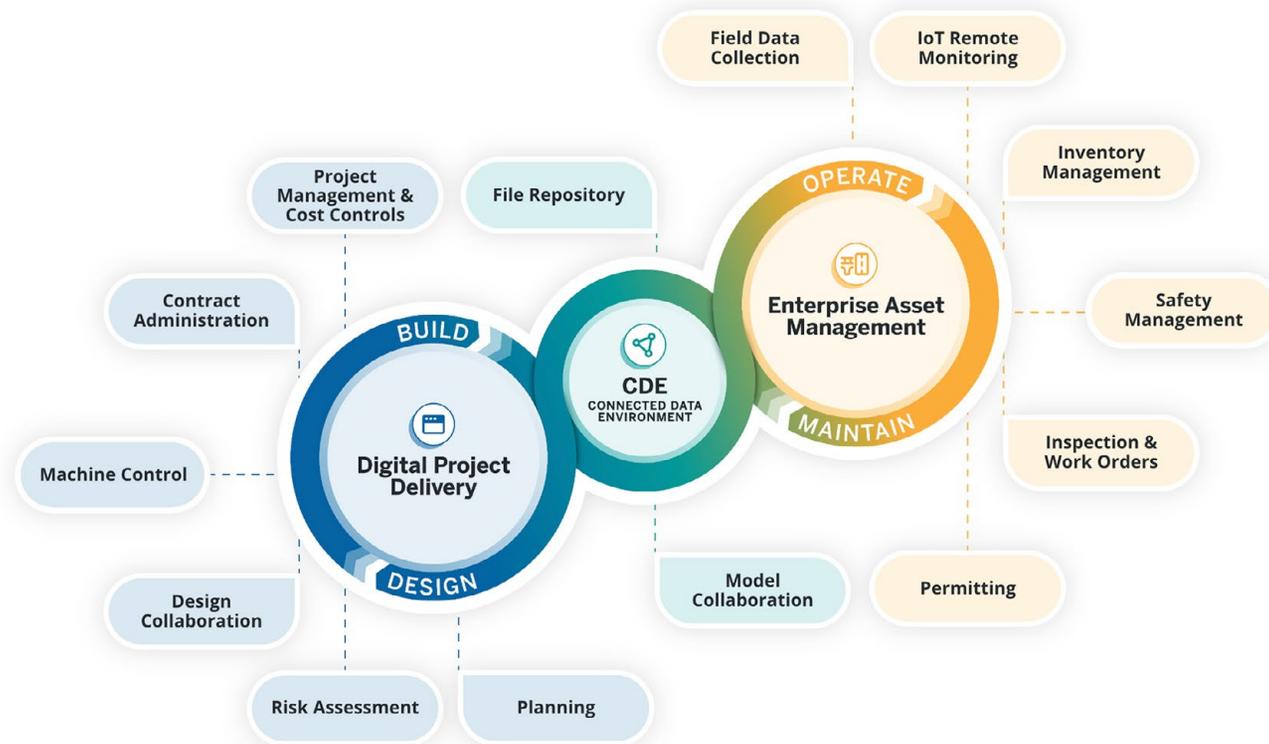




Trimble can deliver a complete asset lifecycle management solution implemented by more than 250 global partners specializing in supporting the transition to an asset-centric approach. We're different than other technology companies that exclusively serve the needs of just one stakeholder. Trimble helps to create an environment where project information can seamlessly flow between parties, **using technology to maintain momentum through data standardization and interoperability**. A particular focus is placed on the handoff between stakeholders and ensuring the optimal functionality and methods are in place to achieve the project's target outcomes.

Airports can solve multiple problems with one solution: The Trimble Unity Asset Lifecycle Management Solution provides end-to-end capabilities. We can also manage various projects in a multi-stakeholder environment.

## Trimble ALM Solution





# Digitally transforming the way airports work

## 01 Successful implementation of ORAT (Operational Readiness, Activation, and Transition) plans:

Trimble helps new and redeveloped airports take an integrated approach to managing the transition of a service or facility from project delivery into active operations. The International Air Transport Association (IATA) defines dozens of ORAT best practices, including “integrating new and existing systems,” a hallmark of effective asset lifecycle management.

## 02 Simplifying inspections with digitized workflows:

Trimble digital technologies support FAA 14 CFR Part 139, ICAO Annex 14, and NEPA 403 inspection compliance involving the examination of airfield assets, including lights, signs, pavement, navigational aids, security items, and more. Digitizing the inspection process benefits airport operators by reducing operating costs and mitigating airfield safety risks.

## 03 Manage safety and reduce risks using integrated solutions:

We provide a safety management solution that helps you meet FAA requirements to identify hazards, mitigate the associated risks, and report on **Safety Risk Management (SRM)** and **Safety Assurance (SA)** efforts. Federal grant funding is available for airports looking to procure safety management system software. Airports using Trimble digital technologies to help secure funding are now implementing projects to improve airport safety and compliance.



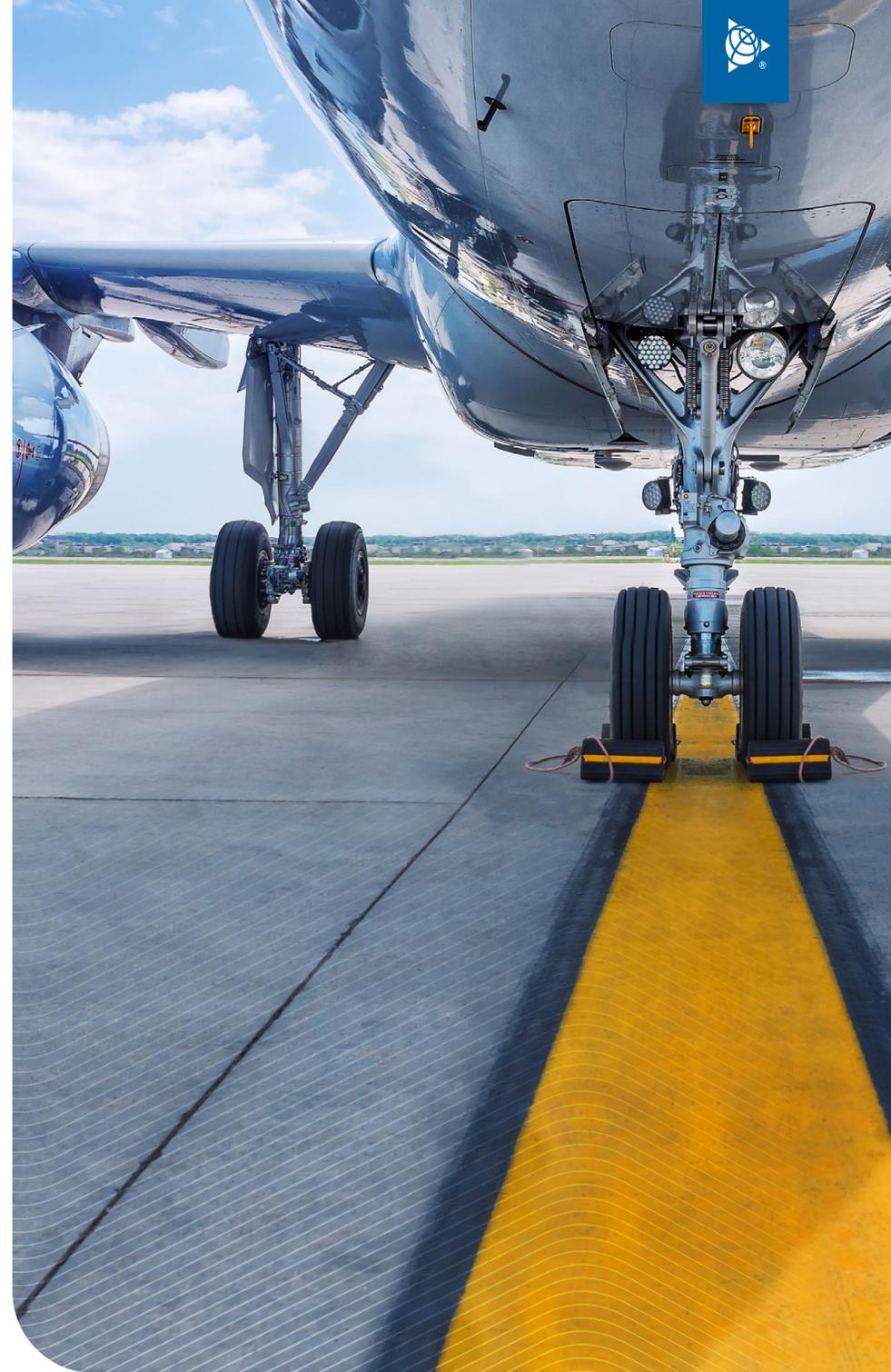
# Airport Asset Lifecycle Management



# Airport Asset Lifecycle Management

The Trimble Unity Asset Lifecycle Management (ALM) Solution connects all phases of the asset lifecycle — Plan and Design, Build, Operate, and Maintain — using a single source of accurate data across integrated workflows that streamline the handoffs from one team to another. This unified process improves efficiency and productivity while reducing waste and rework at every phase so that projects can be finished on time and within budget. In addition, this full-lifecycle perspective enables a proactive and coordinated approach to asset maintenance, with well-timed, cost-saving preventive actions that reduce the need for expensive, disruptive, significant repairs.

For many years, airport leaders and their business partners have made do with legacy paper-based processes and antiquated systems pieced together through disjointed workflows using multiple sources of often unreliable data. It's no wonder that these outdated methods and technologies have dampened productivity and driven up costs. Successful **airport asset lifecycle management starts with digitally transforming each phase of the lifecycle and connecting them in a seamless ecosystem** of integrated people, processes, and information. To support this transformation, interconnected digital technologies redefine each lifecycle phase.



## PLAN AND DESIGN

Digitized capital planning automates the process of coordinating stakeholders; maintaining historical, current, and potential planning data; and managing cash flow. With digital design, capital improvement project owners manage the design workflow from a single controlled data set: the 3D design model. The model automatically maintains version control for all design inputs and updates, and enables the owner to more easily track and process submissions and approvals.

Digital design also helps airport owners improve the execution of their ORAT plans because it allows them to integrate past, current, and predicted asset management information into the new design to drive a more future-focused design process.

## BUILD

By sharing a 3D design model with those who build from it—the contractor team—the owner helps optimize the design for real-world building conditions, technologies, and means and methods. Combining that building information modeling (BIM) information with digitized project management platforms eliminates data silos by enabling real-time tracking and visibility across the whole project. The owner can then better assess how changes will affect costs, schedules, and project quality.

Here, too, digitizing the management of the Build phase enables airport owners to more readily implement their ORAT plan, because they can rely on as-built data to inform the transition to an operational facility or service.

## OPERATE

Up-to-date, digitized asset information—from as-built documents to warranty details to BIM reference models—helps team members make better informed decisions to ensure assets perform optimally for their public. This also helps owners with future planning by enabling them to take information about asset performance into consideration for the next project.

## MAINTAIN

Using advanced analytics and predictive modeling, asset owners create optimized work plans to improve productivity and performance while maintaining assets more cost-effectively across their service life. Connecting maintenance information with other asset lifecycle data helps owners optimize all phases of an asset, from design through construction, operations, and maintenance.



# Why do airports need the Trimble Unity Suite?

Airport asset lifecycle management plays a pivotal role in **ensuring the airport can operate successfully** and minimizes adverse safety and economic impacts on the public.

The Trimble Unity Asset Lifecycle Management Workflow diagram below illustrates the efficiency and cost savings opportunities. The opportunity for the highest impact on TCO is the purple dotted line, showing that the earlier the asset data is collected in the lifecycle, the more significant the long-term impact on TCO reduction over time. In other words, by collecting data as early as possible, airports can use timely data analytics to optimize decision-making through all asset lifecycle phases, maximizing the lifetime value that the asset delivers. Airport officials estimate that the Trimble Unity Asset Lifecycle Management solution reduces reporting time by 30 minutes (0.5 labor hours) per daily report. Accumulated over a year, that equates to more than 545 labor hours in annual time savings on daily inspections alone. Annual FAA on-site inspections are much more streamlined, resulting in additional time and money saved.



Organizations that use airport asset lifecycle management technology solutions

save as much as

# 40%

on the total cost of their assets

while facilitating the safety, efficiency, and sustainability of their facilities and services.



# Key Capabilities of Trimble Unity Asset Lifecycle Management Suite

## 01 Digital Project Delivery

Digital project delivery is the use of digital data to plan, design, construct, inspect, and record as-built conditions throughout a construction project. With **digital project delivery**, owners build public trust by coordinating stakeholders and using reliable data to deliver projects on time and on budget. In addition, the resulting data—when carried forward to later phases of the asset lifecycle—empowers owners to manage their assets for better performance and cost-effectiveness, lowering the overall cost of ownership.

## 02 Enterprise Asset Management

Enterprise asset management is the ability to cost effectively plan, manage, and optimally maintain a portfolio of assets for maximum performance across the lifecycle. This means avoiding costly, disruptive repair projects by staying proactive with preventive maintenance—and in the process, increasing public confidence by ensuring asset reliability and longevity. For Trimble customers, a **GIScentric asset management solution** streamlines maintenance activities by integrating office-to-field to office workflows, enabling teams to improve both operational efficiency and asset performance.

## 03 Connected Data Environment

A connected data environment is a digital information platform that enables asset owners to accelerate productivity by getting high-fidelity data into the field through an open, 3D object-based collaboration environment. By centralizing data across the asset lifecycle, **Trimble connected data environment** eliminates the information gaps caused by legacy proprietary data formats and antiquated file-based systems. Multidisciplinary stakeholders have access to consistent, comprehensive, up-to-date information about the asset—from its design and construction history all the way to its projected future performance and maintenance needs.

# GIS-Centric Asset Lifecycle Management

Asset lifecycle management is effective only when airport organizations know their assets, including asset condition, attributes, and location.

A geographic information system (GIS) is critical for collecting and using this information. Using a GIS as the authoritative system of record, airport leaders can better visualize their public assets and the associated data, work activities, and business processes. **Trimble Unity** is the original and leading GIS-centric asset lifecycle management solution built exclusively on Esri ArcGIS®.

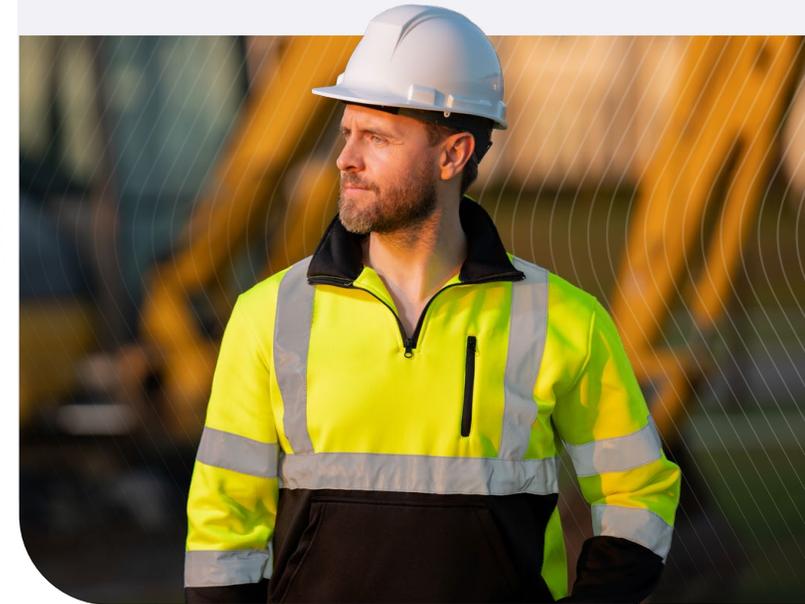
Together in one solution, Trimble and Esri ArcGIS empower airports to:

- Understand exactly where assets are located
- Establish and streamline workflows
- Visually track historical work activities
- Schedule preventive maintenance
- Gather real-time data on airport assets
- Create meaningful data visualizations and GIS-centric dashboards

While complete digital transformation may seem like a daunting long-term goal, airport organizations can take steps now to achieve that goal successfully over time. A critical first step toward digital transformation is to **adopt an organizational technology strategy** that supports the three crucial capabilities of airport asset management: Trimble extensive ecosystem of solutions and services provides these capabilities.

## USES AT AIRPORTS

- Operations & Maintenance (Part 139)
- Facility / Grounds / Fleet Maintenance
- ARFF
- Contract & Project Management
- Lease Space Tracking
- Inventory Management
- Asset Management
- Permitting, Land, Licensing
- Trimble Asset Platform (i.e., Trimble Unity Construct)





# Digital Project Delivery (DPD)

## Trimble Unity Construct

Trimble Unity Construct is a cloud-based, digital project delivery capability, part of Asset Lifecycle Management (ALM) solutions. It is a **construction management solution** for capital projects that improves outcomes by delivering trusted insights, improving process control, and reducing cycle times across the entire project and asset lifecycle. With Digital Project Delivery, airports can achieve capital project cost savings greater than 4%. Powered by e-Builder\*.

### \*e-Builder History

e-Builder was founded in 1995 by Jon and Ron Antevy, who were raised and formally schooled in the design and construction field. Their passion for the industry guided the company to produce a software solution designed explicitly for program and project owners. The company's roots and culture were deeply embedded and explicitly established for the construction industry. Just one year after it was founded, e-Builder made headlines when the Washington Suburban Sanitary Commission (WSSC) of Laurel, MD. WSSC became the first government organization to use the e-Builder solution for collaboration on capital construction projects. After 29 years, WSSC continues to use the e-Builder solution, which is now branded as Trimble Unity Construct. By 1997, e-Builder's construction project management solution was successfully implemented in over 30 states with users nationwide.



## CAPABILITIES

Trimble Unity Construct supports the following functionalities:

- **Risk Assessment:** Address risks proactively using actionable, real-time data.
- **Funding Allocation:** Make informed decisions to maximize the impact of your budget.
- **Right of Way Management:** Improve safety and save permitting and parcel acquisition time.
- **Design Collaboration:** Break down silos by connecting design and construction teams.
- **Constructible Model:** Enable seamless collaboration to increase safety and reduce waste.
- **Bidding:** Attract more qualified bidders in less time with lower costs.
- **Contract Management:** Build trust with reliable information and centralized document control.
- **Project Management:** Improve outcomes with real-time visibility across every project phase.
- **Cost Management:** Increase confidence with accurate forecasts and precise reporting.
- **Asset Handover:** Carry as-built data forward for operations and maintenance.

Today, over 450 active installations of the construction project management solution support more than 12,000 companies and over 200,000 users involved in capital construction planning, design, construction, and operations. While several industries use the e-Builder solution, the focus is on Government, Education, Healthcare, Utilities and Commercial markets. Trimble Unity Construct provides the same capabilities as, and is powered by the e-Builder solution.

Trimble Unity Construct is a premier software **platform designed to streamline project processes**, enhance collaboration, and optimize project management across diverse portfolios. Trimble Unity Construct empowers organizations to efficiently manage budgets, schedules, documents, and communication, ensuring successful project completion at all scales. In addition, as a dynamic solution, Trimble Unity Construct is equally accessible in both office and field settings and is supported with mobile applications for iOS & Android devices. It is equipped with robust analytical tools to aid managers in informed decision-making. Its seamless interoperability makes it ideal for maximizing digital capabilities and improving operational effectiveness.

**Trimble Unity Construct Technical Architecture:** Trimble Unity Construct is a web-based application hosted using cloud-based technologies. Trimble tiered design and technology stack provide data and services on demand via common internet browsers. Trimble Unity Construct is architected and built as a true SaaS system, using proven multi-tenant SaaS architecture patterns. Additional technical documentation is available on request.



# Enterprise Asset Management (EAM)

Trimble comprehensively offers two solutions for Enterprise Asset Management: Trimble Unity Maintain and Trimble Unity Permit.

## Trimble Unity Maintain

Trimble Unity Maintain is a GIS-centric enterprise asset management capability that helps airports proactively manage and maintain their infrastructure assets to optimize safety, cost-effectiveness, and performance. Built on Esri ArcGIS, Trimble Unity Maintain unifies airport asset data in a centralized asset inventory that supports a data-driven approach to operations and maintenance through seamless field-to-office-to-field workflows. Powered by AgileAssets\* and Cityworks AMS\*.

## Trimble Unity Maintain Technical Architecture

Additional technical documentation is available on request for all Trimble Unity Maintain products.





## Trimble Unity Permit

Trimble Unity Permit is a **GIS-centric permit, licensing, and land management solution** that helps airports manage community development, land use, and public infrastructure. Public portals, customizable workflows, and robust reports support the varying administrative needs across the airport organization. This digital solution helps reduce paperwork, eliminate manual errors, promote public visibility, and increase efficiency. Powered by Cityworks PLL\*.

Trimble EAM solutions provide the following land and airside capabilities in compliance with **FAA 14 CFR Part 139, ICAO Annex 14, and NEPA 403:**

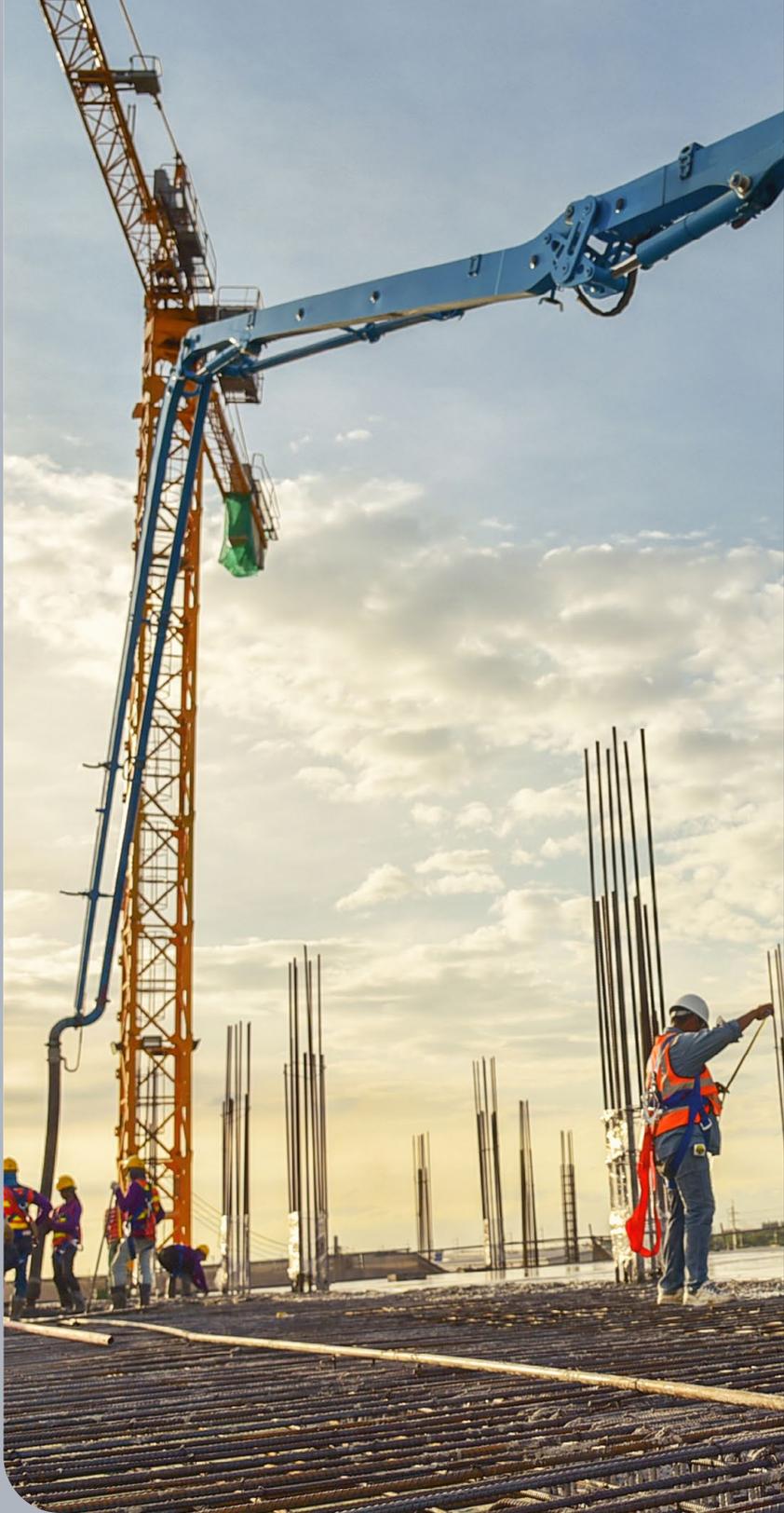
- **Safety Inspections:** Increase the accuracy and efficiency of safety inspections using digital and mobile capabilities.
- **Regulatory Compliance:** Ensure safety and compliance while saving time using connected data and automated workflows.
- **Operational Insights:** Boost efficiency with GIS-centric work plans, mobile capabilities, and seamless field-to-office workflows.
- **Maintenance and Service:** Streamline maintenance activities in the office & field.
- **Work Order Management:** Easily schedule work activities and track progress for a specific task, contractor, or project.
- **Work Crew Management:** Use public dashboards and portals to connect inspection crews, office staff, and customers with accurate data.
- **Emergency Response:** Ensure safety and mitigate risks while keeping customers informed.
- **Infrastructure Planning:** Manage processes in a hassle-free way while modifying multiple facilities.
- **Monitoring Materials:** Manage inventory and track materials and equipment data for runways, taxiways, lights, and signs.
- **Pavement Analysis:** Store, view, and analyze pavement condition data for runways.
- **Permitting:** Multi-tenant management while modifying facilities on the land and airside for crane management, etc.

## \*Cityworks History

Founded in 1986, Azteca Systems began as a consulting firm that provided cartographic mapping support to federal agencies. The company earned a reputation for GIS-centric solutions, and public works agencies began approaching the company for help with their asset management strategy. In 1996, the Cityworks software solution was born. The original and leading GIS-centric public Enterprise Asset Management (EAM) system leverages the power of Esri® ArcGIS®. Cityworks and ArcGIS help organizations empower GIS to work smarter and use location intelligence to improve infrastructure management and decision-making.

By 2008, **Cityworks AMS\*** (Asset Management Solution) had become a leader in the industry. By 2010, the company had expanded its solutions offerings by developing **Cityworks PLL\*** (Permits, Licensing, and Land). In 2015, the solutions were released as a web GIS-centric platform designed with various asset management and permitting apps, specialized ancillary apps, and a framework capable of efficiently integrating with other systems. In subsequent years, apps were developed to identify risk, build budgeting forecasts, and prioritize asset maintenance based on operational and analytical data. Today, the Cityworks solution is used by more than 650 of Trimble customers, including government entities at the city, county, and state levels. Capabilities of the Cityworks solution are now provided with Trimble Unity Maintain and Trimble Unity Permit.





## \*Agile Assets History

AgileAssets was founded in 1994 and has been a global leader for over three decades in supplying enterprise software solutions to help transportation agencies deliver safer, longer-lasting road networks and maximize the return on infrastructure investments. AgileAssets solutions have helped agencies save time and money by using advanced data analysis to improve decision-making, from strategic planning to day-to-day maintenance operations.

The result is that AgileAssets users may better manage the full lifecycle of their infrastructure assets—from bridges, pavements, and roadway assets to fleets, facilities, and more. AgileAssets solutions are currently implemented for over 60 of Trimble customers, which include 21 U.S. state DOTs plus agencies in 15+ countries on five continents. Over 50 percent of state-owned lane miles in the U.S. are managed using AgileAssets solutions. The AgileAssets client base extends from small to large agencies across various cultures and geographies. This demonstrates the solution's flexibility to meet every agency's unique challenges. The capabilities of the AgileAssets solutions are now provided with Trimble Unity Maintain.

# Connected Data Environment (CDE)

## Trimble Connect

Trimble Connect is a connected data environment that makes collaboration easy by streamlining workflows and enhancing project efficiency.

Trimble Connect™ is a **cloud-based document management system**, and Trimble Connected Workflows is a portfolio of capabilities, both product-based and service-based, that support organizations to **integrate processes and workflows across the asset lifecycle through the phases and across departments, disciplines, and in the asset lifecycle phases.**

Open and interoperable data and process automation are critical in improving efficiencies and reducing risks with a high availability of reliable information to support action and decision-making. Trimble offers connected workflow capabilities in a combination of self-service and full-service models. Self-service capabilities enable Trimble customers to provision, develop, configure, adjust, and deploy using a combination of standard Trimble product capabilities and customer-provided knowledge and skill sets.





In addition to standard Trimble product interactions, examples of self-service capabilities include the entirety of the Trimble API portfolio, open file formats, and [published API connectors and workflows](#). On the other hand, Trimble's full-service capabilities are available through a professional services engagement, taking advantage of [Trimble AppXchange](#), and/or Trimble Unity Construct AppXchange. These services provide a turn-key managed solution that connects any combination of compatible systems and devices, both on-premise or in the cloud, leveraging Trimble's extensive experience and expertise.

Trimble's partner ecosystem similarly offers connected workflow capabilities to extend with more third-party systems and devices broadly. Through Trimble and our partners, customers can use a self-service, full-service, or hybrid approach to support the entire asset lifecycle. The platform **supports both document and object-based workflows** for every type of file imaginable, including .dgn, .dwg and IFC BIM files. Powerful visualization capabilities enable users to access and use a 3D model in the field.

Trimble Connect is a portfolio of product- and service-based capabilities that support organizations in integrating processes and workflows across the asset lifecycle phases and across departments, disciplines, and teams. Open and interoperable data and process automation are key factors in improving efficiencies and reducing risks through the high availability of reliable information to support informed decision-making and action.

Trimble offers connected workflow capabilities in a combination of self-service and full-service models. Self-service capabilities enable Trimble customers to provision, develop, configure, adjust, and deploy using a combination of standard Trimble product capabilities and customer-provided knowledge and skill sets. In addition to standard Trimble product interactions, examples of self-service capabilities include the entirety of the Trimble API portfolio, open file formats, and [published API connectors and workflows](#).

Trimble's full-service capabilities are available through a professional services engagement, taking advantage of [Trimble AppXchange](#) and/or Trimble Unity Construct AppXchange. These services provide a turnkey managed solution that connects any combination of compatible systems and devices, both on-premise and in the cloud, leveraging Trimble's extensive experience and expertise.

Trimble's partner ecosystem similarly offers connected workflow capabilities to extend functionality with more third-party systems and devices broadly. Through Trimble and our partners, customers can use a hybrid approach — combining self-service and full-service models — to support the entire asset lifecycle.



## CAPABILITIES

- Connect design and construction and facilitate connected workflow processes.
- Manage QA/QC processes in the field.
- Use open APIs to connect to any data source.
- Manage models without data loss.
- Leverage interoperability with airport design and construction tools. Trimble Connect fully connects to key construction design tools from Bentley and Autodesk.
- Create and manage constructible models for civil construction.
- Manage design review processes across all design environments via task management.
- Make digital as-builts a seamless part of the asset handover process.
- Use the digital as-built as the as-maintained model (digital twin) to operate and maintain assets digitally via a 3D model.



# Trimble Unity Field

Trimble Unity Field is a configurable mobile solution that provides role-based, GIS-centric, and project-centric data collection workflows to connect construction, operations, and maintenance teams seamlessly.

This end-to-end mobile application extends the capabilities of the Trimble Unity asset lifecycle management solution suite into the field, enabling seamless office-to-field-to-office communication and teamwork.

Trimble Unity Field offers a fully integrated mobile solution that supports end-to-end asset lifecycle management. It enhances decision-making by providing real-time data and reducing travel time and rework, potentially saving up to 40%. The application simplifies administration, reduces costs, and eliminates the need for expensive, difficult-to-maintain customizations with its self-service configuration. It is compatible with any mobile device, including Microsoft®, Apple®, and Android™.

## CAPABILITIES

### **Integrated with Trimble Unity Construct for Digital Project Delivery**

Trimble Unity Field utilizes your configured workflows from Trimble Unity Construct for:

- Workflow status monitoring and approval
- Inspection
- RFI and issue management
- Daily reports
- Work assignments
- Drawing view and markup
- Change order management

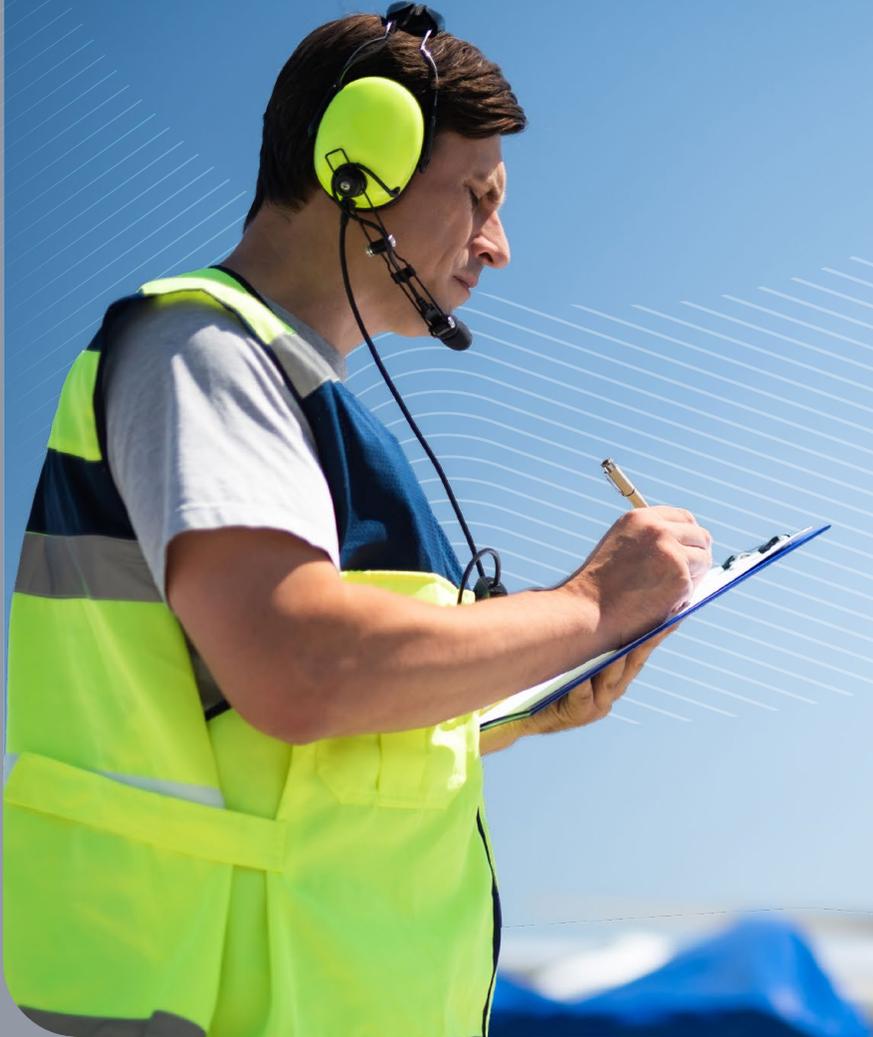
### **Integrated with Trimble Unity Maintain for Enterprise Asset Management**

Trimble Unity Field utilizes your configured workflows from Trimble Unity Maintain for:

- Inspections
- Service requests
- High-accuracy asset location
- Field data collection
- Work order execution
- GIS-based workflows
- Advanced Reporting and Analytics



# Services and Solution Support





# Professional Services

Trimble Professional Services are designed to support customers throughout their journey with the software, from **initial implementation to ongoing optimization**, to help organizations achieve their project and asset management goals and drive successful asset lifecycle management.

## IMPLEMENTATION SERVICES



Implementation services help customers seamlessly deploy the software within airport organizations.

## CONSULTING SERVICES



Consulting services offer expert guidance and strategic advice to customers seeking to improve their project management processes and maximize the value of their software investment.

## CUSTOMIZATION AND CONFIGURATION



The Trimble team of experts can customize and configure the software to align with the unique requirements of customers' construction projects and asset management.

## INTEGRATION SERVICES



Integration services help connect and combine different software applications, platforms, or systems to work together seamlessly and exchange data efficiently.

## TRAINING AND EDUCATION



Trimble adult learning experts provide comprehensive training and education programs to ensure users can use the software to its full potential.

## DATA MANAGEMENT AND ANALYTICS



Data specialists help customers manage their project data effectively and leverage analytics capabilities to gain actionable insights into project performance.

## RESIDENT CONSULTANTS



Resident consultants are Trimble staff members who work onsite at the airport to provide customers with day-to-day strategic and operational support to maximize the benefits of the Trimble solution.

## CHANGE MANAGEMENT



Professional Services teams assist customers in managing organizational change associated with adopting new technology and processes.





# Implementation Services

Trimble offers comprehensive implementation services to ensure a seamless and successful deployment of our software solutions for our customers.

Our implementation services are designed to help organizations effectively transition to Trimble solutions while maximizing their return on investment. Related services include configuration services, product training, managed services, and resident and dedicated consultants, who are Trimble staff members who provide customers with day-to-day strategic and operational support.

Trimble Construct adheres to a proven implementation methodology modeled after the five-phase project implementation approach recommended by the **Project Management Institute (PMI)**. Trimble teams excel in **adapting and configuring commercial-off-the-shelf (COTS) GIS-centric asset management solutions** to meet airports' specific requirements. Collaborating with industry experts and consulting firms, we maintain strategic, focused partnerships that enhance and drive our implementation capabilities.



# Landside and Airside Implementation Opportunities

Trimble Unity Asset Lifecycle Management Solutions suite is designed for land and airside use since it is an all-in-one solution.

Below are some key areas where airports can implement Trimble solutions that comply with FAA 14 CFR Part 139, ICAO Annex 14, and NEPA 403.

	Airside	Landside
Trimble Solutions	<b>Runways, Taxiways, Aprons, Utilities, Support Infrastructure, NAVAIDS</b>	<b>Terminals, Cargo, Control Towers, Transit, Office, Retail, Entertainment &amp; Support Buildings</b>
	Trimble Unity Construct (project management, cost control, contracts management)	Trimble Unity Construct (project management, cost control, contracts management)
	Trimble Unity Maintain (compliance reporting, safety and inspections, pavement management)	Trimble Unity Maintain (asset management, work order management, inventory management)
	Trimble Unity Permit (permitting, surveying)	Trimble Unity Permit (permitting, licensing, surveying)
	CDE - Centralized field management, creating and managing as-built models for performance tracking, 3D model collaboration	



# Case Studies



# Charlotte Douglas International Airport

Charlotte Douglas International (CLT) is one of the top ten busiest airports in the world.

## Modernizing with Asset Lifecycle Management

### PROBLEM

A 10-year, \$3.1 billion capital improvement program — initiated in 2016 — includes new terminal roadways, an expanded terminal and lobby, more gates, and a fourth parallel runway. The need to deliver these new assets successfully and operate them efficiently while continuing to maintain and operate its existing airport assets led CLT to look for ways to maximize effectiveness through digital transformation.

### TRIMBLE SOLUTION

CLT uses the Trimble Unity capabilities, including **Trimble Unity Maintain**, a GIS-centric enterprise asset management solution that supports maintenance operations, and **Trimble Unity Construct**, a digital project delivery software that helps manage the airport's capital improvement program. These solutions are playing a crucial role in the airport's success to date, helping to streamline workflows, eliminate data and communication silos, and foster cost-effective project and asset management.

### RESULT

Since adopting Trimble solutions, CLT has created more than 50 new processes that support a broad range of departments, and field crews successfully complete hundreds of inspections and work orders daily. These solutions help CLT **save time and money while improving its airport operations' safety and efficiency.**



Charlotte Douglas International Airport (CLT) serves over

**47** million passengers annually

and has over

**700** million daily flights



# Chicago Rockford International Airport

Chicago Rockford International Airport (RFD) is one of the fastest-growing cargo airports in the world. It also has an on-site aviation maintenance and repair facility.

## Streamlining Inspections and Reporting like most airports

### PROBLEM

RFD operates like a small city, complete with its infrastructure, facilities, and regulations that need to be managed and maintained. For years, the airport has used spreadsheets, paper-based forms, and an outdated legacy system to manage its assets and track FAA inspection reports. This time-worn approach resulted in communication silos, data backlogs, and time-consuming workflows.

### TRIMBLE SOLUTION

RFD adopted the **Trimble Unity Maintain** capability to help track compliance reporting and inspections, such as the daily Part 139 inspection reports, Notice to Air Missions (NOTAMS) reports, FAA 14 CFR airfield inspections, fuel inspections, perimeter check audits, TSA security audits, and more. Airport teams use Unity Maintain to support all asset management activities, including facility maintenance, mowing, and other preventive maintenance activities, with digitized work orders and service requests.

### RESULT

RFD staff members can access relevant data in one centralized digital environment and easily submit inspection reports. Digitized workflows **eliminate data loss and increase confidence in operational accuracy.**



“The data we can capture in Unity Maintain proves every day that the investment in Unity Maintain saves time and money; we have become less reactive and more proactive as an organization and have better efficiency and a greater understanding of our operation overall.”

— **Seth Nygen**, Operations Manager at RFD



# Savannah/Hilton Head International Airport

Savannah/Hilton Head International Airport (SAV) has been named one of the top airports in the U.S.

## Boosting Fieldwork Efficiency

### PROBLEM

SAV employees would come into the office, check a mailbox for daily assignments, fill out associated paperwork, head out to the field to complete the task, and return to the office to record that job as complete. SAV wanted to transition from an office-centric system to one that supported seamless office-to-field-to-office workflows using integrated mobile capabilities.

### TRIMBLE SOLUTION

SAV implemented the **Trimble Unity Maintain** capability and engaged Woolpert, a leading architecture, engineering, and geospatial consulting firm and Trimble business partner, to help with the process. SAV replaced outdated software systems to improve communication, workflow, and asset management.

### RESULT

Now, SAV workers receive and complete work orders digitally, by phone or tablet, while in the field. The **Trimble Unity** mobile app puts real-time information right in the palms of their hands.



“Trimble Unity Maintain has excellent capabilities in GIS integration, performance indicator reporting, visualization of work, tracking costs associated with work, project budgeting, and forecasting.”

— **Jessica Smith**, Savannah Airport Commission

“We were able to create and customize inspections critical to our operations. The entire airport staff touches the system in one way or another.”

— **Eric Risner**, Geospatial Project Manager at Woolpert



# Milwaukee Mitchell International Airport

Milwaukee Mitchell International Airport (MKE) is one of North America's top 10 medium-sized airports.

## Putting Part 139 Data to Work

### PROBLEM

MKE realized its Part 139 inspection data was valuable for more than FAA reporting requirements. This data also plays an integral role in the airport's asset lifecycle management strategy.

### TRIMBLE SOLUTION

MKE replaced its antiquated spreadsheets and logbooks with the **Trimble Unity Maintain** capability, a GIS-centric maintenance management system.

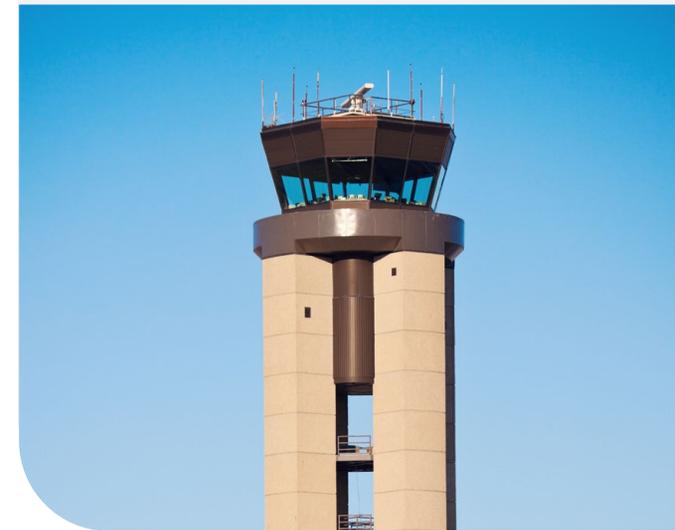
### RESULT

Work orders resulting from FAA inspections are now linked, allowing staff to track associated labor, materials, and equipment while managing open work orders from subsequent inspections. By tracking consistent data in a single geospatial database, MKE has gained new insights into its daily operations, enabling the maintenance team to identify trends better, prioritize projects, and adjust work schedules, material usage, and equipment utilization for **optimal cost-effectiveness and efficiency.**



We're able to collect information that wasn't even considered before, such as material use, who performed work, who is inspecting, who requested the work, and more. We've developed a much better way of communicating everything from outages to issues, and we can distribute accurate information quickly to the people who need it."

— **Timothy Pearson**, GIS Manager at MKE



# VINCI Airports

VINCI Airports is a leading global airport operator.

## Ensuring passenger safety and mobility

### PROBLEM

VINCI Airports needed an enterprise asset management system as part of its long-term plan to keep its airport infrastructure equipped to handle projected increases in air travel to surpass its pre-pandemic level of more than 255 million passengers per year at VINCI-operated locations.

### TRIMBLE SOLUTION

VINCI Airports achieved a milestone in its performance-driven operations strategy by deploying the **Trimble Unity Maintain** capability to manage and maintain airside pavements at more than 20 airports in six countries, with a plan to expand the use of the solution to its entire airport network.

### RESULT

Using Unity Maintain, an enterprise asset management capability, VINCI Airports applies advanced analytics to **improve the efficiency, timing, and cost-effectiveness** of its airfield planning and maintenance.

The airport operator now uses the Unity Maintain solution at airports in Belgrade, Serbia; Porto and Faro, Portugal; Phnom Penh and Sihanoukville, Cambodia; Puerto Plata, Dominican Republic; Salvador, Brazil; and Kobe, Japan; and more than a dozen other locations globally.



VINCI Airports  
has developed a  
network of

**70**  
airports  
in **12 countries**



# Northwest Arkansas National Airport

Northwest Arkansas National Airport (XNA) is Arkansas's largest commercial, public, and general-aviation airport by land area.

## Launching Asset Lifecycle Management

### PROBLEM

As airports modernize to meet regulatory demands, XNA is taking bold steps to improve safety, efficiency, and cost savings by digitizing its operations. XNA is successfully expanding its strategy from focusing on Part 139 compliance to a focus on digitally-enabled asset lifecycle management.

### TRIMBLE SOLUTION

XNA implemented **Trimble Unity Maintain** to improve accuracy, collaboration, and decision-making by centralizing all airport asset data. This increased productivity and efficiency by connecting office-to-field-to-office workflows for inspections and maintenance.

### RESULT

XNA successfully launched a proactive strategy for asset lifecycle management, which **improved project outcomes and lowered total asset ownership costs.**



“The end goal is to create an airport asset management system where data exists in one space, helping save time and money, as well as streamline work activities.”

— **Thane Seeley**, Deputy Director of Operations and Maintenance, XNA



# Hong Kong International Airport

Hong Kong International Airport (HKIA) is one of the busiest airports in the world. Before the COVID-19 pandemic, the airport served 74.7 million passengers.

## Significant Risk Reduction

### PROBLEM

HKIA faced the challenge of transforming the airport into a three-runway system (3RS) from the existing two-runway system (2RS). The 3RS project is more than a new runway. Its scale is almost equivalent to building a new airport next to the existing one.

HKIA wanted to avoid the traditional, siloed mindset usually associated with major infrastructure projects. With the scale of this initiative and the very tight schedule constraints, HKIA needed an innovative construction approach that would enable the organization to maximize productivity through improved project workflows.

### TRIMBLE SOLUTION

This type of project delivery is a fairly new, unique process, particularly for a project of this size. HKIA consulting partner DBM Vircon, in collaboration with AECOM, turned to Trimble to help connect stakeholders across each project phase with the digital construction solutions **Trimble Tekla Structures and Trimble Connect**.

### RESULT

The collaborative process implemented by DBM Vircon and AECOM has resulted in HKIA having a much clearer understanding of the status of the structural design, particularly the connection designs and the architectural construction detailing. The transparency afforded by HKIA access to Trimble Connect provided **greater certainty with tender quantities, resulting in significant risk reduction**.

We're most proud of the teamwork and collaboration displayed by all project stakeholders, particularly in the wake of the major disruptions and dislocations caused by the COVID-19 pandemic. Tekla Structures and Trimble Connect played a major role in enabling this collaboration."

— **Simon Schmitt**, Business Manager  
at DBM Vircon



# Teams



# Partner Network

Trimble's network of certified partners with deep airport knowledge and domain expertise is available to provide professional services in project management, system integration, configuration, and implementation of Trimble technology for airport asset lifecycle management.

Applying industry best practices and localized know-how, Trimble partners, such as the LaGuardia Redevelopment Program, help ensure the airport's successful business outcomes and return on investment. To be certified to implement Trimble technology, Trimble partners undergo a stringent vetting, onboarding, and training program that includes specialized skill-building in database design, development, configuration, data creation, collection, and analytics.







# Key Trimble Subject Matter Experts



**Billy Lang**  
*Sales Engineering Manager*

Billy Lang is a Sales Engineering Manager at Trimble, focused on helping airports optimize airfield operations and facilities management through GIS-centric Asset Lifecycle Management software. He partners with airport stakeholders to deliver solutions that improve visibility, streamline work execution, and support regulatory compliance across airside and landside environments. With deep experience in geospatial technology and infrastructure workflows, he enables teams to manage inspections, maintenance, and capital planning within a spatial context—ensuring alignment with FAA requirements and driving operational resilience across airport systems.



**Lisa Ruggieri**  
*Vice President, Professional Services*

Lisa Ruggieri is a results-oriented leader serving on Trimble's AECO owner-focused leadership team as Vice President of Professional Services for owner and public sector technologies. She is also an executive sponsor for the Trimble Women's Network. She brings over 30 years of experience in the technology sector, leading and scaling project management offices and professional services organizations with an emphasis on developing best business practices to transform how organizations work and adopt technology. Lisa led her team to implement, onboard, and enhance the use of Trimble Unity Construct PMIS technology for organizations that focus on infrastructure development and maintenance. Lisa is a senior point of contact to address escalated Professional Services needs and issues.



**Shawn Silbor**  
*Vice President – State & Local Government*

Shawn Silbor is a construction technology industry veteran passionate about helping customers leverage software to improve capital project delivery and asset management. He was an integral part of e-Builder's disruption of the Owner market that scaled the business to a \$500M valuation. As a Trimble sales leader for State and Local Government, Shawn leads high-performing sales teams, bringing the Unity portfolio of products to the market. Shawn led the sales efforts for several Trimble airport clients, including JFK International, LaGuardia, and Newark Liberty International.



### **Nassim Saoud**

*Trimble Consulting Director*

Nassim Saoud is an architect serving as the Trimble Consulting Director for the EMEA region, with 20 years of experience as a core member of Trimble Consulting (ex Gehry Technologies), an AECO consulting and service company that is part of Trimble's Owner and Public Sector. He is responsible for the global delivery of consulting projects and direct client engagements for strategic roles related to technology adoption, project execution, integrated delivery, and digital transformation strategies for various projects across different world regions. He has developed extensive experience and expertise in delivering world-class airports by focusing on the convergence and deployment of digital strategies, integrated processes, and federated data to deliver complex and large-scale infrastructure projects successfully. He is also engaged as a guest professor for the use of BIM in the delivery of projects in design and engineering universities.



### **Pascal Laumet**

*Director of International Sales and Operations*

Pascal Laumet is a Director of International Sales and Operations for Trimble. With over 20 years of experience in infrastructure enterprise asset management software, he has served on all sides, leading large-scale DOT implementations in Wyoming, North Carolina, New York, and Texas, among others. He also led the Unity Maintain product team before focusing on the international expansion and growth of the Unity Maintain customer base. He has secured and led the implementation of the Unity Maintain airport solution for the largest airport operator in the world (VINCI Airports, with 23 airports onboarded to date), as well as airport customers Qatar Airways and Melbourne.



### **Pascal Devynck**

*Business Director – International*

Pascal Devynck has 35 years of experience in international business and channel partner management. He is an International Business Director at Trimble. He supports the EAM sales and ecosystem, including Unity Maintain and Unity Permit for the Airport segment in the EMEA, APAC and LATAM territories. Currently, he leads airport projects in Italy, Thailand, Mexico, and Brazil.





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### North America

**Shawn Silbor**

Vice President – State & Local Government  
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### Other Continents

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