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# THE MAGEC™ LFM SYSTEM

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## General Description

The MAGEC™ Leased Fleet Management System is a cloud-based, database-controlled system for managing fleets of vehicles and equipment ranging in size from tens to thousands of units. It is designed to support a business environment that consists of:

- An unlimited number of Vehicles
- Online portal from which Managers and Supervisors can access pertinent information
- Ultra-powerful online search capability on every field of data in any database
- Complete online management of all processes with login security control
- Self-Auditing database
- Full detailed Audit Trails of all database modifications
- Automatic Database Backup with Backup & Restore Management built in
- Online help for every screen, function, and data field

...and more.

It features:

- Automatic notifications of optimal time to roll over leases on each vehicle
- Automatic alerts of potential problem events
- Automatic notification of time to renew registrations, imminent warranty expiration, safety recalls, preventative maintenance, etc.
- Server-based storage of all critical documents

...and much more.

The system is built entirely on a powerful SQL database platform that provides extremely fast performance of very complex processes within a normalized database architecture. While that may have little meaning to many not familiar with database architecture, it means that the system was designed from the ground up for maximum flexibility and capability to manage extremely complex situations.



## Background

The system was designed and developed by Al Lee & Associates, Inc. (ALAI), a company that has decades of experience with very large-scale computer application systems operating in Fortune 1000 and Fortune 500 companies. Such computer systems must be extremely robust in their capabilities and thorough in their handling of data in order to manage multi-billion dollar business operations. Unlike business systems in smaller companies, these systems can not fall back on manual processes or scrutiny to fill in for holes in their designs. The sheer volume of transactions dictates that the computer system must be capable of handling all conditions ably and reliably.

The MAGEC™ Leased Fleet Management System is built to those standards; but it is intended for use by any size operation managing a fleet of a few Vehicles up to thousands of vehicles.

- Matsushita Electric Company (Panasonic)
- Intel Corporation
- Control Data Corporation
- Winn-Dixie
- Swiss-American Securities
- Mary Kay Cosmetics (both US and Canada)
- Follett Book Publishers
- Kubota
- Riceland Foods
- Pier 1 Imports
- Lone Star Steel
- Belden Wire
- Pirelli
- General Board of Global Ministries UMC
- Welfare & Pension Administration Seattle
- Finlay Fine Jewelers

## Cloud-Based Advantages



The entire system operates from our application and database servers. That means that there is no installation of software needed on the computers that will be used to access or manage the system. It also means that there is no need to apply regular software updates because the most current version of everything is always on the server, centrally managed by us.

The system can be used from any computer or device that can access the internet, no matter where you are. There is no need to designate certain computers for the system. Your login identity gives you access from anywhere via computer, tablet, or smart phone.

The same can be said for your Field Supervisors. They have access to their portals from any device that can access the internet. Login security controls their access as well. They are able to see their up-to-the second status at any time. But, they see only their own realm, other information is not revealed to them.



## Online Help

Every screen and function has a Help button that you can click to bring up a comprehensive help display. Every screen field that you can enter data into has a brief field-level help narrative that pops up if you click the field help icon beside it. A diagram of the database helps you to understand the relationships among the various entities (Vehicles, Drivers, Leases, GPS Devices, etc.) and also serves as a main menu allowing you to simply click on the icon for any entity to access the functions to list, display, update, and add items to it.

## Database Audit

One of the features this system has in common with the very best large-scale computer systems in the largest companies in the world is a Database Audit feature. Errors can creep into even the best possible computer system and detecting errors in the Database is a very difficult chore. On larger systems it is usually more than just difficult, it is impossible to do manually. Thus, the best systems include an automated Database Audit process that periodically scans over the entire Database looking for illogical or erroneous situations.



The MAGEC™ LFM system includes an industrial-strength automated Database Audit that does a thorough and comprehensive check of the entire Database to find any problems—particularly any that could result in incorrect management decisions. This Audit process is automatically done immediately before any critical process and also may be done at any time by an authorized manager.

## Backup & Restore Management

Managing database backups is a critical function in any serious computer system. The MAGEC™ LFM System provides powerful and easy-to-use features built-in. When any critical process is initiated, such as a mass update to the database, a backup is automatically triggered. Thus, if some major problem were to occur, or some mistake be made, it would be easy to “undo” the entire process by simply restoring the database to its condition immediately prior to that process. Also, any authorized manager can initiate a full database backup at any time. All the backup files are stored on the server in a compressed format that both saves space and makes it more difficult for an unauthorized person or robot to use the data in the backup files. However, the backup files are also automatically downloaded to the manager’s computer in uncompressed format so that they could not only be used as input to the built-in restore facility; but also to any standard database utility. The built-in Restore facility even automatically captures a full backup of the database prior to doing the restore so that the manager can “undo” the restore operation if he/she decides that doing *it* was a mistake.



## Hacking Detection

In today's world of super-clever computer hackers, having the best front-end security to block access to the database is just not enough. In a world in which the Pentagon and Sony Corporation cannot prevent their databases from being hacked into, it is important for you to also have a way to detect what might have been done to the database to enrich some clever hacker or competitor at your expense. The **Database Audit** process is exactly that sort of back-end robotic detective.

Because the Database Audit checks the entire Database looking for any inconsistency or situation that might result in improper decisions, it makes it extremely difficult for a hacker (assuming they got past the front-end security) to make the necessary modifications to the Database tables, which are related to one another in specific ways, to escape detection.

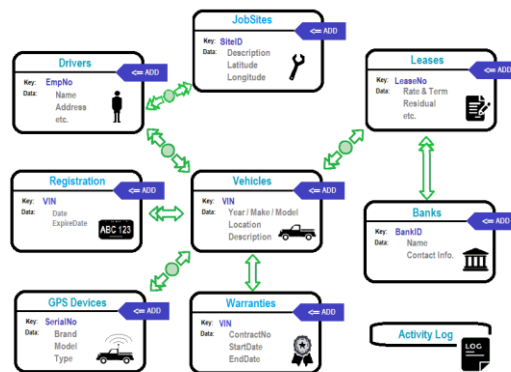
The automatic **Audit Trail** feature logs every change to data in the database in detail. It can be instrumental in detecting fraudulent entries, correcting innocent errors made by users, or recovering from a disaster when used in conjunction with the **Automated Database Backups**.

Even if the hacker manages to pose as an authorized manager to make modifications, every change to the database is logged into a permanent **Activity Journal**.

While perfect protection may not be possible, we can make it so difficult that the thief will likely just go look for someplace else that is easier to steal from.

## Relational Structure

Another feature the system has in common with the best computer applications in giant companies is its relational database architecture. That is simply a way of designing the database to be able to handle a very large number of complex relationships in a straightforward manner. For example, the business problem we address in this system involves the relationships among Vehicles, Drivers, GPS Devices, JobSites, Leases, Banks, and more. The relationships among these entities can change constantly as employees leave and are replaced, vehicles are replaced, new vehicles are added, and so forth. The modern relational database architecture enables the system to handle those changes rapidly and reliably. It deftly handles complex relationships and a virtually unlimited number of vehicles, drivers, and so forth.





## Document Storage & Retrieval

The system provides for online storage of critical documents related to Vehicles, Drivers, Registrations, Leases, and more. The documents are catalogued for easy location and retrieval. They can be viewed or printed to paper by any authorized user at any time. Because they are catalogued, the system can also detect any missing documents so that the users can locate them and upload to the database. This greatly reduces the reliance on paper-based filing systems which are far less reliable and secure.

## Search & Find Capability

With hundreds or thousands of Vehicles, Drivers, Leases, Warranties, Registrations, and more to keep up with, it is important that you have powerful search and find capabilities available for all data. MAGEC LFM includes very user-friendly, but robust, search capability that is built on the already-strong SQL facilities with a layer added on top of it to make it easy for even a novice user to effectively do complex searches, produce reports, and extract data to a spreadsheet or other software.

## Route Optimization



MAGEC LFM includes a very powerful and effective route optimization feature that will plan routes for up to 81 stops. It produces optimal paths approaching from any of 16 directions and allows the driver to specify a starting point (their home or office, usually) from which they will approach the route and to skip any number of sites for a particular day's run. It produces an itinerary that can be printed or viewed online. It can produce optimized route

plans based on site locations with no human input required—but, also allows you to override specifications when you believe you could improve on its choices.

## Flexibility

The MAGEC™ LFM system was developed using a Relational Database Architecture and a proprietary Rapid Application Development system owned and developed by ALAI. Together, they make the system highly flexible and modifiable. New features can be added in much less time than would otherwise be possible.