Mobile Driver's License Study

2016 Report

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Virginia Department of Motor Vehicles

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Executive Summary

The Virginia Department of Motor Vehicles ("DMV") conducted a proof of concept of a mobile driver's license ("mDL") from July to September 2016 to determine the feasibility of allowing customers to access DMV issued mDLs through their own electronic devices. DMV partnered with Canadian Bank Note Secure Technologies ("CBN") and provided 252 customers with mDLs, which could be used at 15 businesses selling age restricted products in the Richmond Metropolitan area.

The proof of concept demonstrated that providing mobile driver's licenses and other electronic credentials is technically feasible. DMV was able to provide driver information in a format which allowed it to be quickly shared with retailers. The proof of concept also showed that DMV could provide a credential with less than all of the fields normally printed on a driver's license, allowing only truly necessary information to be displayed during a transaction. But the proof of concept also showed that there was room for improvement if DMV moves to a more permanent solution. For example, many retail locations suffered from bad network connections, making it difficult for retailers to verify the mDL. Nonetheless, surveys at the end of the proof of concept showed that customers were mostly satisfied with mobile driver's licenses, and that there is customer demand for an mDL.

As DMV moves forward from this proof of concept, the mDL team recommends that DMV proceed using an online model of mDL – that is, an mDL where the credential is verified online prior to being deemed acceptable. Although it may be challenging to implement in areas with limited cellular service, it is the best way to ensure that security is maintained and customers' personal information is adequately protected. To lessen the burden on relying parties, DMV could contract with third parties to provide the verification service, which would

also allow for solutions to be developed which will meet the needs of retailers, law enforcement, state agencies, and others who have a need to verify identity within their normal business practices. Finally, the mDL team recommends that DMV implement this program by working with retailers to create a statewide footprint in order to provide opportunities to use mDL in as many parts of the state as possible.

Background

It has become quite common to carry and present documents and credit cards on mobile devices, and one of the most common ways to do this is by using an electronic wallets. Apple and Google both offer electronic wallets, which allow users to store many documents and credentials in one convenient location. The types of documents which can be carried electronically seem to be only limited by the imagination – for example, there are now electronic versions of credit cards, gift cards, loyalty cards, membership cards, airline boarding passes, and even baseball tickets.

Driver's licenses and other government-issued identifications cards, however, have so far not been a feature of electronic wallets. Although the security of any credential is paramount, the security measures that are taken for an electronic driver's license would need to be very different than the measures taken for physical licenses because of the nature of the two products. For example, standards for a physical driver's license that require driver's licenses to have physical security features are not relevant to mDLs because they would not be "manufactured" in the same way as a physical driver's license. On the other hand, computer system security will likely play a much greater role in mDL security than it does for physical credentials today. Accordingly, mDLs will need to develop different security standards to provide for the unique

security needs of the document. The American Association of Motor Vehicle Administrators ("AAMVA")[1] is currently studying the standards which would apply to mDLs, and a report is expected in December 2016.

Iowa was among the first states to begin an mDL study, in 2014. Delaware began a license study soon thereafter. Alabama offers mDLs to persons eligible to renew their driver's licenses online, and Louisiana has passed legislation authorizing its Office of Motor Vehicles to issue mDLs, though none have been issued. A full list of states considering mDL legislation is included in Appendix A. DMV is aware that mDLs are being studied by the governments of the United Kingdom, the Netherlands, and the Australian state of New South Wales. Additionally, in September of 2016 the government of India began issuing mDLs through its Digilocker system. Digilocker is an Indian government provided electronic wallet which can also store vehicle registration cards as well as a myriad of other government documents.

History of the Project

DMV partnered with CBN to complete a study on the feasibility of an mDL.[2] A project team was formed with representatives from DMV's Driver Services, Information Technology, Governmental Affairs, Legislative Services, and Strategic Management Services. Work began in the summer of 2015 and continued through the spring in order to prepare for the proof of concept. A complete list of project team members is listed in Appendix B.

DMV staff identified two key use cases for mDLs. The first was the retail use case – e.g. when a person buys an age restricted product, such as alcohol, lottery tickets, or tobacco, and is

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[1] AAMVA is an organization that represents motor vehicle administrators in the United States and Canada. Its work includes the creation of model policies and best practices on topics of interest to the motor vehicle administrator community.

[2] CBN is DMV's vendor for the production of physical driver's licenses.

asked to show identification to prove that they are of the legal age. The second is the law enforcement use case – e.g. when a person is pulled over by a police officer and asked to show identification. DMV originally planned for the proof of concept to encompass both use cases, and met with both retailers and law enforcement officials to begin work. Following discussions with both groups of stakeholders, the decision was made that the proof of concept should focus on the retail use case. Staff continued work on the law enforcement use case and a demo was provided to law enforcement in July 2016; however, the law enforcement use case was not made available to the public during the proof of concept.

A key component which DMV wanted to test as part of the retail use case was the ability of mDLs to provide only limited information. A physical driver's license is required by Va. Code § 46.2-342 to contain the license number, the licensee's full name, date of birth, address, photograph, description of the licensee, and signature. Although this information helps to accurately identify the individual presenting the license, it also means that all of the information is displayed to whomever needs to see the license when it is used to verify a licensee's information, which has the potential to lead to misuse. A retailer usually needs some of this information to complete the transaction, but rarely needs all of it. For example, a retailer selling alcohol needs to know that the buyer is over 21 and that the person presenting the license is its rightful owner, but there is arguably no need for the retailer to see the person's address or the exact date of birth. Therefore, as will be explained in more detail below, the retail use case was designed to minimize the release of personal information.

The mDL team felt that it was important to allow customers to test mDLs in real world conditions, so DMV partnered with a number of retail partners in the Richmond area. A natural retail partner was the Virginia Department of Alcoholic Beverage Control ("ABC"), the retailer

of distilled spirits in Virginia. ABC operates retail stores throughout Virginia, including a number in the Richmond area, and agreed to be a partner in the mDL project. DMV also reached out to convenience store chains in the Richmond area which sell age restricted products such as beer, wine, tobacco, and lottery tickets. The Woodfin Company, which operates Pit Stop convenience stores attached to Exxon gas stations, agreed to be a partner in the mDL project as well. DMV also solicited a number of craft breweries with tasting rooms, and partnered with three of them to allow brewery patrons to use mDLs at those establishments. DMV also added two restaurants[3] during the proof of concept in order to test how it would work in a sit-down restaurant environment. Finally, during the proof of concept AAMVA held its Annual International Conference at the Williamsburg Lodge in Williamsburg, Virginia. DMV added Sweet Tea and Barley, a bar at the Lodge, as an mDL partner for the duration of the conference.

The Prototype

The prototype mDL was developed by members of DMV's IT team and CBN. DMV provided customers with a link to their mDL, which was hosted on CBN's servers, and customers followed prompts within the website to place a bookmark for the website on their phone.

For the study, CBN provided retail sites with tablets which were secured to only run a special application used for verifying the mDL. When a customer wished to buy something, he or she would open the mDL on his or her phone and use the tablet at the retail location to scan a quick response code ("QR code") on his or her phone.

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[3] Under Virginia law, licenses to sell alcohol are generally not available to bars which do not also serve food. The mDL test at these two restaurants was therefore also a test of how the system would work at bars.

Once scanned, the tablet alerted CBN servers, which in turn obtained the customer's information from DMV via a secure web connection. Once received, the CBN server used the information in the driving record to construct an mDL profile to send to the tablet. This record contained the picture of the driver, an indicator as to whether the driver was over the age of 18, a separate indicator as to whether the driver was over the age of 21, and a date and time stamp. No customer birth dates were shared with the retailer.
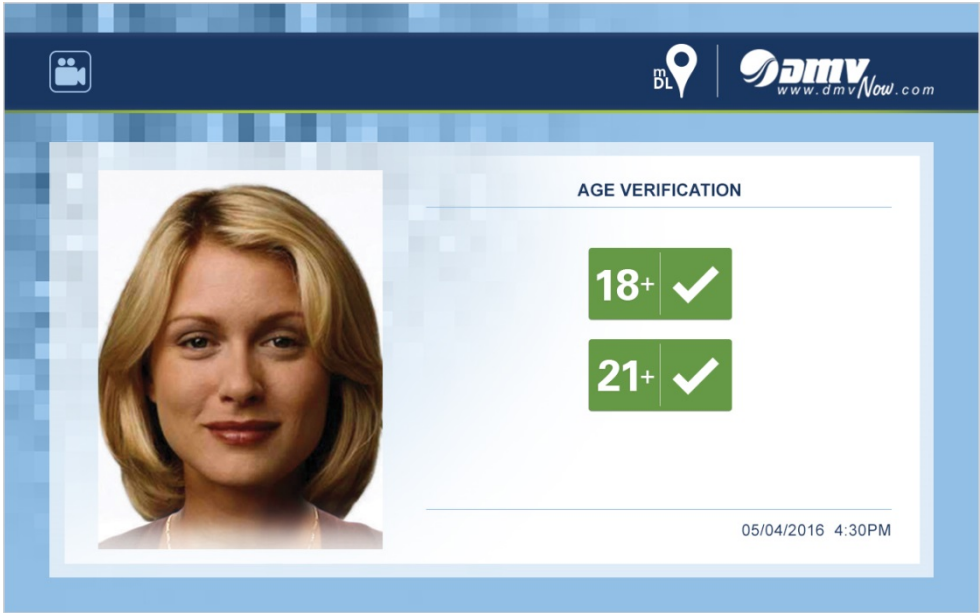
When the driver was under 18 or 21, the green check mark was replaced with a red "X."

Additionally, if the person's driver's license was expired, a license expiration indicator was displayed to the retailer; no indicator appeared if the license was not expired, and the exact date of expiration was not shared.[4]
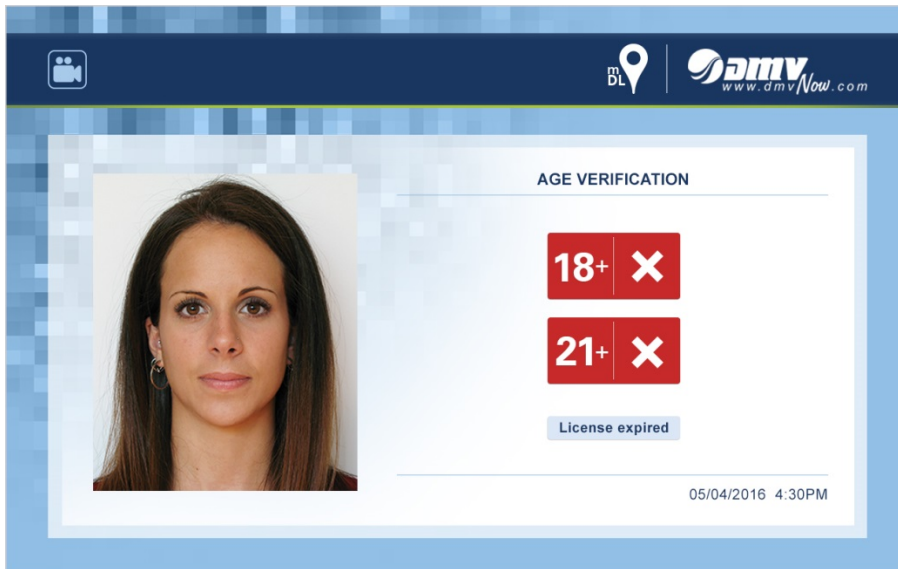
 The information selected was chosen to maximize the privacy of the customer; it allowed the clerk to ensure that the customer in front of him or her was of the correct age without having to reveal personal information, such as home addresses or dates of birth.

The prototype was also designed to ensure high levels of credential security. The QR code displayed on the mDL was a one-time use code; once the QR code had been scanned by a retail partner once, the system would not return a profile if the same code was scanned again. Additionally, no personal information was displayed on the customer's mobile device itself; only the QR code was displayed. Only the retailer was able to view the information listed on the profile, and only by using the special tablets provided by CBN containing software which

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[4] Under Virginia laws requiring sellers of alcohol to check identification, the identification shown must be unexpired. Va. Code § 4.1-304. The expiration indicator was added to assist retail partners' compliance with this law.

verified the authenticity of the mDL after scanning the QR code. This design also increased

security because it forced retailers to scan the QR code and run it through the system; the mDL

team feared that if the profile was included in plain view on the holder's phone, retailers would

not actually verify the credential in real time through the system, which could compromise

security.

The Study

To conduct the study, DMV worked with ABC, Woodfin, and local breweries to develop

a network of fifteen locations where participants could use the mobile driver's license. Mobile

driver's licenses were accepted at the following locations:

ABC Stores
- 1601 Willow Lawn Drive, Suite 106, Richmond, VA 23230
- 10 North Thompson Street, Richmond, VA 23221
- 1217-19 West Broad Street, Richmond, VA 23220
- Village Shopping Center, 7015 Three Chopt Road, Richmond, VA 23226
- Short Pump Crossing Shopping Center, 3450-3452 Pump Road, Henrico, VA 23233

Pit Stop Convenience Stores (Woodfin)
- 8534 Richfood Road, Mechanicsville, VA 23216
- 1300 Crosscountry Road, Mineral, VA 23117
- 4435 Commerce Road, Richmond, VA 23234
- 807 E Parham Road, Richmond, VA 23227
- 24270 Rogers Clark Blvd, Ruther Glen, VA 22546

Local Breweries
- Isley Brewing Company, 1715 Summit Ave., Richmond, VA, 23230
- Triple Crossing Brewing Company, 113 S. Foushee St., Richmond, VA 23220
- Strangeways Brewing, 2277 Dabney Road, Richmond, VA 23230

Restaurants and Bars

- Sedona Taphouse, 15732 WC Main St, Midlothian, VA 23113.

- Home Team Grill, 1630 W. Main St., Richmond, VA 23220.
- Sweet Tea and Barley, 310 S England St, Williamsburg, VA 23185

The first thirteen retail locations went online between July 5th and July 14th. The Sedona Taphouse location was opened on August 2nd, and the Home Team Grill location was added on September 7th. All locations remained operational until September 30th.

Two hundred and fifty two people participated in the study by downloading mDLs to their phones. DMV invited its own employees, employees of ABC and the other retailers where the mDL was accepted, and students of Virginia Commonwealth University and the University of Richmond to download an mDL. Invitees were also encouraged to invite family and friends to participate. Although participation was generally restricted to customers 21 and older, three younger customers enrolled as part of ABC's underage buyer program to test whether the mDL could accurately determine age and communicate that information to the retailer.

User Statistics

At the end of the study, DMV gathered the following user statistics from its system:

	Total Users	Active Users	Non-Active Users
Number of Male Users	143 (57%)	70 (51%)	73 (64%)
Number of Female Users	109 (43%)	68 (49%)	41 (36%)
Total Users	252 (100%)	138 (55%)	114 (45%)
Average Number of Uses Per User	4.54	8.28	0
Number of Users 21-35	113 (45%)	51 (37%)	62 (54%)
Number of Users 36-50	75 (30%)	44 (32%)	31 (27%)
Number of Users 51-70	64 (25%)	43 (31%)	21 (18%)
Number of Users 71+	0 (0%)	0 (0%)	0 (0%)
Number of DMV Employees	146 (58%)	90 (65%)	56 (49%)
Number of Other Users	106 (42%)	45 (35%)	58 (51%)

In the table above, an "active user" is defined as any user who used the mDL at least once. "Non-active users" were those users who did not use the mDL at least once.

Observations

Survey Results

DMV sent out a survey to all mDL participants, with 68 holders responding to the survey. Of the survey respondents, 37 (54%) were male and 31 (46%) were female. A plurality of respondents, 27 (40%), were between ages 36-50, while 24 users (35%) between 21 and 35 represented the second largest group of survey respondents.

Survey respondents used the mDL at a higher rate than the entire cohort of mDL users, with 47 (69%) of survey respondents indicated that they had used the mDL at least one time,

compared to 55% of all mDL users. Of these survey respondents, 26 (55%) indicated that they

had used the mDL once or twice, while 19 (40%) indicated that they had used it three to six

times. Most users who did not use the mDL indicated that they did not do so because the

participating retail locations where mDL could be used were not convenient. Survey respondents

were asked if they had experienced a problem using their mDL, with 73% indicating that they

had not.

Survey respondents were also asked whether the mDL met their expectations, and 86% of

respondents either somewhat or strongly agreed that it did. When asked whether the mDL was

easy to use to make purchases, 80% somewhat or strongly agreed. When asked whether it

decreased the time to make a purchase, however, only 48% somewhat or strongly agreed.

Nonetheless, 95% of respondents somewhat or strongly agreed that the mDL was a secure

credential, and 85% somewhat or strongly agreed that they enjoyed using the mDL.

Eighty three percent of survey respondents indicated that they were very or somewhat

satisfied with the mDL, and 85% of respondents indicated that they would be interested in

having an mDL permanently.   Only 40% of the respondents, however, said that they would be

very or somewhat likely to pay a fee for having an mDL. When asked how much they would be

willing to pay for an mDL, 21 respondents skipped the question entirely, with some saying in

comments that they would not pay anything for the mDL, or that DMV should instead raise the

price of the physical driver's license to cover the cost of an mDL as a free add-on. Of those who

did respond to the price question, 80% said they would pay $5 per year and 15% said that they

would pay $6 to $10 per year.

Finally, respondents were asked to rate how important various features of the mDL were

to them. Security of personal information was rated the most important requirement, with ease

of use coming in second. The ability to display limited information and having a quicker

transaction came in third and fourth, respectively.

An earlier survey was sent to participants when they signed up for the mDL to gauge

their expectations, and comparisons were made between the responses to that survey and the

responses to the survey sent afterwards. Respondents had high expectations regarding the mDL

when they signed up, and for the most part their expectations were met. Of note, the percentage

of respondents who believed that the mDL was a secure credential increased slightly by the end

of the study, from 93% to 95%. Additionally, the mDL team was pleased that 85% of the post-

study survey respondents were satisfied with the mDL. Although 100% of the respondents to the

expectations survey expected to be satisfied prior to the pilot, the ability to reach such a high

level of satisfaction following real world testing is a testament to the potential of mDLs, as well

as the model of mDL proposed by this pilot.

A survey was also sent to retail partners. There were only 17 respondents to the retail

survey, which was not statistically significant. With that caveat, the survey noted 75% of retail

partners were overall somewhat or very satisfied with the mDL proof of concept. Many retail

partners liked that they did not have to calculate the holder's age and liked that there was limited

information on the credential, making it easier to find the pertinent information. Many also liked

that this would help them appeal to tech-savvy customers who would prefer to do everything on

their phone.

When asked whether they would be interested in participating in a permanent mDL

program, 71% of retailers said that they would. On the other hand, 86% of retailers said they

would not be willing to pay to participate in the program in order to get accurate and up-to-date

information from DMV by using an mDL. Half of the retail respondents said that they would

prefer to read mDLs through their point of sale system, while 36% answered "other," with comments to the question indicating that connected devices such as smartphones might be an option.

One of the most notable trends from the retail partner survey was that clerks and servers were far more negative about the mDL than management and ownership. DMV believes that this may be the result of the temporary nature of the proof of concept, as the use of separate tablets, which were not part of their main point of sale ("POS") system, may have been viewed as an inconvenience given the low volume of customers using the mDL.

Many retailers also noted that they experienced problems with the mDL verification process; however, there were very few calls made to the DMV help desk to solve these problems. It seems that the retailers either did not check ID because the mDL holder was clearly over the age of 21, or else asked for the physical license. Since all participants were required to carry their physical license on them, there was likely little incentive for the retail staff to call when they could instead ask for the physical license.

Timing

The proof of concept was implemented during the summer of 2016, beginning immediately after the Independence Day holiday. The timing of the study proved challenging for recruiting members of the public to sign up for the study. The study team had hoped to recruit a good number of college students for the mDL study, in order to get input from a younger constituency. Unfortunately, few enrolled. The timing may have been one factor; many college students leave the Richmond area during the summer, and even those who do not may be unlikely to check their university issued e-mail account over the summer. Likewise, the study may have been hampered by the summer travel season.

Connectivity

While in the expectations survey, 72% of respondents thought that using mDL would decrease the amount of time spent to make a purchase, in the final participant survey, only 48% thought it actually did – a 24% drop. The team believes that this drop is attributable in part to connectivity problems experienced by the tablets installed at the retail partners. For the proof of concept, CBN provided relying parties with special tablets which were programmed to read the QR code on the mDL. The tablets were connected to the internet through a mobile hotspot connected to the Verizon network. Unfortunately, the hotspots did not always work well. A consistent problem was that if a tablet had not been used for a long time, Verizon would de-prioritize requests made when the tablet was used. This meant that it took a long time for profiles to be received to the tablet; in many instances, the request timed out before the response could be received, and no profile was ever returned. This led to frustration among some mDL holders, who were unable to use their mDL because of these connectivity issues.

Many of these problems were likely consequences of the limited nature of the proof of concept, and may be alleviated somewhat in the production phase when the mDL is more widely rolled out. For example, if mDL were to be integrated into a POS system, retail establishments could opt into the system simply by purchasing compliant POS systems. Likewise, because many POS systems have internet connectivity for processing credit cards, it is more likely that an mDL reader will have better connectivity to the internet. Nonetheless, these problems will need to be addressed if the mDL is to be a commercial success.

Underage Buyers

To test whether the system would correctly identify persons under 21, DMV enrolled three minors under the age of 21 who were part of ABC's existing underage buyer program, which checks to see whether establishments sell alcohol to minors. During a compliance check, a

minor went with ABC agents to a participating retailer, attempted to buy alcohol, and showed their mDL when asked for identification. Retailers were warned in advance that underage buyers would be visiting, but were not warned of the timing of the visit. If during a visit a retailer attempted to sell alcohol after being shown the mDL, the ABC agent stopped the sale before it could be completed. Because the mDL was new, and it was understood that many retailers may not be familiar with its operation, ABC agreed not to seek any action against mDL retailers who attempted to sell alcohol to an underage buyer with an mDL during the proof of concept.

During the proof of concept, the mDLs of the underage buyers correctly showed that they were underage, and there were no instances where an mDL showed that an underage buyer was overage. Many retailers were able to read the visual cues and correctly refused to sell alcohol to an underage buyer. Nonetheless, there were some incidents in which retailers attempted to sell alcohol to underage buyers despite the fact that the mobile driver's license clearly indicated that the buyer was underage. Overall, ABC conducted 39 compliance checks, with 33 checks resulting in the retailer correctly refusing to sell alcohol and six checks where a sale was contemplated before the ABC agent stopped the sale. This 85% compliance rate is comparable to the 86% compliance rate which ABC observed in the Richmond area in 2015 during its checks using physical licenses.

ABC recommended in its report that there be a robust training component to ensure that retailers know how to use the mDL and that the importance of not selling to minors is reinforced. ABC agents also suggested design changes to better distinguish between over and underage buyers. For example, it was noted that the same audio cue – a "ding" – sounded every time the mDL was scanned, so it may make sense to provide another audio cue for holders who are under 21. It also noted that some retailers were confused when presented with an mDL for someone

who was under 21 but over 18, as it had both the green check mark and the red X next to the respective ages. They suggested better distinguishing between the two age groups, and also providing a better photo, to assist retailers in interpreting the mDL.

Limited Profiles

ABC also noted in its report that they felt that not enough information had been provided on the mDL record returned to the retailers. They noted that underage persons will often obtain an ID from another person with similar facial features, and that information such as height, weight, or eye color can be used by the retail establishment to help determine whether the holder of the credential is the true holder. Accordingly, they recommended that the agency's limited profiles include more information to allow for this verification to occur.

ABC was not the only stakeholder to make this recommendation to DMV. Management from one of the retail establishments made a similar comment in the survey. Also, DMV staff on a site visit spoke with a bouncer who said that he felt such information would be very useful. He noted that if he is doubtful whether the person on the card is the person in front of him, he can often clarify the question quickly by asking for the holder's date of birth or address as printed on the license.

Providing this information may be helpful to retailers, but it may not be well received by customers. One of the selling points used when recruiting study participants was that mDL would allow consumers to shield personal information from retailers; many customers may have privacy concerns and prefer not to have their address and other personal information displayed. For this reason, DMV will need to carefully study the issue to ensure that the mDL product is desirable to customers but contains enough information to assist retailers to correctly identify whether the customer is old enough to purchase the age restricted product.

Privacy Concerns

Many customers expressed concerns to DMV staff that they did not want the agency to be able to track where they were making age restricted purchases. Under Virginia law, DMV must keep track whenever a driving record is accessed. Accordingly, DMV advised study participants that DMV would be required to keep a log, accessible to DMV staff, of when and where their information was accessed. Because the mDL system was not integrated directly into the retailer's POS system, DMV did not record what, if anything, the customer bought during the transaction. Indeed, DMV encouraged customers to use their mDL even if not buying an age restricted product in order to provide more uses for analysis. Nonetheless, if an mDL is used at a location such as an ABC store, it raises the inference that liquor of some kind was purchased. This would be less of a concern at convenience stores, such as Pit Stop, which sell a broader variety of age restricted products; however, the mere fact of scanning may suggest that restricted products of some kind were bought.

DMV does not currently track when people use a physical driver's license, but some retailers do. For example, ABC has a policy of scanning the bar code of any driver's license which is presented to prove proof of age for purchasing alcohol, and many grocery stores selling alcohol have a similar policy. Other retailers scan driver's licenses for other purposes – for example, Best Buy scans driver's licenses when accepting returns in order to enforce their return policy. ABC staff indicated to DMV staff that many customers dislike their policy of scanning driver's licenses, and believe that the government is already using the information to monitor their drinking habits. Accordingly, the adoption of mDL may not change much for those people. It is worth noting that the barcode on the back of the physical driver's license simply repeats information printed on the front of the license; it does not provide a link to DMV systems to confirm validity, nor is the barcode updated if the person's information changes on DMV's

computer system.   As explained above, the mDL in the proof of concept did provide up-to-date information from DMV; therefore, it is possible that some people will view scanning of an mDL differently than scanning a physical driver's license.

Protecting customer privacy is crucial; the product will not catch on if customers believe that the government will be actively tracking their drinking, smoking, and gambling habits. On the other hand, there are legitimate reasons why a customer and their purchases may need to be matched. For example, if ABC fines a restaurant for serving an underage buyer, the restaurant may seek mDL records to prove that the buyer represented that they were overage. Law enforcement may also seek the records as part of criminal investigations, which could prove invaluable to prove guilt or innocence. It will therefore be important to find the right balance so that customers get as much privacy as possible while making records available in limited and appropriate circumstances. DMV believes that the best way to do this is to build the system using privacy enhancing technologies to distribute the information among different parties, with proper controls in place to limit access and release of information.

DMV is already exploring the use of privacy enhancing technologies for this purpose. During the proof of concept, DMV enrolled customers for the proof of concept and provided CBN with anonymous identifiers, but no personally identifying information of the mDL holder. When an mDL was used, CBN requested the profile by providing DMV with the appropriate identifier, and DMV then provided the pertinent information to CBN. CBN then provided the profile to the relying party and recorded that the profile of the anonymous identifier was provided to the relying party. Since CBN did not know the identity of the profile holder, and DMV did not know where mDLs were being used, it was only possible to track usage of an mDL by combining the two data sets.

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As an example of how this worked, suppose John signed up for an mDL during the proof of concept. He enrolled with DMV and was assigned customer number 37, which was provided to CBN. When John goes to the ABC store to buy liquor, he used his mDL, which instructs CBN to request the profile for customer number 37. CBN does not tell DMV where customer 37 used his mDL. DMV looks up customer number 37, determines that it is John, retrieves John's profile and provides it to CBN via a secure web service. When CBN receives the profile, it receives it as the profile of customer number 37; John's name is not associated with the profile, only his picture and the indicator saying he is over 18 and 21. CBN then provides the profile to the ABC store and records that customer number 37 used his mDL at the ABC store. Because CBN does not know that customer number 37 is John, it does not record that John personally went to the ABC store. Likewise, although DMV knows that John is customer number 37, it does not know that he went to the ABC store because it only knows that CBN needed his profile. If somebody wanted to determine the identity of customer number 37, or determine where John used his mDL, he would need to obtain information from both DMV and CBN and match the data.

The use of privacy enhancing technologies could be a powerful tool to frustrate those who would seek the information illegitimately by making it much more difficult to piece the information together while still providing for access for those with a legitimate need. The use of these and other technologies, along with continuing this agency's strong commitment to protection of privacy will help ensure the public acceptance and use of mDLs.

Sign-Up Process

There were 717 unique views of the mDL enrollment website, but ultimately only 252 people signed up. Although the study team is not sure why there was such a steep drop off, it is possible that some would be participants dropped out after reading the study agreement. DMV

staff heard anecdotal reports that some users considered the agreement carefully and chose not to sign up after reading the terms and conditions.

The study team also believes that some customers may have chosen not to participate in the study because of the requirement that customers establish a DMV PIN account prior to getting an mDL. DMV requires participants to verify their identity online before being allowed to set up a PIN account; the verification process involves answering questions about their driving and vehicle records. For example, customers may be asked which customer service center they visited when they last renewed their driver's license, or which documents they presented in support of an application made to DMV. The process is similar to the identity verification process used by many financial institutions, although those institutions often use information from third parties, such as credit reports and other public records instead of the information they have in their own records.

A number of customers reported that they had trouble with the verification process because they could not recall the answers to the questions, especially when the transaction about which they were being asked occurred months or years in the past.   Other customers were not able to use the identity verification process because their DMV record did not contain sufficient information to generate the required number of questions. Customers in both situations have the option of calling DMV to verify their identity over the phone to obtain a temporary PIN to use to establish an online account, but the study team believes that many people simply gave up and opted not to participate in the study.

Law Enforcement

Although the proof of concept focused on the retail use case, DMV and CBN staff continued to work on the law enforcement use case. As a result, DMV was able to provide a demonstration of the technology to Virginia State Police, DMV Law Enforcement, and Virginia Lottery

Investigations personnel on July 27, 2016. The demo tested both a version of the mDL where the law enforcement officer scanned a barcode, similar to the retail use case, and another where the customer wirelessly transmitted the mDL information to a tablet in the officer's police cruiser.

Based on feedback from law enforcement partners at the demo, the mDL team envisions that the mDL profile provided to law enforcement would be designed somewhat differently than the model used during the proof of concept at retailers. Unlike the limited information profile provided to retailers, a profile provided to a law enforcement officer would need to have all of the information printed on the driver's license in order to permit law enforcement to complete their duties. Additionally, the QR code solution used for the retail use case will not be effective for law enforcement. Law enforcement officers indicated that they need to keep their hands free during traffic stops for safety reasons, especially during the beginning of the traffic stop when they are assessing the risk that a driver may pose. Accordingly, it would be safer and more convenient if they could read the mDL remotely.

During the demo, DMV tested technology which sent data directly to a tablet in the officer's cruiser without needing to scan anything. It is possible that in the future profiles could be sent to the officer's mobile data terminal, which law enforcement officers agreed could be a viable option. One state trooper noted that many agencies issue their officers with official smartphones, and that it might be helpful to allow for limited portions of the profile, such as the driver's photo, to be sent to the officer's smartphone. The smartphone would only be checked once the officer had control of the situation and felt comfortable that it would be safe to divert attention from the driver to the cell phone. While it may not be practicable to send the entire mDL profile to the officer's phone, the state trooper making the comment noted that even providing just a photo

could provide some reassurance to the officer that they are dealing with someone with proper identification.

Following the demo, DMV received further feedback from State Police regarding mDL. State Police praised mDL for its ability to give State Police the ability to quickly determine identity with greater assurance, as well as providing more up to date information regarding the driver's status. Nonetheless, State Police had some concerns about the costs which would be incurred by law enforcement agencies to outfit police officers with the appropriate technology to use the mDL. They also echoed some of the concerns voiced at the law enforcement event regarding officer safety, especially if mDL equipment must be carried in the officer's hand. On the other hand, State Police also believes that mDL could benefit officer safety if it could be integrated with the summons and crash report writing process. This integration could allow state troopers to complete their documentation more quickly, shortening roadside contacts and limiting the amount of time that they are exposed to passing traffic.

Steps for the Future

Mobile driver's licenses are a new technology. Although it seems likely that mDLs will continue to develop in some form, it is too early to say definitively what form they will take. The release of the AAMVA mDL standards will likely help jurisdictions and companies to define the direction that mDLs will need to take.

Structure and Fees

DMV proposes that mDLs should be an optional add-on to the physical driver's license for the foreseeable future. The agency believes that many people will be interested in obtaining an mDL, and that interest will increase over time as people become more familiar with the concept and retailers and law enforcement agencies begin to accept it. Nonetheless, the agency

recognizes that there will be people who do not wish to obtain an mDL right away. For example, some people who do not own smartphones or live in areas where cellular service is poor may not wish to sign up for an mDL. Others will be concerned about privacy aspects, and would prefer to continue using their physical driver's licenses. Physical driver's licenses will continue to be issued to all customers who apply for a driver's license, including those customers who also want an mDL.

If mDLs become available, DMV anticipates that they will be offered to customers for an additional fee. DMV intends to make the fee payable on an annual basis, similar to the current system for vanity license plates, and similar to subscription models which are used for other technology services. This length of time will allow customers the opportunity to try an mDL for a year; if they do not like it, they will be under no obligation to renew.

The shorter renewal cycle also makes it easier for DMV to ensure that mDL holders enjoy the most up-to-date and secure credentials available. Physical driver's licenses are renewed once every eight years, meaning that licenses with previous security features can continue to be valid for up to eight years following their replacement, delaying the full benefits of the new technology. This delay would be especially problematic with mDLs, since technology is always rapidly improving. Therefore, replacing mDLs at frequent intervals would help ensure that mDL holders receive the benefit of the latest technology to keep their data safe and secure.

Online Model

As discussed above, CBN provided tablets during the proof of concept in order for retailers to verify mDLs. Retailers were not able to view any license information until they had scanned the QR code and had the necessary information returned by the system. This is the "online" model, and it contrasts with the "offline" model tried in other jurisdictions where a

representation of the license resides on the customer's device and is visually read from the customer's device. The mDL team believes that license information should continue to be returned through an online, real-time model, and that to ensure the success of the online model, no information should be displayed directly on the customer's phone. If information were to be displayed directly on the phone, it is likely that many retailers would simply read the information on the screen even if DMV or ABC said that an mDL was only valid if it is scanned, leading to a de facto offline model. The use of real-time data accessed directly from DMV in an online model would make it much harder to spoof an mDL, as no data would reside directly on the mobile device.

Implementing a policy of requiring access to mDLs to be read through computer systems will require retailers and other relying parties to have the necessary equipment to access the mDL system, as well as an internet connection to support it. Although DMV will need to provide software to make the information available to authorized parties, the agency will not be in a position to provide verification hardware to every retailer of age restricted products in Virginia. Accordingly, the long-term success of an mDL which requires system access will depend on the willingness and ability of private companies to build mDL readers which integrate with DMV systems and provide them to retailers at a reasonable cost.

DMV anticipates that private companies could facilitate system access by building mDL readers into existing products already used by their customers. For example, a company selling POS systems may make mDL readers available as an optional add-on to their systems, allowing a retailer with barcode readers to use the same barcode reader to read the mDL and have the information appear on existing cash register screens. For sit-down restaurants, there may be room for innovation. For example, some restaurants, such as Chili's and Olive Garden, already

use electronic tablets to allow patrons to place orders. It may be possible for those tablets to also read mDLs, allowing the restaurant and the customer to manage all aspects of the ordering process from the tablets. There are many other solutions which could be designed to meet a businesses' unique needs; for this reason, it would be best if retailers worked with their existing vendors to craft solutions which would best integrate with their businesses while ensuring the security of the credential.

Use of the online model also requires internet access. Most retailers which accept credit cards already have some internet connectivity to facilitate their acceptance, though for some small businesses this may be a dial-up connection over a landline telephone. What may be harder is ensuring that law enforcement will have the ability to check mDLs during roadside stops. Most police cruisers have mobile data terminals ("MDT"), and some operate over standard cellular networks, which could work well for an online model mDL. Accordingly, installing mDL verification software in MDTs which operate over cellular networks, and are in areas with good service, should not prove to be a challenge. In some jurisdictions, however, MDTs operate over radio, which would not allow for the transmission of pictures and other key information. There are also many areas in Virginia which are poorly served by cellular networks, leaving radio as the only feasible means of transmitting information to these terminals.

The offline model of mDL would have benefits in areas without good cellular service, since it would allow the use of the credential even when the system could not be accessed. Nonetheless, the security concerns of the offline model would still be present, and would be especially problematic in the law enforcement use case since the accuracy of credential is most important there. Accordingly, additional resources should be devoted to support an online use case for mDLs for law enforcement, even in remote areas.

27

DMV anticipates that there will be a charge for businesses seeking to verify mDLs through the online model. Of course, DMV does not and cannot charge when a customer shows a physical license at a retailer, in part because DMV does nothing to verify these transactions at the counter. A verifiable mDL will have a number of advantages over the physical license for businesses. Most importantly, DMV will verify the validity of the credential in real time, so the business can have more confidence that they are not being presented with a false credential – a guarantee which cannot be made when a physical credential is presented for visual inspection. This can be helpful not only for businesses selling age restricted products, but also for businesses which count on checking IDs to deter fraud. Additionally, mDLs can be programmed to be easier to use than current physical credentials – for example, by providing the 21+ indicator instead of requiring the clerk to manually calculate the holder's age.

Finally, it is anticipated that mDLs can provide more up-to-date information than a physical license could. For example, consider a scenario where a customer who recently moved is showing ID while setting up a utility account. The utility company must have the customer's correct address so it knows where to establish service. If, however, the customer just moved, it is likely that the address on the customer's license is the old address until the customer purchases a new credential with the updated address and it is printed and mailed to the customer. This mismatch inconveniences the utility company because it must ask the customer to provide the correct information, adding time to the transaction. In contrast, since mDL will be based on DMV records, it can return an updated address as soon as the customer has reported the change to DMV. The mDL holder could therefore choose to share a profile containing his address, and the retailer will receive the holder's new address instead of his old address. Thus, for those

businesses which require updated address information to complete a transaction, an mDL will

help them collect the information in a more streamlined fashion.

The fee charged to businesses will be designed solely to cover DMV's costs in setting up

and maintaining the verification system. The mDL team suggests that a default rate be set – for

example, a flat fee to cover DMV's costs in setting up a relying party user in the system, plus a

per search charge. This would likely appeal to users who expect only a small number of mDL

searches. The mDL team also recommends that the Commissioner have the authority to

establish discounted rates for bulk users, such as grocery stores, to make the system more

economical for larger users who will make many searches of the verification system.

Implementation

Successful implementation of the mDL will require a vast network of locations where

mDL can be used. This is necessary to make it worthwhile for the user to obtain an mDL,

especially if it is offered for an extra cost. DMV has a number of options for obtaining such a

network. Entering into an agreement with ABC would be especially advantageous because they

already have a statewide network of stores. Of course, there are a number of retail chains which

also have a large presence in the state, such as 7-Eleven, Wawa, Sheetz, and Wal-Mart, along

with a number of regional grocery store brands such as Kroger and Food Lion in Richmond,

Farm Fresh in Hampton Roads, and Giant and Safeway in Northern Virginia. Contracting with

these and many other stores would be helpful in establishing the mDL's footprint.

Ultimately, DMV is likely to want to enter into a contract with a third party to manage

DMV's agreements with retail establishments. This would be necessary in part due to the sheer

number of retailers which sell age-restricted products in the state. But it would also be beneficial

to retailers because it would make it much easier to sign up. If, for example, a major provider of

POS systems were to administer parts of the mDL system on DMV's behalf, a retailer could sign up simply by purchasing a compliant system from the POS provider and agreeing to abide by privacy standards. Making it easy for retailers to adopt the mDL system will help encourage its spread.

Finally, as mDLs become more popular, it is likely that Virginians will wish to use their mDL in other states, and visitors from other states will want to use their mDLs in Virginia. For this reason, the backend infrastructure must be able to communicate with systems used by other states to facilitate cross-border checking of credentials. The release of AAMVA standards will allow states to develop their mDLs in a fashion which should make that technically feasible.

Conclusion

DMV's proof of concept successfully showed that it is technically feasible for DMV to provide an mDL to the citizens of Virginia. The proof of concept also successfully showed that there is a demand for an mDL in Virginia. The challenge will be to implement it in a manner that makes it attractive for both the citizens who will use mDLs and the people who rely on Virginia's credentials to meet their requirements while also improving accuracy, ensuring privacy, and preventing fraud. The lessons learned in the proof of concept will help DMV to design a product which will make that a reality.

Appendix A: Mobile Drivers Licensing in Other U.S. States

Mobile Driver's Licensing in Other U.S. States

State	Project Type	Status	Date
Alabama	Agency Initiative	Implemented	07/23/2015
Arizona	Enabling Legislation	Held in State House	03/26/2015
California	Study Mandate	Vetoed	10/09/2015
Delaware	Study Mandate and RFP	Enacted	01/29/2015
Florida	Enabling Legislation	Enacted, Awaiting Implementation	06/20/2014
Illinois	Study Mandate	Enacted	5/30/2015
Iowa	Agency Study and RFP	In Progress	12/8/2014
Louisiana	Enabling Legislation	Enacted, Awaiting Implementation	06/17/2016
North Dakota	Study Mandate	Enacted	01/06/2015
New Jersey	Study Mandate	Enacted	01/19/2016
Tennessee	Enabling Legislation	Enacted, Awaiting Implementation	06/03/2015
Texas	Study Mandate	Enacted	06/20/2015
Utah	Study Mandate	Enacted	03/22/2016

Appendix B: Stakeholder Comments on Draft Report and Legislation

COMMONWEALTH of VIRGINIA

Department of Alcoholic Beverage Control

COMMISSIONERS
JEFFREY L. PAINTER, CHAIRMAN
JUDITH G. NAPIER
HENRY L. MARSH, III

CHIEF OPERATING OFFICER/SECRETARY TO THE BOARD
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December 13, 2016

Richard D. Holcomb, Commissioner
Virginia Department of Motor Vehicles
2300 West Broad Street
Richmond, Virginia 23269

Rick

Dear Commissioner Holcomb,

The Department of Alcoholic Beverage Control (Virginia ABC) was pleased to have participated in the Department of Motor Vehicles (DMV) Mobile Driver's License (MDL) proof of concept. I must commend DMV for developing an easy-to-use tablet-based system for identifying age-appropriate customers using MDL technology. I also appreciate DMV's willingness to incorporate testing feedback.

DMV's effort to meet consumer needs by utilizing technology preferred by the consumer is the future of both government and retail services. This motivating idea behind the MDL project also informs many of the modernization projects being undertaken by Virginia ABC. Keeping the consumer focused mindset, and undertaking key priorities for our agencies in this regard, will be essential in meeting expectations of the modern citizen and customer.
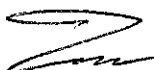
In reviewing the report, the MDL technology certainly made it more convenient for consumers to utilize their phone for identification purposes. The proof of concept was successful in utilizing the technology to confirm legal age for the purchase of alcohol. Additionally, the system returned visual prompts that were easy for the customer to understand (although additional auditory cues may also be useful) and provided information deemed necessary to determine whether a sale could legally be made.

While the technology merits continued consideration, in order for Virginia ABC to recognize its full benefits, it would have to be integrated into our existing point of sale (POS) system. While integration costs are unclear, they could include: opening Virginia ABC's registers to the internet, using Virginia ABC's third-party vendor to make changes to "read" MDL barcodes in the POS; issuing VITA work orders; and significant testing. All of these integration activities could affect the staffing resources working on Virginia ABC's ongoing technology projects as well as impacting the POS system as it is currently in use.

In its current age verification protocol, Virginia ABC utilizes its POS system to scan the physical driver's licenses. If someone is underage our current POS will stop any transaction's completion. ID check information is also one measure of store personnel performance and is reported to various decision-makers utilizing the data collected by the POS system. If the MDL technology were to be established outside the POS system, it may present challenges in terms of automatically preventing an underage sale after ID scan and diminishes our capability to collect compliance information.

As I said earlier, I was very impressed by DMV's MDL technology and its ease-of-use. There is no question that the concept holds the potential to provide greater convenience to customers and accessible information to retailers and enforcement personnel. As Virginia ABC's existing POS system is replaced in the coming years, the agency will certainly have an interest in incorporating this MDL technology into our future requirements for customer interactions. Until that time, we are interested in continuing to be a resource to DMV as you explore the benefits of this technology.

With best wishes to you during this holiday season and beyond,

Travis G. Hill
Chief Operating Officer

COMMONWEALTH OF VIRGINIA

Colonel W. S. (Steve) Flaherty
Superintendent

(804) 674-2000

Lt. Colonel Tracy S. Russillo
Deputy Superintendent

DEPARTMENT OF STATE POLICE
7700 Midlothian Turnpike, Richmond, VA 23235

(804) 674-2000

November 29, 2016

Richard D. Holcomb, Commissioner
Virginia Department of Motor Vehicles
2300 West Broad Street
Richmond, Virginia 23269

Dear Commissioner Holcomb:

I have been briefed by Captains Ronald C. Maxey, Jr. and F. Daniel Glick concerning the results of the recent Mobile Driver's License (MDL) workgroup and associated law enforcement demonstration. I appreciate the great challenge you have been given, as well as the efforts your staff and the workgroup have put forth developing this exciting new technology for the citizens of the Commonwealth.

The MDL concepts from the workgroup are intriguing and will offer great benefits to law enforcement in the Commonwealth. MDLs will provide law enforcement the ability to quickly determine the identity of individuals they contact with greater assurance; and will also provide law enforcement access to real time and accurate data related to the status of drivers they contact. Eventually, they may be used to auto-populate summonses and crash reports which will shorten roadside contacts and limit exposure to passing traffic for the trooper and motorist.

While the MDL concepts offer many advantages to law enforcement, there are concerns which must be addressed. Most MDLs technologies will require law enforcement to purchase an interface device or software to communicate with the MDL. In these times of shrinking budgets, the potential costs incurred by participating law enforcement agencies are problematic. In addition to the costs, law enforcement officers are reticent to carrying more equipment than is already required. Additional equipment carried by hand can be cumbersome and distracting, posing officer safety concerns.

My hope, as we continue to explore the MDLs, is to find cost effective and safe solutions for all who will use this exciting new technology.

I hope you will find this information helpful. Best wishes to you and your organization in future.

Sincerely,

Superintendent

WSF/FDG/vmb

Appendix C

Stakeholders and Study Participants

Department of Alcoholic Beverage Control:

David Walker   Brent Uzel   Frank Monahan

Virginia State Police:

Capt. Daniel Glick   Lt. Ronald Maxey   Julie Henry

Woodfin Company:

Catherine Green   H.O. Harcum   Bridget Santini

Strangeways Brewing:

Cheyenne Burnham

Isley Brewing Company:

Jaymie Mitchell   Michael Isley

Triple Crossing Brewing Company:

Adam Worcester

Home Team Grill:

Garland Taylor   Mark Overby

Sedona Tap House:

Abdel Rafai   Dennis Barbaro

Virginia Commonwealth University:

Joe Cippola

University of Richmond:

Dr. Joe Boehman

Canadian Bank Note Secure Technologies, Inc.

Ian Shaw	Cornel Bright	Mike Delich
Rick Schmaltz	Francine Roy	Alex Schmidt
Dan Sanchez	Jeff Quarrington	Christine Horton
Phil Henniges	Nina Antcheva	John Duffy
Mike Smith	Bogdan Manoilescu	Terry Newton
Greg Brown	Scott Lackie	Ping Chen
Nicky Koon	Matt Jackson	George Lianeris
Keith Gow	Kim Alf	Lee Howard
Mark Doyle		

Department of Motor Vehicles:

Richard D. Holcomb	David Burhop	David Mitchell
Karen Grim	Carla Jackson	Lana Shelly
Joe Hill	Barbara Klotz	Millicent Ford
Janet Smoot	Sheila Rodis-Bradshaw	Nick Danforth
Sandy Jack	Betsy Bratton	Ronald Arnold
Charlie Sheldon	Matt Ely	Kenneth Rae
Jamie Habecker	David Leahy	Dave Williams
Ashley Hall	Luke Harris	Dalton Lee
Pam Goheen	Brandy Brubaker	Katy Lloyd
Jessica Seier	Gabriel Boisvert	Kathleen Furr
Sherri Vaughn	Sharon Brown	David Pierce
Betty Mattice		

Appendix D: Draft Legislation

1   A BILL to amend the Code of Virginia by adding in Chapter 2 of Title 46.2 an article numbered

2   3, consisting of sections numbered 46.2-225 through 46.2-230, relating to electronic credentials.

3

4   **Be it enacted by the General Assembly of Virginia:**

5   **1. That the Code of Virginia is amended by adding in Chapter 2 of Title 46.2 an article**

6   **numbered 3, consisting of sections numbered 46.2-225 through 46.2-230, as follows:**

7   <u>**Article 3: Electronic Credentials**</u>

8   <u>**§ 46.2- 225: Definitions**</u>

9   <u>As used in this article, unless the context requires a different meaning:</u>

10   <u>"Data Field" means a piece of information which appears on a physical credential,</u>

11   <u>electronic credential, or profile.</u>

12   <u>"Display Requirement" means a provision within the Code of Virginia, the Virginia</u>

13   <u>Administrative Code, or a local ordinance or regulation which requires or permits the</u>

14   <u>display or possession of a physical credential to do an act, identify a person or piece of</u>

15   <u>personal property, and/or show entitlement to a right or privilege.</u>

16   <u>"Electronic Credential" means an electronic method by which a person may display or</u>

17   <u>transmit to another person information which verifies a person's identity, identifies</u>

18   <u>personal property, or serves as evidence of the right of a person to do, or to use personal</u>

19   <u>property to do, an act.</u>

20   <u>"Electronic Credential System" means a computer system accessed by a person using a</u>

21   <u>computer, cellular telephone, or other electronic device and used to display and/or</u>

22   <u>transmit electronic credentials to other persons or a verification system.</u>

23   "Physical Credential" means a document issued by an agency of the Commonwealth,

24   another state, the District of Columbia, the United States, a foreign country, or a political

25   subdivision of a foreign country, which is issued in a physical format, such as paper or

26   plastic, and which identifies the holder, identifies a piece of personal property, and/or

27   grants the holder the permission to do, or to use property to do, an act.

28   "Profile" means an electronic credential created by the Department which display a

29   different set of data fields than are displayed on the physical credential.

30   "Third Party Electronic Credential System" means an electronic credential system which

31   is not maintained by the Department or by an agent of the Department on its behalf.   A

32   third party electronic credential system may include, without limitation, an electronic

33   wallet.

34   "Verification System" means a computer system operated by the Department or its agent

35   on its behalf which is made available to persons who are presented with electronic

36   credentials for the purpose of verifying the authenticity and validity of electronic

37   credentials issued by the Department or by other government agencies or jurisdictions.

38   **§ 46.2-226: Electronic Credentials**

39   A. The Department may issue electronic credentials to persons who hold a valid physical

40   credential which the Department is authorized to issue.

41   B. If the Department issues electronic credentials, they shall be issued in addition to, and

42   not instead of, the underlying physical credentials for which the person is eligible,

43   and no electronic credential shall be issued unless the applicant holds the

44   corresponding physical credential.

45   C. If the Department issues electronic credentials, it shall issue them to an electronic

46   credential system.

47   D. The Department may issue electronic credentials to third party electronic credential

48   systems. Prior to issuing electronic credentials to a third party electronic credential

49   system, the Department shall enter into an agreement with the owner of the third

50   party electronic credential system which shall set forth the terms on which electronic

51   credentials may be displayed.

52   E. The Department may enter into agreements with an agency of the Commonwealth,

53   another state, or the United States to grant access to the use of electronic credentials

54   issued by that agency. The provisions of subsection (B) of this section shall apply to

55   credentials to which the Department grants access unless, as part of the agreement

56   permitting the Department to grant access, the other agency agrees that the

57   Department may grant access to electronic credentials to persons not holding a

58   corresponding physical credential.

59   **§46.2-227: Fees**

60   A. The Department shall assess a fee of $10 per year for each individual who is issued

61   electronic credentials by the Department or is granted access to an electronic

62   credential issued pursuant to an agreement pursuant to the provisions of § 46.2-

63   226(D).

64   B. The Department shall assess a fee as specified in § 46.2-214 for searches of the

65   verification system.

66   C. The fees received by the Department under this section shall be paid into the state

67   treasury and shall be set aside as a special fund to be used to meet the expenses of the

68   Department.

69 **§46.2-228: Design of Electronic Credentials**

70   A. The Department, and other agencies which enter into an agreement with the Department

71   pursuant to § 46.2-226(D), may create and issue profiles to be used in those

72   circumstances where the display of the data fields on the profile would satisfy the

73   purpose for which the profile is being presented.

74   B. Electronic credentials and electronic credential systems shall be designed so that there is

75   no need for the credential holder to relinquish possession of the device in which the

76   electronic credential system is installed in order to present the credential, or for the

77   person to whom the credential is presented to search the verification system to confirm

78   the validity of the credential.

79   C. Electronic credential and verification systems shall be designed to protect the credential

80   holder's privacy, including by use of privacy enhancing technologies or other appropriate

81   methods. If the Department enters into an agreement with the owner of a third party

82   electronic credential system, the agreement shall require the owner of that system to take

83   appropriate measures to protect the credential holder's privacy.

84

85 **§46.2-229: Verification System**

86   A. The Department or its agent may create and operate a verification system.

87   B. The Department may enter into agreements with other government jurisdictions

88   issuing electronic credentials to allow for the verification of those credentials through

89   the Verification System, and may also enter into agreements with other government

90   jurisdictions or their agents operating a similar verification system for the purpose of

91   verifying Virginia electronic credentials used in other states.

92   C. The Department or its agent may enter into an agreement with a person to access and

93   search the verification system. Any such agreement shall require, at a minimum, that

94   the person to whom the Department is granting access to agree to search the system

95   only in compliance with the requirements of this Section and to take appropriate

96   measures to protect the credential holder's privacy.

97   D. A person who has entered into an agreement with the Department to access and

98   search the verification system, and who has been presented with an electronic

99   credential or profile, may search the verification system to verify the validity and

100   accuracy of the electronic credential or profile he has been presented if the electronic

101   credential holder consents to the search.

102   E. Following a search of the verification system made by a person with whom it has

103   entered into an agreement pursuant to subsection (C) of this section, the Department

104   may release through the verification system a verification of those data fields which

105   the electronic credential holder has consented to be verified.

106

107   **§46.2-230: Acceptance of Electronic Credentials**

108   A. The possession or display of an electronic credential shall not relieve a person from

109   the requirements of any provision in the Code of Virginia, Virginia Administrative

110   Code, or local ordinance or regulation requiring the possession or display of a

111   physical credential.

112   B.   Any provision of the Code of Virginia, Virginia Administrative Code, or local

113   ordinance or regulation with a display requirement, which may be satisfied by the

114   display or possession of a physical credential for which the Department may issue an

115   electronic credential, may be satisfied by displaying or possessing an electronic

116   credential issued pursuant to this Act.   Acceptance of electronic credentials shall be at

117   the discretion of the person to whom it is presented and subject to the conditions of

118   this section.

119   C.   If a person displays a profile, its display shall satisfy a display requirement if the

120   profile provides sufficient data fields to satisfy the purpose for which it is being

121   displayed.

122   D.   If the Department, or another agency responsible for enforcing a display requirement,

123   requires that an electronic credential or profile be verified through the verification

124   system prior to acceptance in certain circumstances, the display requirement shall be

125   deemed satisfied by presentation of an electronic credential or profile in those

126   circumstances only if the electronic credential or profile is verified by the verification

127   system.

128   E.   The provisions of this section shall apply to the possession or display of similar

129   electronic credentials or profiles issued by the government of another state, the

130   District of Columbia, the United States, a foreign country, or a political subdivision of

131   a foreign country to the extent that a physical credential from the same jurisdiction

132   would satisfy the relevant display requirement.

133

134   **2. That the Department of Motor Vehicles shall examine the electronic credential**

135   **program and determine whether the fees in § 46.2-228 as created by this act**

136   **adequately cover the Department's costs of administering the additional**

137   **responsibilities imposed on the Department under this act. The Department shall**

138   **report the results of its review to the Chairmen of the House and Senate Committees**

139   **on Transportation no later than December 1, 2019.**