

December 2019

RESEARCH PROJECT TITLE

Midwest Cross-Jurisdictional Image
Verification

SPONSORS

Iowa DOT Bureau of Investigation and
Identity Protection
(InTrans Project 16-583)
U.S. DOT Federal Motor Carrier Safety
Administration

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CTRE

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The mission of the Center for Transportation Research and Education (CTRE) at Iowa State University is to develop and implement innovative methods, materials, and technologies for improving transportation efficiency, safety, reliability, and sustainability while improving the learning environment of students, faculty, and staff in transportation-related fields.

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Facial recognition software and interstate data sharing and coordination can help states identify and prevent cases of multi-jurisdictional commercial driver's license fraud.

Objectives

This project aimed to ultimately improve commercial motor vehicle safety through the following:

- Prevent cross-state commercial driver's license (CDL) fraud among the four participating states
- Establish a replicable model that could be used by or expanded to other state driver's license agencies (SDLAs) for nationwide, multi-jurisdictional, fraud detection and prevention

Background

Facial Recognition Technology

Facial recognition (FR) is a biometric software application that can assist with identifying a specific individual in a digital image or across multiple images by analyzing and comparing facial features.

FR helps state departments of motor vehicles (DMVs) identify fraud and theft and correct clerical errors, among other benefits, by comparing applicants' photos to other driver's license application photos, booking photos, etc.

Illinois first began using FR to review driver's license applications in 1999, and the technology has since become widely used by DMVs across the United States. As of 2015, more than 40 states used FR.

Midwest Cross-Jurisdictional Image Verification Project

In 2015, the Iowa Department of Transportation (DOT) Motor Vehicle Division (MVD) received a Federal Motor Carrier Safety Administration (FMCSA) CDL Program Implementation Grant to initiate the Midwest Cross-Jurisdictional Image Verification project.



Thousands of CDL applicants were screened among four states

The Iowa DOT was the lead agency for the project, with Illinois and Nebraska as the original partner states and South Dakota joining later.

Before the project was initiated, all four participating SDLAs used IDEMIA's (formerly MorphoTrust's) Biometric Identification (BI) platform for FR. FR enabled each state to identify, flag, and prevent potential driver's license fraud within its respective jurisdiction.

However, no collaboration existed among the four participating SDLAs to cross-check and detect CDL identity fraud that occurred across state lines. The BI platform was extended to enable the communication and exchange of data with cooperating entities, facilitating the cross-jurisdictional effort.

Image sharing among states began incrementally. Iowa and Nebraska began sharing images in July 2018, and Nebraska and South Dakota began sharing images in October 2018. The project was fully implemented, with images being shared among all states, in December 2018.

Project Scope

As part of the Midwest Cross-Jurisdictional Image Verification project, the Iowa State University (ISU) research team was responsible for the following:

- Document the resources and workflows of the four participating SDLAs and all project-related efforts and impacts
- Evaluate the amount of cross-jurisdictional fraud uncovered

Research Description

In the early stages of the project, the research team gathered information from each of the four participating SDLAs regarding their use of FR to identify fraud. This information included staffing, core functions, probe image sources, daily review practices, priorities, general workflow, and baseline statistics.

After interstate collaboration began, each participating SDLA was asked to record information regarding their activities, workloads, and fraud cases. Because the four states began sharing information at different dates, each state provided this information for a sample period during implementation. Moreover, the information provided by the states was at different levels of completeness.

To supplement the self-reported information and provide a frame of reference, each state also provided standard "external" reports automatically generated by the FR system.

The research team also participated in two major project-related events. In June 2016, IDEMIA sponsored a Midwest Multi-State CDL Screening Summit to discuss the CDL applicant screening process. The overarching goal was to minimize the changes that the project might impose on existing agency procedures and initially estimate the potential changes in workload.

In July 2017, the four participating states organized a Multi-State Facial Recognition LEAN event to develop a standard approach for sharing information across all states, establish a business practice to minimize delays in investigation and license issuance, and develop a working memorandum of understanding (MOU) for a multi-state information sharing and investigation process.

Key Findings

- All participating states found the ability to check applicants against other states' databases to be the greatest success of the project. States are now capable of detecting fraudulent applications across state lines.
- Through interagency data sharing, multiple clerical errors have been corrected, and both possible and confirmed cases of CDL fraud have been identified.
- The communication and cooperation among states in identifying fraudulent applications uniformly and securely was also found to be a success.
- The image databases against which applicant photos were checked naturally became larger, leading to the identification of additional potential fraud cases and thus increased workloads. Lack of staffing was consistently considered the biggest challenge.
- All participating states reported increased workloads. Iowa, Illinois, and Nebraska reported that their workloads increased slightly, while South Dakota reported that its workload increased moderately.
- In addition to working a greater number of cases, all states spent time and effort on communication and information exchange.
- In addition to the costs of staff time, additional project costs included initial investment in an FR system, system maintenance and upgrades, and the computational and communications infrastructure to support both FR and cross-jurisdictional data sharing.
- Although communication and cooperation among the four states was successful, developing uniform processes and effective communication practices during information exchange was considered challenging.

- Iowa and Nebraska reported no changes in their internal workflows, while Illinois and South Dakota changed their workflows to prioritize external leads.

Conclusions

- The Midwest Cross-Jurisdictional Image Verification project demonstrated that four SDLAs can successfully communicate and exchange data to systematically identify possible CDL fraud involving multiple agencies.
- The project demonstrated the importance of interagency cooperation and agencies' dedication to the effort. Without the commitment of all agencies involved, the technological benefits of cross-jurisdictional FR cannot be realized.
- Agency staff were also critical to the project's success. The most extensive staffing issue is the increased burden on staff to clear daily leads and address possible cases of fraud. This increased workload should be considered when expanding cross-jurisdictional efforts to more agencies.
- Even if no fraud had been discovered during the project, an implicit benefit of the collaboration may exist in confirming no cases of fraud for the well over 100,000 CDL applicants screened during the project.

Implementation Readiness and Benefits

The cross-jurisdictional project was implemented successfully and can be expanded to include other states or used as a model for other interstate collaboration efforts.

The benefits of cross-jurisdictional collaboration include the value associated with correcting clerical errors and the impact of identifying and preventing different types of fraud.

The FR system used by the participating states is scalable in terms of the number of probe images and participating agencies. The system is also designed to work with systems from other vendors, which could facilitate the inclusion of agencies not using the same product as the four SDLAs involved in this project.

With a larger image database containing images from additional states, the FR system would become more robust in terms of identifying fraudulent applications, and records would become more accurate through correction of clerical errors.

However, if additional staffing resources are not allocated, increasing the number of available comparison images with data from additional states would likely increase workloads and possibly delay response times.