

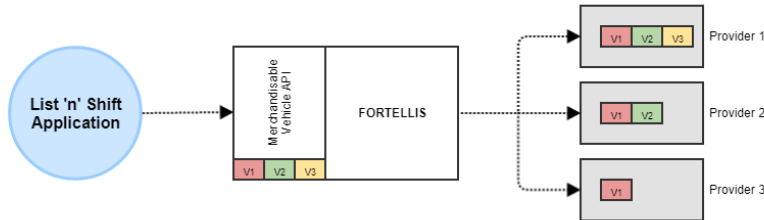
# Merchandisable Vehicle API Blueprint

## Purpose

The API is a web service that intends to allow 3rd party immediate and filtered access to vehicles being sold (or merchandised) by a dealer from providers who have registered in Fortellis. The merchandisable vehicle API exposes the the following functions to allow for searching merchandisable vehicles.

- Vehicle Search
  - By vehicle make, model
  - By vehicle details like number of body type, transmission or drivetrain
  - By geographic location
  - By price or monthly payments
- Get details about the vehicle
  - Images and videos
  - Details of the vehicle like interior and exterior colour
  - Price information
  - Specification
  - Technical info (like economy, number of cylinders, etc)
- Details of the dealer who's selling the vehicle

See the block diagram below. The interface provides uniform access to all merchandisable vehicle data irrespective of the provider system, standardizing details that may vary among them. Users of the web service may be different kinds of consumer- or dealer-facing applications.



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## Basic

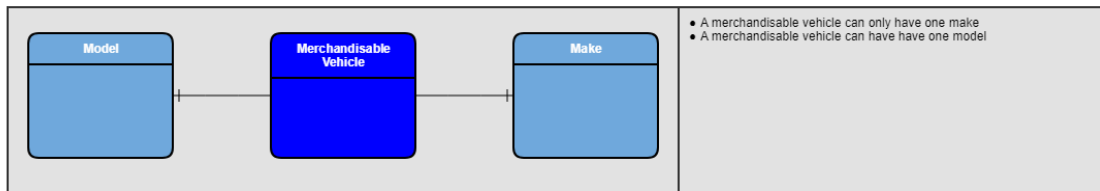
### Workflows

This workflow enables the user to search for merchandised vehicles with the make and model of the vehicle required to hand. Refer the [API Specification](#) for detailed API endpoint descriptions, data dictionary, error codes and status codes.

Workflow	Description	Inputs	Constraints	Resource Actions
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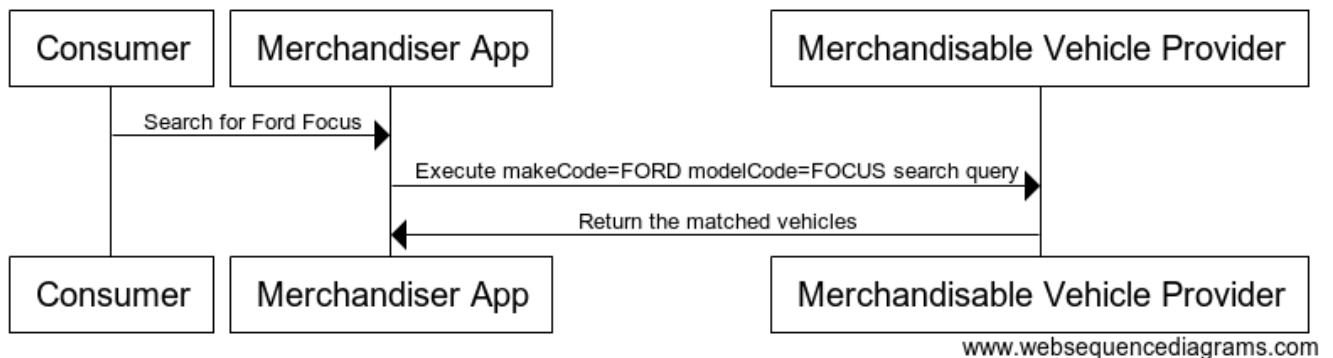
Search for vehicles of a specific make and model	Search for merchandisable vehicles based on various search fields. This will return back the list of vehicles and basic information like price that will allow each to be advertised including 2 pictures and the ID of the given merchandisable vehicle	<ul style="list-style-type: none"> <li>• makeCode</li> <li>• modelCode</li> </ul>	<ul style="list-style-type: none"> <li>• Make must match list of available codes</li> <li>• Model must match list of available codes</li> </ul>	Query Merchandisable Vehicle
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## Entity Relationships



## Sequence Diagram

### Basic Flow



```

    title Basic Flow
    Consumer->>Merchandiser App:Search for Ford Focus
    Merchandiser App->>Merchandisable Vehicle Provider:Execute makeCode=FORD
    modelCode=FOCUS search query
    Merchandisable Vehicle Provider->>Merchandiser App:Return the matched
    vehicles
  
```

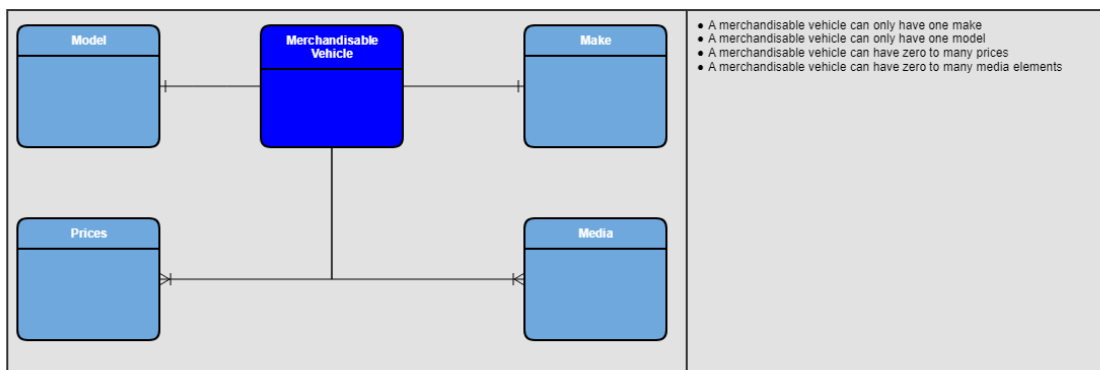
## Simple

## Workflows

This workflow enables a user to search for a required vehicle by make and model, select that vehicle and display all the photographs, videos and prices associated with it. Refer the [API specification](#) for detailed API endpoint descriptions, data dictionary, error codes and status codes.

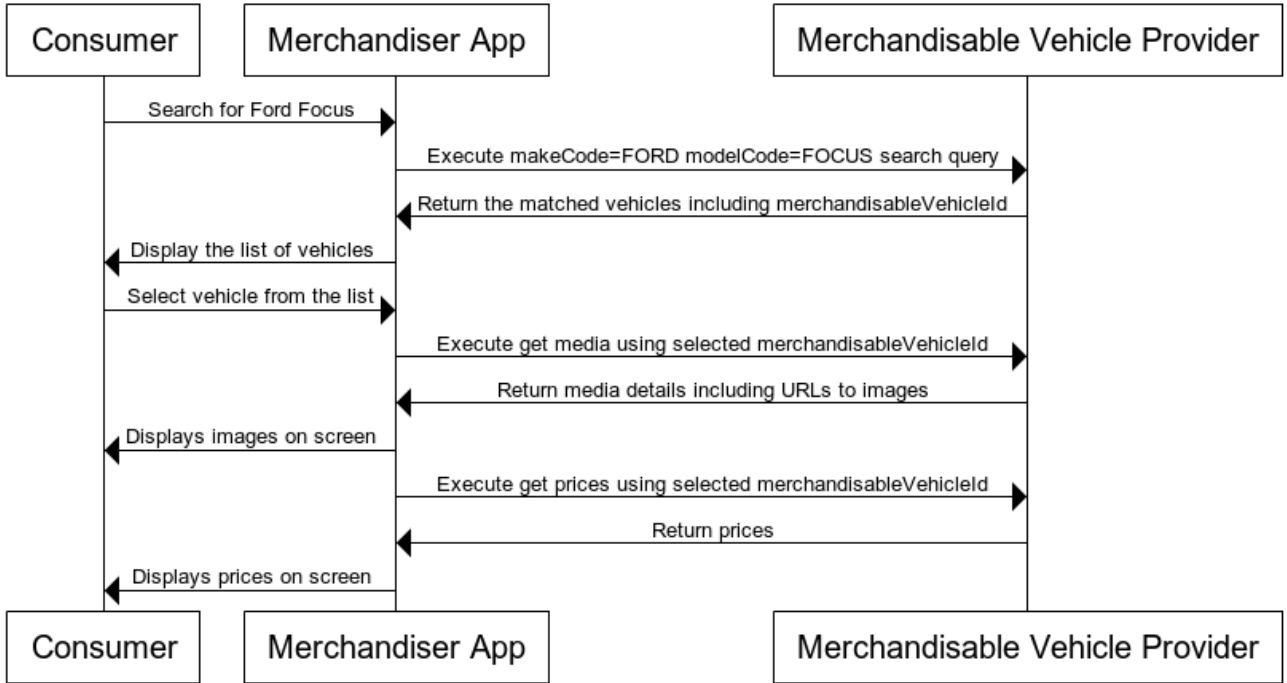
Workflow	Description	Inputs	Constraints	Resource Actions
Search for vehicles of a specific make and model	Search for merchandisable vehicles based on the make and model required. This will return back the list of vehicles and basic information like price that will allow each to be advertised including 2 pictures and the ID of the given merchandisable vehicle	<ul style="list-style-type: none"> <li>• makeCode</li> <li>• modelCode</li> </ul>	<ul style="list-style-type: none"> <li>• Make must match list of available codes</li> <li>• Model must match list of available codes</li> </ul>	Query Merchandisable Vehicles
In your app select the vehicle found and get back the merchandisableVehicleId and use it to show more images and videos than the basic ones	Once the vehicle required is found using the previous calls then more details can be read including the list of all the pictures	<ul style="list-style-type: none"> <li>• merchandisableVehicleId</li> </ul>		Query Merchandisable Vehicles <a href="#">Media</a>
Use the selected vehicle to find all the prices available	Find all available prices	<ul style="list-style-type: none"> <li>• merchandisableVehicleId</li> </ul>		Query Merchandisable Vehicles <a href="#">Prices</a>

## Entity Relationships



## Sequence Diagram

## Simple Flow



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```
title Simple Flow
```

```
Consumer->>Merchandiser App:Search for Ford Focus
Merchandiser App->>Merchandisable Vehicle Provider:Execute makeCode=FORD
modelCode=FOCUS search query
Merchandisable Vehicle Provider->>Merchandiser App:Return the matched
vehicles including merchandisableVehicleId
Merchandiser App->>Consumer:Display the list of vehicles
Consumer->>Merchandiser App:Select vehicle from the list
Merchandiser App->>Merchandisable Vehicle Provider:Execute get media
using selected merchandisableVehicleId
Merchandisable Vehicle Provider->>Merchandiser App:Return media details
including URLs to images
Merchandiser App->>Consumer:Displays images on screen
Merchandiser App->>Merchandisable Vehicle Provider:Execute get prices
using selected merchandisableVehicleId
Merchandisable Vehicle Provider->>Merchandiser App:Return prices
Merchandiser App->>Consumer:Displays prices on screen
```

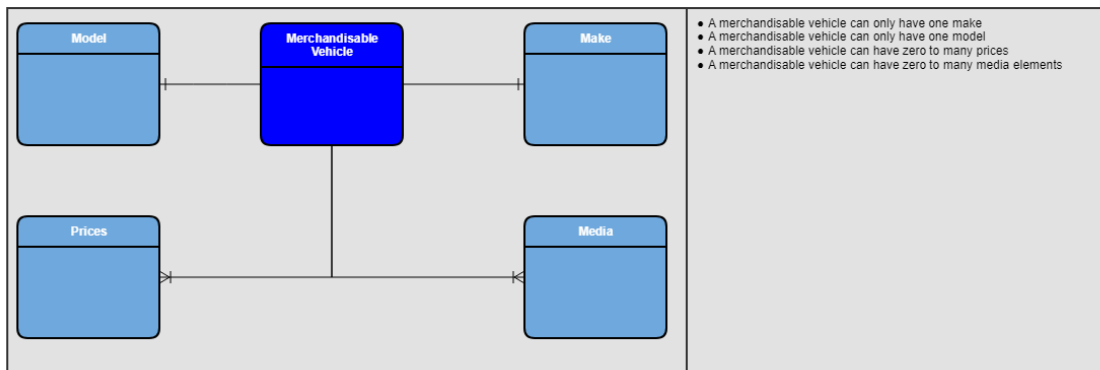
## Intermediate

### Workflows

This workflow enables a user to search for a required vehicle by monthly payment, select that vehicle and display all the photographs, videos and prices associated with it. Refer the [API specification](#) for detailed API endpoint descriptions, data dictionary, error codes and status codes.

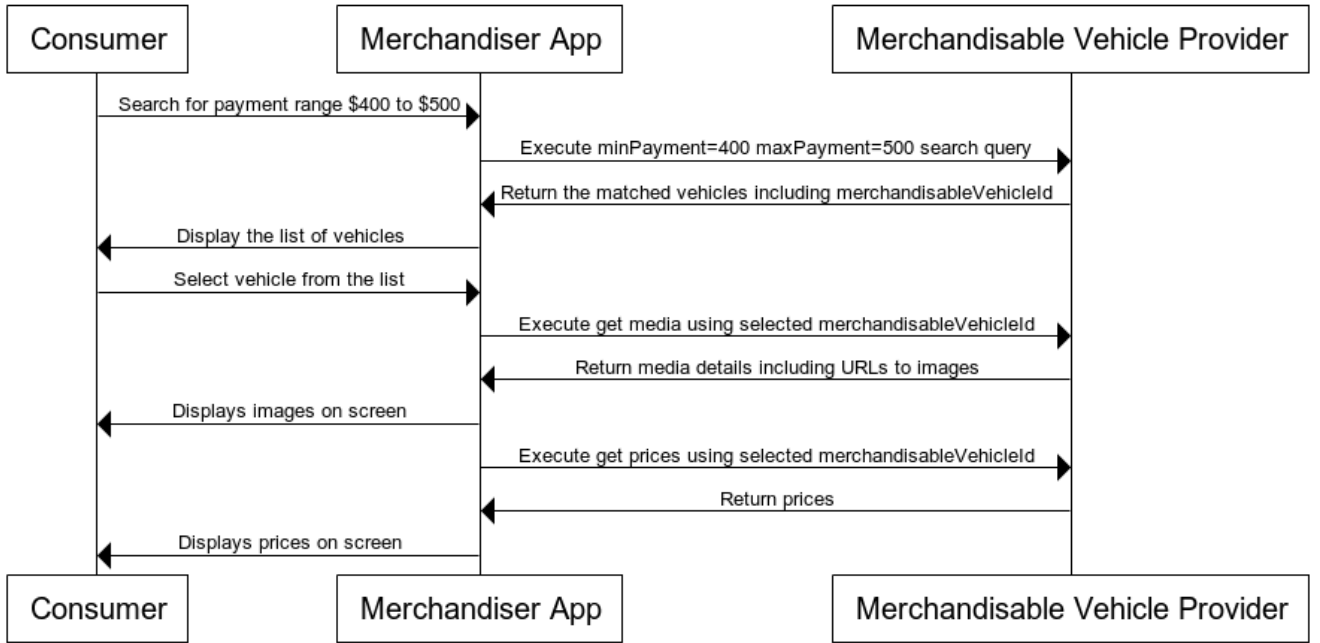
Workflow	Description	Inputs	Constraints	Resource Actions
Search for vehicles with a specific payment range	Search for merchandisable vehicles based on the desired monthly payment. This will return back the list of vehicles and basic information like price that will allow each to be advertised including 2 pictures and the ID of the given merchandisable vehicle	<ul style="list-style-type: none"> <li>minPayment</li> <li>maxPayment</li> </ul>	<ul style="list-style-type: none"> <li>Make must match list of available codes</li> <li>Model must match list of available codes</li> <li>The vehicle must have payments associated with it</li> </ul>	Query Merchandisable Vehicles
In your app select the vehicle found and get back the merchandisableVehicleId and use it to show more images and videos that the basic ones	Once the vehicle required is found using the previous calls then more details can be read including the list of all the pictures	<ul style="list-style-type: none"> <li>merchandisableVehicleId</li> </ul>		Query Merchandisable Vehicles <a href="#">Media</a>
Use the selected vehicle to find all the prices available	Find all available prices	<ul style="list-style-type: none"> <li>merchandisableVehicleId</li> </ul>		Query Merchandisable Vehicles <a href="#">Prices</a>

## Entity Relationships



## Sequence Diagram

## Intermediate Flow



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```
title Intermediate Flow
```

```
Consumer->Merchandiser App:Search for payment range $400 to $500
Merchandiser App->Merchandisable Vehicle Provider:Execute minPayment=400
maxPayment=500 search query
Merchandisable Vehicle Provider->Merchandiser App:Return the matched
vehicles including merchandisableVehicleId
Merchandiser App->Consumer:Display the list of vehicles
Consumer->Merchandiser App:Select vehicle from the list
Merchandiser App->Merchandisable Vehicle Provider:Execute get media
using selected merchandisableVehicleId
Merchandisable Vehicle Provider->Merchandiser App:Return media details
including URLs to images
Merchandiser App->Consumer:Displays images on screen
Merchandiser App->Merchandisable Vehicle Provider:Execute get prices
using selected merchandisableVehicleId
Merchandisable Vehicle Provider->Merchandiser App:Return prices
Merchandiser App->Consumer:Displays prices on screen
```

## Advanced

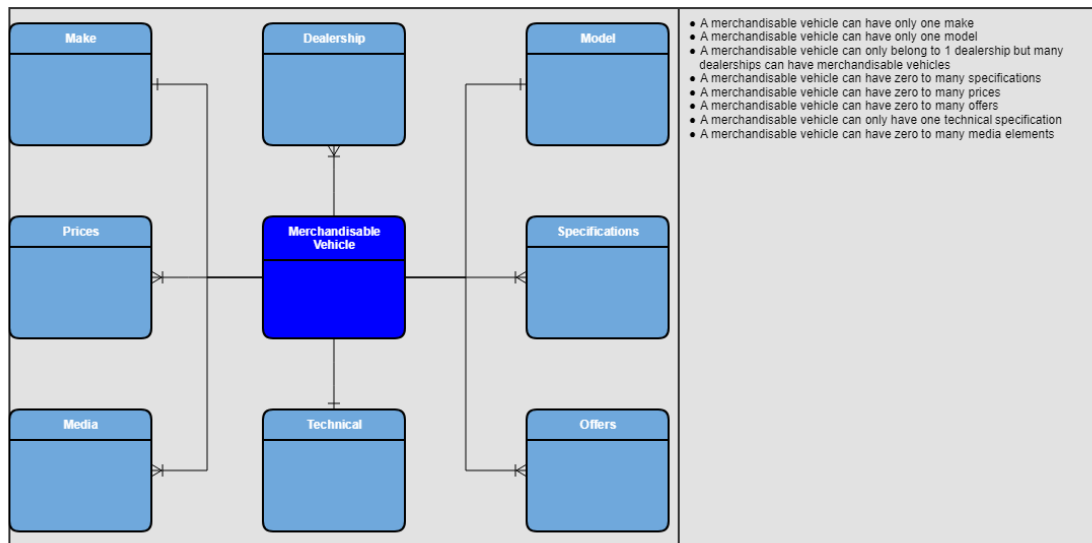
### Workflows

This workflow enables a user to search for a required vehicle by geographic location, select that vehicle and display all the photographs, videos and prices associated with it. Refer the [API specification](#) for detailed API endpoint descriptions, data dictionary, error codes and status codes.

Workflow	Description	Inputs	Constraints	Resource Actions
Search for vehicles of a specific make and model in a specific radius	Search for merchandisable vehicles based on the make and model and how far they are from the current location. This will return back the list of vehicles and basic information like price that will allow each to be advertised including 2 pictures and the ID of the given merchandisable vehicle	<ul style="list-style-type: none"> <li>• make</li> <li>• model</li> <li>• latitude</li> <li>• longitude</li> <li>• radius</li> </ul>	The dealership must have an assigned latitude and longitude	Query Merchandisable Vehicles
In your app select the vehicle found and get back the merchandisableVehicleId and use it to show more images and videos that the basic ones	Once the vehicle required is found using the previous calls then more details can be read including the list of all the pictures	<ul style="list-style-type: none"> <li>• merchandisableVehicleId</li> </ul>		Query Merchandisable Vehicles Media
Use the selected vehicle to find all the prices available	Find all available prices	<ul style="list-style-type: none"> <li>• merchandisableVehicleId</li> </ul>		Query Merchandisable Vehicles Prices

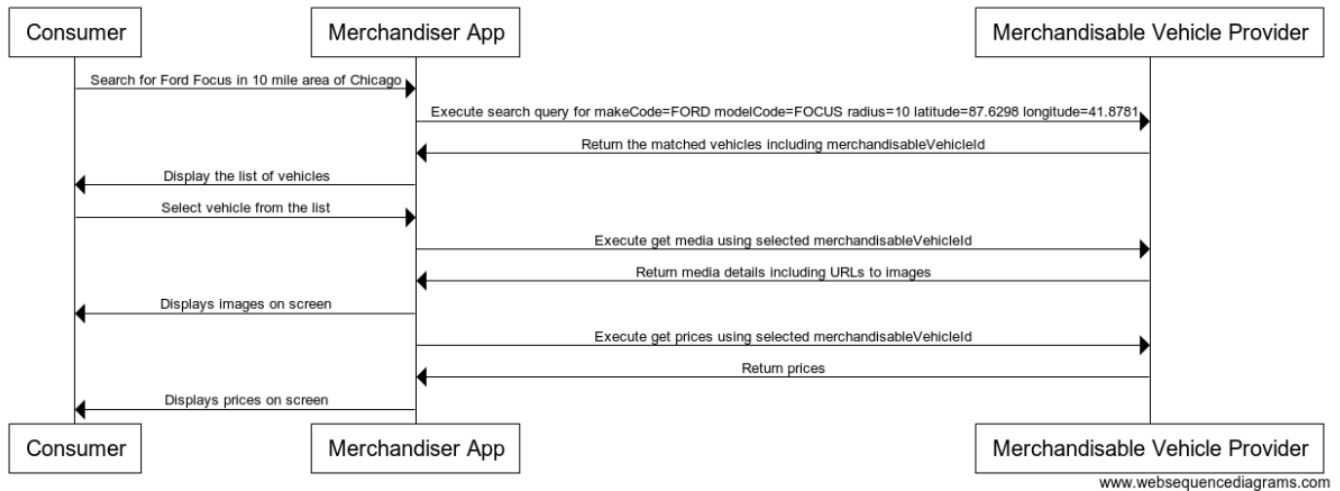
There are a number of different search parameters including price, mileage, fuel type and body type. All these can be used in conjunction with each other to filter the result set.

## Entity Relationships



## Sequence Diagram

## Advanced Flow



title Advanced Flow

```

Consumer->>Merchandiser App:Search for Ford Focus in 10 mile area of Chicago
Merchandiser App->>Merchandisable Vehicle Provider:Execute search query for makeCode=FORD modelCode=FOCUS radius=10 latitude=87.6298 longitude=41.8781
Merchandisable Vehicle Provider->>Merchandiser App:Return the matched vehicles including merchandisableVehicleId
Merchandiser App->>Consumer:Display the list of vehicles
Consumer->>Merchandiser App:Select vehicle from the list
Merchandiser App->>Merchandisable Vehicle Provider:Execute get media using selected merchandisableVehicleId
Merchandisable Vehicle Provider->>Merchandiser App:Return media details including URLs to images
Merchandiser App->>Consumer:Displays images on screen
Merchandiser App->>Merchandisable Vehicle Provider:Execute get prices using selected merchandisableVehicleId
Merchandisable Vehicle Provider->>Merchandiser App:Return prices
Merchandiser App->>Consumer:Displays prices on screen
    
```

## Resource Reference

### Query Parameters

Parameters used to query the merchandisable vehicles

Attribute	Description	Type	Required
latitude	Current location latitude as defined by ISO 6709 standard	number	no
longitude	Current location longitude as defined by ISO 6709 standard	number	no
radius	The radius from the current location. Used in conjunction with the <a href="#">dealership location</a>	number	no
makeCode	The make, franchise or brand code of the vehicle. Used to match against the reference data <a href="#">makeCode</a>	string	no
modelCode	The model code of the vehicle. Used to match against the reference data <a href="#">modelCode</a>	string	no



minPrice	The minimum price of the vehicle. Used to match against the <a href="#">netPrice</a>	integer	no
maxPrice	The maximum price of the vehicle. Used to match against the <a href="#">netPrice</a>	integer	no
minPayment	The minimum monthly payment of the vehicle	integer	no
maxPayment	The maximum monthly payment of the vehicle	integer	no
minMileage	The minimum mileage of the vehicle. Used to match against the <a href="#">mileage value</a>	integer	no
maxMileage	The maximum mileage of the vehicle. Used to match against the <a href="#">mileage value</a>	integer	no
fuelType	The fuel type of the vehicle. Used to match against the <a href="#">engine fuel type</a>	string	no
bodyType	The body type of the vehicle. Used to match against the <a href="#">technical body type</a>	string	no
transmission	The transmission type of the vehicle. Used to match against <a href="#">technical transmission</a>	string	no
drivetrain	The drivetrain of the vehicle. Used to match against <a href="#">technical drivetrain</a>	string	no

## Vehicle

Attribute	Description	Type	Required
merchandisableVehicleID	The merchandisable vehicle identifier	string	yes
inventoryVehicleId	The inventory or stock vehicle identifier	string	no

## Identification

Attribute	Description	Type	Required
vin	The vehicle identification number (VIN)	string	yes
licensePlate	The vehicle license plate or registration number <i>chassis</i> - If a chassis number is assigned to the vehicle in addition to the VIN then it should be specified here. If in doubt use VIN	string	no
engineNumber	The vehicle engine number	string	no

## Description

Attribute	Description	Type	Required
class	The class of the vehicle. Car, van, motorcycle, truck	string	yes
description	The description of the vehicle	string	no
salesDescription	Sales description of the vehicle	string	no
make	The description of the make, franchise or brand of the vehicle	string	yes
model	The description of the model of the vehicle	string	yes
variant	The description of the variant, sub-model, trim or style of the vehicle	string	no
modelYear	The model year assigned to this vehicle. This is assigned by the manufacturer and it not necessarily the year of build, but the year of model release	string	yes
exteriorColor	Description of the color of the vehicle's exterior. This may include the finish (e.g. Metallic)	string	no
interiorColor	Description of the color of the vehicle's interior. This may include the fabric (e.g. Leather)	string	no

## Reference Data

Attribute	Description	Type	Required
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providerId	The unique identifier for the reference data provider (usually a manufacturer)	string	yes
makeCode	The make, franchise or brand code of the vehicle	string	yes
modelCode	The model code of the vehicle	string	yes
variantCode	The variant, sub-model, trim or style code of the vehicle	string	no
vehicleCode	In some cases a unique code can be provided which identified the vehicle which is NOT the vin	string	no
exteriorColorCode	The color code of the vehicle's exterior	string	no
interiorColor	The color code of the vehicle's interior	string	no

## Mileage

Attribute	Description	Type	Required
value	The distance covered or hours operated	number	yes
unit	The unit of measurement of the mileage. Enumerated as: miles, kilometers, hours	string	yes

## Dates

Attribute	Description	Type	Required
registrationDate	The date the last registration was performed on the vehicle using universal format defined in section 5.6 of RFC3339	string(\$date)	no
firstRegistrationDate	The date of the first registration of the vehicle using universal format defined in section 5.6 of RFC3339	string(\$date)	no

## Merchandising Summary

### Media Item

Attribute	Description	Type	Required
href	The URI to access the media	string	yes
contentType	The content type of the media. See <a href="#">IETF RFC 6838</a> .	string	yes
title	Title for this media	string	no
mediaTrackingId	ID to track the media	string	no

## Price

Attribute	Description	Type	Required
currencyCode	Three letter currency code ISO 4217	string	yes
netPrice	The price of the vehicle excluding sales tax in the given currency	string	yes
netTitle	A title associated with the net price	string	no
grossValue	The price of the vehicle including taxes in the given currency	string	no
grossTitle	A title associated with the gross price	string	no

## Specifications

Attribute	Description	Type	Required
body	The body type of the vehicle. Sedan, coupe, truck, SUV, van, hatch, wagon, convertible	string	no
engine	The engine specifications	<a href="#">EngineSpecifications</a>	no
transmission	The transmission type of the vehicle. Manual or auto	<a href="#">TransmissionSpecifications</a>	no
drivetrainDescription	The drivetrain of the vehicle. All wheel drive, front wheel drive and rear wheel drive	string	no
seatingCapacity	The seating capacity of the vehicle	integer	no
seatingDescription	The description of the seating capacity	string	no

## EngineSpecifications

Attribute	Description	Type	Required
description	Description of the engine	string	no
cylinders	The number of cylinders used by the engine	integer	no
displacement	The displacement of the vehicle engine	string	no
displacementUnit	The unit used for the displacement. Enumerated as "liter" (liter), "cc" (cubic centimeter), "cui" (cubic inch)	string	bo
fuelType	The fuel type of the vehicle (e.g gasoline, diesel, hybrid, LPG, bio fuel, electric)	string	no

## TransmissionSpecifications

Attribute	Description	Type	Required
description	The description of the transmission	string	no
type	The type of the transmission. Enumeration: "manual", "auto"	enum	no
speeds	The number of speeds of the transmission	integer	no

## RangeSpecifications

range	The range of the vehicle	number	no
rangeUnit	The unit used for range. Enumeration: "mi, km"	string	no
fuelCapacity	The fuel capacity of the vehicle	number	no
fuelCapacityUnit	The unit used for fuelCapacity. Enumeration: "liter", "us-gal", "imp-gal"	string	no
energyCapacity	The energy capacity of the vehicle	number	no
energyCapacityUnit	The unit used for fuelCapacity. Enumeration: "kwh"	string	no

## EconomySpecifications

Attribute	Description	Type	Required
city	The economy value for city driving	number	no
highway	The economy value for highway driving	number	no
combined	The economy value for combined city and highway driving	number	no
unit	The unit used for the economy. Enumerated as: mpg, kpl	string	yes

## Offers

Accessed via the offers end point

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Attribute	Description	Type	Required
offerId	Unique identifier for the vehicle sales offer	string	yes
description	Description of the vehicle sales offer	string	no
disclaimer	Disclaimer for the vehicle sales offer	string	no
startDate	Date that the vehicle sales offer starts using universal format defined in section 5.6 of RFC3339	string(\$date)	no
expiryDate	Date that the vehicle sales offer will expire using universal format defined in section 5.6 of RFC3339	string(\$date)	no
type	Type of vehicle sales offer. Cashback, finance, lease, loyalty, bonus, discount, rebate, other	string	no
owner	Which actor owns the offer. Dealer or OEM	string	no
provider	Name of who provides the offer	string	no
currencyCode	The currency of the grossValue as a three letter currency code ISO 4217	string	no
grossValue	Value for the vehicle sales offer	number	no

## MediaItem

Attribute	Description	Type	Required
href	URI of the media item	string	yes
title	Title of the media item	string	no
mediaType	The MIME type ( <a href="#">IETF RFC 6838</a> ) of the media item	string	no
mediaTrackingId	ID to track the media	string	no
lastChanged	The timestamp of when the media item was last changed	string	no

Accessed via the media end point

## Main Photo

Attribute	Description	Type	Required
path	Path or URL to access the media	string	yes
title	Title for this media	string	no
type	Type of media. Still or video	string	no
mediaTrackingId	ID to track the media	string	no

## Thumbnail Photo

Attribute	Description	Type	Required
path	Path or URL to access the media	string	yes
title	Title for this media	string	no
type	Type of media. Still or video	string	no
mediaTrackingId	ID to track the media	string	no

## Media

### Additional Photos

Attribute	Description	Type	Required
path	Path or URL to access the media	string	yes
title	Title for this media	string	no
type	Type of media. Still or video	string	no
mediaTrackingId	ID to track the media	string	no

### Videos

Attribute	Description	Type	Required
path	Path or URL to access the media	string	yes
title	Title for this media	string	no
type	Type of media. Still or video	string	no
mediaTrackingId	ID to track the media	string	no

## Prices

Attribute	Description	Type	Required
currencyCode	Three letter currency code ISO 4217	string	yes
netPrice	The price of the vehicle excluding sales tax in the given currency	number	yes
netTitle	A title associated with the net price	string	no
grossValue	The price of the vehicle including taxes in the given currency	number	no
grossTitle	A title associated with the gross price	string	no

## Feature

Attribute	Description	Type	Required
description	Description of the feature	string	no
label	Label for the feature	string	no
type	Type of the feature. Enumerated as: entertainment, safety, interior, exterior, mechanical, warranty, equipment, options	string	no

## Dealer

---

Attribute	Description	Type	Required
name	The name of the dealer	string	no
physicalAddress	A code associated with the dealer	<a href="#">PhysicalAddress</a>	no
contactMethods	The contact methods for the dealer	list of <a href="#">ContactMethod</a>	no

## References

[Merchandisable Vehicle API Specification](#)