eagle
TECHNOLOGY

Integration of GIS with CMMS & EAM System

WHITEPAPER

Introduction

A growing number of Airports, Warehouses, private and public utilities today are implementing Computerized Maintenance Management Systems (CMMS) and Enterprise Asset Management (EAM) systems. In 2019, the CMMS software market was worth $0.92 billion. By 2027, it is expected to reach $1.77 billion, increasing at a compound annual growth rate (CAGR) of 8.58% during 2020-2027.

This developing interest in asset and maintenance management is driven by the multiple benefits that an EAM system and a CMMS offer in terms of prolonging the useful life of maturing infrastructure, and assets.

On the other hand, a geographic information system (GIS) offers exceptional capabilities and flexible licensing for applying location-based analytics to infrastructures such as airports, roadways, and government facilities.

Both GIS and CMMS systems complement one another. For companies looking to increase the return on investment (ROI) on their maintenance efforts, integrating a GIS with a CMMS platform is an expected headway that can considerably improve the capabilities of their maintenance crew and give them the best results.
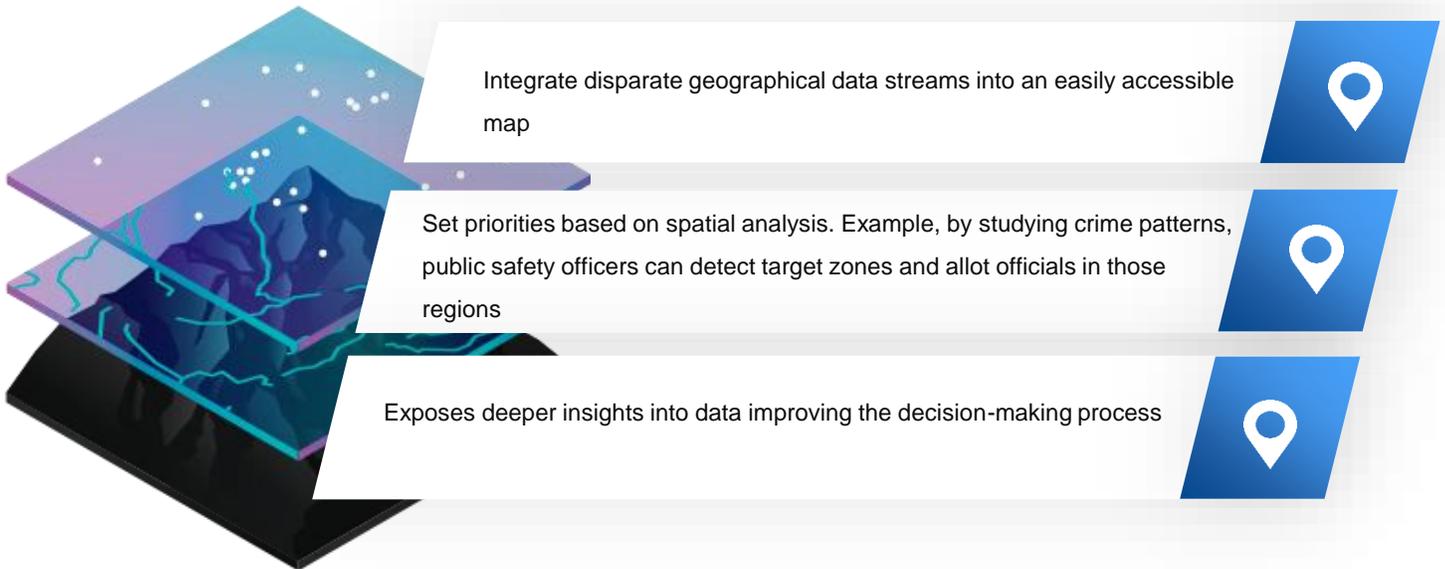
This paper takes a closer look at the definitions and benefits of GIS, EAM, and CMMS. Moreover, it sheds light on some important considerations associated with the integration of GIS with an EAM system and CMMS. It also presents a powerful solution to streamline the integration process.

What is a Geographic Information System (GIS)?

A GIS is designed for collecting, managing, evaluating, and storing geographical data. Embedded in the science of geography, it evaluates spatial location and arranges information layers into visualizations via maps and 3D scenes.
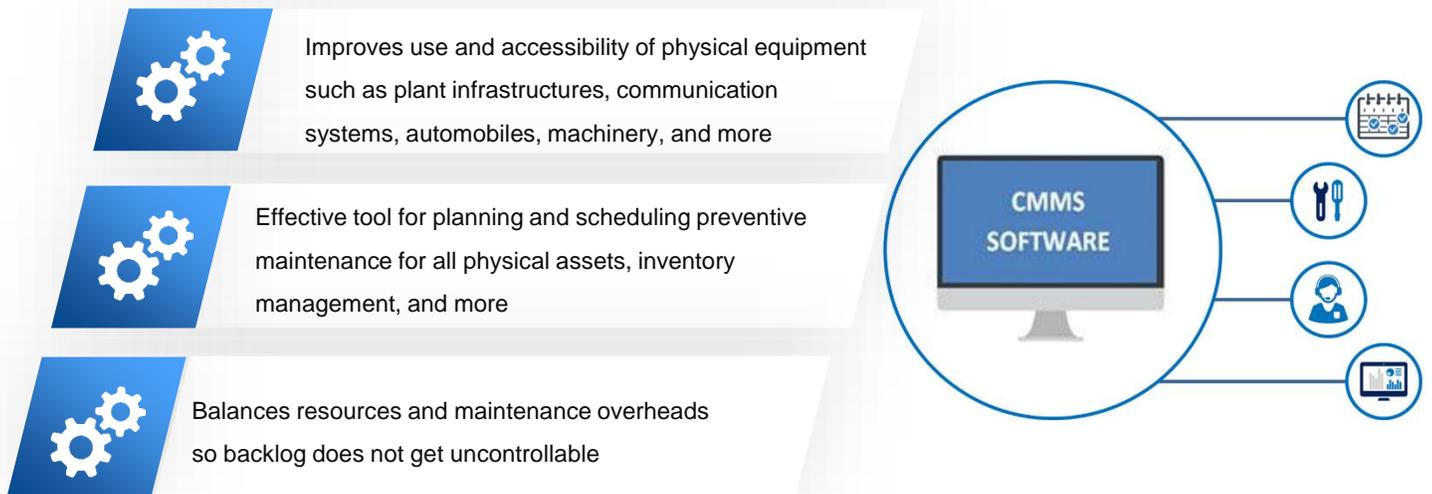
Benefits of GIS

Integrate disparate geographical data streams into an easily accessible map

Set priorities based on spatial analysis. Example, by studying crime patterns, public safety officers can detect target zones and allot officials in those regions

Exposes deeper insights into data improving the decision-making process

What is a Computerized Maintenance Management System (CMMS)?

A CMMS is a platform that maintains a computer database of information about a company's assets and maintenance operations. This data helps maintenance staff fulfill their tasks efficiently and to support the managers with making informed decisions.
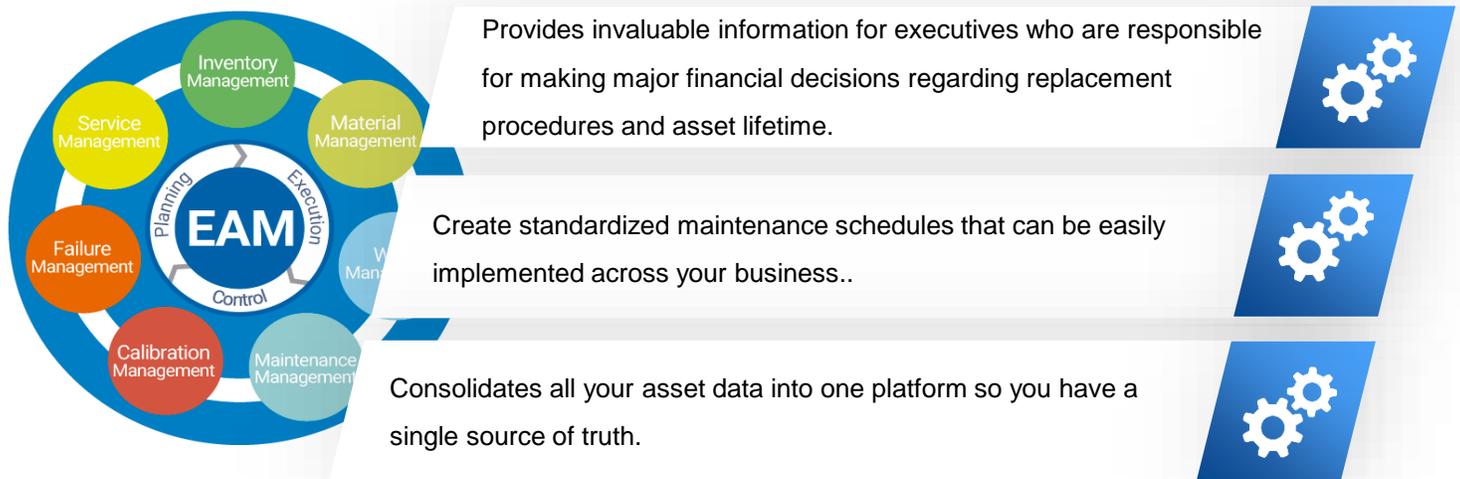
Benefits of CMMS

Improves use and accessibility of physical equipment such as plant infrastructures, communication systems, automobiles, machinery, and more

Effective tool for planning and scheduling preventive maintenance for all physical assets, inventory management, and more

Balances resources and maintenance overheads so backlog does not get uncontrollable

www.eaglecmms.com

What is an Enterprise Asset Management (EAM) System?

EAM is an arrangement of software, systems, and services that help maintain and control operational assets and equipment. The purpose is to improve the quality and consumption of assets during their entire lifecycle, boost productive uptime, and decrease operational expenditures.

Benefits of EAM

Provides invaluable information for executives who are responsible for making major financial decisions regarding replacement procedures and asset lifetime.

Create standardized maintenance schedules that can be easily implemented across your business..

Consolidates all your asset data into one platform so you have a single source of truth.

The Need for Integrating GIS with CMMS & EAM Systems

GIS can considerably improve a CMMS and EAM system by offering the ability to access, use, display, and manage spatial data. Unlike printed maps, it gives maintenance crews the ability to include an up-to-date and precise map with work orders, which can significantly increase their efficiency in the field.

For example, in utility companies, there are two major kinds of assets:

- Geographically distributed assets like water, electrical, or gas distribution systems
- Concentrated groups of assets like power generation stations or water treatment plants

Geographically distributed assets are extended over large spaces where maintenance team communication is challenging, and travel time is a huge cost. Whereas concentrated asset groups have multiple asset types that need several different types of maintenance activities. Using an EAM system or CMMS that is integrated with a GIS can improve the maintenance and management of geographically distributed facilities or utility networks.

Traditionally, companies with both geographically distributed utility networks and concentrated groups of assets often have to implement two asset and maintenance management systems – one for the utility network and another for the treatment facilities. By integrating GIS with CMMS, you no longer have to implement two maintenance management systems.

Some other benefits of integrating GIS with CMMS are:

- Utilities can leverage their investment in spatial information by getting access to other spatial information such as street maps, census information, property data, consumer information, and other utility systems information.
- It provides maps of the utility, helping you detect problems and locate system facilities and customers.
- You can leverage network analysis and tracing to find other connected facilities.
- It helps route teams to work locations and decreases travel time.
- You can use it to support scheduling and assigning maintenance work to teams that are in a particular area.

How to Integrate GIS with EAM System and CMMS

Before you integrate a GIS with an EAM system and CMMS, keep the following considerations in mind:

- Ensure that integration of GIS with EAM and CMMS software doesn't affect file transfers, including ETL (Extract, Transfer, and Load) transfer.
- Once the maintenance schedule is completed, see whether or not the aggregation of the different classes of assets is being performed conveniently. This is essential particularly when you have to carry out capital improvement planning.
- Consider the number of levels to which the assets can be disintegrated. This means the number of subsets that the assets can be classified into. For instance, some old systems allow decomposing assets into four levels only. However, for better analysis and scheduling, you may have to decompose the assets into more levels.

Streamline GIS & CMMS/EAM Integration with Proteus MMX ArcGIS

Often, a CMMS/EAM system and GIS platform go hand-in-hand as they complement each other. However, without effective data visualization, it can become challenging to completely understand how daily business processes impact a company's bottom line.

With Proteus MMX ArcGIS, maintenance managers can collect, consolidate, and utilize the complex information that defines facilities and operations. It is equipped with contextual tools that give you greater insights by effectively visualizing and analyzing your data. You can seamlessly collaborate with your maintenance crew and share critical data via maps, apps, dashboards, and reports.

Moreover, an effective maintenance management solution is crucial to establish a secure, compliant, and dynamic workplace. Proteus MMX ArcGIS can enhance your operations by providing a consolidated, cloud-based, and flexible system to oversee and stay connected with your asset and inspection workflows. You can reduce expensive machine downtime and move to preventive maintenance by combining it with Total Productive Maintenance (TPM).

Examples of actual product at Airport Facility

How Proteus MMX ArcGIS Can Help

Key benefits of using Proteus MMX ArcGIS:

- You can locate assets, capture data, and track patterns in your data to make better decisions and take quick action.
- It improves coordination and operational efficiency by bringing together data from across the business to streamline operations.
- With smart maps, you can optimize the management of infrastructure and assets.
- Maintenance managers can acquire data immediately.
- It improves communication and accelerates results - from facility maintenance to engineering and wayfinding.
- You can track performance in multiple areas over time to specify whether your company is operating within acceptable levels.
- It manages, captures, and tracks inspection, maintenance, and repair initiatives for containing cost and reducing risk.

To learn more about Proteus MMX ArcGIS, or to schedule your free product demo or 90-day trial, visit our website www.eaglecmms.com, call 262-241-3845, or e-mail sales@eaglecmms.com.

About Eagle Technology, Inc.

Named Top Performer in the "Winter 2020 Maintenance Management Software" category, Eagle Technology, Inc. has nearly three decades of experience working in several industries across the US.

As a leader in the development and sale of CMMS and EAM solutions, we partner with the best resources to provide our customers with outstanding functionality. Our CMMS "Proteus MMX" offers the ability to boost productivity, control cost, and maintain compliance all from the web and mobile-enabled software.

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Resources and Further Reading

Follow the links below for further information about Eagle Technology and Proteus MMX ArcGIS.

1. Eagle Technology Website: https://www.eaglecmms.com/

2. Eagle Technology Products: https://www.eaglecmms.com/products/

3. Eagle Technology Case Studies: https://www.eaglecmms.com/case-studies/

4. Eagle Technology Industries: https://www.eaglecmms.com/industries/

5. Eagle Technology White Papers: https://www.eaglecmms.com/whitepapers/

6. Eagle Technology Podcasts: https://www.eaglecmms.com/eagle-podcasts/

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10. Eagle Technology Free Demo: https://www.eaglecmms.com/free-demo/

For any additional information, trial, or podcast requests: https://www.eaglecmms.com/contact-us/

Image Sources:

Esri: https://www.esri.com/en-us/what-is-gis/overview

Verified Market Research: https://www.verifiedmarketresearch.com/product/cmms-software-market/

FierceElectronics: https://www.fierceelectronics.com/components/enterprise-asset-management-market-rise