

**State of Indiana, Bureau of Motor Vehicles
Electronic Lien (E-Lien) Design Develop & Implement Project
Service Provider Technical Specification Document**

**State of Indiana
Bureau of Motor Vehicles
Electronic Lien (E-Lien) Design Develop & Implement Project**

**Service Provider System Specification Document
Version 1.7**

**State of Indiana, Bureau of Motor Vehicles
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Document Control

Version	Date	Prepared/Revised By	Change Description
0.1		T. Kundu	
0.2	01/09/22	T. Kundu, L. Friel	Resubmitted 12/21/21
0.3	02/21/22	T. Kundu, L. Friel	Submitted for Final Approval 03/04/22
0.4	03/17/22	T. Kundu, L. Friel	Submitted for Final Approval 03/17/22
0.5	04/15/22	T. Kundu, L. Friel	<ul style="list-style-type: none"> - Updated Field Reference tables for: <ol style="list-style-type: none"> 1. Business Error code – identify as an array 2. Title Mail to Address – fields no longer required 3. Customer & Lienholder Address Line 2 – fields no longer required - Updated Security (3.0) to provide more detail. - Updated Section 2.1.1.4 to include a new Field Description table that contains field length, format, data types and locations. - Updated Section 2.1.1.4.2 (Table Values) to include Vehicle Body Type, Boat Body Type tables, Vehicle Make, Vehicle Mode and Country. - Updated Error Code Table (2.1.1.4) to include corresponding transactions. - Update transaction JSON object Headers to include Business Error Code array - Added statement “Title number and issue date will change as part of: <ol style="list-style-type: none"> 1. 1.2 Request Conversion to Electronic Lien 2. 1.4 Request Conversion to Paper Lien 3. 1.5 Lien Release - Added Section 2.1.1.6 Title Change Notification Addendum to identify what fields would trigger a title change notification.
0.6	7/13/22	L. Friel	<ul style="list-style-type: none"> - Update to Section 2.1.1.1.2 - ELT Transaction Code for Title Change Notifications (“TN” to “TC”, “STN” to “STC” and “ETN” to “ETC”) - Added to Section 2.1.1.1.2 - Title Change Notification a Title Sub Status Type explanation. - Updated JSON Header labels to TransactionHeader for Lien Release (Section 2.1.1.2.5), Convert to E Lien (Section 2.1.1.2.6), Convert to Paper Lien (Section 2.1.1.2.7), Failure (Section 2.1.1.2.4) and Success messages (Section 2.1.1.2.3) for Title Change Notification and Failure (Section 2.1.1.2.2) and Success (Section 2.1.1.2.1) messages for Lien Notification.

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			<ul style="list-style-type: none"> - Updated JSON Body labels to include transaction name for the requests of Lien Release (Section 2.1.1.2.5), Convert to E Lien (Section 2.1.1.2.6), Convert to Paper Lien (Section 2.1.1.2.7), Failure (Section 2.1.1.2.4) and Success messages (Section 2.1.1.2.3) for Title Change Notification and Failure (Section 2.1.1.2.2) and Success (Section 2.1.1.2.1) messages for Lien Notification.
0.7	7.21.22	L. Friel	<ul style="list-style-type: none"> - Updated Section 2.1.1.2.7 Conversion to Paper Lien to include Speed Title. - Updated Section 2.1.1.2.6.2 Single Title Conversion to Electronic to include issue date. - Removed Title Inquiry Section. - Updated Table of Contents.
0.8	9.27.22	L. Friel	<ul style="list-style-type: none"> - Updated Section 2.1.1.2.7 Conversion to Paper Lien response JSON and table references as follows: <ul style="list-style-type: none"> o From MailToUsaZipCode to MailToPostalCode o From Country to MailToCountry [NOTE: this was changed again on 11.29.22] o Added MailToAddress2 - Updated Section 2.1.1.4 API Field Lengths, Data Types and Table Values: <ul style="list-style-type: none"> o For MailToPostalCode and MailToState to Data Type "varchar" o Added note to Customer, Lienholder and MailTo Addresses 1 and 2 - Updated each Sections Field Reference Table and Header JSON object to include this note "If there are no BusinessErrors, the value of BusinessErrors should be null". - Replaced Country table in Section 2.1.1.4. These are the only valid entries for BMV current transactions. - Added State Table - Updated Section 2.1.1.3 Error Handling to include additional error messages that may optionally be used. - Updated Section 2.1.1.1.1 Lien Notification <ul style="list-style-type: none"> o Added TransactionlogID to Field Reference Table and JSON object. This field is for BMV Internal uses only. - Updated Section 2.1.1.1.2 Title Change Notification <ul style="list-style-type: none"> o Added TransactionlogID to Field Reference Table and JSON object. This field is for BMV Internal uses only. - Updated Section 2.1.1.4 API Field Lengths <ul style="list-style-type: none"> o Added field details for TransactionlogID.

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Version	Date	Prepared/Revised By	Change Description
			- Added Document Version ID to Cover Page.
0.9	11.09.22	M. Moore	<ul style="list-style-type: none"> - Corrected VehicleMakeName in message body table for Lien Notification and Title Change Notification to VehicleMakeCodeName to match JSON example - Corrected VehicleModelName in message body table for Lien Notification and Title Change Notification to VehicleModelCodeName to match JSON example - Corrected LienholderReleaseDate in message body table for Lien Notification and Title Change Notification to LienReleaseDate to match JSON example - Added explanation for use of the TitleType field in the Lien Notification and Title Change Notification messages (required but can be blank) - Added explanation for the LienholderName and LienholderOrganization in the Lien Notification and Title Change Notification messages (required but can be blank) - Added explanation for the TitleLienholderUID field in the message header for the Convert to Electronic (CE) message header – the field is required in the heads but will be null because the service provider does not know this data
1.0	11.22.22	M. Moore	<ul style="list-style-type: none"> - Removed error codes 6036, 6037 and 6039 from the table in section 2.1.1.3 - Added a column to the error code table in Section 2.1.1.3 to indicate the point at which BMV will send error codes to the service providers (at initial validation in response to an LR, CP, or CE request versus included with a failure messages (ELR, ECP, or ECE)
1.1	11.29.22	M. Moore	<ul style="list-style-type: none"> - Updated JSON and tables for Convert to Paper in section 2.1.1.2.7 <ul style="list-style-type: none"> o Provided additional information about optional fields for the CP request in the table. Added “No need to send on request” o Added IssuedDate as a required field o Updated name from MailToCountry to Country - Updated name of field from MailToCountry to Country for Lien Release in section 2.1.1.2.5 - Changed MailToCountry to Country in 2.1.1.4 table
1.2	12.09.22	M. Moore, N. Moore	<ul style="list-style-type: none"> - Added comments to indicate the characters that are acceptable in the Mail To Address fields in the CP and LR messages <ul style="list-style-type: none"> o Address Line 1 - can only contain A-Z (lower case included), 0-9, Slash (/), pound sign (#) o Address Line 2 - No restrictions

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			<ul style="list-style-type: none"> ○ City - can only contain A-Z (lower case included) ○ Zip Code - for 5 - 99999, for 5-4 digits - 99999-9999 - Removed requirement to include TitleLienHolderUID field in the message body for the CE message – lienholders will not have this field for a current paper title and sending null in the field causes an error. - Changed the Timestamp field in the CE message header to Optional - Added section 2.1.1.5 to TOC - Clarified requirement for LienholderName & LienholderOrganization fields for CE messages. - Added ModelBoatInchesLength field to LN field matrix (Sec. 2.1.1.1.1) - Added ModelBoatInchesLength field to TC field matrix (Sec. 2.1.1.1.2) - Clarified TitleBrandCodeName & OdometerBrandName should be null for watercraft in LN and TC messages (Secs. 2.1.1.1.1 & 2.1.1.1.2) - Added comments to indicate the characters that are acceptable in the MailToCustomerName fields in the CP and LR messages: A-Z (including lower case) - Corrected formatting with JSON messages for ELN, SLN, STC and ETC messages - Changed LienholderApplicationDate to ApplicationDate for LN & TC messages to align with example JSON
1.3	3/7/23	N. Moore	<ul style="list-style-type: none"> - Corrected CustomerStateCode and FormerStateofTitle fields in table under 2.1.1.4.1 API Field Lengths and Data Types to indicate true field name and field length. - Corrected field length for CustomerStateCode in business error message table under 2.1.1.3. - Removed TI transaction type, changed TN to TC in the first row, added TC wherever there is LN in business error code table under 2.1.1.3 to indicate applicable message types. - Correct field name formatting for the Input/Output CSV files and Validation Criteria under 2.1.1.2.6.1 - Added IssuedDate field line item (for CE & CP messages) to matrix under 2.1.1.4 (API Field Lengths, Data Types and Table Values) - Added requirement of single or double quotes around strings LienholderFEIN and LienholderSuffix under 2.1.1.4 (API Field Lengths, Data Types and Table Values)
1.4	6/12/23	N. Moore	<ul style="list-style-type: none"> - Corrected LienholderFEIN field name under 2.1.1.1.6, Example of the Post request for Convert to Electronic (CE) transaction - Clarified “MailTo” fields in Message Body table under 2.1.1.2.5 & 2.1.1.2.7 must be omitted if null - Clarified data within “MailTo” fields under 2.1.1.2.5 & 2.1.1.2.7 do not have to match BMV data

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			<ul style="list-style-type: none"> - Clarified in 2.1.1.2.6 that if any “MailTo” field has a value, all “MailTo” fields must be included and have a value as well; includes Country field - Clarified in 2.1.1.2.6 that ‘lienholder address’ field data must match BMV data to be accepted - Clarified in 2.1.1.2.6 LienholderOrganization field can be empty if lienholder is an individual - Clarified in Message Body table under 2.1.1.1.1 & 2.1.1.1.2 that LienholderFEIN and LienholderSuffix may be null if the title has a secondary paper lien - Added note to Message Body table under 2.1.1.1.1 & 2.1.1.1.2 stating that if vehicle information included, do not also include values in the watercraft-specific fields; if watercraft information provided, do not also include values in the vehicle-specific fields - Clarified that digits are acceptable for MailToCustomerName under 2.1.1.2.5 & 2.1.1.2.7. - Added MakeCodeName and ModelCodeName attributes to tables and message examples under 2.1.1.1.1 & 2.1.1.1.2. These attributes are specific to watercraft. - Corrected spelling of PONTOON in Boat Body Type table under section 2.1.1.4.2
1.5	7/28/23	N. Moore	<ul style="list-style-type: none"> - Added MakeCodeName & ModelCodeName fields to table under 2.1.1.4 - Corrected data type for State under Section 4.1.1.2, under the State/Province matrix
1.6	10/26/23	N. Moore	<ul style="list-style-type: none"> - Added Service Provider API Security section with 3 authentication options under 2.1.1.1.1 - Added IP from which messages sent from IN BMV will originate so that Service Providers may whitelist, under 3.0 API Security
1.7	4/19/24	N. Moore	<ul style="list-style-type: none"> - Minor correction to number of transactions available (5) in Section 1.0 - Corrected impact of Convert to Electronic (CE) transactions on the title number in Section 1.4 – the title number changes in this situation - Added the IPs for Service Providers to whitelist under Section 3.0 - Added acceptable special characters, dash (-), ampersand (&), for the following transactions, data fields and sections: <ul style="list-style-type: none"> o Section 2.1.1.2.5 Request Lien Release (LR) <ul style="list-style-type: none"> ▪ MailToCustomerName ▪ MailToAddress1 ▪ MailToCity

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			<ul style="list-style-type: none"> ○ Section 2.1.1.2.7 Conversion from Electronic Lien to Paper Lien (CP) <ul style="list-style-type: none"> ▪ MailToCustomerName ▪ MailToAddress1 ▪ MailToCity ○ Section 2.1.1.2.6.2 Single Title Conversion from Paper Lien to Electronic Lien (CE) <ul style="list-style-type: none"> ▪ LienholderAddress1 ▪ LienholderAddress2 ▪ LienholderCity - Corrected "BusinessErrors" field within the example POST request from Section 2.1.1.2.1 – Added "s" to the end of the fieldname to reflect actual fieldname expected. - Added clarification to provider of how to design endpoints in Section 2.1.1.1 E-Lien Transaction Service Send Endpoint under Security Provider API Endpoint - Clarification to provider for authenticating BMV's requests in Section 2.1.1.1 E-Lien Transaction Service Send Endpoint under Service Provider API Security - Removed Transactions Affected column from Business Error table in section 2.1.1.3 Error Handling within APIs

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1.0 E-Lien Service Provider System Messages

The BMV E-Lien APIs will allow service providers to conduct five (5) different transactions (fifteen (15) if we include the success and failure messages associated to each business transaction) with BMV. Participating E-Lien lenders can request these transactions using third-party service providers to send request messages to the BMV. Upon receiving a transaction request, the E-Lien API will return an immediate response message that indicates one of the following:

1. The BMV successfully received the request
2. The BMV failed to receive the request, such as due to a network error, invalid request data, or invalid message content
3. The BMV rejected the request

Figure 1 illustrates the sending of a request to the BMV and the message acknowledgement response that the BMV returns.

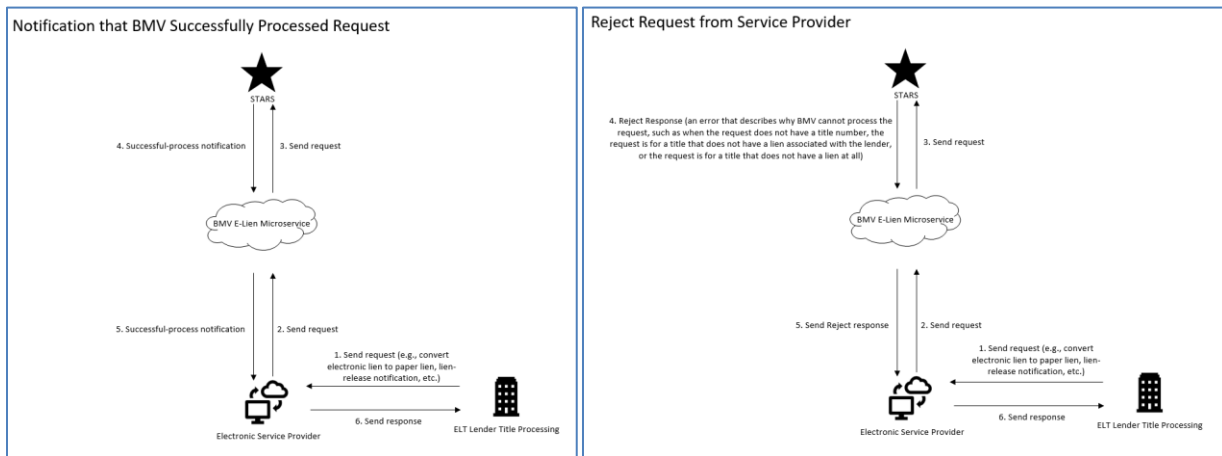


Figure 1: Message acknowledgement

Depending on the transaction, the BMV may return a later response after the BMV has processed the request.

A transaction may have either inbound or outbound messages. An inbound transaction is a transaction that the service provider initiates. For an inbound transaction, the service provider sends a message to the BMV. An outbound transaction is a transaction that the BMV initiates and sends to the service provider. For an outbound transaction, the BMV sends a message to the service provider.

Following are the transactions:

- Inbound Transactions (initiated by service provider)
 - Request Lien Release
 - Request Conversion to Electronic Lien
 - Request Bulk Conversion to Electronic Liens
 - Request Conversion to Paper Lien
- Outbound Transactions (initiated by BMV)

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- Send Lien Notification
- Send Title Change Notification

1.1 Send Lien Notification

The BMV uses the Send Lien Notification transaction to inform lienholders of new liens.

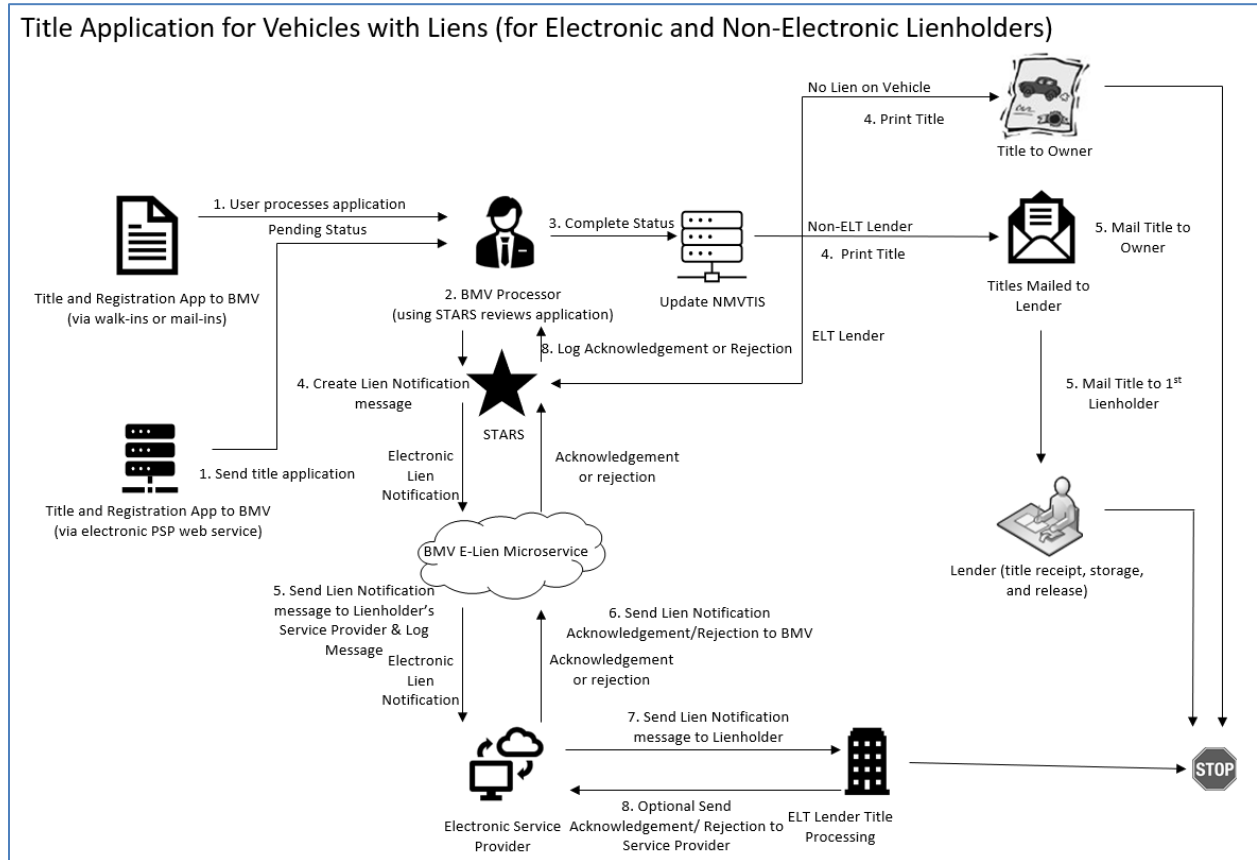


Figure 2: Flow for the Send Lien Notification transaction

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1.2 Request Conversion to Electronic Lien

A lienholder uses the Request Conversion to Electronic Lien transaction to convert a paper title with a lien to an electronic title with a lien. After the BMV successfully completes the conversion, the paper title is void, and the lienholder may dispose of it properly. The lienholder can only convert titles in which they are the lienholder of record. Only one lien conversion at a time is currently supported via this service. Please note that bulk conversion is supported via process 1.3. Title number and issued date will change as part of the conversion. TitleLienHolderUID will be re-issued upon successful conversion and all future transactions about the converted lien should use that.

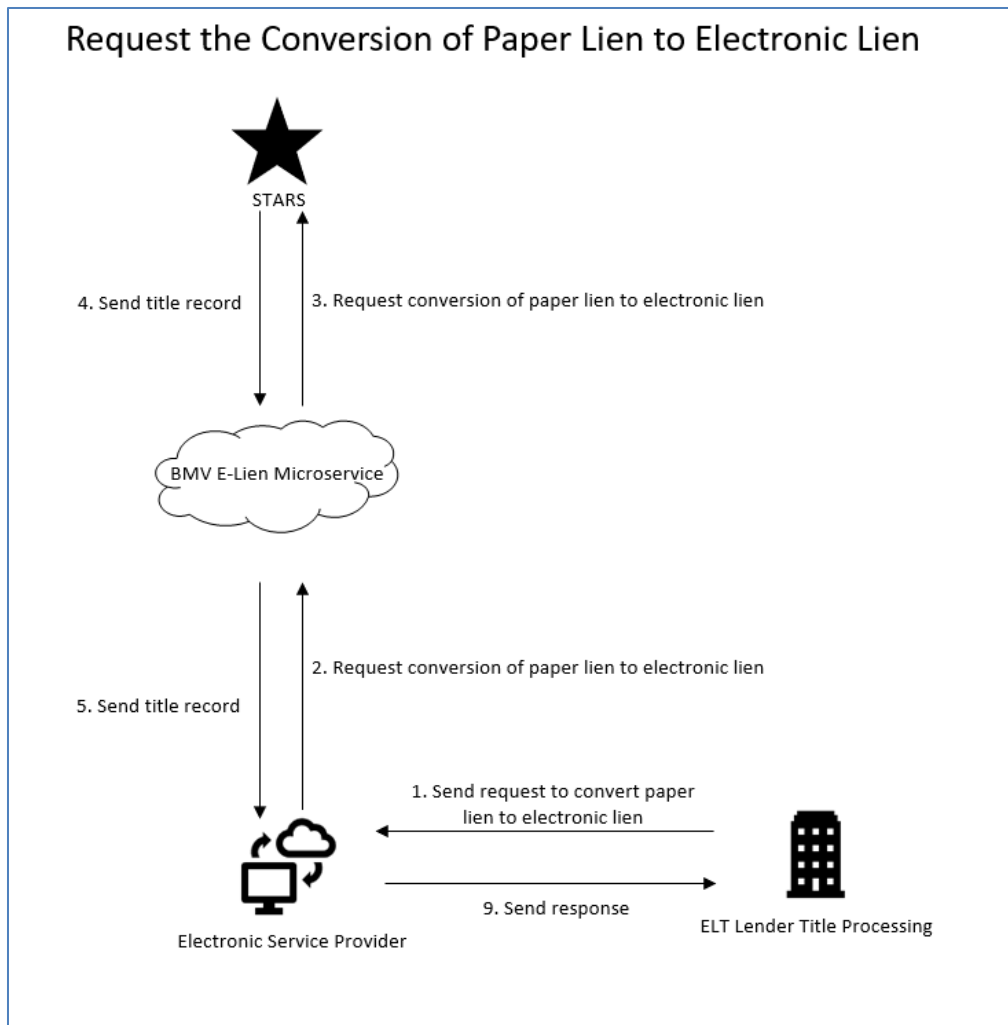


Figure 3: Flow for the Request Conversion to Electronic Lien transaction

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1.3 Request Bulk Conversion to Electronic Liens

The Request Bulk Conversion to Electronic Liens transaction is similar to the Request Conversion to Electronic Lien transaction, in that a lienholder can use either transaction to convert a paper title with a lien to an electronic title with a lien. With the Request Bulk Conversion to Electronic Liens transaction, however, a lienholder can request the conversions of multiple liens as a batch.

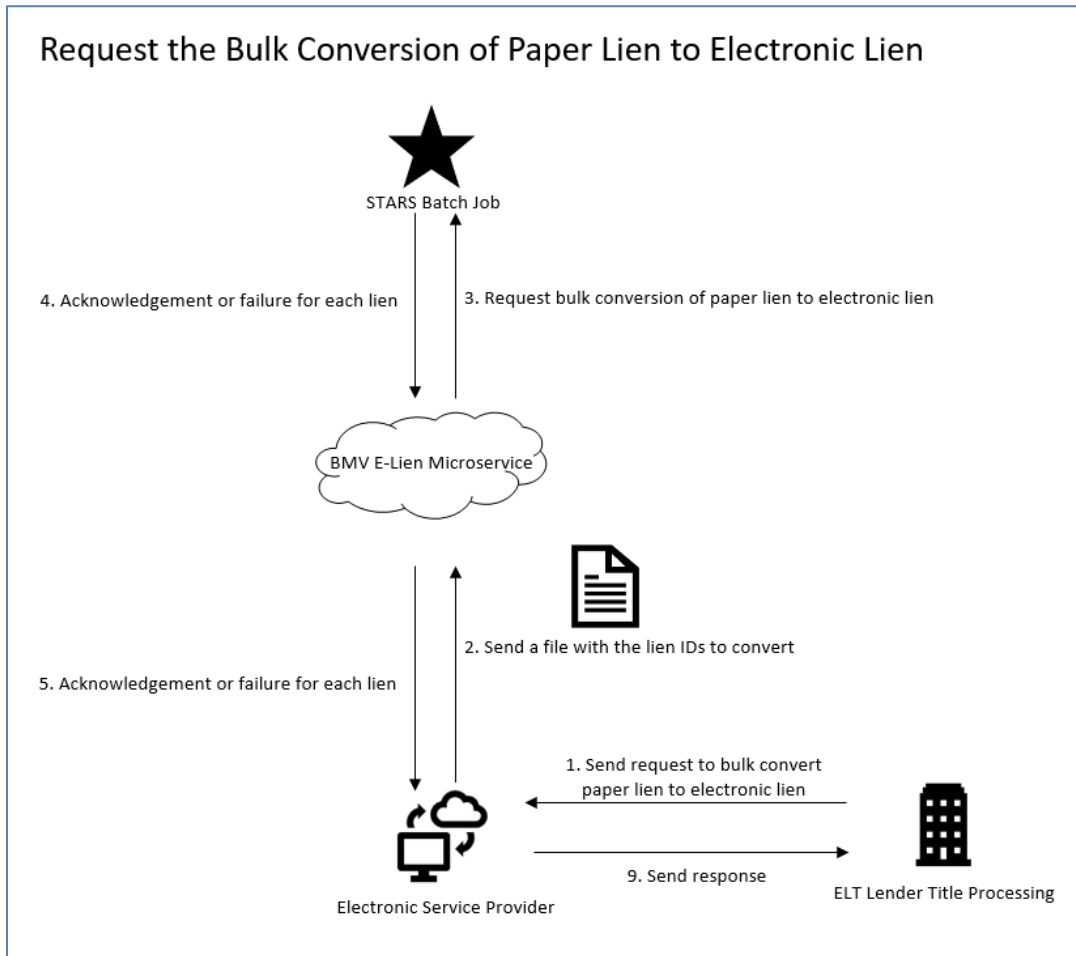


Figure 4: Flow for the Request Bulk Conversion to Electronic Liens transaction

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1.4 Request Conversion to Paper Lien

A lienholder uses the Request Conversion to Paper Lien transaction to convert an electronic lien to a paper lien, with lien information intact, resulting in the issuance of a paper title to the lienholder. The BMV will mail the paper title to the lienholder at the lienholder address on record. Once the lienholder receives the paper title, the lienholder must maintain the paper title in a secure location. Paper titles are for only taking action that requires the paper title as evidence of the lienholders financial interest in the vehicle, such as transferring ownership to another state or the results from loan defaults. Otherwise, lienholders should maintain title records electronically whenever possible. Title number will change as part of conversion from electronic to paper.

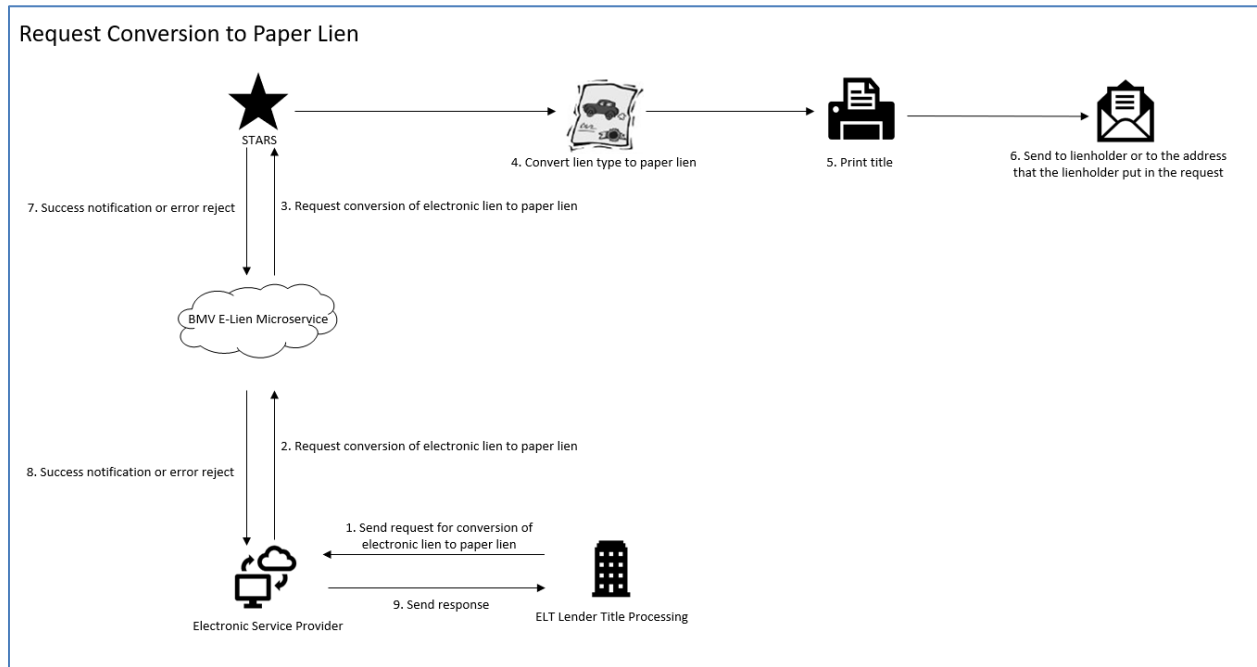


Figure 5: Flow for the Request Conversion to Paper Lien transaction

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1.5 Request to Release Lien

A lienholder uses the Request to Release Lien transaction to release its electronic lien when the owner pays off a vehicle loan, a dealer pays off the loan as part of a trade-in/sale, or an insurance company pays off a total loss claim. The lienholder may release its lien and specify the name and address for the BMV to mail a paper title. Provided there is no other electronic lien on the title, BMV will print the title upon processing of the Request to Release Lien message. If no name/address is provided in the message, the BMV will mail the printed title to the owner at the address on STARS. The title number and issue date will change as part of the Lien Release.

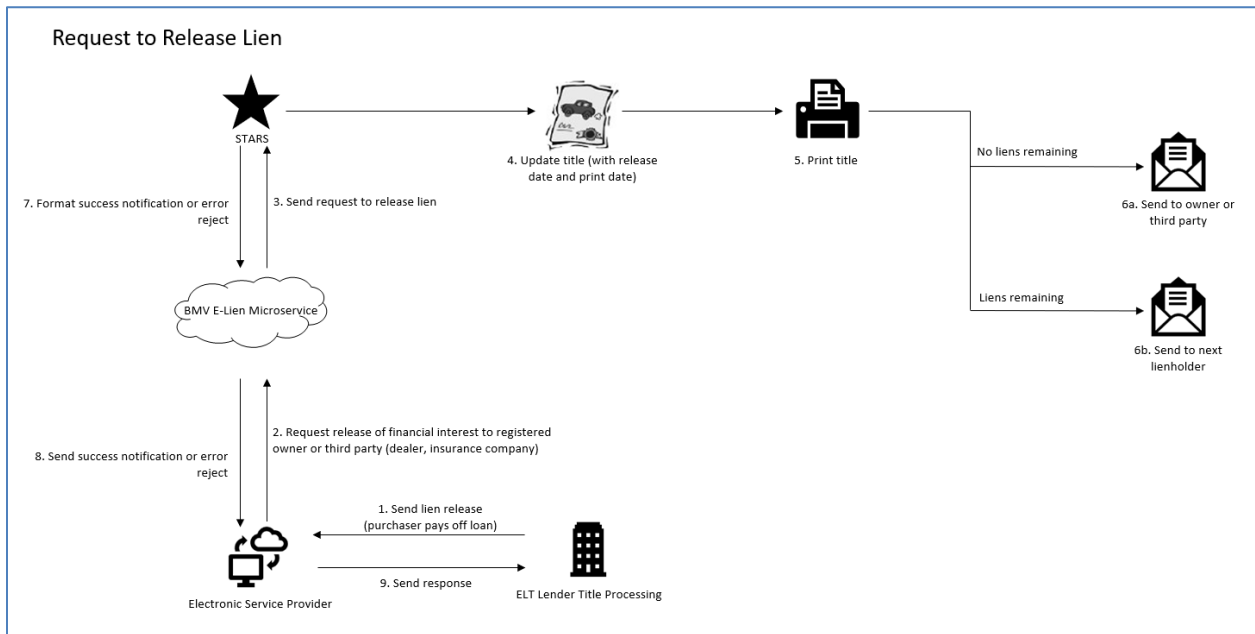


Figure 6: Flow for the Request to Release Lien transaction

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1.6 Send Title Change Notification

The BMV uses the Send Title Change Notification transaction to inform lienholders of changes to title, vehicle, lien or customer data. The Title Change Notification would identify any changes to data elements in the BMV's database after the issuance of the Lien Notification.

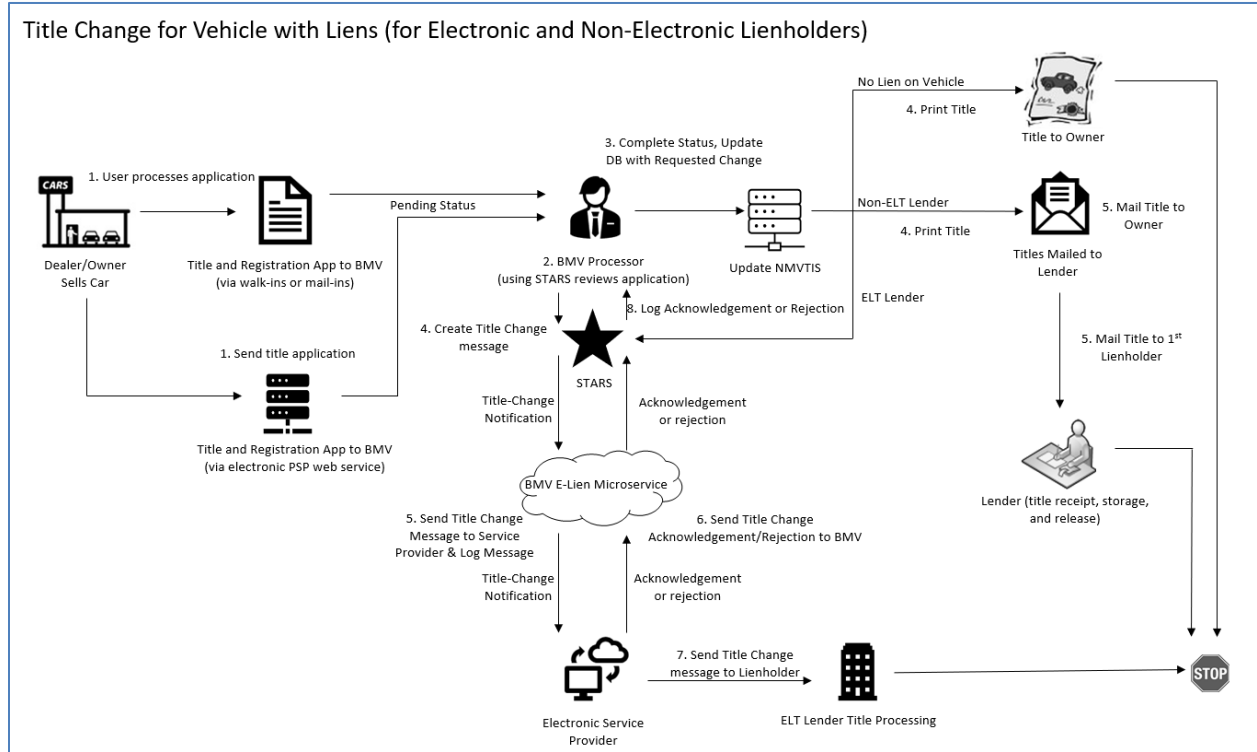


Figure 7: Flow for the Send Title Change Notification transaction

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2.0 Implementation of API in support of E-Lien Messages

The E-Lien Services are comprised of the following business microservices:

- E-Lien Transaction microservice

2.1.1 API Name – E-Lien Transaction microservice

The E-Lien Transaction Microservice API will allow service providers to conduct fifteen (15) different business messages (including success and failure messages) with BMV. Participating E-Lien lenders will leverage third-party service providers to send request messages to the BMV. These messages will be known as “inbound” messages. Upon receiving an “inbound” message, the E-Lien API will return a response message that indicates one of the following:

- BMV successfully received and processed the request
- BMV failed to receive the request, such as due to a network error, invalid request data, or invalid message content. It must be noted that the E-Lien microservice has been designed to capture both the technical error (network failure, database being down etc) and also a set of business error (examples of those business error codes are provided in section 2.1.1.4 Business Error Codes) that have been agreed upon by the service provider and the BMV. The error codes will be stored in the API log table (in STARS database) for future reference.

BMV will also leverage the microservice to send all “outbound” messages to the E-Lien lenders. Once the service providers receive these messages, they will follow up with appropriate successful or failure messages to BMV indicating that they have successfully received or rejected the original message.

The following messages are supported by this microservice. Each message is designed as an endpoint and will be exposed to the relevant users (consuming services) using appropriate security roles in the STARS database. It must be noted that all endpoints will be part of the configuration file in the system.

- Inbound messages (initiated by service provider)
 - Request Lien Release – (Transaction code: LR)
 - Request Conversion (Bulk and singular) to Electronic Liens: - (Transaction code -singular– (CE); Bulk (CB))
 - Request Conversion to Paper Lien – (Transaction code – CP)
 - Success messages for
 - Lien notification – (Transaction Code – SLN)
 - Title change notification – (Transaction Code – STC)
 - Failure messages for
 - Lien notification – (Transaction Code – ELN)
 - Title change notification – (Transaction Code -ETC)
- Outbound messages (initiated by BMV)
 - Send Lien Notification – (Transaction Code – LN)
 - Send Title Change Notification – (Transaction Code – TC)
 - Send Failure Message for Lien Release – (Transaction Code – ELR)
 - Send Success Message for Lien Release – (Transaction Code – SLR)
 - Send Failure Message for Convert to Electronic (singular) – (Transaction Code – ECE)
 - Send Success Message for Convert to Electronic (singular) – Transaction Code – SCE)

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- Send Failure Message for Convert to Paper (Transaction Code – ECP)
- Send Success Message for Convert to Paper (Transaction Code – SCP)

Please note that as we continue to develop and test (in iterations) the various endpoints of the transaction microservice, we will continue to update this document if needed to keep it aligned to the latest design and code.

2.1.1.1 E-Lien Transaction Service Send Endpoint

The Send Endpoint of the E-Lien Transaction Service will be used to transmit the following messages from BMV to Service Providers:

- Lien Notification Message
- Title Change Notification Message
- Failure Message for Lien Release
- Success Message for Lien Release
- Failure Message for Convert to Electronic (singular)
- Success Message for Convert to Electronic (singular)
- Failure Message for Convert to Paper
- Success Message for Convert to Paper

2.1.1.1.1 Lien Notification Message

The E-Lien Notification message will be sent to inform lienholders of any new liens in STARS application. Below represents how the Send Endpoint will be consumed to send the message to the Service Provider. The exact nature of how the STARS application component triggers this Lien Notification API is described in the STARS design changes with the System Design Document (deliverable). It must be noted that any technical error faced by STARS while invoking this endpoint of the Transaction microservice will be logged in the Audit table created for the APIs. The error information can be visualized via a STARS screen that can be built to extract the audit data. The error handling described here will be applicable to all “Send” messages, not just for Lien Notification message. More information about error processing is described in Section 2.1.1.3 of this document.

The transaction microservice will have an inherent capability to resend failed transaction. This will be true for all “Send” endpoints. The number of “retries” will be defaulted to 3 but part of the configuration settings.

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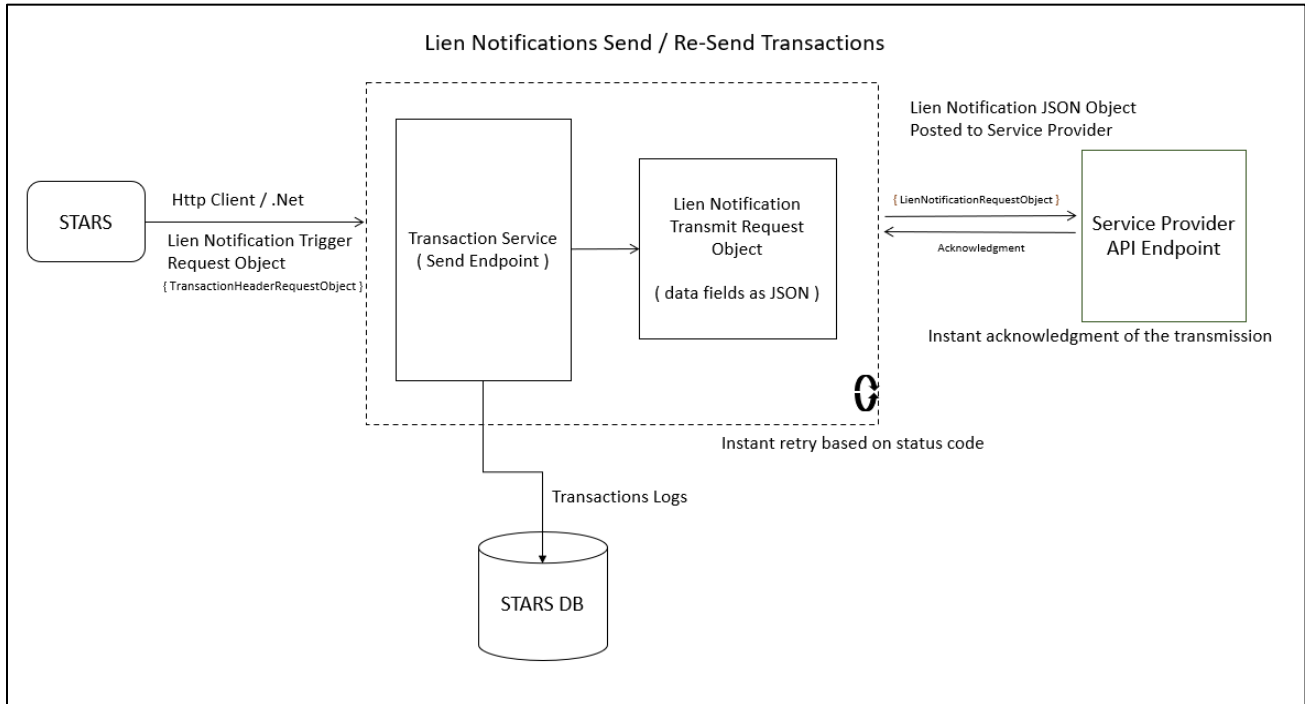


Figure 8 – Lien Notification Send/Re-send transactions

Send Endpoint Technical Specification:

- Lien Notification End Point Types: POST

`https://{aws_domainname}/api/eltransactionservice/send //`

**** Note: aws_domainname will be provided by BMV/IOT after successful configuration of the production environment for E-Lien API **//**

Request Object Technical Specification

- Request Object Name: - TransactionRequestObject
- Request Object Type: - JSON

These fields are sent by the BMV Transaction API to the Service provider end point.

Note:

- If only one lienholder is present, it will be present in the header (only FEIN and suffix) and body (full details)
- If multiple lienholders are present, you will get the full list of lienholders with order in the body. Header is designed to be consistent for all transactions.

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Message Header (part of TransactionRequestObject):

The below header part of the Request body will stay consistent with all transactions (both inbound and outbound) and across multiple service providers.

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TraceID	Auto generated by BMV API, will be used to track related requests. TraceID is stored in the Transaction log tables after the fact for tracking, but it will be created by the ASP.NET Core framework uniquely assigned for each HTTP request.	ELT_TRANSACTION_LOG	Y
TransactionCode	LN (Lien Notification)	ELT_TRANSACTION_CODE	Y
TransactionDescription	Lien Notification (when a new electronic Lien is created).	ELT_TRANSACTION_CODE	N
ServiceProviderUID	Database value, specific to service provider	ELT_SERVICE_PROVIDER	Y
LienholderFEIN	Federal tax ID number from database specific to Lienholder.	LIEN HOLDER	Y
LienholderSuffix	Suffix to uniquely identify Lienholder.	LIEN HOLDER	Y
TitleLienHolderUID	This field must be present in the request will be null because the lienholder does not know this information for a paper lien	TITLE_LIEN HOLDER	Y
BusinessErrorCode	If there are no BusinessErrors, the value of Business Errors should be null.	ELT_TRANSACTION_LOG	N
BusinessErrorDescription	NA	ELT_TRANSACTION_LOG	N
Timestamp	Current date and time in UTC format. The consuming application will convert to desired time zone (EST) as per requirement.		Y
TransactionStatus	Success/Failure only for acknowledgements	ELT_TRANSACTION_LOG	Conditional (N for request, Y for response)
TransactionlogID	This field will contain data but it is for BMV	ELT_TRANSACTION_LOG	

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	internal use only. The Service Provider should ignore this field and its contents		
--	---	--	--

Message Body (part of TransactionRequestObject): -

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TitleNumber	system-generated	TITLE	Y
TitleType	type of title (e.g. "Normal"). Valid values are blank/null, "Normal", "Duplicate", "Amend" and "Salvage". When a title transfer to a new owner is performed, the TitleType is blank/null.	vw_CompletedTransactions	Y
Leased	is the vehicle leased (e.g. Y or N)	TITLE	Y
TitleBrandCodeName	e.g., "clear", "salvage", "rebuilt"; null for watercraft	TITLE_BRAND_CODE	Y
TitleDamageBrandName	e.g., "flood"	TITLE_DAMAGE_BRAND_CODE	Y
MFGBuyback	yes or no indicator	TITLE	Y
FormerTitleNumber	out of state title number or primary title document	FORMER_TITLE	Y
FormerStateOfTitle	state vehicle was previously titled	FORMER_TITLE	Y
IssueDate	date title was issued	TITLE	Y
PurchaseDate	date vehicle was purchased	TITLE_PURCHASE_INFORMATION	Y
<i>This section allows the lienholder to provide information specific to vehicle and watercraft; if vehicle info provided, do not populate values for watercraft-specific fields; if watercraft info provided, do not populate values for vehicle-specific fields.</i>			
VIN_HIN	Vehicle or Hull identification number	VEHICLE	Y
VehicleMakeCodeName	brand of vehicle (e.g., "Toyota")	VEHICLE_MAKE	Y
VehicleModelCodeName	Model name	VEHICLE_MODEL	Y
VehicleYear	model year	VEHICLE	Y

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VehicleBodyTypeCode	shape and style of the car (e.g., "two-door coupe")	VEHICLE_BODY_STYLE_CODE	Y
MakeCodeName	brand of watercraft (watercraft)	VEHICLE_MAKE	Y
ModelCodeName	Model name (watercraft)	VEHICLE_MODEL	Y
ModelBoatInchesLength	boat length - inches	SUB_TRANSACTION_VEHICLE	N
ModelBoatLength	boat length	SUB_TRANSACTION_VEHICLE	Y
BodyBoatType	type of watercraft (e.g. sailboat)	WATERCRAFT_TYPE_CODE	Y
WeightPropulsion	Watercraft propulsion (e.g. inboard)	PROPULSION_TYPE_CODE	Y
FuelTypeName	code for gas, hybrid, electric	FUEL_TYPE_CODE	Y
OdometerReading	mileage in miles	TITLE	Y
OdometerBrandName	code that states whether miles are correct; null for watercraft	ODOMETER_BRAND_CODE	Y
HullMaterial	hull material (e.g. aluminum)	HULL_MATERIAL_CODE	Y
<i>Lienholders, if any will be sent as part of an array with order number specified</i>	<i>Up to 5 Lienholders may be assigned to a title</i>	<i>The following lienholder fields will be provided for each Lienholder</i>	
LienholderOrganization	Lienholder's organization. This field will be blank/null if the lienholder is an individual person	LIEN HOLDER	Y
LienholderName	Lienholder's Name. This field will be blank/null if the lienholder is an organization or government.	LIEN HOLDER_NAME	Y
LienholderFEIN	Lienholder's FEIN; may be null if the title has a secondary paper lien	LIEN HOLDER	Y
LienholderSuffix	Lienholder's suffix; may be null if the title has a secondary paper lien	LIEN HOLDER	Y
LienholderAddress1	Lienholder's Address line 1	LIEN HOLDER_ADDRESS	Y
LienholderAddress2	Lienholder's Address line 2	LIEN HOLDER_ADDRESS	N
LienholderCity	Lienholder's City	LIEN HOLDER_ADDRESS	Y

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LienholderState	Lienholder's State	LIEN_HOLDER_ADDRESS	Y
LienholderZipCode	Lienholder's Zip Code	LIEN_HOLDER_ADDRESS	Y
LienholderCountry	Lienholder's Country	LIEN_HOLDER_ADDRESS	Y
ApplicationDate	Date lien was applied to title	TITLE_LIEN_HOLDER	Y
LienReleaseDate	Date lien was released	TITLE_LIEN_HOLDER	Y
TitleLienholderUID	Unique ID for an ELT Lienholder for a given title	TITLE_LIEN_HOLDER	Y
LienholderOrder	Order lien was placed on title	TITLE_LIEN_HOLDER	Y
<i>There may be multiple customers assigned to a title. They will be sent as part of an array with order number specified</i>			
MultipleOwnerName	Combined name of owners (e.g. Mary and Joseph Smith)	VEHICLE_OWNERSHIP	Y
CustomerName	customer's name	VwCUSTOMER	Y
CustomerAddress1	customer's address line 1	CUSTOMER_ADDRESS	Y
CustomerAddress2	customer's address line 2	CUSTOMER_ADDRESS	N
CustomerCity	customer's city	CUSTOMER_ADDRESS	Y
CustomerStateCode	customer's state code (e.g. IN)	CUSTOMER_ADDRESS	Y
CustomerZipCode	customer's zip code	CUSTOMER_ADDRESS	Y
CustomerCountryName	country name of customer	CUSTOMER_ADDRESS	Y
CustomerOrder	Identifies primary and secondary owners	MF_TITLE_LINK	Y

Http Response Object (LienNotificationRequestObject): -

Send header table data (refer above) back with TransactionStatus.

Example of the POST request –

```
POST /elttransactionservice/send/ json HTTP/1.1
Host: {aws_domainname}
Accept: application/json
Content-Type: application/json
{
  "Header": {
    "TraceID": "sample data",
    "TransactionCode": "LN",
    "TransactionDescription": "sample data",
```

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```
    "Timestamp": "2022-01-10T20:12:00.8527984Z",
    "ServiceProviderUID": 753,
    "LienholderFEIN": "sample data",
    "LienholderSuffix": "sample data",
    "TitleLienHolderUID": "55112233",
    "BusinessErrors": [
      {
        "BusinessErrorCode": "{error code}",
        "BusinessErrorDescription": "{error description}"
      }
    ] //If there are no BusinessErrors, the value of BusinessErrors should be null
    "TransactionStatus": "sample data",
    "TransactionlogID": "sample data"
  },
},
},
"Body": {
  "Customers": [
    {
      "CustomerName": "sample data",
      "CustomerAddress1": "sample data",
      "CustomerAddress2": "sample data",
      "CustomerCity": "sample data",
      "CustomerStateCode": "sample data",
      "CustomerZipCode": "sample data",
      "CustomerCountryName": "sample data",
      "CustomerOrder": 1 //This will distinguish primary owner of the vehicle.
    }
  ],
  "Lienholders": [
    {
      "LienholderName": "sample data",
      "LienholderFEIN": "sample data",
      "LienholderSuffix": "sample data",
      "LienholderAddress1": "sample data",
      "LienholderAddress2": "sample data",
      "LienholderCity": "sample data",
      "LienholderState": "sample data",
      "LienholderZipCode": "sample data",
```

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```
"LienholderCountry": "sample data",
"LienholderOrganization": "sample data",
"ApplicationDate": "2022-01-10T20:12:00.8527984Z",
"LienReleaseDate": "2022-01-10T20:12:00.8527984Z",
"TitleLienHolderUID": 55112233,
"LienHolderOrder": 1 // This will denote the hierarchy of the Lien Holder
}
],
"Title": {
  "TitleNumber": "sample data",
  "TitleType": "sample data",
  "MultipleOwnerName": "sample data",
  "Leased": "sample data",
  "IssueDate": "2019-06-18T00:00:00",
  "OdometerReading": 123839.0,
  "FormerStateOfTitle": "sample data",
  "FormerTitleNumber": "sample data",
  "PurchaseDate": "2009-06-18T00:00:00",
  "TitleBrandCodeName": "sample data",
  "TitleDamageBrandName": "sample data",
  "OdometerBrandName": "sample data",
  "MFGBuyback": "sample data",
},
"Vehicle": {
  "VIN": "sample data",
  "VehicleMakeCodeName": "sample data",
  "VehicleYear": 2015,
  "VehicleBodyTypeCode": "sample data",
  "VehicleModelCodeName": "sample data"
},
"Watercraft": {
  "HIN": "sample data",
  "VehicleYear": 2019,
  "FuelTypeName": "sample data",
  "WeightPropulsion": "sample data",
  "HullMaterial": "sample data",
  "BodyBoatType": "sample data",
  "ModelBoatLength": 45
  "MakeCodeName": "sample data",
```


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```
    "ModelCodeName": "sample data"  
  }  
}  
}
```

Service Provider API end point

Note: We expect to receive the Service Provider API endpoints from the appropriate Service Provider at the beginning of their onboarding process. Service Provider endpoints will be stored in the Transaction API config file and have pipeline variables to match them. We can then update the pipeline variable without redeploying the API code. BMV supports only 1 provider endpoint for all message types.

Service Provider API Request Objects

Note: We expect to receive the Service Provider API endpoints from the appropriate Service Provider at the beginning of their onboarding process

Service Provider API Security Token

Note: We expect to receive the Service Provider API endpoints from the appropriate Service Provider at the beginning of their onboarding process

Service Provider API Security

BMV allows for 3 types of authentication to Service Provider APIs.

1. *API Key*

The API Key will be sent as an Authorization header



2. *Certificate*

3. *OAuth 2.0*

The token will be sent as an Authorization header with a prefix of "Bearer"

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```

Request Headers:
Content-Type: "application/json"
Authorization: "Bearer [redacted]"
User-Agent: "PostmanRuntime/7.13.0"
Accept: "*/*"
Cache-Control: "no-cache"
Postman-Token: "[redacted]"
Host: "[redacted]"
accept-encoding: "gzip, deflate"
content-length: 3766
Connection: "keep-alive"

```

If OAuth 2.0 is used BMV will send client credentials in the body of the request, rather than the header.

Service Provider Acknowledgment data fields

Message header object should be sent back with Transaction Status field populated to indicate Success/Failure. The same TracelD is expected back. Please see above for the Message header table.

STARS Table Names: Below are the tables that are used to create the Lien Notification Message and update the log table for auditability.

Table Names		
CUSTOMER_ADDRESS	LIEN_HOLDER_NAME	TITLE_STATUS
LIEN_HOLDER	MF_TITLE_LINK	TITLE_SUB_STATUS
ELT_SERVICE_PROVIDER	ODOMETER_BRAND_CODE	VEHICLE
ELT_TRANSACTION_CODE	PROPULSION_TYPE_CODE	VEHICLE_BODY_STYLE_CODE
ELT_TRANSACTION_LOG	SUB_TRANSACTION_VEHICLE	VEHICLE_OWNERSHIP
FORMER_TITLE	TITLE	VEHICLE_MAKE
FUEL_TYPE_CODE	TITLE_BRAND_CODE	VEHICLE_MODEL
HULL_MATERIAL_CODE	TITLE_DAMAGE_BRAND_CODE	WATERCRAFT_TYPE_CODE
LIEN_HOLDER_ADDRESS	TITLE_LIEN_HOLDER	
LIEN_HOLDER	TITLE_PURCHASE_INFORMATION	

Views: - Below are the views that are used to create the Lien Notification Message and update the log table for auditability.

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View Names
vwCUSTOMER
vw_CompletedTransactions

Handling success and failure messages from the Service Provider for the E-Lien Notification sent

Once the service provider has received the Lien Notification message, they will process and then send a separate success or failure message that corresponds to each Lien Notification message that was previously sent.

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2.1.1.1.2 Title Change Notification Message

The BMV uses the Send Title Change Notification transaction to inform lienholders of changes to existing title records. Changes may include updates to vehicle, title, owner, or lienholder information. Figure 9 below is the diagram that depicts the system flow for this message.

The error handling and the resend logic will be exactly like that in the Title Change Notification message.

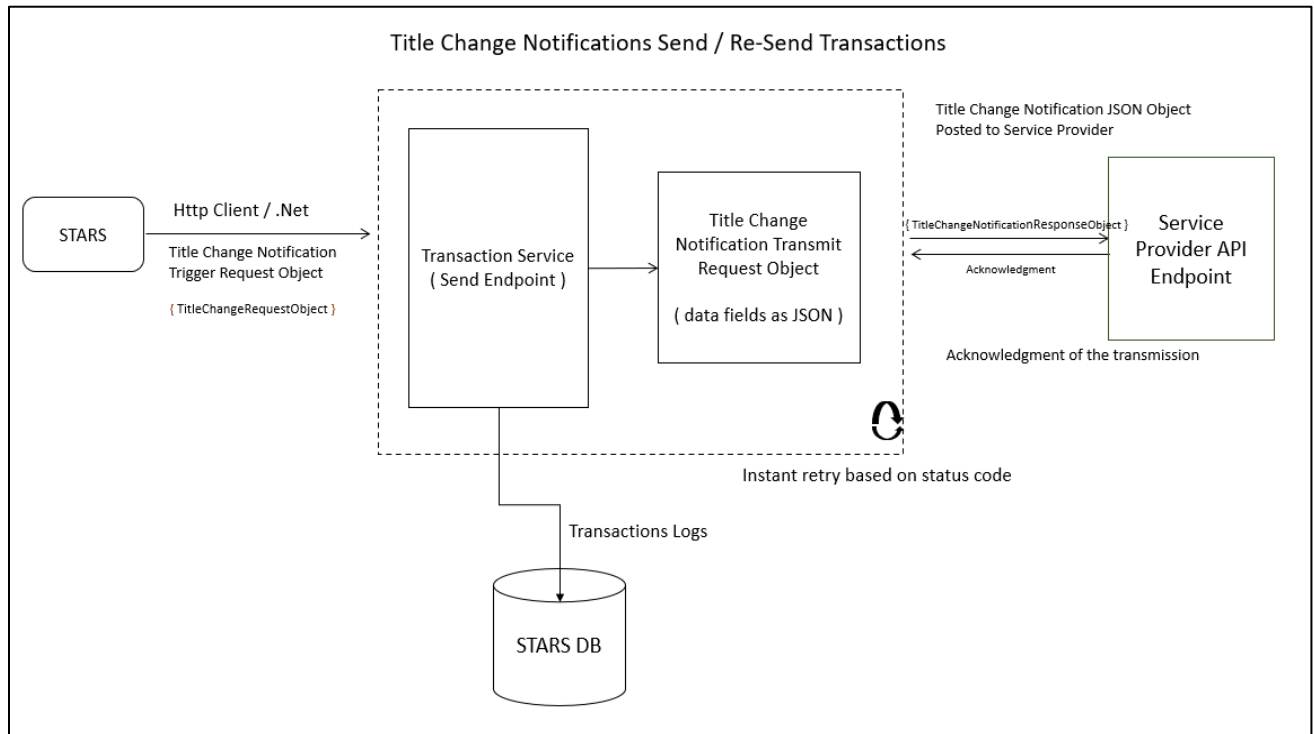


Figure 9 - E-Lien Title Change Send / Re-Send transactions

Send Endpoint Technical Specification

- Title Change Notification Service Types: POST
https://{aws_domainname}/api/eltransactionservice/send

Request Object Technical Specification -

- Request Object Name: - TitleChangeRequestObject
- Request Object Type: - JSON

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Message Header (part of TitleChangeRequestObject):

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TraceID	Auto generated by BMV API, will be used to track related request.	ELT_TRANSACTION_LOG	Y
TransactionCode	TC (Title Change Notification)	ELT_TRANSACTION_CODE	Y
TransactionDescription	when any Title related thins changes.	ELT_TRANSACTION_CODE	N
ServiceProviderUID	Database value, specific to service provider	ELT_SERVICE_PROVIDER	Y
LienholderFEIN	Federal tax ID number from database specific to Lien holder.	LIEN HOLDER	Y
LienholderSuffix	Suffix to uniquely identify Lien holder.	LIEN HOLDER	Y
TitleLienHolderUID	A database value that uniquely identifies specific Lien for a title. This is the primary key for a specific lien attached to a title.	TITLE_LIEN HOLDER	Y
BusinessErrorCode	If there are no BusinessErrors, the value of Business Errors should be null.	ELT_TRANSACTION_LOG	N
BusinessErrorDescription	NA	ELT_TRANSACTION_LOG	N
Timestamp	Current date and time in UTC format. The consuming application will convert to desired time zone as per requirement.		Y
TransactionStatus	Success/Failure	ELT_TRANSACTION_LOG	Conditional (N for request, Y for response)
TransactionlogID	This field will contain data but it is for BMV internal use only. The	ELT_TRANSACTION_LOG	

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Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
	Service Provider should ignore this field and its contents		

Message Body (part of TitleChangeRequestObject): -

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TitleNumber	system-generated	TITLE	Y
TitleType	type of title (e.g. "Normal"). Valid values are blank/null, "Normal", "Duplicate", "Amend" and "Salvage". When a title transfer to a new owner is performed, the TitleType is blank/null.	vw_CompletedTransactions	Y
TitleSubStatusType*	Title sub status (e.g., "Junk", "OOS Cancellation", "Stolen" or blank)	TITLE_SUB_STATUS_TYPE_CODE	Y
Leased	is the vehicle leased	TITLE	Y
TitleBrandCodeName	e.g., "clear", "salvage", "rebuilt"; null for watercraft	TITLE_BRAND_CODE	Y
TitleDamageBrandName	e.g., "flood"	TITLE_DAMAGE_BRAND_CODE	Y
MFGBUYBACK	yes or no indicator	TITLE	Y
FormerTitleNumber	out of state title number or primary title document	FORMER_TITLE	Y
FormerStateOfTitle	state vehicle was previously titled	FORMER_TITLE	Y
IssueDate	date title was issued	TITLE	Y
PurchaseDate	date vehicle was purchased	TITLE_PURCHASE_INFORMATION	Y
ReleaseDate	date dues on the trade-in vehicle have been paid	TITLE_LIEN HOLDER	Y
PrintDate	date title is printed	TITLE	Y
<i>Lienholder to provide information specific to vehicle and watercraft; if vehicle info provided, do not populate values for watercraft-specific fields; if watercraft info provided, do not populate values for vehicle-specific fields.</i>			
VIN_HIN	Vehicle or hull identification number	VEHICLE	Y
VehicleMakeCodeName	brand of the vehicle (e.g., "Toyota")	VEHICLE_MAKE	Y
VehicleModelCodeName	name of a car product (e.g., "Camry")	VEHICLE_MODEL	Y

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Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
VehicleYear	ales model year	VEHICLE	Y
VehicleBodyTypeCode	shape and style of the car (e.g., "two-door coupe")	VEHICLE_BODY_STYLE_CODE	Y
MakeCodeName	brand of watercraft (watercraft)	VEHICLE_MAKE	Y
ModelCodeName	Model name (watercraft)	VEHICLE_MODEL	Y
ModelBoatInchesLength	boat length - inches	SUB_TRANSACTION_VEHICLE	N
ModelBoatLength	boat length	SUB_TRANSACTION_VEHICLE	Y
BodyBoatType	boat type (e.g. sailboat)	WATERCRAFT_TYPE_CODE	Y
WeightPropulsion	Boat propulsion (e.g. inboard)	PROPULSION_TYPE_CODE	Y
FuelTypeName	code for gas, hybrid, electric	FUEL_TYPE_CODE	Y
OdometerReading	mileage in miles	TITLE	Y
OdometerBrandName	code that states whether miles are correct; null for watercraft	ODOMETER_BRAND_CODE	Y
HullMaterial	hull material (e.g. aluminum)	HULL_MATERIAL_CODE	Y
<i>Lienholders, if any will be sent as part of an array with order number specified</i>	<i>Up to 5 lienholders may be assigned to a title</i>	<i>The following lienholder fields will be provider for each lienholder</i>	
LienholderOrganization	Lienholder's organization. This field will be blank/null if the lienholder is an individual person	LIEN HOLDER	Y
LienholderName	Lienholder's Name. This field will be blank/null if the lienholder is an organization or government.	LIEN HOLDER_NAME	Y
LienholderFEIN	Lienholder's FEIN; may be null if the title has a secondary paper lien; may be null if the title has a secondary paper lien	LIEN HOLDER	Y
LienholderSuffix	Lienholder's suffix; may be null if the title has a secondary paper lien; may be null if the title has a secondary paper lien	LIEN HOLDER	Y
LienholderAddress1	Lienholder's Address line 1	LIEN HOLDER ADDRESS	Y
LienholderAddress2	Lienholder's Address line 2	LIEN HOLDER ADDRESS	N

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Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
LienholderCity	Lienholder's City	LIEN_HOLDER_ADDRESS	Y
LienholderState	Lienholder's State	LIEN_HOLDER_ADDRESS	Y
LienholderZipCode	Lienholder's Zip Code	LIEN_HOLDER_ADDRESS	Y
LienholderCountry	Lienholder's Country	LIEN_HOLDER_ADDRESS	Y
ApplicationDate	Date lien was applied to title	TITLE_LIEN_HOLDER	Y
LienReleaseDate	Date lien was released	TITLE_LIEN_HOLDER	Y
TitleLienholderUID	unique ID of ELT Lienholder on a given title	TITLE_LIEN_HOLDER	Y
LienholderOrder	Order lien was placed on title	TITLE_LIEN_HOLDER	Y
<i>There may be multiple customers assigned to a title. They will be sent as part of an array with order specified.</i>			
MultipleOwnerName	Combined owner's names (e.g. Mary and Joseph Smith)	VEHICLE_OWNERSHIP	Y
CustomerName	customer's name	VwCUSTOMER	Y
CustomerAddress1	customer's address line 1	CUSTOMER_ADDRESS	Y
CustomerAddress2	customer's address line 2	CUSTOMER_ADDRESS	N
CustomerCity	customer's city	CUSTOMER_ADDRESS	Y
CustomerStateCode	customer's state code (e.g. IN)	CUSTOMER_ADDRESS	Y
CustomerZipCode	customer's zip code	CUSTOMER_ADDRESS	Y
CustomerCountryName	country name of customer	CUSTOMER_ADDRESS	Y
CustomerOrder	Identifies primary and secondary owners	MF_TITLE_LINK	Y

***TitleSubStatusType** - The BMV will pass the values of "Junk", "OOS Cancellation", and "Stolen". If the title has been marked "Junk", the BMV will send "JUNK" in the TitleSubStatusType field and the title number will not change from the previous title number sent in the original Lien Notification. If the title has been marked "OOS Cancellation" because the BMV has been informed the title has been titled in another state, the BMV will send "OOS Cancellation" in the TitleSubStatusType field and the title number will not change from the previous title number sent in the original Lien Notification.

The title number sent in the Title Change Notification will be the current title number on file when the title change notification is sent.

- If the Title Change Notification is sent as result of a customer, vehicle, or lien modification, the title number in the Title Change Notification is the new title number. The Former Title Number field is the previous title number initially provided in the Lien Notification.
- If the Title Change Notification is sent as a result of the BMV marking the title as "Junk" or "OOS Cancellation", the title number in the Title Change Notification is the same title number as previously provided in the Lien Notification.

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Http Response Object (TitleChangeNotificationResponseObject): -

Send header table data (refer above) back with TransactionStatus.

Example of the POST request –

```
POST / titlechangenotificationservice/send/ json HTTP/1.1
Host: {aws_domainname}
Accept: application/json
Content-Type: application/json
Content-Length: 5384

"Header":{
    "TraceID": "sample data",
    "TransactionCode": "TC",
    "TransactionDescription": "sample data",
    "Timestamp": "2022-01010T20:12:00.8527984Z",
    "ServiceProviderUID": 753,
    "LienholderFEIN": "sample data",
    "LienholderSuffix": "sample data",
    "TitleLienHolderUID": 55112233,
    "BusinessErrors": [
        {
            "BusinessErrorCode": "{error code}",
            "BusinessErrorDescription": "{error description}"
        }
    ] //If there are no BusinessErrors, the value of BusinessErrors should be null
    "TransactionStatus": "sample data",
    "TransactionlogID": "sample data"
},
"Body": {
    "Customers":[
        {
            "MultipleOwnerName": "sample data",
            "CustomerName":"sample data",
            "CustomerAddress1":"sample data",
            "CustomerAddress2":"sample data",
            "CustomerCity":"sample data",
            "CustomerStateCode":"sample data",
            "CustomerZipCode":"sample data",
            "CustomerCountryName":"sample data",
```

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```
    "CustomerOrder": 1 //This will distinguish primary owner of the vehicle.
  }
],
"Lienholders":[
  {
    "LienholderName":"sample data",
    "LienholderFEIN":"sample data",
    "LienholderSuffix":"sample data",
    "LienholderAddress1":"sample data",
    "LienholderAddress2":"sample data",
    "LienholderCity":"sample data",
    "LienholderState":"sample data",
    "LienholderZipCode":"sample data",
    "LienholderCountry":"sample data",
    "LienholderOrganization":"sample data",
    "ApplicationDate": "2022-01-10T20:12:00.8527984Z",
    "LienReleaseDate": "2022-01-10T20:12:00.8527984Z",
    "TitleLienHolderUID": 55112233,
    "LienHolderOrder": 1 // This will denote the hierarchy of the Lien Holder
  }
],
"Title": {
  "TitleNumber": "sample data",
  "TitleType": "sample data",
  "Leased": "sample data",
  "PrintDate": "2019-06-18T00:00:00",
  "OdometerReading": 123839.0,
  "FormerStateOfTitle": "sample data",
  "FormerTitleNumber": "sample data",
  "PurchaseDate": "2009-06-18T00:00:00",
  "TitleBrandCodeName": "sample data",
  "TitleDamageBrandName": "sample data",
  "OdometerBrandName": "sample data",
  "MFGBuyback": "sample data",
},
"Vehicle": {
  "VIN":"sample data",
  "VehicleMakeCodeName":"sample data",
  "VehicleYear": 2015,
  "VehicleBodyTypeCode":"sample data",
```

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```

        "VehicleModelCodeName": "sample data"
    },
    "Watercraft": {
        "HIN": "sample data",
        "VehicleYear": 2019,
        "FuelTypeName": "sample data",
        "WeightPropulsion": "sample data",
        "HullMaterial": "sample data",
        "BodyBoatType": "sample data",
        "ModelBoatLength": 45
        "MakeCodeName": "sample data",
        "ModelCodeName": "sample data"
    }
}
}
}

```

Service Provider API end point

Note: We expect to receive the Service Provider API endpoints from the appropriate Service Provider at the beginning of the onboarding process. Endpoints will be part of configuration file. BMV promotes a standardized endpoint for all service providers.

Service Provider API Request Objects

Note: We expect to receive the Service Provider API endpoints from the appropriate Service Provider at the beginning of the onboarding process

Service Provider API Security Token

Note: We expect to receive the Service Provider API endpoints from the appropriate Service Provider at the beginning of the onboarding process

STARS Table Names: Below are the tables that are used to create the Title Change Notification Message and update the log table for auditability.

Table Names		
CUSTOMER_ADDRESS	LIEN_HOLDER_NAME	TITLE_STATUS
LIEN_HOLDER	MF_TITLE_LINK	TITLE_SUB_STATUS
ELT_SERVICE_PROVIDER	ODOMETER_BRAND_CODE	VEHICLE
ELT_TRANSACTION_CODE	PROPULSION_TYPE_CODE	VEHICLE_BODY_STYLE_CODE

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ELT_TRANSACTION_LOG	SUB_TRANSACTION_VEHICLE	VEHICLE_OWNERSHIP
FORMER_TITLE	TITLE	VEHICLE_MAKE
FUEL_TYPE_CODE	TITLE_BRAND_CODE	VEHICLE_MODEL
HULL_MATERIAL_CODE	TITLE_DAMAGE_BRAND_CODE	WATERCRAFT_TYPE_CODE
LIEN HOLDER_ADDRESS	TITLE_LIEN HOLDER	
LIEN HOLDER	TITLE_PURCHASE_INFORMATION	

Views: - Below are the views that are used to create the Title Notification Message and update the log table for auditability.

View Names
vwCUSTOMER
vw_CompletedTransactions

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2.1.1.1.3 Failure Message for Lien Release Request

The failure message for Lien Release Request could be generated by BMV for a variety of reasons that can include, but not limited to, requested lien not found in the STARS system, or the lien is not in the correct status for a Lien release. The message originates from the BMV system and information is sent to the Service Provider as depicted in Figure 10 below.

A standard set of business error codes will be used by BMV and Service providers. The list provided in Section 2.1.1.3 will be used for all business failure messages. This list will be shared with service providers so that the messages are standardized between the sender and the receiver.

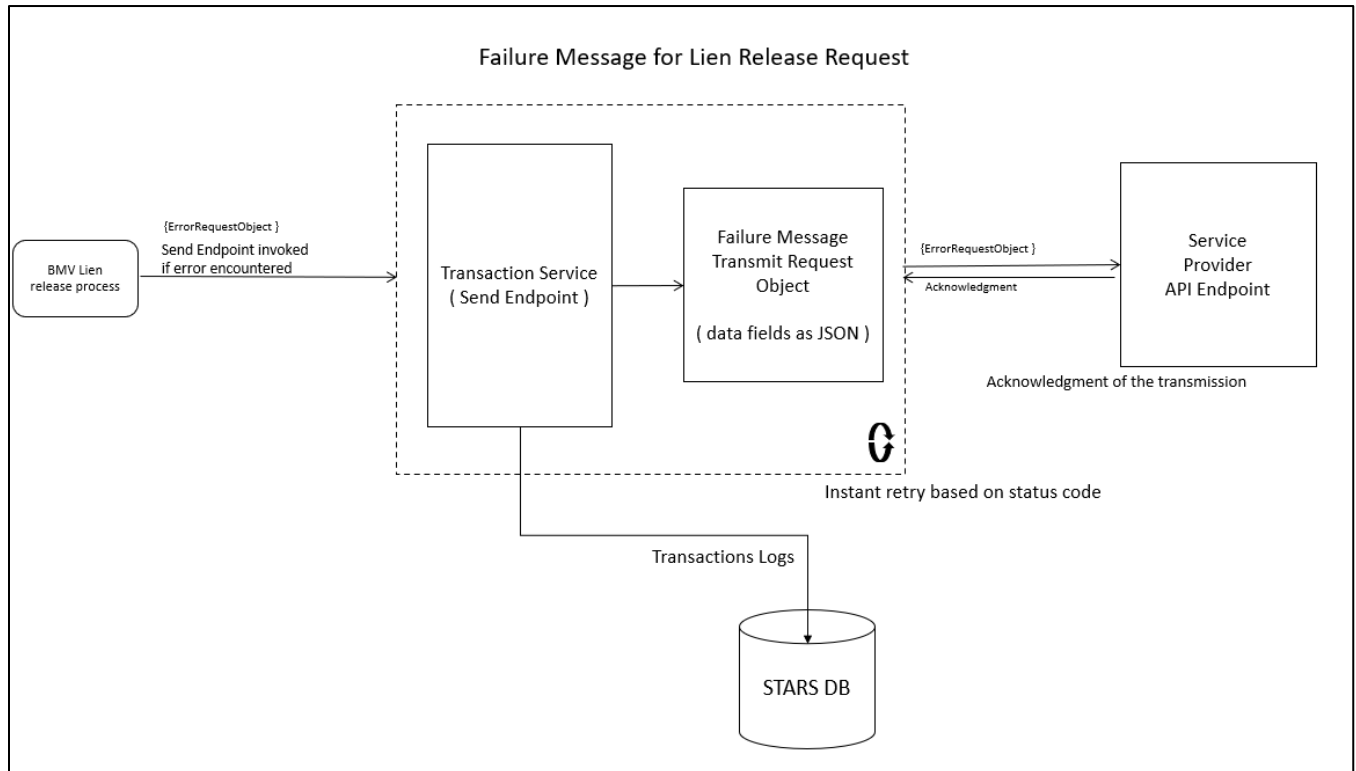


Figure 10 - Failure Message for Lien Release Request

Send Endpoint Technical Specification:

- Failure Message for Lien Release Service Types: POST
https://{aws_domainname}/api/eltransactionservice/send

Request Object Technical Specification

- Request Object Name: - ErrorRequestObject
- Request Object Type: - JSON

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Message Header (part of ErrorRequestObject): -

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TraceID	Optional value from Service Provider	ELT_TRANSACTION_LOG	N
TransactionCode	ELR (Error Lien Release Notification)	ELT_TRANSACTION_CODE	Y
TransactionDescription	Sent as a follow up API Call, only when business validation of LR Transaction fails.	ELT_TRANSACTION_CODE	N
ServiceProviderUID	Database value, specific to service provider	ELT_SERVICE_PROVIDER	Y
LienholderFEIN	Federal tax ID number from database specific to Lien holder.	LIEN_HOLDER	Y
LienholderSuffix	Suffix to uniquely identify Lien holder.	LIEN_HOLDER	Y
TitleLienHolderUID	A database value that uniquely identifies specific Lien for a title. This is the primary key for a specific lien attached to a title.	TITLE_LIEN_HOLDER	Y
BusinessErrorCode	Any matching error codes. There may be multiple error codes. They will be sent as part of an array.	ELT_TRANSACTION_LOG	Y
BusinessErrorDescription	Error description LR Transaction. (Ex. Invalid Title ID, Title Lien Holder ID)	ELT_TRANSACTION_LOG	Y
Timestamp	Current date and time in UTC format		Y
TransactionStatus	Failure	ELT_TRANSACTION_LOG	Conditional (N for request, Y for response)

Message Body (part of ErrorRequestObject):

There is no separate message body for Success/Failure messages. The header object is expected back with TransactionStatus populated. Please see above table for header.

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Service Provider Acknowledgment data fields

Send header table data (refer above) back with TransactionStatus.

Example of the POST request –

```
POST /failurelienservice/send/ json HTTP/1.1
Host: {aws_domainname}
Accept: application/json
Content-Type: application/json
Content-Length: 6565
{
  "Header": {
    "TraceID": "sample data",
    "TransactionCode": "ELR",
    "TransactionDescription": "sample data",
    "Timestamp": "2022-01010T20:12:00.8527984Z",
    "ServiceProviderUID": "753",
    "LienholderFEIN": "sample data",
    "LienholderSuffix": "sample data",
    "TitleLienHolderUID": 55112233,
    "BusinessErrors": [
      {
        "BusinessErrorCode": "{error code}",
        "BusinessErrorDescription": "{error description}"
      } //If there are no BusinessErrors, the value of BusinessErrors should be null
    ]
    "TransactionStatus": "sample data"
  },
}
}
```

Service Provider API endpoint

Note: We expect to receive the Service Provider API endpoint from the appropriate Service Provider at the beginning of the onboarding process

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Service Provider API Request Objects

Note: We expect to receive the Service Provider API endpoint from the appropriate Service Provider at the beginning of the onboarding process

STARS Table Names: Below are the tables that are used to create the Lien Release Message and update the log table for auditability.

Table Names		
CUSTOMER_DEALER_NUMBER	LIEN_HOLDER	TITLE_LIEN_HOLDER
ELT_SERVICE_PROVIDER	LIEN_HOLDER_NAME	VEHICLE
ELT_TRANSACTION_CODE	LIEN_HOLDER_ADDRESS	
ELT_TRANSACTION_LOGTRANS	TITLE	

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2.1.1.1.4 Success Message for Lien Release Request

The success message for Lien Release Request indicates that the electronic lien for the specified title is successfully released and is depicted in Figure 11 below.

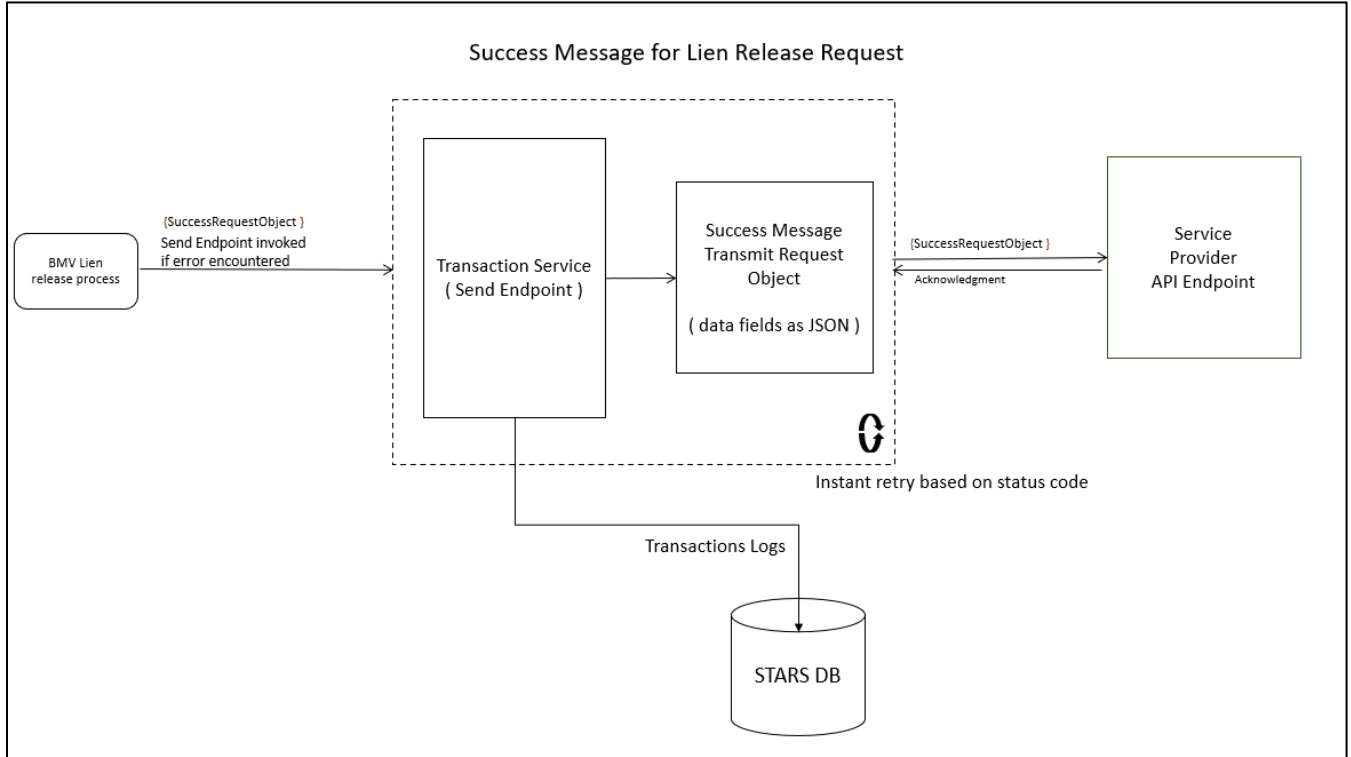


Figure 11 - Success Message for Lien Release Request

Send Endpoint Technical Specification:

- Success Message for Lien Release Service Types: POST
https://{aws_domainname}/api/eltransactionservice/send

Request Object Technical Specification

- Request Object Name: - SuccessRequestObject
- Request Object Type: - JSON

Message Header (part of SuccessRequestObject): -

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TraceID	Optional value from Service Provider	ELT_TRANSACTION_LOG	N

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Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TransactionCode	SLR (Success Lien Release Notification)	ELT_TRANSACTION_CODE	Y
TransactionDescription	Sent as a follow up API Call, only when business validation of LR Transaction succeeds.	ELT_TRANSACTION_CODE	N
ServiceProviderUID	Database value, specific to service provider	ELT_SERVICE_PROVIDER	Y
LienholderFEIN	Federal tax ID number from database specific to Lien holder.	LIEN HOLDER	Y
LienholderSuffix	Suffix to uniquely identify Lien holder.	LIEN HOLDER	Y
TitleLienHolderUID	A database value that uniquely identifies specific Lien for a title. This is the primary key for a specific lien attached to a title.	TITLE_LIEN HOLDER	Y
BusinessErrorCode	If there are no BusinessErrors, the value of Business Errors should be null.	ELT_TRANSACTION_LOG	N
BusinessErrorDescription	NA	ELT_TRANSACTION_LOG	N
Timestamp	Current date and time in UTC format		Y
TransactionStatus	Success	ELT_TRANSACTION_LOG	Conditional (N for request, Y for response)

Message Body (part of SuccessRequestObject):

There is no separate message body for Success/Failure messages. The header object is expected back with TransactionStatus populated. Please see above table for header.

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Example of the POST request –

```
POST /successlienservice/send/ json HTTP/1.1
Host: {aws_domainname}
Accept: application/json
Content-Type: application/json
Content-Length: 6565
{
  "Header": {
    "TraceID": "sample data",
    "TransactionCode": "SLR",
    "TransactionDescription": "sample data",
    "Timestamp": "2022-01010T20:12:00.8527984Z",
    "ServiceProviderUID": 753,
    "LienholderFEIN": "sample data",
    "LienholderSuffix": "sample data",
    "TitleLienHolderUID": 55112233,
    "BusinessErrors": [
      {
        "BusinessErrorCode": "{error code}",
        "BusinessErrorDescription": "{error description}"
      }
    ] //If there are no BusinessErrors, the value of BusinessErrors should be null
    "TransactionStatus": "sample data"
  },
}
```

Service Provider API end point

Note: We expect to receive the Service Provider API endpoints from the appropriate Service Provider at the beginning of the onboarding process

Service Provider API Request Objects

Note: We expect to receive the Service Provider API endpoints from the appropriate Service Provider at the beginning of the onboarding process

STARS Table Names: Below are the tables that are used to create the Lien Release Message and update the log table for auditability.

Table Names		
CUSTOMER_DEALER_NUMBER	LIEN_HOLDER	TITLE_LIEN_HOLDER
ELT_SERVICE_PROVIDER	LIEN_HOLDER_NAME	VEHICLE
ELT_TRANSACTION_CODE	LIEN_HOLDER_ADDRESS	

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ELT_TRANSACTION_LOG	TITLE	
---------------------	-------	--

2.1.1.1.5 Failure Message for Convert to Electronic (Singular) Request

The failure message for Convert to Electronic (singular) Request could be generated by BMV for a variety of reasons that can include, but not limited to, requested lien not found in the STARS system, or the lien is not in the correct status for a conversion to electronic lien. The message originates from the BMV system and information is sent to the Service Provider as depicted in Figure 12 below.

A standard set of business error codes will be used by BMV and Service providers. The list provided in Section 2.1.1.3 will be used for all business failure messages. This list will be shared with service providers so that the messages are standardized between the sender and the receiver.

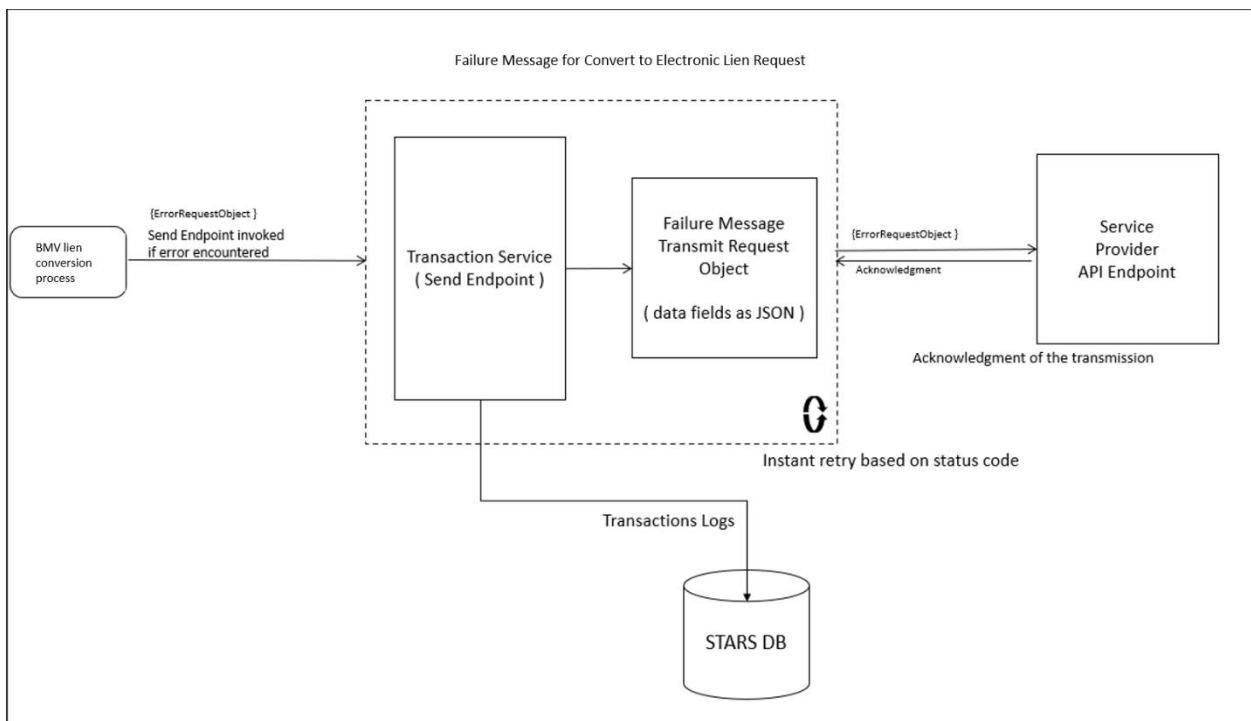


Figure 12 - Failure Message for Convert to Electronic (Singular) Request

Send Endpoint Technical Specification:

- Failure Message for Convert to Electronic (Singular) Service Types: POST
https://{aws_domainname}/api/eltransactionservice/send

Request Object Technical Specification

- Request Object Name: - ErrorRequestObject
- Request Object Type: - JSON

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Message Header (part of ErrorRequestObject): -

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TraceID	Optional value from Service Provider	ELT_TRANSACTION_LOG	N
TransactionCode	ELR (Error Lien Release Notification)	ELT_TRANSACTION_CODE	Y
TransactionDescription	Sent as a follow up API Call, only when business validation of LR Transaction fails.	ELT_TRANSACTION_CODE	N
ServiceProviderUID	Database value, specific to service provider	ELT_SERVICE_PROVIDER	Y
LienholderFEIN	Federal tax ID number from database specific to Lien holder.	LIEN_HOLDER	Y
LienholderSuffix	Suffix to uniquely identify Lien holder.	LIEN_HOLDER	Y
TitleLienHolderUID	A database value that uniquely identifies specific Lien for a title. This is the primary key for a specific lien attached to a title.	TITLE_LIEN_HOLDER	Y
BusinessErrorCode	Any matching error codes. There may be multiple error codes. They will be sent as part of an array.	ELT_TRANSACTION_LOG	Y
BusinessErrorDescription	Error description in LR Transaction. (Ex. Invalid Title ID, Title Lien Holder ID)	ELT_TRANSACTION_LOG	Y
Timestamp	Current date and time in UTC format		Y
TransactionStatus	Failure	ELT_TRANSACTION_LOG	Conditional (N for request, Y for response)

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Message Body (part of ErrorRequestObject):

There is no separate message body for Success/Failure messages. The header object is expected back with TransactionStatus populated. Please see above table for header.

Service Provider Acknowledgment data fields

Send header table data (refer above) back with TransactionStatus.

Example of the POST request –

```
POST /failurelienservice/send/ json HTTP/1.1
Host: {aws_domainname}
Accept: application/json
Content-Type: application/json
Content-Length: 6565
{
  "Header": {
    "TraceID": "sample data",
    "TransactionCode": "ECE",
    "TransactionDescription": "sample data",
    "Timestamp": "2022-01010T20:12:00.8527984Z",
    "ServiceProviderUID": 753,
    "LienholderFEIN": "sample data",
    "LienholderSuffix": "sample data",
    "TitleLienHolderUID": 55112233,
    "BusinessErrors": [
      {
        "BusinessErrorCode": "{error code}",
        "BusinessErrorDescription": "{error description}"
      }
    ] //If there are no BusinessErrors, the value of BusinessErrors should be null
    "TransactionStatus": "Failure"
  },
}
}
```

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Service Provider API end point

Note: We expect to receive the Service Provider API endpoints from the appropriate Service Provider at the beginning of the onboarding process

Service Provider API Request Objects

Note: We expect to receive the Service Provider API endpoints from the appropriate Service Provider at the beginning of the onboarding process

STARS Table Names: Below are the tables that are used to create the Convert to Electronic and update the log table for auditability.

Table Names		
ELT_SERVICE_PROVIDER	LIEN HOLDER	TITLE
ELT_TRANSACTION_CODE	LIEN HOLDER NAME	TITLE LIEN HOLDER
ELT_TRANSACTION_LOG	LIEN HOLDER ADDRESS	VEHICLE

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2.1.1.1.6 Success Message for Convert to Electronic (Singular) Request

The success message for Convert to Electronic Lien (Singular) Request indicates that the paper lien for the specified title has successfully been converted to an electronic lien and is depicted in Figure 13 below.

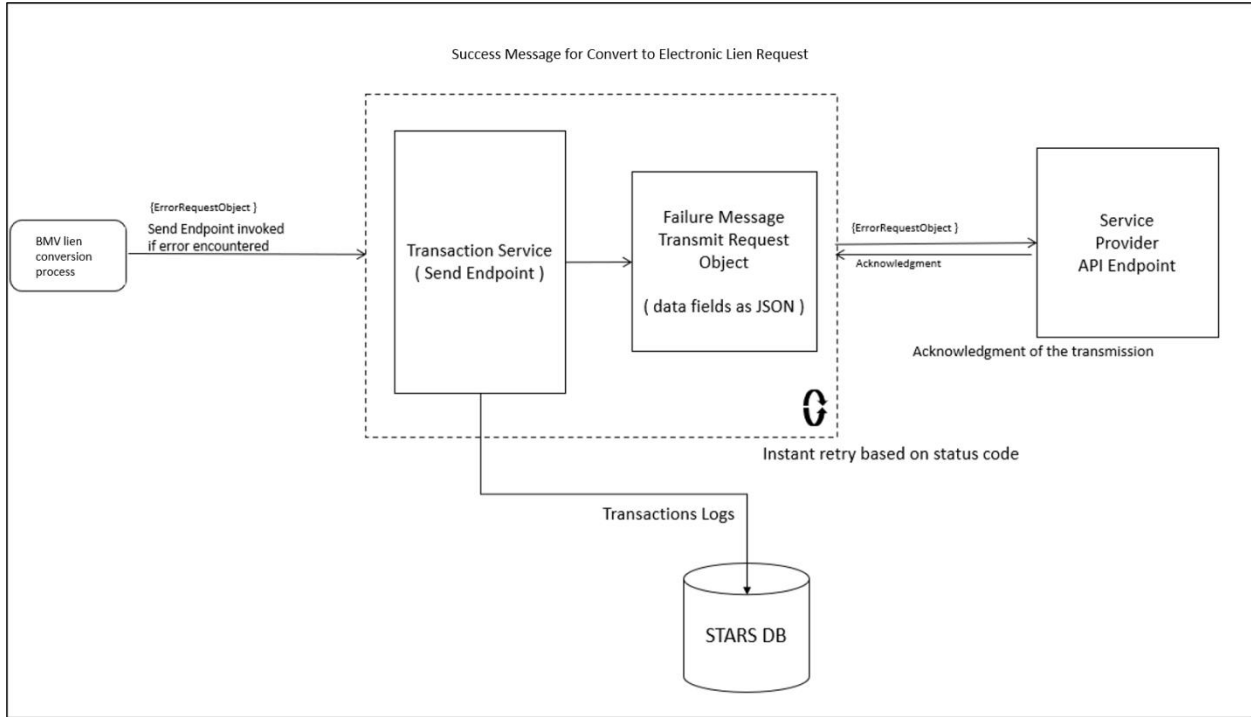


Figure 13 - Success Message for Convert to Electronic (Singular) Request

Send Endpoint Technical Specification:

- Success Message for Convert to Electronic Service Types: POST
https://{aws_domainname}/api/eltransactionservice/send

Request Object Technical Specification

- Request Object Name: - SuccessRequestObject
- Request Object Type: - JSON

Message Header (part of SuccessRequestObject): -

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TraceID	Optional value from Service Provider	ELT_TRANSACTION_LOG	N
TransactionCode	SLR (Success Lien Release Notification)	ELT_TRANSACTION_CODE	Y
TransactionDescription	Sent as a follow up API Call, only when business validation	ELT_TRANSACTION_CODE	N

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Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
	of LR Transaction succeeds.		
ServiceProviderUID	Database value, specific to service provider	ELT_SERVICE_PROVIDER	Y
LienholderFEIN	Federal tax ID number from database specific to Lien holder.	LIEN HOLDER	Y
LienholderSuffix	Suffix to uniquely identify Lien holder.	LIEN HOLDER	Y
TitleLienHolderUID	A database value that uniquely identifies specific Lien for a title. This is the primary key for a specific lien attached to a title.	TITLE_LIEN HOLDER	Y
BusinessErrorCode	If there are no BusinessErrors, the value of Business Errors should be null.	ELT_TRANSACTION_LOG	N
BusinessErrorDescription	NA	ELT_TRANSACTION_LOG	N
Timestamp	Current date and time in UTC format		Y
TransactionStatus	Success	ELT_TRANSACTION_LOG	Conditional (N for request, Y for response)

Message Body (part of SuccessRequestObject):

There is no separate message body for Success/Failure messages. The header object is expected back with TransactionStatus populated. Please see above table for header.

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Example of the POST request –

```
POST /successlienservice/send/ json HTTP/1.1
Host: {aws_domainname}
Accept: application/json
Content-Type: application/json
Content-Length: 6565
{
  "Header": {
    "TraceID": "sample data",
    "TransactionCode": "SCE",
    "TransactionDescription": "sample data",
    "Timestamp": "2022-01-10T20:12:00.8527984Z",
    "ServiceProviderUID": 532,
    "LienholderFEIN": "sample data",
    "LienholderSuffix": "sample data",
    "TitleLienholderUID": 55112233,
    "BusinessErrors": [
      {
        "BusinessErrorCode": "{error code}",
        "BusinessErrorDescription": "{error description}"
      }
    ] //If there are no BusinessErrors, the value of BusinessErrors should be null
    "TransactionStatus": "sample data"
  },
}
```

Service Provider API end point

Note: We expect to receive the Service Provider API endpoints from the appropriate Service Provider at the beginning of the onboarding process

Service Provider API Request Objects

Note: We expect to receive the Service Provider API endpoints from the appropriate Service Provider at the beginning of the onboarding process

STARS Table Names: Below are the tables that are used to create the Convert to Electronic (Singular) Message and update the log table for auditability.

Table Names		
ELT_SERVICE_PROVIDER	LIEN HOLDER	TITLE
ELT_TRANSACTION_CODE	LIEN HOLDER_ADDRESS	TITLE_LIEN HOLDER

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ELT_TRANSACTION_LOG	LIEN_HOLDER_NAME	VEHICLE
---------------------	------------------	---------

2.1.1.1.7 Failure Message for Convert to Paper Request

The failure message for Convert to Paper Request could be generated by BMV for a variety of reasons that can include, but not limited to, requested lien not found in the STARS system, or the lien is not in the correct status for a conversion to paper lien. The message originates from the BMV system and information is sent to the Service Provider as depicted in Figure 14 below.

A standard set of business error codes will be used by BMV and Service providers. The list provided in Section 2.1.1.3 will be used for all business failure messages. This list will be shared with service providers so that the messages are standardized between the sender and the receiver.

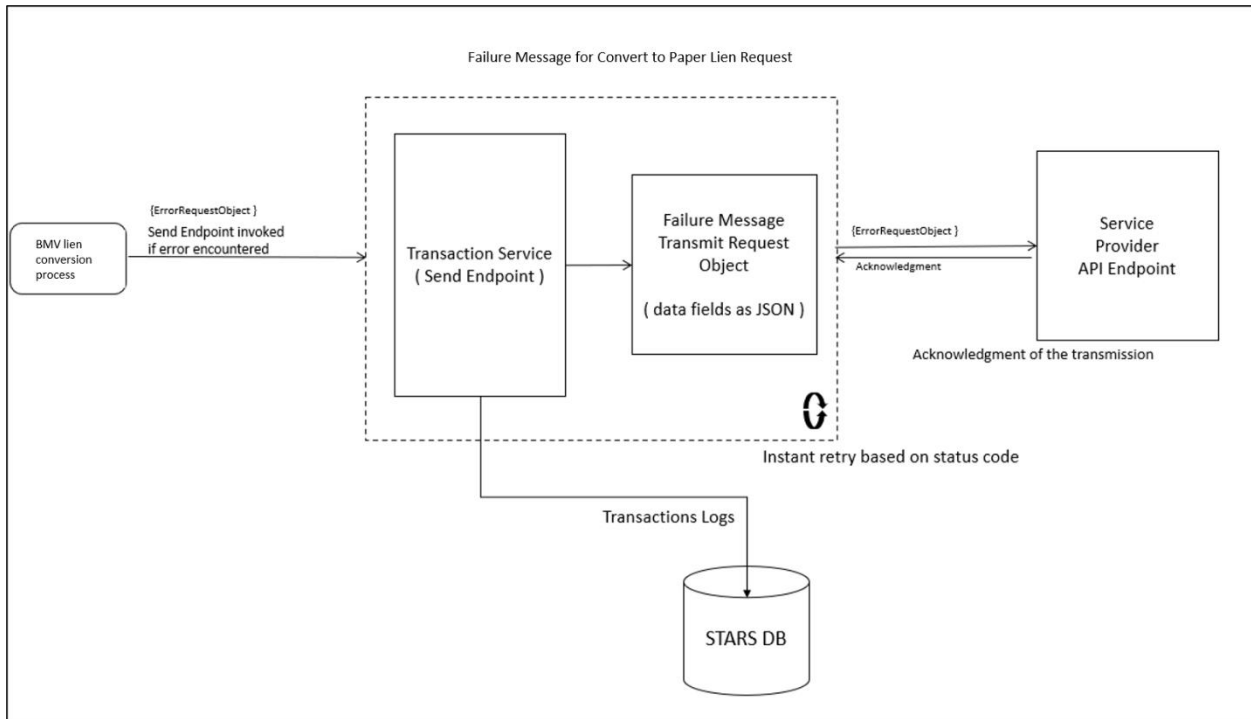


Figure 14 - Failure Message for Convert to Paper Request

Send Endpoint Technical Specification:

- Failure Message for Convert to Paper Service Types: POST
https://{aws_domainname}/api/eltransactionservice/send

Request Object Technical Specification

- Request Object Name: - ErrorRequestObject
- Request Object Type: - JSON

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Message Header (part of ErrorRequestObject): -

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TraceID	Optional value from Service Provider	ELT_TRANSACTION_LOG	N
TransactionCode	ELR (Error Lien Release Notification)	ELT_TRANSACTION_CODE	Y
TransactionDescription	Sent as a follow up API Call, only when business validation of LR Transaction fails.	ELT_TRANSACTION_CODE	N
ServiceProviderUID	Database value, specific to service provider	ELT_SERVICE_PROVIDER	Y
LienholderFEIN	Federal tax ID number from database specific to Lien holder.	LIEN_HOLDER	Y
LienholderSuffix	Suffix to uniquely identify Lien holder.	LIEN_HOLDER	Y
TitleLienHolderUID	A database value that uniquely identifies specific Lien for a title. This is the primary key for a specific lien attached to a title.	TITLE_LIEN_HOLDER	Y
BusinessErrorCode	Any matching error codes. There may be multiple error codes. They will be sent as part of an array.	ELT_TRANSACTION_LOG	Y
BusinessErrorDescription	Error Description in LR Transaction. (Ex. Invalid Title ID, Title Lien Holder ID)	ELT_TRANSACTION_LOG	Y
Timestamp	Current date and time in UTC format		Y
TransactionStatus	Failure	ELT_TRANSACTION_LOG	Conditional (N for request, Y for response)

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Message Body (part of ErrorRequestObject):

There is no separate message body for Success/Failure messages. The header object is expected back with TransactionStatus populated. Please see above table for header.

Service Provider Acknowledgment data fields

Send header table data (refer above) back with TransactionStatus.

Example of the POST request –

```
POST /failurelienservice/send/ json HTTP/1.1
Host: {aws_domainname}
Accept: application/json
Content-Type: application/json
Content-Length: 6565
{
  "Header": {
    "TraceID": "sample data",
    "TransactionCode": " sample data",
    "TransactionDescription": "sample data",
    "Timestamp": "2022-01-10T20:12:00.8527984Z",
    "ServiceProviderUID": 753,
    "LienholderFEIN": "sample data",
    "LienholderSuffix": "sample data",
    "TitleLienHolderUID": 55112233,

    "BusinessErrors": [
      {
        "BusinessErrorCode": "{error code}",
        "BusinessErrorDescription": "{error description}"
      }
    ] //If there are no BusinessErrors, the value of BusinessErrors should be null
    "TransactionStatus": "sample data"
  },
}

}
```

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Service Provider API end point

Note: We expect to receive the Service Provider API endpoints from the appropriate Service Provider at the beginning of the onboarding process

Service Provider API Request Objects

Note: We expect to receive the Service Provider API endpoints from the appropriate Service Provider at the beginning of the onboarding process

STARS Table Names: Below are the tables that are used to create the Convert to Paper Message and update the log table for auditability.

Table Names		
ELT_SERVICE_PROVIDER	LIEN_HOLDER	TITLE_MAILING_ADDRESS
ELT_TRANSACTION_CODE	TITLE	VEHICLE
ELT_TRANSACTION_LOG	TITLE_LIEN_HOLDER	

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2.1.1.1.8 Success Message for Convert to Paper Request

The success message for Convert to Paper Request indicates that the paper lien for the specified title has successfully been converted to a paper lien and is depicted in Figure 15 below.

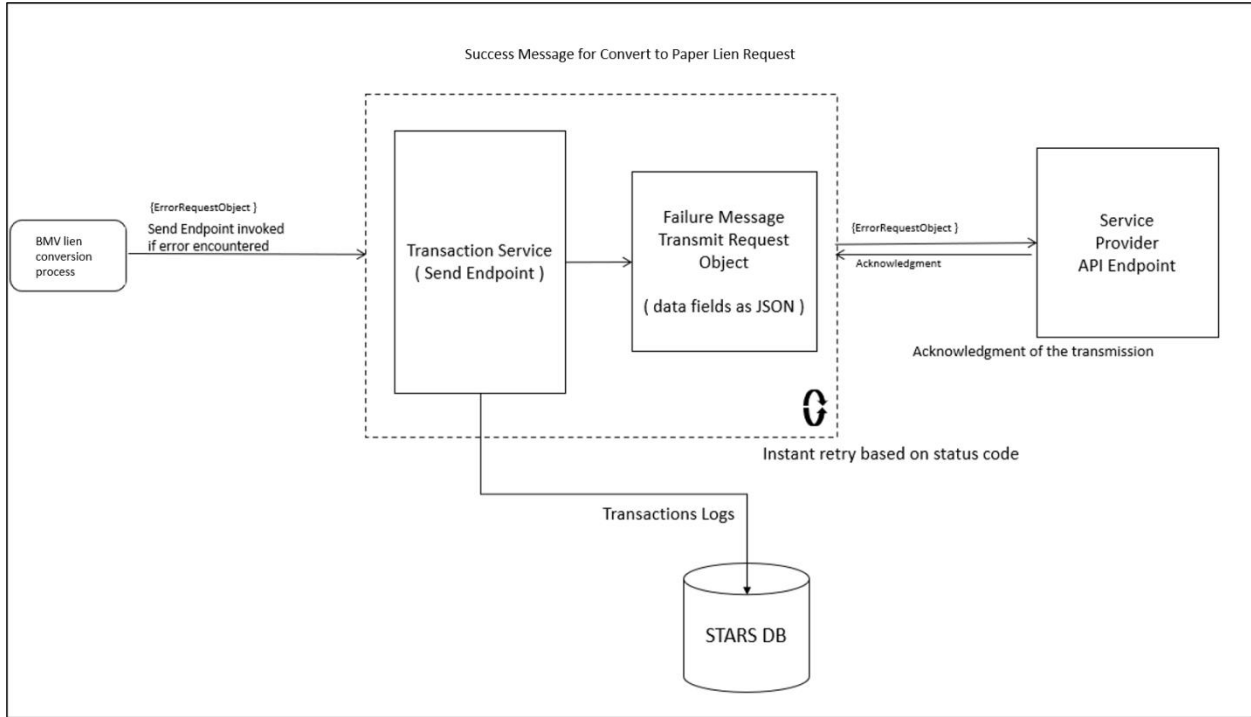


Figure 15 - Success Message for Convert to Paper Request

Send Endpoint Technical Specification:

- Success Message for Convert to Paper Service Types: POST
https://{aws_domainname}/api/eltransactionservice/send

Request Object Technical Specification

- Request Object Name: - SuccessRequestObject
- Request Object Type: - JSON

Message Header (part of SuccessRequestObject): -

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TraceID	Optional value from Service Provider	ELT_TRANSACTION_LOG	N
TransactionCode	SLR (Success Lien Release Notification)	ELT_TRANSACTION_CODE	Y

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Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TransactionDescription	Sent as a follow up API Call, only when business validation of LR Transaction succeeds.	ELT_TRANSACTION_CODE	N
ServiceProviderUID	Database value, specific to service provider	ELT_SERVICE_PROVIDER	Y
LienholderFEIN	Federal tax ID number from database specific to Lien holder.	LIEN HOLDER	Y
LienholderSuffix	Suffix to uniquely identify Lien holder.	LIEN HOLDER	Y
TitleLienHolderUID	A database value that uniquely identifies specific Lien for a title. This is the primary key for a specific lien attached to a title.	TITLE_LIEN HOLDER	Y
BusinessErrorCode	If there are no BusinessErrors, the value of Business Errors should be null.	ELT_TRANSACTION_LOG	N
BusinessErrorDescription	NA	ELT_TRANSACTION_LOG	N
Timestamp	Current date and time in UTC format		Y
TransactionStatus	Success	ELT_TRANSACTION_LOG	Y

Message Body (part of SuccessRequestObject):

There is no separate message body for Success/Failure messages. The header object is expected back with TransactionStatus populated. Please see above table for header.

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Example of the POST request –

```
POST /successlienservice/send/ json HTTP/1.1
Host: {aws_domainname}
Accept: application/json
Content-Type: application/json
Content-Length: 6565
{
  "Header": {
    "TraceID": "sample data",
    "TransactionCode": " sample data",
    "TransactionDescription": "sample data",
    "Timestamp": "2022-01-10T20:12:00.8527984Z",
    "ServiceProviderUID": 753,
    "LienholderFEIN": "sample data",
    "LienholderSuffix": "sample data",
    "TitleLienHolderUID": 55112233,

    "BusinessErrors": [
      {
        "BusinessErrorCode": "{error code}",
        "BusinessErrorDescription": {error description}
      }
    ] //If there are no BusinessErrors, the value of BusinessErrors should be null
    "TransactionStatus": "Success"
  },
}
```

Service Provider API end point

Note: We expect to receive the Service Provider API endpoints from the appropriate Service Provider at the beginning of the onboarding process

Service Provider API Request Objects

Note: We expect to receive the Service Provider API endpoints from the appropriate Service Provider at the beginning of the onboarding process

STARS Table Names: Below are the tables that are used to create the Convert to Paper Message and update the log table for auditability.

Table Names		
ELT_SERVICE_PROVIDER	LIEN_HOLDER	TITLE_MAILING_ADDRESS

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ELT_TRANSACTION_CODE	TITLE	VEHICLE
ELT_TRANSACTION_LOG	TITLE_LIEN_HOLDER	

2.1.1.2 E-Lien Transaction Service Receive Endpoint

The Receive Endpoint of the E-Lien Transaction Service will be used to receive the following messages from the Service Providers:

- Success Message for Lien Notification
- Failure Message for Lien Notification
- Success Message for Title Change Notification
- Failure Message for Title Change Notification
- Request for Lien Release
- Request Conversion to Electronic Lien (single; bulk conversions go through a separate SFTP process)
- Request Conversion to Paper Lien (single)

2.1.1.2.1 Success Message for Lien Notification

The service provider will process a Lien Notification message and send a success message if there were no errors found. This success message will be processed by the Receive Endpoint of the E-Lien Transaction microservice as outlined in Figure 16 below.

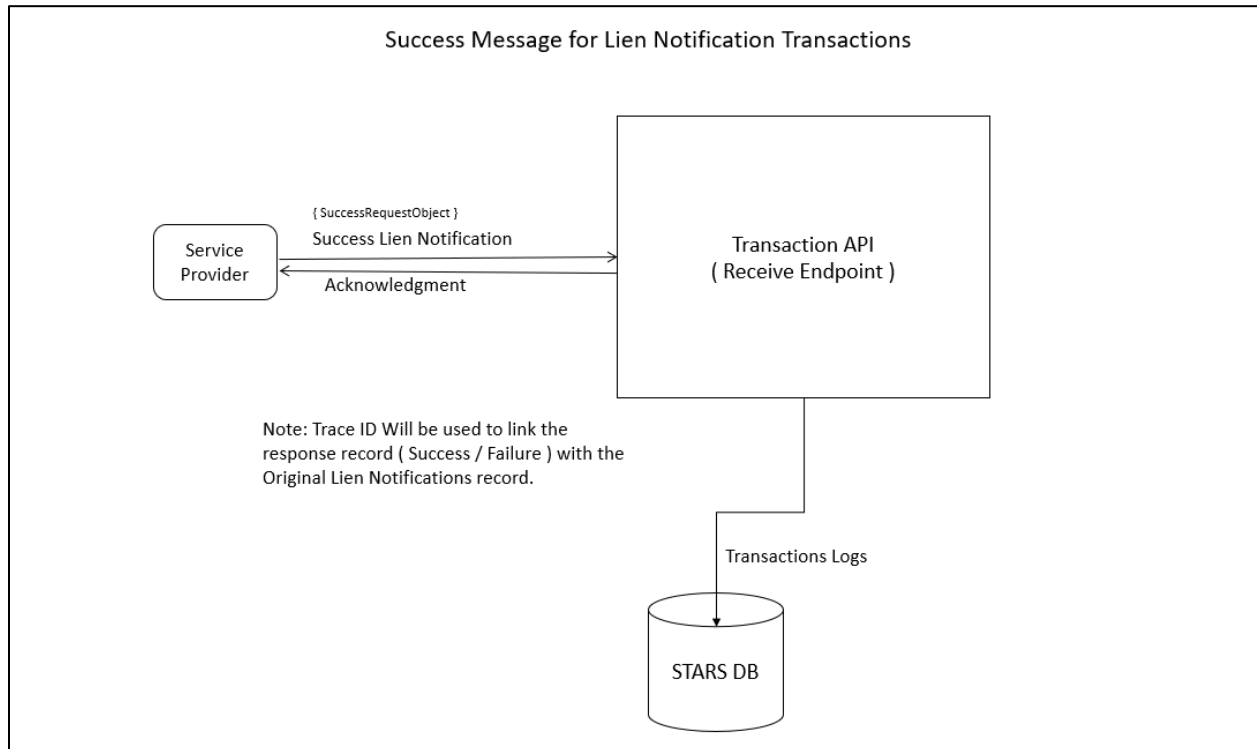


Figure 16 - Success Message for Lien Notification Transactions

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Receive Endpoint Technical Specification:

- Success Message for Lien Notification Service Types: POST
https://{aws_domainname}/api/eltransactionsservice/receive

Request Object Technical Specification

- Request Object Name: - SuccessRequestObject
- Request Object Type: - JSON

Message Header (part of SuccessRequestObject): -

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TraceID	Trace ID sent, with the original Lien Notification transaction (LN).	ELT_TRANSACTION_LOG	Y
TransactionCode	SLN (Success Lien Notification)	ELT_TRANSACTION_CODE	Y
TransactionDescription	Successful processing of Lien Notification.	ELT_TRANSACTION_CODE	N
ServiceProviderUID	Federal tax ID number from database specific to Lien holder.	ELT_SERVICE_PROVIDER	Y
LienholderFEIN	Federal tax ID number from database specific to Lien holder.	LIEN HOLDER	Y
LienholderSuffix	Suffix to uniquely identify Lien holder.	LIEN HOLDER	Y
TitleLienHolderUID	A database value that uniquely identifies specific Lien for a title. This is the primary key for a specific lien attached to a title.	TITLE_LIEN HOLDER	Y
BusinessErrorCode	If there are no BusinessErrors, the value of Business Errors should be null.	ELT_TRANSACTION_LOG	N
BusinessErrorDescription	NA	ELT_TRANSACTION_LOG	N
Timestamp	Current date and time in UTC format		Y

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TransactionStatus	Success	ELT_TRANSACTION_LOG	Conditional (N for request, Y for response)
-------------------	---------	---------------------	--

Message Body (part of SuccessRequestObject):

There is no separate message body for Success/Failure messages. The header object is expected back with TransactionStatus populated. Please see above table for header.

BMV Acknowledgment data fields:

Field Name	Notes / Descriptions	Required (Y= Yes N = No)
Http Status Code	4xx for request errors. 5xx for internal server errors. 2xx for success Note: This status code is automatically generated.	Y

Example of the POST request –

```
POST /elttransactionservice/send/ json HTTP/1.1
Host: {aws_domainname}
Accept: application/json
Content-Type: application/json
{
  "TransactionHeader": {
    "TraceID": "sample data",
    "TransactionCode": "SLN",
    "TransactionDescription": "sample data",
    "Timestamp": "2022-01-10T20:12:00.8527984Z",
    "ServiceProviderUID": 753,
    "LienholderFEIN": "sample data",
    "LienholderSuffix": "sample data",
    "TitleLienHolderUID": 55112233,
    "BusinessErrors": [
      {
        "BusinessErrorCode": "{error code}",
        "BusinessErrorDescription": "{error description}"
      }
    ] //If there are no BusinessErrors, the value of BusinessErrors should be null
  }
}
```

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```

    "TransactionStatus": "Success"
  }
}

```

STARS Table Names: - Below are the tables that are used to update the STARS database for auditability.

Table Names		
CUSTOMER_ADDRESS	LIEN_HOLDER_ADDRESS	TITLE_CERTIFICATE_OF_ORIGIN
ELT_SERVICE_PROVIDER	LIEN_HOLDER_NAME	TITLE_DAMAGE_BRAND_CODE
ELT_TRANSACTION_CODE	NMVTIS_TITLE_TYPE_CODE	TITLE_LIEN_HOLDER
ELT_TRANSACTION_LOG	ODOMETER_BRAND_CODE	TITLE_PURCHASE_INFORMATION
FORMER_TITLE	PROPULSION_TYPE_CODE	VEHICLE
FUEL_TYPE_CODE	SUB_TRANSACTION_VEHICLE	VEHICLE_BODY_STYLE_CODE
HULL_MATERIAL_CODE	TITLE	VEHICLE_VEHICLE_MODEL
LIEN_HOLDER	TITLE_BRAND_CODE	VEHICLE_TYPE_CODE, WATERCRAFT_TYPE_CODE

Views: - Below are the views that are used to create the Lien Notification Message and update the log table for auditability.

View Names
vwCUSTOMER

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2.1.1.2.2 Failure Message for Lien Notification

The service provider will process a Lien Notification message and send a failure message if there were errors found. This failure message will be processed by the Receive Endpoint of the E-Lien Transaction microservice as outlined in Figure 17 below.

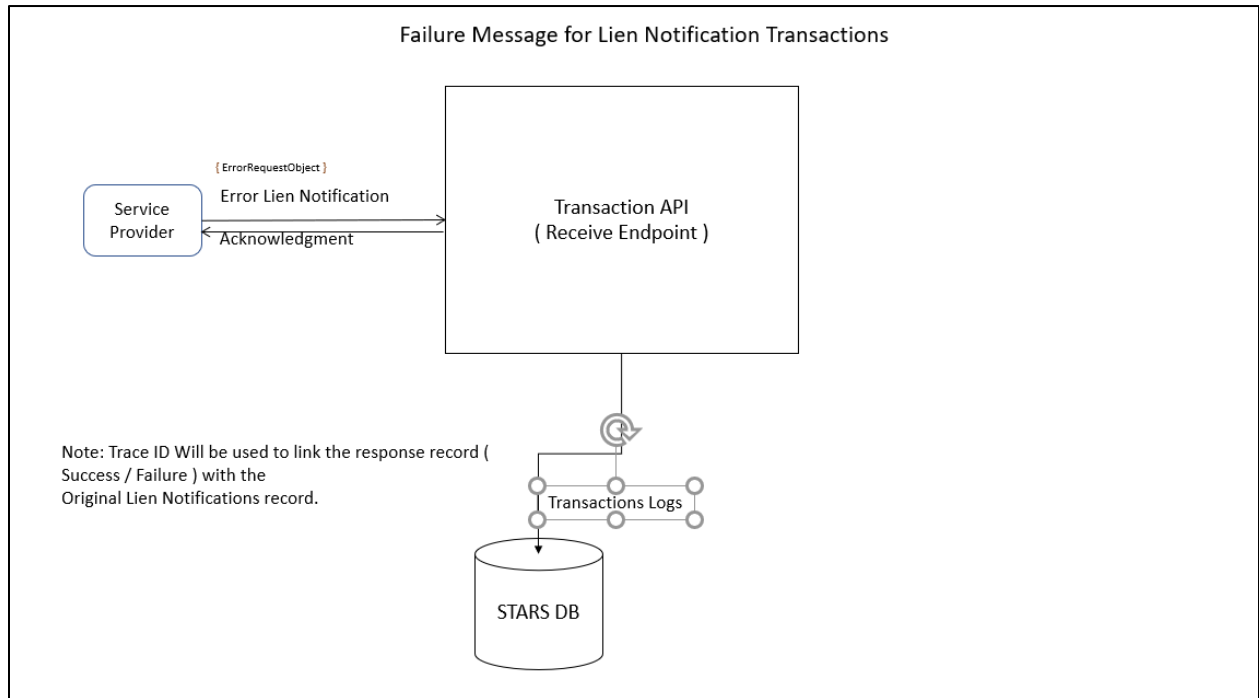


Figure 17 - Failure Message for Lien Notification Transactions

Receive Endpoint Technical Specification:

- Failure Message for Lien Notification Service Types: POST
https://{aws_domainname}/api/eltransactionservice /receive

Request Object Technical Specification

- Request Object Name: - ErrorRequestObject
- Request Object Type: - JSON

Message Header (part of ErrorRequestObject): -

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TraceID	Trace ID sent, with the original Lien Notification transaction (LN).	ELT_TRANSACTION_LOG	Y

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Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TransactionCode	ELN (Error Lien Notification)	ELT_TRANSACTION_CODE	Y
TransactionDescription	Error in processing Lien notification	ELT_TRANSACTION_CODE	N
ServiceProviderUID	Database value, specific to service provider	ELT_SERVICE_PROVIDER	Y
LienholderFEIN	Federal tax ID number from database specific to Lien holder.	LIEN HOLDER	Y
LienholderSuffix	Suffix to uniquely identify Lien holder.	LIEN HOLDER	Y
TitleLienHolderUID	A database value that uniquely identifies specific Lien for a title. This is the primary key for a specific lien attached to a title.	TITLE_LIEN HOLDER	Y
BusinessErrorCode	Any matching error codes. There may be multiple error codes. They will be sent as part of an array.	ELT_TRANSACTION_LOG	Y
BusinessErrorDescription	Provide the error details	ELT_TRANSACTION_LOG	Y
Timestamp	Current date and time in UTC format		Y
TransactionStatus	Failure	ELT_TRANSACTION_LOG	Conditional (N for request, Y for response)

Message Body (part of ErrorRequestObject):

There is no separate message body for Success/Failure messages. The header object is expected back with TransactionStatus populated. Please see above table for header.

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BMV Acknowledgment data fields:

Field Name	Notes / Descriptions	Required (Y= Yes N = No)
Http Status Code	4xx for request errors. 5xx for internal server errors. 2xx for success Note: This status code is system generated.	Y

Example of the POST request –

```
POST /elttransactionservice/send/ json HTTP/1.1
Host: {aws_domainname}
Accept: application/json
Content-Type: application/json
{
  "TransactionHeader": {
    "TraceID": "sample data",
    "TransactionCode": "ELN",
    "TransactionDescription": "sample data",
    "Timestamp": "2022-01-10T20:12:00.8527984Z",
    "ServiceProviderUID": 753,
    "LienholderFEIN": "sample data",
    "LienholderSuffix": "sample data",
    "TitleLienHolderUID": 55112233,
    "BusinessErrors": [
      {
        "BusinessErrorCode": "{error code}",
        "BusinessErrorDescription": "{error description}"
      }
    ] //If there are no BusinessErrors, the value of BusinessErrors should be null

    "TransactionStatus": "Failure"
  }
}
```

STARS Table Names: - Below are the tables that are used to update the STARS database for auditability.

Table Names		
CUSTOMER_ADDRESS	LIEN_HOLDER_ADDRESS	TITLE_CERTIFICATE_OF_ORIGIN
ELT_SERVICE_PROVIDER	LIEN_HOLDER_NAME	TITLE_DAMAGE_BRAND_CODE

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ELT_TRANSACTION_CODE	NMVTIS_TITLE_TYPE_CODE	TITLE_LIEN_HOLDER
ELT_TRANSACTION_LOG	ODOMETER_BRAND_CODE	TITLE_PURCHASE_INFORMATION
FORMER_TITLE	PROPULSION_TYPE_CODE	VEHICLE
FUEL_TYPE_CODE	SUB_TRANSACTION_VEHICLE	VEHICLE_BODY_STYLE_CODE
HULL_MATERIAL_CODE	TITLE	VEHICLE_VEHICLE_MODEL
LIEN_HOLDER	TITLE_BRAND_CODE	VEHICLE_TYPE_CODE, WATERCRAFT_TYPE_CODE

Views: - Below are the views that are used to create the Lien Notification Message and update the log table for auditability.

View Names
vwCUSTOMER

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2.1.1.2.3 Success Message for Title Change Notification

The service provider will process a Title Change Notification message and send a success message if there were no errors found. This success message will be processed by the Receive Endpoint of the E-Lien Transaction microservice (Refer to Figure 18 below).

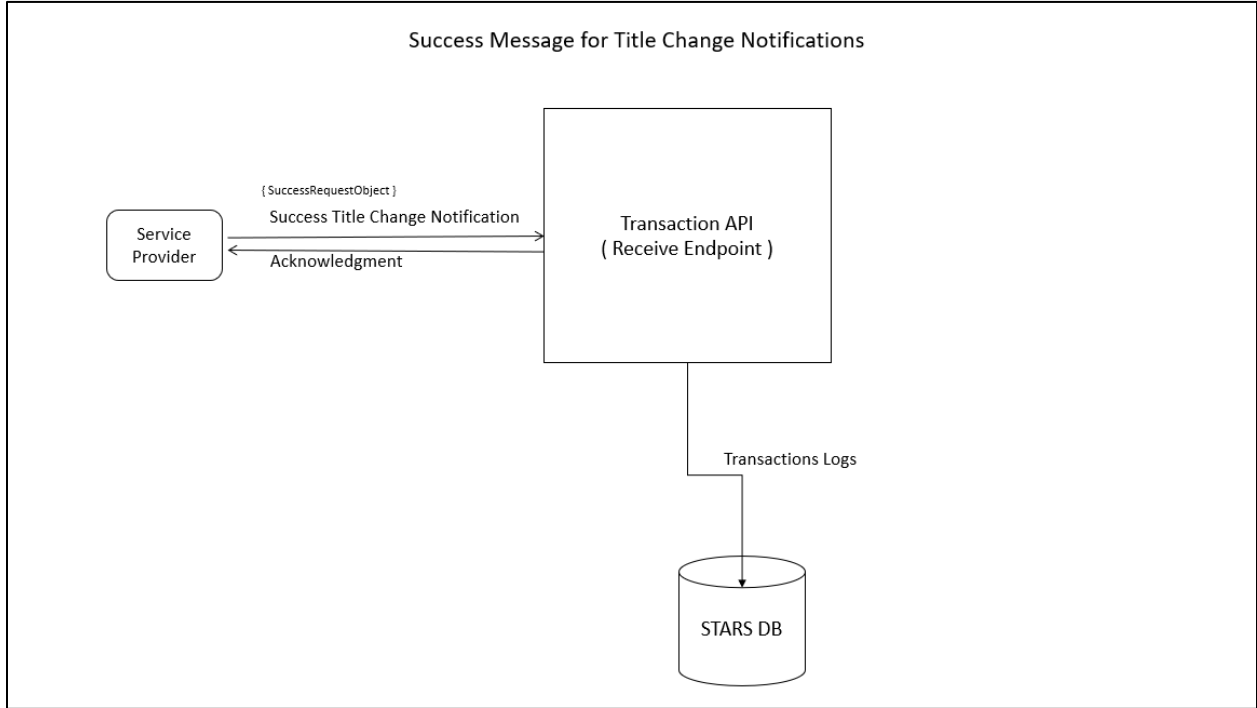


Figure 18 - Success Message for Title Change Notification Transactions

Receive Endpoint Technical Specification:

- Success Message for Title Change Notification Service Types: POST
https://{aws_domainname}/api/eltransactionservice/receive

Request Object Technical Specification

- Request Object Name: - SuccessRequestObject
- Request Object Type: - JSON

Message Header (part of SuccessRequestObject): -

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TraceID	Auto generated by BMV API, will be	ELT_TRANSACTION_LOG	Y

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	used to track related request.		
TransactionCode	STC (Success Title Change Notification)	ELT_TRANSACTION_CODE	Y
TransactionDescription	Success to Title change Notification	ELT_TRANSACTION_CODE	N
ServiceProviderUID	Database value, specific to service provider	ELT_SERVICE_PROVIDER	Y
LienholderFEIN	Federal tax ID number from database specific to Lien holder.	LIEN HOLDER	Y
LienholderSuffix	Suffix to uniquely identify Lien holder.	LIEN HOLDER	Y
TitleLienHolderUID	A database value that uniquely identifies specific Lien for a title. This is the primary key for a specific lien attached to a title.	TITLE_LIEN HOLDER	Y
BusinessErrorCode	If there are no BusinessErrors, the value of Business Errors should be null.	ELT_TRANSACTION_LOG	N
BusinessErrorDescription	NA	ELT_TRANSACTION_LOG	N
Timestamp	Current date and time in UTC format		Y
TransactionStatus	Success	ELT_TRANSACTION_LOG	Conditional (N for request, Y for response)

Message Body (part of SuccessRequestObject):

There is no separate message body for Success/Failure messages. The header object is expected back with TransactionStatus populated. Please see above table for header.

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BMV Http Acknowledgment data fields: -

Field Name	Notes / Descriptions	Required (Y= Yes N = No)
Http Status Code	4xx for request errors. 5xx for internal server errors. 2xx for success Note: This status code is system generated.	Y

Example of the POST request –

```
POST / titlechangenotificationservice/send/ json HTTP/1.1
Host: {aws_domainname}
Accept: application/json
Content-Type: application/json
Content-Length: 5384
{
  "TransactionHeader": {
    "TraceID": "sample data",
    "TransactionCode": "STC",
    "TransactionDescription": "sample data",
    "Timestamp": "2022-01-10T20:12:00.8527984Z",
    "ServiceProviderUID": 753,
    "LienholderFEIN": "sample data",
    "LienholderSuffix": "sample data",
    "TitleLienHolderUID": 55112233,
    "BusinessErrors": [
      {
        "BusinessErrorCode": "{error code}",
        "BusinessErrorDescription": "{error description}"
      }
    ] //If there are no BusinessErrors, the value of BusinessErrors should be null
    "TransactionStatus": "sample data"
  }
}
```

STARS Table Names: - Below are the tables that are used to create the Title Change Notification Message and update the log table for auditability.

Table Names		
CUSTOMER_ADDRESS	LIEN HOLDER ADDRESS	TITLE LIEN HOLDER

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Table Names		
ELT_SERVICE_PROVIDER	LIEN_HOLDER_NAME	TITLE_PURCHASE_INFORMATION
ELT_TRANSACTION_CODE	NMVTIS_TITLE_TYPE_CODE	VEHICLE
ELT_TRANSACTION_LOG	ODOMETER_BRAND_CODE	VEHICLE_BODY_STYLE_CODE
FORMER_TITLE	SUB_TRANSACTION_VEHICLE	VEHICLE_OWNERSHIP
FUEL_TYPE_CODE	TITLE	VEHICLE_TYPE_CODE, WATERCRAFT_TYPE_CODE
HULL_MATERIAL_CODE	TITLE_BRAND_CODE	vwCUSTOMER
LIEN_HOLDER	TITLE_CERTIFICATE_OF_ORIGIN	

Views: - Below are the views that are used to create the Title Notification Message and update the log table for auditability.

View Names
vwCUSTOMER
vw_CompletedTransactions

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2.1.1.2.4 Failure Message for Title Change Notification

The service provider will process a Title Change Notification message and send a failure message if there were errors found. This failure message will be processed by the Receive Endpoint of the E-Lien Transaction microservice (Refer to Figure 19 below).

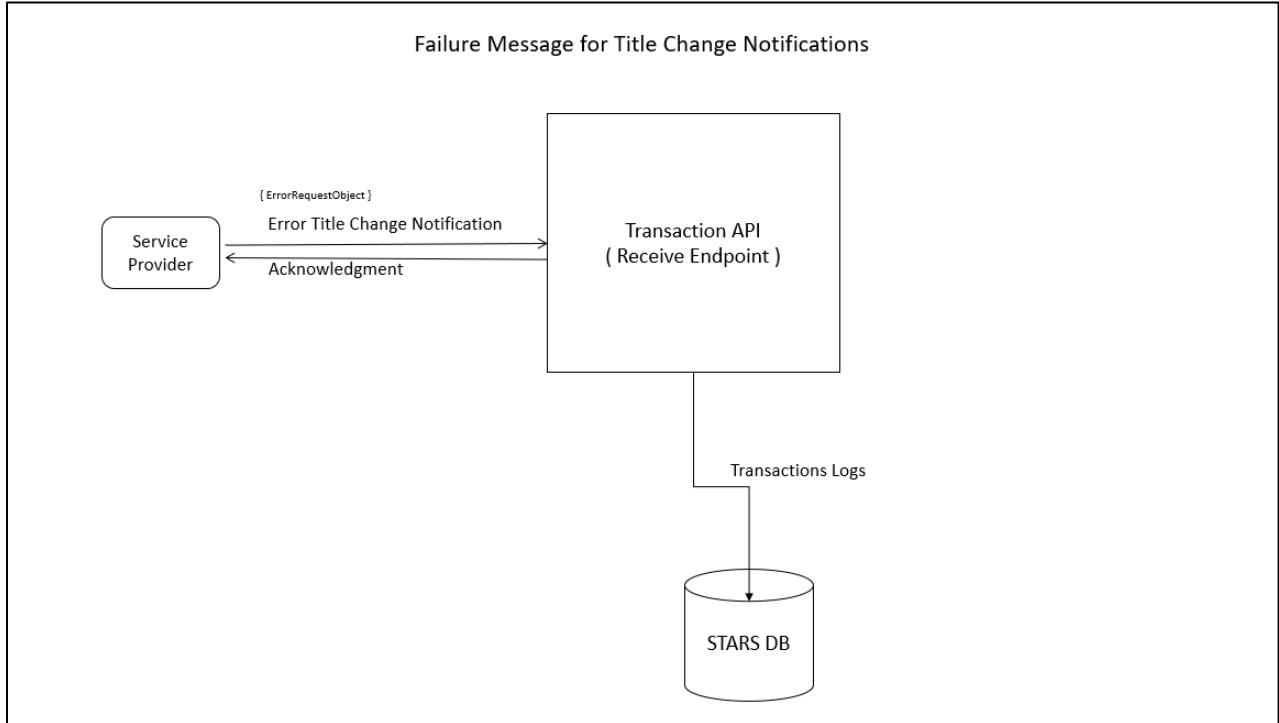


Figure 19 - Failure Message for Title Change Notification Transactions

Receive Endpoint Technical Specification:

- Failure Message for Title Change Notification Service Types: POST
https://{aws_domainname}/api/eltransactionservice/receive

Request Object Technical Specification

- Request Object Name: - ErrorRequestObject
- Request Object Type: - JSON

Message Header (part of ErrorRequestObject): -

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TraceID	Auto generated by BMV API, will be	ELT_TRANSACTION_LOG	Y

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	used to track related request.		
TransactionCode	ETC (Error Title Change)	ELT_TRANSACTION_CODE	Y
TransactionDescription	Error when processing title change notification	ELT_TRANSACTION_CODE	N
ServiceProviderUID	Database value, specific to service provider	ELT_SERVICE_PROVIDER	Y
LienholderFEIN	Federal tax ID number from database specific to Lien holder.	LIEN_HOLDER	Y
LienholderSuffix	Suffix to uniquely identify Lien holder.	LIEN_HOLDER	Y
TitleLienHolderUID	A database value that uniquely identifies specific Lien for a title. This is the primary key for a specific lien attached to a title.	TITLE_LIEN_HOLDER	Y
BusinessErrorCode	Any matching error codes. There may be multiple error codes. They will be sent as part of an array.	ELT_TRANSACTION_LOG	Y
BusinessErrorDescription	Provide the error details	ELT_TRANSACTION_LOG	N
Timestamp	Current date and time in UTC format		Y
TransactionStatus	Failure	ELT_TRANSACTION_LOG	Conditional (N for request, Y for response)

Message Body (part of ErrorRequestObject): -

There is no separate message body for Success/Failure messages. The header object is expected back with TransactionStatus populated. Please see above table for header.

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BMV Acknowledgment data fields:

Field Name	Notes / Descriptions	Required (Y= Yes N = No)
Http Status Code	4xx for request errors. 5xx for internal server errors. 2xx for success Note: This status code is system generated.	Y

Example of the POST request –

```
POST / titlechangenotificationservice/send/ json HTTP/1.1
Host: {aws_domainname}
Accept: application/json
Content-Type: application/json
Content-Length: 5384
{
  "TransactionHeader": {
    "TraceID": "sample data",
    "TransactionCode": "ETC",
    "TransactionDescription": "sample data",
    "Timestamp": "2022-01-10T20:12:00.8527984Z",
    "ServiceProviderUID": 753,
    "LienholderFEIN": "sample data",
    "LienholderSuffix": "sample data",
    "TitleLienHolderUID": 55112233,
    "BusinessErrors": [
      {
        "BusinessErrorCode": "{error code}",
        "BusinessErrorDescription": "{error description}"
      }
    ] //If there are no BusinessErrors, the value of BusinessErrors should be null

    "TransactionStatus": "Failure"
  }
}
```


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STARS Table Names: - Below are the tables that are used to create the Title Change Notification Message and also update the log table for auditability.

Table Names		
CUSTOMER_ADDRESS	LIEN_HOLDER_ADDRESS	TITLE_CERTIFICATE_OF_ORIGIN
ELT_SERVICE_PROVIDER	LIEN_HOLDER_NAME	TITLE_LIEN_HOLDER
ELT_TRANSACTION_CODE	NMVTIS_TITLE_TYPE_CODE	TITLE_PURCHASE_INFORMATION
ELT_TRANSACTION_LOG	ODOMETER_BRAND_CODE	VEHICLE
FORMER_TITLE	PROPULSION_TYPE_CODE	VEHICLE_BODY_STYLE_CODE
FUEL_TYPE_CODE	SUB_TRANSACTION_VEHICLE	VEHICLE_MODEL
HULL_MATERIAL_CODE	TITLE	VEHICLE_TYPE_CODE, WATERCRAFT_TYPE_CODE
LIEN_HOLDER	TITLE_BRAND_CODE	vwCUSTOMER

Views: - Below are the views that are used to create the Title Notification Message and update the log table for auditability.

View Names
vwCUSTOMER

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2.1.1.2.5 Request Lien Release

A lienholder uses the Request to Release Lien transaction to release its electronic lien when the owner pays off a vehicle loan, a dealer pays off the loan as part of a trade-in/sale, or an insurance company pays off a total loss claim. The lienholder may release its lien and specify the name and address for the BMV to mail a paper title. Provided there is no other electronic lien on the title, BMV will print the title upon processing of the Request to Release Lien message. If no name/address is provided in the message, the BMV will mail the printed title to the owner at the address on STARS.

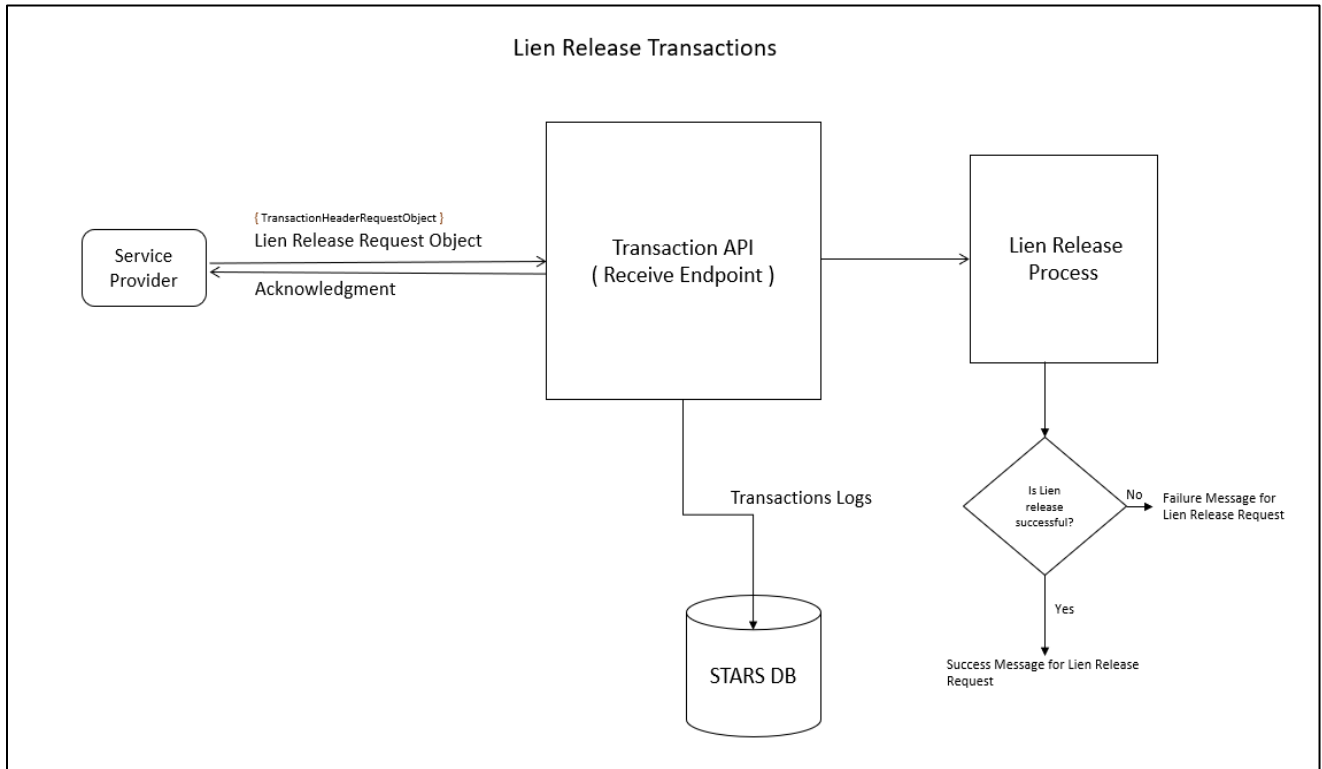


Figure 20 - Request to Release Lien Message

Receive Endpoint Technical Specification:

- Request Message to Release Lien Notification Service Types: POST
https://{aws_domainname}/api/eltransactionservice/receive

Request Object Technical Specification

- Request Object Name: - TransactionRequestObject
- Request Object Type: - JSON

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Message Header (part of TransactionHeaderRequestObject): -

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TraceID	Optional value from service provider	ELT_TRANSACTION_LOG	N
TransactionCode	LR (Lien release)	ELT_TRANSACTION_CODE	Y
TransactionDescription	when a Lien holder request Lien to be released. No need to send on request	ELT_TRANSACTION_CODE	N
ServiceProviderUID	Database value, specific to service provider	ELT_SERVICE_PROVIDER	Y
LienholderFEIN	Federal tax ID number from database specific to Lien holder.	LIEN_HOLDER	Y
LienholderSuffix	Suffix to uniquely identify Lien holder.	LIEN_HOLDER	Y
TitleLienHolderUID	A database value that uniquely identifies specific Lien for a title. This is the primary key for a specific lien attached to a title.	TITLE_LIEN_HOLDER	Y
BusinessErrorCode	If there are no BusinessErrors, the value of Business Errors should be null. No need to send on request	ELT_TRANSACTION_LOG	N
BusinessErrorDescription	No need to send on request	ELT_TRANSACTION_LOG	N
Timestamp	Current date and time in UTC format		Y
TransactionStatus	Success/Failure No need to send on request	ELT_TRANSACTION_LOG	Conditional (N for request, Y for response)

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Message Body (part of TransactionHeaderRequestObject):

Field Name	Notes/Descriptions	Table Name	Required (Y= Yes N = No)
TitleNumber	system generated	TITLE	Y
VIN_HIN	Vehicle or hull identification number	VEHICLE	Y
LienReleaseDate	date financial interest on lien has been satisfied	TITLE_LIEN_HOLDER	Y
SpeedTitle	Request for speed title ("1" Yes, "0" No)	TITLE	N
MailToCustomerName	name of customer title is to be mailed to; A-Z (including lower case), 0-9, Slash (/), pound sign (#), dash (-), ampersand (&); no need to match BMV info	Provided by Lienholder / TITLE_MAILING_ADDRESS	N - Exclude field if Null; if included, all fields in this set must be included
MailToAddress1	address of customer title is to be mailed to. May only contain A-Z (lower case included), 0-9, Slash (/), pound sign (#), dash (-), ampersand (&); no need to match BMV info	Provided by Lienholder / TITLE_MAILING_ADDRESS	N - Exclude field if Null; if included, all fields in this set must be included
MailToAddress2	Address of customer title is to be mailed to; no need to match BMV info	Provided by Lienholder / TITLE_MAILING_ADDRESS	N - Exclude field if Null; if included, all fields in this set must be included
MailToCity	city of customer title is to be mailed to. May only contain A-Z (lower case included), 0-9, Slash (/), pound sign (#), dash (-), ampersand (&); no need to match BMV info	Provided by Lienholder / TITLE_MAILING_ADDRESS	N - Exclude field if Null; if included, all fields in this set must be included
MailToState	state of customer title is to be	Provided by Lienholder / TITLE_MAILING_ADDRESS	N - Exclude field if Null; if included, all

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Field Name	Notes/Descriptions	Table Name	Required (Y= Yes N = No)
	mailed to; no need to match BMV info		fields in this set must be included
MailToPostalCode	zip code of customer title is to be mailed to. For 5 digits - 99999, for zip+4 - 99999-9999; no need to match BMV info	Provided by Lienholder / TITLE_MAILING_ADDRESS	N - Exclude field if Null; if included, all fields in this set must be included
Country	Country title is to be mailed to. If MailToState is a US state, Country must be "United States of America" not "USA"	Provided by Lienholder / TITLE_MAILING_ADDRESS	N - Exclude field if Null; if included, all fields in this set must be included

BMV Acknowledgment data fields:

Field Name	Notes / Descriptions	Required (Y= Yes N = No)
Http Status Code	4xx for request errors. 5xx for internal server errors. 2xx for success Note: This status code is system generated.	Y

Example of the POST request –

```
POST /eltransactionsservice/receive/ json HTTP/1.1
Host: {aws_domainname}
Accept: application/json
Content-Type: application/json
Content-Length: 1187
{
  "TransactionHeader": {
    "TraceID": "sample data",
    "TransactionCode": " sample data",
    "TransactionDescription": "sample data",
    "Timestamp": "2022-01-10T20:12:00.8527984Z",
    "ServiceProviderUID": 753,
    "LienholderFEIN": "sample data",
    "LienholderSuffix": "sample data",
```

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```

        "TitleLienHolderUID": 55112233,
        "BusinessErrors": [
            {
                "BusinessErrorCode": "{error code}",
                "BusinessErrorDescription": "{error description}"
            }
        ] //If there are no BusinessErrors, the value of BusinessErrors should be null

        "TransactionStatus": "sample data"
    },
    "LienReleaseRequest": {

        "TitleNumber": "sample data"
        "VIN_HIN": "sample data",
        "LienReleaseDate": "sample data",
        "SpeedTitle": "sample data"
        "MailToCustomerName": "sample data",
        "MailToAddress1": "sample data",
        "MailToAddress2": "sample data",
        "MailToCity": "sample data",
        "MailToState": "sample data",
        "MailToPostalCode": "sample data",
        "Country": "sample data",
    }
}

```

STARS Table Names: - Below are the tables that are used to create the Lien Notification Message and update the log table for auditability.

Table Names		
CUSTOMER_DEALER_NUMBER	LIEN HOLDER	TITLE LIEN HOLDER
ELT_SERVICE_PROVIDER	LIEN HOLDER ADDRESS	VEHICLE
ELT_TRANSACTION_CODE	LIEN HOLDER NAME	
ELT_TRANSACTION_LOG	TITLE	

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2.1.1.2.6 Request Conversion to Electronic Lien

2.1.1.2.6.1 Bulk Title Conversion Scenario:

The Service Provider may request to convert paper liens for a lender to electronic lien in bulk. In that scenario, the service provider will provide a file comprising of paper lien data to BMV. We anticipate that this file will be sent via GoAnywhere (IOT tool for accepting files in a secured manner) to a predetermined “drop zone” in the BMV data center. This process will then pick up that file and initiate the conversion process to convert all the liens to E-Liens. We have chosen a batch process that directly updates the database (via windows services and stored procedures) for efficiency reasons.

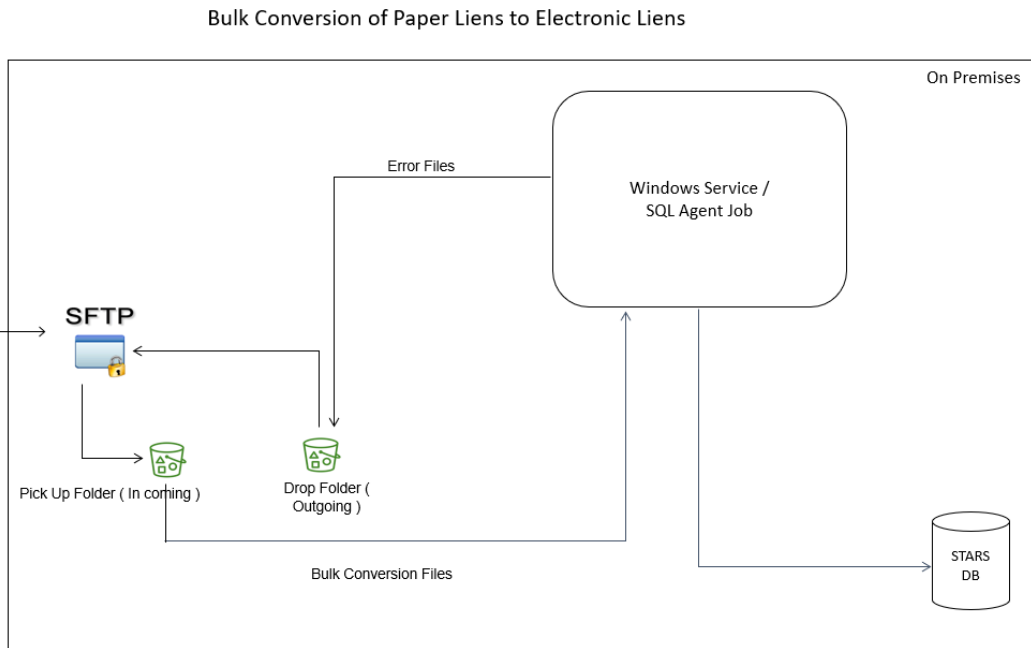


Figure 21 - Bulk Conversion from Paper Liens to Electronic Liens

This Service Provider sends a Flat File (csv) to convert (Bulk) Paper Liens to Electronic Liens.

This Flat File will be dropped or shared with the BMV on a IoT SFTP Pickup Folder, specific to Service Provider.

A listener can be configured (Windows Service) to watch for file changes in the SFTP folder(s) and invoke the service for validating and converting each paper Lien to Electronic Lien.

Each Service Provider will need SFTP credentials from BMV to enable transfer of data

CSV File Naming Convention

The input file should be named in the following format to ensure that it is processed for individual service providers:

CB_{Service_Provider_Id}_*.csv

The file should start with the transaction code CB and the Service Provider ID that is provided by the BMV. The rest of the filename does not need to follow a specific format as it will not be parsed.

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Input File CSV Format

LienHolderFein, LienHolderSuffix, TimeStamp, TitleNumber, IssueDate, VIN_HIN, LienHolderName, LienHolderOrganization, LienHolderAddress1, LienHolderAddress2, LienHolderCity, LienHolderState, LienHolderZipCode

Validation Criteria

Input Validation involves matching the request fields with the following STARS database attributes:

ServiceProviderUID, LienHolderFein, LienHolderSuffix, TitleNumber, IssueDate, VIN_HIN, LienHolderOrganization, LienHolderName, LienHolderAddress1, LienHolderAddress2, LienHolderCity, LienHolderState, LienHolderZipCode

Output file CSV Header Format:

BusinessErrorCode, BusinessErrorDescription, Http_Status_Code, Title_Lien_Holder_ID, Title_Number, VIN_HIN, LienHolderOrganization, LienHolderName, LienHolderAddress1, LienHolderAddress2, LienHolderCity, LienHolderState, LienHolderZipCode, Transaction_Status

Error Record Handling:

Any subset of Title records that fail input validation or does not have a matching FEIN and Suffix, will be sent back to service provider in a csv error file placed in SFTP drop off folder.

The Windows Service will be responsible for putting the error file(s) in the SFTP Drop folder. Windows Service will be triggered based on a Timer schedule.

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2.1.1.2.6.2 Single Title Conversion Scenario:

A Service Provider sends an API Request to convert a single Paper Lien to Electronic Lien, The Transaction API receive end point will be used to process the request. Figure 22 depicts this scenario.

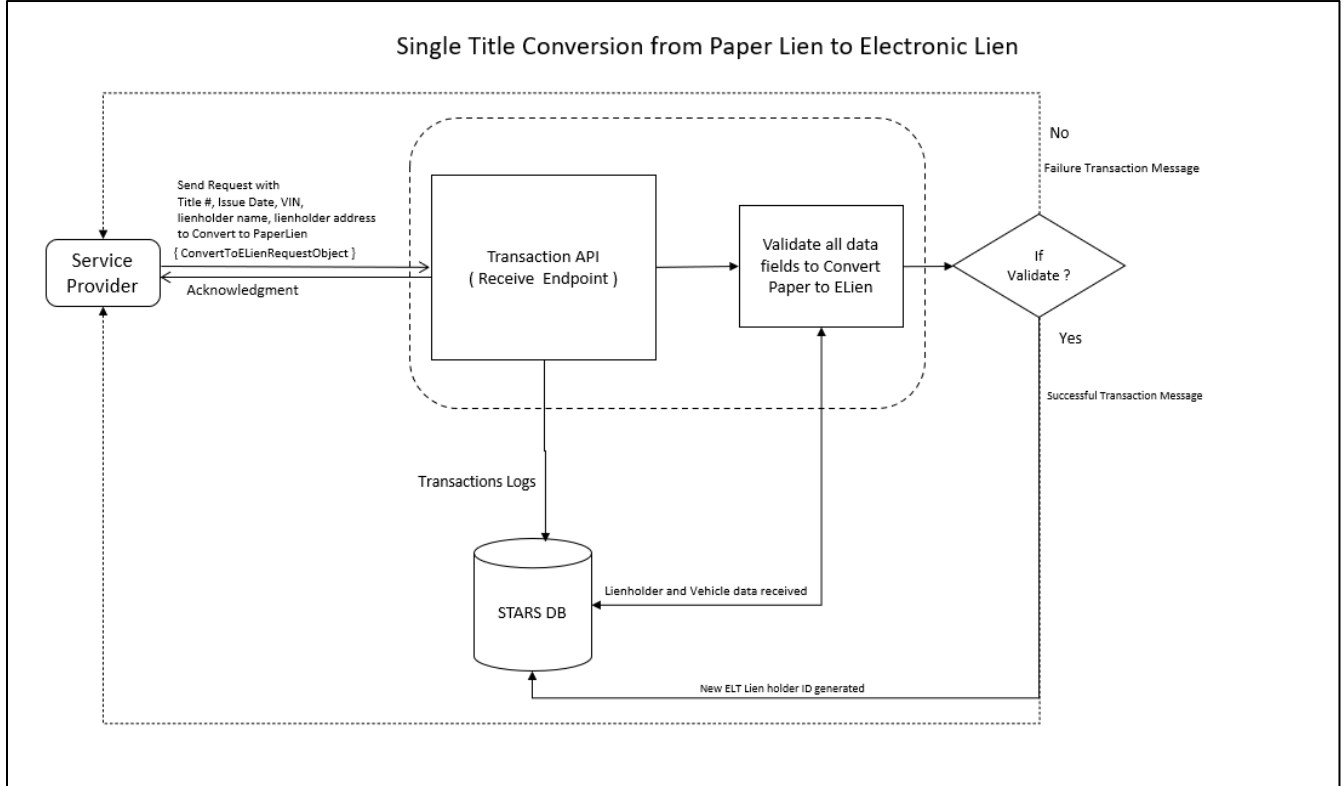


Figure 22 - Single Title Conversion from Paper Lien to Electronic Lien

Receive Endpoint Technical Specification:

- Request Message Conversion of Paper Lien to Electronic Lien Service Types: POST
https://{aws_domainname}/api/eltransactionservice/receive

Request Object Technical Specification

- Request Object Name: - ConvertToELienRequestObject
- Request Object Type: - JSON

Message Header (part of ConvertToELienRequestObject): -

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TraceID	Optional value from service provider	ELT_TRANSACTION_LOG	N
TransactionCode	CE (Convert to Electronic)	ELT_TRANSACTION_CODE	Y

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Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TransactionDescription	when a conversion to electronic transaction. No need to send on request	ELT_TRANSACTION_CODE	N
ServiceProviderUID	Database value, specific to service provider	ELT_SERVICE_PROVIDER	Y
LienholderFEIN	Federal tax ID number from database specific to Lien holder.	LIEN HOLDER	Y
LienholderSuffix	Suffix to uniquely identify Lien holder.	LIEN HOLDER	Y
Timestamp	Current date and time in UTC format		N
BusinessErrorCode	If there are no BusinessErrors, the value of Business Errors should be null. No need to send on request	ELT_TRANSACTION_LOG	N
BusinessErrorDescription	No need to send on request	ELT_TRANSACTION_LOG	N
TransactionStatus	Success or Failure No need to send on request	ELT_TRANSACTION_LOG	Conditional (N for request, Y for response)

Message Body (part of ConvertToELienRequestObject): -

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
Title Number	system generated	TITLE	Y
IssuedDate	Date title was approved for issuance by the BMV	TITLE	Y
VIN/HIN	Vehicle or hull identification number	VEHICLE	Y
LienholderName	lienholder's Name. This may be the same value as LienholderOrganization when lienholder is a company	LIEN HOLDER_NAME	Y

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LienholderOrganization	May be null when lienholder is an individual. Can be the same value in LienholderName for company lienholders.	LIEN_HOLDER_NAME	Y
LienholderAddress1	lienholder's address line 1; May only contain A-Z (lower case included), 0-9, Slash (/), pound sign (#), dash (-), ampersand (&); must match BMV's data	LIEN_HOLDER_ADDRESS	Y
LienholderAddress2	lienholder's address line 2; May only contain A-Z (lower case included), 0-9, Slash (/), pound sign (#), dash (-), ampersand (&); must match BMV's data	LIEN_HOLDER_ADDRESS	N
LienholderCity	lienholder's city; May only contain A-Z (lower case included), dash (-), ampersand (&); must match BMV's data	LIEN_HOLDER_ADDRESS	Y
LienholderState	lienholder's state; must match BMV's data	LIEN_HOLDER_ADDRESS	Y
LienholderZipCode	Lienholder's zip code; must match BMV's data	LIEN_HOLDER_ADDRESS	Y
LienholderCountry	Lienholder's country; must match BMV's data	LIEN_HOLDER_ADDRESS	Y

Example of the POST request –

```
POST /eltransactionsservice/receive/ json HTTP/1.1
Host: {aws_domainname}
Accept: application/json
Content-Type: application/json
Content-Length: 1187
{
  "TransactionHeader": {
    "TraceID": "sample data",
    "TransactionCode": " sample data",
    "TransactionDescription": "sample data",
    "Timestamp": "2022-01-10T20:12:00.8527984Z",
    "ServiceProviderUID": 753,
    "LienholderFEIN": "sample data",
    "LienholderSuffix": "sample data",
```

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```

    "BusinessErrors": [
      {
        "BusinessErrorCode": "{error code}",
        "BusinessErrorDescription": "{error description}"
      }
    ] //If there are no BusinessErrors, the value of BusinessErrors should be null

    "TransactionStatus": "sample data"
  },
  "ConvertToELienRequest": {
    "TITLE": {
      "TitleNumber": "sample data",
      "IssuedDate": "2022-01-10"
    },
    "VEHICLE": {
      "VIN_HIN": "sample data"
    },
    "LIEN_HOLDER_NAME": {
      "LienholderName": "sample data",
      "LienholderOrganization": "sample data"
    },
    "LIEN_HOLDER_ADDRESS ": {
      "LienholderAddress1": "sample data",
      "LienholderAddress2": "sample data",
      "LienholderCity": "sample data",
      "LienholderState": "sample data",
      "LienholderZipCode": "sample data",
      "LienholderCountry": "sample data"
    }
  }
}

```

BMV Acknowledgment data fields:

Field Name	Notes / Descriptions	Required (Y= Yes N = No)
Http Status Code	4xx for request errors. 5xx for internal server errors. 2xx for success	Y

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	Note: This status code is system generated.	
--	---	--

STARS Table Names: - Below are the tables that are used to update the STARS database for auditability.

Table Names		
ELT_SERVICE_PROVIDER	LIEN_HOLDER	TITLE
ELT_TRANSACTION_CODE	LIEN_HOLDER_ADDRESS	TITLE_LIEN_HOLDER
ELT_TRANSACTION_LOG	LIEN_HOLDER_NAME	VEHICLE

2.1.1.2.7 Conversion from Electronic Lien to Paper Lien

A Service Provider sends an API Request to convert from Electronic Lien to Paper Lien, The Transaction API receive end point will be used to process the request. This scenario is outlined in Figure 23 below.

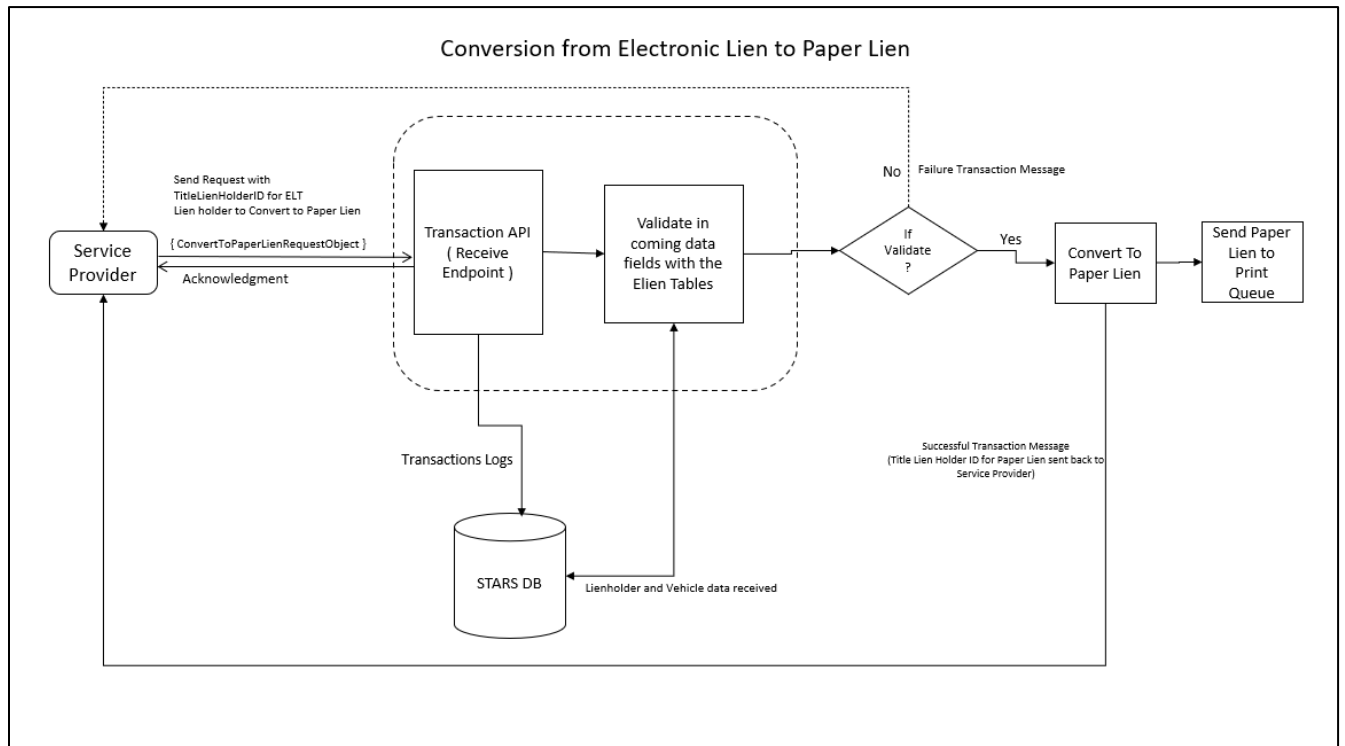


Figure 23 - Conversion from Electronic Lien to Paper Lien

Receive Endpoint Technical Specification:

- Request Message Conversion from Electronic Lien to Paper Lien Service Types: POST
https://{aws_domainname}/api/eltransactionservice/receive

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Request Object Technical Specification

- Request Object Name: - ConvertToPaperLienRequestObject
- Request Object Type: - JSON

Message Header (part of HTTP ConvertToPaperLienRequestObject): -

Field Name	Notes / Descriptions	Table Name	Required (Y= Yes N = No)
TraceID	Optional value from service provider	ELT_TRANSACTION_LOG	N
TransactionCode	CP (Conversion To Paper)	ELT_TRANSACTION_CODE	Y
TransactionDescription	when an electronic lien is converted to paper. No need to send on request	ELT_TRANSACTION_CODE	N
Timestamp	Current date and time in UTC format		Y
ServiceProviderUID	Database value, specific to service provider	ELT_SERVICE_PROVIDER	Y
LienholderFEIN	Federal tax ID number from database specific to Lien holder.	LIEN HOLDER	Y
LienholderSuffix	Suffix to uniquely identify Lien holder.	LIEN HOLDER	Y
TitleLienholderUID	A database value that uniquely identifies specific Lien for a title. This is the primary key for a specific lien attached to a title.	TITLE_LIEN HOLDER	Y
BusinessErrorCode	If there are no BusinessErrors, the value of Business Errors should be null if sent. No need to send on request	ELT_TRANSACTION_LOG	N
BusinessErrorDescription	No need to send on request	ELT_TRANSACTION_LOG	N
TransactionStatusCode	Success / Failure No need to send on request	ELT_TRANSACTION_LOG	Conditional (N for request, Y for response)

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Message Body (part of HTTP ConvertToPaperLienRequestObject): -

Field Name	Notes/Descriptions	Table Name	Required (Y= Yes N = No)
TitleNumber	system generated	TITLE	Y
VIN_HIN	Vehicle or hull identification number	VEHICLE	Y
TitleLienHolderUID	unique ID of ELT Lienholder on a given title	TITLE_LIEN_HOLDER	Y
IssuedDate	Date title was approved for issuance by the BMV	TITLE	Y
SpeedTitle	Request for speed title ("1" Yes, "0" No). If not sent, will be treated as "0"	TITLE	N
MailToCustomerName	Name of customer title is to be mailed to; A-Z (including lower case), 0-9, Slash (/), pound sign (#), dash (-), ampersand (&); no need to match BMV info	Provided by Lienholder / TITLE_MAILING_ADDRESS	N - Exclude field if Null; if included, all fields in this set must be included
MailToAddress1	Address of customer title is to be mailed to. May only contain A-Z (lower case included), 0-9, Slash (/), pound sign (#), dash (-), ampersand (&); no need to match BMV info	Provided by Lienholder / TITLE_MAILING_ADDRESS	N - Exclude field if Null; if included, all fields in this set must be included
MailtoAddress2	Address of customer title is to be mailed to); no need to match BMV info	Provided by Lienholder / TITLE_MAILING_ADDRESS	N - Exclude field if Null; if included, all fields in this set must be included
MailToCity	city of customer title is to be mailed to. May only contain A-Z (lower case included), 0-9, Slash (/), pound sign (#), dash (-	Provided by Lienholder / TITLE_MAILING_ADDRESS	N - Exclude field if Null; if included, all fields in this set must be included

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Field Name	Notes/Descriptions	Table Name	Required (Y= Yes N = No)
), ampersand (&); no need to match BMV info		
MailToState	state of customer title is to be mailed to; no need to match BMV info	Provided by Lienholder / TITLE_MAILING_ADDRESS	N - Exclude field if Null; if included, all fields in this set must be included
MailToPostalCode	zip code of customer title is to be mailed to. For 5 digits - 99999, for zip+4 - 99999-9999; no need to match BMV info	Provided by Lienholder / TITLE_MAILING_ADDRESS	N - Exclude field if Null; if included, all fields in this set must be included
Country	Country title is to be mailed to. If MailToState is a US state, Country must be "United States of America" not "USA"	Provided by Lienholder / TITLE_MAILING_ADDRESS	N - Exclude field if Null; if included, all fields in this set must be included

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BMV Acknowledgment data fields: -

Field Name	Notes / Descriptions	Required (Y= Yes N = No)
Http Status Code	4xx for request errors. 5xx for internal server errors. 2xx for success Note: This status code is system generated.	Y
Title_Number	System-generated	Y
VIN_HIN	Vehicle or hull identification number	Y
TitleLienHolderUID	unique ID of ELT Lienholder on a given title	Y
TransactionDate	Date transaction is processed. Cannot be a future date	Y

Example of the POST request –

```
POST /eltransactionsservice/receive/ json HTTP/1.1
Host: {aws_domainname}
Accept: application/json
Content-Type: application/json
Content-Length: 1187
{
  "TransactionHeader": {
    "TraceID": "sample data",
    "TransactionCode": " sample data",
    "TransactionDescription": "sample data",
    "Timestamp": "2022-01-10T20:12:00.8527984Z",
    "ServiceProviderUID": 753,
    "LienholderFEIN": "sample data",
    "LienholderSuffix": "sample data",
    "TitleLienHolderUID": 55112233,
    "BusinessErrors": [
      {
        "BusinessErrorCode": "{error code}",
        "BusinessErrorDescription": "{error description}"
      }
    ]
  }
  "TransactionStatus": "sample data"
```

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```

    },
    "ConvertToPaperLienRequest": {
      "TITLE": {
        "TitleNumber": "sample data"
        "IssuedDate": "2022-01-10",
        "SpeedTitle": "sample data",
      },
      "VEHICLE": {
        "VIN_HIN": "sample data"
      },
      "TITLE_LIEN HOLDER": {
        "TitleLienholderUID": "sample data",
      },
      "TITLE_MAILING_ADDRESS": {
        "MailToCustomerName": "sample data",
        "MailToAddress1": "sample data",
        "MailToAddress2": "sample data",
        "MailToCity": "sample data",
        "MailToState": "sample data",
        "MailToPostalCode": "sample data",
        "Country": "sample data",
      }
    }
  }
}

```

STARS Table Names: - Below are the tables that are used to create the Convert to Paper Message and update the log table for auditability.

Table Names		
ELT_SERVICE_PROVIDER	LIEN HOLDER	TITLE_MAILING_ADDRESS
ELT_TRANSACTION_CODE	TITLE	VEHICLE
ELT_TRANSACTION_LOG	TITLE_LIEN HOLDER	

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2.1.1.3 Error Handling within APIs

This section summarizes how error handling will happen within the API code – send or receive. Since the API will interact with service provider endpoints and with BMV’s internal suite of applications (STARS), we have created a tracking and error handling mechanism that allows quick identification of where the error occurred so that troubleshooting, and incident management becomes easy. The table below describes step-by-step process for handling our errors for all send and receive messages.

Message Type	Where error occurred	How API registered the error	Subsequent Processing
All Send messages (initiated by the BMV legacy application STARS)	Prior to API call request (error in STARS area)	Error is logged in the STARS error framework and table. This error can be reviewed subsequently by the BMV incident management team	STARS will attempt retry up to 3 times (3 being configurable)
All Send messages	Authentication issues	Audit log table will capture error in ResponseBody. Set status_code field to 400 in the Audit Log table	System will stop processing after logging error; no retry; Manual incident management
All Send messages	After API receives request and input validation fails	Audit log table will capture error in ResponseBody. Set status_code field to 400 in the Audit Log table	System will stop after logging errors, no retry: Manual incident management
All Send messages	Network communication with Service Provider fails (e.g. Service Provider API endpoint not available)	ELT_Transaction_Log table will capture error in ResponseBody. Status code will be set to the value we received from the Service Providers	Elien API will retry up to 3 (configurable) times before logging error.
All Send messages	Service provider throws error	ELT_Transaction_Log table will capture error in ResponseBody. Status code will be set to the value we received from the service provider	System will stop after logging errors, no retry: Manual incident management
All Receive messages	Network communication with BMV fails (e.g. Service Provider API endpoint not available)	No Error is registered on BMVs side	Service Provider is encouraged to retry. The recommendation is 3 times.
All Receive messages	After API receives request and input validation fails	Audit log table will capture error in ResponseBody. Set status_code field to 400 in the Audit Log table	ELT_Transaction_Log table will capture error in ResponseBody. Status code will be set to 400 series

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We have also created a business error message table to standardize the errors across all service providers and BMV.

Below is the version 1.0 of the business error code/description the BMV's system will use. If there is a need to add any additional error messages, this list can be enhanced. The service providers will be using the same business error codes and descriptions to help normalize the error messages.

Business Error Code	Business Error Description	Error sent when?
6000	TRACE_ID_MISSING_OR_INVALID	Initial Validation
6001	TITLE_NUMBER_MISSING_OR_INVALID	Initial Validation
6002	VIN/HIN_MISSING_OR_INVALID	Initial Validation
6003	LIENHOLDER_FEIN_MISSING_OR_INVALID	Initial Validation
6004	LIENHOLDER_SUFFIX_MISSING_OR_INVALID	Initial Validation
6005	TITLELIENHOLDER_UID_MISSING_OR_INVALID	Initial Validation
6006	SERVICE_PROVIDER-ID_MISSING_OR_INVALID	Initial Validation
6007	TRANSACTION_CODE_MISSING_OR_INVALID	Initial Validation
6008	TRANSACTION_STATUS_CODE_MISSING_OR_INVALID	Initial Validation
6009	LIEN_RELEASE_DATE_MISSING_OR_INVALID	Initial Validation
6010	LIEN_DOES_NOT_EXIST_IN_BMV_RECORDS	Initial Validation
6011	LIEN_DOES_NOT_EXIST_IN_LIENHOLDER_RECORDS	Initial Validation
6012	VIN/HIN_DOES_NOT_HAVE_LIEN_ON_BMV_RECORDS	Initial Validation
6013	LIENHOLDER_AND_TITLE_DO_NOT_MATCH_BMV_RECORDS	Initial Validation
6014	MAIL_TO_CUSTOMER_NAME_MISSING_OR_INVALID	Initial Validation
6015	MAIL_TO_CUSTOMER_ADDRESS_LINE_1_MISSING_OR_INVALID	Initial Validation
6016	MAIL_TO_CITY_MISSING_OR_INVALID	Initial Validation
6017	MAIL_TO_STATE_MISSING_OR_INVALID	Initial Validation
6018	MAIL_TO_ZIP_CODE_MISSING_OR_INVALID	Initial Validation
6019	COUNTRY_MISSING_OR_INVALID	Initial Validation
6020	ISSUE_DATE_MISSING_OR_INVALID	Initial Validation
6021	LIENHOLDER_ORGANIZATION_MISSING_OR_INVALID	Initial Validation
6022	LIENHOLDER_ADDRESS1_MISSING_OR_INVALID	Initial Validation
6023	LIENHOLDER_ADDRESS2_MISSING_OR_INVALID	Initial Validation
6024	LIENHOLDER_CITY_MISSING_OR_INVALID	Initial Validation
6025	LIENHOLDER_ZIP_CODE_MISSING_OR_INVALID	Initial Validation
6026	BUSINESS_ERROR_CODE_MISSING_OR_INVALID	Initial Validation
6027	BUSINESS_ERROR_CODE_DESCRIPTION_MISSING_OR_INVALID	Initial Validation
6028	APPLICATION_DATE_MISSING_OR_INVALID	Initial Validation
6029	LIEN_FORMAT_IS_ALREADY_ELT	Initial Validation
6030	LIEN_FORMAT_IS_ALREADY_NON-ELT	Initial Validation
6031	CANNOT_RELEASE_A_NON-ELT LIEN	Initial Validation
6032	INCORRECT_TITLE_NUMBER_FOR_VIN/HIN	Initial Validation
6033	ISSUE_DATE_DOES_NOT_MATCH_ISSUE_DATE_ON_BMV_TITLE_RECORD	Initial Validation
6034	TITLE_STATUS_IS_NOT_ACTIVE	Initial Validation
6035	TITLE_DOES_NOT_HAVE_A_COMPLETE_STATUS	Initial Validation
6040	UNABLE_TO_PROCESS_A_TITLE_WITH_A_TITLE_SUB_STATUS_TYPE	Initial Validation
6041	CANNOT_CONVERT_TITLE_LIENHOLDER_DOES_NOT_MATCH_BMV_RECORDS	Initial Validation

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6042	SPEED_TITLE_IS_INVALID	Initial Validation
6043	TITLE_IS_NOT_ELECTRONIC	Initial Validation
6044	LIENHOLDER_COUNTRY_MISSING_OR_INVALID	Initial Validation
6046	INVALID_DATA_VEHICLE_AND_WATERCRAFT_MISSING	With Error Message
6047	TITLETYPE_MISSING_OR_INVALID	With Error Message
6048	INVALID_DATA_TITLEDAMAGEBRANDNAME	With Error Message
6049	TITLEBRANDCODENAME_MISSING_OR_INVALID	With Error Message
6050	ODOMETERBRANDNAME_MISSING_OR_INVALID	With Error Message
6051	FUELTYPE_NAME_MISSING_OR_INVALID	With Error Message
6052	HULLMATERIAL_MISSING_OR_INVALID	With Error Message
6053	TIMESTAMP_MISSING	With Error Message
6054	LEASED_MISSING	With Error Message
6055	ODOMETERREADING_MISSING	With Error Message
6056	FORMERSTATEOFTITLE_MISSING	With Error Message
6057	FORMERTITLENUMBER_MISSING	With Error Message
6058	PURCHASEDATE_MISSING	With Error Message
6059	MFGBUYBACK_MISSING	With Error Message
6060	VEHICLEMAKECODENAME_MISSING	With Error Message
6061	VEHICLEYEAR_MISSING	With Error Message
6062	VEHICLEBODYTYPECODE_MISSING	With Error Message
6063	VEHICLEMODELCODENAME_MISSING	With Error Message
6064	WEIGHTPROPULSION_MISSING	With Error Message
6065	BODYBOATTYPE_MISSING	With Error Message
6066	MODELBOATLENGTH_MISSING	With Error Message
6067	CUSTOMERNAME_MISSING	With Error Message
6068	CUSTOMERADDRESS1_MISSING	With Error Message
6069	CUSTOMERADDRESS2_MISSING	With Error Message
6070	CUSTOMERCITY_MISSING	With Error Message
6071	CUSTOMERSTATECODE_MISSING	With Error Message
6072	CUSTOMERZIPCODE_MISSING	With Error Message
6073	CUSTOMERCOUNTRYNAME_MISSING	With Error Message
6074	CUSTOMERORDER_MISSING	With Error Message
6075	LIENHOLDERNAME_MISSING_OR_INVALID	With Error Message
6076	LIENHOLDER_STATE_MISSING_OR_INVALID	With Error Message
6077	LIENHOLDERORDER_MISSING	With Error Message

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2.1.1.4 API Field Lengths, Data Types and Table Values

2.1.1.4.1 API Field Lengths and Data Types

The table below includes all the fields that are used in the various API transactions previously reviewed in this document.

Field Description	Length	Format	Data Type	Table Name/Column Name
ApplicationDate		ISO-8601 format "2022-05-01T00:00:00"	Date	TITLE_LIEN_HOLDER/Application Date
BoatBodyType	255	Table provided 2.1.1.4.2	Varchar	WATERCRAFT_TYPE_CODE/ CODE_NAME
BusinessErrorCode	50	If there are no BusinessErrors, the value of Business Errors should be null.	Varchar	ELT_TRANSACTION_LOG/ BUSINESS_ERROR_CODE
BusinessErrorDescription	200	See 2.1.1.3	varchar	ELT_TRANSACTION_LOG/ BUSINESS_ERROR_DESCRIPTION
CustomerAddress1	50	Note: Currently only 20 characters will print on the Title. The BMV will be expanded to 35 characters.	Varchar	CUSTOMER_ADDRESS/ADDRESS_LINE_ 1
CustomerAddress2	50	Note: Currently only 20 characters will print on the Title. The BMV will be expanded to 35 characters.	Varchar	CUSTOMER_ADDRESS/ ADDRESS_LINE_2
CustomerCity	20		varchar	CUSTOMER_ADDRESS/CITY
CustomerCountryName	240		Varchar	COUNTRY/ COUNTRY_NAME
Customer Name	2048		Varchar	Vwcustomer/Customer_Name
CustomerOrder	1		Int	*
CustomerStateCode	2		Varchar	STATE/ STATE_NAME
CustomerZipCode	10		Varchar	CUSTOMER_ADDRESS / POSTAL_CODE
FormerStateofTitle	2		Varchar	STATE/ STATE_CODE, COUNTRY/ COUNTRY_NAME
FormerTitleNumber	100		Varchar	FORMER_TITLE/ TITLE_NUMBER
FuelTypeName	255	Table provided 2.1.1.4.2	Varchar	FUEL_TYPE_CODE/ CODE_NAME
HullMaterial	255	Table provided 2.1.1.4.2	Varchar	HULL_MATERIAL_CODE/CODE_NAME
IssueDate		ISO-8601 format "2022-05-01T00:00:00" Used for LN & TC messages	Date	TITLE/ IssuedDate

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IssuedDate		ISO-8601 format "2022-05-01T00:00:00" Used for CE & CP messages	Date	TITLE/ IssuedDate
Leased	1	0 = No, 1 = Yes	char	TITLE/ LEASED_VEHICLE
LienholderAddress1	50	Note: Currently only 20 characters will print on the Title. The BMV will be expanded to 35 characters.	Varchar	LIEN_HOLDER_ADDRESS/ ADDRESS_LINE_1
LienholderAddress2	50	Note: Currently only 20 characters will print on the Title. The BMV will be expanded to 35 characters.	Varchar	LIEN_HOLDER_ADDRESS/ ADDRESS_LINE_2
LienholderCity	20		Varchar	LIEN_HOLDER_ADDRESS/ CITY
LienholderCountry	240	Table provided 2.1.1.4.2	Varchar	COUNTRY/ COUNTRY_NAME
LienholderFEIN	9	Include single or double quotes around this string	Char	LIEN_HOLDER/ FEIN
LienholderName	101		Varchar	LIEN_HOLDER_NAME/FIRST_NAME, LIEN_HOLDER_NAME/LAST_NAME, LIEN_HOLDER_NAME/MIDDLE_INITIAL
LienholderOrder	1		Int	TITLE_LIEN_HOLDER /TITLE_LIEN_HOLDER_ORDER
LienholderOrganization	254		Varchar	LIEN_HOLDER_NAME /ORGANIZATION_NAME
LienholderState	2		Varchar	STATE/ STATE_CODE
LienholderSuffix	4	Include single or double quotes around this string	char	LIEN_HOLDER/ SUFFIX
LienholderZipCode	10		Varchar	LIEN_HOLDER_ADDRESS / POSTAL_CODE
LienReleaseDate		ISO-8601 format "2022-05-01T00:00:00"	Datetime	TITLE_LIEN_HOLDER / RELEASE_DATE
MailToAddress1	50	Note: Currently only 20 characters will print on the Title. The BMV will be expanded to 35 characters. can only contain A-Z (lower case included), 0-9, Slash (/), pound sign (#)	Varchar	TITLE_MAILING_ADDRESS / ADDRESS_LINE_1
MailToAddress2	50	Note: Currently only 20 characters will print on the Title. The BMV will be expanded to 35 characters.	Varchar	TITLE_MAILING_ADDRESS / ADDRESS_LINE_2
MailToCity	20	can only contain A-Z (lower case included)	Varchar	TITLE_MAILING_ADDRESS / CITY

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Country	240	Table provided 2.1.1.4.2	Varchar	COUNTRY/ COUNTRY_NAME
MailToState	2	Table provided 2.1.1.4.2	Varchar	STATE/ STATE_CODE
MailToPostalCode	5	for 5 - 99999, for 5-4 digits - 99999-9999	Varchar	TITLE_MAILING_ADDRESS / POSTAL_CODE
MakeCodeName	255	Table provided 2.1.1.4.2	Varchar	VEHICLE_MAKE / CODE_NAME
MFGBuyback	1		Char	TITLE/ MANUFACTURER_BUYBACK
ModelBoatLength	2		numeric	VEHICLE/LENGTH_FEET
ModelCodeName	255	Table provided 2.1.1.4.2	Varchar	VEHICLE_MODEL / CODE_NAME
MultipleOwnerName	35		Varchar	VEHICLE_OWNERSHIP / TITLE_MULTIPLE_OWNER_NAME
OdometerBrandName	255	Table provided 2.1.1.4.2	Varchar	ODOMETER_BRAND_CODE / CODE_NAME
OdometerReading	20		numeric	TITLE / ODOMETER_READING
PrintDate		ISO-8601 format "2022-05-01T00:00:00"	datetime	TITLE/ PrintedDate
PurchaseDate		ISO-8601 format "2022-05-01T00:00:00"	datetime	TITLE_PURCHASE_INFORMATION / PURCHASE_DATE
ServiceProviderUID			int	LIEN_HOLDER/ ELT_SERVICE_PROVIDER_UID
Timestamp		YYYY-MM-DDTHH:MM:SS.N	Datetime 2	ELT_TRANSACTION_LOG / TIME_STAMP
TitleBrandCodeName	255	Table provided 2.1.1.4.2	Varchar	TITLE_BRAND_CODE / CODE_NAME
TitleDamageBrandName	255	Table provided 2.1.1.4.2	Varchar	TITLE_DAMAGE_BRAND_CODE/CODE_NAME
TitleLienholderUID			int	TITLE_LIEN_HOLDER/ TITLE_LIEN_HOLDER_UID
TitleNumber	15		Varchar	TITLE/ TITLE_NUMBER
TitleType	20	Table provided 2.1.1.4.2	Varchar	vw_CompletedTransactions/ TRANS_TYPE_CODE_HOOK
TraceID	100		Varchar	ELT_TRANSACTION_LOG /TRACE_ID
TransactionCode	200	See 2.1.1 (Inbound /outbound messages)	Varchar	ELT_TRANSACTION_LOG / TRANSACTION_CODE
TransactionDescription	200	See 2.1.1 (Inbound /outbound messages)	Varchar	ELT_TRANSACTION_LOG / TRANSACTION_DESCRIPTION
TransactionStatus	10	Null, "Failure", or "Success"	Varchar	ELT_TRANSACTION_LOG / TRANSACTION_STATUS
VehicleBodyTypeCode	255	Table provided 2.1.1.4.2	Varchar	VEHICLE_BODY_STYLE_CODE/ CODE_NAME
VehicleMakeCodeName	255	Table provided 2.1.1.4.2	Varchar	VEHICLE_MAKE/ CODE_NAME
VehicleModelCodeName	255	Table provided 2.1.1.4.2	Varchar	VEHICLE_MODEL/ CODE_NAME

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VehicleYear	4	YYYY	int	VEHICLE/ VEHICLE_YEAR
VIN_HIN	30		Varchar	VEHICLE/ IDENTIFICATION_NUMBER
WeightPropulsion	255	Table provided 2.1.1.4.2	Varchar	PROPULSION_TYPE_CODE/CODE_NAME

2.1.1.4.2 Table Values

This section provides table references for commonly used API fields.

Odometer Brand Codes (OdometerBrandName)
Actual Reading
Exceeds Mechanical Limits
Exempt
Not Actual Reading

Title Brand Codes (TitleBrandCodeName)
Clear
Low Speed Vehicle
Rebuilt
Reconstructed
Replica
Salvage
Specialty Constructed Vehicle

Title Damage Brand Codes (TitleDamageBrandNames)
Flood

Title Type (TitleType)
Normal
Amend
Duplicate
Blank/null
Salvage

Hull Material (HullMaterial)
Aluminum
Fiberglass
Other
Plastic
Steel
Wood

Fuel Type (FuelTypeName)
Diesel
Gasoline

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Other

Boat Body Type		
AIRBOAT	HOVERCRAFT	PONTOON
AMPHIBIOUS	HYDROFOIL	RUNABOUT
COMMERCIAL	HYDROPLANE	SAILBOAT
CRUISER	JET-SKI	UTILITY
HOUSEBOAT	OTHER	YACHT

Vehicle Body Style Codes		
2 DOOR WAGON/SPORT UTILITY	FORWARD CONTROL	ROAD/TRAIL
2 PASSENGER NEV	GARBAGE OR REFUSE	ROADSTER
3 DOOR EXTENDED CAB PICKUP	GLIDERS	ROTARY SWEEPER
3 DOOR EXTENDED CAB/CHASSIS	GRAIN	RUNABOUT 3 DOOR
4 DOOR EXTENDED CAB PICKUP	HARDTOP	RV- Motorhome
4 DOOR EXTENDED CAB/CHASIS	HARDTOP 2 DOOR	RV-Travel Trailer
4 DOOR WAGON	HARDTOP 4 DOOR	RV-Truck Camper
4 PASSENGER NEV	HATCHBACK	SEDAN
6 PASSENGER NEV	HATCHBACK 2 DOOR	SEDAN 2 DOOR
8 PASSENGER SPORT VAN	HACHBACK 4 DOOR	SEDAN 4 DOOR
AMBULANCE	HEARSE	SEDAN 5 DOOR
ARMORED TRUCK	HOPPER	SHORT-BACK NEV
AT	INCOMPLETE CHASSIS	SNOWMOBILE
AUTO CARRIER	INCOMPLETE EXTENDED VAN	SPECIAL MACHINERY
BUS	INCOMPLETE PASSENGER	SPORT COUPE
CAB & CHASSIS	LIFTBACK	SPORT HATCHBACK
CARGO CUTAWAY	LIFTBACK 3 DOOR	SPORT PICKUP
Cargo truck	LIFTBACK 5 DOOR	SPORT VAN
CARGO VAN	LIMOSINE	STAKE OR RACK
CHASSIS & CAB	LOGGER	STATION WAGON
CLUB CAB PICKUP	MAXI VAN	STEP VAN
CLUB CHASSIS	MAXI WAGON	SUBURBAN & CARRY ALL
CONCRETE OR TRANSIT MIXER	MINI BIKE	SUPER CAB PICKUP
CONVENTIONAL CAB	MINI CYCLE	TANDEM
CONVERTIBLE	MINI MOTO CROSS	TANK
COUPE	MINI ROAD/TRAIL	TILT CAB
COUPE 3 DOOR	MINI TRUCK	TILT TANDEM

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COUPE 4 DOOR	MOBILE HOME	TOW TRUCK WRECKER
CRANE	MOPED	TRACTOR TRUCK (DIESEL)
CREW CHASSIS	MOTO CROSS	TRACTOR TRUCK (GASOLINE)
CREW PICKUP	MOTOR SCOOTER	TRAIL/DIRT
CUSTOMER PICKUP	MOTORIZED CUTAWAY	TRAILER (SEMI)
CUTAWAY	MULTI-PURPOSE	TRAILER (UTILITY)
DIRT	NOTCHBACK	TRAILS
DISPLAY VAN	OFF-ROAD VEHICLE	TRAVELALL
DNR Fire Truck	ONE SEAT	TRUCK
DUMP	PANEL	TWO SEAT
ENDURO	PARCEL DELIVERY	UTILITY
EXTENDED CARGO VAN	PICKUP	VAN
EXTENDED SPORT VAN	PICKUP WITH CAMPER	VAN CAMPER
EXTENDED VAN	PILLARD HARDTOP 2 DOOR	VANETTE
EXTENDED WINDOW VAN	PILLARD HARDTOP 4 DOOR	WAGON 2 DOOR
FARM TRACTOR (FOR FARMING)	RACER	WAGON 4 DOOR
FIRE TRUCK	Refrigerated trailer	WIDE WHEEL WAGON
FORMAL HARDTOP 2 DOOR	ROAD/STREET	WINDOW VAN

Vehicle Make Code Name		
29 SSK	FLEXIBL	ORIENT
33 VICKY	FLEXIBLE	OSCA
44B ANTHEM	FLINT	OSHKOSH
AC	FLXIBLE	OSI
AC AUTOKRAF	FLYBO-EV	OVERLAND
A02	FMC	OWEN
ABARTH	FMT	P CAR/PACKAGE CAR/
ACANAN	FONTANA	PACER
ACG	FOR EXPLORER CARRYALL	PACKARD
ACME	FORD	PAIGE
ACSI	FORD CLUB	PALACE
ACURA	FORD COUPE	PANHARD
ADLER	FORD EXPLORER SPORT TRAC	PANOZ
ADVANCE TECH	FORD REPLICA	PANTERA
AEROMATE	FORD/FRENCH/	PANTHER
AGRI -PLASTICS MFG	FOREST RIVER – PALOMINO	PANZ

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AHEAL	FOREST RIVER, INC	PANZO
AHENS	FORTE	PARCAR
AL HITCH	FOUR SEASON	PARGO
AJC	FOUR WHEEL DRIVE	PASSPORT
ALBANY	FRANKLIN	PATRIOT
ALFA ROMEO	FRAZER	PEACE
ALL STATE	FRAZER NASH	PEERLESS
ALLARD	FRAZIER	PEUGEOT
ALLERGO	FREEWAY	PHANTOM
ALLIED	FREIGHFRHTTLINER	PIERCE ARROW
ALLISON FIBERGLASS MFG	FREIGHTLINER COACHMEN	PILOT
ALPHA	FRHT	PINIFARINA
ALPHA ROMEO	FRISKYSPORT	PINNACLE
ALTA	FRONTENAC	PINZGAUER
ALTRA	FSKR	PIPER
ALVIS	FTEYR PUCH	PJ TRAILER
AM GENERAL	FVC	PLYMOUTH
AMANTE	GAD-ABOUT	PLYMOUTH SUPER DELUXE
AMAZE AND TOW	GALAXIEE	POLAR BY GODFREY MARINE
AMC	GARDNER	POLARIS
AMERICAN BANTAM	GAS MOBILE	PONTIAC
AMERICAN STANDARD	GATBY	PONTIAC STEAMLINER
AMERICAN	GAZ	PORSCHE
AMERICAN AUSTIN	GAZELLE	POWE
AMERICAN GENERAL	GEM	POWELL
AMERICAN GENERAL HUMMER	GENERAL DYNAMICS	POWERSPORT
AMERICAN HAULER	GENERAL MOTORS	PRATT
AMERICAN LAFRANCE	GENERAL MOTORS CORP	PREMIER
AMERICAN MOTORS	GENESIS	PREVOST
AMERICAN MOTORS CORPORATION	GEO	PRINCE MOTORS
AMERICAN MTRF	GEORGETOWN	PRINCESS
AMERICAN SPORTWORKS LLC	GHI	PT24T/13 BJ
AMERICAN UNDERSLUNG	GIANNINI	PTT
AMERICAR	GIL	PUCH
AMG	GLACIER	PULSE
AMPHICAR	GLAS	PUMA

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AMX	GLASSIC	QIPA
ANDERSON	GLENDALE	QUANTUM LEAP
ANGLIA/ENGLISH FORD/	GLOBAL ELECTRIC MOBILE	QVALE
ANTIQUE & COLLECTIBLE AUTOS INC	GMC	RAIL BUGGY
APOLLO	GO 4	RALTON
APPERSON	GOGGOMOBILE	RAM
APPERSON TOURISTER	GOKA	RAMBLER
APPOLLO	GOLIATH	RAMBLER AMERICAN
APRI	GORDINI	RANGE ROVER
APS	GORDON KEEBLE	RAUCH LANG
ARABELLA/LLOYD/	GOTFREDSON	READING VAN BODY
ARBOC	GRADALL	REAMES
ARTIC CAT	GRAHAM	RECONDITIONED
ARGO	GRAHAM PAIGE	RECONSTRUCTE
ARGOSY	GRAMM	RECREATION IND INC
ARIE	GRAMM BERSTEIN	REGAL T-BIRD
ARIEL	GRAND DESIGN	RELIABLE DAYTON
ARMANDA POWERBOATS	GRANT	RELIABLE DAYTONA
ARMSTRONG SIDDELEY	GREMLIN	RELIANT
ARNOLT	GRIFFIN	RENAULT
ARNOLT-BRISTOL	GRIFFITH	REO
ARO HUNTER	GRUMAN	REPLIA/1910/FORD
AROA	GTD	REPLICA
ARONDE/SIMCA	GTO	REPLICA 1966 COBRA
ARROW EXPRESS	GUIDESMAN	REPLICA BUCKBOARD CAR
ASA	GLUIDER	REPLICA FACTORY FIVE
ASCOT	GULFSTEAM	REPLICAR
ASPT	GULFSTREAM MINI	REVERE
ASSEMBLED	HAILI ICEBEAR	RHINO
ASTON MARTIN	HALL-SCOTT	RIDDLE
ASUMA	HAMERHEAD	RILEY
ATOMIC ELECTRIC VEHICLE	HANSA	ROADSTER
ATTERBURY	HAYNES	ROADTREK
AUBURN	HBREC	ROAMER
AUDI	HEINKEL	ROCHET SCHNEIDER
AURORA	HENDRICKSON	ROCKNE

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AUSTIN	HENNEY PACKARD	ROCKWOOD GEO PRO
AUSTIN COOPER	HENRY J	ROCKWOOD LITE WEIGHT TRAILER
AUSTIN COOPER S	HERITAGE (KIT CAR)	ROKETA
AUSTIN HEALEY	HI SUN	ROLLIN
AUSTIN HEALY	HIGH JUMPER	ROLLS BENTLEY
AUSTIN MINI	HILLMAN	ROLLS ROYCE
AUSTIN OF ENGLAND	HIS	ROMAN WHEELS
AUSTIN ROVER	HISPANA SUIZA	ROMETSCH
AUTO	HISPONA SUIZA	RONAL
AUTO BIANCHI	HOBIE CAT COMPANY	RON'S TRAILERS
AUTO CAR	HOLDEN	ROOSEVELT
AUTO DELTA	HOLLYWOOD	ROOTES
AUTO MECCA	HOLSMAN	ROSEMARY
AUTO UNION	HOMEMADE	ROSSION
AUTOCAR	HONDA	ROTUS
AUTOETTE	HOOSIER	ROUCHLAND
AUTOKRAFT	HORNET	ROUGH TERRAIN
AVAILABLE	HOVERCRAFT	ROVER
AVANTI	HPB	ROVIN
AVENGER	GRG	RS
AZTEC	GRUBETZ	RUF
AZTEX	GUDSON	RUMELY
B & B ANUFACTURING	HUMBER	RUSSIAN SCOUT
B F MEYERS	HUMDINGER	RUXTON
BACKDRAFT	HUMMER	SAAB
BAD BOY BTV	HUMPMOBILE	SABARI
BAJA	HUP MOBILE	SABRA
BAKER ELECTRIC	HUBMOBILE	SAFARI KAR
BALKO	HURRICANE	SAN FOX
BANDI	HUWAIN	SANDRAIL
BANTAM	HUZHON DAIXI ZHENVA	SANFORD
BARRIER	HYDROFORCE	SATURN
BARRINGTON	HYUNDAI	SATURN INFLATABLE
BAS	ILLUSION BOATS INC	SAXON
BASIL ROAD	IMPERIAL	SCAMP
BATEMAN	INDIANA	SCAMPER

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BATRODZ	INFINITI	SCAT HOOVER CRAFT
BAY BRIDGE	INNOCENTI	SCHACHT/LEBLONDE SCH/
BBEN	INTERMECANICA	SCHULT
BEALL	INTERMECCANICA	SCION
BEARCAT	INTERNATIONAL	SCORPION
BEARDMORE	INTERNATIONAL HARVESTER	SCRIPPS BOOTH
BECK	INTERSTATE	SD PITTMANNIC
BENTLEY	INVADER	SEA CORP
BERKELEY	ISETTA	SEA RAY BOATS INC
BERKLEY	ISO	SEAMAX
BERNARDI	ISOTTA FRASCHINI	SEARE
BARRIAN CONV	ISU	SEARS
BERONE	ISUZU	SEBRING
BETZ	ITALIA	SEBRING VANGUARD
BIANCHINA	IZH	SEIYING
BIANCO	J.B. ENTERPRISE	SERIES II /ELEC CAR
BIEDERMAN	JACKSON	SERRO
BIRKIN	JAGUARJANUS/ZUNDAPP/	SFD
BISON	JARED00	SHASCA
BITTER	JAVELIN	SHASTA
BIZZARRINI	JEEP	SHAY
BKW	JEEP (1970 – 1988)	SHAY RERODUCTION
BLACKHAWK	JEEP (Post 1988)	SHEBLY COBRA
BLAKELY	JEEP 1969	SHELBY
BLISS	JEEP/AM MOTORS/	SHELBY AMERICAN
BLU	JENSEN	SHELBY COBRA
BLUE BIRD	JENSEN HEALEY	SHELBY-AC-COBRA
BLUE CAR	JENSEN HEALLY	SHOP
BLUECAR SAS	JETMOBILE	SHORE LAND'R TRAILER
BMW	JEWEL (1906)	SHORES
BOLLORE	JEWETT	SIAF
BOMBARDIER	JOHN DEERE	SIATA
BOND MINICAR	JOHNSON	SILVER EAGLE
BORGWARD	JON	SILVERLINE INC
BORGWARD/HANSA	JORDAN	SIMCA
BOYSEN	JOSHUA TRAILER	SIMMER

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BRADFIELD	JOWETT	SIMPLEX
BRADLEY GT	JOY TIME	SINGER
BRADY	JOYNER	SIZAIR ET NAUDIN
BRAUN	K A P CUSTOMS	SKIDOO (AT)
BREWSTER	D Z COYOTE	SKORPION
BRICKLIN	K&O	SMART
BRIDGEVILLE	KAISE	SMARTCAR
BRISTOL	KAISER	SMARTLEE
BRITISH COACH WORKS	KAISER EEP CORPORATION	SOUTH BEND
BRITISH LELAND	KANDI	SOUTH CAROLINA HOMEMADE BOATS
BROCKWAY	KAWASKI	SOUTHBAY PONTTON
BRUSH	KCWI	SOUTHERN COACH
BSA	KELLISON	SOUTHWIND
BUGATTI	KELLY SPRINGFIELD	SPARTAN
BUICK	KELMARK	SPCNS
C V SPECIAL	KESINGON	SPCON
CABRIOLET	KEWET	SPECIAL
CADILLAC	KFC	SPECIAL PURPOSE AUTOMOBILE
CAIC	KHARMANN GHIA	SPECIAL T
CAMELOT	KIA	SPECIALY CONTRUCTED
CANTEBERRY	KIBLINGER	SPECIALTY CONTRUCTED
CANTELL	KING	SPECO
CAPRI/SP CP/MERCURY/	KING GOLFCAR	SPEEDSTER
CAPSTONE COMERCE CO	KING MIDGET	SPEN
CAR NATIONAL	KING STEAM CAR	SPIRIT
CARBO TECH	KIRKHAM ROADSTER	SPRINGDALE
CARTER	KIRSCH	SPWL
CASCO	KISSEL	SS CARS LIMITED
CASE	KIT	SSI
CASITA	KIT CORVETTE	SSW-EXPREME
CATERHAM	KIT ROADSTER	STADARD-TRIUMPH
CENNTENNIAL	KITV	STANLEY STEAMER
CHALLENGER	KJC	STAR
CHAMONIX	KNOX	STARCRAFT
CHANDLER	KOUGAR	STARCRAFT ALL STAR
CHANGZHOU ZHONGMAO	KOUNTRY COMFORT	STEALTH

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CHTEAU	KOUNTRY STAR	STEARNS
CHE	KROFT	STERLING
CHE IMPALA	KRYSTAL (SPVA)	STEVENS
CHE MONTE CARLO	KTM	STEWARD
CHECKER	KTMEX	STEY
CHELSEA	KUBOTA	STEYR PUCH
CHENOWTH	KURTIS KRAFT	STODDARDDAYTON
CHEROKEE	DVA	STORAGE FRAME
CHEVELL	LA DAWRI	STOUGHTON
CHEVETTE	LA NEF	STRAIGHTLEY
CHEVROLET	LADA	STREET ROD
CHEVY	LAFAY	STUD STREETROD
CHEVY CONCOURSE	LAFAYETTE	STUDA BAKER
CHEVY CORVETTE	LAFER	STUDEBAKER
CHEVY GREENBRIER	LAFORZA	STUTZ
CHEVYY	LAFRANCE	STYLEMASTER
CHITTY CHITY BANG BANG	LAMBERT	SUBABARIAN
CHRYSLER	LAMBORGHINI	SUBARU
CI (CONVERTIBLE)	LANCHESTER	SUMMERLAND
CIMBRIA	LANCIA	SUN VALLEY
CISTALIA	LAND ROVER	SUNBEAM
CICJ5STATION	LANDAU BOAT CO	SUNBEAM ALPINE
CITE CAR	LANES	SUNBEAM IMP
CITI CAR	LANZIA SCORPION	SUNBEAM ROOT
CITROEN	LARRABEE	SUNBEAM TALBOT
CJ5	LASALLE	SUNBEAM TIGER
CLASSIC	LASER	SUNBIRD
CLASSIC CAR TRAILER	LATISHA	SUNBURST
CLASSIC ROADSTER	LAURIN & KLEMENT	SUNDOWNER
CLASSIC T	LAY	SUNSET PARK & RV
CLASSIC VICKY	LE REVE	SUNVIEW
CLEARSPRING CONVERSION	LEADER	SUPERFORMANCE
CLEMENT	LEATA	SUPERIO
CLENET	LECTRIC	SUPERIOR
CLINTON	LEGEND	SUPREME
CLUB	LELAND	SURRY

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CLUB CAR	LEMANS	SUZ
CLYDESDALE	LESLIE SPECIAL	SUZUKI
COBRA	LEWISLEXINGTON	T BIRD
COLE	LEXUS	TALBOT
COLEMAN	LEYLAND	TATRA
COLUMBIA	LIFELINE EMERGENCY VEHICLE	TATUM
COMET	LIGHTING RACE CAR	TAUNUS
COMMER	LINCOLN	TAYLOR DUNN
COMMERCE	LINCOLN PARK	TCHAIKA
COMMODORE	LLYOYD	TD
COMMUTER	LNDR	TEMPLAR
COMPTANK	LOCAL MOTORS	TERRAPLANE
COMPUTER DESIGNED	LOCOMOBILE	TERRY CAMPER
COMUTA	LOHR	TESLA
COMUTA CAR	LONDON MOTORS	THAMES
CONCORD	LONDON TAXI	THINK
CONTEMPARY	LONDON TAXI INT	THOMAS FLYER
CONTINENTIAL	LONE STAR	THORNE
CONVENTIONAL CARGO	LOOK	THOROUGHbred COACH BUILDER
COOPER	LORO	THOROUGHbred HOUSEBOATS LLC
CORBITT	LO-TRAILER	THROUGHbred
CORD	LOTUS	TIFFANY
CORSAIR	LOW TILT	TIGE
CORTINE	LOZIER	TIGER
CORVAIR	LTD	TIMBERLINE RANGE CAMPS LLC
COUGAR	LUAZ	TITAN
COV	LUFKIN	TITANIUM
COYOTE	MA	TJ POWER SPORTS
CRANE CARRIER	M G	TLS
CREIGHTON	MS	TOMBERLIN
CROFTON	M.E.T	TOTAL PERFORMANCE
CROSLEY	MACK	TOTAL REPLICIA
CROW ELK	MADZA	TOURING
CROWN LINE	MAG INTERNATIONAL	TOW BANDIT
CUMMINGHAM	MAICO	TOYNE

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CUPELLE	MANBULA	TOYOTA
CUSTOM	MANCO	TOYOTA/TOYOPET
CUSTOM BUILT	MANDLAY	TRABANT
CUSTOM DESIGNED	MANNUPP	TRADEWINDS
CUSTOM HAUL	MANTA	TRAH
CUTLAS SUMPREME	MARCH	TRAIL & SPORT
CUVE	MARION	TRAIL MOBILE
D & L MARKETING CO	MARLIN	TRAILERS USA INC
D18	MARMON	TRAILSTAR
DAEWOO	MARQUETTE	TRAKKER
DAF	MASERATI	TRANS TWO
DAIHATSU	MASON	TRAVEL TRAILER
DAIMLER	MASSIMO	TRAVELMASTER
DANA	MASTER HOUSE	TREMBLAY
DATSUN	MATADOR COUPE	TRI VAN
DAVIS	MATRA	TRITON
DAVVIKI	MAXI TAXI	TRIUMPH
DAYTONA MIGI	MAXIM	TRUIMPH CAR
DAZON	MAXTON	TRN
DE DION BOUTON	MAXWELL	T- ROADSTER
DE TOMASO	MAYBACH	TROJAN
DEESOTO	MAYTAG	TROPICAL CAT
DEFENDER	MAZDA	TROY
DEFIANCE	MCFARLAND	TR-TEC (PTY) LTD
DEL	MCGILL	TUCKER
DEL CABRIOLET	MCINTYRE	TUK TUK
DEL-RAY	MCK	TUNDA
DELAGE	MCLAREN	TURIN
DELAHAYE	MCLAUGHLIN TOURING	TURNER
DELOREAN	MCLEAN	TVR
DELOREN	MCLOUGHLIN	TWENTY 9 SSK
DELPHINUS BOARS	MEADOWS	UBILT
DELUXE	MEDIX	UBIOT
DEMERS	MEL TRAIL	UBLT
DESERTER	MELBURN	ULTIMA
DESOTO	MENGDELI	ULTRALITE

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DETOMASO	MERCEDES	UMC
DETOMASO GIHA	MERCEDES BENZ	UNIQUE MOTOR CARS
DETROIT	MERCEDES BENZ COMMERCIAL	UNITED MANUFACTURING GROUP
DEUTSCH BONNET	MERCER	UNIVERSAL
DEVAUX	EMRCURY	UNKNOWN
DEVIN	MERKUR	URBA CAR
DEWITT	MERRYOLDS	UTILMASTER
DF KIT CAR	MESSERSCHMIDT	UUU
DF MOTO	MESSERSCHMITT	VACATION VILLA
DFP	METEOR	VALIANT
DIAMOND	METRO	VALIENTE
DIANA	METROPOLITAN	VANDEN PLAS
IIAVA	METZ	VANGUARD
DIVCO	MG	VANTAGE
DIXON	MG ROADSTER	VAUXHALL
DODGE	MGA	VAZ
DODGE BROTHERS	MGB	VEGA
DODGE WAG	MGB ROADSTER	VELIE
DORETTI	MGKT	VELOREX
DORT	MGTD	VESPA
DOUGLAS	MIATA	VINTAGE AUTO
DOVAL	MIDGET	VINTAGE SPYDER
DOVER	MIER	VOG
DOWNS	MIGI	VOLGA
DUAGA	MIII	VOLKSWAGEN
DUAL GHIA	MILBURN	VOLVO
DUCHESS	MILES AUTOMOTIVE GROUP LIMITED	VOLVO VN
DUESENBERG	MINERVA	VORTEX
DUESENBERG II	MINI	VPG
DUISENBERG	MINI 1000	WASCHUETTS
DUKE	MINI COOPER	WALBASH
DUNE BUGGY	MINI MARK	WANDERER
DUPLEX	MINI WHEEL	WARD LAFRANCE
DUPONT	MITCHELL	WARREN DETROITER
DURANT	MITSUBISHI	WARTBURG
DURUXX	MK COACH COMPANY	WAVERLY

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DUSER	MLARP	WAY
DUSTER	MNNI	WAYNE WORKS
DUTCHMAN	MOBILE TRAILER	WCM/S2K
DUTTON	MODEL A RPROD	WELD=CRAFT
DUTTON PHAETON	MODEL T	WEST 2 PLACE SPYDER
EAGLE	MOEN	WESTCHESTER CORD
ECONOMY	MOMENTUM	WESTCOAST COBRA
ECSTASY	MONSTER	WESTCOTT
EDEN	MONTE CARLO	WESTERN STAR
EDSEL	MONTEVERDI	WESTFIELD
ELCAR	MOON	WHEEGO
ELE	MORETTI	WHIPPET
ELECTRIC VEHICLE	MORGAN	WHITE MOTOR COMPANY
ELECTRICAR	MORGAN AERO	WIL
ELEGANT	MORGAN AERO 8	WILLARD
ELGIN	MORGAN PASS	WILLIES KNIGHT
ELVA	MORGANSPORT	WILLY
EFM	MORRIS	WILLYS
EMPIRE	MORRIS GARAGE	WILLYS KNIGHT
EMPIRE CARGO TRAILERS	MORRIS MINOR	WILLYS OVERLAND
ENCORE	MOSKVICH	WILLYS OVERLAND JEEPSTER
ENERGICA	MOTOR COACH INDUSTRIES	WILLYS-KNIGHT
ENGLISH FORD	MOUTAINTOP	WINCONSIN
ENGLISH FORD ANGLIA	MOVT	WINDSOR
ERSKINE	MUNTZ	WINNEBAGO ERA
ESHELMAN	MUSTANG BOSS	WINSTON
ESSEX	MUSTANG COUPE	WINTON
EUREKA	MV AUGUSTA	WISCONSIN
EUROPA MOTOR CAR	MV1	WISE
EVA	MVZ/FOREIGN	WOLSELEY
EVERETT	N-ALEX	WOLVERINE
EVERETT MORRISON MTRCAR	NAP CAR	WOODILL WILDFIRE
EXCALIBUR	NASH	WOODS-MOBILETTE
EXOMOTIVE	NASH HEALEY	WORKHORSE CUSTOMS
EZRIDE	NATIONAL	WRANGLER
FACEL VEGA	NATIONAL KISSEL	XTREME TRAIL

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FACTORY FIVE	NATIONAL MOTOR CAR	XY
FACTORY FIVE RACING	NEWSOME	YAMAHA
FAGEOL	NISSAN	YARE
FAIRTHORPE	NMN	YUGO
FALCON	NOBLE	YUNNENG
FARGO	NORTHERN	Z1 LITE
FEDERAL	NORTHWESTERN	ZEGATO
FERRARI	NSU	ZELLI
FIAT	NSU PRINZ	ZENN
FIBER FAB	OAKLAND	ZENOS
FIBER FAB MIGI	OLDSMOBLE	ZHEGIANG XINGYUE
FINA	OLES	ZIM
FIRESTONE ROADSTER	OLYMPIC	ZIMMER
FISHER	OLYMPUS	ZIMMERMAN AUTOMOBILES
FIKER	OMEGA GT	ZONE ELECTRIC CAR
FLANDERS	OMORT	ZXYV
FLEETWOOD PROWLER	OPEN	
FLEX	OREION MOTORS	

Vehicle Model Code Name	
0002PMH00 ATV OUTLANDER XT 650 1G 21	EAGLE BF
031W CHATEAU	ECONOLINE350
1 AXLE	ELITES
10	ENDURA CL-C-MH
110-I	F15
116	FKSS
16'	FLAGSTAFF LITE WEIGHT TRAILERS FLT231KSS
16' UTILITY STANDARD 2AXLE	FLAGSTAFF LITE WEIGHT TRAILERS FLT25DKS
16S	FT975
17' ALUMINUM AIRBOAT	G1500 EXPRESS CARGO
170 MALIBU	HEAT ASSAULT 500
1708T	HIDOUT 24BHSWE
18' CAR TRAILER	HODAKA
1902 LTD	HW276
2000B	INTERATIONAL

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2014 PARKER LITTLE PUP	LAREDO LA274RB14
22'	LAREDO TRAVEL TRAILER LA333BH17 3-SLIDE OUTS
220 CLIPPER	LAT11—B-NP
229 TB TRAVEL STAR EXP	LE211L-18
245RLS JAY FLIGHT SLX TT	LITTLE GUY 5 WIDE PLATFORM
268DA0675	LM500 GREEN
26TB	M35Y
2ER	MTH
3010	MV-1
30200312	MV-50QV-9
31DS GREYHAWK CLASS C	N69
31E	NITO Z19 SPORT
3201RB	PACX8516TA2
35	PP2400BH17
3550 TSL	PRO V16
51-7-T-241RB-123194	PS40
5614	PT1325T
57-6-T-E825BH-32431	PW14-13
5614	R.PONDO-BO-TOWABLE
57-6T-E825BH-32431	R13H76AG
60 FOOT MOBILE HOME	RB 2
6700	RENEGADE 40VBH
67B	RN68
7014	ROBALO 160
717STVTAR6	ROCKWOOD 180 MINI LITE
7516SPTDLX	SA32
770	SABRE RETS 28
8CWS POP UP	SALEM 28FLLSS
921G ZBAR T4 FINAL	SALEM LAMINATED TOWABLES SBF370BL
A04CH59AJ	SALEM TOWABLES SMT180RT
ACKT26L	SEA TURTLE
ALTO 1713	SELECT 450501
ARIAL DEV	SHASTA PHOENIX FIFTH WHEEL SPF30BH
ASTRONAUTIC	SKYLINE
AU8245A2	SMT4
AUTO RICKSHAW	SPRING RIDE HOPPER TRAILER

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AVENGER TRAVEL TRAILER AVT26BBS-61	SPRINDALE SM2960BH18
BARRA	SPRINTER FIFTH WHEEL TRAILER-26 FWRL 2-SLIDE OUT.30FT3IN
BIGHORN 397ORD	SPRINTER ST266RBS14
BILTRITE	SPRINTER ST269FWRLS14
BLSH-8.512TA35	SPRINTER TRAVEL TRAILER 333FKS 37FT 3 SLIDE OUTS
BLSH-8.524TA52	ST610
BLUEBIRD	ST80TD
BOAT KIT	ST81201T-B-140
BT CRUISER 29 FT	STR10218TA-100RTDLP
C21	SUNCRUISER
CADET	SWIVEL
CARGO MATE GAEL G8.422TTA4	T4DRSOJDR
CAT22FB	T800B
CAT27BHS	TP810SA1
CATALINA CAT 273BH	TR33-69/90090053
CATALINA COACHMAN CATALINA ACAT293QBCKLE	TRAIL
CHEROKEE CCKT29VT	TRAILERS
CM15BHS15	TRIMCRAFT
CN122D	UNKNOWN
COACHMEN FREEDOM EXPRESS FET246RKS	US14 S
COACHMEN FREEDOM EXPRESS TRAVEL TRAILER FET19RKS 1 SLIDE OUT	UT5X10NRY 7K
COUGAR 24SABWE	VALO-150
CT	VOLANTE VL22RB19
CT41	VOLANTE VL25BH19
CUSTOM 24FT	VOLANTE VL28BH19
CUSTOME	VPG
DAYTONA	WD-45
E24-65TTB	WINNEBAGO
E28	

Country
United States of America
Canada
US Territories

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State Code	Description	State Code	Description	State Code	Description
AB	Alberta	ID	Idaho	ND	North Dakota
BC	British Columbia	IL	Illinois	OH	Ohio
MB	Manitoba	IN	Indiana	OK	Oklahoma
NB	New Brunswick	IA	Iowa	OR	Oregon
NT	Northwest Territories	KS	Kansas	PA	Pennsylvania
NS	Nova Scotia	KY	Kentucky	RI	Rhode Island
NU	Nunavut	LA	Louisiana	SC	South Carolina
ON	Ontario	ME	Maine	SD	South Dakota
PE	Prince Edward Island	MD	Maryland	TN	Tennessee
QC	Quebec	MA	Massachusetts	TX	Texas
SK	Saskatchewan	MI	Michigan	UT	Utah
YT	Yukon Territory	MN	Minnesota	VT	Vermont
MX	Mexico	MS	Mississippi	VA	Virginia
AL	Alabama	MO	Missouri	WA	Washington
AZ	Arizona	MT	Montana	WV	West Virginia
CA	California	NE	Nebraska	WI	Wisconsin
CO	Colorado	NV	Nevada	WY	Wyoming
CT	Connecticut	NH	New Hampshire	AS	American Samoa
DE	Delaware	NJ	New Jersey	GU	Guam
DC	District of Columbia	NM	New Mexico	MP	Northern Mariana Islands
FL	Florida	NY	New York	PR	Puerto Rico
GA	Georgia	NC	North Carolina	VI	Virgin Islands
HI	Hawaii				

State values are the standard (2) two-character state code (e.g. IN, PA, etc.). Also included with the State values are the (2) two-character Territory codes for Canada (e.g. BC (British Columbia, ON (Ontario)).

2.1.1.5 Title Change Notification Addendum

Changes to the following fields during an AMEND transaction will trigger a title change notification.

Data field	
Vehicle Type (ex. Truck)	Unit Number

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Watercraft Type	Title Combined Name
VIN/HIN	Owner (add an owner, change an owner name)
Year	Owner Order #
Title Registration Class	Title Brand
Make	Damage Brand
Model	MFG Buyback
Body Style (ex. Sport Utility Vehicle)	Former State of Title
Secondary Body Style (ex. 4W)	Former Title Country
Secondary Vehicle Type (ex. Passenger)	Odometer Brand
Watercraft Use	Odometer reading
Propulsion Type	Lienholder
Horsepower	One Time Mailing Address
Fuel Type	Purchase Date
Hull	Purchase Price
Length Ft	Sales/Use Exemptions
Conversion Vehicle (Yes or No)	Discounts
Color – Primary	Allowance Trade In
Color – Secondary	

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3.0 API Security

The API Services currently run on an AWS Fargate cluster and are exposed via a secure endpoint through MuleSoft. The provided endpoint will be HTTPS encrypted with TLS 1.3.

These services are configured with multiple layers of security:

- Traffic is restricted to the MuleSoft endpoints
- The Fargate cluster does not allow direct external traffic
- MuleSoft validates JWT token authenticity against Azure signatures
- Tokens are scoped with roles; it will control which endpoints the service providers can access
- Application code initiates additional checks that validate the received token, roles, and access request
- Services utilize securely stored secrets for environment related connections
- Service Providers should whitelist the following:

Hosting Setup	UAT	PAR	PROD
APIs Hosted Externally	3.136.175.129	18.217.237.184	3.17.171.151

For obtaining more information about test and production environments, URLs associated to the endpoints and the secret keys, the service providers must use the following point of contact. It should be noted that BMV may expect background checks to be performed on individuals who will have access to their data prior.

Type	Element	Provided By	Contact
ID	CLIENT_ID	State: BMV	Rubeck, Brent BRubeck@bmv.IN.gov
Secret	CLIENT_SECRET	State: BMV	Rubeck, Brent BRubeck@bmv.IN.gov
Endpoint	API URL	State: BMV	Rubeck, Brent BRubeck@bmv.IN.gov
MuleSoft API Key	API_KEY	State: BMV	Rubeck, Brent BRubeck@bmv.IN.gov
IP	Expected Egress IP of Requester	Service Provider	<To be provided by the Service Provider>

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4.0 Assumptions

Below are the design assumptions we have made during the E-Lien project –

- The majority of the API design is to support real-time transactions (except for the bulk conversion of paper to electronic lien which will be performed in batch) between BMV and the service providers
- For Real Time API design, the service provider will operationalize appropriate endpoints (at the start of their onboarding process) that will be invoked for outbound BMV messages