Online Vehicle Registration System

QA Test Plan

Version: <3.0>

Prepared By:
Group 1

Swapnil Biradar - 002775707
Deepika Balasubramanian - 002194564
Bhawna Bassarmalani - 002925424
Rebecca Biju - 002768633

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1 DOCUMENT ACCEPTANCE AND SIGN-OFF

By signing below, I acknowledge that I have read the entire contents of this document and accept the document in this form as reasonably fulfilling the goals described in the section titled Document Purpose. I further agree that this will constitute the document of record and cannot be changed without review and acknowledgement of the groups shown below:

Group / Role	Approver Name	Approver Signature	Date Approved
Group 1 / Test Manager	Swapnil Biradar	SB	12/12/2023
Group 1 / Dev Manager	Bhawna Bassarmalani	BB	12/12/2023
Group 1 / Test Analyst	Rebecca Biju	RB	12/12/2023
Group 1 / Test Lead	Deepika Balasubramanian	DB	12/12/2023

2 REVISION HISTORY

Document/Department Editor:			
Date	**Revision #**	**Editor**	**Description of Change**
12/01/2023	1.0	QA	*Team Initial version of the document for registration of all the entities*
12/06/2023	2.0	QA	*Team Incorporated feedback from review process*
12/12/2023	3.0	QA	*Team Updated test scenarios and added new test cases for additional functionality to include seamless entity registration issuance of individual drivers*

3 Introduction

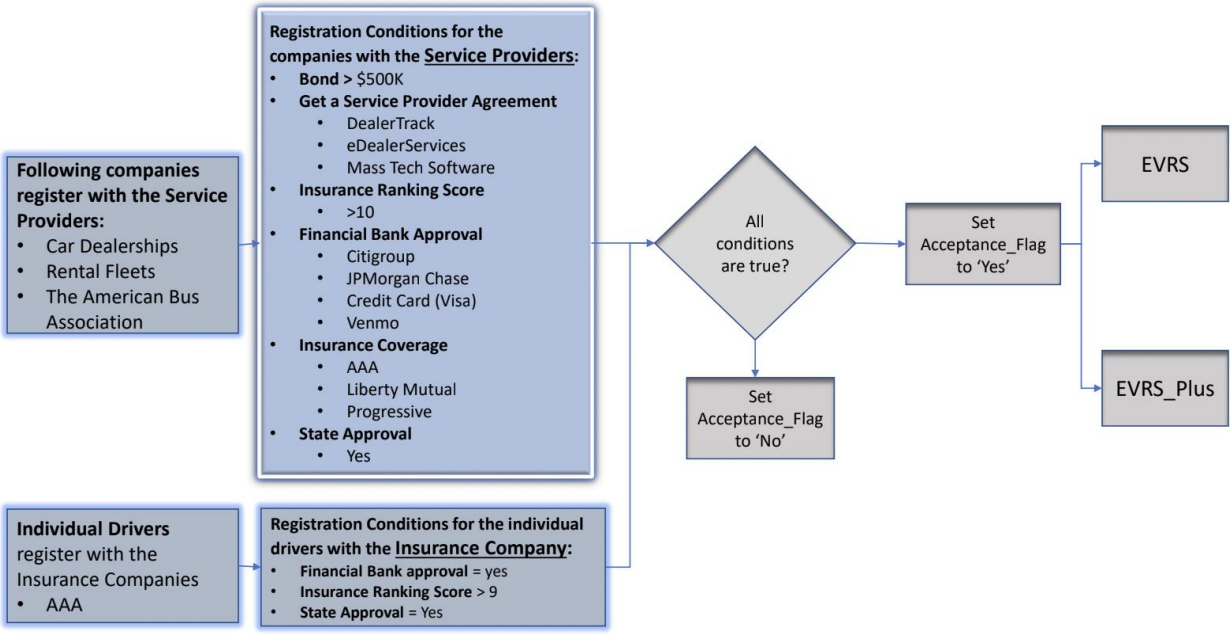
3.1 PURPOSE

The purpose of this test plan is to ensure that the Electronic Vehicle Registration System (EVRS) aligns with its functional requirements and performs flawlessly in various scenarios. This plan guides the testing process to validate the system's functionality, usability, and reliability, ensuring it meets the expectations of both the administration and the users.

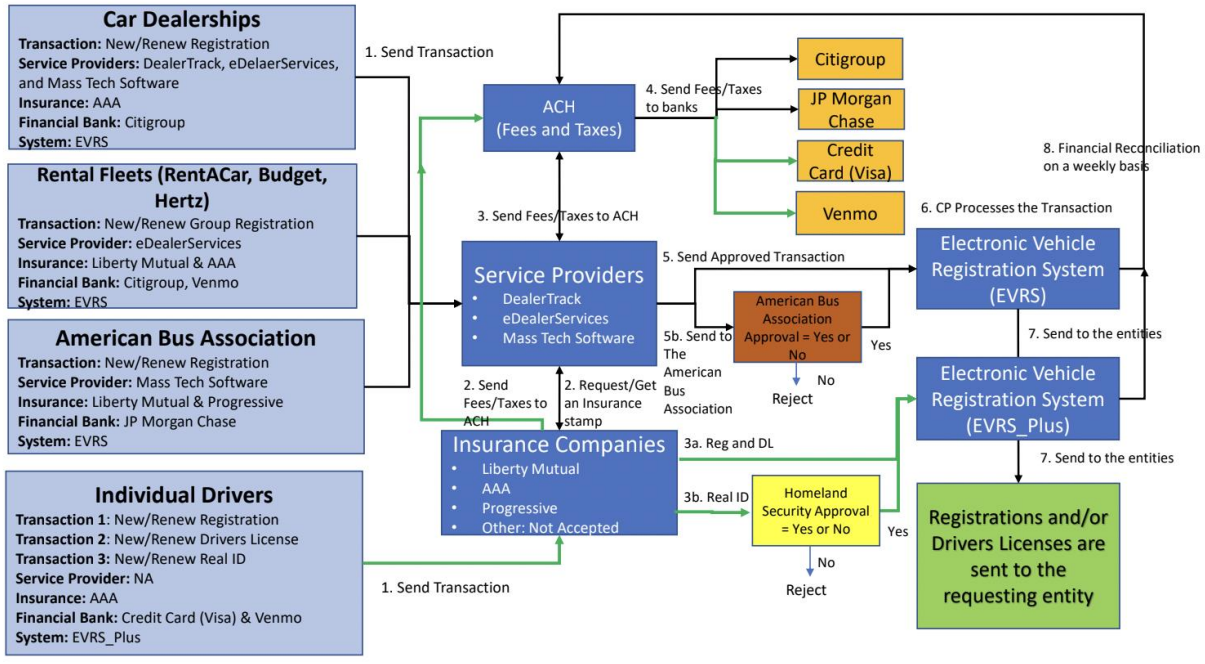
3.2 PROJECT OVERVIEW

The EVRS project is developed to facilitate efficient and user-friendly online vehicle registrations, driver's licenses, and Real ID applications. It aims to modernize and streamline the traditional processes, introducing digital conveniences and reducing administrative burdens. Key functionalities of the system include user and company registration processes, vehicle registration, driver's license and Real ID applications, transaction processing workflows, and financial reconciliation features.

1. EVRS & EVRS_Plus - Registration Process



2. EVRS & EVRS_Plus Overall Transaction Processing workflow



4 Scope

4.1 IN-SCOPE

The EVRS project represents a significant digital transformation in vehicle registration and driver's licensing processes. It is aimed at providing a streamlined, user-centric online platform for handling vehicle registrations, driver's license applications, and Real ID requests. This system is designed to offer functionalities such as user registration, data input for vehicle and driver details, document upload capabilities, payment processing, and administrative features for managing these processes efficiently.

The test plan covers a wide range of functionalities including but not limited to:

- *Registration processes for users and companies.*
- *Vehicle registration workflows.*
- *Driver's license and Real ID application processes.*
- *Transaction processing for different entities.*
- *Financial reconciliation processes.*

4.2 OUT-OF-SCOPE

The EVRS project represents a significant digital transformation in vehicle registration and driver's licensing processes. It is aimed at providing a streamlined, user-centric online platform for handling vehicle registrations, driver's license applications, and Real ID requests. This system is designed to offer functionalities such as user registration, data input for vehicle and driver details, document upload capabilities, payment processing, and administrative features for managing these processes efficiently.

- *Performance testing under extreme conditions.*
- *Compatibility testing with all possible browser versions and older operating systems.*
- *Testing of integrations with unspecified third-party systems or services.*

5 Testing Strategy

5.1 Test Objectives

- *Functionality Verification: Ensuring that every function of the EVRS, including user and vehicle registration, license application, and Real ID requests, works as specified.*
- *Data Integrity and Security: Testing for accurate data processing and storage, along with robust security measures to protect sensitive user information.*
- *User Interface Usability: Assessing the user interface for ease of use, clarity, and responsiveness.*
- *System Compatibility: Ensuring the system operates effectively across different browsers and devices.*
- *Performance and Load Testing: Evaluating the system's performance under normal and peak loads.*

5.2 Risks & Assumptions

Risks/Assumptions	Mitigation
Incomplete requirements may lead to inadequate test coverage.	Regular review and update sessions with stakeholders to clarify and finalize requirements.
Delays in test environment setup could impact the testing schedule.	Work on a detailed environment setup plan with identified responsibilities and timelines.
Limited availability of test data might not cover all testing scenarios.	Create synthetic test data that encompasses a broad range of test conditions.
Assumption that all stakeholders have a unified understanding of the system's functionality.	Conduct training sessions and ensure comprehensive documentation is available.
Changes in project scope during the testing phase could invalidate existing test cases.	Implement a change management process to assess and incorporate scope changes effectively.

5.3 Data Approach

- *Test Data Creation: Generating realistic test data that covers a wide range of scenarios, including typical and atypical use cases.*
- *Data Privacy: Ensuring that test data used is compliant with data privacy regulations and does not compromise real user data.*
- *Data Validation: Regular checks for data accuracy and integrity throughout the testing process.*

Example of Test Data for Registration

List of Entities	Bond > $500K	Insurance Coverage	Financial Approval	State Approval	Service Provider	Acceptance Flag
Car Dealerships	Yes	Yes	Yes	Yes	Yes	Yes
Fleet	Yes	No	Yes	Yes	Yes	No
Individual Driver	N/A	Yes	Yes	N/A	N/A	Yes

5.4 TYPES OF TESTING

List the types of testing to be performed.

Test Type	Description	Responsible Parties
Unit Testing	Testing of individual components to ensure each one functions correctly in isolation.	Test Analyst
Functional Testing	Verification of specific actions within the application to ensure they meet the defined requirements.	Test Lead
User Acceptance Testing (UAT)	Testing with end-users to confirm the system meets their requirements and is ready for production.	Test Manager
Regression Testing	Repeated testing after changes to ensure new code does not disrupt existing functionality.	Test Analyst
Performance Testing	Evaluating the system's behavior under a particular workload to ensure it performs well under high traffic.	Test Lead

5.5 UNIT TESTING

- *Company and individual driver registration processes, including verification of the acceptance flag setting.*
- *The transaction processing workflow for new and renewed registrations, driver's licenses, and Real IDs across different entities such as car dealerships, rental fleets, individual drivers, and the American Bus Association.*
- *The financial reconciliation process between EVRS/EVRS_Plus and ACH (American Clearing House), ensuring the proper handling of successful and failed reconciliations.*

Participants:

Tester's Name	Department/ Area	Role
Swapnil Biradar	QA	Test Manager
Deepika Balasubramanian	QA	Test Lead
Rebecca Biju	QA	Test Analyst

5.6 FUNCTIONAL TESTING

- *Validation of the registration process for companies and individual drivers, including the setting of the Acceptance Flag.*
- *Accuracy in processing new and renewal transactions for registrations, driver's licenses, and Real IDs.*
- *Verification of the transaction processing workflow for various entities, ensuring compliance with defined criteria.*
- *Financial reconciliation between EVRS/EVRS_Plus and ACH, particularly the handling of failed reconciliations and their remediation process.*

Participants:

Tester's Name	Department/ Area	Role
Swapnil Biradar	QA	Test Manager
Deepika Balasubramanian	QA	Test Lead
Rebecca Biju	QA	Test Analyst

5.7 USER ACCEPTANCE TESTING

- *Usability and accuracy of the user interface for the registration and transaction processes.*
- *End-to-end transaction workflow for vehicle registrations, driver's licenses, and Real IDs.*
- *Overall user satisfaction with the system and whether it meets the business requirements.*

Participants:

Tester's Name	Department/ Area	Role
Swapnil Biradar	QA	Test Manager

Deepika Balasubramanian	QA	Test Lead
Rebecca Biju	QA	Test Analyst

5.8 REGRESSION TESTING

- *Stability of existing functionalities after integration of new code changes.*
- *Registration and transaction process integrity post updates or bug fixes.*

Participants:

Tester's Name	Department/ Area	Role
Swapnil Biradar	QA	Test Manager
Deepika Balasubramanian	QA	Test Lead
Rebecca Biju	QA	Test Analyst

5.9 PERFORMANCE TESTING

- System performance under peak load conditions for registration and transaction processes.
- Response times for user interactions and transaction processing.
- System stability and handling of concurrent user sessions.

Participants:

Tester's Name	Department/ Area	Role
Swapnil Biradar	QA	Test Manager
Deepika Balasubramanian	QA	Test Lead
Rebecca Biju	QA	Test Analyst

6 Execution Strategy

6.1 QA Entrance Criteria

- *The entrance criteria refer to the desirable conditions to start test execution.*
- *Entrance criteria are flexible benchmarks. If they are not met, the test team will assess the risk, identify mitigation actions, and provide a recommendation.*

QA Entrance Criteria	Test Team	Technical Team	Notes
Test environment(s) is available	✔	✔	Verify environment stability.
Test data is available	✔		Cover edge cases and negative scenarios.
The code has been merged successfully		✔	Ensure no merge conflicts.
Development has completed unit testing		✔	Check unit test coverage and results.
Test scripts are completed, reviewed, and approved by the Project Team	✔		Include traceability to requirements.

6.2 QA Exit criteria

- *The QA exit criteria are the desirable conditions that need to be met in order to proceed with the implementation.*
- *QA Exit criteria are flexible benchmarks. If they are not met, the test team will assess the risk, identify mitigation actions, and provide a recommendation.*

Exit Criteria	Test Team	Technical Team	Notes
100% Test Scripts executed	✔		Document test evidence.
90% pass rate of Test Scripts	✔		Prioritize critical tests.
No open Critical and High severity defects	✔		Must resolve or mitigate high risks.
All remaining defects are either canceled or documented as Change Requests for a future release	✔		Track in the defect management system.

All expected and actual results are captured and documented with the test script	✔		Ensure clarity for audit purposes.
All test metrics collected based on reports from daily and Weekly Status reports	✔		Use for project assessment and reporting.
All defects logged in the Defect Tracker/Spreadsheet	✔		Full defect lifecycle tracking.
Test environment cleanup completed and a new backup of the environment		✔	Prepare for subsequent projects.

6.3 DEFECT MANAGEMENT

- **Test case and scenario validation**: Each test case and scenario should be cross-checked with the functional requirements to ensure they map directly to the expected outcomes. Validation involves confirming that each step in the test case is clear, testable and provides expected results for given input conditions.
- **Defect management:** Defects identified during testing are logged in a dedicated Defect Tracker or Spreadsheet, which captures the defect details, severity, impact, and status throughout its lifecycle.
- **Tester responsibilities**: Testers are tasked with the full cycle of defect handling, which includes identifying defects, documenting them in the tracker, verifying fixes once they are implemented, and closing the defects upon successful retest.
- **Execution of test scripts**: Testers are expected to thoroughly execute all test scripts as per the test plan for each testing cycle, ensuring that all functionalities are verified.
- **Retesting and closure**: Upon defect resolution, testers must retest the affected functionality and only close the defect if the retest confirms that the issue has been adequately addressed.

Defects found during the Testing should be categorized as below:

Severity	Impact
1 (Critical)	▪ *Functionality is blocked and no testing can proceed* ▪ *Application/program/feature is unusable in the current state*
2 (High)	▪ *Functionality is not usable and there is no workaround but testing can proceed*
3 (Medium)	▪ *Functionality issues but there is a workaround for achieving the desired functionality*
4 (Low)	▪ *Unclear error message or cosmetic error which has minimum impact on product use.*

7 Environment Requirements

7.1 TEST ENVIRONMENTS

The quality of an application is assessed by testing teams in environments that closely replicate the actual conditions under which the software will run post-deployment. This process is crucial for identifying and rectifying any issues that could compromise the application's functionality.

- **Testing Environment**: Utilized for the primary phase of testing, focusing on functional and regression tests.
- **Staging Environment**: Acts as a pre-production setup for final testing rounds, mirroring the production environment.
- **Production Environment**: Reserved for smoke testing to ensure the application's stability after deployment.

8 Dependencies

Dependencies	Comments
Test Data Availability	Test data & database should also be made available to the testers for use during testing.
Software Availability	Selenium, E-treatment system, JIRA, Load Runner
Resource Availability	Testing must be conducted with an adequate number of resources
Budget Constraint	Testing should be funded adequately

Test Schedule

Deliverable	Start Date	End Date
Design and Functional Requirements Review	Dec 1, 2023	Dec 20, 2023
User Story Reviews	Jan 2, 2024	Jan 12, 2024
Sprint 1 to Sprint 5	Feb 1, 2024	April 5, 2024
Test Plan Review	Jan 23, 2023	-
Test Cases Review, Before each Sprint	Feb 1, 2024	April 5, 2024
Performance & Load Testing,	March 1, 2024	April 28, 2024
Pilot Release	April 15, 2024	-
Full Deployment	May 1, 2024	-
Project Retrospective	June 1, 2024	-