Contents

1.0 Introduction to System and Project Specifications

This appendix describes the DMV's Specifications for the NCDMV Modernization Vendor Selection.

Vendor must submit the following items to form a comprehensive and complete proposal (including all specific items or data requested in the RFP) with detailed narratives and information describing the innovative approaches and/or solutions being offered. At a minimum, a comprehensive and complete proposal shall include the following specific components using the following template:

1. The RFP cover sheet completed and signed by an authorized representative of Vendor.
2. Signed copy of all addenda, if issued.
3. DMV Modernization Solution Proposal
4. The DMV Modernization Solution proposal must include a comprehensive narrative describing the proposed DMV Modernization Solution approach and how it satisfies the needs and requirements identified and described in Section (need section reference).
4. **P**roject Management Proposal
5. The Project Management Proposal must include a comprehensive narrative describing the proposed project management approach and how it satisfies the needs and requirements identified and described in Section (need section reference).
5. Project Staffing Proposal
6. The Project Staffing Proposal must include a comprehensive narrative describing the proposed project staffing approach and how it satisfies the needs and requirements identified and described in Section (need section reference).
6. Testing and Acceptance Proposal
7. The Testing and Acceptance Proposal must include a comprehensive narrative describing the proposed testing approach and how it satisfies the needs and requirements identified and described in Section (need section reference).
7. Deployment Plan
8. The Deployment Plan must include a comprehensive narrative describing the proposed deployment plan and approach and how it satisfies the needs and requirements identified and described in Section (need section reference).
8. Training Proposal
9. The Training Proposal must include a comprehensive narrative describing the proposed training plan and approach and how it satisfies the needs and requirements identified and described in Section (need section reference).
9. Service and Support Management Proposal
10. The Service and Support Management Proposal must include a comprehensive narrative describing the proposed service and support management approach and how it satisfies the needs and requirements identified and described in Section (need section reference).
10. Vendor Profile and Customer Reference Response

11. Vendor must submit a comprehensive response to the Vendor profile and customer reference components as indicated in Section (need section reference).
11. Pricing, Incentives, and Payment Response
12. Vendor must submit a comprehensive response to pricing, incentives, and payment as indicated in Section (need section reference).
12. DMV Modernization Solution Contract Response
13. Vendor must submit a response to the DMV Modernization Solution Contract as indicated in Section (need section reference).
13. Proposal Assumptions
14. Vendor must submit a comprehensive list that clearly identifies all significant technical/functional, solution, project, and pricing assumptions and explanations needed to clarify its proposal.
15. Each item included in the list of assumptions must include cross-references pointing back to specific proposal responses, including paragraph and page number references.
14. Identification of Proprietary Information
16. In the event a proposal contains proprietary information, Vendor must provide a detailed table listing all pages of the proposal that contain proprietary information and the reason it deems such information proprietary. The classification of an entire proposal as proprietary or trade secret is not acceptable.
17. Vendor must submit the required table as Part 14 of their proposal. If there are no proprietary components of the Vendor proposal, the Vendor shall state there are no proprietary components.

1.1 Prohibited Products and Services

No Vendor may include as part of its proposal, whether directly or indirectly through subcontractors, any hardware, software, or services that have been prohibited for use on federal systems by the U.S. Department of Homeland Security.

2.0 Current Systems Overview

The North Carolina Department of Information Technology hosts and manages a set of **IBM z/OS mainframes** that run mission-critical and non-mission-critical business applications used by state and local governments and school systems.

NCDIT's mainframe hosts more than 20,000 distinct users working at 30 different state agencies. These systems have exceptionally fast I/O, which enables the Department of Information Technology- Transportation (**Division of Motor Vehicles' Systems**) to quickly process a high volume of database transactions by a myriad of users simultaneously. The mainframe system also offers tremendous availability (99.99%), reliability (built-in redundancy), business recovery, and security.

2.1 Features:

z/OS System Features

- NCDIT manages the mainframes and everything that runs on them, including backup and recovery services.
- Most independent service vendor (ISV) software running on the mainframe and CICS, IMS and Db2 transaction applications that agencies build is sharable. This enables your organization to minimize costs.
- An average of 27 million encrypted transactions are processed daily.
- Virtual disk and tape storage provide batch or real-time job streams.
- IOGen, control units, HMC and thin client consoles are included.
- Technical support:
    - File transfer: sftp, FTPS and Connect:Direct
    - CSSMTP (mainframe email)
    - Maintenance of the latest supported encryption level
    - Monitoring
        - Alerts sent by email and text
        - Infrastructure internal and external network connections
        - Daily system batch and online processes
        - Microsoft's Windows-based event monitoring solution, which enables event correlation within your corporate computing environment
    - Analysis
        - Reviews the network infrastructure to ensure the proper design for disaster recovery and customer needs
        - Ensures encryption requirements are met
        - Handles z/OS upgrade/migration requirements proactively
        - Manages hardware configurations: HMC, control units and thin client consoles
    - Service level agreements
        - Ensures supported software to n-1 levels
        - Resolves customer incident and service request tickets in a timely manner

For additional features, see the Technical Information section (Section 6.0).

Software Features

- COBOL
    - RESTful Java™ Script Object Notation (JSON) services with traditional XML web services
    - Native UTF-8 enables COBOL applications to efficiently communicate across applications via RESTful APIs and to directly process UTF-8 data
    - AMODE 64 (64-bit) batch applications development, which supports processing large data tables over 2 GB
- z/OS Db2 12
    - Provides database management using SQL
    - Extends Db2's scalability, security, reliability and efficiency, and supports cloud, mobile and analytics applications
    - Processes up to 11.7 million inserts per second and 256 trillion rows per table

Job Scheduling Features – Zeke Scheduler

- Dynamically schedules automated jobs, dispatches events, and monitors every aspect of your job schedule using functions such as:
    - System command scheduling
    - Automatic variable calculation and substitution

  - Step-level condition code validation
  - Workload balancing
  - Schedule forecasting and simulation
  - SAF security, optional SMP/E support
  - Simultaneous support for multiple JCL libraries
  - Electronic vaulting capabilities
  - Prebuilt calendars and other utilities
- Creates schedules, performs backups and maintains calendars without interrupting service
- Manages enterprise-wide scheduling
- Schedules and manages from one location to an infinite number of systems, across operating systems worldwide or just across the room
- Displays on one screen all the schedule information for every supported platform and highlights all exceptions (e.g., abends, late jobs)
- Supports concurrent schedules within the same job names (versioning)
- Provides perpetual calendars that allow you to define dates as far into the future as needed
- Monitors all aspects of job schedules continuously, and responds to messages automatically
- Uses the IBM system management facility to check the step-level condition code, and allows job cancellation based on condition codes

Performance Features

NCDIT's Capacity Management team ensures that resource and workload capacity is performing sufficiently to meet your current and future needs. This includes data management and manipulation, storage capacity planning, performance management, availability management, revenue analysis and reporting.

Capacity management processes are divided into two services:

- Workload capacity management, which monitors and controls the performance of the customer's IT services by examining relevant data
- Resource capacity management for monitoring the performance of components within the IT infrastructure

For additional features, see the Technical Information section (Section 6.0).

Transaction Services (CICS, IMS & MQSeries) Features

NCDIT's Transaction Services team manages customer configuration, troubleshooting and support, system installation and maintenance. The team ensures that the applications running on the z/OS platform are available for all state agencies. This includes tracking and accessing z/OS online applications written and supported by various North Carolina state agencies.

Online processing time for Customer Information Control System (CICS) and Information Management System (IMS) is available by the minute and online through web and Middleware Services running under z/OS.

For additional features, see the Technical Information section (Section 6.0).

Mainframe Disaster Recovery Features

- The Hitachi Universal Replicator mirrors data to NCDIT's disaster recovery center to minimize mainframe recovery time.
- Mainframe data is mirrored asynchronously in 5 minutes or less, 24/7.
- Data is encrypted to secure its transmission between data centers.

2.2 Overview of Existing DMV Services

The Division of Motor Vehicles (DMV) has many functions that require application support on the state's mainframe platform. These critical business functions include but are not limited to vehicle registration, issuance of credentials, traffic records (crashes), voter applications, car inspections and emissions, vehicle insurance, medical certifications, and more.

State Titling and Registration System (STARS)

STARS provides automated titling and registration services for all motor vehicles registered in the State of North Carolina. STARS was designed and built for DMV to facilitate registration and titling as well as management of special registration and inventory management of titling. It is one of North Carolina's largest systems and requires a high level of support and maintenance.

The main functions of STARS:

- Provide fully automated title and registration services
- Facilitate branch office services
- Provide over the counter or third-day receipt of title
- Ensure proper handling of fiscal activities for titling and registration services
- Support inventory management
- Provide special dealer transaction processing
- Validate sticker/registration documentation processing
- Facilitate correspondence process
- Automate forms for titling and registration
- Maximize management of special registration
- Allow proper validation of VINs and addresses
- Promote effective interface with external system

STARS supports NC DMV's over 128 license plate agencies where registration and titling services are transacted, 18K internal users, private institutions, and state and federal agencies. STARS currently manages the following number of vehicle-related artifacts:

- Total Vehicles: 41,147,053
- Total Titles: 95,205,534
- Active Titles: 31,362,717
- Cancelled Titles: 61,977,424
- Active Registrations: 10,536,952

The STARS system has mainframe and Internet components and complies with the North Carolina Statewide Architecture guidelines, http://www.NCSTA.gov.

STARS Code Repository Stats:

In the table below please find the Type and Number of Development Artifacts that comprise the STARS Mainframe Application, as well as the Total Lines of Code. Note: All code metrics were generated by the Application Intelligence Analytics and Standards (AIAS) Team using data compiled from the CAST Software's Application Intelligence Platform.

Type	No. of Artifacts
COBOL Online	610

Type	No. of Artifacts
Cobol Batch	745
Assembler Program	24
Easytrieve Programs	94
Job Control Language	1017
Control Cards, CICS Files etc.	1981
CICS Transactions	691
COBOL Copy Books	1815
DB2 Tables	190
Total Number of LOC: 2,596,043	

STARS Cross System Interactions:

The Table below represents all the cross systems interactions originating from STARS within the DMV Mainframe System Applications.

Source System	Target System	Type of Interaction	No. of Interactions
STARS	SADLS	JCL à CTL Card	3
STARS	SADLS	Cobol Prog à Cobol Prog	38
STARS	SADLS	Cobol Prog à Cobol Copybook	110
STARS	SADLS	Cobol Prog à CTL Card	92
STARS	LITES	CICS Trans à Cobol Prog	2
STARS	LITES	Cobol Prog à CTL Card	2
STARS	LITES	Cobol Prog à Cobol Copybook	73
STARS	LITES	Cobol Prog à Cobol Prog	73
STARS	Emissions	Cobol Prog à Cobol Prog	30
STARS	Emissions	Cobol Prog à Cobol Copybook	28
STARS	Emissions	CICS Trans à Cobol Prog	88
STARS	IRP	Cobol Prog à Cobol Prog	57
STARS	IRP	Cobol Prog à Cobol Copybook	335
STARS	IRP	CICS Trans à Cobol Prog	146

STARS interfaces with external systems including the following:

- AAMVA Programs: State-to-State verification service, Commercial Driver License Information System, Problem Driver Point System
- Finalist: Pitney Bowes mailing address management and verification system
- X/PTR (report storage)

The STARS Internet components utilize CICS WEB Services to interface with the mainframe, including:

- Registration Renewal – allows citizens to request the renewal of vehicle registrations via the Internet
- Duplicate Registration – enables citizens to request duplicate vehicle registrations via the Internet

- Special/Personalized Plate Reservation and Inquiry – allows citizens to request special and personalized plates via the Internet

Batch job scheduling is managed using ASG Zeke.
RACF is used to provide access control and auditing functionality.

State Automated Drivers License System (SADLS)

SADLS provides for the issuance and adjudication of North Carolina driver licenses and identification (ID) cards. SADLS was designed and built for the DMV's Driver License Section to facilitate the issuance of North Carolina driver licenses and to assist in the efficient and consistent adjudication of driver license records that reflect convictions and moving violations. SADLS supports the NC DMV's 120 Driver License offices and 700 internal users. Additionally, SADLS web-based interfaces support approximately 6 million NC citizens seeking driver license services.

SADLS interfaces with external systems, including the following:

- NLETS (National Law Enforcement Telecommunications System)
- X/PTR (report storage)
- SADLS Code Repository Statics:
- In the Table below please find the Type and Number of Development Artifacts that comprise the SADLS Mainframe Application, as well as the Total Lines of Code. *Note: All code metrics were generated by the Application Intelligence Analytics and Standards (AIAS) Team using data compiled from the CAST Software's Application Intelligence Platform.*

Type	No. of Artifacts
COBOL Online	921
Cobol Batch	1346
Assembler Program	2
Easytrieve Programs	211
Job Control Language	996
Control Cards, CICS Files etc.	2809
CICS Transactions	2564
COBOL Copy Books	3107
DB2 Tables	358
Total No. of LOC: 3,500,160	

SADLS Cross System Interactions:

The Table below represents all the cross systems interactions originating from SADLS within the DMV Mainframe System Applications.

Source System	Target System	Type of Interaction	No. of Interactions
SADLS	STARS	JCL à Cobol Prog	14
SADLS	STARS	CICS Trans à Cobol Prog	1
SADLS	STARS	Cobol Prog à Cobol Prog	26
SADLS	STARS	Cobol Prog à Cobol Copybook	64
SADLS	LITES	CICS Trans à Cobol Prog	2
SADLS	LITES	Cobol Prog à Cobol Copybook	3
SADLS	Emissions	Cobol Prog à Cobol Prog	1
SADLS	Emissions	Cobol Prog à Cobol Copybook	4
SADLS	IRP	Cobol Prog à Cobol Prog	1

Liability Insurance Tracking Enforcement System (LITES)

LITES provides automated processing and tracking of vehicle insurance for all motor vehicles registered in the State of North Carolina. LITES was designed and built to track and enforce vehicle liability insurance and economic responsibility requirements per NC statute for the Division of Motor Vehicles. In North Carolina, the registered owner of a motor vehicle must have the proper level of liability insurance coverage provided by an insurance company authorized to do business in the State.

The main functions of LITES:

- Accept and process new insurance notifications from insurance companies
- Accept and process terminated insurance notifications from insurance companies
- Accept customer responses
- Establish an interface between Vehicle Registration services and Liability Insurance services.
- Allow inquiry on Liability Insurance data
- Process and track prima facie requests
- Accept and track hearing requests
- Process and track insurance lapses
- Provide administrative services

LITES supports 2000 internal users, primarily in the DMV's Liability Insurance (LI) Unit, which is responsible for ensuring that all licensed vehicles registered in the State of NC maintain continuous liability insurance coverage, along with the proper level required by General Statute. It also supports various other internal and external entities, such as Contract License Plate agencies, insurance companies, and collection agencies. The performance of the current LITES application is variable today due to several factors including network latency, external interfaces, system utilization, transaction volumes, etc.

The LITES system has mainframe and Internet components. The main frame components are written primarily in Sapiens eMerge, COBOL, and CICS using DB2 as the database repository. The mainframe batch and online components operate under the IBM ZOS operating system. The LITES Internet components are written in .NET and Java and utilize CICS web services and CICS Transaction Gateway to interact with the mainframe.

LITES interfaces with external systems including the following:

- Finalist: Pitney Bowes mailing address management and verification system
- X/PTR (report storage)

Batch job scheduling is managed using ASG Zeke.

RACF is used to provide access control and auditing functionality.

LITES Code Repository Stats:

In the table below please find the Type and Number of Development Artifacts that comprise the LITES Mainframe Application, as well as the Total Lines of Code.

Type	No. of Artifacts
COBOL Online	51
Cobol Batch	132

Type	No. of Artifacts
Assembler Program	350
Easytrieve Programs	0
Job Control Language	160
Control Cards, CICS Files etc.	652
CICS Transactions	0 (Access through STARS and Sapiens)
COBOL Copy Books	178
DB2 Tables	105
Total Number of LOC: 346,076	

LITES Cross System Interactions:

The Table below represents all the cross systems interactions originating from LITES within the DMV Mainframe System Applications.

Source System	Target System	Type of Interaction
LITES	STARS	JCL to → Cobol Prog
LITES	STARS	Cobol Prog to Cobol Prog
LITES	STARS	Sapiens Module to Cobol Prog
LITES	STARS	Cobol Prog to Cobol Copybook
LITES	SADLS	Cobol Prog to Cobol Copybook
LITES	SADLS	Cobol Prog to Cobol Prog
LITES	IRP	JCL to Cobol Prog
LITES	IRP	Cobol Prog to Cobol Copybook

North Carolina Electronic Transmittal System (NCETS)

NCETS provides IT applications to support DMV License and Theft in managing the North Carolina Vehicle Inspection program and providing data to STARS to support the renewal of a vehicle. The Emissions system and STARS exchange data to meet NC inspection requirements.

NCETS Emissions system provides the following major functions:

- Provides vehicle inspection status information to STARS that allows or blocks vehicle registrations using a CICS linked program.
- Sets 'R' exemptions for vehicles using a CICS linked program.
- Manages the assignment of control numbers for technicians with out-of-state driver licenses utilizing a CICS user interface.
- Provides DMV License and Theft program staff and Call Center representatives with access to inspection status information and the ability to manage exceptions and special inspection exemptions using the CICS user interfaces.
- Provides inspection facility and location information to the NCDOT web team using FTP.
- Processes civil penalties for permanent plate vehicles using mainframe batch processes.

- Provides maintenance for civil penalties using a CICS user interface.
- Provides penalty notifications using a batch process that utilizes the mainframe correspondence system in SADLS.
- Provides data to the SADLS delinquent accounts system via mainframe batch processes accessing the DB2 tables.
- Hearings for Emission penalties – schedules and decisions are maintained via CICS user interfaces. Notification letters are produced utilizing the SADLS correspondence system.
- Manages the Daily Activity reporting for DMV staff using CICS user interfaces.
- Provides statistical reports for Daily Activity reporting that are requested via a CICS user interface, created using mainframe batch processes, and are available for viewing by the user via NCXPTR.
- Extracts inspection exemptions issued by the user for reporting in Daily Activity by using a mainframe batch process.

Physical and Topological Details

The NCETS Emissions system is hosted on the IBM mainframe at ITS. The DMV License and Theft users, the DMV License Tag Agents, and some STARS users access the system via a secure 3270 Host-On-Demand connection to the legacy ITS mainframe EM40 CICS transaction. This method allows the users to inquire on and maintain the NCETS Emissions system data. The system also prints correspondence and reports on printers at DMV Headquarters and on local LAN printers.

The application resides on the mainframe and utilizes CICS as the user interface. The exchange of inspection data to NCETS is via a CICS-linked program called the COBOL program in batch.

NCETS interfaces with external systems including the following:

- Finalist: Pitney Bowes mailing address management and verification system
- X/PTR (report storage)

Batch job scheduling is managed using ASG Zeke.
RACF is used to provide access control and auditing functionality

NCETS (Emissions) Code Repository Statics:

The table below shows the Type and Number of Development Artifacts that comprise the NCETS Mainframe Application and the Total Lines of Code. Note that the Application Intelligence Analytics and Standards (AIAS) Team generated all code metrics using data compiled from *CAST Software's Application Intelligence Platform.*

Type	No. of Artifacts
COBOL Online	150
Cobol Batch	226
Assembler Program	112
Easytrieve Programs	39
Job Control Language	117
Control Cards, CICS Files etc.	433
CICS Transactions	174

Type	No. of Artifacts
COBOL Copy Books	1535
DB2 Tables	71
Total Number of LOC: 690,239	

NCETS(Emissions) Cross System Interactions:

The Table below represents all the cross systems interactions originating from NCETS within the DMV Mainframe System Applications.

Source System	Target System	Type of Interaction	No. of Interactions
Emissions	STARS	JCL à JCL Proc	6
Emissions	STARS	Cobol Prog à Cobol Prog	52
Emissions	STARS	Cobol Prog à Cobol Copybook	355
Emissions	STARS	Assembler à Assembler	3
Emissions	SADLS	Cobol Prog à Cobol Prog	128
Emissions	SADLS	JCL à Cobol Prog	11
Emissions	SADLS	Cobol Prog à Cobol Copybook	300
Emissions	LITES	CICS Trans à Cobol Program	2
Emissions	IRP	Cobol Prog à Cobol Copybook	2

International Registration Plan (IRP) / Motor Carrier

IRP/Motor Carrier provides automated processing of interstate and intrastate vehicles registered in the State of North Carolina. IRP/Motor Carrier is a registration reciprocity agreement among 48 states of the United States, the District of Columbia, and Provinces of Canada providing for payment based on fleet distance operated in various jurisdictions.

IRP/Motor Carrier supports 600 internal users, and state and federal agencies, including the Department of Revenue, the federal Unified Carrier Registration (UCR) system, the Federal Motor Carrier Safety Administration (FMCSA) systems, state counties, and other public and private entities. It also supports insurance companies and truckers. Performance of the current IRP/Motor Carrier application is variable today due to several factors, including network latency, external interfaces, system utilization, transaction volumes, etc.

The IRP/Motor Carrier solution has mainframe and Internet components. The IRP/Motor Carrier/Motor Carrier system comprises of Mainframe and Internet modules. The mainframe components of IRP/Motor Carrier/Motor Carrier are written primarily in COBOL and CICS using DB2 as the database repository. The mainframe batch and online components operate under the IBM ZOS operating system. The IRP/Motor Carrier Internet components are written in Java and utilize CICS Transaction Gateway (CTG) to screen scrape the mainframe screens. IRP/Motor Carrier today utilizes a Db2 database.

IRP/Motor Carrier interfaces with external systems including the following:

- Finalist: Pitney Bowes mailing address management and verification system
- X/PTR (report storage)

The IRP/Motor Carrier Internet components utilize CICS Transaction Gateway (CTG) Services to screen scrape the mainframe screens.

Batch job scheduling is managed using ASG Zeke.

RACF is used to provide access control and auditing functionality.

IRP/Motor Carrier Code Repository Statics:

In the table below please find the Type and Number of Development Artifacts that comprise the IRP/Motor Carrier Mainframe Application, as well as the Total Lines of Code.

Type	No. of Artifacts
COBOL Online	170
Cobol Batch	288
Assembler Program	31
Job Control Language	147
Control Cards, CICS Files etc.	976
CICS Transactions	170
COBOL Copy Books	2971
DB2 Tables	105
Total Number of LOC: 1,021,699	

IRP/Motor Carrier Cross System Interactions:

The Table below represents all the cross systems interactions originating from IRP/Motor Carrier within the DMV Mainframe System Applications.

Source System	Target System	Type of Interaction	No. of Interactions
IRP	STARS	JCL to Cobol Prog	10
IRP	STARS	Cobol Prog to Cobol Program	273
IRP	STARS	Cobol Prog to Cobol Copybook	1660
IRP	STARS	Assembler to Assembler	4
IRP	SADLS	JCL toCobol Prog	2
IRP	SADLS	Cobol Prog to à Cobol Prog	2
IRP	SADLS	Cobol Prog to CTL Card	11
IRP	SADLS	Cobol Prog toCobol Copybook	7
IRP	LITES	Cobol Prog toCobol Prog	23
IRP	LITES	Cobol Prog toCobol Copybook	56
IRP	Emissions	Cobol Prog toà Cobol Copybook	1

2.3 Online Processing Information

Mainframe – CICS Transactions

We currently process approximately 5,205,171 DMV transactions per day. Of that average, we process approximately 2,582,154 SADLS transactions and 2,623,017

STARS/LITES/IRP/ENFORCEMENT transactions. This transaction count is representative of April 23, 2025.

CICS Region	SYSID	#Trans	Trans/Sec	Avg Resp Time Secs / Systems
ZSANCMV	SYSB	2623017	10.1197	0.03 / STARS/IRP/LITES/ENFORCEMENT
ZSANCMD	SYSB	2450830	9.0771	0.04 / SADLS
ZSANCMI	SYSB	12889	0.0477	6.87 / SADLS
ZSANCIN	SYSB	118435	0.7833	0.35 / SADLS

2.4 Batch Processing Information

Critical Batch Print Volumes

Batch Job Types and Volumes		
Description	**Freq**	**Volume (Rcds)**
Processing trigger records e.g. court convictions	Daily	5,000
Vehicle renewal notices – mail	Monthly	800,000
Vehicle renewal notices – eMail	Monthly	100,000
Vehicle Registration Cards	Daily	15,000
Dealer Renewals	Monthly	1,0000
Driver License renewal notices -- mail	Monthly	95,000
Driver License renewal notices – email	Monthly	95,0000
Miscellaneous correspondence e.g., compliance letters	Monthly	400,000
Driving Records	Daily	10,000
IRP Cab Cards	Daily	200
IRP Renewal Notices	Monthly	1,000
Insurance Termination Notices	Daily	2,500

Current Batch Integration Categories

Batch Integration Categories	
Method	**Comments**
sFTP via USS	Interfaces with various organizations using the Unix Systems Services on the mainframe.
FTPS	Integration with insurance companies.
NDR	through AAMVANET / File 98
Finalist - Batch	Executes a vendor-provided application executed in batch to process address standardization and delivery point validation
Mailstream Plus	Software to optimize mailing using barcodes.

Current Batch Data and Report / Printed Output Handling

Print Stock - Special forms/card stocks include:

- Titles: Pre-printed paper stock
- Vehicle Renewal Notices
- Vehicle Registration cards:
- Driver License Renewal Notices
- IRP Stickered Cab Cards

- Perforated 3 equal sections
- Card stock Envelopes
- Labels

2.5 Current Integrations and Interfaces

Legacy Middleware Services:

- MQ Series
- SOAP Web Services
- RESTFul Web Services
- CICS Transaction Gateway (CTG)
- DB2 Connect
- SFTP

Customer Flow Management Application (Q-Flow)

The ACF provided QFlow application provides touch screen kiosks at DMV locations where customers or Facilitators can print tickets specific to the service the customer is requesting. Every ticket comes up with a ticket ID and case ID on it and automatically the ticket gets enqueued in the QFlow web application. Examiners use QFlow web application at workstations and call the enqueued tickets to serve customers. Examiners will key in case ID on Mainframe application to link the QFlow ticket with customer's application. The QFlow application interfaces with MVN (Must View Networks) application to display printed ticket IDs and commercials and to call out audio prompt on large TVs at DMV offices. The URL for QFlow Web application is https://queuing.services.ncdot.gov/QFlow/SignIn.aspx

Online Appointment Scheduling (OAS)

DMV provides an online appointment booking application developed and supported by vendor ACF that offers appointment scheduling features to customers to book appointments for various DMV offered services. Customers can use the public facing web application to select the desired service and search for appointments available in all DMV locations across NC and select any office to book an appointment. The URL for OAS Web application is https://skiptheline.ncdot.gov

Automated Testing System (ATS)/Know to Drive (K2D)

This is a DMV provided service to take knowledge tests for various types of driver's licenses. The K2D application is developed and supported by the vendor, ITI Inc. The DMV examiners are authenticated by the K2D web application using Active Directory (AD) accounts. Examiners will search for customer information on K2D app and initiate knowledge test on a testing station. Customers will take knowledge tests on touch screen testing station for the DL type they have applied for. All the testing information will be saved to database which will be later retrieved by the mainframe application by examiner to issue customer's DL. The URL for K2D Examiner Web application is https://ncats.dot.nc.net/ncinquick.html

Secure Image Management System (SIMS)

The Secure Image Management System (SIMS) is provided and supported by an external Contractor (CBN) that is used to issue and distribute North Carolina Driver's Licenses and Identification Cards to the citizens. SIMS is a standalone custom developed solution. SIMS utilizes web services to exchange necessary data between DMV backend systems and the CBN card printing and processing facility. This includes interfaces to the image database via SIMS.

DMV Splunk

Splunk is DMV's enterprise SIEM solution. The State security policy requires the storing of audit records in a repository separate from the audited system or system component to

ensure that a compromise of the system being audited does not also result in a compromise of the audit records. The DMV Splunk SIEM serves this purpose as well as the required capability to centrally review and analyze audit records from multiple systems in a single platform.

DMV Secure Apps

Intranet / Extranet applications

Transit Notification System (TNS)

Businesses can monitor their drivers and if drivers have any conviction the business will get correspondence that the driver has received a conviction.

DCI, CJLEADS and NCIC

DMV mainframe systems interface with the NC Division of Criminal Investigation (DCI) and the Criminal Justice Law Enforcement Automated Data Services (CJLEADS) for providing driver and vehicle related information. In addition, DMV receives information related to stolen vehicles and plates from the National Crime Information Center (NCIC).

AAMVANet (American Association of Motor Vehicle Administrators)

A variety of interfaces supporting various motor vehicle related functions including driver licensing and identification (examples include NDR, CDLIS, CSTIMS, Social Security Verification, DLDV, SPEX, Electronic Record Exchange, etc.)

Tek Data Systems

New and used car prices for retrieval of vehicle valuations.

NMVTIS (National Motor Vehicle Titling Information System)

The National Motor Vehicle Title Information System (NMVTIS) is designed to protect consumers from fraud and unsafe vehicles and to keep stolen vehicles from being resold.

Enterprise Data Architecture

Data sourced from DMV

IRP Data Repository

IRP account, fleet, vehicle, and fee data.

VINtelligence

VIN-decoding information for passenger cars, light trucks, trailers, and motorcycles

ELT

Electronic Lien and Titling system interfacing with an external vendor

USPVS - U.S. Passport Verification Service (AAMVA) – REAL ID

SAVE - Systematic Alien Verification for Entitlements

Address Verification Services:Pitney Bowes/Finalist

North Carolina Department of Health and Human Services

Receive Substance Abuse assessment completion data.
Receive Death data from Vital Records Unit.
Integration to support customer and Vehicle information

Online Dealer Vendors

This interface provides a means for North Carolina dealerships to issue vehicle title and registration cards, metal license plates and stickers at the point of sale.

Administrative Office of the Courts

Integration to support vehicle seizures with DWI and other violations.
Receive conviction, suspension, and other events.

MV Solutions

Vehicle insurance verification system using sFTP and Web Services.

NC Department of Revenue

Integration to support IRP audits

Remittance Processing - AQUIRIT

Integration to support mail-in transaction processing for renewals.

AQURIT is a custom off the-shelf software system integrated with the STARS system. It is used to process vehicle registration renewals received by mail at the Division of Motor Vehicles and paid by check. The Remittance Processing (RTP) Unit uses AQURIT (AQ2) to scan the coupons and checks, and create the data files that are sent to First Citizen Bank. AQUIRIT also sends the payment information to STARS.

North Carolina State Board of Elections

Voter Registration integration support

NCDOR Vehicle Tax System

Solution for supporting collection of vehicle property taxes.
Quarterly data of Driver and Address is sent to NCDOR.

Insurance Companies

Submission of insurance initiation and termination documents for North Carolina vehicles. Provide Bulk Driver's data to several of them.

iNovah – Credit/Debit Payment Card Collections

iNovah Point of Sale system is a commercial off-the-shelf software system implemented by the North Carolina Division of Motor Vehicles (NCDMV) in August 2013. This system enables the processing of card-present credit and debit card transactions at over 300 NCDMV service locations across the state. iNovah captures payments for services including Titling and Registration (LPAs), International Registration Plan (IRP), and Motor Carrier (MC). The system is integrated with the NCDMV's primary mainframe systems (STARS, IRP, MC, SADLS) and associated payment processing components to facilitate payment collection and data management.

Number of Card Present Payments Collected (July 2023 – June 2024)

Vehicle Registration	Driver's License	IRP	Total
3,649,050	1,373,811	16,805	5,039,666

Enterprise Content Management

NCDOT's Enterprise Content Management System (ECMS) is composed of two main commercial off-the-shelf (COTS) products: OpenText Capture, which handles document

capture, and SharePoint. Together, these platforms form a powerful enterprise solution for streamlining the entire document lifecycle—from capture to secure management and collaboration.

Paper documents are captured using ScanPlus with a scanner at the DMV Scan Center. This automated process captures documents using a batch cover sheet (to separate batches using a barcode) and document cover sheets with a barcode (generated from STARS) for automatic indexing and transporting the images to the storage process. Once documents are captured and established as a batch in the InputAccel application, the documents are indexed and exported to the DMV SharePoint repository.

Both OpenText Capture and SharePoint offer a wide range of features, including the following:

OpenText Capture:

- Serves as the front-end intake system, handling high-volume document capture, including scanning, importing, classification, and data extraction using OCR and intelligent recognition. It ensures that documents—whether paper-based or digital—are efficiently ingested and pre-processed for downstream use.
- Provides both direct (native) and RESTful APIs that enable developers to integrate custom document intake workflows, apply metadata tagging, implement validation logic, and configure routing rules. These APIs also support automation of capture processes and integration with external systems such as RESTful web services, databases, and cloud platforms.
- Includes reporting features that provide visibility into capture performance, batch processing, exception handling, and system throughput—helping administrators monitor operations and optimize efficiency.
- Supports Windows Authentication, SAML, and integration with enterprise identity providers (e.g., Active Directory, Azure AD), enabling secure, role-based access to capture services.
- Supports flexible deployment options, including on-premises and cloud environments. Its modular architecture makes it easy to scale capture capacity independently from storage or workflow components.

Microsoft SharePoint

- Serves as the core content management platform, offering centralized document storage, permission management, version control, and workflow support. It allows users across the organization to securely access, manage, and collaborate on content, with tight integration into the Microsoft 365 ecosystem..
- Offers an extensive set of REST APIs, Graph API (via Microsoft 365), and CSOM/JSOM (Client and JavaScript Object Models). These enable advanced content manipulation, workflow automation, permissions management, and tight integration with Microsoft services like Teams, Power Automate, and Power Apps.
- Includes reporting features that provide visibility into site activity, document usage, workflows, and user interactions. When used with tools like Power BI, these insights can help teams better understand how content is managed and used across the organization.
- Supports secure, token-based authentication through Azure Active Directory and OAuth 2.0 in Microsoft 365 environments. For on-premises setups, it can also work with authentication methods like Kerberos, NTLM, or federated identity systems.

Supports both on-premises (e.g., SharePoint Server) and cloud-based (SharePoint Online) deployment models. It integrates with other Microsoft 365 services and supports hybrid configurations for gradual cloud adoption.

3.0 DMV Modernization Vendor Selection Scope and Requirements

3.1 Approach

The Division's modernization approach consists of the following overarching elements.

- **Entire DMV System in Scope** – The Division is interested in modernizing its entire technology platform during this project. This is consistent with DMV modernization best practices for agencies with legacy systems that need to substantially upgrade most or all of their systems and migrate away from an expensive mainframe platform.
- **Single System Preference** – The Division prefers to have as much scope as possible within a single system. Subsystems that are smaller and less integrated into the master system may involve other software components. Again, this is consistent with best practices because it allows the agency to create a unified system for managing customers, transactions, and data.
- **AZ MAX Solution** –The AZ MAX solution has been selected as the future system based on analysis performed to date and ongoing analysis. The AZ MAX solution is a well recognized technical and functional accomplishment from the State of Arizona and multiple states are in the process of adopting and implementing this solution for themselves.

In *Figure 1 DMV Modernization Blueprint* below the shading shows that a large majority of NC DMV functions are planned to be supported by the AZ MAX solution, thereby providing a very integrated solution and approach. Some functions, such as Knowledge and Skills testing or Kiosks naturally have specialized solutions.

The Blueprint is composed of three layers. Each layer is a logical grouping of subsystems and functions as follows:

- **Business Layer** – This layer contains subsystems and functionality which are specific and unique to each operational business unit.
- **Base Layer** – This layer contains subsystems and functionality which is commonly required by most business areas, including customer management and web-based (self-service) offerings.
- **Foundation Layer** – This layer contains technologies and tools that should be used to consistently build modern systems and functions. The creation of a common toolset for system modernization allows IT staff to maximize effort and create a system that is easier to maintain and naturally more integrated.

Figure 1. DMV Modernization Blueprint

Subsystems in each layer might be purchased as "off-the-shelf" products, part of a larger solution, or implemented as custom-developed solutions for the NCDMV.

3.2 Foundation Layer Functions

The Foundation Layer contains subsystems that are more technical in nature and contain technologies and tools that could be used to consistently build common systems and functions.

Future functionality expectations subsystems in the Foundation Layer are listed in the following subsections.

Electronic Correspondence

- **Multiple Electronic Communication Modes –** Enables multiple communication modes such as the use of email, SMS Text, and electronic fax as well as storing results of the transmission and the document in the system's records for audit and customer support.
- **Sending and Tracking** – Enables the sending of the documents to recipients and tracking that the transmission was successfully completed.
- **Receipt and Routing** – Collects the messages and documents received electronically and matches them to the proper transaction or customer records and triggers any processing steps which may be required.
- **Encryption** – Encrypts data when the data is sent via electronic media, such as, email.
- **Security** – Ensures that the correspondence is secure, and customer data is not exposed outside of NCDMV.

Electronic Forms

- **Intuitive Support For Data Collection –** Supports electronic, auto-fillable, smart forms with instructions to customers, collects and validates data, and transfers the data to the systems for a transaction and can be used via the website.
- **Electronic Submission** – Supports the forms being filled in electronically and submitted to the system to start or complete a transaction.

- **Offline Use** – Supports collection of data when a customer is not on-line and allows data to be transmitted when the customer returns to being on-line.
- **Adaptive Content** – Can adjust the appearance of fields to show relevant fields as data is collected and decision are made.
- **Printable** – Supports printing of forms by users for manual submission via mail or in-person.
- **Barcoded Encoding of Data** – Generates barcodes with captured data for quick scanning and processing.
- **Electronic Signatures** – Enables electronic signatures, which is important for many document types to be handled completely electronically.

Notes

The team has leveraged SimplyGov for some forms but still prefers for their subsystems to be fully integrated in one solution.

Document Composition

- **Common Tool** – Provides a common tool for designing, generating and printing documents at all locations and supports merging document designs and layouts with appropriate document data to produce finished documents.
- **Design Tools** – Allows documents to be designed and created in ways that are consistent with modern word processors.
- **Templates** – Enables creation of templates that can ensure consistent design across many documents and notices.
- **Data Integration** – Integrates with databases and dictionaries so that designers can merge document content and live data.
- **Batch and On Demand** – Enables large numbers of documents and notices for batch production as well as individual document production for transactions including legal documents and notices.
- **Multiple Output Formats** – Manages the layout, consistency and production of documents to multiple media including paper, PDF, HTML, email, SMS Text, fax / eFax.
- **Intelligent Letter Generator** – Enables generation of letters that are tailored to the personized need of a specific customer.

Reporting and Analysis

- **Standard Reporting** – Enables automatic generation and distribution of reports on a regular basis.
- **Ad-hoc Report** – Allows analysts to copy logic and designs from other reports to create new ones.
- **Analysis** – Enables analytical “number crunching” and performing unique calculations. Allows the data to be manipulated by reporting tools and makes data available for extract into desktop tools such as Excel.
- **Data Dictionary** – Provides a comprehensive data dictionary that allows analysts to quickly understand and use the data that is in the system.

- **Report Library** – Enables documentation of system reports, including their purpose and current usage.
- **Scheduler and Distribution** – Offers the ability to schedule and store reports and distribute reports electronically.
- **Audit Reports and Analytics** – Provides a structured evaluation of financial, operational, or compliance processes.

Interface Management

- **Multiple Interface Types** – Supports data exchange with a variety of other computer systems and partners including support for flat file transfer (SFTP), XML, web services and other interface approaches.
- **Scheduling and On Demand Exchanges** – Provides scheduling for routine and on demand exchanges of data as well of processing of data that is received.
- **ETL** – Supports interface and ETL (Extraction, Transformation, Load) functionality that transforms data.
- **Consistency** – Allows external and internal interfaces to be automated and implemented in a consistent manner.

Workflow Management

- Flow of Transaction Work – Supports multiple staff across multiple areas to work in a sequence of predefined steps that are consistently followed.
- **Routing and Notification** – Defines and implements extended business processes by automatically routing the work to staff and notifying them about the work task that needs to be performed. Supports work tasks including manual processes and automated tasks.
- **Work Distribution** – Automatically distributes work to staff based on their changing availability to support the steps.
- **Tracking and Status Information** – Provides tracking information to customers that updates them regarding their transaction status and reduces customers' calls to the call support center.
- **Workflow Editor** – Provides the capability to edit the existing workflow without IT involvement.
- **Reporting** – Tracks performance metrics and general process reporting.

Business Rules Manager

- **United Rules Management**– Provides a unified approach to consolidate and manage the business rules so that they are well documented and consistently applied in the system.
- **Executes Rules** – Performs calculations, enforces complex business rules, and generates results.
- **Change and Manage Rules** – Provides a facility to change business rules and calculations in a manner that is fast, efficient, and minimizes system reprogramming (ex: fees due, requirements to restore privileges).

- **Variety of Rule Types** – Supports look-up tables, calculations, if-then logic, and other frameworks of rules.
- **Support for all Subsystems** – Allows the staff to manage the logic of business rules, calculations, and fees and is accessible to all NCDMV subsystems so that multiple subsystems can access it and so that rules can remain consistent.

Access Control

- **Complete User Management** – Supports a variety of users including NCDMV staff and management as well as other state agencies, the public, and business partners with some form of access to the system or a limited number of subsystems.
- **Role Management –** Provides complete management of roles within the system such as creation, updating, and deletion.
- **Role Based** – Defines access privileges based on user's role and responsibilities.
- **Account Management** – Manages the unique identify and authentication information of each user and assigns role privileges.
- **History** – Tracks history of usage, changes, and other audit information.
- **Integration** – Provides support for multiple systems and software packages and integrates with other directories such as Active Directory.
- **Centralized** – Supports centralizing security management and single sign-on to access all authorized systems.

Notes

The DMV intends to leverage the existing Active Directory to support access controls.

Scanning and Imaging

- **High Quality Imaging and Scanning** – Supports a high-quality imaging and scanning capability suitable for legal representation of important documents.
- **Counter Scanning** – Provides the ability to immediately return documents to a customer after being scanned and imaged.
- **High Speed Scanning** – Supports high-speed scanning capabilities at the central office for bulk scanning of documents, including the capability to scan, index, and route to the correct NCDMV user and customer's account.
- **OCR Capability** – Enables extraction of metadata from documents and attachment of the information to the correct customer's account and transactions.

Notes

- High speed scanning is being performed at DMV headquarters using IBML scanners. There may be an opportunity for integration with the proposed AZ MAX solution.
- The Division would prefer to utilize the AZ MAX document management solution if possible.

Operational Database

- **Well-Designed** – Serves the entire enterprise and implements a relational, normalized, organized design that meets all business area needs and the management of common customer information.
- **Complete Design** – Includes necessary data including Customer Data, Contact Info., Transaction and Payment Information, Driver License Data, Vehicle Title & Registration Data, Driving Compliance Data, Motor Carrier Data, Business Licensing Data.
- **Real Time Updates** – Contains live data which is updated in real-time when business transactions occur.
- **Secure** – Contains customer-sensitive data that is always protected; this includes protecting the integrity of the data as well as access to the data.
- **Resiliency** – Has appropriate failover, backup, and recovery capabilities.
- **Business Usability** – Provides users access to the system's available data.
- **Efficient** – Ensures fast, reliable, and scalable transaction processing by optimizing data storage, indexing, and retrieval while maintaining data integrity and consistency.
- **Flexible** – Provides the ability to add fields to the data model.

Notes

Database migration from DB2 to Microsoft is intended to be part of this modernization, and part of AZ MAX solution.

Data Warehouse

- **Reporting & Analysis** – Supports reporting and analysis, including point in time analysis to find trends and examine past performance.
- **Easy Access** – Collects data and stores it in a data store that allows efficient and easy access to the information.
- **Efficient Summarization** – Allows transaction level information to be summarized and analyzed in an efficient manner without impacting the performance of the operational database.
- **Cleanse Data for Accurate Analysis** – Provides tools to ensure that the data quality is maintained so that accurate analysis can be conducted.
- **Longitudinal View** – Collects data from historical periods that may originate from different systems.
- **Consolidation** – Combines data from multiple sources to create a comprehensive reporting environment.

Notes

The DMV does not currently have a data warehouse.

Document and Image Repository

- **Manages All Documents and Images** – Provides the capability to capture, organize, track, and retrieve a considerable number of documents and images / photos associated with a distinct customer and related business operations.

- **Point of Use Functionality** – Allows for capture and retrieval of information at a variety of locations. Supports capture of customer photos and quick scanning of documents while the customer is present as some documents may need to be returned promptly after being scanned.
- **Versioning** – Tracks the history and changes to photos and documents over time.
- **Retention** – Manages and implements retention schedules.
- **Annotation & Editing** – Supports editing, annotation, redaction, & similar capabilities.
- **Workflow** – Supports collection, editing, handoff, and tracking of documents to users with different roles and responsibilities.
- **Indexing and Searching** – Allows data to be captured as well as searched, retrieved, and processed.
- **Barcode Processing** – Allows barcodes to be read and processed to support other functions.

3.3 Base Layer Functions

The Base Layer contains subsystems and functionality that are commonly required by several or most business areas. Subsystems in this layer might be purchased as "off-the-shelf" products or custom-developed.

Future functionality expectations subsystems in the Base Layer are listed in the following subsections.

Customer Management

- **Capture and Track Customer Information –** Supports tracking of core information regarding individual and business customers, including contact information, financial information, business locations, DBAs and AKAs, and links registered individual owners and operators to a business.
- **Consistency in Customer Data –** Consistently leverages the same basic functions and services for all customers including transaction processing, searching and results viewing.
- **Unique Customer Identification** – Provides support for identity verification and processing via unique customer number assignment and tracking of each unique business and individual.
- **Track all Customer Interactions –** Tracks customers interactions, including email, paper & scanned documents, electronic documents and voice conversations. Provides the ability to track required follow-up actions stemming from conversations and interactions, such as triggering reminders for customers or staffs.
- **360-degree View of Customer –** Provides a 360-degree view of customers to both customers and NCDMV agents to view all their DL/ID, privilege status, vehicles, titles, registration, correspondence, associated plates, transaction history, etc.

Identity Management

- **Capture Identity Information** – Captures all information that will establish a unique identification for a customer or an entity.
- **Capture and Manage Documents** – Collects identity documents and stores them in a repository that allows efficient and easy access to the information when required in order to verify the customer or entity.

- **Perform Profile Checks** – Performs customer or entity profile related checks such as facial recognition, background checks, as necessary.
- **Support Self-Managed Account** – Allows customers or business entities to create a self-managed account with the NCDMV.
- **Tools to Confirm Customer's Identity** – Provides tools to confirm a customer's identity such as biometrics, third party, selfie on the phone to customer, and photo on file.

Case Management

- **Multiple Case Type** – Supports and manages cases of different types, such as cases for insurance cancelations, complaints, disputes, information discovery, legal case preparation, violations, and other situations.
- **Complete Case Lifecycle** – Manages the complete lifecycle of a case from its creation to its resolution. The case management process may include
- collection of documents
- tracking of all interactions
- issuance of orders, and other actions involving a customer and their privileges
- **Tracking and Linking Cases** – Enables integration with the customer management capabilities to track communications and link cases to customers.
- **Trigger a Workflow** – Integrates with the workflow management to support transitioning cases between staff.

Notes

The Division currently uses ServiceNow for case management. Post modernization, the Division would prefer to leave general internal IT case management in ServiceNow, but handle AZ MAX related cases via the AZ MAX solution.

Vehicle Management

- **Vehicle Ownership –** Establishes and tracks vehicle ownership by issuing and managing titles certifying ownership including support for lien management.
- **Registration –** Registers vehicles for operation on public roads and issues license plates, decals, and registration documents. Tracks payment of fees and taxes.
- **Vehicle Information –** Provides accurate and complete tracking of vehicle information so that transactions can be consistently processed.
- **Vehicle Lifecycle History –** Maintains and displays "cradle to grave" tracking of the life of a vehicle over multiple owners, titles, liens, and registrations.
- **Integrate with Partner Systems –** Supports integration with partner systems such as IRP, IFTA and UCR for shared data.
- **Initiate Interface Checks** – Enables triggering of various interface checks such as NMVTIS for title, NLETS/NCIC check for stolen vehicles, etc.

Web Based Transaction Portal – Customer

- **Identify Customer –** Allows customers and/or businesses to identify themselves using a trusted identity verification method.

- **Self-Service Transactions –** Allows customers to perform self-service transactions such as: initiate a title application, renew their vehicle registration, apply for licenses, submit documents, check status, and make payments.
- **Manage Customer Profile** – Allows customers to update information on their account, such as: addresses, contact information, communication preferences, pin/password.
- **View Real-time Information** – Provides customers the ability to check on the status of their transactions, including vehicle registrations, plates applications, payments processed, as well as plates and decals which may be expiring soon.
- **Download or Upload Documents –** Enables downloading of applications and other forms or uploading of documents required to process an application.
- **Query Information** – Enables real-time queries of information regarding a variety of authorized businesses such as insurance companies.
- **Tracking Visits** – Tracks all queries and access to the system, fulfilling requests electronically where possible.

Notes

The Division prefers to have a "One Stop Shop" for all DMV services.

Web Based Transaction Manager – Business Partner

- **Establish Partner Identity –** Establishes a user's identity by providing partners with a valid login credential and verification methods, such as two factor authentication, or use of PIN/password etc.
- **Communication** – Enables partners to send and receive communications with the NCDMV via their account.
- **Business Service Transactions & Queries–** Provides partners with a secure portal to identify staff, conduct queries, track query usage, and submit payment for services.
- **Submit Customer Transaction –** Provides partners with the ability to submit transactions on behalf of customers, such as driver training schools submitting student training data.
- **View and Register for Education** – Provides partners with the ability to see a calendar of available education courses and register/modify/cancel course registrations.

Notes

AZ-MAX is the preferred solution for business partner solutions but other systems may be necessary

Customer Information Center (Website)

- **Viewing Information** – Enables customer viewing of information, including requirements and processes for obtaining various personal, commercial, and business licenses.
- **License Requirements –** Provides license requirements information, which includes processes for obtaining various personal, commercial and business licenses.
- **Consumer Reference Material –** Provides consumer reference materials such as driving manuals, tutorials, and how-to guides for viewing and downloading.

- **Business Reference Material** – Provides business reference materials including information that allows businesses to more easily reference procedure guides, understand their responsibilities, and conduct business with the NCDMV.

Notes

Modernization of the NCDMV website is in scope but the solution may be to leverage AZ-MAX and there may be need to simply leverage existing NC tools and standards for the static pages of the website.

Kiosk Management

- **Kiosk Transactions –** Enables customer-facing and high-volume transactions, such as renewals, to be completed at a kiosk.
- **Realtime Interaction with NCDMV –** Provides a real-time interaction with the NCDMV system to perform a transaction using a kiosk so that all systems are immediately updated.
- **Tracking and Collection of Money –** Collects and tracks money by interacting with the NCDMV system when the customer is performing a transaction using a kiosk.

Notes

Currently, ITI manages the DMV's kiosks. There are 9 kiosks in the field, and the Division is expanding towards a target of 20 total kiosks. ITI could interface with the AZ MAX.

Mobile App and Mobile Wallet

- **Mobile App** – Enables support of mobile apps that complement the web portal. This includes a wide range of functions:
  - Obtain general information & assistance
  - Receive NCDMV notifications
  - Check license, ID, title, and registration status
  - Upload Information to NCDMV
  - Conduct appropriate driver and vehicle transactions
  - Support mobile DL/ID
- **Mobile Wallet** – Enables secure mobile wallet interaction with NCDMV processes:
  - Maintain and verify the identity information (DL/ID)
  - Maintain and verify the vehicle ownership information
  - Securely facilitate vehicle ownership transfer

Notes

- The NCDMV provided a report to legislature in January 2025 outlining the Division's mobile app plans. These plans may be modified as the modernization project evolves. The NCDMV team prefers to have a mobile app in scope with AZ-MAX.
- E-Titling is considered a potential future phase, as the functionality has not been fully developed in AZ-MAX currently. Interstate E-Titling would likely be addressed as part of a future multi-jurisdictional effort.

Call Center Management

- **Support Omnichannel Interactions** – Supports traditional incoming and outgoing voice calls as well as communication via email, live or video chat, and social media.
- **Interactive Voice Response (IVR)** – Manages call volumes and routing as well as collection of customer information that can be provided to an agent when taking a call.
- **Route Calls and Other Interactions** – Enables the use of several different routing methods, such as routing to the next available agent, routing based on skills of agents, or predictive routing based on anticipated customer need.
- **Integration with Customer Management** – Allows agents to view all documented information related to the customer they are serving including information on all previous contacts with the customer.
- **Computer Telephony Integration (CTI)** – Allows an agent's computer to function with the phone including using cloud-based calling (VOIP) and triggering desktop popups for agents.

Notes

DMV operations use a distributed call center structure which includes a large call center augmented by a 20 person staff in Rocky Mount.

The DMV's current call center solution is CX1 Agent. CX1 Agent is integrated with ServiceNow.

The team prefers a fully integrated solution across all call centers within AZ MAX.

Integration with ServiceNow is another option, if necessary, particularly if interfacing is straightforward.

Licensing Manager

- **Privilege Tracking –** Tracks core information about personal and commercial privileges that are licensed or suspended for individuals or businesses.
- **Master Information on Privileges –** Manages "master" information about the types of privileges offered and their requirements, which may include skill and knowledge tests, background checks, and submission of certifications or other information.
- **Applications for Privileges and Licenses –** Manages and tracks applications for privileges/licenses and tracks if the requirements have been met and proper fees paid including identifying missing requirements.
- **Authorizing Privileges** – Supports the process of authorizing privileges, generating necessary associated documents, and notifying appropriate parties.
- **Status Changes –** Supports processing authorized status changes including renewals, suspensions and restorations, upgrades/downgrades including notifying customers of needed actions and scheduling suspensions or other appropriate status changes.
- **Active Privileges –** Reviews and checks all active privileges as some commercial privileges require interim refresh of some requirements to maintain the privilege.

Appointment Scheduling

- **Appointment Attributes** – Defines and manages appointment attributes for types of appointments, appointment lengths, appointment durations, and other appointment related attributes.
- **Appointment Times –** Provides visibility into appointment times so that customers can view and schedule appointments.
- **Updates to Appointments –** Provides the ability to cancel or reschedule an appointment via portal or by calling an agent.
- **Confirmations –** Sends confirmations and reminders for appointments through a variety of different channels.

Notes

The DMV offers online scheduling today; however, the objective is to offer all functionality within the AZ MAX solution.

Customer Queuing

- **Customer Sorting** – Allows sorting of customers by the type of transaction.
- **Workload Management** – Manages staff workload by tracking staff productivity, and identifies potential customer issues (e.g., the same ticket has been at the counter for an extended period) that might require supervisor assistance.
- **Customer Convenience –** Supports online functions that enable downloading and printing of a queuing ticket at home that can be scanned upon arrival at the NCDMV.
- **Wait Times Display**– Displays customer wait times to the public. This functionality is available at selected offices.
- **Self Check-in** – Allows customers to perform a self-check-in via mobile devices when within the vicinity of the NCDMV office to put themselves in the queue.

Knowledge and Skills Test

- **Knowledge Test** – Supports process for knowledge testing pertaining to driving privileges and other licenses and permits.
  - Provide knowledge testing for applicable driving privileges
  - Provides multi-language support
  - Schedules and manage tests
  - Supports third party testing on the NCDMV's behalf
- **Skills Test** – Supports technology for skills testing pertaining to driving privileges.
  - Supports skills testing for applicable driving privileges
  - Allows the test instructor to schedule, conduct, electronically score, and submit test results
  - Supports third party testing on the NCDMV's behalf

Notes

The Division prefers to include online testing as part of the future AZ MAX solution.

If AZ MAX does not offer online testing, then NCDMV will consider interfacing with the existing system.

Financial Management

- **Chart of Accounts –** Supports allocation of funds to different accounts based upon source of the revenue and legislative rules.
- **Manage Collection –** Provides integration with operational areas that collect payments from customers.
- **Allocation and Distribution –** Tracks and reconciles all funds and distributes them to their appropriate accounts.
- **Customer Accounts –** Manages a financial account for each customer as necessary (e.g., driving records, commercial accounts, payment plans).
- **Accounts Receivable (AR) and Accounts Payable (AP)** – Tracks and manages all accounts receivable and accounts payable operations for the agency.
- **General Ledger** – Performs all general ledger activities related to the agency.
- **Interface with State Accounting System** – Interfaces with the state accounting system to meet the financial needs requirements as mandated by State Treasurer's office.

Point of Sale (POS)

- **Cash Register Function** – Provides a complete "cash register" function that allows staff to collect appropriate payments at all locations that collect payments including mail, kiosks and other channels.
- **Payment Types –** Supports multiple payment types, and mixed types for a single transaction.
- **Reconciliation and Reporting –** Reconciles and reports on the day's receipts and provides appropriate close out and audit reports for all registers and cashiers.
- **Integration with Transaction Systems –** Supports integration with transactional systems and the financial system that records and allocates all funds.

Inventory Management

- **Inventory Distributions –** Manages and tracks the distribution of serialized stock such as registration stickers/tables, title stock, and license plates.
- **Inventory Levels –** Tracks stock levels at all locations and supports replenishment of inventory as per the relevant business rules.
- **Shipments of Inventory –** Manages the shipment of all controlled and non-controlled items both to replenish and transfer inventory.
- **On-Demand Inventory Request –** Supports on-demand inventory requests for all plate types including the specialty and personalized plates, and other special use plates and decals.

Knowledge Management

- **Knowledge Repository** – Provides a web-based consolidated repository for institutional knowledge management.

- **Institutional Knowledge Management** – Manages institutional knowledge that includes:
  - business process and policy explanations
  - operational best practices
  - guidance for handling infrequent events
  - history of the operations and changes
- **Search Capability** – Provides a robust searchable knowledge base for information regarding processes and system instructions.
- **Knowledge Framework** – Provides a framework for creating policies and procedure manuals that are consistent, up-to-date, and searchable including a maintenance process to keep information current.
- **Improvements** – Supports the collection of suggestions and process improvements.

Notes

- Preference is for the inclusion of Knowledge Management within AZ MAX, if possible. Knowledge management currently includes Policy Management and Learning Management.
- The Division also discussed the importance of knowledge transfer from current staff to future staff.

3.4 Business Layer Functions

The Business Layer contains subsystems and functionality which are specific and unique to each business area.

Future functionality expectations subsystems in the Business Layer are listed in the following subsections.

Driver Licensing

Enables driver related functions associated primarily with licensing and ID issuance, including, at a minimum, functionality for:

- Identity Management
- Identification Cards
- Driver License & Beginner's/Learner's Permits
- Testing
- Insurance Compliance
- Driving Records
- Outreach and Education

Driver Compliance

Enables driver enforcement and compliance includes tracking infractions and other violations and attempts to ensure that only drivers with proper credential are on the road by offering, at a minimum, functionality for:

- Violation Structure Management
- Processing Violations/Citations
- Assessment and Withdrawal of Privileges
- Reinstatement of Privileges
- Medical Evaluation
- Remediation Processing
- Reciprocity
- Medical Registry (MR2) Application
- Ignition Interlock
- Commercial Driver Monitoring
- Insurance Reporting / Financial Responsibility / Safety Responsibility (SR)

Vehicle Services

Enables vehicle related functions involving vehicle titles and registrations for both personal vehicles and fleets including, at a minimum, functionality for:

- Vehicle Management
- Vehicle Titling
- Vehicle Registration
- Plate Management
- Lien Management
- Fleet Management
- Disability Placards
- Electronic Registration and Titling (ERT) Program
- Covert/Confidential Registrations
- Vehicle Records
- Abandoned Vehicle Management
- Vehicle Insurance Tracking and Enforcement

4. Motor Carrier Services

Supports NCDMV's participation in the International Registration Plan (IRP) program including, at a minimum, functionality for:

- Account Management
- All International Registration Plan (IRP) functionality

- Road Use Fee
- Unified Carrier Registration (UCR)
- Heavy Vehicle Use Tax (HVUT)
- Business Insurance Information and Insurance Tracking
- Permits
- Integration with all Vehicle and Customer Functionality and Databases

Business Licensing

Supports NCDMV's oversight of vehicle dealerships, driving schools, and other driver/vehicle related businesses including, at a minimum, functionality for:

- Licensing a Business
- Complaints and Compliance
- Business Inspections
- Electronic Registration and Titling (ERT) Program
- Dealer Plates
- Dealer Accounts
- Temporary License
- Permits
- Dealer Educational Requirements

Financial Operations

Supports finance and accounting capabilities, including, at a minimum functionality for:

- Cash and Payment Collection
- Collections
- Balancing and Deposits
- Reconciliation
- Refunds
- Dishonored Payment
- Chart of Accounts
- Accounts Receivable
- Accounts Payable
- Distribute Funds
- Tracking Collections and Distributions
- Financial Reporting

Notes

While transactions will be performed on the AZ MAX solution, the Division does not intend to make changes to its current AR and AP functions that are part of their financial solution.

The Official North Carolina DMV Website is DMV's primary informational service channel. Included on the website, is an in-depth collection of the content regarding DMV services, commercial and motor carriers, highway safety, and much more. Prominent features include DMV Customer Service locations with corresponding real-time average wait times. Built using various technologies supporting Responsive Web Design, the website served approximately 13.2 million users last year.

NCDOT Contact Us Form provides the ability for a citizen to Contact DMV electronically. Built using technologies to support Responsive Web Design, the website received over 375,000 comments last year.

myNCDMV is DMV'S primary eCommerce service channel integrated with DMV mainframe systems and business rules. Included on the website, there is an in-depth collection of the services one may complete online. This website is provided by a 3rd party vendor, PayIt. The services include: renewal of vehicle registration, pay limited registration taxes, order a duplicate registration/change of address, order a special or personalized plate, renew license & ID cards, upgrade a full provisional license, duplicate license & ID cards/change of address, submit a voter registration application, pay administrative hearing fees, request driving records, renew permanent disability placard, pay citizen liability insurance lapse, and request crash reports. Built using various technologies supporting Responsive Web Design, the website serves and processes over 5,000,000 transactions a year.

NC's MyDMV is the DMV online portal that allows citizens to view and manage details about their driver license and vehicle registration anytime and anywhere without ever having to wait in line. Built using various technologies supporting Responsive Web Design, the website serves approximately 1.5 million users per year.

4.0 DMV Modernization Solution Project Approach

The DMV Modernization Solution project shall consist of two primary stages:

Stage 1: Project Initiation and Proof-of-Concept (POC)
DMV desires completion of Stage 1 within 6 months following Contract execution.

Stage 2: Iterative Agile-based Design, Build, and Delivery of Full DMV Modernization Solution - DMV desires completion of Stage 2 within 3 years following completion of Stage 1 and DMV approval to proceed with Stage 2.

DMV reserves the right to terminate the Contract at the conclusion of Stage 1 or at any point after Contract award. Reasons for termination may include, but are not limited to, proof-of-concept results that fail to meet the overall needs of DMV, unacceptable management or performance, insufficient project funding, and/or for convenience of the Commonwealth.

4.1 Stage 1 – Proof-of-Concept Activities

The objective of the Stage 1 Proof-of-Concept is for the Selected Vendor to successfully demonstrate the effectiveness and viability of their proposed plans, approaches, concepts, and methodologies to successfully deliver a comprehensive and complete DMV Modernization

Solution. This includes demonstrating the development of applications centered around small, independent, and loosely coupled services and then demonstrating the consumption of those services from different user interfaces (for example Blazor UI, Power App, etc.)

During Stage 1, the Selected Vendor shall fully demonstrate their proposed approaches, concepts, methodologies, and capabilities to:

- Deconstruct and transform a small sample set of system components defined by DMV into a services-based architecture model.
- Transform a small sample set of user interfaces into modernized user interfaces consuming the newly developed services.
- Perform an iterative delivery of the new modernized sample set of components while synchronizing data and components between the new and existing systems.

The Selected Vendor must complete the following Stage 1 activities while working on-site with DMV staff:

- Project initiation and planning activities including all related documentation.
- Further define and document the scope of the POC.
- Further define the POC structure and workflow.
- Define and document the business processes, business rules, and requirements of the POC components.
- Develop and document detailed system design specifications based on selected Vendor-facilitated discussions with DMV for the POC components. Specific tasks that will be undertaken during the detailed system design process include, but are not limited to:
    - Specification of the technical architecture to be employed and the required configuration.
    - Program structure and flow.
    - Logical and physical data models.
    - Definition of any interfaces between systems.
    - Preliminary screen designs.
- Train and coach DMV staff participating in the POC on new software and development tools as necessary.
- Fully build and demonstrate the working functionality of the following POC sample set of system components:
    - Add and maintain a DMV customer.
    - Issue a basic North Carolina title and registration (no liens, one owner).
    - Request vehicle valuation from JD Power NADA value guide, licenses provided by DMV (web API request).
    - Collect title and registration fees (including settlement processing).
    - Produce print data file for a title and registration card.
    - Produce a batch print data file supporting monthly registration renewal notices (demonstrate executing batch solution).

  - System to system integration - Customer inquiry from an external business partner (web API).
- Define and document a detailed Go-Forward Plan for the full DMV Modernization Solution project based on the results of the POC. The Go-Forward Plan will also include a detailed project work plan and projected staffing plan based on an agile/iterative development and delivery approach with proposed release cycles.
- Provide a detailed presentation of the results of the POC and Go-Forward Plan to the DMV Executive Steering Committee for further consideration and approval.

At the end of Stage 1, DMV will review and evaluate the results of the POC and the Go-Forward Plan. If DMV approves the detailed Go-Forward plan, Stage 2 efforts may proceed for the agile-based iterative development and delivery of the full DMV Modernization Solution.

The selected Vendor must provide a comprehensive and detailed narrative describing the proposed plans, approaches, concepts, and methodologies to accomplish the requirements of Stage 1 – Proof-of-Concept Activities.

4.2 Stage 2 – Full DMV Modernization Solution Build and Implementation

During Stage 2, the Selected Vendor will complete the following while working on-site with DMV staff:

- Project initiation and planning activities including all related documentation.
- Further define and document the scope of the full DMV Modernization Solution.
- Conduct a comprehensive analysis and deconstruction of the existing CSS application(s), interfaces, and components to transform to a services-based architecture model.
- Document comprehensive process flows, user stories, business rules, requirements, and related specifications while following agile methodologies.
- Define and document finalized specifications of the technical architecture for the DMV Modernization Solution approach.
- Build test plans and documentation (including automated testing). Existing structured testing business rules, process flows, test plans, test cases can be used in this process.
- Define and document a comprehensive build and delivery plan including a detailed product backlog and release cycle plan with user stories prioritized based on business value as defined by DMV.
- Iteratively build and implement/release the full DMV Modernization Solution components while synchronizing data, as necessary, and components between the new and existing systems.

Acceptance and approval, in writing, will be based on successful reviews of each iteration/release by the appropriate DMV team members and/or the Executive Oversight Committee members.

The selected Vendor must provide separate comprehensive and detailed narratives describing the proposed plans, approaches, concepts, and methodologies to accomplish the requirements of Stage 2 – Full DMV Modernization Solution Build and Implementation activities under 2 different scenarios:

Scenario (Build From ADOT MVD MAX As Starting Point)

The Selected Vendor will complete all activities related to Stage 2 – Full DMV Modernization Solution Build and Implementation based on utilizing a fully functional DMV Modernization Solution(MAX) for processing, recording, and retaining of information pertaining to motor vehicle and driver license transactions currently in use by the Arizona Department of Transportation Motor Vehicle Division (ADOT MVD).

DMV has acquired the current code for the ADOT MVD MAX system applications under a System Application Agreement and Memorandum of Understanding between DMV and ADOT MVD. DMV has decided to use the MAX system applications as a starting point for developing the DMV Modernization Solution.

There are no options for the Vendor to propose incentives which include provisions for Vendor ownership or Vendor rights to resell the DMV Modernization Solution.

5.0 Technical Needs and Requirements

5.1 Mandatory Technical Compliance Requirements

The Supplier must acknowledge and confirm their understanding that the DMV MODERNIZATION VENDOR SELECTION Solution developed by the Vendor and DMV shall comply with the following and DMV policies and standards. To the extent that DMV's security policies and procedures conflict with those of the State of North Carolina, the policies and procedures that provide the highest level of protection shall take precedence.

5.2 Mandatory Security Requirements

The selected Vendor must adhere to the NC Statewide security policies.
https://it.nc.gov/programs/cybersecurity-risk-management/esrmo-initiatives/statewide-information-security-policies

https://csrc.nist.gov/projects/cprt/catalog#/cprt/framework/version/SP_800_53_5_1_1/home

5.3 DMV Modernization Solution Architecture Requirements

The Vendor must acknowledge and confirm their understanding that the DMV Modernization Solution developed by the Contractor and DMV will comply with the following solution architecture requirements:

Target Architecture

The target architecture for DMV is envisioned as a Microsoft Azure based cloud-native architecture that is secure and scalable. DMV requires an incremental approach to deconstruct our existing monolithic DMV mainframe application into a more scalable and agile Services based architecture.

A Services based architecture is an approach to building software applications as a collection of services communicating with lightweight mechanisms, often through APIs (Application Programming Interfaces).

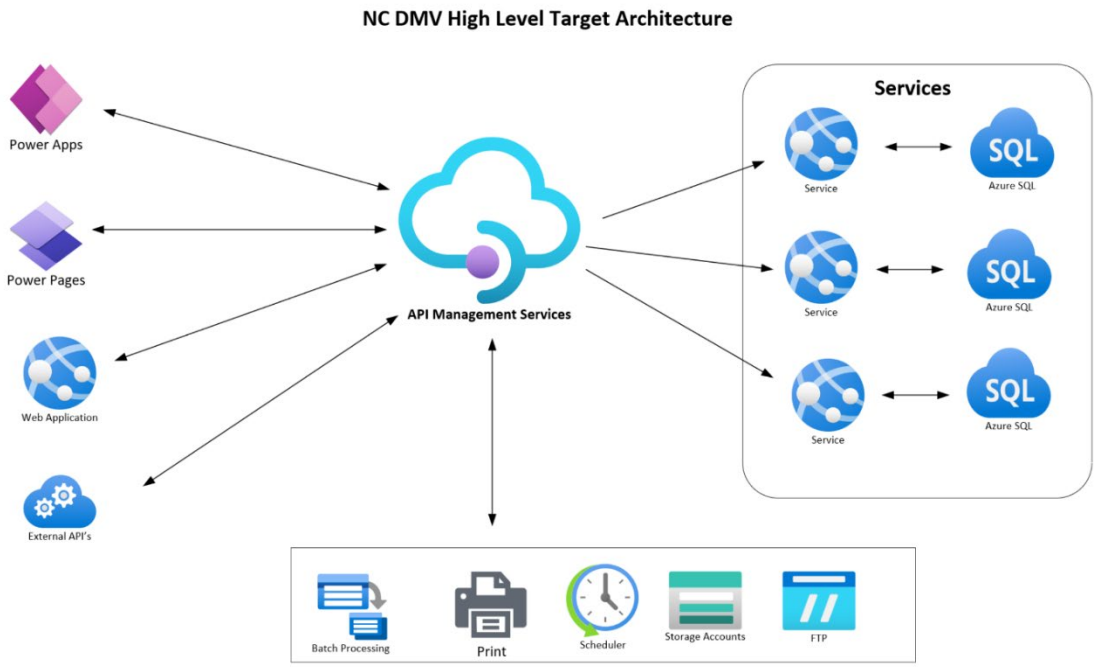

Figure 2. NC DMV High Level Target Architecture

The key required characteristics of the target Services based architecture include:

1. Modularity: Applications are divided into smaller services based on specific business functions. Each service focuses on a single task, making it easier to develop, deploy, and scale.

2. Decentralized Data Management: Each service can have its own database, allowing for different data storage technologies that best suit the service's requirements.

3. Flexibility and Scalability: Services enable better scalability by allowing individual components to be scaled independently based on demand.

4. Resilience: Failure in one service doesn't necessarily bring down the entire application. Since services are separate, the failure of one service ideally doesn't affect others.

5. Ease of Deployment and Continuous Delivery: Smaller services are easier to deploy, test, and maintain. Continuous integration and continuous delivery (CI/CD) practices are often employed to streamline updates and changes.

Target Architecture – Guiding Architecture Principles

The following architecture principles are high-level statements that frame and contribute to the understanding of the North Carolina Department of Information Technology (DIT) Enterprise Architecture. They are derived from best practices that have been assessed for appropriateness to the DIT Enterprise Architecture.

The DMV Modernization Solution developed by the Contractor and DIT should conform to the following architecture principles:

1. **Service Oriented/Loosely Coupled -** Interfaces should be loosely coupled, backward compatible, self-describing, and offer a low impact to the enterprise if changed. A focus on integration increases the likelihood that future changes can be accommodated. Well defined services limit the tendency to modify services for a purpose for which they were not intended. Loose-coupling allows for more incremental evolution of the system with reduced impact to DIT. The architecture must be flexible, scalable, adaptable, enduring, extensible, and open.

2. **Information Security -** Information Security means protecting information and information systems from unauthorized access, use, disclosure, disruption, modification, and/or destruction. Systems implemented should include the following goals of Information Security in their architecting, design, development, and implementation.

   - Confidentiality: Information is not disclosed to unauthorized parties.

   - Integrity: Information remains unchanged in transit or in storage until it is changed by an authorized party.

   - Availability: Authorized parties are given timely and uninterrupted access to resources and information.

   - Accountability: The traceability of actions performed on a system to a specific system entity.

3. **Identity and Access Management -** The DMV Modernization Solution should dynamically interact with identity and policy services rather than duplicating security management. At minimum, enterprise solutions need to dynamically authenticate against enterprise authentication services. Unless local security is required to match the desired level of risk, systems should not require independent authentication tokens (e.g., username and password). Enterprises achieve elevated security profiles by implementing single sign-on for DMV applications. Flexibility of business rules to protect privacy of information should be considered.

4. **Data Management -** Data is an asset that has value to the enterprise and is managed accordingly. Business users have access to the data necessary to perform their duties; therefore, data is shared across enterprise functions and organizations. In the enterprise data model, each data source has a trustee accountable for data quality. How the data is defined must be consistent throughout the enterprise. The definitions are understandable and available to all users. Enterprise data must be protected from unauthorized use and disclosure. In addition to the traditional aspects of national security classification, this includes, but is not limited to, protection of pre-decisional, sensitive, source selection-sensitive, and proprietary information.

5. **Scalability** – The Solution Architecture should be scalable in size, capacity, and functionality to meet emerging business and technical requirements.

6. **Interoperability** - Software and hardware should conform to defined standards that promote interoperability for data, applications, and technology. Application systems should be developed using standard, common methodologies, and shared resources.

7. **Business Continuity** - The DMV Modernization Solution should ensure that critical business functions will be available to customers, business partners and other entities that must have access to those functions in spite of system interruptions.

8. **Supportability/Serviceability** - Supportability/Serviceability is the inherent quality of a system, including design for reliability and maintainability, technical support data, and maintenance procedures, to facilitate detection, isolation, and timely repair/replacement of system anomalies.

Backup and Disaster Recovery

The Vendor must acknowledge and confirm their understanding that the DMV Modernization Solution shall include a backup and disaster recovery approach and plan jointly developed by DIT and the Contractor. Database Migration/Synchronization Requirements

Working with DIT, the Vendor must transition from the current database environment to future state while aligning with data governance best-practices and synchronizing data between the existing and DMV Modernization Solutions during the iterative development and deployment process. This includes but is not limited to:

- Database Security
- Ad hoc Capabilities
- Database Performance
- Database Training and Knowledge Transfer
- Data Cleansing and Readiness for Conversion

The selected Vendor and DIT will jointly plan and define the future state capacity requirements to ensure the applications and data will operate at the same level of performance and reliability or better.

The Vendor must provide a comprehensive and detailed narrative describing the proposed plans, approaches, concepts, and methodologies to accomplish data cleansing, migration, and synchronization requirements.

5.4 Non-Functional Requirements

The Vendor must acknowledge and confirm their understanding that the DMV Modernization Solution shall be developed jointly by the Selected Vendor and DIT in a manner to comply with each of the following requirements related to Availability, Capacity, Integrity, Maintainability, Performance, and Scalability principles.

#	Category	Requirement
1	Availability	The DMV Modernization Solution shall provide greater than 99.99% up-time on a 24/7, 365 day per year basis (excluding planned system maintenance downtime).
2	Availability	The DMV Modernization Solution shall provide for high availability, redundancy, and scalability at all tiers (presentation, application/business logic, and data).
3	Availability	The DMV Modernization Solution shall not have a single point of failure for each critical component of the solution.
4	Availability	The DMV Modernization Solution shall maintain session state where applicable in the event of failover.

5	Capacity	The DMV Modernization Solution shall have a fully scalable architecture designed to incrementally upgrade to meet demands of increased usage.
6	Capacity	The DMV Modernization Solution shall support more than 300,000 customer transactions per day.
7	Integrity	The DMV Modernization Solution shall provide internal processing controls, including the capability in the event of a system failure to automatically restore the system to its last consistent state before the failure occurred.
8	Maintainability	The DMV Modernization Solution shall include remotely accessible tools that facilitate monitoring of Application Users and management of all application services.
9	Maintainability	The DMV Modernization Solution shall include tools for monitoring and optimizing performance on web, application, batch and data tiers when needed, which provide dynamic environment changes that minimize system downtime.
10	Maintainability	The DMV Modernization Solution shall provide a mechanism for reverting to previous releases of implemented functionality.
11	Maintainability	The DMV Modernization Solution shall have change management support capabilities that can be applied automatically (re-apply program modifications to a new release for example).
12	Performance	The DMV Modernization Solution shall provide safeguards to ensure no user-initiated query or process will negatively impact system performance beyond an established threshold.
13	Performance	The DMV Modernization Solution shall complete 95% of online transactions within three (3) seconds (real time) and 100% within ten (10) seconds (near real time).
14	Performance	The DMV Modernization Solution shall allow for up to 3,000 concurrent Application Users while meeting the response time and throughput requirements. Concurrent users are defined as Solution Application Users who are logged on and/or actively performing solution functions.
15	Scalability	The DMV Modernization Solution shall provide an architecture that easily accommodates multiple, extensible resources for presentation, application/business logic, and data tiers.
16	Scalability	The DMV Modernization Solution shall be scalable in size, capacity, and functionality to meet emerging business and technical requirements.

6.0 Project Staffing Requirements

6.1 Planning For Modernization Using the AZ MAX Solution

Implementation plans for the AZ MAX solution should consider the following:

Cloud-Native Design and Hosting Requirements – AZ MAX is a fully cloud-native system designed to operate exclusively in the Microsoft Azure environment. It relies on Azure-specific

services and architectural components, making Azure the only supported hosting platform. This design offers significant advantages in scalability, security, and performance but also requires adopting jurisdictions to have a modern IT infrastructure and a skilled workforce familiar with cloud technologies.

Multi-State Collaboration and Consortium Strategy – Arizona is encouraging the development of a multi-state consortium that will allow participating states to maintain their own systems while coordinating on shared features and enhancements. This collaborative model is intended to promote innovation, reduce redundancy, and spread the cost of future development across multiple jurisdictions.

Not a Commercial Off-the-Shelf (COTS) Product – AZ MAX was built using Microsoft .NET Core tools and other software development frameworks. It follows a DevSecOps development methodology, which blends software development, IT operations, and security practices. As a result, successful implementation requires a team with advanced technical skills and a strong understanding of Azure infrastructure, modern development practices, and the AZ MAX architecture itself. To minimize risk and ensure a smooth rollout, states adopting AZ MAX are strongly encouraged to work with experienced implementation vendors familiar with the platform and its development lifecycle.

6.2 Vendor Requirements

The State is undertaking a large, complex, multi-year project and requires a DMV Modernization Implementation Vendor to lead the initiative and perform development and implementation services from start to finish. The selected Vendor's experience shall meet the following requirements.

Development Process – Experience with the AZ MAX Software Development Life Cycle, including the software development tools, configuration management tools, software frameworks, and software deployment process.

Testing – Experience testing the AZ MAX system, including the development of test plans, test cases, test scripts, and test data. Testing experience should include functional, technical, and security testing.

Process Documentation and Gap Analysis – Experience assessing DMV agency business processes and operations and mapping them to the functionality of the AZ MAX system to determine gaps and needed modifications

Architecture & Design – Experience working with AZ MAX system architecture and design and experience supporting and modifying the system.

Cloud Infrastructure – Experience planning, sizing, and provisioning the Azure cloud services necessary to implement the AZ MAX system environments.

Configuration Management – Experience defining and managing the AZ MAX system in multiple working environments such as Development, Test, and Production and promoting configurations and code from one environment to another.

DMV Operations – Experience with DMV operations such as driver licensing, vehicle services, and AAMVA-related systems and interfaces such as NMVTIS and SPEX.

Data Conversion – Experience mapping, transforming, and loading data from other systems into the AZ MAX Database.

Training – Experience developing a training plan, preparing training materials, preparing a training system with data, and training staff with a range of roles and responsibilities to use the AZ MAX System.

Resource Assignment(s)

Vendor shall provide a list of job titles, short descriptions, number of resources for each role and experience levels assigned to each phase of the project that determines deliverable fulfilment and knowledge transfer to NC DMV/DIT employees. See Figure 1.

Job Position Name	Short Description	# of Resource(s)	Exp Level (Sr, Jr, Mid level

Figure 1

In accordance, the Vendor shall also a provide skills matrix to communicate both the level and emphasis of expertise to satisfy given deliverables along with magnitude of expertise required for knowledge transfer.

Finally, an organization chart, with leadership accountability, shall be delivered so that DIT and DMV understands the Vendor's chain of command for questions, discrepancies, issues, or concerns.

7.0 Testing and Acceptance

System acceptance will be based on individual DMV Modernization Solution components that are built in an agile-based iterative/release approach. For each component being reviewed and tested for acceptance, the following levels of testing will occur:

- **Level 1 Testing:** General unit testing performed during the development stage. Testing is performed in a development environment.

- **Level 2 Testing:** System integration testing, to include regression testing, mock live testing, volume testing, security testing, and stress testing, prior to production implementation. Volume and stress testing must replicate anticipated volumes at all DMV service locations. Testing is performed in a test environment.
- **Level 3 Testing:** User acceptance testing which involves coordination of business user approval, and regression testing. Testing is performed in a test environment.
- **Level 4 Testing:** Component level acceptance review where system components are implemented and monitored for a minimum of 30 calendar days in a production environment. Upon successful review and monitoring, based on the sole judgement of DIT, the DIT Project Manager will issue a component level acceptance notice, in writing, to the Selected Vendor.

Final Acceptance: After all components of the full DMV Modernization Solution have been built, deployed, and operational, DIT will conduct a review and monitoring period for a minimum of 30 calendar days. Upon successful review and monitoring, based on the sole judgement of DIT, the DIT Project Manager will issue a Final Acceptance notice, in writing, to the Selected Vendor.

The selected Vendor shall develop a detailed written test plan which should include at a minimum:

- All necessary criteria and component-level tests which will be performed to ensure that the DMV Modernization Solution as a whole, and all components thereof, satisfy the requirements of this RFP.
- A description of all stages of testing.
- Detailed test scripts.
- Provisions for the documentation of testing results, problem detection, and corrective measures taken to permanently address problems.
- A description of the DIT and selected Vendor resources necessary to conduct testing.
- A description of the proposed testing tools that will be provided by the selected Vendor.

Unless otherwise specified by DIT, the requirements of this RFP must be completed, and Final Acceptance achieved within the mutually agreed upon project work plan and schedule.

The Selected Vendor and DIT shall maintain appropriate records documenting results during all testing and Final Acceptance periods and such records shall be conclusive for purposes of determining compliance with testing criteria and Final Acceptance requirements.

DIT shall be the sole judge of compliance with testing criteria and whether any failure to satisfy or pass testing criteria was due to operator error or system malfunction.

Final Acceptance and approval of all project deliverables will be based on successful reviews and written approval by the appropriate project team members, business owners, and the Steering Committee.

DIT currently utilizes the following tools for testing and bug tracking:

- UFT – Automation Testing

- Azure DevOps – Manual and Bug Tracking
- Postman – API Testing

DIT is currently reviewing and may use the following tool for testing:

- Azure Load Testing – Performance Testing

The selected Vendor must propose the recommended testing and tracking tools to be utilized during the project based on the tools DIT currently utilizes and plans to utilize, as well as recommendations for any additional tools.

8.0 Deployment Plan

The Vendor must submit with their proposal a detailed deployment plan and proposed schedule that utilizes an agile-based iterative/release approach while providing for the progression of implementation from a development environment, then into an integrated system testing environment, then into an acceptance test environment, then full production implementation.

The Selected Vendor must provide appropriate level of staff to be on-site during the deployment periods to include:

- Staff fully knowledgeable with the operation of the system to perform on-site refresher training and system monitoring for the first full day of operation.
- Support staff on-site at DMV Headquarters in Rocky Mount to resolve problems that may arise and to work with the DIT and DMV Help Desk(s).

9.0 Training Requirements

The Selected Vendor shall provide training to adequately prepare technical and support staff in all aspects of tools required for this effort and the DMV Modernized Solution. Training for technical and system administration staff must adequately prepare them for ongoing DMV Modernization Solution support, maintenance, and batch production control in the new environment.

The scope of training and knowledge transfer provided by the Selected Vendor will be limited to the concepts, processes and tools directly related to re-writing application code, ongoing maintenance and support of the applications and related code and migrating data for this effort.

Training must be tailored to the following DIT and DMV staff including, but not limited to:

- IT Project Managers, Developers, Analysts
- System Administrators
- Operations/Support staff
- DMV Print Shop for printed output
- Help Desk staff
- System Users such as License Plate Examiners, Driver License Administrators, etc.

The Vendor must provide a comprehensive training plan and approach that includes, but is not limited to:

- A training plan and approach for operational, administrative, and technical staff including:
  - Method of training (such as face-to-face either in the classroom or on-site, e-learning, and self-guided)
  - Training tools
  - Length of training (estimate number of hours for each type of employee)
  - Recommended number of training participants in each training session
  - Detailed outline and description of each training session
  - List of training materials and samples (provided by the Vendor)
  - Description of any self-guided training modules

- A transition plan for technical staff that will adequately prepare them for ongoing development and maintenance in the new environment.
- A description of the training personnel, equipment, tools, and facilities that DIT and DMV must provide in order to support the proposed training approach.
- A description of how DIT and DMV training personnel can be utilized for delivering the proposed training.

DIT, DMV and the Selected Vendor will establish a training schedule that will align with the agreed upon project work plan.

Prior to training, the Selected Vendor must present a "dry run" training presentation to DIT and DMV staff for approval. This presentation must represent what will be presented during the actual training and must include the final training documents. At least two weeks prior to the "dry run", the Selected Vendor must present all training materials and curricula to DIT and DMV staff for approval.

10.0 Service and Support Management Requirements

10.1 Account Management

The Selected Vendor must appropriately manage the business and performance aspects of a resultant Contract to achieve maximum service and performance levels within a minimal amount of time during the project as well as during the life of the contract.

To support this requirement, the Selected Vendor must designate key individuals and primary points of contact for managing both business (including managing requests for additional needs and enhancements) and performance (including managing overall performance, trouble calls, and solution fixes) aspects of the contract. Selected Vendor designated key individuals must attend monthly service review meetings, on-site at DIT Headquarters, to review all business and performance aspects of the Contract with DIT staff.

The Vendor must provide a detailed narrative describing the proposed approach to meet this requirement.

10.2 Service and Support

The DMV Modernization Solution will require services and technical support for the software required for the Project. The Selected Vendor will provide support services to include, but not limited to, the tasks listed below:

- Delivery and deployment of software (e.g., custom re-written code, selected Vendor tools and utilities) required for the future state environment. This includes maintenance of software and installation of upgrades, updates, and critical fixes.
- Testing of new versions of software in order to ensure that they do not adversely affect any currently running applications.
- Implementation of DMV requested new functionality.
- Interface with the DIT groups for storage issues, data requirement requests, DIT applications or IP port numbers.

In addition, there are tasks that DIT will assume responsibility for, but may request Vendor support. These tasks include, but are not limited to:

- Performance and tuning of database and software suite.
- Interface with the DIT Security group for started task requests.
- Testing of software suite under new operating systems versions.

DIT must be self-sufficient to the fullest extent possible and transition into full system support once acceptance is achieved for each DMV Modernization Solution component. The Vendor must provide a detailed narrative describing the proposed approach, to include training and coaching, that will facilitate and ensure self-sufficiency of DIT with respect to transitioning ongoing management and maintenance of the DMV Modernization Solution to DIT.

DIT may determine that additional DMV Modernization Solution service and support provided by the Selected Vendor may be necessary. This service and support may be requested by DIT on an as needed basis, at DIT's sole discretion. The Vendor must provide a detailed narrative describing the DMV Modernization Solution service and support options that can be made available to DIT at DIT's option.

11.0 Experience Level and Customer References

DIT requires a certain level of experience and demonstrated success in delivering solutions of similar scope and complexity. Where it is stated that Vendor shall meet the requirements it shall be understood that the requirement is equally applied to Vendor and any other third-party which Vendor intends to propose as part of its response to this procurement.

The Vendor must provide evidence that it is experienced and has engaged in the activity of developing and implementing systems of a similar size and nature.

The Vendor must describe the minimum of two (2) most recent engagements (of a similar size, nature, and complexity as defined by the RFP requirements) that it has performed within the last ten (10) years that demonstrates its capability to perform the services required in this RFP. Vendor must include the following:

- Contract duration, including dates.
- Brief written description of the project and the methodology employed.
- Problems encountered and how they were resolved to the customer's satisfaction.
- A reference that can be contacted for verification of all data submitted (include name, title, company name, address, e-mail address, and telephone number).
- Name, address and telephone number of sub-contractors used, if any.

Vendor must state if it has no such contracts to report.

Vendor must use the attached Customer Reference Form (Attacchment G) to report information for each engagement. DIT may make such reasonable investigations as deemed proper and necessary to determine the ability of a Vendor to perform a resultant contract.

12.0 Project Management

Project Management is ongoing for the duration of the contract. The primary objective of project management is to plan, manage, and control the timely and accurate completion and approval of all tasks and deliverables. The selected Vendor shall develop and execute the Project Management Plan and adhere to all scheduled due dates for all milestones.

12.1 Working With DMV and DIT Governance

The selected Vendor shall comply with and provide support to DMV and DIT project management processes and collaborate with all governance teams, including the Steering Committee and Project Management Office (PMO).

The State is open to any suggestions, improvements, and best practices that the selected Vendor can provide which will help to reduce risk, improve process and deliverable quality, and support the overall success of the project. Changes to processes, tools, guidelines, and associated repositories will be made at the State's sole discretion after consideration of any selected Vendor-recommended changes. All changes will be submitted in writing, and all approvals or rejections will be transmitted via written documentation.

12.2 Initial Project Management Deliverables

The selected Vendor will provide the following deliverables, which will follow the review and approval process

- **Startup** – Project Kickoff Materials and Sessions
- **Methodology Review, Tailoring and Plan** – Documented as a PM Plan (should cover all the basic PMBOK areas – Schedule, Scope, Risk, Issue, Quality/Deliverable Review & Approval, Resources, Procurement, Communications & Stakeholders)
- **Requirements Management** – Initial Requirements Traceability Matrix (RTM) and Requirements Management Reporting and Approach
- **Initial 90-Day Schedule** – milestones, deliverables, state staff participation tasks
- **Rolling 90-day schedule** – milestones, deliverables, state staff participation tasks
- **Vendor Project Org Chart** – updated monthly

- **Establish Project Repository** – if not using the state's repository, state staff will be trained by selected Vendor staff and selected state staff will have full admin access to all areas of the Repository to see detailed data and have access to run reports, etc.
- **Communication Approach** – status reporting, demonstrations, staff updates, Attorney General and Chief of Staff updates

12.3 Project Startup

The selected Vendor is responsible for performing project startup activities as described below.

Project Kickoff

The selected Vendor and State shall plan and deliver multiple kickoff meetings as needed (and determined by the State Project Manager) to engage and coordinate with DIT project management staff and other stakeholders. For the kickoff meeting, the selected Vendor shall:

- Present an overview of the Project Management Plan and the manner in which project activities will be executed.
- Include an agenda, WBS, High-Level Roadmap, presentation, and all other materials needed to detail the approach and preliminary activities for project implementation.
- Obtain approval 5 days in advance from the State for the meeting materials and agenda.
- Deliver kickoff presentation materials within 30 days of the Notice to Proceed date.

Project Startup Tasks

The Master Project Schedule shall include fully detailed Contract and project startup activities and activities for the first six months of the project per the Master Project Schedule requirements, which shall include an overview of the timelines and phases/activities for the entire project. The following tasks shall be included in the Project Startup tasks within the Master Project Schedule and executed:

Vendor Onboarding & Logistics

The selected Vendor shall, at a minimum, go through the State's onboarding Process which includes:

- Undergo and satisfactorily pass necessary federal and State background checks.
- Have their PCs checked for compliance with encryption and anti-virus standards by DIT.
- Receive identification cards and building access cards.
- Sign non-disclosure forms and other forms as required by the State and DIT.
- Any Equipment will be tracked by the State's IT and or State's PM with written documentation.

Since the selected Vendor 's staff will onboard and off-board at different times during the project, the selected Vendor shall designate a resource that will coordinate these onboarding processes with the State. The selected Vendor's Project Manager will review every 30 days or whenever a known change is made to ensure the appropriate people have the appropriate

access to the State's equipment and data. All terminations will be reported to the State's PM immediately.

Proposed Delivery Methodology

The selected Vendor must use a proven project management delivery methodology. The selected Vendor must review and tailor the methodology with the State Project Manager to achieve the agreed-upon approach and timelines. The State will approve the proven methodology.

Contract Review

The selected Vendor and the State shall schedule meetings to review the awarded contract with the State team and selected Vendor team so that participants can be fully informed about the scope and approach for the project. This shall include the SOW presented to the selected Vendor and the selected Vendor 's proposal. The selected Vendor shall schedule this review within 14 days after the beginning of the project.

Initial Project Management Plan

The selected Vendor shall prepare and deliver an initial Project Management Plan and timeline for delivery of updates for the entire Project Management Plan. Details of the Project Management Plan requirements are identified in section (need section reference).

All selected Vendor project startup tasks or deliverables listed above are due within [__] days or sooner of the NTP date.

12.4 Project Management Requirements

The selected Vendor will complete all project management activities according to project standards, which may be defined by the State throughout the project. At the State's sole discretion, any requirements may be waived.

- **Develop Project Management Plan** – The selected Vendor shall develop, maintain, and follow a State approved Project Management Plan consistent with project and PMO standards that addresses all of the project management requirements in this RFP and the awarded contract.
- **Review & Update** – The selected Vendor shall periodically review the Project Management Plan for any updates that may need to be applied during the execution of the Contract.
- **Assumptions** – The selected Vendor shall document and share any assumptions made during the creation of the Project Management Plan, including any of the sub-plans.
- **Best Practices** – The selected Vendor shall collaborate with the State and its representatives to incorporate all best practices and approaches into the Project Management Plan and its sub-plans.
- **Improve** – The selected Vendor shall keep the Project Management Plan current to reflect the best-known information and lessons learned throughout the execution of the project to improve project execution.
- **Roadmap** – The selected Vendor shall develop a high-level roadmap to organize and depict the approach for managing and executing the project, including planned development/implementation milestones.

Project Management Plan

The selected Vendor shall work with the State's project management team to create a consolidated set of project management plans and deliverables and maintain them during the course of the Contract.

Scope and Change Management

The selected Vendor shall develop, present for approval, and execute a plan for defining and managing project scope, including a Work Breakdown Structure and approach for tracking progress toward completion.

- All documentation and work products, once the scope and schedule are agreed upon by the State Project Manager, shall be subject to the agreed-upon change management process.
- The selected Vendor shall update the work breakdown structure (WBS) and Master Project schedule that is approved by the State as part of the change management process.
- The WBS shall clearly define all project deliverables, whether they are created by the selected Vendor, a Subcontractor, or the State. All deliverables need to be approved in writing by the State.

Schedule Management

The selected Vendor shall develop, present for approval, and execute a plan for creating, maintaining, and managing the Master Project Schedule.

- All project schedules shall include selected Vendor and State tasks. The selected Vendor shall obtain input and approval on State tasks before publishing. The selected Vendor may not commit State resources to timelines or tasks without State participation and approval of the schedule. The selected Vendor shall provide a calendar month's lead time (or other mutually agreed timeframe) to ensure that the appropriate State resources are available.
- The selected Vendor shall use Microsoft Project to maintain all project schedules and be capable of preparing both detailed and summary schedules.
- The selected Vendor shall gain approval from the State before publishing modifications to the schedule baseline. If the completion date is affected, an amendment is required.
- Project schedules shall follow PMI PMBOK project management practices. Project schedules shall clearly define dependencies, resource requirements, and the critical path of tasks. No task shall be longer than 80 hours in duration. All project schedules shall include appropriate milestones approved by the State to allow for the overall tracking of project progress.
- All task durations and review cycles shall be calculated in State working days, not calendar duration of days.
- The selected Vendor shall at all times develop and propose project schedules that it believes are realistic and properly manage risk. Schedule delays that are not mutually agreed to as being caused by the State will not considered for a change order nor additional compensation or consideration to the selected Vendor.

Quality Management

The selected Vendor shall develop, present for approval, and execute an approach for Quality Management. The Quality Management Plan must define the processes, oversight, and resources that will ensure that high-quality deliverables are being developed, reviewed, and presented to the State in a consistent and managed approach.

Project Performance Improvement – Throughout the project and not less than at the end of each project phase, the selected Vendor will fully participate in a review of lessons learned and project improvements that can be implemented.

Availability & Storage – Documents, deliverables, and work products shall be stored in the agreed-upon repository and shall be viewable by the State and its agents.

Resource Management

The selected Vendor shall develop and present a plan for approval, and execute an approach for management of its resources on the project. The plan shall include:

- Project organizational structure
- Role and responsibility assignments, including percent of time allocated to assignments
- Staffing plan describing when and how staff will be brought onto and transitioned off the project team, retention, and where they will be located
- Background checks
- Training needs
- Details on required support from the State staff, which will help the State to allocate the appropriate resources in alignment with the project plan

Substitution of Key Personnel during the Contract term shall be approved by the State as defined in the RFP.

Communications & Stakeholder Management

The selected Vendor shall develop, present for approval and execute an approach for communicating with stakeholders and project leadership. The selected Vendor shall work with the State to identify stakeholders, communication needs, communication activities and tools. The selected Vendor shall support and participate in presentations and information sessions with DIT and DMV leadership, staff, and partners as necessary to facilitate the project's success.

Risk & Issue Management

The selected Vendor shall develop, present for approval, and execute an approach for risk and issue management to ensure that potential risks are identified and addressed with both a preventative mitigation and a remediation plan. The selected Vendor shall develop and actively manage a risk register and issue register that shall be updated regularly as directed by the State.

Status Reporting

Weekly Status Meetings

- The selected Vendor shall meet with the State team at least weekly or less frequently as determined by the State to report status. During these meetings, the selected Vendor will conduct a project review (e.g., resources, schedule, issues, risks, procurement).

- The State will set the agenda and facilitate these meetings or may delegate these responsibilities to the selected Vendor.

Bi-Weekly Status Reports

The selected Vendor 's Project Manager shall submit status reports to the State once every two weeks on a day mutually agreed upon by the State and selected Vendor. The proposed format and level of detail for the status reports will be subject to the State's approval. The report shall include, at a minimum, the following:

- Accomplishments over the reporting period
- Risk status for new or previously identified risks to any aspect of the project
- Issue status for new or previously identified issues to any aspect of the project
- Key activities over the next period
- Schedule for the next period's activities, including deliverables and dates
- Deliverables expected to finish in the next period
- Deliverables expected to start in the next period
- Identification and justification of any proposed adjustments in the schedule (time), resources (staff), scope of work, costs, or other aspects of the Project Management Plan
- Identification of schedule delays and recommended corrective action plans
- Performance reporting, including variance analysis, trend analysis, and change requests

Monthly Executive Status Meetings

On a monthly basis, the selected Vendor shall meet with the State management team to report status.

- The selected Vendor shall provide an executive-level project review (e.g., resources, schedule, issues, risks, procurement), highlighting items that require executive attention.
- The State will set the agenda and conduct these meetings or may delegate these responsibilities to the selected Vendor.
- One or more meetings may be necessary to update both DMV and DIT leadership.

Quarterly Management Meetings

Every quarter or as otherwise mutually agreed, the selected Vendor shall present a project status to the State staff and managers to communicate the project status to the broader NC DMV community.

12.5 Document Repository

State's SharePoint Repository

The selected Vendor shall implement and maintain a documentation repository. The DIT has chosen SharePoint as the primary document repository and will furnish licenses as necessary to the selected Vendor for this purpose. If SharePoint is used as the Document Repository, the

State shall provide the hardware, operating system licenses, client access licenses, and SharePoint software and will be responsible for the backup and recovery of the site. The State shall maintain administrator rights to the SharePoint site. The State shall manage changes to the SharePoint site through a change request process to be developed jointly between the selected Vendor and the State.

Alternate Repository

The State is open to the selected Vendor providing and implementing a supplementary Document Repository platform that facilitates traceability with other project artifacts. Traceability shall be managed by the features of the tools and platform rather than manually. The State will maintain overall administrator rights of the site, and changes to the site shall be processed through a change management process that the selected Vendor develops with input and approval by the State. The design of the repository shall be developed in collaboration with the State and the selected Vendor shall obtain approval of the design from the State. The selected Vendor shall provide staff who can implement the approved changes to the site.

The State has the option to review and approve the selected Vendor -proposed suite to track requirements, test cases, defects and traceability.

12.6 Project Management Tools

The selected Vendor shall use the following project management tools unless justification is provided and agreed upon by the State as to how it would be beneficial to the State:

- SharePoint
- Team Foundation Server
- MS Project & MS Project Server
- MS Office
- Adobe

If the selected Vendor employs a document repository other than SharePoint:

- The selected Vendor shall be responsible for performing backups of any repository the selected Vendor establishes.
- The selected Vendor shall be responsible for performing appropriate training to the Agency for any repository the selected Vendor establishes.
- The selected Vendor will provide the State with the highest level of access to its information on the site.

12.7 Frequency and Evolution of Project Management Activities

The State will work with the selected Vendor to determine the most practical and effective approach to project management, which will evolve over time (collaboratively with the selected Vendor) to meet the needs of the project. The State expects that a project of this size and duration will evolve over time. The project management activities will be dynamic as well. The project management responsibilities described in this section represent a minimum set of required tasks and deliverables. The State will set the standards for project management reporting and tasks throughout the life of the project and they will be compatible with industry

standards. The selected Vendor is responsible for complying with those project management standards.

13.0 NCDIT-T ISO Security Requirements and Specifications

13.1 ISO-SEC-RQMT-1

Vendor shall include the following statement as part of its proposal; "We affirm and explicitly acknowledge that the Vendor's proposed solution at time of award and for the duration of the contract is subject to all applicable State policies, guidelines, standards, practices, procedures, and safeguards as defined in the North Carolina Department of Information Technology Statewide Information Security Manual (SISM)."

SISM introduction and individual SISM control family policy locations:

https://it.nc.gov/documents/statewide-information-security-manual

https://it.nc.gov/resources/cybersecurity-risk-management/initiatives/information-security-policies

13.2 ISO-SEC-SPEC-1 RESERVED

13.3 ISO-SEC-SPEC-2

Describe how Vendor's proposal substantially conforms with the Maximum Tolerable Downtime (MTD) and Recovery Point Objective (RPO) specifications, which are as follows:

MTD = 4
RPO = 0

a. If the Vendor's proposed solution is recoverable, describe in detail how the Vendor's proposal solution would be recoverable via non-State hosted (e.g. Vendor, third-party, subcontractor, partner, cloud), State hosted, or any other solution scenario.

b. Describe how and affirm if the Vendor has the capability to meet specified MTD.

c. Describe how and affirm if the Vendor has the capability to meet specified RPO.

d. Vendor affirms to complete and return a Disaster Recovery Assessment (DRA) in Microsoft Excel format if requested.

See DRA: <Insert link to the NCDOT Connect Folder>

13.4 ISO-SEC-SPEC-3

Regarding any suspected security incident or security breach involving or impacting State data, the Vendor's Incident Response Policy and process/procedure should affirm and describe how the Vendor's proposal substantially conforms to these specifications, which are as follows:

a. The Vendor should describe with its proposal a current Incident Response Policy and process/procedure.

b. The Vendor should notify NCDOT and NCDIT within 24 hours of confirmation of the incident and/or breach.

c. Describe how the Vendor would notify NCDOT and NCDIT of the incident and/or breach.

d. The Vendor should provide the full details of the incident and/or breach to NCDOT and NCDIT.

14.0 Implementation Vendor Specifications

In order to maximize the speed of delivery and minimize the risk of project failure, North Carolina will engage a system implementation vendor with deep experience working with the AZ MAX system, using the software development methodology, and working with jurisdictions to adapt the system to a new agency.

The State is undertaking a large, complex, multi-year project and requires a system implementation vendor to lead the initiative and perform development and implementation services from start to finish. The vendor's experience shall meet the following requirements.

Development Process – Experience with the AZ MAX Software Development Life Cycle, including the software development tools, configuration management tools, software frameworks, and software deployment process.

Testing – Experience testing the AZ MAX system, including the development of test plans, test cases, test scripts, and test data. Testing experience should include functional, technical, and security testing.

Process Documentation and Gap Analysis – Experience assessing DMV agency business processes and operations and mapping them to the functionality of the AZ MAX system to determine gaps and needed modifications

Architecture & Design – Experience working with AZ MAX system architecture and design and experience supporting and modifying the system.

Cloud Infrastructure – Experience planning, sizing, and provisioning the Azure cloud services necessary to implement the AZ MAX system environments.

Configuration Management – Experience defining and managing the AZ MAX system in multiple working environments such as Development, Test, and Production and promoting configurations and code from one environment to another.

DMV Operations – Experience with DMV operations such as driver licensing, vehicle services, and AAMVA-related systems and interfaces such as NMVTIS and SPEX.

Data Conversion – Experience mapping, transforming, and loading data from other systems into the AZ MAX Database.

Training – Experience developing a training plan, preparing training materials, preparing a training system with data, and training staff with a range of roles and responsibilities to use the AZ MAX System.

The Selected Vendor must provide all necessary services and support for the overall DMV Modernization Solution project, including:

- Planning, defining, analyzing, designing, developing, customizing, configuring, testing, and implementing a fully integrated and automated DMV Modernization Solutionthat supports all DMV core business processes defined in this RFP while utilizing iterative agile methodologies.
- Developing electronic interfaces and integrations with various internal and external systems in support of business and transaction processes.
- Performing data migration/synchronization from the existing mainframe environment to the new target environment.
- On-site project management and project staffing during all project stages.
- On-site training and coaching.
- On-site transition support.