



Wisconsin Department of Transportation

eMV PARTNER

2021 NASCIO State IT Recognition Award Nomination

Category: Business Process Innovations

Project Initiation: August 2017

Project Completion: April 2021

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Executive Summary

In April 2021, the Wisconsin Department of Transportation (WisDOT) launched the final phase of the eMV **P**rocessing **A**pplications **R**enewals and **T**itles with **N**ew **E**lectronic **R**esources (PARTNER) system. The eMV PARTNER system is the result of a decades-long intention and a multi-year project to completely transform the business processes via which motor vehicles are titled and registered in the State of Wisconsin.

The eMV PARTNER system is a comprehensive, streamlined, modern, one-stop portal to process all third-party sales and registration of motor vehicles in the state of Wisconsin. Users at dealerships can use the web application itself to process transactions or use one of many national vendors' software suites to connect to the eMV PARTNER API. In addition to creating streamlined processes for dealerships, eMV PARTNER also supports new consolidated electronic processes for all the following users as well:

- financial institutions for lien processing
- salvage inspectors for junking vehicles
- owners of fleets of vehicles can renew registration for multiple vehicles with a few clicks
- emissions inspectors can print temporary plates without special printers.

Looking back, the WisDOT was among the first state agencies in the nation to begin to use electronic processes for motor vehicle titles and registrations in the 1980s. As technology advanced since that time, the WisDOT has been a technological leader by continuing to enhance their business processes with enhancements and new functionality.

In 2017 the eMV PARTNER project was kicked off, and WisDOT engaged NIC Wisconsin (NIC WI) to collaborate on a transformative new design to drastically transform and improve their customers experience and usage of the system. At the same time WisDOT staff and NIC WI developed an innovative vision to help remove barriers to communication with their users from the point of sign up and contracting all the way through the daily messages that users will see informing them of important events or news.

By leveraging an Agile approach, WisDOT has been able to refine its requirements based on new information from partners to make sure that eMV PARTNER satisfies users' needs. Further, the Agile approach has allowed WisDOT to launch components of the system since very early in the development process until the final phase was launched earlier this year. This phased approach enabled WisDOT to deploy a new fully-automated electronic sign up, registration, and contracting component that allows many of the thousands of users to migrate successfully while the critical business functions to process titles and registrations were still under development. This process ensured a smooth and successful migration of users to the new system with minimal disruption as the users were able to use the new features as soon as they were deployed.

Since initial implementation in August 2019, eMV PARTNER has processed over 3.3 million vehicle transactions. In April 2021 alone, it processed over 75,000 title transactions plus almost 70,000 registration transactions.

Idea

The WisDOT's idea for the eMV PARTNER system was to completely overhaul and modernize the decades-old business processes used to title and register motor vehicles in the State of Wisconsin by utilizing advances in digital government. This goal aligns with many of the State CIO Top Ten Priorities: designed with digital government at top of mind to provide citizens with a modern and optimized way to process third party vehicle sales in Wisconsin. WisDOT embarked on this project to use innovative technologies to replace outdated legacy systems at a low cost to WisDOT and citizens by partnering with NIC WI through the State's eGovernment Program.

Starting in 2005, Wisconsin offered individual dealerships and other related businesses electronic processing for titles and license plate registrations, which became required in 2007. Electronic lien processing was added in 2010. However, as these solutions were added independently over time, the efforts to maintain and support these systems became increasingly difficult as the functionality expanded while the technologies aged. Business needs grew and evolved over time, but the systems lost pace with the shift in users' expectations and the constant need to adjust these systems to accommodate new legislation, new or updated policies, and innovations in the market.

Alongside the electronic processing described above, WisDOT program staff had developed a patchwork of complex and often confusing processes, documentation, manual reviews and notifications that were needed outside the electronic processing functions. Over time, WisDOT identified the following needs that were unmet in some way by their existing solutions:

- Process to sign up and renew organizations was manual, slow and prone to error
- No way to verify user knowledge of rules and requirements prior to processing
- Cardboard temporary plates were difficult to manage and track
- Desire for better tracking and logging of user actions
- Users found coded user messages difficult to understand, and systems required development and deployments to change them, making them difficult to update
- Lack of a modern API and other automation made it too difficult to add and support more vendors
- Existing payment processing was handled outside the system using manual processes that were complex and time-consuming

To formally begin the project in 2017, WisDOT and NIC WI reviewed the business processes and applications in use at the time to identify opportunities to leverage emerging technologies. As a result of this investigation, WisDOT staff established the goal of creating an efficient web-based one-stop shop with streamlined self-service business processes related to vehicle sales, lien processing, fleet renewals, and various other transactions regularly processed by WisDOT. Further, WisDOT sought to increase security and compliance with applicable processing guidelines.

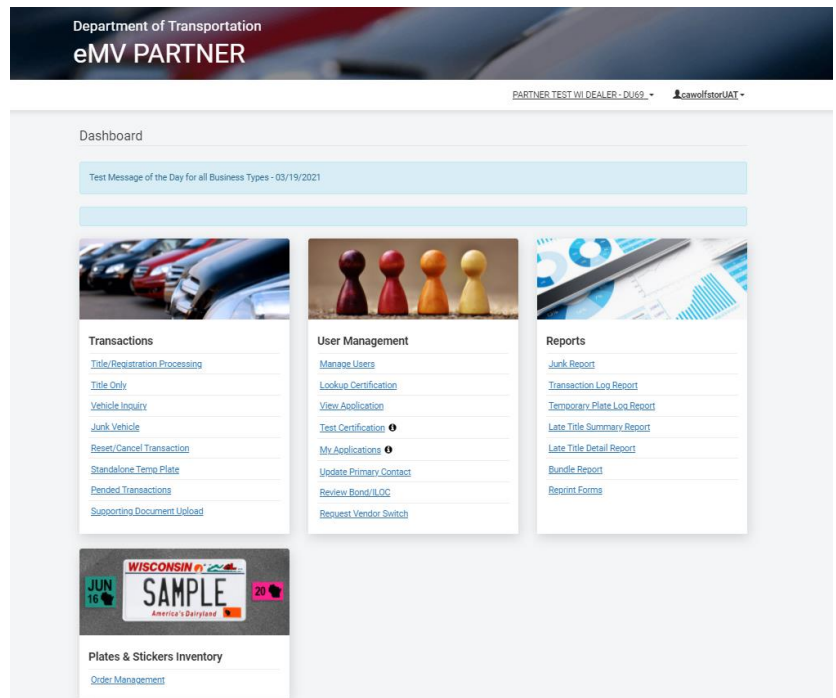
For example, some of WisDOT's business processes were not available electronically or were able to only be partially completed online. In short, many transactions were paper-based and required customers to print and mail forms to WisDOT staff for manual processing, data entry, and maintenance of electronic vehicle records data. Looking for improvements, WisDOT designed eMV PARTNER with 100% online user sign up and set up with minimal DOT effort for new organizations. Seeing the potential

in the new electronic business processes, WisDOT added the ability for the to ensure adherence to processing guidelines and statutes by periodically requiring users to pass certification tests to use certain workflows.

In addition, eMV PARTNER was also designed with numerous self-service functionalities that allow the WisDOT to respond to user feedback in real-time without the need for additional development or any deployments. This includes allowing staff to display targeted customized banner messages to user groups, to edit error messages to give clearer feedback on processing transactions, and to create and edit information bubbles to direct users to processing guidelines on the WisDOT's website.

eMV PARTNER was also designed to go beyond improving existing business processes with two brand new pieces of electronic business processes that have had significant cost and time savings for DOT and dealerships. Electronic document upload capabilities in eMV PARTNER have had a dramatic impact on efficiency for DOT and costs for dealerships. Prior to implementing this feature, dealerships were mailing supporting documentation for vehicle sales daily, and DOT was scanning in those documents. WisDOT ensured that eMV PARTNER empowers these users with the ability to scan and upload documents directly to the WisDOT's electronic file system with just a few clicks.

The second brand new electronic business process in eMV PARTNER that has reduced costs allows dealerships to electronically order plates and stickers in the application. Previously, dealerships sent orders for license plates and registration stickers via email or fax. The new eMV PARTNER process has reduced WisDOT's fulfillment time to a quarter of what it was previously. Moreover, this process has been even further streamlined in eMV PARTNER with a license plate and registration sticker auto-ordering feature that tracks stock and usage trends and automatically creates orders for dealerships and DMV Service Centers when their inventory drops below configurable thresholds. Importantly, the auto-ordering functionality has eliminated the need for tracking stock at individual locations and cuts down on fraud, waste, and abuse.



Implementation

The project was kicked off in 2017 leveraging a collaborative Agile approach between WisDOT and NIC Wisconsin. Requirement-gathering was approached using this iterative methodology. High-level system functionality (such as Sign-Up, Certification, and Lien Processing) were broken up into large sections and prioritized. This enabled the team to deliver sign up and contracting functions in 2018, a full year before the actual title and registration processing functions would be made available in 2019.

eMV PARTNER is built using responsive design on .NET, using high-availability servers.

WisDOT and NIC WI built in WisDOT and customer feedback throughout the process. A piloting process was used for external vendor connections to improve the process for future vendors. The project also used a phased approach to deliver value iteratively to user groups, here is a summary of the key phases.

- August 2019: Phase 1 - Standard Title & Registration
- September 2020: Phase 2.1 – Dealership Plate and Sticker electronic ordering
- October 2020: Phase 2.2 – Dealership electronic document upload process for all transactions
- April 2021: Phase 2.3 and Fully Implemented – Plates and Stickers Smart Ordering for all DMV Service Centers and Dealerships

eMV PARTNER was a joint effort between NIC WI and various WisDOT departments, including Dealer & Agent Section, Bureau of Information Technology, Special Handling Section, License Plate & Postal Service Section. Various 3rd party vendors, dealerships and user groups were engaged for feedback and helped to pilot the brand-new application. WisDOT worked with their teams and customer bases to ensure users were trained, onboarded, and excited to begin using a brand-new system

Various technical resources and subject matter experts at WisDOT and NIC WI worked to bring this project to fruition. eMV PARTNER is a transactionally funded application which helped to keep costs to the state low while creating a modern solution for end users. eMV PARTNER was built using responsive .NET framework, the application is hosted in the state data center on high availability servers. The application is scanned and updated annually to ensure accessibility compliance

Impact

eMV PARTNER has completely transformed the way cars are sold and processed by WisDOT in the state of Wisconsin. This modern application has consolidated the various transactions for dealerships into one easy to use application, which have had dramatic time and cost savings for businesses and citizens of Wisconsin. The efficiencies created by increased electronic processing, self-service functionality, new reporting tools have had a dramatic impact on WisDOT. The design of the application has increased the security of citizen data, and helped to identify and limit fraud, waste, and abuse.

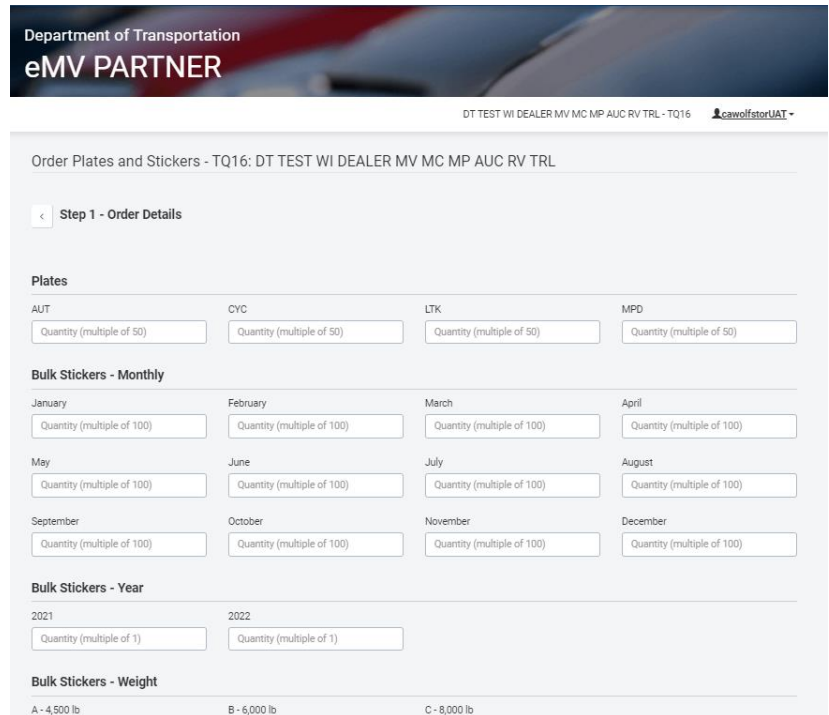
Every day, thousands of users from key industries in the State of Wisconsin use the eMV PARTNER system, Including dealerships, financial institutions, and even grocery stores and gas stations. Without reliable, efficient, accurate, and secure title and registration processing, there would be a significant impact to citizens lives and state economy. In fact, more than 5,000 businesses and tens of thousands of users interact with the eMV PARTNER application every day to process transactions related to vehicle title and registrations for the State of Wisconsin. The system successfully processes over 100,000 transactions per month and has already processed well over 1 million transactions since initial phases of the project launched in late 2019.

Increased electronic processing – along with the launch of eMV PARTNER, all third-party transactions were required to be completed electronically through the application, which eliminated errors and processing time that go hand-in-hand with paper forms being mailed to WisDOT. eMV PARTNER also

allows many more transactions to be processed electronically including heavy vehicles, creation of temporary plates, out of state registrations, and others. Below are a few functionalities offered in eMV PARTNER and an overview of the impact they have had on WisDOT and Wisconsin businesses and citizens.

- **Order and Auto-Ordering Plates & Stickers**

Prior to implementation of this workflow dealership and DMV Customer Service centers were emailing or faxing orders for plate and sticker stock, and fulfillment was a long manual process for WisDOT. eMV Partner created online ordering, and order fulfillment that has reduced time WisDOT spends on each order by a quarter of what it was. Plates and stickers online ordering and auto-ordering have helped to reduce fraud waste and abuse by tracking actual stock dealerships have and maximizing shipping costs by giving WisDOT the ability to check inventory across all plates and sticker types.



- **Electronic Document Upload**

When vehicles are bought and sold in the state of Wisconsin, dealerships are required to send copies of relevant paperwork to WisDOT. In October 2020, eMV PARTNER provided dealerships a streamlined UI solution to upload scanned documents directly to WisDOT's document management system with all relevant metadata. This modern solution has had a dramatic time and cost savings for both dealerships and WisDOT – dealerships no longer have to worry about packaging and postage costs, and WisDOT has cut scanning and document review time to a fraction of what it previously was.

- **Self-service Functionality**

WisDOT & NIC WI concentrated on identifying areas where efficiency could be gained by building more self-service functionality for WisDOT and end-users. While designing eMV PARTNER both parties identified areas that support staff spent time supporting customers and functionalities that require deploys and code changes for simple tasks. Third party users have a variety of self-service functionality in eMV PARTNER. They can sign up, fill out applications, upload documents required for processing (Bond/ILOC, business licenses, and others) and be approved for processing in Wisconsin without ever talking to a WisDOT staff member. Users

have the ability to add and remove staff members and grant them different permissions. Users can request to switch vendors processors via the application and have user roles, certification and documentation moved on the day they switch occurs. WisDOT has a suite of functionality to adjust to customer needs in real-time, these include – user role management, error message editing, information bubble functionality, certification test management, etc. eMV PARTNER also has several reporting tools to determine how the system is being used and to audit users, without require laborious database queries and exports.

- **Increased Security**

eMV PARTNER incorporated an enhanced security measures to protect citizen data and prevent fraud and abuse. An increased number of user roles were created to ensure that users groups have access to functionality that aligns with their job responsibilities rather than a one size fits all approach. Search and inquiry functionality has been streamlined to only provide access to data that a customer has provided during a transaction. Additional security measures have been built such as universal suspension, logging to create a trail of user history, and application monitoring.

The screenshot shows the 'eMV PARTNER' interface for 'Manage Thresholds - Organizations - TS22: ZIMBRICK INC'. It includes a 'Terminal ID' field with a 'Required' label and a 'Search' button. Below that is a 'Months of Inventory' field with a 'Required' label, a 'Save' button, and a value of '4'. There are two tables: 'Plates' and 'Stickers'. The 'Plates' table has columns for Plate Type, Full Stock Qty, Low Stock Qty, and Current Qty. The 'Stickers' table has columns for Sticker Type, Full Stock Qty, Low Stock Qty, and Current Qty.

Plate Type	Full Stock Qty	Low Stock Qty	Current Qty
Automobile	528	165	560
Light Truck	39	10	232
Moped	0	0	0
Motorcycle	0	0	0

Sticker Type	Full Stock Qty	Low Stock Qty	Current Qty
A - 4,500 lb Sticker (Bulk)	2	0	100
B - 6,000 lb Sticker (Bulk)	49	9	78
C - 8,000 lb Sticker (Bulk)	3	0	94
January Monthly Sticker (Bulk)	98	0	100
February Monthly Sticker (Bulk)	125	1	88
March Monthly Sticker (Bulk)	163	9	168
April Monthly Sticker (Bulk)	177	161	218
May Monthly Sticker (Bulk)	1	1	291

eMV PARTNER is transitioning to maintenance mode, as the goal of developing a modern, secure, one-stop application for dealers to manage vehicle sales in the state of Wisconsin has been achieved. However, both WisDOT and NIC WI understand that technology and citizen needs are constantly evolving. To ensure eMV PARTNER remains impactful, useful, and up to date monthly meetings and releases are ongoing, as well as a plan to regularly assess the landscape and processing needs in Wisconsin.

As a result of this program, every aspect of how the organizations and their users who interact with the state’s Title & registration processing was completely transformed. User experience was a key focus during the design process, and workflows and notifications were incorporated to provide guidance to users for each step, aimed at drastically reducing support. To reinforce this work, online resources were provided, showing many of the most common screens a user needs to interact with. For examples, please see this page: <https://wisconsindot.gov/Pages/dmv/dlr-agents/dlr-ttl-reg/emvpartner.aspx>.