**E Contracting Application System(EAS)**

Client: Safeguard International

OEM is the Original Equipment Manufacturer like Audi, Hyundai etc which will be called as Program in our side. When user/customer purchase contract, the dealer is the one who purchase the contracts from the OEM via the respective portals for the user. In order to make contracts, the OEM have tie up with Safeguard International which is our client.

To provide and manage contracts, we have 2 sides:

EAS side and CMS side.

EAS side concentrates on SQL server and it is done by MayuraTech and CMS concentrates on Postgres SQL and it is done by iboss team in Delhi.

In EAS side we maintain many tables.

**Dealer side tables:**

On the dealer side we have many tables like Dealer, Dealer\_program\_association, Dealer\_address etc. We can get the CMS Dealer Number from the Dealer table.

Dealer\_program\_association table provides the mapping between dealer and OEM.

Dealer\_address table contains columns like address, id, address\_type\_ID. For example address\_type\_ID 20194 is Primary type address which we can get from a table named ref\_lookup\_value.

Similarly Contact\_type\_ID 20208 is primary contact type.

Next we have table called Ref\_state\_province which contains the state province code which tells the state to which the dealer belongs. Each state will be having a unique code to identify.

If we want to retrieve dealer’s informations like address, contact etc. it will take time since we have to fetch these details from different tables. So for that purpose we have a view called V\_dealer which contains various columns from each of these dealer tables.

**VIN side tables:**

VIN stands for Vehicle Identification Number which is a unique 18 digit number.

VIN\_details is the one table which contain the VIN pattern, year, make(OEM), model, trim(extension of model), body\_type, vehicle\_type, fuel\_type, engine\_name, basic\_warranty\_terms(in months) etc.

When the dealer enters the VIN in the portal, it will be passed as decoded. It will decode the VIN and get the required information for further processing. The 18 digit VIN will be decoded into 10 digit.

How to decode the VIN (For automobiles):

Eg: Original VIN is 1V2CR2CA5MC567894

3 steps to decode:

1. Remove last 6 digits. 1V2CR2CA5MC
2. Leave next 2 characters as it is. 1V2CR2CAMC
3. Remove the next. 1V2CR2CAMC

How to decode the VIN(For motorcycles):

Eg: Original VIN is 1V2CR2CA5MC567894

3 steps to decode:

1. Remove last 7 digits
2. Leave next 1 character as it is.
3. Remove the next.

VCI\_vehicle\_retails\_sales is another table in the VIN side. OEMs like AU, VW, DU and QP together known as VCI clients. This table contain the columns like VIN(18 digits), saled date etc. If there is saled date already entered in the column for a particular OEM then that saled date will be considered even when the dealer provide the same.

Another table in VIN side is Vehicle\_retail\_details.

Another important term is ISD which stands for In Service Date. ISD is the number of days the vehicle has been used on the road after purchase. This ISD plays a major role in buying contracts. Like if we are buying a car and not using it for the first month, and the service period is for 6 months means, then 6 months after that first month will be calculated for guarantee period since we didn’t use the vehicle on road for the first month.

We have 2 types of teams in our system:

1. Rate team
2. DMT team

The Rate team will receive the requirements from OEM(business) which they will provide to EAS team. Also they prepare the templates and the excel data which is called as the Rate file.

This excel data is loaded to the original database by EAS team which is then verified by the DMT team. BA(Business Analyst) is the one who analyse the requirements which have been received from the business and assign the task to team members.

**Product side tables:**

Product is something that is provided to the dealer based on their input given to the portal.

Ref\_Product\_Type is the table from which we can categorise the product. It is the main table to use for all OEM to categorise the product. Every product type will have a unique code.

Another table is Ref\_Product\_Type\_Category. Based on the product type, we have different product category. In this table, for each product\_type\_id there will be corresponding product category.

The table which contains the list of products under each OEM is Ref\_product\_code.

**Product Plan side tables:**

Product\_plan table contains the different product plans or coverages for different products. Each product can have multiple number of product plans.

* Product\_plan\_code: Code for particular product plan.
* Product\_code\_id: It will be unique id.
* Name and Description: Name and description of particular product plan.
* Effective Date: It is the date from which we allow the dealer to purchase the product plan.
* Expiration Date: It is the date till which the plan is eligible. If we want to stop a particular plan, then we have to provide the expiration date in this table. Then the plan will not be shown on the portal. The maximum expiration date we can provide is 9999-12-31.
* PPM: PPm stands for Pre-Paid Maintenance. This is only used for PPM `
* Is\_eligible\_after\_sale: If the flag is N for this column, then it means you have to purchase that plan along with the purchase of the vehicle.
* Split\_contract: This is for multi coverage plans.
* Is\_bundled: Whenever Split\_contract flag is Y; we should maintain Is\_bundled also as Y.
* Starting and Ending intervals: This is used for prepaid maintenance.
* No\_of\_intervals: This will be given in months.
* Is\_out\_of\_warranty: This means after warranty, you cannot purchase that plan.
* Vehicle\_condition: It is of 3 types;
* New: As the name suggests, it will be a brand-new vehicle.
* Used: Someone will have used that vehicle but not for a long time (Second hand).
* CPO (Certified Pre-Owner): In this, Someone will verify the vehicle and will certify that the vehicle is good to sell.
* Vehicle\_msrp\_from and To: This is the Retail price. From and To is like range. If the From is 0 and To is 45000, then this means the vehicle msrp range is between 0 to 45000. If we select a 40N coverage to purchase, then if the dealer gives amount greater than 40, it will show an error.
* Display order: This tells the order in which the plans are shown on portal.
* Is\_breakage: In multi coverage plans, there will be number of products used for that plan.

Product\_plan\_association table is the one which contains all the multi coverage plans. The Parent\_product\_plan\_Id is one of the field which gets the value from Product\_plan table.

In EAS side when we purchase the contract which includes multi coverages, it will return only one contract number. But at the time of rating the contract in CMS side, we will get the multiple number of contract number based on child plans.

**SKU(stock Keeping Unit):**

Product\_plan\_sku is one of the table in SKU side. There are mainly 5 parameters for SKU which are collectively known as the SKU parameters. They are:

* Term from: This is always taken in months. Indicates the date from which the plan is available.
* Term to: The end date to which the plan is limited. Both of this together gives the range.
* Deductible disappearing:
* Milage:
* Deductible amount:

If any one of the parameter is changed, then that will be considered as a new SKU. Combination of these 5 parameters define a SKU.

**SKU VSC Eligibility side tables:**

As we know, there are five parameters for SKU to define. Beside that, there are more parameters which are used to check the SKU eligibility which are stored in table named Sku\_vsc\_elibility. They are:

* Product\_plan\_sku\_Id: This is a unique id which we get from Product\_plan table.
* Sku\_vsc\_eligibility\_id:
* Odometer\_from: In the portal when we try to purchase a contract, you will be asked to enter the details on how many kilo meters you used this vehicle.
* Odometer\_to: This both together is the range.
* Vehicle\_age\_to and from: This is the date from the vehicle purchase date till the contract purchase date.
* Warranty\_fields(full-warrnaty\_remain\_months, full\_warranty\_remain\_days, full\_warranty\_remain\_miles, powertrain\_warranty\_remain\_months, powertrain\_warranty\_remain\_days, powertrain\_warranty\_remain\_miles) will be used for in\_warranty and out\_warranty.

For some products like gap, cpo, we doesn’t consider in warranty and out warranty. When we purchase a VSC product, they will calculate the in-warranty eligibility based on the in-service date, VIN, vehicle age along with these warranty fields. We use these fields to calculate in warranty and out warranty. In warranty and out warranty is applicable only to VSC products. For example, if the field full\_warranty\_remain\_month is having value as 1, then it means it will allow the dealer to purchase the contract till one month.

* Finance\_fields:
* Finance\_type: There are four types; Lease, balloon, finance and cash.
* Time\_months\_from and To: It is similar to term month from and to.
* Time\_days\_from and To: Based on the vehicle sale date and contract purchase date.
* Vehicle\_condition\_id: the value will be taken from Ref\_lookup table to identify the type of vehicle.
* Vehicle\_type: Like automobiles, motorvehicle. But most of the OEM who had tie up with SG is mostly for automobiles.
* Is\_eligible\_after\_sale: whether the product will be available even after the time of vehicle purchase.
* Warranty\_dynamic\_flag: If those above warranty fields contain any value, then only this value will set to Y.

Vehicle\_condition\_Id:

* 20090- New
* 20091- Used
* 20092- CPO (Certified pre owner)
* 20093- Demo

**Classing side tables:**

Under each OEM there are different classification. For example, take AUDI OEM. Under AUDI, it has many models like A1, A2, A3…but for each of these models, the pricing will be different. Pricing differs for each make, model, trim and other parameter combinations. In EAS side we have different tables to store these values.

Ref\_make table is the main table which contain all the makes like AUDI, ACURA, FORD etc. when the dealer enters the VIN in the respective portal, it will return information like make, model, trim etc of that vehicle. Then we can go to Ref\_make table and can search for that particular make. Similarly we want make id, model id and trim id to get the different classing for pricing for that particular vehicle. We can get model id from Ref\_model table and trim id from Ref\_trim\_level table. We can have different models under same make id in Ref\_model table. These three are the master tables from which we can get the list of makes, models and list of trims for make, model combination.

To find what classifications are available to the given make, model and trim, we use one classification method or function. The function takes VIN, make, model and trim as input and it give back all the classification available for that particular product.

Next table is Ref\_classing\_method which contain classing\_method\_id, name and description. For example, if the classification name is ‘make’, then for a single make, whatever model and trim it is, it will be showing the same amount meaning it will come under same classification. If the classification name is ‘yearmakemodel’, it means for that particular set of model, make and trim, the classification will be one.

Ref\_classing\_method is a reference table which can be referred for any program or product. From this table, we will be able to understand for a particular program and product, what will be the classing method. This table contains the mapping between Ref\_program, Ref\_product and Ref\_classing\_method tables. Same product can have multiple number of classing method under same OEM.

Program\_vehicle\_class is another table that defines the program and class code. This will contain OEM and class codes not product code.

Next table is Program\_vehicle\_class\_mapping. For example, if you got the classing method as make and you know the product and program, to understand what make is, we need this table. This is the main table for classing which has all the information.

We have a view named V\_program\_vehicle\_class. If in the view, the class code is ‘Excluded’ that means that product is not eligible for that make.

**Rating side tables:**

Depending on the state, the rate will be different for different products and different program. Rating will be based on dealer’s state. For rating Rate\_system is the master table which contain the different rate systems for different products. This table contains information like for which program and for which product, what are the rate systems available. Some cases, for one program and one product, there will be multiple rate systems available.

For example, for Program\_id 20323 and Product\_code\_id 1547, we have 6 different rate systems available like EPMC MA, EPMC NATL, EPMC XREPAIR, EPMC NY FIXED, EPMC NY FORD and EPMC FORD.

Another column in this table is the regulated\_rate. It can have values like Non-Reg, Fixed, Reg and Reg-Max. If the flag is non-Reg, it means it is used for MRP and the dealer will not be able to change the amount shown on the portal. Fixed and Non-Reg are same. Reg flag means it is used for some bargains for discount. If flag is Reg, then the dealer is allowed to change the cost in the portal. If flag is Max-Reg, then we can modify the amount but upto a limit specified.

Next table is the Rate\_system-state\_association. This table contains the mapping between rates and systems. It contains for which all states what are the rate systems available. This table contains the rate\_system\_id and the corresponding state\_province to which the rate system belongs to.

Next table is rate\_system\_application which is the mapping between dealer and the rate system. It contains fields like Rate\_system\_id, Program\_id, Dealer\_id etc.

For example, from the table we can understand that for Dealer\_id 5, there are 3 rate systems available. That 3 can belong to different products. There are fields like Sales\_effective and Sales\_expiration dates. If it has an expiration date specified and if the dealer is searching for that product in portal after the expiration date, then it will not be shown in the portal.

Last table in the rating side is the dealer\_product\_plan\_exception. It contains the details on the restriction on product plan for dealers meaning for some dealer, it will not allow to purchase all the product plans in certain cases. For a particular dealer\_id, what all Product\_plan\_id is there, that product plans will not be available to that dealer. That exception is controlled based on the effective and expiration dates.