TANZANIA REVENUE AUTHORITY

ISO 9001: 2015 CERTIFIED

EXTERNAL APPLICATION INTERFACE SPECIFICATION (API)

FOR

CMVRS

TRA Headquarters

Information Technology and Communication Department
DAR ES SALAAM,

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Document Control

Revision History		
Date	**Version**	**Summary of Changes**
11 July, 2024	0.1	Initial Draft

1. INTRODUCTION

To allow external stakeholders to benefit from the APIs provided by TRA, they can integrate their systems with TRA APIs through GovESB. This integration enables them to obtain or verify motor vehicle details. As TRA is the trusted authority responsible for motor vehicle registration, the information retrieved from TRA APIs is verified and reliable.

This document specifies the detailed technical requirements for establishing integration with TRA APIs. External stakeholders can use this document to guide their API integration development.

1.1. Scope

The scope of this document is to specify the integration requirements in terms of the technical aspect to the external stakeholder on APIs provided by TRA. Services available to external stakeholders are stated below:

1.2. Definition

Please refer to the following table for a list of acronyms and definitions used in this document.

ACRONYMS	DESCRIPTION
API	Application Programming Interface
TIN	Taxpayer Identification Number
CMVRS	
VRN	VAT Registration Number
VPN	Virtual Private Network
SSL	Secure Socket Layer
SHA1	Secure Hash Algorithm 1
PKCS1	Public-Key Cryptography Standards #1
AES	Advanced Encryption Standard
RSA	Rivest–Shamir–Adleman
REST	Representational State Transfer
HTTP	Hypertext Transfer Protocol
GUI	Graphical User Interface
PKI	Public Key Infrastructure

1.3. Intended Audience

This document serves to cater to people in the following roles:

- Technical Manager
- Software Engineer/ Developer

2. SYSTEM REQUIREMENTS

2.1. Development Environment

TRA APIs are standardized web services using REST over HTTP. These services allow external stakeholders to obtain registered motor vehicle information through a programmatic interface across a network. External stakeholders can then add the services to a GUI (such as web page or an executable program) to offer specific functionality based on stakeholder's needs.

The Motor vehicle (CMVRS) APIs exchange data in JSON format; therefore, the integration is not bound to any specific platform or programming language.

2.2. Network Connection

The access to Motor Vehicle (CMVRS) APIs is achieved through the internet via the Government Enterprise Service Bus (GovESB). External stakeholders have to request from TRA to obtain the CMVRS APIs access on the Government Enterprise Service Bus (GovESB) portal.

2.3. Credential & Web Service Security

Trusted certificates are typically used to make secure connections to a server over the internet. CMVRS APIs are issued out to authorized stakeholders by TRA to verify the stakeholders before establishing the secure connection. Thus, stakeholders need to engage TRA to exchange the certificates.

3. API WEB SERVICES

3.1. CMVRS API Service

3.2. Request Parameters

- A request body (i.e. esbBody) s from your system to the TRA System via GovESB should include the following information

Field	Data Type	Mandatory	Description
requestOgarnization	string	Yes	The acronym of your organization for instance Tanzania Revenue Authority would be TRA. It is essential to liaise with TRA's ICT officer regarding to the TRA system.
requestData	Object (registrationNo should be string)	Yes	Vehicle registration number

3.3. Response Parameters

Field	Data Type	Mandatory	Description
responseKey	string	Yes	
responseData	string	Yes	

The API employs two stage encryption stages to ensure data security.

3.3.1 responseKey decryption with RSA

- The API utilizes the RSA algorithm to decrypt a responseKey. This responseKey is transmitted in an encrypted format for enhanced security.

3.3.2 responseData decryption with AES.

- Once the responseKey is successfully decrypted using RSA, the API uses the first 16 characters of the decrypted responseKey as the IV.
- The API leverages the Advanced Encryption Standard (AES) algorithm for responseData decryption.
- The decrypted responseKey and IV are used with the AES algorithm to decrypt the responseData
- After successfully decrypting responseData, you will get an object like the one shown below


```
{
 "VehicleControlNo": "string",
 "RegistrationNo": "string",
 "FirstName": "string",
 "MiddleName": " string ",
 "LastName": " string ",
 "RegisteredOn": "Datetime",
 "IsCustomsDutyExempted": "string",
 "ChassisNo": " string ",
 "YearofMake": " string",
 "TareWeight": " string",
 "GrossWeight": " string",
 "ManufacturerDesc": " string",
 "ModelNoDesc": " string ",
 "ModelTypeDesc": " string ",
 "VehicleCategory": “string”,
 "BodyTypeDesc": " string",
 "EngineNo": " string",
 "EngineCubicCapacity": "string",
 "TransmissionDesc": " string",
 "FuelDesc": "string",
 "ColorDesc": "string",
 "SeatingCapacity": 0,
 "RegistrationReasonDesc": "string",
```

```
  "RegistrationPurposeDesc": "string",
  "OwnerIdentityNoType": "string",
  "OwnerIdentityNo": 0,
  "CategoryDesc": " string",
  "DateofBirth": "Datetime",
  "Gender": "string",
  "PhyPhoneNo": "string",
  "IsPaid": "string",
  "RegistrationStatusDesc": "string"
}
```


4. MESSAGE PROCESSING AND ERROR HANDLING

Main principles of message processing:

- For each request, the CMVRS API returns either a successful result or an error code and a Message.
- In case of any error, the CMVRS API returns only the first error code detected and a Message. Find below key table for error codes:

Status Code	Description
200	Details found and retrieved successfully
403	Undocumented Error
404	CMVRS not Found - Motor vehicle registered No not registered
401	Unauthorized Access
500	Internal Server Error