Sales Planning Convergence

Solution Design

Sommario

1 INTRODUCTION

1.1 Scope

Purpose of this document is to present the design of the solution identified to meet the Marelli requirements. The proposed solution will be implemented on Salesforce Sales Cloud and Salesforce Analytics Cloud.

Marelli actually has 5 business lines that manage independently their business and each BL uses a different tool and methodology to manage the sales process; then each BL organized their data in different ways.

The BLs are:

- Automotive Lighting (AL)
- ELectronics (EL)
- EXhaust Systems (EX)
- PoWerTrain (PWT)
- Ride Dynamics (RD)

This project will enable all BLs to have a unique tool, to standardize the sales process and to have data management on a centralized model. The whole tool will be composed of two modules made up of standard and custom components:

- **Sales Planning Tool** → it will be used mainly for the management of opportunities, forecasts and actual of volumes, turnover and for reporting/analytics.
- **RFQ Process Management** → this tool will manage the bid process of the opportunities through a workflow used for the offer package creation.

Both modules will be realized on Salesforce platform and Mulesoft: this will be used to manage the integrations with the systems outside Salesforce (e.g. SAP, Demand Plan).

1.2 Reference Documents

Document title	Version
Attachment4_20180702_MM_ICT_SalesDB_SFDC_Functional_Specification.pdf	**v1**
Attachment5_20180702_MM_ICT_SalesDB_RFQ_Functional_Specification_v2.pdf	**v2**

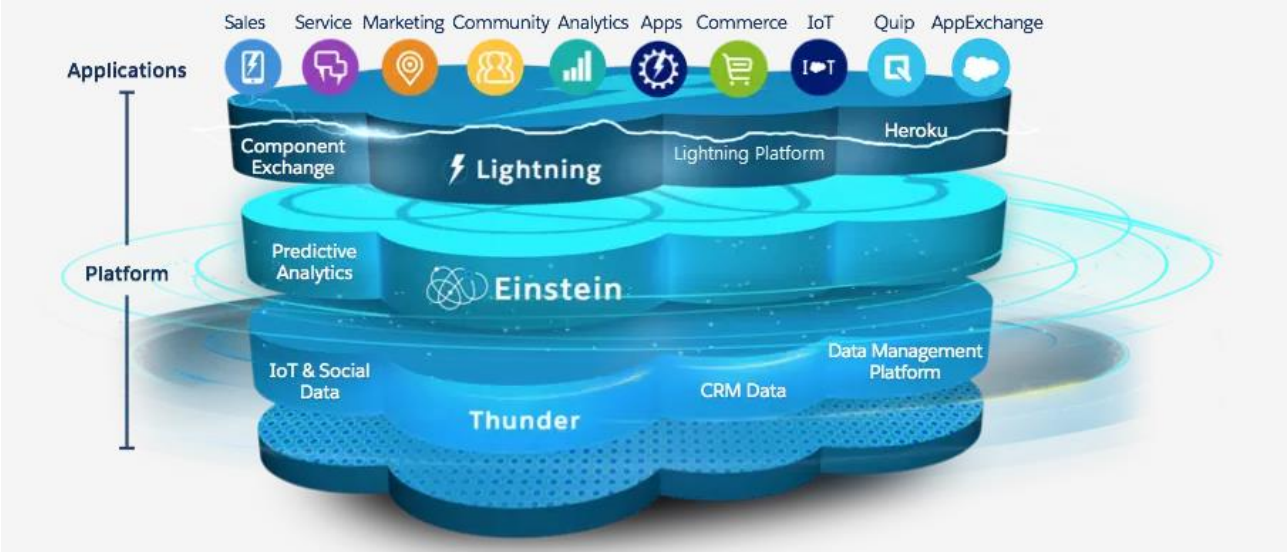
2 GLOSSARY

SP = Sharepoint

3 SALESFORCE ARCHITECTURE

Salesforce was born as a CRM Software as a Service (SaaS) company.

Salesforce offers different software solutions and a platform for users and developers to create and distribute software. Its security architecture is robust but extremely flexible and can be used by all companies in any sector, even those heavily regulated.



Salesforce.com is based on the multitenant architecture which consists in giving the possibility to share the technology among several customers and all work on the latest version, maintaining a high degree of security control, user authentication and customer authentication, administrative authorizations for the access to data and the sharing model.

The organization's data is protected through a unique identifier that limits access to data to everyone by anyone outside the company. User authentication combines network-level security by IP address, session restrictions and audit trails; authentication then provides control and visibility on what users are doing in the system and their field history.

The metadata-driven platform also simplifies customization and resizing as the amount of data or simultaneous user instances increases.

It is no longer necessary to take care of the updates of the applications or of the infrastructure that are executed automatically, three times a year, directly from Salesforce and completely transparent to the customer who will be able to concentrate on business processes and no longer have to worry about the technology.

The main Salesforce Cloud products and services are:

- **Salesforce Sales Cloud** is a CRM platform that allows to manage the sales, marketing and customer support of the organizations. Salesforce Sales Cloud can be used in business-to-business (B2B) and business-to-customer (B2C) processes
- **Salesforce Marketing Cloud** is a digital platform where marketers can manage customer, email, mobile devices, social media, web personalization, content creation, content management and analysis of data.
- **Salesforce Service Cloud** is a service platform for customer support and the organization's support team. Provides features such as case detection and social networking plug-in for conversations and analysis. This helps to speed up customer resolution, but also gives customers access to answers quickly and easily.
- **Salesforce Community Cloud** is a social platform to connect and facilitate communication between employees, partners and customers. This platform can also be used to exchange data and images in real time.

- **Salesforce Commerce Cloud** is the platform that allows the organizations to provide customer service and experience without distinction of customer position. It provides the integration of customer data so that consumers can have a better, more positive and engaging experience.
- **Einstein Analytics** is a business intelligence platform for working with large data databases; Salesforce Analytics gives the possibility to create charts, reports and dashboards. It is optimized for mobile access and data visualization and can be integrated with other Salesforce clouds.
- **Salesforce App Cloud** is a tool for developing custom apps that will run on the Salesforce platform. It also provides a collection of development tools that it is possible to use to create custom applications. Some of the Cloud App tools include:
    - **Force.com** allows administrators and developers to create websites and applications in the main Salesforce.com application.
    - **AppExchange** is an online application marketplace for third-party applications running on the Force.com platform.
    - **Heroku Enterprise** offers developers the flexibility to create apps using their favorite languages and tools.
    - **Salesforce Thunder** is a big data processing engine and rules designed to analyze events and take customized actions.
    - **Salesforce Sandbox** allows developers to test ideas in a secure and isolated development environment.
- **Salesforce IoT Cloud** is the service that allows to store and process data from the Internet of Things. The platform is designed to collect huge amounts of data generated by devices, sensors, websites, applications, customers and partners. Upon receipt of this data, the platform initiates actions to provide answers in real time.
- **Salesforce Health Cloud** is a CRM system for healthcare organizations that integrates the doctor-patient relationship and record management. Through the patient profile it is possible to support the one-to-one relationship by integrating information from multiple data sources.

Other services available on Salesforce are:

- **Chatter** is a Salesforce business collaboration platform that allows employees to communicate with each other and collaborate on work. Chatter can help increase productivity by connecting employees wherever they are. It also helps to share knowledge among the departments of an organization or different organizations.
- **Salesforce1** is the platform that allows to develop applications and exchange data through the Application Programming Interface. The APIs refer to pre-defined programming code components.

For the Sales Planning Tool will be used two Salesforce modules: *Salesforce Sales Cloud* to manage all the central data, the opportunity flow, the management of the volume and *Einstein Analytics* to analyze and build complex dashboard and report.

Moreover, Mulesoft will be used to manage the integration between Salesforce and the other Marelli systems (e.g. SAP, Demand Plan, etc…) and the data migration of all the BL.

Salesforce Sales Cloud

Salesforce Sales Cloud is a fully customizable product that brings together all customer information in an integrated platform that integrates marketing, lead generation, sales, customer service and business analytics and provides access to thousands of applications through the AppExchange. The platform is provided as Software as a Service (SaaS) for browser-based access; a mobile app is also available. Moreover, a real-time social feed for collaboration allows users to share information or ask questions to the user community.

Sales Cloud is the salesforce.com module dedicated to sales; includes entities such as Leads, Accounts, Contacts, Contracts, Opportunities, Products, Prices and Quotes. Includes features such as Web-to-Lead to support online lead acquisition, with automatic response rules. It is designed to be a start-to-end setup for the entire sales process.

Salesforce Sales Cloud has the following features:

- **Contact Management** - helps organize contacts, plan activities and manage offers. Get a complete view of customers, including activity history, key contacts, customer communications, and internal account discussions. It is possible to obtain information from the most popular social media sites such as Facebook, Twitter and LinkedIn directly within Salesforce.
- **Opportunity Management** - allows having a complete view of the team's offers. It is possible to view stages, products, competitions, quotes and more. The opportunity is the connection with the people and information necessary to close each sale. It is possible to keep track of products, customer activities, details about competitors, inform the work team in real time about changes and actions, etc.
- **Lead Management** - allows tracking all the correct information on CRM leads by continuously optimizing campaigns across all channels. Rich activity history lets view and access the most up-to-date contact information while including the best practices and relevant documents using Sales Path.
- **Sales Data** - Using Sales Data, it is possible to connect with key decision makers faster in order to plan territories more easily. Then it is possible increase sales and marketing productivity with the most recent and accurate data.
- **Reports and Dashboards** - Dashboards provide a real-time overview of all activities quickly. It will possible to access all the details through detailed reports that all authorized users can see and even create.
- **Sales Forecasting** - With this tool, it will be possible to obtain a real-time vision in the forecasts of the whole team. It is possible to use online editing, visibility of replacements, multi-currency support, and more to stay updated on all activities.
- **Workflow and Approvals** - With this functionality it will be possible to design and execute any business process with simple point-and-click using Workflow. Flexible approval processes can be set up for multiple entities

Einstein Analytics

With Salesforce Analytics Cloud it will be possible to analyze data from all sources in order to act quickly within the CRM even using the included action framework. Analytics offers a consistent view of data by using dashboards and reports.

The Einstein Analytics platform allows creating custom analysis applications to solve intercepted problems and quickly communicate results with automatically generated slide presentations containing views and discussion points.

Thanks to AI-based marketing services, it will be possible to obtain information on sales, services and marketing. The system automatically analyzes millions of combinations of data in minutes with Einstein Discovery and with Einstein Prediction Build it is also possible to look to the future with potential business results

MULESOFT

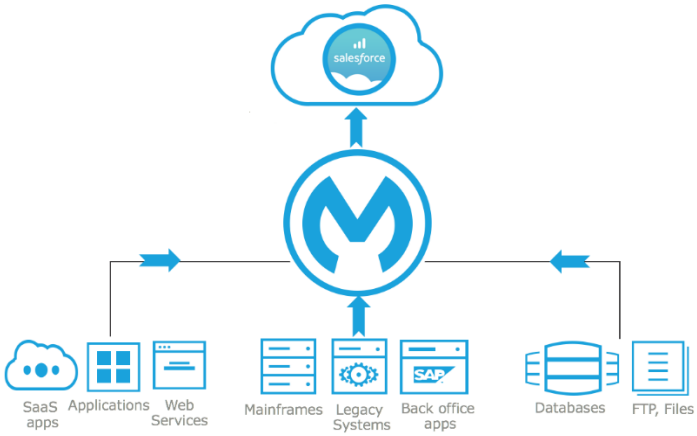
MuleSoft provides a lightweight integration platform that delivers powerful data loading capabilities. The Anypoint Platform provides businesses with what they need to undergo data migration and much more. Numerous components within the platform work together to create connectivity and extend business capabilities.

MuleSoft offers Dataloader.io, a painless, data loader for Salesforce.com to make data migration to and from on-premises and cloud systems easy. Dataloader.io is web-based data loading solution and requires no software. With Dataloader.io, Salesforce.com migration is no longer a chore. Importing, exporting, cleaning, deleting, warehousing, and backing up data become less complicated, allowing to save time and focus on more strategic projects.

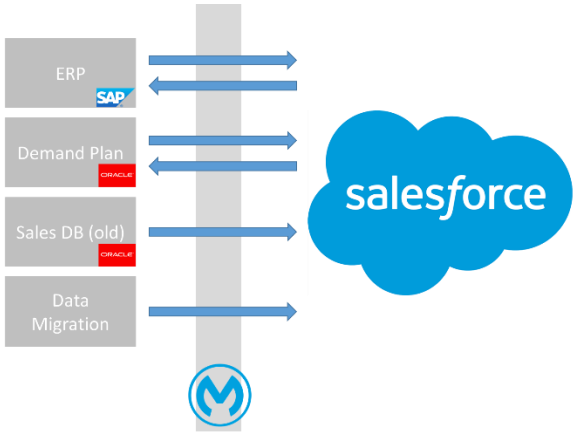
Dataloader.io offers numerous benefits for Salesforce.com migration:

- **Simple UI**: A user-friendly interface makes the process of migrating data less complicated.
- **No VLOOKUP**: Access account IDs from within the integration application easily.
- **OAuth**: There is no need to create a new account, all that's needed are your existing Salesforce.com credentials.
- **Unlimited Usage**: Without any restrictions on the amount of data it is possible to migrate, users are free to connect to as many endpoints as they desire.
- **SaaS Offering**: Being a cloud-based software as a service, Dataloader.io is offered without any strings attached - no software, no downloads.

Warehousing and backing up data allows to ensure that all information remains safe and accessible in case of any mishaps. Dataloader.io simplifies Salesforce.com migration, enabling to move information quickly and respond to business needs.



On Marelli, Mulesoft will be used to manage all the migration activity and all the integration with the Marelli systems.



Process Management Framework

The Framework, used to manage the RFQ process, is composed by two macros application contexts:

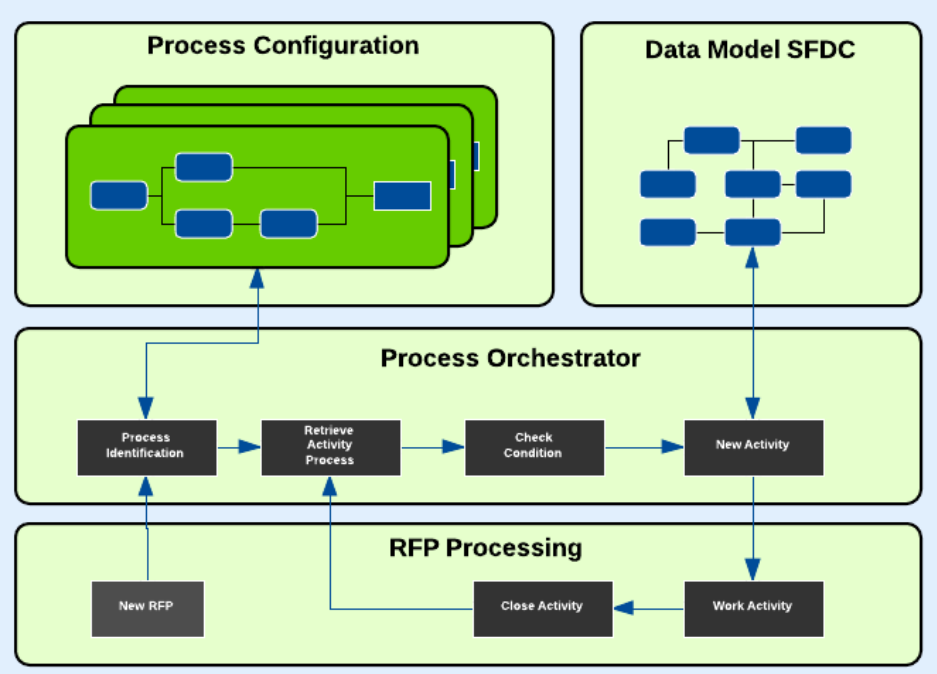
- **Process Configurator**: this context is used to manage the configuration of the business processes on the Salesforce solution:
  - The configuration of the process will be done through point and click interface
  - The processes will be configured as a series of micro business tasks. In this way, it's possible to reuse the micro tasks on multiple processes

- **Process Orchestrator:** this component acts as coordinator and orchestrator of the tasks. The orchestrator allows to manage:
  - Automatic Activities: in this case the system allows to:
    - Check quality data,
    - Send Notification,

- Assign Task.

- Manual Activities: activities for which user feedbacks will be requested. For each task it is possible to track the following:
  - Start Activity,
  - Finish Activity,
  - Status,
  - Owner,
  - Type (Activity, Milestone, and Sub-Process).

For any user interaction, tasks will be implemented as lightning component that permits to work the relative task. System Task will be managed from the BE without any interaction with the user, except the action needed to close the previous task.



4 SALES PLANNING TOOL

Sales process, managed through the Sales Planning Tool, will cover all the activities related to the definition and approval of the Opportunities, the Forecast and Actual Volumes management, all governed by approval processes that will ensure the correct management.

The main topics of the sales process are:

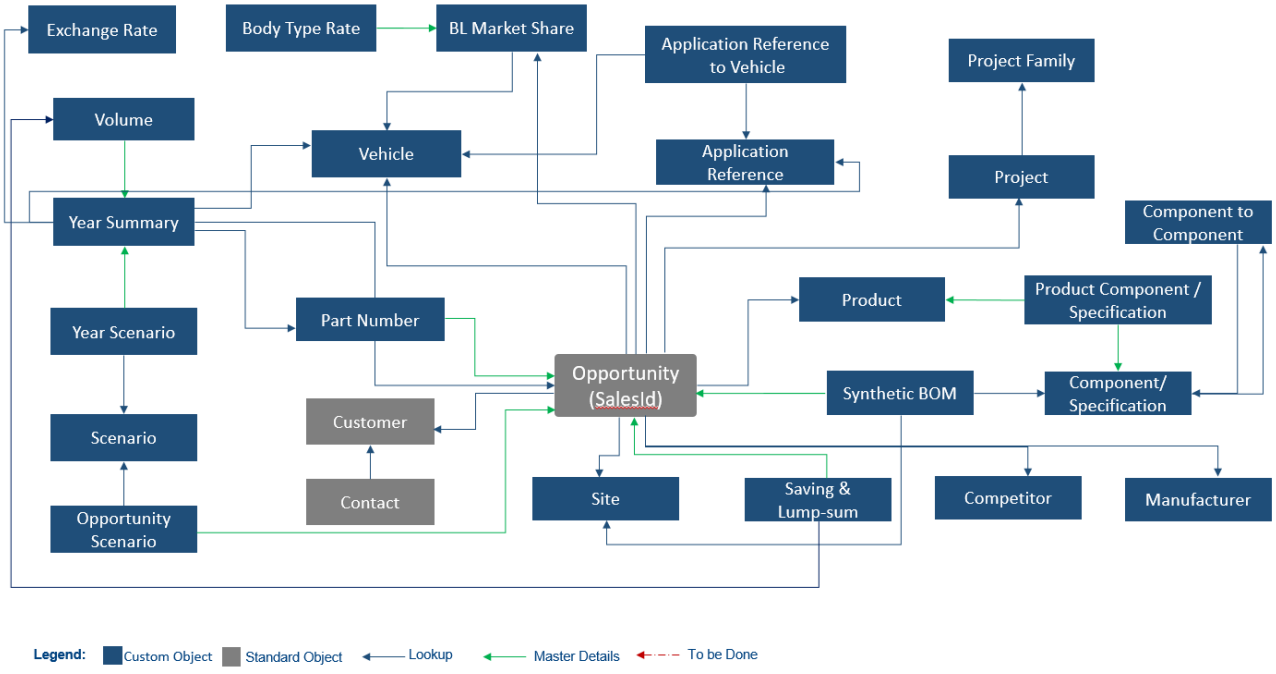
- 5YP assignment management: activity consists in the insertion of sales opportunities in the Sales Planning Tool and the assignment of volumes for the following 5 years.
- Approval process: opportunity will be characterized by its life cycle and, once created, will be governed and managed by the approval process (formal approval of the opportunity and any changes has been requested by all the BLs and will serve to ensure correctness before inserting it into production planning).

4.1 Data Model Overview

A data model is the data structure and it contains the relationship between different data: its scope is support the solution.

This data model has been designed using the standard entities provided by the Salesforce Sales Cloud, in order to use the native functionalities and to meet the Salesforce best practices, and custom objects, used to bridge the gap between Standard functionality and the Marelli requirements.

The following figure shows the business entities and the relationships between them:



In this table, there are information about the objects and their relationship:

Object	Description	Custom/Standard Entity
Customer	Customer is a Salesforce Standard entity uses to track the information about Magneti Marelli Customer.	Standard
Contact	Contact is a Salesforce Standard entity uses to track the information about Customer Referent.	Standard
Vehicle	Vehicle is a custom entity created to track the information about the Magneti Marelli Customer vehicle.	Custom
Site	Site is a custom entity created to track the information about Magneti Marelli production and sale sites.	Custom
Opportunity	Opportunity is a standard entity uses to track the information about the Magneti Marelli order.	Standard

Product	Product is a custom entity use to track the information about the Business Line Product. Product visibility are based on the user's BL.	Custom
Component/Specification	Component/Specification is a custom entity use to track the information about critical components and specifications. In case of a component is track as specification the Product Manager will must insert the Specification type and Description	Custom
Synthetic BOM	Component to Opportunity is a custom entity use to manage the Synthetic BOM functionality. These records are automatically create by the Product Configurator.	Custom
Product Component/Specification	Component to Product is a custom entity use to manage the relationship between Product and Component. This object allows to view in the Synthetic BOM only the components related to the product selected in the Opportunity.	Custom
Component to Component	Component to Component is a custom entity use to manage the relationship between Component Specification and Critical Component. This object allows to view in the Synthetic BOM only the specificationrelated to the component selected in the Systhetic BOM it self.	Custom
Yearly Volume&Price	Yearly Volume&Price is a custom entity use to track the information about the sum of monthly production forecast, actual and EDI, the sum of mothly Customer Production and all turnover type with yearly granularity. User can modify the yearly forecasts through the custom page, the other fields are read only, because they are sums. It is used in the reporting.	Custom
Monthly Volume&Price	Mothly Volume&Price is a custom entity use to track the information about the Magneti Marelli monthly production forecast, actual and EDI, the mothly Customer Production and all turnover type with monthly granularity. User can modify the yearly forecasts through the custom page, the other fields are read only, because they are sums. It is used in the reporting.	Custom
Saving & Lump-sums	Saving & Lum-sum is a custom entity use to manage the savings with which modify the SOP Price and track the information about the lump-sums. In the system the entity used is the same, but the logics is different. The savings and Lump-sums can be insert through a custom page.	Custom
Project	Project is a Custom entity used to aggregate one or more opportunities under only one project.	Custom
Application Reference	Application Reference is a custom entity use to track the informations about Engine and Trasmission. This object can be linked to opportunity.	Custom
Application Reference to Vehicle	Application Reference to Vehicle is a custom entity use to associate Application Reference (engines and Trasmission) to vehicles, in a many-to-many relationship	Custom
Part Number	Part Number is a Custom object used to track the information about the Part Number both Customer and Magneti Marelli.	Custom
Manufacturer	Manufacturer is a custome entity use to track the information about the manufacturer. The manufacturer visibility is based on the BL.	Custom
Competitor	Competitor is a custom entity use to track the information about the competitor. The competitor visibility is based on the BL.	Custom
Competitor to Opportunity	Competitor to Opportunity is a custom entity use to manage the relationship between Competitor and Opportunity, in a many-to-many relationship.	Custom
BL Market Share	BL Market Share is a custom entity use to track the information about the BL changes on Central Vehicle Volumes.	Custom
Body Type Share	Body Type Share is a custom entity use to track how much a body type is worth compared to the BL Market Share.	Custom
Project Family	Project Family is a custom object created to track the information about project families related to Projects.	Custom
Exchange Rate	The Exchange Rate is the custom object that stores all the rates for the currencies used in the systems, and is segregated by year and by planning status.	Custom

Year Scenario	Year Scenario is a custom object created to track the information about opprtunity and year summary.	Custom
Scenario	Scenario is a custom object used to aggregate one or more opportunities under a scenario.	Custom
Opportunity Scenario	Opportunity scenario is a custom object created to track the opportunities in a scenario.	Custom

In a one-to-many relationship, the father entity is related to one or more child entities; for example, in the Account-Contact relationship, an Account can be related to many Contacts, but a Contact is related only to one Account.

Below the full data model with all the entities and all the fields:

MARELLI_Sales_Planning_Tool_Data_Model_

4.2 Marelli Common Data

One of the main goal of this project is to ensure uniformity between the common data to all the BLs of Marelli.

The Common entities are:

- Customer
- Vehicle
- Application Reference
- MM Site
- Competitor
- Manufacturer
- Exchange Rates

4.2.1 Customer

The Customer is modeled through the standard entity “Account”.

It is possible to add a new customer to the database through a functionality that allows the creation of a new Account record, accessible depending on the profile of the user. This can be triggered from the “New Customer” action under the Customer tab.

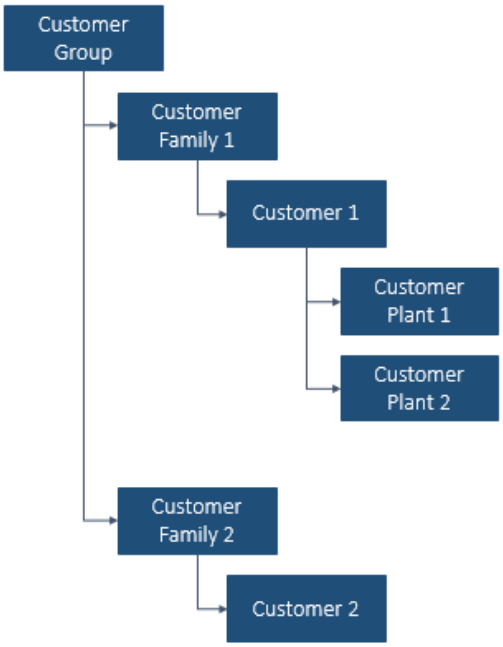
In a similar way, customers’ data can be edited through a functionality that allows to edit a Customer record.

The Common Data Manager profile will manage the Customer entity; all the Business Operations profiles will be able to search for an existing customer and link it to an Opportunity. If a Business Operations user needs to create or edit a Customer record, he/she will send a request to the Common Data Managers, and they will be able to accept or reject. The request will be traced through the standard object Case.

On Salesforce no kind of validation rules or controls will be implemented on this entity.

Customers' information is organized through a tree structure, where the levels are represented by:

- Customer Group
- Customer Family
- Customer
- Customer Production Plant



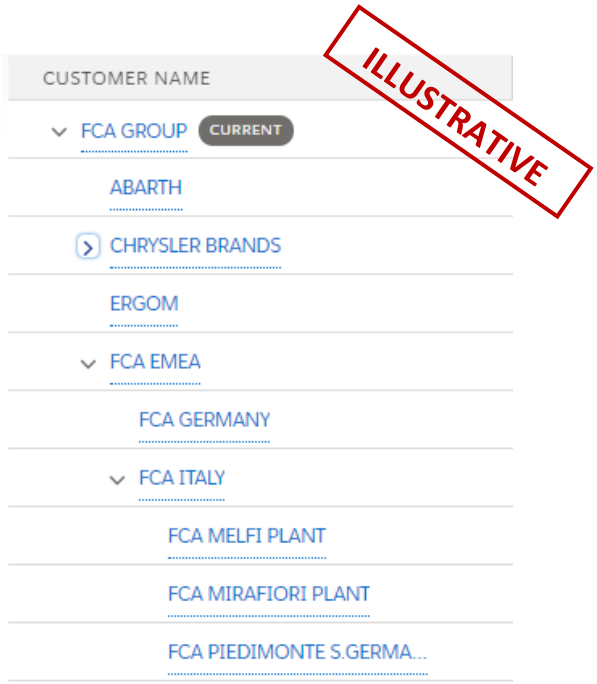
It will be possible create four different type of Customer:

1. **Customer Group**: represents a group of company and it is the highest level of the customer hierarchy. It aggregates different customer families. (e.g. FCA Group)
2. **Customer Family**: represents a company (e.g. FIAT) or a regional division (e.g. FCA EMEA)
3. **Customer**: represents the Customer (e.g. FIAT BRANDS) or a country division (e.g. FCA ITALY)
4. **Customer Production Plant**: represents the Customer production plant (e.g. FCA PLANT MIRAFIORI)

When a new Customer is created on Salesforce, it must be specified the Customer Family in the Parent Customer field and the system automatically fills the Customer Group information; in the same way, when a new Customer Family is created on Salesforce it must be specified the Customer Group in the Parent Customer field.

A single Customer Product Plant record instead will represent a full description of a Customer. The Production Country and Region fields are automatically filled from the address input by Common Data Manager; if he does not know the plant address, he will input the Production Region and Country manually.

It will be possible to view the customer hierarchy using the standard Salesforce functionality:



The visualization of the Customer records can be organized by building views in the Customer TAB in order to show just some data of interest, and filtering them based on different criteria. Some prebuilt views are prepared and available for all the users, anyway a single user will be able to create his own custom visualization.

When a customer is researched through a lookup field (i.e. from the Opportunity), it will be possible to specify in the search filter all the key words needed to identify a specific record; in this way, the search functionality will be able to find directly the record that match with the input keywords.

The following screen shows an example of the Customer records:

ILLUSTRATIVE

	CUSTOMER RECORD TYPE	CUSTOMER NAME	PARENT CUSTOMER	
1	Customer Group	FCA GROUP		
2	Customer Family	FCA MEXICO	FCA NAFTA	FCA GROUP
3	Customer Family	FCA USA	FCA NAFTA	FCA GROUP
4	Customer Family	FCA GERMANY	FCA EMEA	FCA GROUP
5	Customer Family	FCA NAFTA	FCA GROUP	
6	Customer Family	FCA POLAND	FCA EMEA	FCA GROUP
7	Customer Family	FCA EMEA	FCA GROUP	
8	Customer Family	FCA ITALY	FCA EMEA	FCA GROUP
9	Customer	FCA TERMOLI PLANT	FCA ITALY	FCA EMEA
10	Customer	FCA SALTILLO PLANT	FCA MEXICO	FCA NAFTA
11	Customer	FCA AUBURN HILLS PLANT	FCA USA	FCA NAFTA
12	Customer	FCA TYCHY PLANT	FCA POLAND	FCA EMEA
13	Customer	FCA PIEDIMONTE S.GERMANO PLANT	FCA ITALY	FCA EMEA
14	Customer	FCA MELFI PLANT	FCA ITALY	FCA EMEA
15	Customer	FCA MIRAFIORI PLANT	FCA ITALY	FCA EMEA

4.2.1.1 Contacts

It is possible to add the representatives of a specific customer to the database through the standard functionality that allows the creation of a new Contact record, accessible depending on the profile of the user.

In a similar way, contacts data can be edited through a functionality that allows to edit a Contact record.

A contact cannot be saved without specifying the related Account and at least one field between telephone number, mobile and email.

A Contact can be related at any level of the Customer hierarchy.

The visualization of the Contact records can be organized by building views that shows just some data of interest, and filtering them based on different criteria. Some prebuilt views are prepared and available for all the users, anyway a single user will be able to create his own custom visualization.

4.2.2 Vehicle

Vehicle is a custom entity used to track the information about the Customer Vehicle.

It is possible to add a new vehicle to the database through a functionality that allows the creation of a new Vehicle record, accessible depending on the profile of the user. This can be triggered from the “New Vehicle” action under the Vehicle tab.

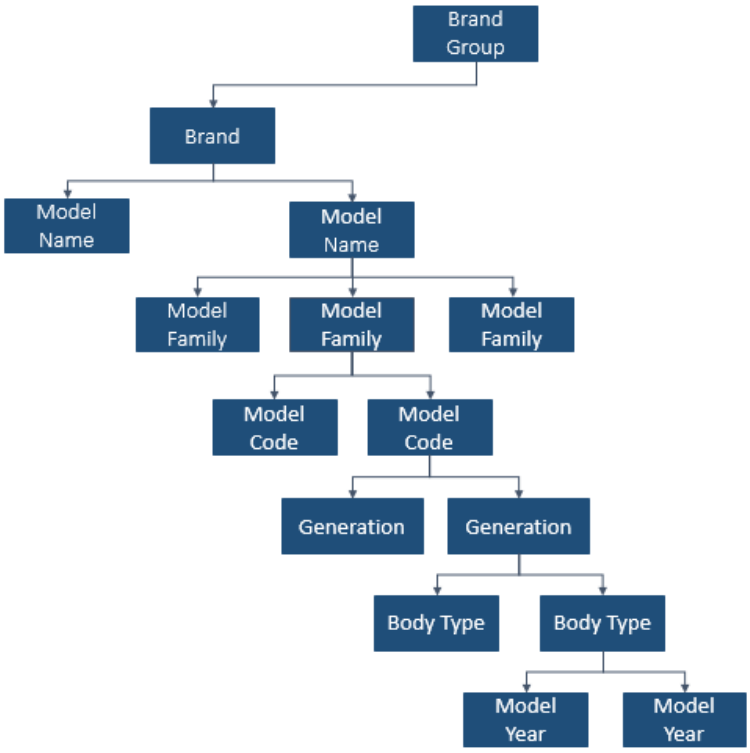
In a similar way, vehicles data can be edited through a functionality that allows editing a Vehicle record.

The Common Data Manager and the Vehicle Data Manager profiles will manage the vehicles entity; all the Business Operations profiles will be able to search for an existing vehicle and link it to an Opportunity. If a Business Operations user needs to create or edit a Vehicle record, he/she will send a request to the Common Data Managers, and they will be able to accept or reject. The request will be traced through the standard object Case.

Vehicles’ information is organized through a tree structure on the flat record, where the levels are represented by:

- Brand Group
- Brand
- Model Name
- Model Family Code
- Model Code
- Generation
- Body Type

- Model Year



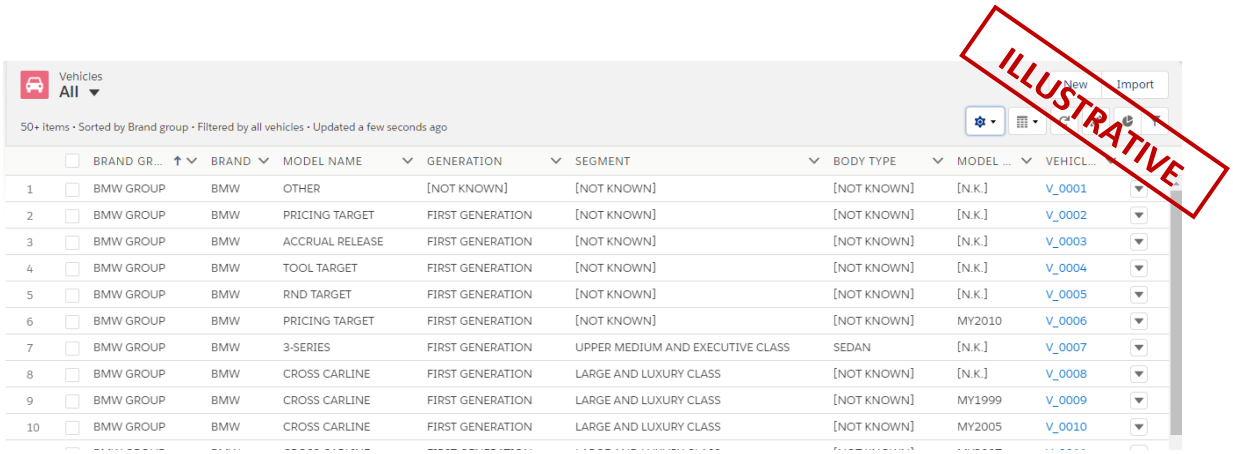
For the following values, it is also the possibility to input the corresponding codes:

- Generation (field: Generation Code)
- Segment (field: Segment Code)
- Body Type (field: Body Type Code)

When a new Vehicle is created on Salesforce, all the hierarchy information can be specified on the same record. In this way, a single Vehicle record will represent a full description of a vehicle. It will also possible to create records where are specified only the highest levels of the hierarchy (for example, the Brand Group).

When a vehicle is researched through a lookup field (i.e. from the Opportunity), it will be possible to specify in the search filter all the key words needed to identify a specific record; in this way, the search functionality will be able to find directly the record that match with the input keywords.

The following screen shows an example of the Vehicle records:



	BRAND GR...	BRAND	MODEL NAME	GENERATION	SEGMENT	BODY TYPE	MODEL ...	VEHICL...
1	BMW GROUP	BMW	OTHER	[NOT KNOWN]	[NOT KNOWN]	[NOT KNOWN]	[N.K.]	V_0001
2	BMW GROUP	BMW	PRICING TARGET	FIRST GENERATION	[NOT KNOWN]	[NOT KNOWN]	[N.K.]	V_0002
3	BMW GROUP	BMW	ACCRUAL RELEASE	FIRST GENERATION	[NOT KNOWN]	[NOT KNOWN]	[N.K.]	V_0003
4	BMW GROUP	BMW	TOOL TARGET	FIRST GENERATION	[NOT KNOWN]	[NOT KNOWN]	[N.K.]	V_0004
5	BMW GROUP	BMW	RND TARGET	FIRST GENERATION	[NOT KNOWN]	[NOT KNOWN]	[N.K.]	V_0005
6	BMW GROUP	BMW	PRICING TARGET	FIRST GENERATION	[NOT KNOWN]	[NOT KNOWN]	MY2010	V_0006
7	BMW GROUP	BMW	3-SERIES	FIRST GENERATION	UPPER MEDIUM AND EXECUTIVE CLASS	SEDAN	[N.K.]	V_0007
8	BMW GROUP	BMW	CROSS CARLINE	FIRST GENERATION	LARGE AND LUXURY CLASS	[NOT KNOWN]	[N.K.]	V_0008
9	BMW GROUP	BMW	CROSS CARLINE	FIRST GENERATION	LARGE AND LUXURY CLASS	[NOT KNOWN]	MY1999	V_0009
10	BMW GROUP	BMW	CROSS CARLINE	FIRST GENERATION	LARGE AND LUXURY CLASS	[NOT KNOWN]	MY2005	V_0010

The visualization of the Vehicle records can be organized by building views that shows just some data of interest, and filtering them based on different criteria. Some prebuilt views are prepared and available for all the users, anyway a single user will be able to create his own custom visualization.

Each record of the Vehicle entity represents a level of the hierarchy. There is no hierarchical relationship between records.

4.2.3 Application Reference

Application Reference will be associable to the Opportunity – instead of the Vehicle. This entity can be used to track the info about engine and transmission and it is used in particular by PWT and EX.

It is possible to add a new Application Reference to the database through a functionality that allows the creation of a new Application Reference record, accessible depending on the profile of the user. This can be triggered from the “New Application Reference” action under the Application Reference tab.

The information track on Engine records are:

- Manufacturer
- Propulsion System Design
- Fuel Type
- Fuel System
- Platform
- Program
- Model

Instead, the information track on Engine records are:

- Manufacturer
- Design
- Sub Design
- Platform

- Program

All these attributes are the list of values and the available field's values depends by the previous field values (e.g. the Propulsion System Design available values depend from Manufacturer values).

The Common Data Manager profile will manage the Application Reference entity; all the Business Operations profiles will be able to search for an existing Application Reference and link it to an Opportunity. If a Business Operations user needs to create or edit an Application Reference record, he/she will send a request to the Common Data Managers, and they will be able to accept or reject. The request will be traced through the standard object Case.

A Permission Set will be created in order to allow specific users to have the grants to manage the Application Reference.

On Salesforce no kind of validation rules or controls will be implemented on this entity.

When an application reference is researched through a lookup field (i.e. from the Opportunity), it will be possible to specify in the search filter all the key words needed to identify a specific record; in this way, the search functionality will be able to find directly the record that match with the input keywords.

The visualization of the A.R. records can be organized by building views that that shows just some data of interest, and filtering them based on different criteria. Some prebuilt views are prepared and available for all the users, anyway a single user will be able to create his own custom visualization.

4.2.3.1 Application Reference to Vehicle

An Application Reference can be linked to one or more existing Vehicles through the junction object "Application Reference to Vehicle".

This object allows to manage the Many-to-many relationship.

4.2.4 Site

The Site is an entity use to track the information about the Marelli Production and Sales site.

It is possible to add a new site to the database through a functionality that allows the creation of a new Site record, accessible depending on the profile of the user. This can be triggered from the "New Site" action under the Site tab.

In a similar way, sites data can be edited through a functionality that allows to edit a Site record.

The Common Data Manager profile will manage the Site entity; all the Business Operations profiles will be able to search for an existing site and link it to an Opportunity. If a Business Operations user needs to create or edit a Site record, he/she will send a request to the Common Data Managers, and they will be able to accept or reject the request that will be traced through the standard object Case.

In order to identify them in a fast way, each site will be identify with a specific "Site Code", generated by the system, with the following naming convention: Business line: Two digits, e.g.: AL, EL, PT etc.

- Country code: Two digits, e.g.: DE, IT, FR etc.
- Minus sign: "-"
- Location (2 digits): RT, CO, etc.

for example: "ALDE-RT", "ELIT-CO".

The Common Data Manager will manually insert the SAP Code identifier.

When a Marelli Site products for more than one Business Line, this will be duplicate.
For example: Corbetta is a production site for both PWT and EL. In this case will be create two different Site:

- PTIT-CO
- ELIT-CO

In order to harmonize the master data among the MM Systems, each Site will be associated with code used in the ERP System. This attribute is called SAP Code and it is insert manually on the site record.

The visualization of the Site records can be organized by building views that that shows just some data of interest, and filtering them based on different criteria. Some prebuilt views are prepared and available for all the users, anyway a single user will be able to create his own custom visualization.

4.2.5 Competitors

It is possible to add a new competitor to the database through a functionality that allows the creation of a new Competitor record, accessible depending on the profile of the user. This can be triggered from the "New Competitor" action under the Competitors tab.

In a similar way, competitors' data can be edited through a functionality that allows to edit a Competitor record.

The Common Data Manager profile will manage the Competitor entity; all the Business Operations profiles will be able to search for an existing competitor and link it to an Opportunity. If a Business Operations user needs to create or edit a Competitor record, he/she will send a request to the Common Data Managers, and they'll be able to accept or reject. The request will be traced through the standard object Case.

On the Competitors there are the information about the Business Line in order to filter on the Opportunity the Competitor for BL. Moreover, there will possible to associate more Competitors to the Opportunity highlighting the main competitor through a flag; this flag will be on the Competitors and will be valued during the Competitor creation or during its variation.

It is not foreseen a validation for the Competitor.

The visualization of the Competitors records can be organized by building views that that shows just some data of interest, and filtering them based on different criteria. Some prebuilt views are prepared and available for all the users, anyway a single user will be able to create his own custom visualization.

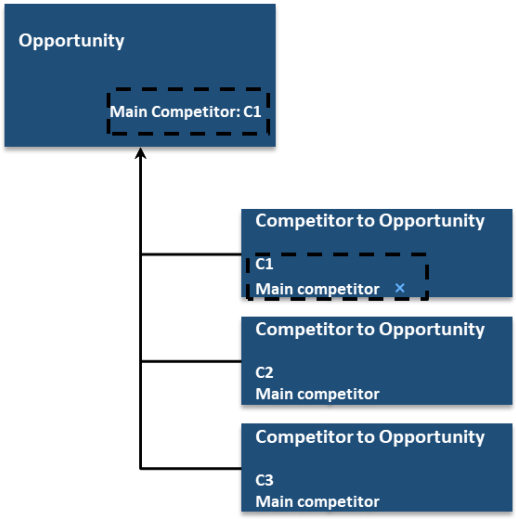
4.2.5.1 Competitor to Opportunity

The custom object “Competitor to Opportunity” allows to implement a many-to-many relationship between the two entities, through this relationship it will be possible to associate many Competitor to one Opportunity.

The main information is:

- Competitor
- Opportunity
- Main Competitor

When a Competitor is set as “Main Competitor” in the Competitor to Opportunity list, the system automatically associates it to the “Main Competitor field” on the Opportunity (see related paragraph).



4.2.6 Manufacturer

Manufacturer is the producer of the vehicle, engine, transmission or an assembler.

It is possible to add a new manufacturer to the database through a functionality that allows the creation of a new Manufacturer record, accessible depending on the profile of the user. This can be triggered from the “New Manufacturer” action under the Manufacturers tab.

In a similar way, manufacturers’ data can be edited through a functionality that allows to edit a Manufacturer record.

The Common Data Manager profile will manage the Manufacturer entity; all the Business Operations profiles will be able to search for an existing manufacturer and link it to an Opportunity. If a Business Operations user needs to create or edit a Manufacturer record, he/she will send a request to the Common Data Managers, and they'll be able to accept or reject. The request will be traced through the standard object Case. On the Manufacturer there are the information about the Business Line in order to filter on the Opportunity the Competitor for BL

The visualization of the Manufacturers records can be organized by building views that that shows just some data of interest, and filtering them based on different criteria. Some prebuilt views are prepared and available for all the users, anyway a single user will be able to create his own custom visualization.

4.2.7 Exchange Rate

The Exchange Rate is the custom object that stores all the rates for the currencies used in the systems, and is segregated by year and by planning status. It's not segregated by Business Line.

It is possible to add a new Exchange Rate to the database through a functionality that allows the creation of a new Exchange Rate record, accessible depending on the profile of the user. This can be triggered from the "New Exchange Rate" action under the Exchange Rate tab.

In a similar way, exchange rates data can be edited through a functionality that allows to edit an Exchange Rate record.

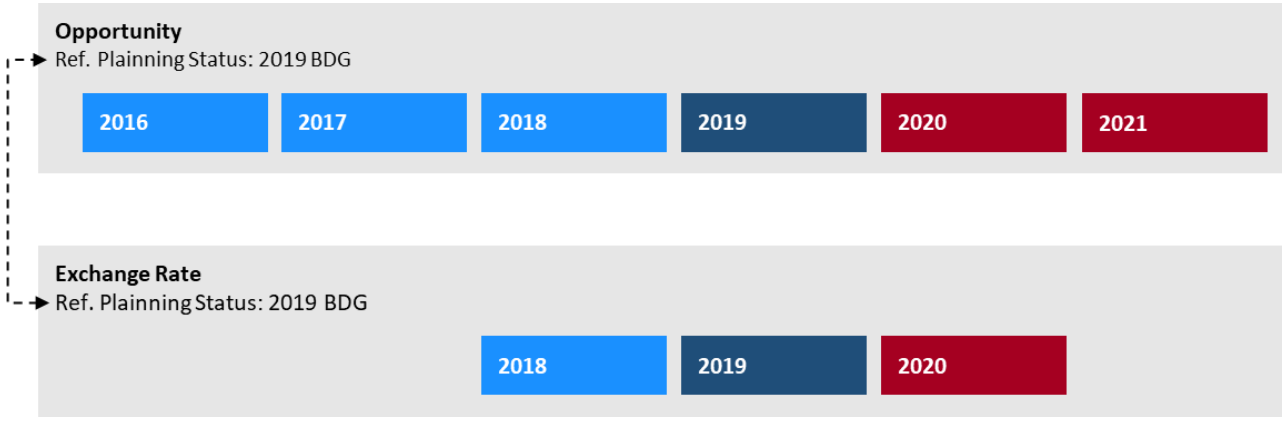
The Common Data Manager and the Sales Planner profiles will manage the Exchange Rate entity; all the Business Operations profiles will be able to search for an existing exchange rate.

The visualization of the Exchange Rate records can be organized by building views that shows just some data of interest, and filtering them based on different criteria. Some prebuilt views are prepared and available for all the users, anyway a single user will be able to create his own custom visualization.

The association of exchange rates to opportunities is done automatically by the system when an opportunity is created and/or the turnover is calculated. The logic to associate an exchange rate to the opportunity is:

1. If there is an Exchange Rate record that matches with the Planning Status Label defined on the opportunity, that Exchange Rate is considered; otherwise, the "CURRENT" Exchange Rate is taken by default.
2. For each year of the opportunity lifetime, the system will search if there is an Exchange Rate record defined for that year and for the Planning Status label as explained at point 1. If there is not such correspondence, the system will associate the last year available for the Exchange Rate found for the associated Planning Status.

The following pictures shows an example:



4.3 Opportunity Management

4.3.1 Opportunity

Opportunity is a standard Salesforce entity used on the Sales Cloud module to manage the life cycle of a sales process.

On Marelli's Sales Planning Tool, the opportunity will continue to assume its standard Salesforce features but, to meet the needs of the Marelli sales process, it will be connected to others objects (standard or custom) such as Customer, Product, Vehicle or Application Reference, and Project.

An opportunity can be added through a functionality that allows the creation of a new Opportunity record, accessible depending on the profile of the user. This can be triggered from the "New" button in the "Opportunities" tab, from the "New Opportunity" button in home page and from the "Create new Opportunity" action from the specific Customer, Vehicle, Product or Application Reference records.

In a similar way, opportunities' data can be edited through a functionality that allows to edit an Opportunity record.

The visualization of the Opportunity records can be organized by building views that shows just some data of interest, and filtering them based on different criteria. Some prebuilt views are prepared and available for all the users, anyway every single user will be able to create his own custom visualization.

Most important data that are specified on the Opportunity are:

- **Sales ID***:* each opportunity is automatically identified by univocal and progressive number, "Sales Id", and its format is BL-######### (BL=Business Line Code; ###### = sequential number). In the same way, the opportunity will also have a unique name associated, with the format MM-######### ("MM" fixed string, ###### = sequential number). The sequential number will be the same for the Sales Id and the Name of the same opportunity. Each Sales ID and Name will be unique identifiers for an opportunity inside a Planning Status or Scenario (see dedicated chapter).
- **Ref. Planning Status**: evidences which is the Planning Status the opportunity refers to.

- **Opportunity Type**: an opportunity can be:
    - **Draft**: created by Sales Accunt or KAM and still not promoted to a relevant stage. When an Opportunity is Draft, it is not considered for the turnover calculation
    - **Approved**: all the opportunities of the Current Planning Status that have been approved by a Sales Planner, or that have been created by the Sales Planner itself. These opportunities are considered for the turnover calculation, basing on their stages
    - **Snapshot**: the snapshot opportunities are cloned copies of the original ones from the Current Planning Status. All the "snapshot" opportunities refer to a Scenario (both Rolling or Official). See dedicated chapter.
- **Stage** and **Probability**: the Opportunity has also a Stage field and a Probability field. The Probability is automatically set depending on the Stage value, according to the following table:

Stage	Probability	Accettable range (included values)
Potential	25 %	0 - 30
Strong Potential	40%	31 -49
To be contracted	75%	50-99
Development	100 %	100
Ongoing	100 %	100
Lost	0 %	0
Stop	0 %	0
Replace	0 %	0
Ongoing LE	100 %	100

- **Customer**: the reference to the Customer record (see dedicated chapter) the Opportunity refers to. The link can be at any level of the Customer Hierarchy
- **Vehicle**: the reference to the Vehicle record (see dedicated chapter) the Opportunity refers to.
- **Product**: the reference to the Product record (see dedicated chapter) the Opportuity refers to.
- **Distribution Channel**: the available list of distribution channels is the following:

Stage
OEM
OES
IAM
OT
RND
TOOL

Prototypes
Royalties
Services
Supplier
Inter - BL
Intra - BL

Each opportunity is a unique combination of Customer, Vehicle, Product and Distribution Channel

- **Dates**:
  - **DOD**: Date of Decision, used to determine which Exchange Rate must be considered at Opportunity (Lifetime) Level
  - **SOP**: indicates the Start Of Production (month and year)
  - **EOP**: indicates the End Of Production (month and year)
  - **SPD**: indicates the Start of Pre Development
  - **SMD**: indicates the Start of Main Development
  - **DTO**: indicated the moment when the ownership of the tool is moved to the customer (see dedicated chapter)

    Basing on the SOP and EOP dates, the system generates all the years and months objects that will be used to manage the volumes and the Price Policy.
- **Price at SOP**: the price defined at the Start Of Production. Basing on this value, the system calculates the average price for each month (if there are not savings applied, the average price will be equal to the Price at SOP till the EOP)
- **Parts per Vehicle** and **Multiply by Parts per Vehicle**: the value of "Parts per Vehicle" indicates how many applications of the Product are considered for the Vehicle (i.e. if the product is a Headlamp, the parts per vehicle should be "2" because for each vehicle there will be produced 2 lamps). The flag "Multiply by Parts per Vehicle" establishes if the turnover calculation must consider or not the value of "Parts per Vehicle" (in fact, established if the specified price is intended per vehicle or per product).

4.3.1.1 Opportunity Classification

According to the value of Product Classification field, the system will enable management of turnover by Volumes & Prices and/or lump-sums.

The available values are:

- *Price Irrelevant*: it will be possible to insert only lump-sums

- *Price Relevant*: it will be possible to insert Volumes & Prices and lump-sums
- *Component*: it will be possible to insert Volumes & Prices and lump-sums. This value identifies specific parts of product that are sold individually.

This field will be mandatory at opportunity creation and the default value will be “Price Relevant”. This value will not be modifiable by the user.

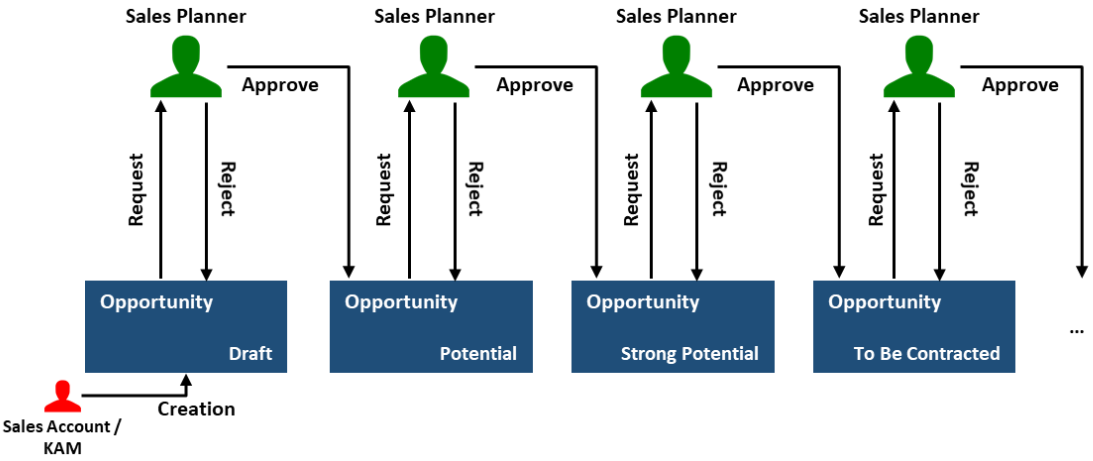
4.3.1.2 Opportunity Approval Process

An Opportunity can be created by the Sales Account, KAM or by the Sales Planner.

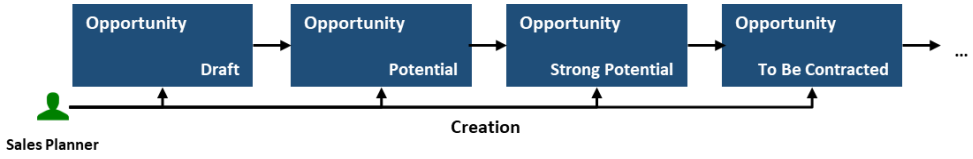
The Sales Account and KAM can create the Opportunity only in “Draft” status; to move it in other stages, he must be submit to approval to Sales Planners. The system automatically creates an approval task assigned to Manager of the user that submitted the Request for Approval.

Every change of stage must be approved by the Sales Planner; when a Sales Account or KAM needs to move an opportunity to the next stage, he must send a request for approval to the Sales Planner.

- It the Sales Planner approves, the opportunity is updated to the next stage
- If the Sales Planner rejects, the opportunity is kept in the current stage.



The Sales Planner create the opportunity in “Draft” or later stages, then can update the opportunity stage without asking for approval.



To submit the Request for Approval it must be respected the Opportunity Validation rules for every stage. To submit the first request (for Draft to Potential), customer, vehicle and product are required, and the Synthetic BOM have to be compiled for the selected product.

4.3.1.3 Opportunity Validation

When an Opportunity is created, the Opportunity Name cannot be changed. If the Opportunity Stage is set as “Replace” the Sales Account, or Sales Planner, must fill the “Replacement Opportunity” field with the new Opportunity, while the stage is set as Won, Lost or Stop they must fill the “Won/Lost/Stop Reason” field with the stage’s reason, otherwise the system doesn’t allow to save the changes.

Moreover, there will also be a series of checks to be performed based on the status of the opportunity so that all fields assume a value consistent and coherent with that status. The value of the fields can be checked before saving the record through Validation Rules that are standard functionalities provided by Salesforce in order to verify if a predefined rule is matched by a field; if the result of this check is negative, an error message will be shown and the record cannot be saved.

If the status of the opportunity passes to **To Be Contracted**: Customer, Vehicle and Product will be required.

If the status of the opportunity passes to **Development**, system will apply these checks:

Field	Check
SOP	Required
EOP	Required
Engineering type	Required
Distribution channel	Required
Product	Required
Contracted technical total volumes	Required
Total contracted Number of weeks	Required

Tool Price cannot be insert if SOP and EOP are not filled.

The dates of the opportunity must be consistent, and they cannot be equal to each other. The correct order is RFQ DATE<DOD<SPD<SMD<SOP<EOP. SOP cannot be changed if actual volumes are present, and EOP cannot be changed to a date earlier than the last actual volume.

If the status of the opportunity passes from **Development** to **Ongoing**, system will apply these checks:

Field	Check
Nominal Weekly contractual capacity	Required
Contractual Number of weeks by year	Required

Field	Check
OES%	Required
IAM%	Required
max flex on weekly volumes requested by customer %	Required
max flex duration max requested by customer (wks)	Required

Flexibility is required for Development and Ongoing stages.

Moreover, the intercompany exchange can be managed by selecting one Business Line as Opportunity Customer and Distribution channel can be filled ad Inter/Intra-company.

4.3.2 Product

4.3.2.1 Product

This entity represents the Final Products and it contains the information about the Business Line Product.

A new product can be added through the functionality that allows the creation of a new Product record, accessible depending on the profile of the user and his Business Line. This can be triggered from the "New Product" action under the Products tab.

In a similar way, products' data can be edited through a functionality that allows to edit a Product record.

On Salesforce no kind of validation rules or controls are implemented on this entity.

The Sales Planner will manage the product entity, only for the Business Line they're associated to; other Business Operations profiles will be able to search for an existing product. If a Business Operations user needs to create or edit a Product record, he/she will send a request to the BL Admin users, and they will be able to accept or reject. The request will be traced through the standard object Case.

The Product hierarchy is characterized by the following fields:

- Product Line
- Product Group
- Product Family
- Product Category
- Product Detail

Moreover, Products are linked to Opportunities through the lookup field and it must be specified the following information, at opportunity level:

- Parts per vehicle → it indicates the number of products to be produced for each vehicle

- Multiply by part per vehicle flag → it indicates whether the total volume of opportunity should be multiplied by the value of parts per vehicle. They will be configured the default value for this fiel for each BL

BL	Default Value
AL	N
PWT	N
EL	N
EX	Y
RD	Y

- MM Production Site
- Price at SOP

On the product record, it is possible insert an image.

The following information determines the behavior of the Opportunities related to the Product:

- **Eligible for Synthetic BOM**: Opportunities tied to Products with this flag active can manage the Synthetic BOM and must complete it before moving to "To Be Contracted"
- **Components Price**: Opportunities tied to Products with this flag active, will calculate automatically the Price at SOP basing on sum of the Value (Price/Cost) fields of the components selected in the Synthetic BOM

4.3.2.2 Component

This entity represents the Critical Component and the Component Specification of Marelli final product, and it is the core of Synthetic BOM creation.

BL Manager and Sales Planner will add components in the system.

The user can create the Synthetic BOM (i.e. Sales Account and/or Sales Planner) through a Product Configurator, with which he can choose the component and the specification among those present in the system and related to the Product chosen on the opportunity.

Component is identified through:

- Component Family (e.g. MODULE)
- Component Type (e.g. E-LIGHT)

Specification is identified through:

- Specification Family (LB)
- Specification Description (LED HIGH BI HIGH PROJECTION)

The user has to specify the Specification Name, then at save the system concatenates the Family with the entered Name.
Example:

- Specification Family: LB
- Specification Name: LED
  After Save:
- Specification Name: LB=LED

4.3.2.3 Component to Opportunity

The custom object "Component to Opportunity" allows implementing a many-to-many relationship between the two entities; through this relationship, it will be possible to associate the components to the Opportunity, in order to track the information about the Synthetic BOM.

The main information is:

- Relationship to Component that allow to have the information about component family and type
- Quantity
- Price (only for EX and PWT)
- Applicability Rate %
- MM Production Site

4.3.2.4 Component to Component

The custom object "Component to Component", that allows to implement a many-to-many relationship between the same entity, through this relationship it will be possible to associate the Critical components to the specifications.

The main information are:

- Relationship to Critical Component
- Relationship to Specification.

4.3.2.5 Component to Product

The custom object "Component to Product", allows to implement a many-to-many relationship between the two entities; through this relationship it will be possible to associate the component to the Product.

The main information is:

- Relationship to Critical Component
- Relationship to Product

4.3.2.6 Codes Association

When a Product is created, the association of the codes that correspond to each level of the product hierarchy is performed through a custom object “Name Codes Association”.

This entity includes the correspondence between a record value and a code that the system must automatically associate, and is managed by the system administrator.

The information that must be input in a single record of the “Name Codes Association” object are:

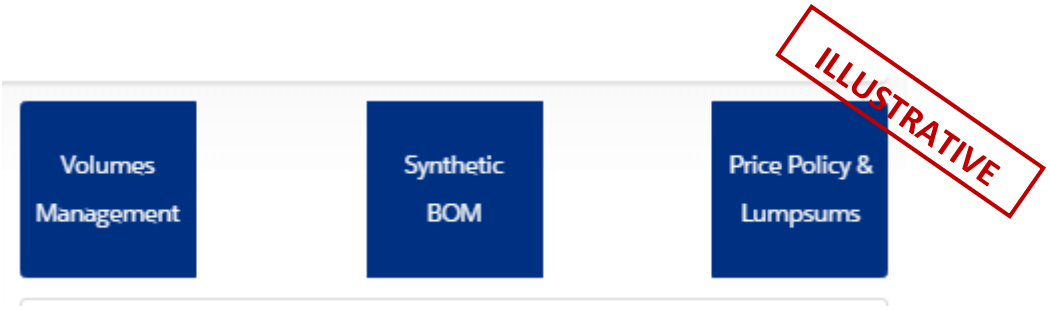
- **Type**: default value is “Standard”. The value “Export For SPACE” is used to identify the codes that must be associated to specific fields that are used only to generate the report for SPACE (e.g. id_brands, id_brandgroups)
- **Reference entity**: the entity where the value for the code must be searched on (e.g. “Product__c”)
- **Field API Name**: the API name of the field where the code must be associated to (e.g. “Product_Line__c”)
- **Value of the field**: the value of the field (e.g. “LIGHTING”)
- **Corresponding Code**: the code that must be retrieved for the specific field that has the specified value on the specified entity (e.g. “LI”)

4.3.3 Synthetic BOM

As described in the “Product” chapter, the Product and Components/Specification are input in the system through the standard Salesforce functionalities, and Components are then associated to the Products through the Product – Component relationship.

Starting from these entities, the system allows to compose the Synthetic BOM, that basically consist in associating Components/Specifications to an Opportunity.

The button "Synthetic BOM" on the Opportunity will allow to access to the Product Configurator page.



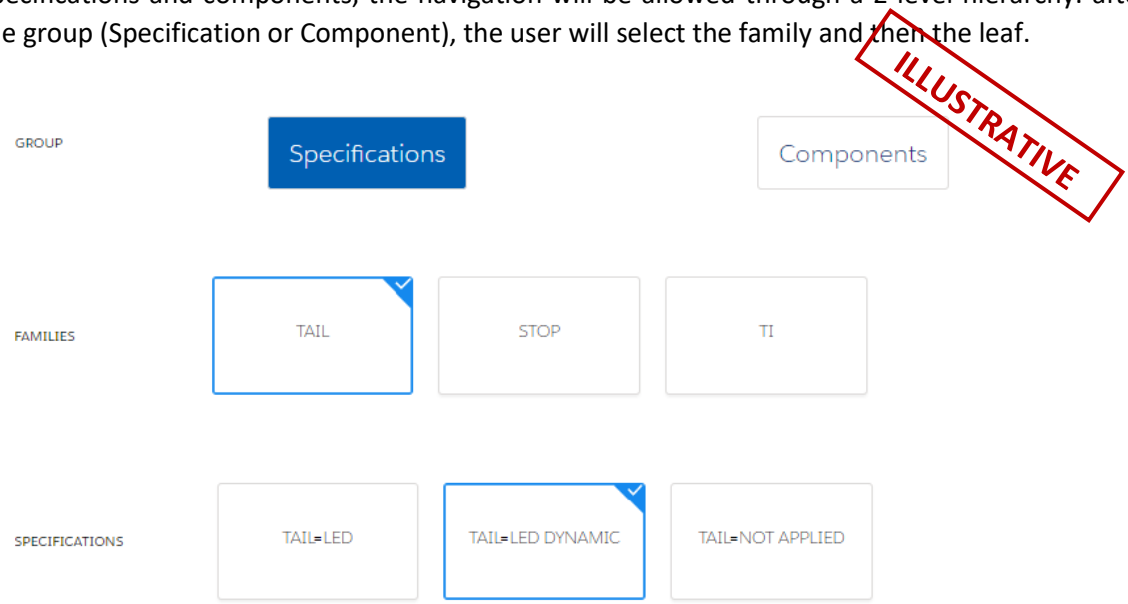
Navigation Buttons on Opportunty layout

The Product Configurator page allows to input both Specifications and Components:

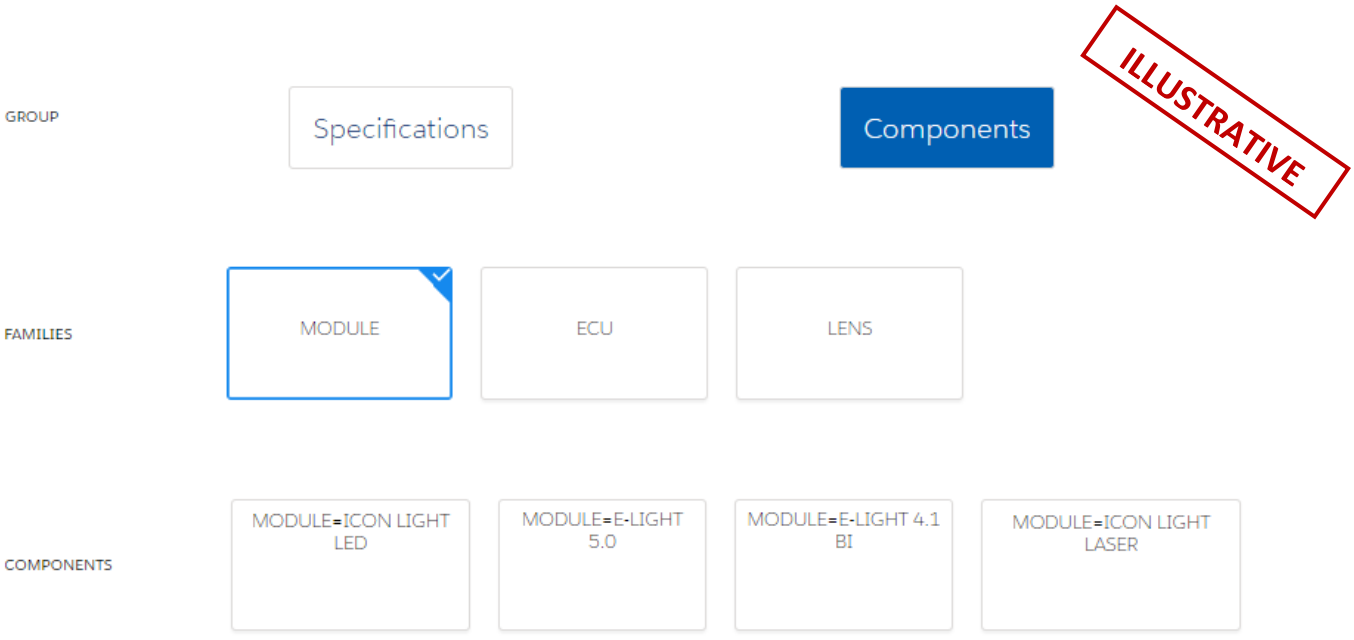
- Specifications: the user will see all the specifications that have been related to the Product selected in the Opportunity through the Product – Component relationship
- Components: the user will see all the Components available for the Business Line, with no filters on Products

In the page of Product Configurator, the user finds the list of Component/Specification Families of his Business Line.

For both specifications and components, the navigation will be allowed through a 2-level hierarchy: after selecting the group (Specification or Component), the user will select the family and then the leaf.



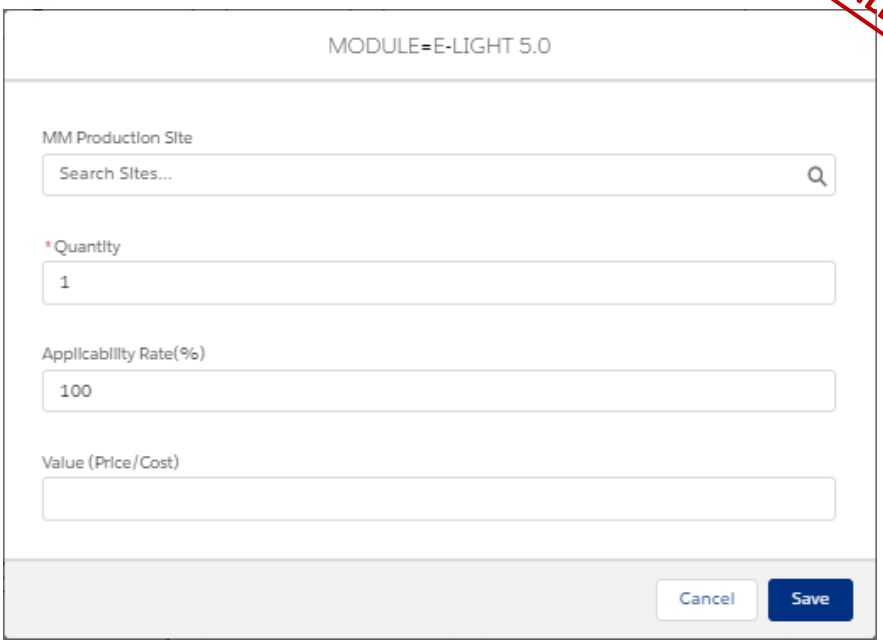
Example of Specification tree



Example of Component tree

At the selection of a Component, the system will show a pop up in which it will be possible to insert some specific details for BL. Below is the complete list of details (depends on the BL):

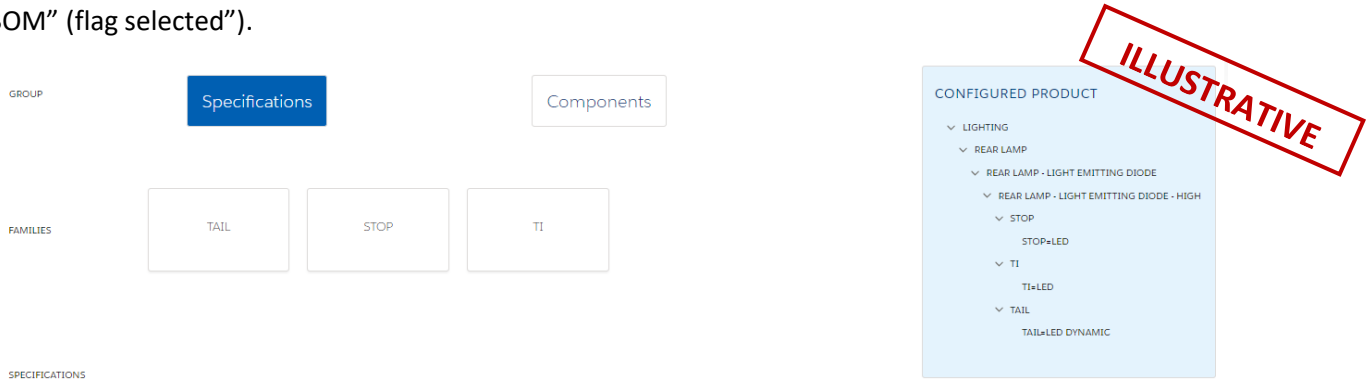
- Quantity
- MM Production Site
- Value (Price/Cost)
- Applicability Rate (%)



Input of Attributes on Components

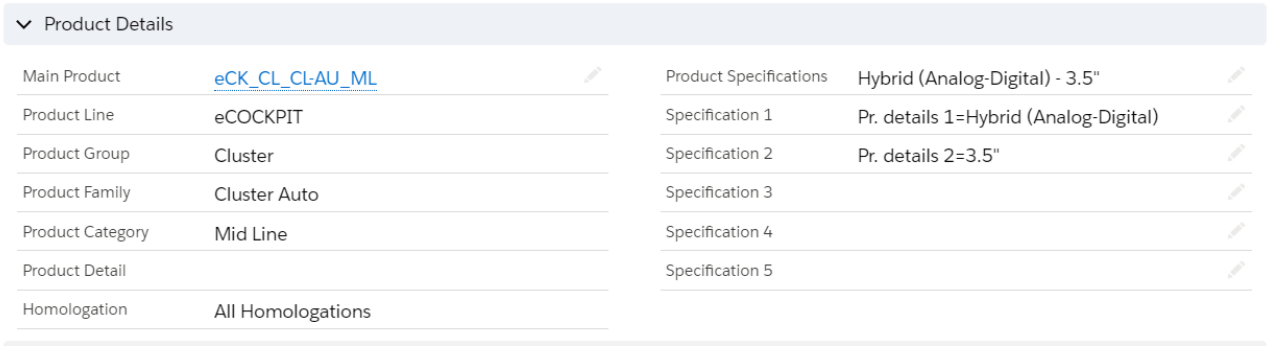
The sum of components cannot be greater than price at sop only for PWT business line.

The composition of the Synthetic BOM will not be mandatory during the creation of Opportunities, it will be made mandatory only for some BLs (e.g. AL, PWT) to be able to evolve the Opportunity to stage “To Be Contracted”. It will be allowed only for Opportunities related to Products that are “Eligible for Synthetic BOM” (flag selected”).



Navigation Tree

The user will be able to see the product information and components choosing ad the right of the layout and a summary of Product and Components in the related list of the Opportunity.



Product details

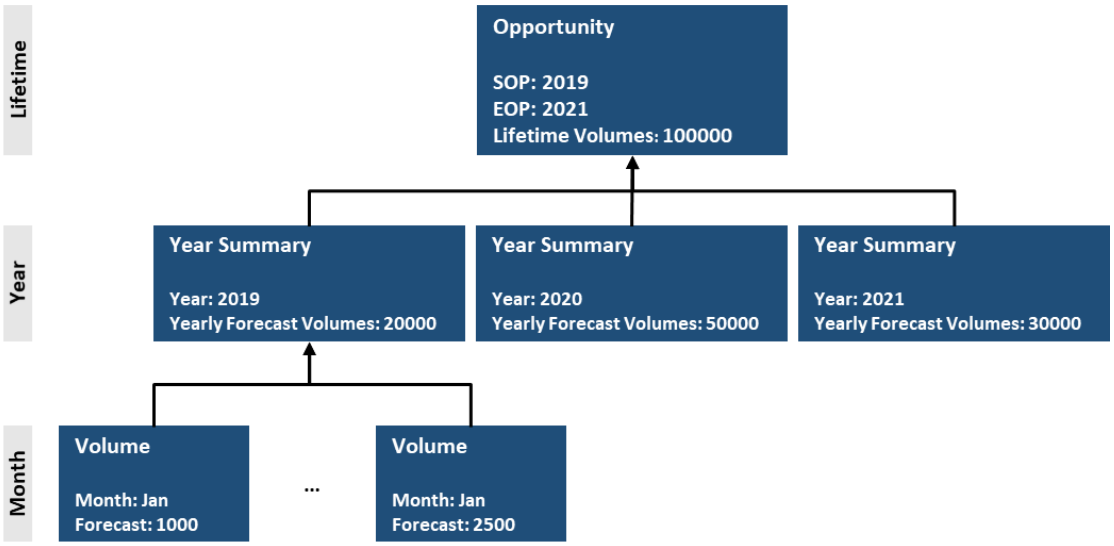
The order of the specification depends not on the order of choice, but on Specification Family level of the specification chosen.

4.3.4 Volumes Management

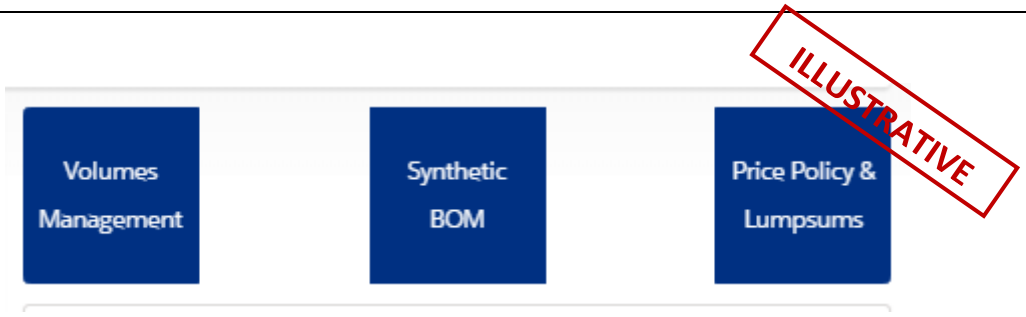
Volumes Management is the focus of production and business planning. It represents the planning of Marelli and Customer production volumes and allows to monitor the market trend.

On each Opportunity that is not “Price Irrelevant”, the input of volumes is crucial to determine the turnover.

At Data Model level, volumes are related to opportunity through a two-level aggregation that considers year and month split of volumes:



Volumes can be added using a dedicated view, accessible from the Opportunity page, that allows the creation of a new Volume record and change the existing records.



From this view, the user will have the possibility to:

- Input volumes at year level and ask the system to split them by month basing on two different algorithms:
  - **Working days** of the Marelli Production Site linked to opportunity record. If there is not a Production Site specified, the default value considered is the Headquarter Working Days.
  - **Region By Market Percentage**, a common data managed by the Common Data Manager that represents the percentage of the region market split by month
- change the volumes at year or month level
- lock a full year in order to do not consider it when in the recalculation function invoked from the split buttons; system will update only the values of the volumes not locked or not modified
- manage Year Share Percentage (see dedicated chapter)

The volumes input by the user through the Volumes Management interface are the Forecast Volumes; from the same view, it will also be possible to see the Rolling Volumes, as a composition of Actuals, EDI (both retrieved from SAP) and Forecast.

4.3.4.1 Rolling Forecast

The rolling forecast is the forecast of the volumes for the current and the following years.

The trend of forecast volumes will be shown using the Salesforce reporting and Einstein Analytics exploiting the data described above on the volumes of the opportunities.

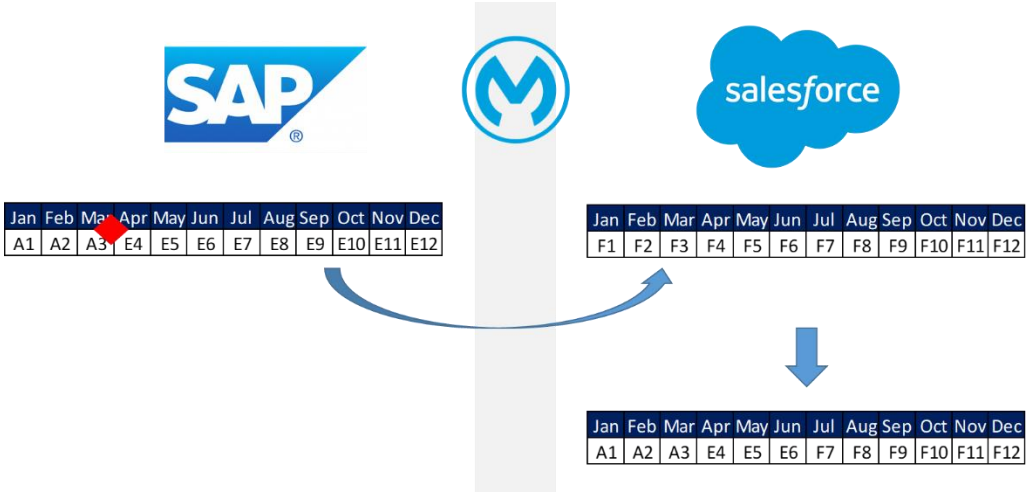
Salesforce will monthly collect the following data from SAP through MuleSoft at Part Number level.

They are available on each Part Number and their aggregate are available on the opportunity level:

- **Actual** of the previous months: the quantity of the product sold to Customer and this value comes from SAP.
  It will also be possible to receive any updates on Actual of past months on Salesforce, overwriting the old Actual value.
- **EDI** for all subsequent months, for the next 12 months.
  The EDI sent to salesforce by SAP will include the current month and the following 12 months, however for the Rolling Forecast trend the system will only consider the following 3 months, for the remaining months we will take into account the forecast.
  At Part Number level the user can change the EDI values.
- **Actual Price:** SAP send to Salesforce the monthly sales price of the product to Customer.

- **Monthly turnover**: turnover on the monthly shipped quantity to customer
  The system will divide the Monthly Turnover to the Actual volumes in order to show the monthly product price

The Actual, EDI, Actual Price and monthly Turnover at Opportunity level are the aggregate of the Part Number values and the sum of them.



A*=Actual Value, E*=EDI Value, F*=Forecast Value

Clicking on Show rolling button in Volumes Management, it is possible to see rollings, with different colours:

- Black if the rolling it's the same value of forecast
- Orange if the rolling it's the same value of actual
- Green if the rolling it's the same value of EDI

For every months is displayed forecast value for rollings if there are not present Actuals or EDI values. If there are Actual values, they will be displayed instead of forecast. For current month e for following two months, if they are present, must be displayed EDI values.

4.3.5 Price Policy

The management of opportunity turnovers depend on volumes and price; the price specified as "Price at SOP" represent the starting price related to the opportunity, then it can be modified through adding savings.

The system calculates the Monthly Price basing on the price of the previous month with the application of savings input in the current month.

Basing on each Monthly Price, the system then calculates the Average Yearly Price.

For each year, the system also stores the information about the Last December Punctual Price, that represents the December price of the previous year; this will be used in turnover calculations as explained in the dedicated chapter.

The turnover is then also influenced by lump-sums, that represent incomes related to a single product on the same opportunity.

The '20XX Yearly Economical Overview' section reported yearly total of saving, lumpsum, turnovers, volume, and December Price Current Year for every year in lifetime of opportunity. All data can be converted with the correct exchange rate for the year and the planning status, by clicking a currency button.

Example of Yearly Economical Overview in Price Policy & Lumpsum

4.3.5.1 Savings

Saving Management represents how the system manage the Saving at month level, and they will be added through the "Price Policy & Lump-sums" page.

Marelli has four types of savings:

A. Contractual Saving (CS)
B. Additional Saving (AS)
C. Technical Saving (TS)
D. End of Amortization (EOA)

Depending on the type selected, the page layout will show different information to be input by the user:

- in case of A, B, C – user must input the corresponding month and year, specifying if the saving is applied from the start of the month or from the middle
  - in case of A, B – user will be asked to input a percentage value
  - in case of C – user will be asked to input an absolute value

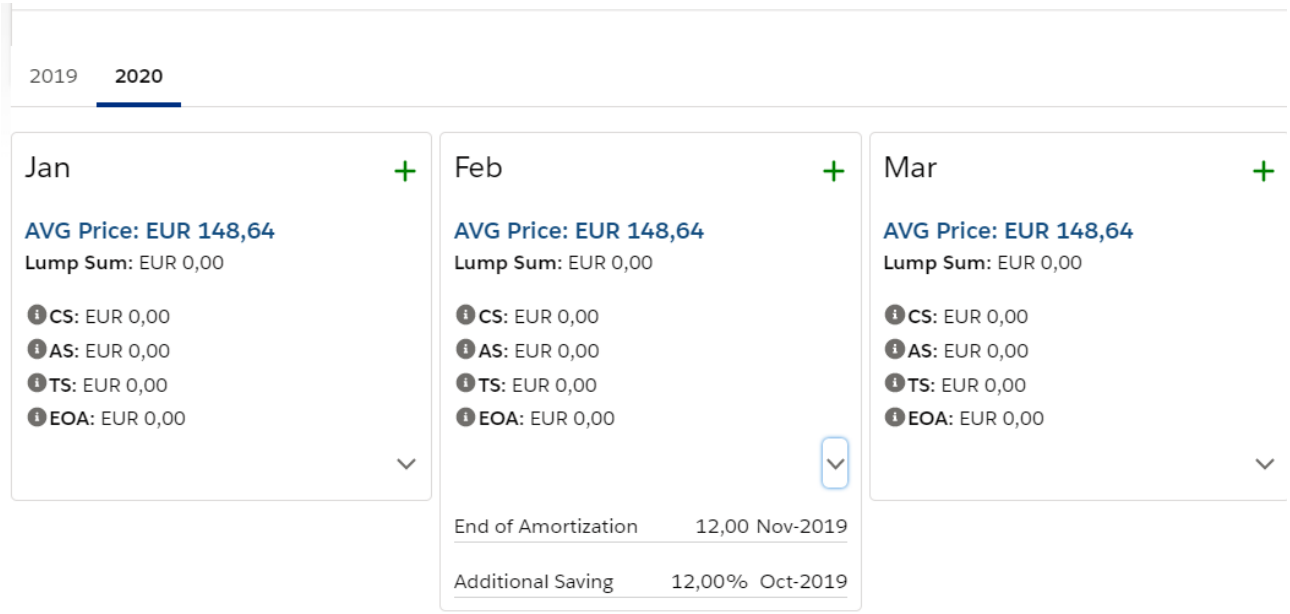
- in case of D – the user must specify the total volume of the products and the percentage of saving to be applied. The system will automatically calculate the date on which the discount is applied based on updating the volumes when they exceed the value of volumes inserted. EOA Date may change when the actual volumes are updated in Salesforce by SAP, since the total volume production must be respected.
  Will be possible to manage three different types of End of Amortization:
  - Tooling
  - R&D
  - Standard

  The system will allow to manage one EOA saving for each type on the same opportunity.

For CS, AS and TS, the user will be able to insert two saving per type each month and they will start at beginning or middle of the month, based on the start date. If the saving is applied from the beginning of the month, it will affect the monthly price for the total number of volumes of the month; if the saving is applied from the middle, it will affect the monthly price for the 50% of the volumes of the month.

Only for EX business line, the saving applied will have effect only on the price of the “IRON” component for “Hot End” Products.

When a saving is inserted in a month, the impact is valid only for the calendar year, but it will affect the average price for all the lifetime of opportunity (and although there is no impact, the saving will always be visible in the window at the bottom of each month). If the user wants, he can extend the duration of the saving (for CS, AS and TS), selecting Multi Year (values are x2, x3, x4) in phase of saving’s creation.



Example of savings

All these saving will affect the Average Monthly Price: percentage values or absolute values will be added up to it. Following the formulas that define monthly impact:

- CS value (%)*Average Price of month before saving entry*forecast current month
- AS value (%)*Average Price of month before saving entry*forecast current month
- TS value*forecast current month
- EOA value* forecast current month

Only for AL, there are Carryover fields (for CS, AS, TS and EOA, not visible at layout) that represent a different duration of savings, with the following rules:

1. If saving is saved in a month during calendar year of SOP, it will have an impact for a number of months calculated by the following formula: *Impacted months = 12 - (SOP month - 1)*
2. If saving is saved in a month out of calendar year of SOP, it will have an impact for twelve months

For example:

- Opportunity with SOP in April 2019 → Impacted months = 12 - (4 - 1) = 9

  - Saving in August 2019, impact for 9 months [Agosto 2019 - Aprile 2020]
  - Saving in November 2019, impact for 9 months [Novembre - Luglio 2020]
  - Saving in March 2020 , impact for 12 months [Marzo 2020 - Febbraio 2021]

4.3.5.2 Lump-sums

The lump-sums will be added from the same “Price Policy & Lump-sums” page used to add savings. Users will select the year and month, then will add the amount of the lump-sum.

More than one lump-sum can be added in the same month; from the “Price Policy & Lump-sums” page, each month will display the sum of the amounts of all the lump-sums added on that specific month.

There are three different kind of lumpsums:

- Standard
- Tooling
- R&D

For “Standard” and “R&D” type, the behaviour is the same: the lump-sum is considered for the turnover calculation with reference to the year where the lump-sums is input (e.g. if a Standard lump-sum is insert on January 2019, it will be considered for the turnover of 2019),

The lump-sums “Tooling” behaviour depends on a date specified at Opportunity level: DTO (Date of Transfer Ownership). This date represents the moment when the ownership of the tool goes to the customer.

If the DTO is not populated, the behaviour of the lump-sums “Tooling” is the same of “Standard” and “R&D” types.

If the DTO is populated on the opportunity, all the lump-sums “Tooling” input in the system before this date, will be considered in the turnover calculation of the year of the DTO; all the lump-sums “Tooling” input in the system after the DTO, will be considered in the turnover calculation of the year they refer to.

No Change of a passed DTO will be allowed inter years

Once a DTO is inserted it will not be possible to delete it, if it is referred to a previous year

For the existing opportunities and for the new ones created in SalesDB during the transition period, the DTO will be automatically calculated by considering the month/year of last lump-sum inserted (for all opportunities with DC= TOOLING, Product= Tooling, Flag= N)

4.3.6 Turnover

The Turnover represents the economical income related to the opportunity, based on the volumes and the price policy. Both these variables are managed in the way shown in the previous chapters.

Turnovers are calculated with monthly granularity, and then aggregated at year level (for each year between the SOP and EOP) and at lifetime level.

There are different types of turnover, calculated as follows:

Turnover	Formula
Finance FC Turnover	Finance Base Turnover + Lump-sums
Sales FC Turnover	Sales Base Turnover + Lump-sums
Year Turnover	∑ (Monthly Forecast Volumes x Monthly Price) + Lumpsum
Base Finance FC Turnover	∑ (Monthly Forecast Volumes) x Yearly Average Price Previous Year
Base Sales FC Turnover	∑ (Monthly Forecast Volumes) x December Punctual Price Previous Year
Year Base Turnover	∑ (Monthly Forecast Volumes x Monthly Price)

Turnover	Formula
Yearly Actual Turnover	∑ (Monthly Actual Turnover)
Yearly Actual Volumes	∑ (Monthly Actual Volumes)
Yearly Forecast Volumes	As inserted by Sales
Sales Delta	Turnover Actual - Sales Base Turnover
Finance Delta	Turnover Actual - Base Turnover

4.3.7 Part Number

Part Number is a final product variant and it can be product in one or more Marelli Production Site. On Salesforce, a Part Number can be associated at only one MM Production Site.

It can be added only if related to a specific Opportunity (there is no "Part Numbers" tab) through a functionality that allows the creation of a new Part Number record, accessible depending on the profile of the user. In a similar way, part numbers' data can be edited through a functionality that allows editing a Part Number record.

The BL Data Manager, Sales Account and Sales Planner profiles will manage the Part Number entity, and no kind of validation rules or controls are implemented on its.

Part Numbers can land on Salesforce in three different ways:

- Creation through User Interface
- Upload from csv file through Data Loader
- Integration flow from SAP (or from Demand Plan for PWT)

The main information track on this entity are:

- Customer Part Number Code
- MM Part Number Code
- PNShare (%)

PNShare field tracks information about the volume percentage of the Part Number compared to the volumes reported on Opportunity; using this value the system automatically split the volumes by years and months. The Part Numbers volumes are not editable.

The percentage field is insert manually by Sales and when it changes the system automatically re-calculates the forecast volumes on Part Number.

4.3.8 Project

Project is a custom object create to track the information about project. It is an opportunities aggregator and no kind of validation rules or controls are implemented on it.

It can be added through a functionality that allows the creation of a new Project record, accessible depending on the profile of the user. This can be triggered from the “New Project” action under the Project tab, or from the Opportunity Page through the “Project” lookup field.

In a similar way, projects data can be edited through a functionality that allows editing a Project record.

The following information must be entered when a project is created is:

- Project Name: it is mandatory
- Project Family: it is not mandatory and it is a list of values
- Project Key: it is manually insert and it is mandatory for move opportunity from TBC to DEV or an up stage
- Project Id: it is auto-generated by the system with this format: BLPRJ-YY######

The Project Key field has the XXX-#### format, where:

- XXX is the BL code (AL, EL, EX, PWT, SA, SS)
- #### is a progressive number 1 to 9999

System will perform a check on the Project Key format.

The visualization of the Project records can be organized by building views that that shows just some data of interest, and filtering them based on different criteria. Some prebuilt views are prepared and available for all the users, anyway a single user will be able to create his own custom visualization.

4.3.8.1 Project Family

Project Family is a custom object created to track the information about project families related to Projects.

It can be added through a functionality that allows the creation of a new Project Family record, accessible depending on the profile of the user. This can be triggered from the “New Project Family” action under the Project Families tab, or from the Project Page through the “Project” lookup field.

The Business Line is automatically associated depending on the value associated to the user that creates the Project Family record.

Only the Sales Planner can create a new Project Family.

The Project Family can be related to a Vehicle and/or a Customer; they’re not mandatory fields.

The visualization of the Project Family records can be organized by building views that that shows just some data of interest, and filtering them based on different criteria. Some prebuilt views are prepared and available for all the users, anyway a single user will be able to create his own custom visualization.

4.3.9 Planning Status

Planning status is the forecast situation of opportunities in a certain period; it includes all the opportunities that contribute (through volumes and price policy) to determine the turnover of the planning status.

All Planning Statuses will be include following data:

- Opportunity details
- Product details
- Part Number details
- Forecast Yearly and Monthly Volumes
- Forecast Prices
- Forecast Sales and Finance Turnover
- Savings
- Lump-sums
- Main Competitor
- Production & Sales sites
- Actual and EDI Volumes
- Actual Turnover

In the system, the list of planning status is managed through a custom object “Planning Status” available only at the System Administrator.

Planning Status are divided in two groups: **Unofficial** and **Official**.

4.3.9.1 Unofficial Planning Status

The unofficial planning status represent the rolling forecast of opportunities, snapshotted every month at the closure of the planning status and at the opening of the subsequent one. There can be only one unofficial planning status open, which is defined “Current Planning Status”.
In phase of creation, an Opportunity is inserted in the current planning status; it will be automatically copied in the following one until its Stage will change in “Stop”.

The full list of available unofficial planning statuses is the following:

Planning Status	Reference Month	Planning Status Label
Forecast 1+11	January	YYYY Forecast 1+11
Forecast 2+10	February	YYYY Forecast 2+10
Forecast 3+9	March	YYYY Forecast 3+9
Forecast 4+8	April	YYYY Forecast 4+8
Forecast 5+7	May	YYYY Forecast 5+7
Forecast 6+6	June	YYYY Forecast 6+6
Forecast 7+5	July	YYYY Forecast 7+5
Forecast 8+4	August	YYYY Forecast 8+4

Planning Status	Reference Month	Planning Status Label
Forecast 9+3	September	YYYY Forecast 9+3
Forecast 10+2	October	YYYY Forecast 10+2
Forecast 11+1	November	YYYY Forecast 11+1
Forecast 12+0	December	YYYY Forecast 12+0

The unofficial Planning Statuses will be generated automatically by the system for all BLs in the same moment.
In a specific day of each month (configurable only by the System Administrator) the system will close the current open planning status, and it will open the new one. As agreement, during the first phase after the go-live, this operation will be managed manually by the Support Team.

When an unofficial Planning Status is closed, it will be moved to Einstein Analytics. Data on Analytics cannot be modified, neither from System Administrators; to modify a planning status frozen on Analytics, a copy of the planning status must be kept on Salesforce as Scenario.
Einstein Analytics will allow the comparison between closed planning statuses and the current open.

4.3.9.2 Official Planning Status

The Official Planning Status is created by the Sales Planner in determined periods of the year; the system will manage the following types of Official Planning Status:

- **Quarterly Forecast**: forecast on the turnover of the current year. This type of Planning Status takes a snapshot of the opportunities every 3 months
- **Budget**: forecast on the turnover of the next year.
- **Business Plan**: forecast on the turnover planned for 5 years following the current one.

The available labels that can be given to an Official Planning Status are the following:

Planning Status	Type
Business Plan	Business Plan
Business Plan Refresh	
Business Plan Draft	
Business Plan Scenario 1	
Business Plan Scenario 2	
Pre-Budget	Budget
Budget	
Forecast 1	Quarterly Forecast
Forecast 2	
Forecast 3	

Planning Status	Type
Forecast 4	

To manage the Official Planning Status in the system, it will be used the Scenario Management feature (see dedicated paragraph).

4.3.10 Scenario Management

The system will give the possibility to create different scenarios in order to generate a cloned copy of a subset of opportunities, modify key data (e.g. volumes, savings, dates) and see the impact comparing the scenario with the original version of the opportunities.

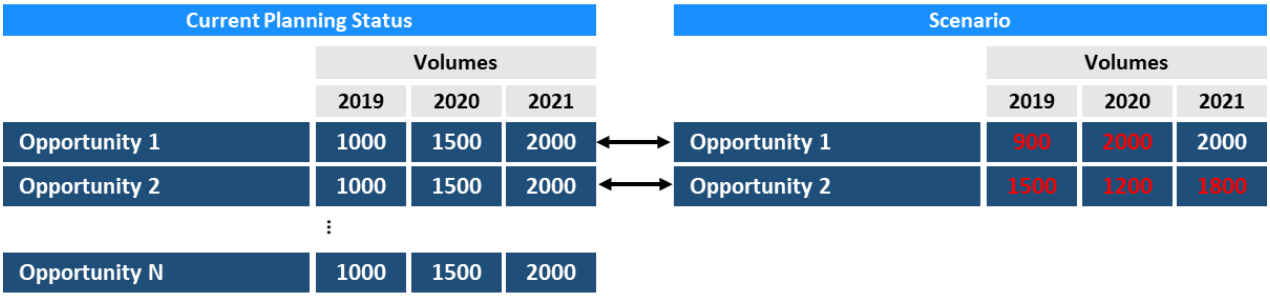
There are two different kinds of Scenario that can be created: **Rolling** and **Official**.

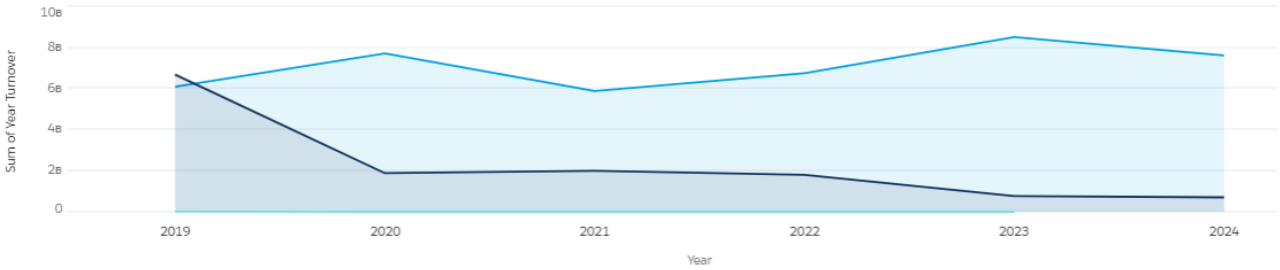
4.3.10.1 Rolling Scenario

The Rolling Scenario is available for Sales Accounts, KAM and Sales Planners. This functionality allows these profiles to create a scenario that include a subset of opportunities (cloned from the "Approved" ones).

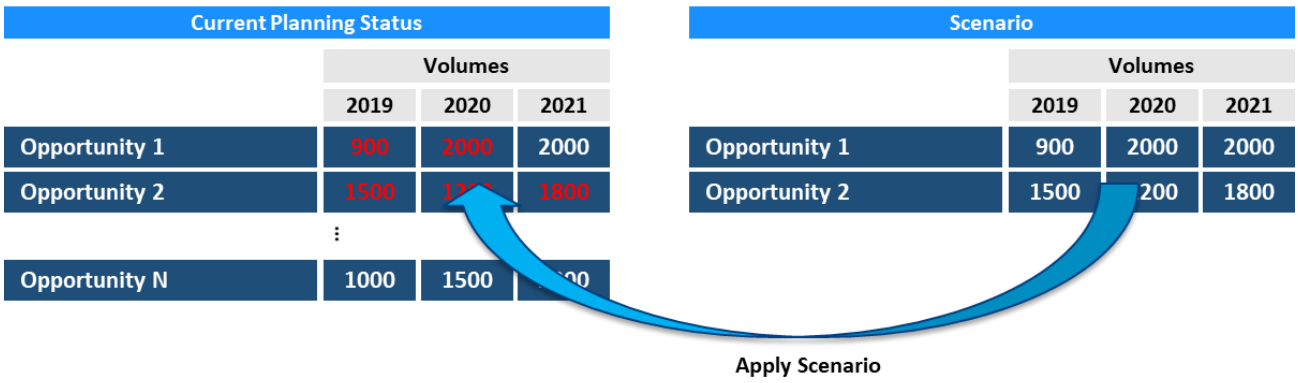
The cloned opportunities related to the Scenario can then be edited without having impacts on the real ones, and through standard Reports & Dashboards there will be the possibility to compare the scenario with the Current Planning Status in order to see the impact of the modifications made on the opportunity.

When a user creates a scenario, only the opportunities that will be modified should be included.





Once the scenario of interest has been obtained, the user can consolidate it using a dedicated push button "Apply Scenario": upon approval, all the volumes and price of the opportunities will be overwritten with those of the scenario and the opportunities themselves will be labeled as to be included in the Planning Status.



The visibility rules of the opportunity included in the scenario will follow the same criteria defined for the opportunities of the Current Planning Status.

4.3.10.2 Official Scenario

The Official Scenario is available for Sales Planners; this kind of user will be able to create an Official Scenario to manage the Official Planning Status

The Sales Planner will create an Official Planning Status by creating a new Scenario and selecting “Official” as scenario type. Then, the Sales Planner will decide the set of opportunities that will be included in the Planning Status, selected between the ones of the Current Planning Status.

The available labels that can be given to an Official Scenario are the following:

Label	Planning Status	Type
BP	Business Plan	Business Plan
BP-REF	Business Plan Refresh	

Label	Planning Status	Type
BP-DRAFT	Business Plan Draft	
BP-SCEN1	Business Plan Scenario 1	
BP-SCEN2	Business Plan Scenario 2	
PRE-BDG	Pre-Budget	Budget
BDG	Budget	
FCT-I	Forecast 1	Quarterly Forecast
FCT-II	Forecast 2	
FCT-III	Forecast 3	
FCTIV	Forecast 4	

Once created, the opportunities in the Official Scenario will be visible to users depending on the visibility rules defined at opportunity level.

The Sales Planner will close the Official Scenario through the button “Close Scenario”; this will have the effect to freeze all the opportunities included in the Official Scenario, in order to prevent users from editing them.

When the Official Scenario is frozen, it won’t be possible to add/remove opportunities and to edit opportunities already included.

4.4 Central Volumes Management

Central Volumes are entered by the Vehicle Data Manager and Common Data Manager, and are related to a specific Vehicle or Application Reference.

The Data Manager can input central volumes by hand through the user interface built on a custom page, or upload them in a massive way through a csv import using the massive central volumes update function (see following guide).

Import wizard - Vehicles_v 1.2.docx

These volumes will be entered per year, based on the Customer Start and End Production Date set at vehicle level. After that, the system will automatically split them by month using an algorithm that divide the volumes according to the monthly working days of the Headquarter and automatically calculate the total volume for the vehicle (sum of yearly volumes).

The Vehicle Data Manager will manually perform monthly or yearly adjustment.

When Data Manager changes the start and/or the end production date on an existing vehicle, the volumes will be modify according (create and delete consequently). In case of the SOP is postponed the volumes of

the deleted month are deleted, instead, if the SOP is anticipated the volumes of adding months are automatically created with value equals to 0.

In the same way, if the EOP is anticipated the volumes of the excluding month are deleted; instead, if the EOP is postponed the volumes of adding months are automatically created with value equals to 0.

The Sales Planners of the business lines can ask for a modification on the central volumes. This will contain the request to volume variation and all data that Sales Planner would like to communicate to Data Manager and the system will assign it to Data Manager that will be able to choose whether to run or not the volume variation and the quantity.

There is no approval process but only a request that the Sales Planner send to Vehicle Data Manager.

Vehicle Data Manager can change the vehicle volume after the creation and submit them to BL, in order to notify them by email.

4.4.1 Applying of Share

The following shares represent the percentage used by the system to automatically split the volumes and propose them to the user who can modify them:

- BL Market Share
- Body Type Share
- Opportunity Yearly Share
- PN Share

4.4.1.1 BL Market Share

Given the central volumes, each BL will be able to define a market share at the Vehicle level, in a realistic market forecast of this BL used the BL Market Share entity.

The BL Market Share will always be created when a central volume is entered, the system will automatically assign a default value of 100% and creates the volumes; Sales Planner after can change the percentage of BL Market Share with a greater or lower value.

The value of BL Market Share will be managed as a percentage value of the total vehicle production volumes.

This entity is characterized by the following attributes:

- Business Line
- Market Share percentage (%)
- Market Share value
- Vehicle Model

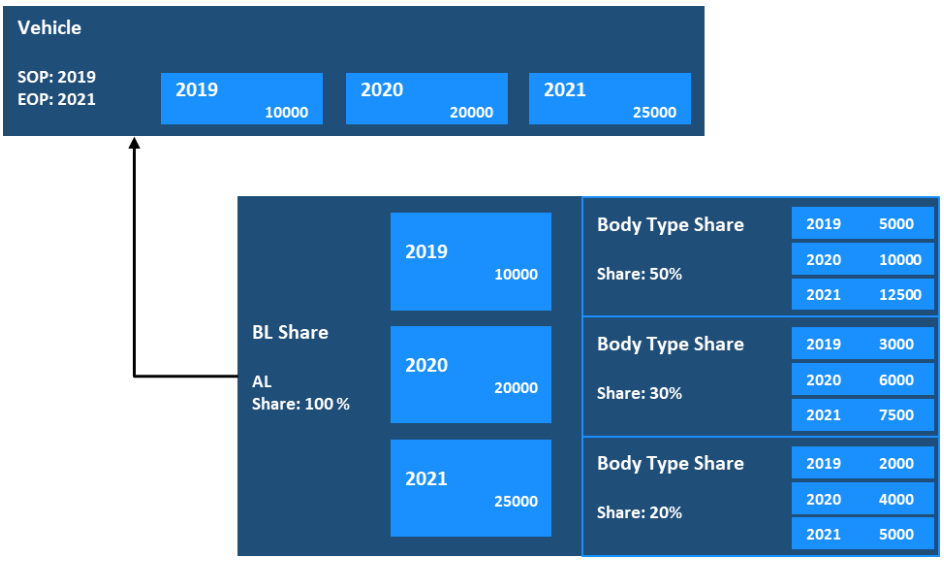
4.4.1.2 Body Type Share

For Each vehicle, the Sales Planner can create and associate to BL Market Share, one or more, Body Type Share, that represent a further division of the volumes with a greater level of detail.

Body Type Share record is characterized of:

- Business Line
- Rate (%)
- Vehicle Body Type

The value of Body Type Share will be managed as a percentage of the BL Market Share production volumes, and automatically the system will calculate the value.



Each Sales Planner will be able to:

- change the BL Market Share percentage up to the value 0% if it has no impact for that specific vehicle

- create one or more Body Type Share from BL Market Share record in case of the BL manages the different product versions for different Vehicle Body Type.
- open a case to Vehicle Data Manager to request modifications at Central Vehicle Volumes

When the Sales Planner creates a Body Type Share he must insert the percentage of BL Market Share volumes for this specific Body Type. After that, the system automatically will calculate the total volume value. On this record is not managed the yearly and monthly volumes.

The system will verify that the sum of the percentages of the Body Type Share will not be greater than 100% of the BL Market Share.

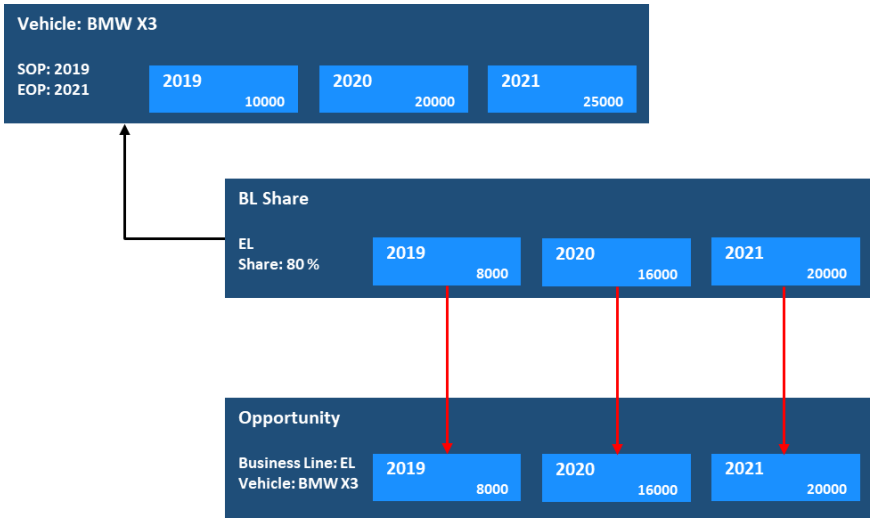
After that the Vehicle Data Manager has modified the existing central volumes on existing vehicle, the Sales Planner will be engaged through an Approval Process to modify BL Market Share. If Sales Planner accepts the Central changes, the system automatically modifies the value on Body Type Share entity (if they are present) according to new BL Market Share value and the Body Type Share percentage.

The link between the Body Type Share and the Opportunity is managed through the selection of a “Body Type” value in the related field (“Body Type”) that is valorised manually of the Opportunity.

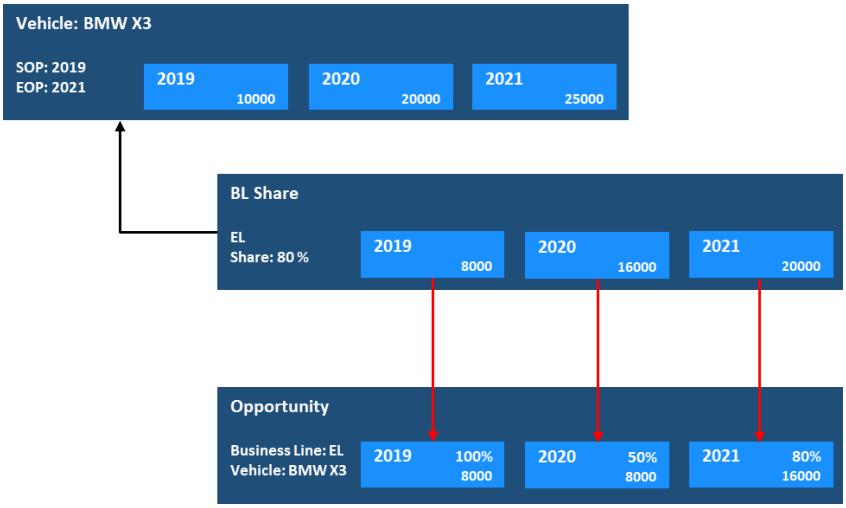
4.4.1.3 Opportunity Yearly Share

At Opportunity level, the volumes are automatically set after the Opportunity creation and the Opportunity is linked to a vehicle that has the central volumes specified.

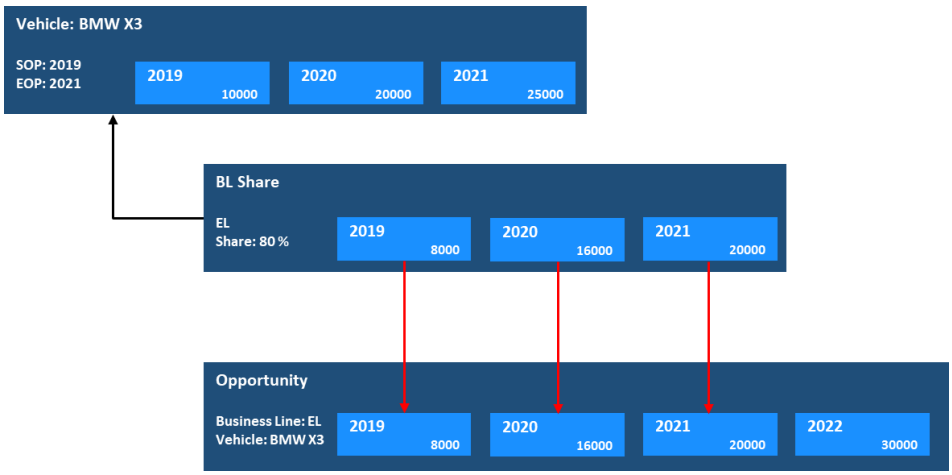
The volumes automatically inherited by the opportunity are the vehicle volumes adjusted according to the percentages described so far (BL Share, Body Type Share).



The volumes can then be modified on every year according to percentages specified on each single year of the opportunity; every year can then have a different value of percentage that will be used by the system to recalculate the volumes for the specific year.



The percentages are applied only on years of the opportunity lifetime that correspond to years of central volumes; years of the opportunity that have no correspondence with central volumes are not aligned with central updates.



4.4.1.4 Part Number Share

PN Share is a percentage manually insert by Sales on the Part Number record and it is not automatically updated when the Part Number Volumes (yearly or monthly) are changed; it is kept fixed.

In case of the opportunity share is changed, the System will automatically calculate the opportunity volumes according to the new percentage and, in the same way, the PN Volumes will be automatically changed according to the PN Share respect to the opportunity volumes.

In case of the opportunity volumes is changed, the System will automatically calculate the opportunity share according to the new values and, in the same way, the PN Volumes will be automatically changed according to the PN Share respect to the opportunity volumes.

In case of updates of Central Volumes, PN share will follow the same updating logic as the Opportunity Yearly Share Share.

4.4.2 Business Processes

Business Process 1 – Creation of a New Vehicle

1. Vehicle Data Manager creates a vehicle and inserts SOP, EOP and yearly Volume (e.g. Jeep Renegade, 12/2018 - 12/2030)
2. System:
    a. Calculates the total central volumes on the Vehicle as a sum of yearly volumes (e.g. Jeep Renegade, 100.000, 12/2018 - 12/2030)
    b. creates one BL Market Share with percentage 100% for each BL (e.g. AL 100%, EL 100%, PWT 100%, etc.) and copies the central volumes on each record.
    c. Sends an email notification to the Sales Planners of each BL containing the information about the central volumes
3. Every Sales Planner can change the percentage for his BL (e.g. AL 80%, EL 140%, PWT 0%, etc.) or maintain the value insert by the system (100%). Then the system automatically updates the BL Market Share volumes adjusted basing on the percentage.

    In case of Sales Planner modifies the BL Market Share percentage, he must input the reason of the change.

    If the reason is “Other”, the Note field is mandatory.

    The Sales Planner can also modify the volumes calculated by the system moving quantities from months to other, but he cannot add/remove volumes; to edit the quantity of volumes, the only way is to edit the percentage.
4. The sales planner can manually create one, or more, Body Types Share basing on the Vehicle Body Types present in the system. Then, he inserts the Body Type Share percentage. At this level, the information available is Body Type percentage and total number of volumes. There is not the yearly and monthly volumes split.
5. Sales:
    a. creates a new opportunity and specifies a vehicle

b. If the vehicle selected has a Model Name specified but does not have the Body Type, the system will automatically relate the BL Market Share volumes associated to the selected vehicle and BL. Otherwise, if he selects Vehicle with Body type value, the system automatically relates the Body Type Share volumes.

The Opportunity Share percentage input by the system during the opportunity creation is set at 100%. The Sales can edit this value, and then the system recalculates the volumes tied to the opportunity basing on the new percentage. Sales can also edit the values of the volumes and system will recalculate the percentage.

6. The system will consider the BL Market Share, or Body Type Share, volumes included in the Opportunity SOP and EOP Date range adjusted based on the Opportunity Share input on the Opportunity level.
7. Sales:
    a. Creates one or more Part Numbers
    b. Inserts the PN Share at Part Number level
8. In a similar way as the Opportunity, the System creates the Part Number volumes from Opportunity volumes adjusted based on the PN Share. Volumes on the Part Number are not editable; the only way to modify them is to edit the PN Share percentage.

Business Process 2 – Creation of a new Opportunity without Central Volumes

1. Sales creates a new opportunity and links it to a vehicle or application reference without central volumes associated

    In this case the Opportunity Share will not be considered and the system will not automatically generate the volumes on the Opportunity.

    The Sales will be able to insert the volumes on opportunity in the SOP and EOP date range.

If a Vehicle Data Manager creates central volumes on an existing vehicle that is already associated with one or more opportunities, all these opportunities will be impacted by this change. The owner of the impacted opportunities will receive an email notification when the central volumes are created and associated to the vehicle.

2. The System:
    a. creates one BL Market Share with percentage 100% for each BL (e.g. AL 100%, EL 100%, PWT 100%, etc.) and copies the central volumes on each record.
    b. Sends an email notification to the Sales Planners of each BL containing the information about the central volumes

3. Every Sales Planner can change the percentage for his BL (e.g. AL 80%, EL 140%, PWT 0%, etc.) or maintain the value insert by the system (100%). Then the system automatically updates the BL Market Share volumes adjusted basing on the percentage.

   In case of Sales Planner modifies the BL Market Share percentage, he must input the reason of the change.

   If the reason is “Other”, the Note field is mandatory.

   The Sales Planner can also modify the volumes calculated by the system moving quantities from months to other, but he cannot add/remove volumes; to edit the quantity of volumes, the only way is to edit the percentage.

4. The sales planner can manually create one, or more, Body Types Share basing on the Vehicle Body Types present in the system. Then, he inserts the Body Type Share percentage. At this level, the information available is Body Type percentage and total number of volumes. There is not the yearly and monthly volumes split.

5. The system automatically updates the opportunities and Part Numbers created before the Central Volumes creation taking into account the Opportunity and PN Share.

   Central Volumes Update will not affect the Opportunities Won (Development and upper stages), Lost or Replace.

   On these opportunities, the system will automatically fill the Warning field: “The vehicle central volumes are changed but this opportunity hasn't impacted because it is in end stage (Won, Lost or Replaced)”.

The new opportunities created after the Vehicle Central volumes creation will use the new available vehicle volumes (ref. Use Case 1).

Business Process 3 – Central Volume Update

1. Vehicle Data Manager changes the vehicle volumes (amount and/or distribution of volumes) by years or month (e.g. Jeep Renegade, 100.000 → 200.000) and automatically the system calculates the total.

   Once completed all changes, the Vehicle Data Manager will confirm the changes with the save button and will send a notification to all BL with the submit button.

   The owner of the impacted opportunities will receive an email notification when the central volumes are updated.

2. After change submission, the System:

   a. creates an approval process for each BL that has BL Market share different from 0, and assigns it to the Sales Planners of each BL.

3. Every Sales Planner, on BL Market Share, can:

    a. **Approve** the changes proposed automatically by the system (e.g. AL 80%, 80.000 → AL 80%, 160.000). The system will update the volume values by years, or months, maintaining the same percentage.

    b. **Reject** the changes proposed automatically by the system and maintain the old total volume in absolute value (e.g. AL 80%, 80.000 → AL 40%, 80.000). The system will update the percentage value (by increasing or decreasing it) to maintain unchanged the absolute value of volumes.

    After rejecting, he will be able to modify manually the percentage.

    c. **Re-assign** the approval to BL Sales Director or BL Data Manager.

    The percentage of Body Type Share is not affected by this update; the percentage remains unchanged, while the total volumes on Body Type share is automatically updated basing on the BL Market Share new volumes.

    The system automatically updates the opportunity volumes based on the Opportunity Share, and in the same way it updates the Part Numbers based on the PN Share.

    Central Volumes Update won't affect the Opportunities Won (Development and upper stages), Lost or Replace.

    On these opportunities, the system will automatically fill the Warning field: "The vehicle central volumes are changed but this opportunity hasn't impacted because it is in end stage (Won, Lost or Replaced)".

When (and if) a digital RFQ is created and linked to one or more Part Numbers, the forecast volumes of Part Numbers will be editable from the Sales and the opportunity tied to the same Part Numbers will receive back the volumes modification. For this reason, the opportunities related to RFQs will not be affected by central volumes updates.

The same logic will be applied to all the opportunities in Development and upper stages, even if there are not Digital RFQs related.

Business Process 4 – Vehicle EOP and/or SOP update

1. Vehicle Data Manager extends the End of production date (and/or Start Production Date) for a vehicle (e.g. Jeep Renegade, 12/2020 → 12/2023)

2. System adds the volumes split by additional months all with the value equal to 0. The Sales will be able to insert the volume values in the additional months/years.

3. The Vehicle Data Manager will be able to modify the yearly (or monthly) volumes through the Volume Management page and, ended the changes, he will confirm the changes with the save button and will send a notification to all BL with the submit button .

The owner of the impacted opportunities will receive an email notification when the central volumes EOP and/or SOP Dates are updated on the vehicle.

4. The system:
    a. Calculates the new total vehicle volumes automatically on Vehicle entity
    b. creates an approval task for each BL impacted and assigns it to Sales Planner
5. Every Sales Planner, on BL Market Share, can:
    a. **Approve** the changes proposed automatically by the system (e.g. 12/2020 → 12/2023). The system creates the volumes split by years, or months, with the same value of central vehicle volumes and it updates the EOP and SOP Date
    b. **Reject** the changes proposed automatically by the system (e.g. 12/2020 → 12/2020). The end of production date for this BL Market Share is not update.

       After rejecting he will be able to manually modify the percentage.
    c. **Re-assign** the approval to BL Sales Director or BL Data Manager.

   The percentage of Body Type Share is not affected by this update, but the total volumes on Body Type share is automatically updated basing on the BL Market Share new volumes.
6. Every sales planner can modify manually the existing Body Type Share or create a new one based on the Vehicle Body Type present in the system
7. The system automatically updates the opportunity volumes based on the Opportunity Share, and in the same way it updates the Part Numbers based on the PN Share.
8. In case of Vehicle Data Manager anticipates the End of Production Date (or postpones the Start of Production Date) the volumes of years excluded will be deleted and, ended the changes, he can submit they to BL trough the “Submit changes to BL” button.
9. The system re-calculates the new total vehicle volumes and creates an approval task for each BL.
10. After that, the following steps are the same of 5 and 6 of this use case.

Business Process 5 – BL Market Share Percentage Update

1. The Sales Planner can change the BL Market Share percentage.

   The percentage of Body Type Share is not affected by this update, but the total volumes on Body Type share is automatically updated basing on the BL Market Share new volumes.

   The owner of the impacted opportunities will receive an email notification when the BL Market Share volumes are changed.

2. The system automatically updates the opportunity forecast volumes based on the Opportunity Share, and in the same way it updates the Part Numbers volumes based on the PN Share.

BL Market Share Update will not affect the Opportunities Won (Development and upper stages), Lost or Replace.

On these opportunities, the system will automatically fill the Warning field: “The vehicle central volumes are changed but this opportunity hasn't impacted because it is in end stage (Won, Lost or Replaced)”.

Business Process 6 – Body Type Share Percentage Update

1. The Sales Planner can change one, or more, Body Type Share percentages.

   The total volumes on Body Type share is automatically updated by the system basing on the new percentage.

   The owner of the impacted opportunities will receive an email notification when the Body Type Share volumes are changed.

2. The system automatically updates the opportunity forecast volumes based on the Opportunity Share, and in the same way it updates the Part Numbers volumes based on the PN Share.

Body Type Share Update will not affect the Opportunities Won (Development and upper stages), Lost or Replace.

On these opportunities, the system will automatically fill the Warning field: “The vehicle central volumes are changed but this opportunity hasn't impacted because it is in end stage (Won, Lost or Replaced)”.

Business Process 7 – Opportunity Share Update

When the Sales changes the Opportunity Share on Opportunity the system automatically:

a. Re-calculates the opportunity volumes basing on the new percentage and splits them using the monthly production plant working days

b. Updates the Part Numbers linked to this opportunity basing on the PN Share percentage.

When the Sales changes the Opportunity Volumes on Opportunity the system automatically:

a. Splits them using the monthly production plant working days

b. Re-calculates the opportunity share basing on the new percentage

c. Updates the Part Numbers linked to this opportunity basing on the PN Share percentage.

The Opportunities Lost or Replace are not editable by the user.

4.5 RFQ Process

The RFQ will be managed through the BID Process, which is composed by several steps (*e.g. tasks*) described as follow.

The RFQ process will be used to create an economic proposal to present to the customer. The flow includes approval tasks and tasks in which specific actions are required such as uploading documentation, etc.

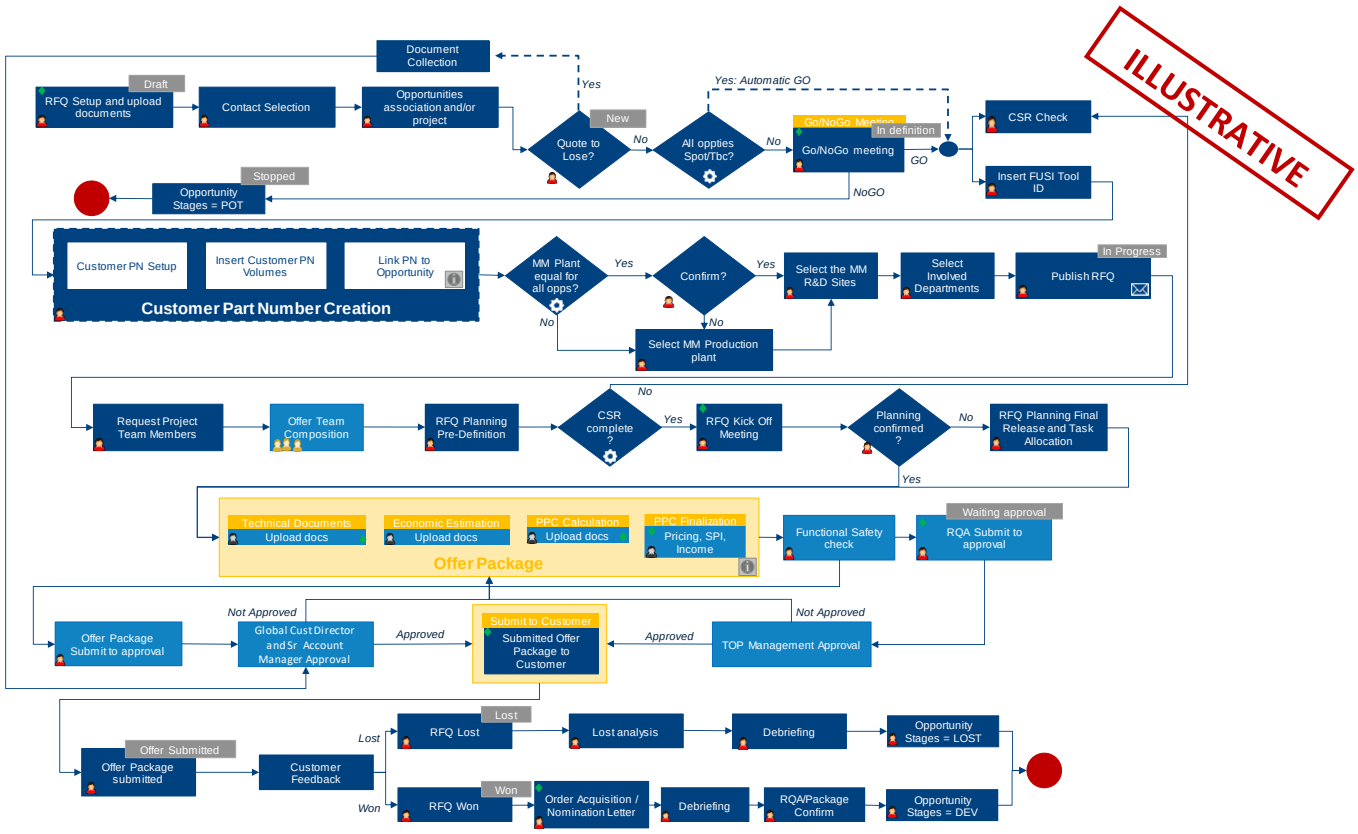
RFQ will be created starting from RFQ Tab and it will contain all the tasks that make up the RFQ process flow. The flow defines different tasks and operations to do. The RFQ Process has been designed with a workflow methodology in order to easily manage each process task within the solution.

The whole process includes different kind of tasks:

- **Configuration/Composition task**: this task will be used to track the configuration activities of the RFQ as the choice of the opportunity, the planning, the selection of the plants, etc. To move process forward, it will be mandatory to execute all the actions required.
- **Documentation task**: this task will be used to allow the user to upload the documents requested during the process and to show how documents are mandatory or optional
- **Approval Process**: this task will be used to notify the team or the people that have to approve the RFQ. For every approval process's task, the system selects automatically a list of approver and sends an email notification to them. This list can change based on specific criteria. In Each email notification there is a link to access the approval process details.
- **Decision Point**: these tasks allow following the different process, based on the decision or the validation executed. These kind of task can be automatic or manual
- **Team Composition**: this task will be used to select the Offer Team members. The team members and the relevant managers will be notified with an email with a summary of the RFQ.

For some tasks, specific forms will be created to manage the data insertion (es. Go/NoGo Meeting form or Debriefing form).

The following is the complete flow of the whole process:



Detailed information about RFQ Process are described on the document *Solution Design - RFQ Process*.

4.6 Sharing and Visibility

4.6.1 Sales Planning Tool

The management of data visibility on the Sales Planning Tool will be governed through the 2 configurations levels provided by Salesforce:

- **Role**: defines the level of visibility that a user has on every single system data. Management is done by hierarchy, so as to give visibility to a role of data that can be accessed and to all data that can be accessed by roles that are hierarchically placed at a lower level, while, unless have a sharing rule dedicated and specific, a default role will not be able to access the data of a role that is at a higher hierarchical level

- **Profile**: defines the possibility of access to a specific data or not and if access is permitted to the type of shares allowed for that specific profile.

On the Sales Planning Tool will be created specific roles and profiles that will be used to define what each user can see and how it can interfere with this data.

The following profiles will be created:

Common Data Manager: assigned to users that will manage the central data. They are dedicated to create and edit Customers, Contacts, Vehicles, Sites, Manufacturers and Competitors. Have read only permissions on Opportunities and related data.

Vehicle Data Manager: users that manages central volumes related to the Vehicle (and Application Reference).

Sales Account: profile assigned to sales agents, which are responsible to create and manage opportunities for their BL. Sales Accounts have write access to all the entities related to the Opportunity (Saving, Lump-Sums, Volumes) and read access on common data.

BL Data Manager: has the same permissions of the Sales Account, but can also create Planning Statuses and manage the BL Market Share for his BL.

Sales Planner: has the same permissions of the BL Data Manager, but can also manage Products (create, edit) for his BL.

Sales Planner PWT: sales planner profile created only for PWT users, that needs to manage different entities

KAM: profile assigned to global customer directors, they have write access on contacts and can generate planning statuses. They can even generate reports and export to other users.

KAM EL EMEA: KAM profile created only for EL users, that needs to edit savings and volumes on EL opportunities.

Sales Director/ Regional Sales Director: manager of the Sales Accounts/Planners of a BL. They have read access to all the opportunities of the BL, and can also create planning statuses.

Top Management: users with this profile have global read access on all common data, BL data, opportunities.

Local FIN: limited read access on a subset of entities. They cannot see contacts and volumes.

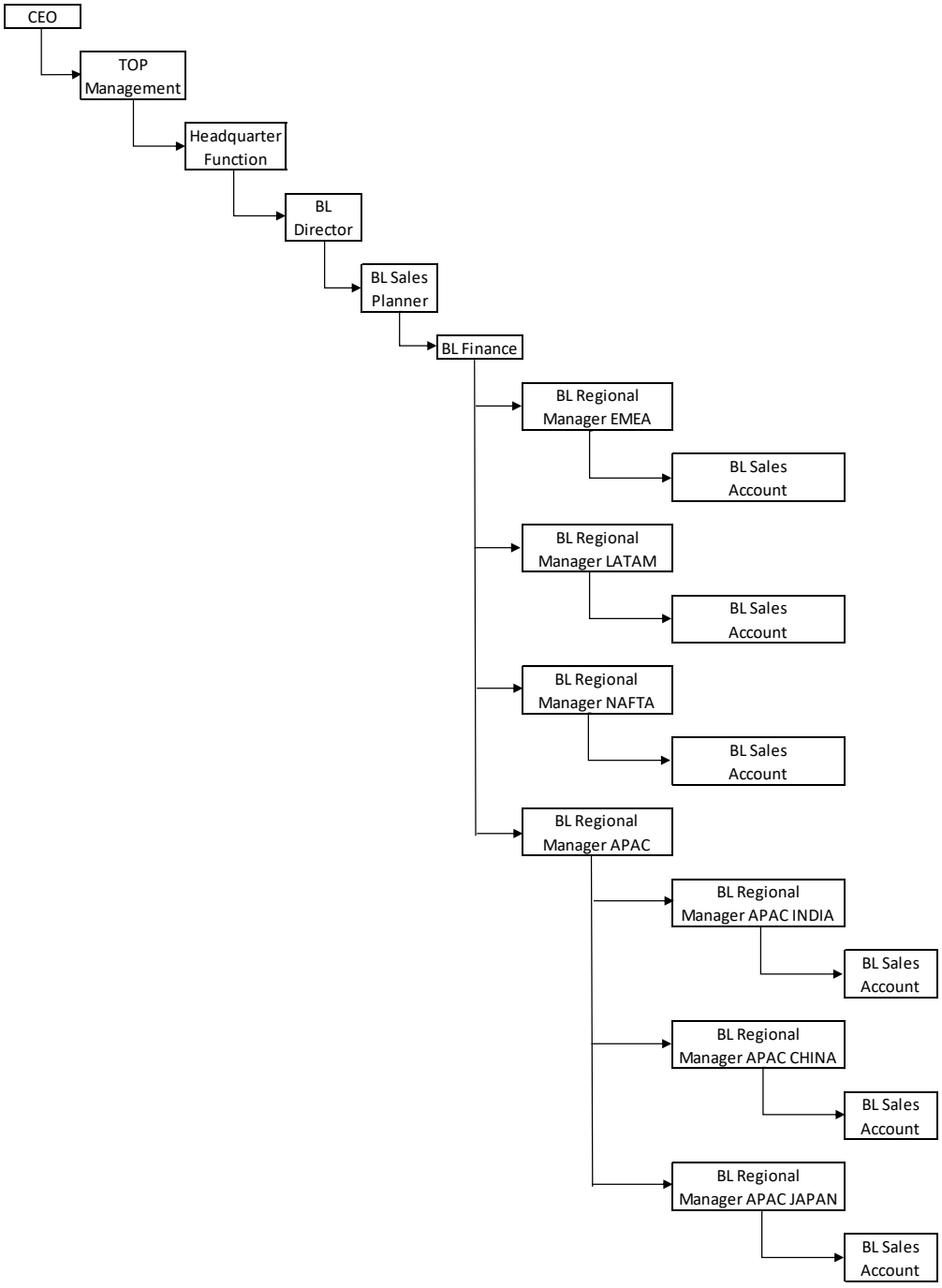
Product Manager: profile dedicated to the management of the Product Catalogues

The full definition of profiles is included in the following attachment:

Magneti Marelli -
Profiles Permissions

The matrix included in the Excel shows if a functionality (on rows) is enabled for a profile (on columns).

The role hierarchy manages the visibility by region. The following image it tracks the headquarter function and the BL function that will be replicated for each BL:



The customer visibility is managed through Sharing Rules base on the Customer Group in EMEA, on Customer Region outside EMEA, and the rules are the same for all BL.

The EMEA KAMs are, for example, to the following Customers:

- AM, FORD and GM
- VW GROUP

- FCA GROUP
- PSA GROUP
- BMW GROUP
- RENAULT, NISSAN and MITSUBISHI

The KAMs outside EMEA are to the regional Customers:

- NAFTA CUSTOMERS
- LATAM CUSTOMERS
- APAC INDIA CUSTOMERS
- APAC CHINA CUSTOMERS
- APAC JAPAN CUSTOMERS

4.6.1.1 Opportunity visibility

The visibility of opportunities is based on the following data in the opportunity:

- Business Line (is the same BL of the user that create the opportunity)
- Customer Team (is the same CT of the user that create the opportunity, and it cannot be changed manually. In case of user cross BL, it is the same CT of the customer group of the customer)
- Customer Group (that depends on the customer of the opportunity, and it has a customer team included in sharing)
- Production Site Region (is chosen by the user during the creation phase)
- Sales Site Region (is chosen by the user during the creation phase)

These data define the public groups to which visibility will be shared. The user belonging to public groups will have visibility.

Following an example:

Opportunities data:

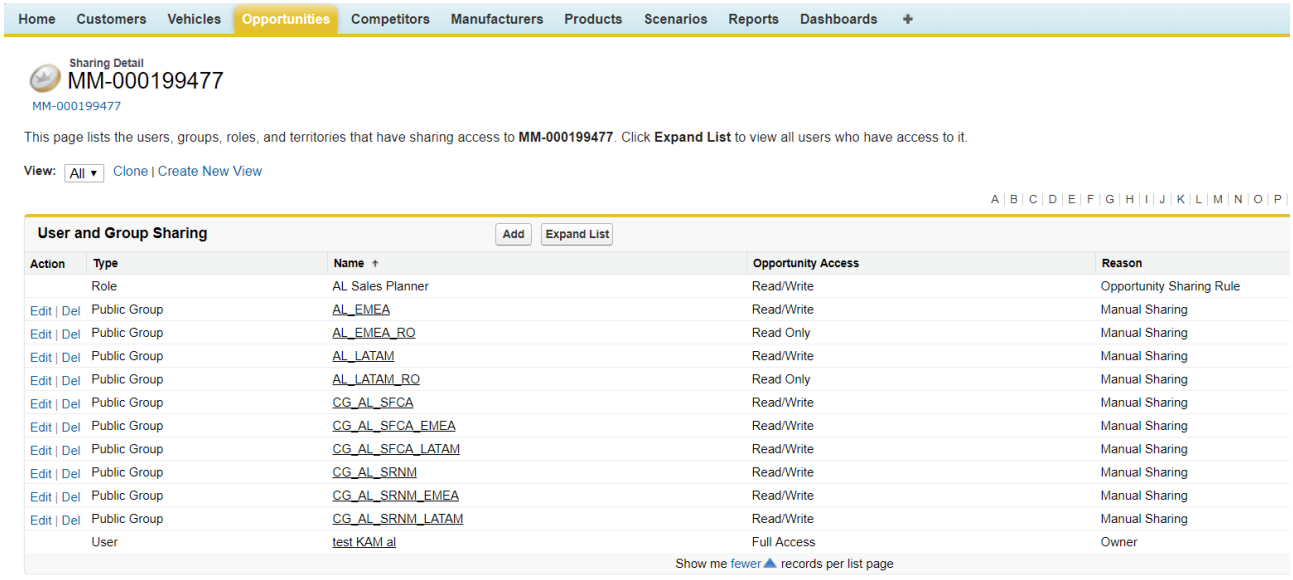
BL → AL
CT → SRNM
CG → FCA
CT of CG → SFCA
Production Site Region → EMEA
Sales Site Region → LATAM

Sharing rules will be based on following groups:

AL Sales Planner → Sales planner of the BL
AL_EMEA → BL group related to production site region

AL_EMEA_RO → BL group related to production site region read only
AL_LATAM → BL group related to sales site region
AL_LATAM_RO → BL group related to sales site region read only
CG_AL_SFCA → BL group related to customer team of customer group
CG_AL_SFCA_EMEA → BL group related to production site of customer team of customer group
CG_AL_SFCA_LATAM → BL group related to sales site of customer team of customer group
CG_AL_SRNM → BL group related to Customer team of owner group
CG_AL_SRNM_EMEA → BL group related to production site of customer team of owner
CG_AL_SRNM_LATAM → BL group related to sales site of customer team of owner
test KAM al → owner

The user who are part of the public groups, will have visibility of the opportunity.



Example of Sharing Rules of an Opportunity

Any modification of the data (owner, Production Site Region, Sales Site Region, customer with different CG) will cause a change in the sharing rules of opportunity, so the visibility will be updated.

4.6.2 RFQ

For the RFQ functionalities will be created specific roles and profiles that will be used to define what each user can see and how it can interfere with this data.

The following profiles will be created:

- Sales: Sales profile can delete e write on all the tasks

- R&D: R&D profile will be enabled for reading for all the task included Economic Estimations and PCC Report; he can read and write only the Technical Documents
- Eco / Non Sales (CEC, PUR, MFE): this profile will be enabled for reading for all the task included Technical Documents and PCC Report; he can read and write only the Economic Estimations
- FIN: FIN profile will be enabled for reading for all the task included Economic Estimations and Technical Documents; he can read and write only the PCC Report
- VIP: VIP profile will be enabled for reading for all the task included Economic Estimations, Technical Documents and PCC Report
- ADMIN: this profile can execute the operations of all the profiles

The full definition of profiles is included in the following attachment:

- TBD

5 INTEGRATIONS

Mulesoft has been identified as first choice tool for managing the integration layer between Salesforce and Marelli legacy systems.

The following integration flows must be considered for the Sales Planning Convergence Project:

- **SalesDB to Salesforce**: flow between Salesforce and the SalesDB in order to keep the two systems aligned during the first months after the AL go-live. All the opportunities created on SalesDB will be sent to Salesforce.
- **SAP to Salesforce**: move to Salesforce information about Part Numbers, Actual Volumes and EDI Volumes
- **Salesforce to SAP**: align SAP with the SalesIDs (Opportunities) created on Salesforce
- **Demand Plan to Salesforce:** move to Salesforce information about Part Numbers, Actual Volumes and EDI Volumes (only for PWT)
- **Salesforce to Demand Plan**: align Demand Plan with all the information of the opportunities created on Salesforce (only for PWT)

5.1 SalesDB to Salesforce

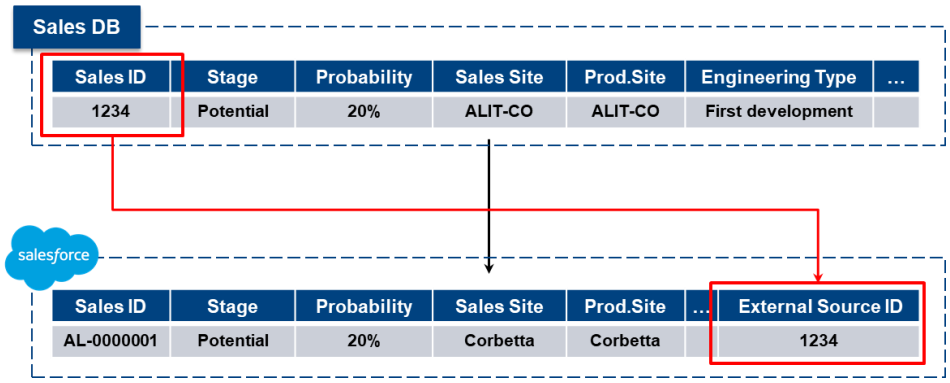
The rollout of AL will be split by Region; for this reason, there will be a period of time during which some users will work on Salesforce and other users will work on SalesDB; during this elapsed of time, Salesforce will receive updates from SalesDB that will include:

- New Opportunities created on SalesDB that does not exist on Salesforce
- Updates to opportunities that already exist on Salesforce

This flow updates Salesforce with data of current opportunities (from the “rolling” planning status) and the related entities:

- Savings
- Lump-sums
- Volumes

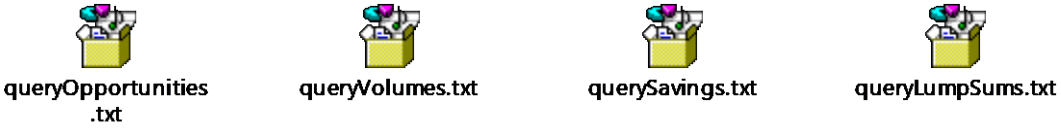
The **Opportunity flow** will move to Salesforce all the opportunities that are part of the current planning status (for example, “2+10” on February, “3+9” on March), in order to recreate the current version of the opportunity. The connection between the old system (SalesDB) and the new system (Salesforce) will be the SalesID field, that on Salesforce will be saved on a dedicated field “External Source ID”, while the Sales ID field on Salesforce will be automatically generated.



Sales ID as connection between the two systems

Volumes, Savings and Lump-sums will refer to the opportunity through the SalesID (External Source ID).

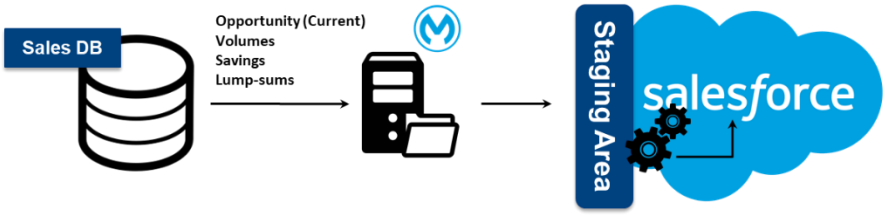
Data are taken from SalesDB by Mulesoft through a single flow that runs 4 queries in sequence. Detail of queries are included in the following documents:



Data read from SalesDB are copied through Mulesoft on a staging area on Salesforce, which is made up of four custom objects that stores the source records as they come from SalesDB:

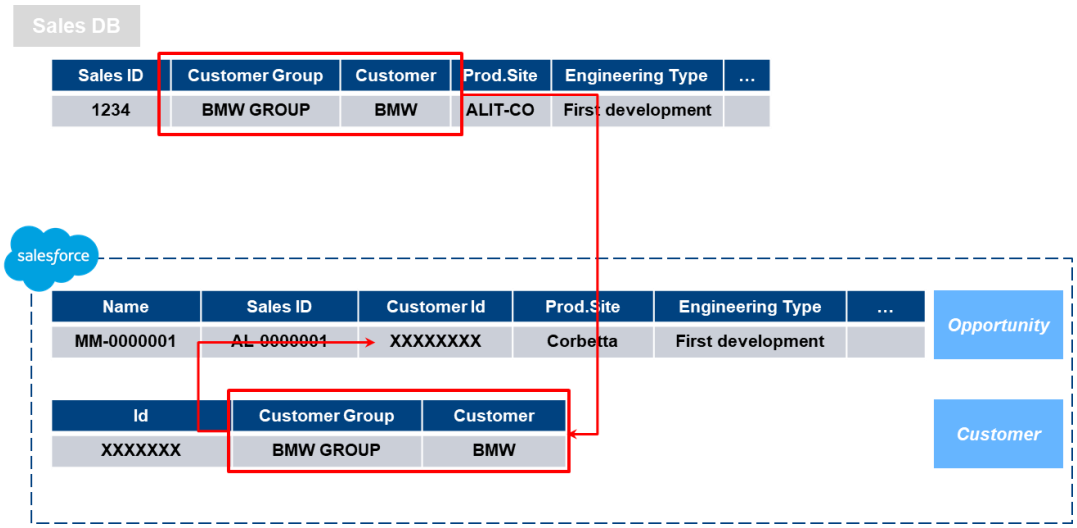
- Opportunity Staging
- Volumes Price Staging
- Saving Staging
- Lump-Sum Staging

A daily scheduled batch process on Salesforce reads the content of the staging objects and transforms data in order to create records for the Salesforce Data Model objects.



Integration flow from SalesDB to Salesforce

Data of customer, vehicles, products, sites, manufacturers and competitors will be mapped through searching the corresponding hierarchies in the Salesforce objects, as shown by the following example:



Retrival of Customer on Salesforce basing on input data from SalesDB

For more details of Mulesoft in the flow, you can see the chapter 7 (7.3 From Sales DB).

5.2 SAP to Salesforce

The integration flow from SAP to Salesforce is needed in order to move to Salesforce data about Acutals and EDI volumes related to the opportunities.

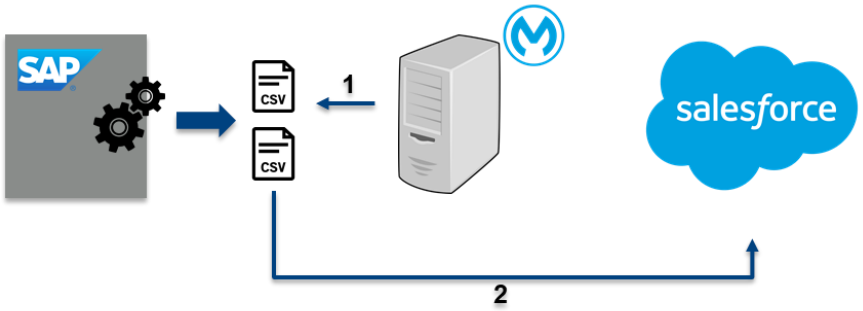
SAP data is exported into an aggregated csv (coma separated value) file. The csv file structure will be precisely mapped to the related salesforce entities attributes.

The csv files will be:

- COPA.CVS for actuals
- SD.CSV for EDI

SD export is scheduled on the day 1 of each month. COPA export is scheduled on the day 8 of each month.

Procedures implemented on Mulesoft will read contents of the csv files and transfer data into corresponding Salesforce data model objects.



Both for Actuals and EDI, the following dataset must be returned from SAP to Mulesoft:

Label	Contend Description
SalesId	Alphanumeric string
MM Part Number Code	Alphanumeric string
Part Number Description	Alphanumeric string
Customer Part Number Code	Alphanumeric string
Plant	Code of plant
Distribution Channel	Accepted values: • OEM • OES • IAM • Other • Research & Development • Tooling • Prototypes • Royalties • Services • Supplier • Inter – BL • Intra – BL
Month	2 Digits format (MM)
Year	4 Digits format (YYYY)
Price	Decimal format with dot separator for decimals

Currency	ISO 4217 code (ex. EUR, USD, etc.)
Quantity	Integer number
Quantity x Price	Decimal format with dot separator for decimals

The Mulesoft script is scheduled to run once a month.

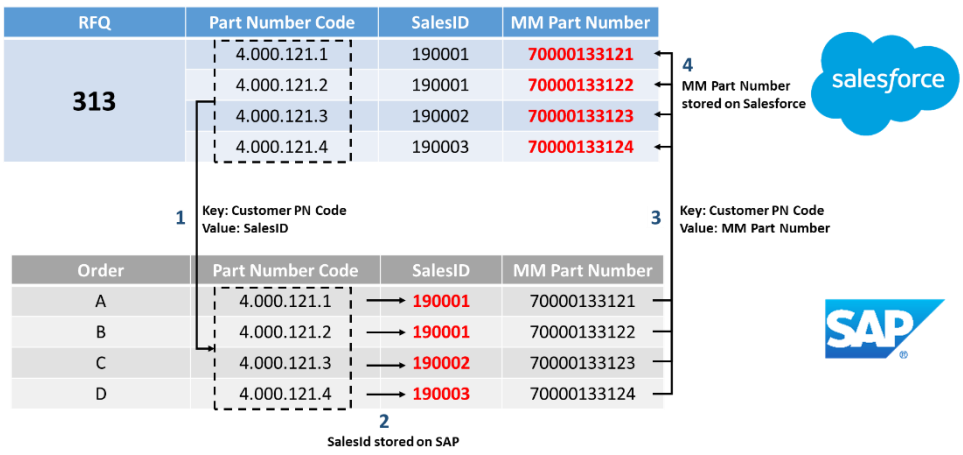
For more details of Mulesoft in the flow, you can see the chapter 7 (7.1 Importing Materials from SAP systems to Salesforce).

5.3 Salesforce to SAP

Integration from Salesforce to SAP will be implemented in order to transfer SalesIDs codes on SAP and associate them to the Customer Part Numbers on SAP. This will be possible only in case of implementation of the RFQ digitalization, in all the other cases the SalesID must be associated by hand on Part Numbers on Salesforce.

The process will be as follows:

1) RFQ is created on Salesforce
2) Starting from the RFQ, Customer Part Numbers are created on Salesforce. On every Customer Part Number must be also specified the SalesId.
3) Through an integration process, it will be possible to join Customer PNs on Salesforce and Customer PNs on SAP through the Customer Part Number Code; this will allow first to store the SalesID on Customer PNs and Orders on SAP, then to save the MM Part Number on Salesforce.



The alignment flow will be a batch process.

Mulesoft will receive as input a list of Customer Part Number Code – Sales ID pairs that must be used to search for existing PNs on SAP:

SAP will return a list of Customer Part Number – MM Part Number pairs as a response.

If a Customer Part Number passed as input is missing in the return, it means that a corresponding Customer Part Number has not been found on SAP; this will leave the Salesforce Part Number still unaligned.

Also in this case, if the logic to identify the correct SAP instance is delegated to Mulesoft, the logic to identify the SAP instance to be invoke is delegated to the SAP – Salesforce flow.

Basing on the defined logic, if Mulesoft cannot find a match on the identified SAP instance, it won't search for data on the other instances.

For more details of Mulesoft in the flow, you can see the chapter 7 (7.2 Salesforce to SAP).

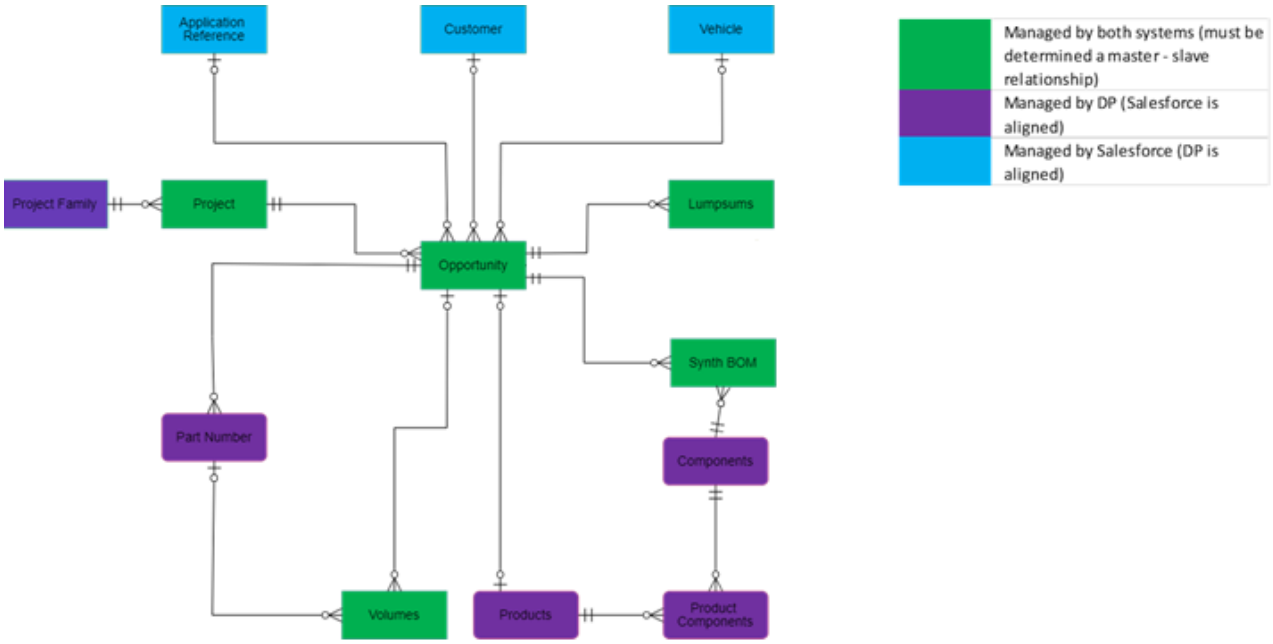
5.4 Salesforce and Demand Plan

The integration between Salesforce and Demand Plan will be considered only for PWT.

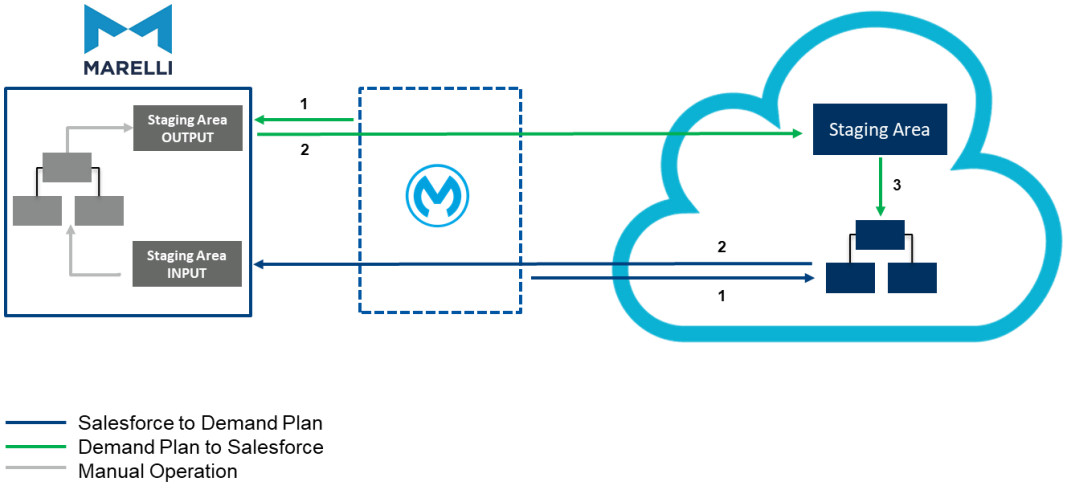
Demand Plan contains all the information managed by PWT for working on opportunities, and the integration flow between Salesforce and Demand Plan will ensure the alignment of Data between the two systems.

The data alignment runs in both directions and depending on the verse (Salesforce → DP, DP → Salesforce) some entities will be considered and some other will not.

The following schema shows the full set of entities involved in the alignment flows between the two systems, and the ownership for each of them:



Both the flows will pass data to the recipient system through a staging area that will be implemented on Oracle tables, as shown in the following high level architecture:



All the flows included in the integration are listed as follows, and they will be triggered from Salesforce through a dedicated user interface. On this page will be possible to call the following actions:

- Export Opportunities or common data with lock from SF to DP
- Export Opportunities or common data with no lock from SF to DP
- Export Common Data from SF to DP
- Import BL Data from DP to SF
- Import Opportunities or BL Data from DP to SF
- Check the status of the export/import jobs

The import/export flow will pass from the following states:

- 'New' in the opening phase
- 'In progress' during the flow
- 'Succeeded' at the end of the flow
- 'Completed with errors' in case of successful process, but with exceptions
- 'Failed' if process is not successful

It is possible to create only one Integration Request at a time, and it will not be editable until the end of the process.

At the end of the flow, the user who requested the import / export will receive an email with the following information:

- Requested by: name of the user who started the flow
- Request Date: date and time of flow start
- Action: type of flow started
- Status: outcome of the flow
- Time of completion: date and time of completion of the flow

In the case of 'Export Opportunities and Common Data with Lock', there is this notice: 'Please note that Opportunities has been locked for export and should be unlocked Manually'

Following a mail example:

The Demand Plan: Export process has been completed with status: Succeeded

Requested by: Michela Maglia
Request Date: 2019-07-17 07:39:45 GMT
Action: Export Common Data;Export Opportunities
Status: Succeeded
Time of completion: 2019-07-17 07:44:51 GMT

Please note that Opportunities has been locked for export and should be unlocked Manually

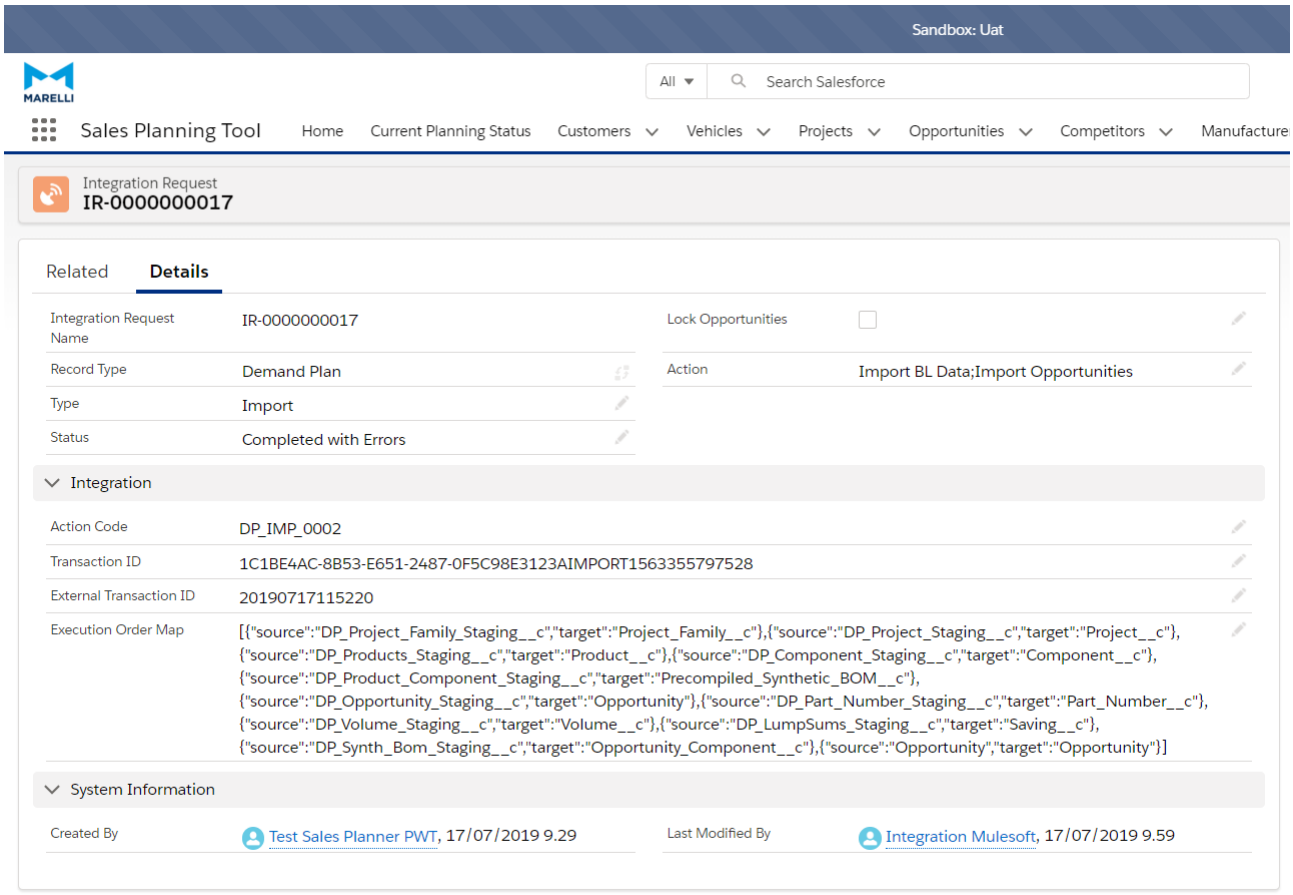
Please note that you can see log entries in Salesforce

Example of received mail

By clicking on an Integration Request, you can view some information:

- Integration Request Name: Progressive number, automatically generated by system
- Type: type of flow (import/export)
- Status: outcome of the flow
- Action: type of di import/export
- Lock Opportunities: flag for the locked opportunities in Salesforce
- Action Code: technical fiel for identify IR
- Transaction ID: technical fiel for identify IR
- External Transaction ID: technical fiel for identify IR
- Execution Order Map: order of import execution

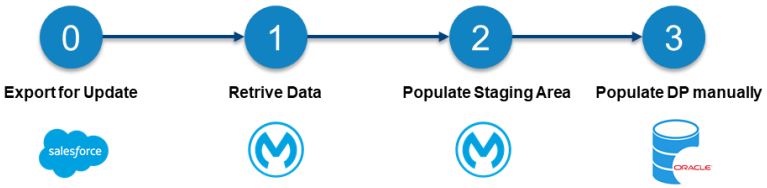
Following an example:



Example of an Integration Request

5.4.1 Export Flow

From Salesforce, it will be invoked the export flow to Demand Plan.



The opportunities considered for the export to DP are all the ones associated to the following stages on Salesforce: To Be Contracted, Development, OnGoing, OnGoing LE.

The opportunities exported are the ones related to the current unofficial planning status open on Salesforce (e.g. 2019 4+8).

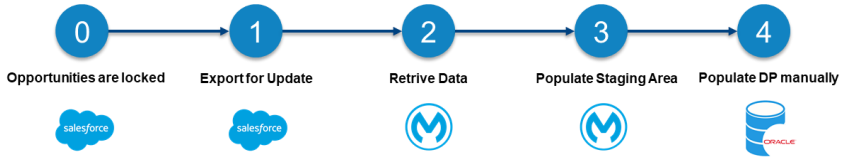
It will be possible to Export only the Common Data entities ('Customer', 'Vehicle', 'Application Reference') with the 'Export Common Data Only' flow. It is possible to export 'Application Reference', 'Customer', 'Vehicle', 'Opportunity', 'Project', 'Saving', 'Opportunity Component' and 'Volume' with the 'Export Opportunities and Common Data' flow.

On the Staging Area there will be a set of import tables, one for each entity that must be moved to DP (according with the shared templates)

Opportunities are no locked when the export process starts.

5.4.2 Export For Update

From Salesforce, it will be invoked the export flow to Demand Plan.



The opportunities considered for the export to DP are all the ones associated to the following stages on Salesforce: To Be Contracted, Development, OnGoing, OnGoing LE.

The opportunities exported are the ones related to the current unofficial planning status open on Salesforce (e.g. 2019 4+8).

It will be possible to Export only the Common Data entities ('Customer', 'Vehicle', 'Application Reference') with the 'Export Common Data Only' flow. It is possible to export 'Application Reference', 'Customer', 'Vehicle', 'Opportunity', 'Project', 'Saving', 'Opportunity Component' and 'Volume' with the 'Export Opportunities and Common Data' flow.

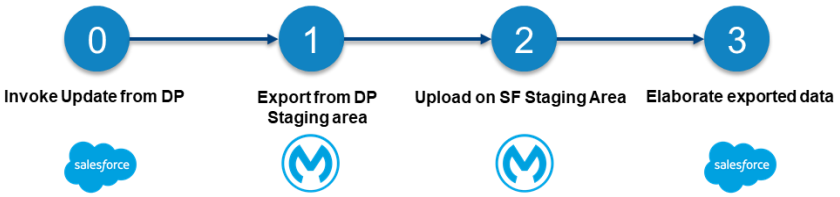
For the "Export Opportunities and Common Data with Lock" the opportunities are locked when the export process starts: only the System Administrator and the Sales Planner can modify locked opportunities.

It will be possible (for the Sys.Admin. and Sales Planner) to call an action to unlock the opportunities. (More information in 5.4.4 Lock/Unlock Opportunities)

On the Staging Area there will be a set of import tables, one for each entity that must be moved to DP (according with the shared templates).

5.4.3 Recall Update

From Salesforce, it will be possible to invoke an update from DP.



On the Staging Area there will be a set of export tables, one for each entity that must be moved to Salesforce (according with the shared templates).

Mulesoft will retrieve the full data included in the export tables, without any filter logic.

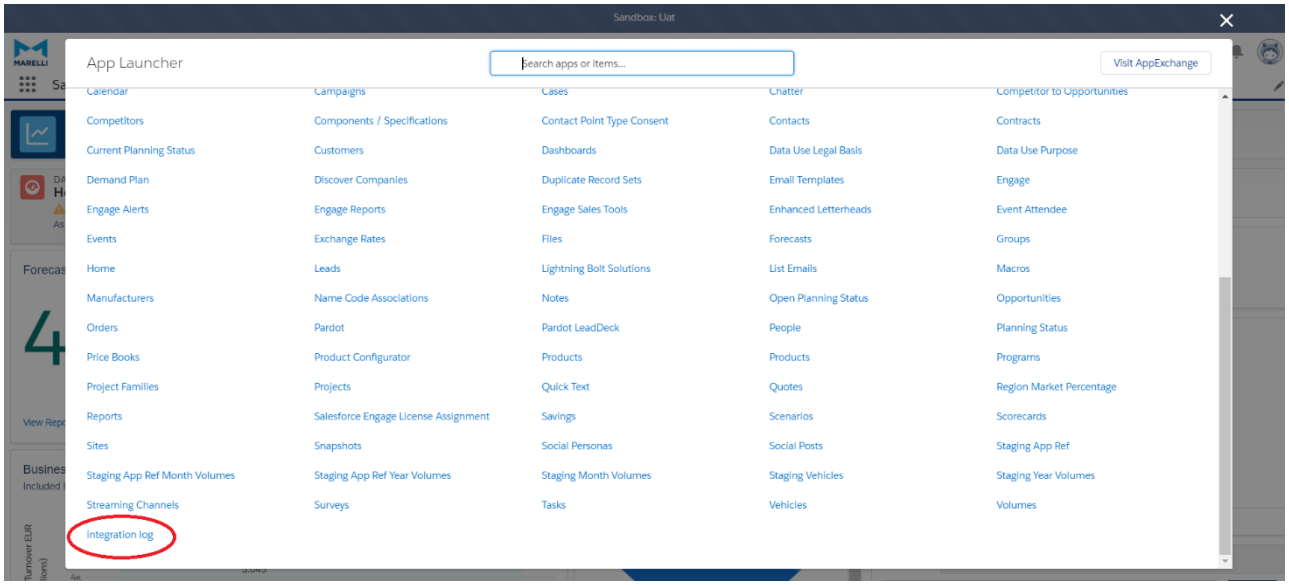
It will be possible to Import only the BL Data entities ('Project', 'Project Family', 'Products', 'Components', 'Product Components') with Import BL Data Only flow. It is possible to import 'Project', 'Project family', 'Product', 'Component', 'Product component', 'Opportunity', 'Part Number', 'Volumes', 'Lumpsum' and 'Synth BOM' with Import Opportunities and BL Data flow.

The data of opportunities exported from DP will overwrite all the corresponding fields of the opportunties related to the current unofficial planning status open on Salesforce. Any modification made on Salesforce will be overwritten.

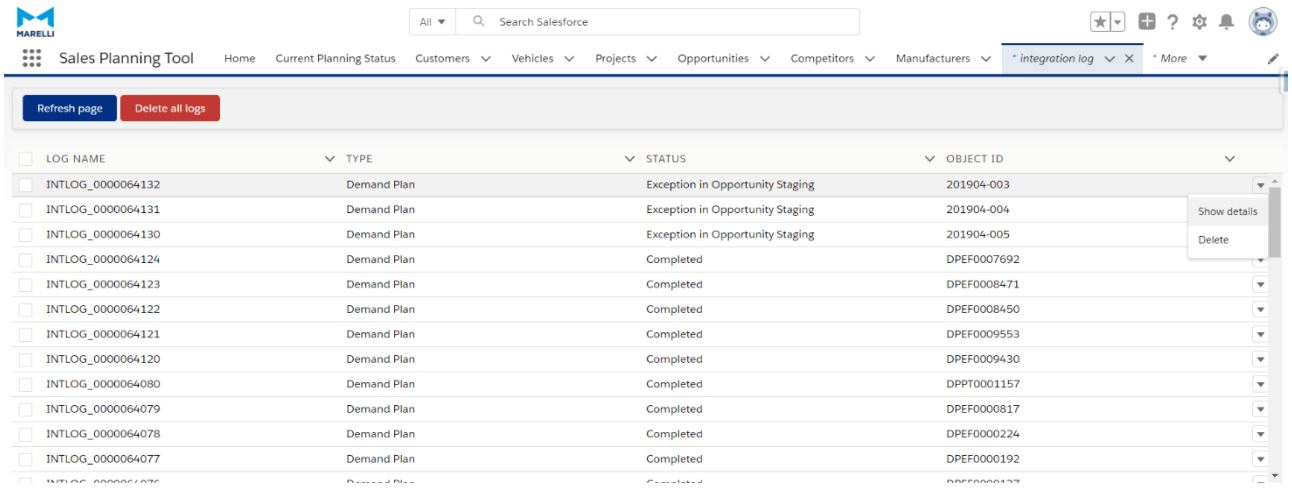
If opportunities are locked, they will be always manually unlocked at the end of the update process.

5.4.4 Integration Log for Demand Plan

If there are errors, it is possible to consult the logs, accessible from the Integration Log tab only with Admin user:



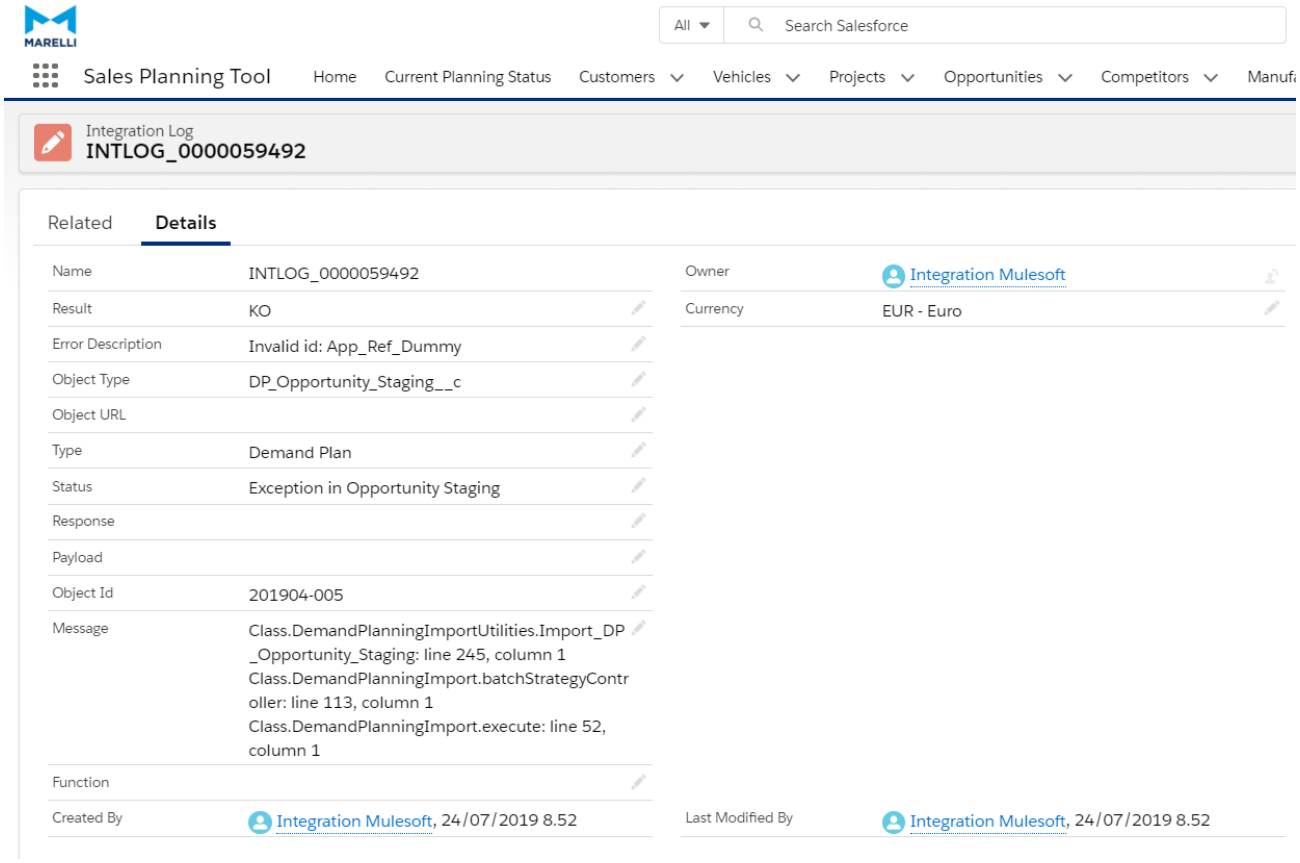
Integration Log Tab



List of Integration Log

Clicking on 'Show details' in the picklist on the right of an Integration log name, it's possible view more information:

- Name: identify of the log
- Result: outcome of the process (OK, KO)
- Error Description: description of the errors during the flow
- Object Type: staging table for the errors in the data
- Type: Demand Plan
- Message: error detailed description



Example of Integration Log

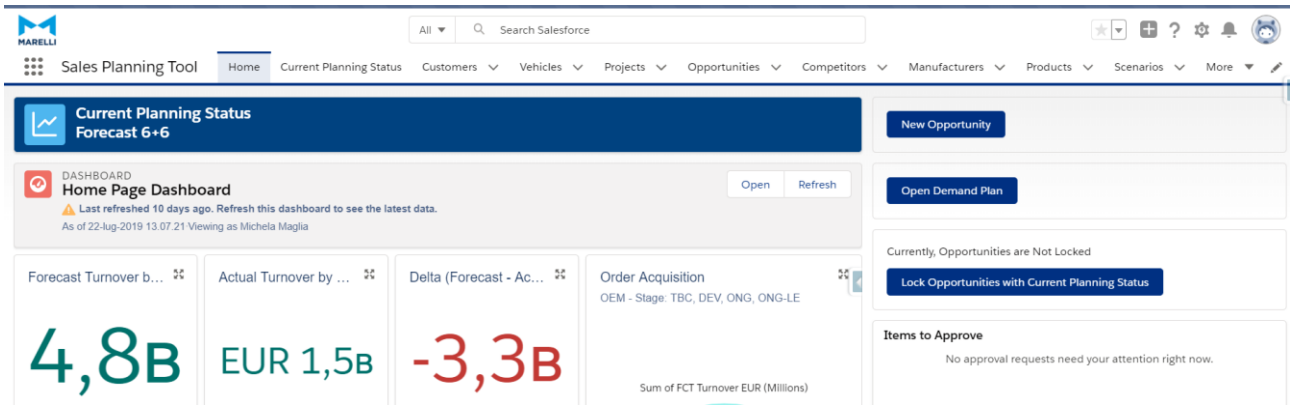
5.4.5 Lock/Unlock Opportunities

It is possible to lock/unlock the opportunities in the current planning status, for Sales Planner user that have the 'Current Plan Status Lock User' permission set.

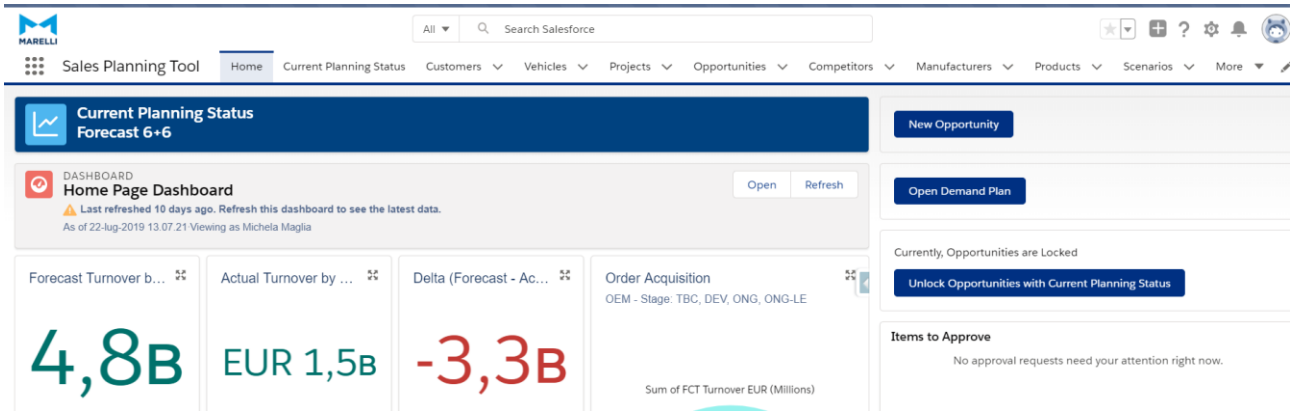
The lock/unlock is started clicking on the 'Lock/Unlock Opportunities with Current Planning Status' button on the Homepage. The lock regards the opportunities related to the BL of the user with the permission set.

Name and description of the button are the following:

- 'Lock Opportunities with Current Planning Status', with description 'Currently, Opportunities are Not Locked' if the opportunities are unlocked
- 'Unlock Opportunities with Current Planning Status', with description 'Currently, Opportunities are Locked', if the opportunities are locked



Lock button in Home Page



Unlock button in Home Page

Clicking on 'Lock Opportunities with Current Planning Status', the opportunities of the current planning status belonging to the BL of the user that performs the operation, will be locked: the flag DP_Locked__c (not visible in layout) will be true. The locked opportunities cannot be changed: an error message is shown when you try to save every type of updates, or when you try to create a new opportunity in a locked planning status. Only Sales planner and Administrator can change the locked opportunities or create a new.

Users like KAM or Sales cannot:

- Edit the opportunities, like modify its Volumes, Synthetic BOM, Prices Policy, add a Part number or a Competitor to opportunity
- Clone an Opportunity
- Apply scenario for an Opportunity
- Submit to approval an existing opportunity
- Create a new opportunity in a locked planning status

The Sales planner can unlock the Opportunities clicking on the 'Unlock Opportunities with Current Planning Status' button visible in a lock planning status, and restore normal operations.

6 DATA MIGRATION STRATEGY

Data Migration will be performed in order to populate the system at start with all data of interest related to opportunities coming from SalesDB (AL, EL, SA), Demand Plan (PWT) and Excel file of EX and SS.

The entities that will be migrated are:

- Central data:
  - Customers
  - Customer Sites
  - Vehicles
  - Sites
  - Manufacturers
  - Competitors
  - Exchange Rates
- BL data:
  - Opportunities
  - Projects
  - Volumes (Monthly Volumes Price)
  - Savings
  - Lump-sums
  - Products (and Components)
  - Past Planning Statuses

Every release will contemplate a run of the migration procedures, that will include data of the BLs involved in the go-live; in total, there will be 4 migration runs for BL data and 1 run for Central Data:

1. **January 2019**: Central Data
2. **January 2019**: AL
3. **February 2019**: EL, RD
4. **April 2019**: PWT, EX

Central data will be uploaded only during the first migration run.

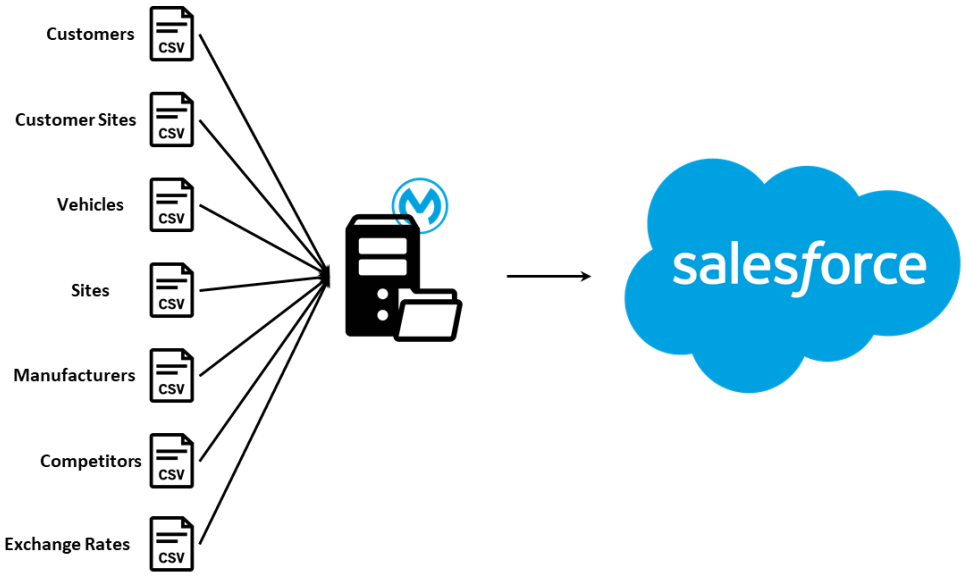
Two different approaches will be implemented for AL migration (January 2019) and other BLs.

The migration procedures will be used to manage the initial loading of data in the system at the go-live date. Therefore, they cannot be used for any subsequent recovery.

6.1 Migration Strategy Central Data

The upload will be performed through upload of csv files.

Files used for upload will be provided by Marelli and then will be shared with all the BLs in order to allow them to harmonize the BL data when they will perform data cleaning on the dataset that needs to be migrated.



8

Import of Central Data

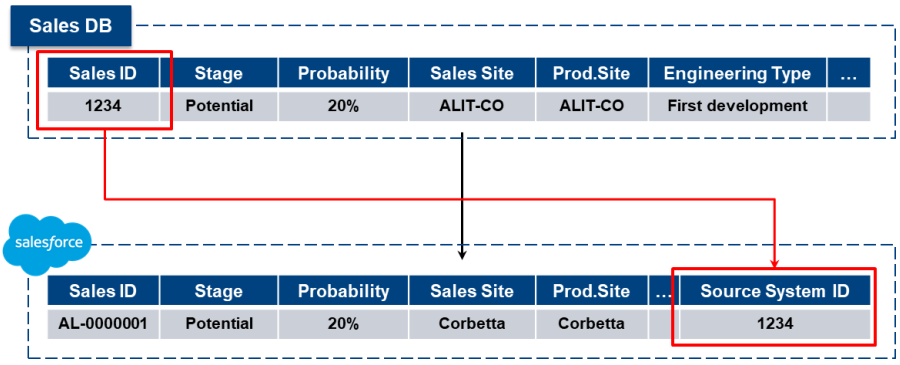
6.2 Migration Strategy for AL

As described in the dedicated chapter, The Sales Planning Tool includes an integration flow that aligns Salesforce with the opportunities created on the SalesDB. This flow updates Salesforce with data of current opportunities (from the last planning status), volumes, savings and lump-sums.

Considering that these entities represent the core BL data that must be migrated, has been decided only for AL to perform the data migration through the integration with SalesDB and not through the shared templates for the following entities:

- Opportunities
- Savings
- Lump-sums
- Volumes

The **Opportunity flow** will move to Salesforce all the opportunities that are part of the current planning status, in order to recreate the current version of the opportunity. The connection between the old system (SalesDB) and the new system (Salesforce) will be the SalesID field, that on Salesforce will be saved on a dedicated field “Source System ID”, while the Sales ID field on Salesforce will be automatically generated.

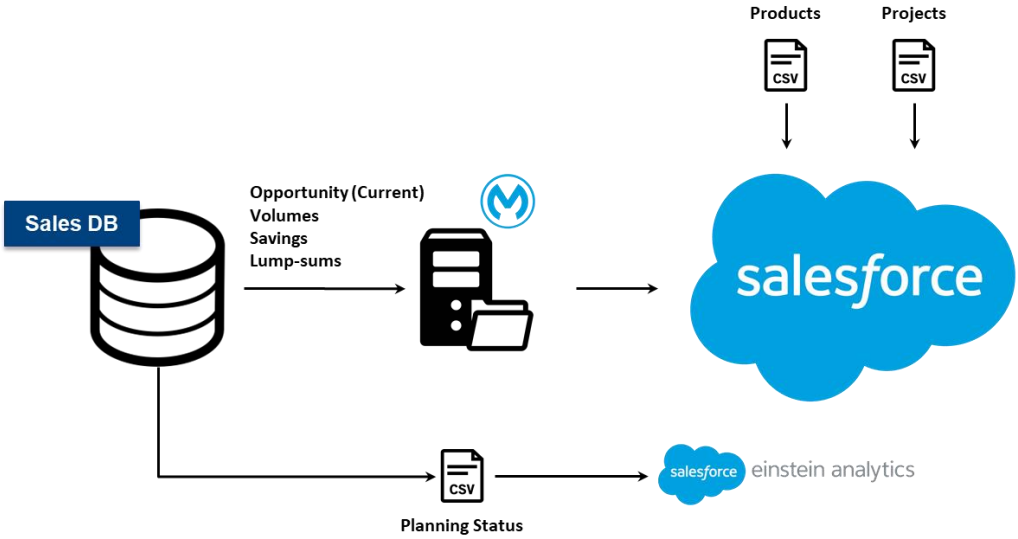


- *Sales ID as connection between the two systems*

Volumes, Savings and Lump-sums will refer to the opportunity through the SalesID (Source System ID).

Other data will be uploaded through csv files:

- **Products:** product hierarchy provided by AL according to the shared templates. This includes:
  - Components: list of critical components and their relationship with products
  - Specifications: list of specifications and their relationship with component
- **Planning Status:** directly uploaded on Einstein Analytics basing on shared templates.
- **Project:** since this entity does not exist in SalesDB, if needed they will be uploaded through csv import according to the shared templates.

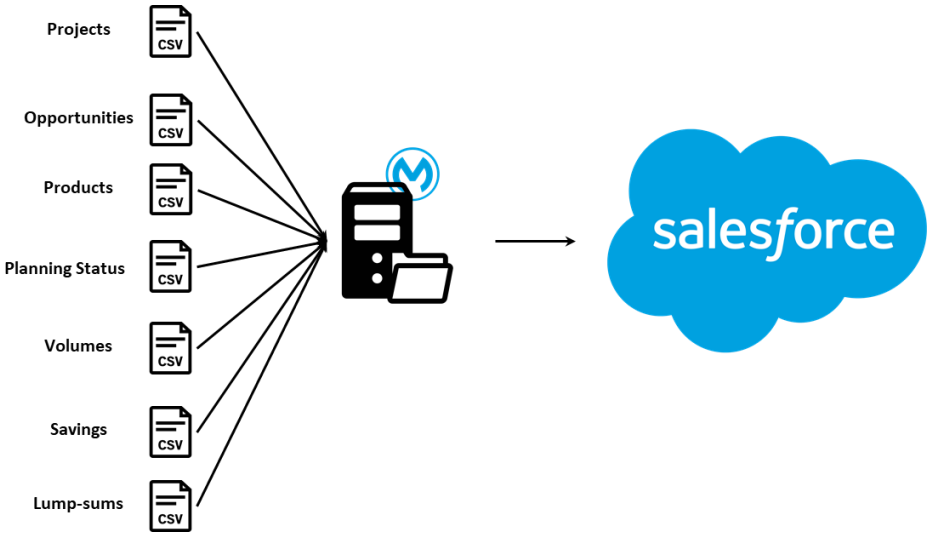


Import of BL Data (AL)

6.3 Migration Strategy for other BLs

The migration procedures will be implemented on Mulesoft and will receive a set of previously cleaned up data in order to not apply further logic before and after the import.

The input data of the migration procedures will be csv files; the format of the files (column names, order of columns, data format) will be the same for all the BLs. The Business Lines will be asked to perform data cleaning in order to uniform data to the requested format.

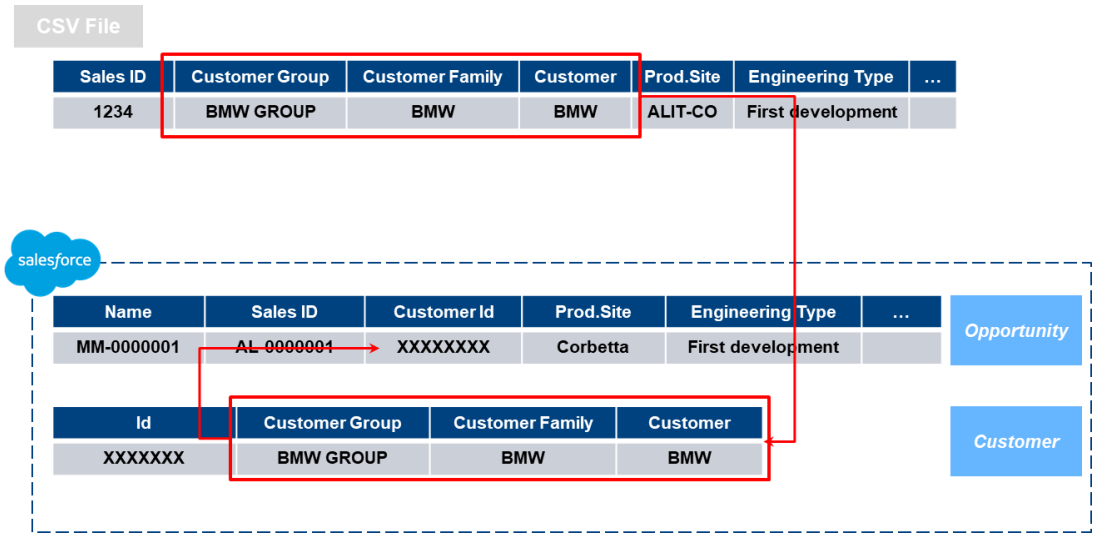


Import of BL Data (except for AL)

Procedures implemented on Mulesoft will read contents of the csv files and transfer data into corresponding Salesforce data model objects.

Central Data will be sent to the Business Lines in order to allow them to input data referencing the harmonized central structure; in this way, it will be possible to set references in the target database (on Salesforce).

In the following example, the fields of the Customer hierarchy specified on the SalesID record are used to find the corresponding Customer record on Salesforce, and then the Customer record is referenced in the new Opportunity record created on Salesforce.



Example of customer association during the Opportunity migration

The following table reports the migration activities for each migration run, and the owners:

Seq.	Activity	Description	Owner
1	Data Cleaning	Data needs to be clean up to before import them into Salesforce, to correct incongruences and set right data formats. Data must be aligned to central data, shared with the BLs after the upload on Salesforce.	BLs
2	Data Export	Export of all relevant data that needs to be migrated. Data will be input in the templates shared with all the Business Lines.	BLs
3	Mapping	Input data (e.g. columns of template files) are mapped to Salesforce data model objects. Will be implemented by the migration procedures.	SI
4	Transformation	Operations on input data to adapt them to the Salesforce data representation will be implemented by the migration procedures.	SI
5	Migration Tests	Migration procedures run from input data (e.g. fully compiled templates) using a test environment as target. This will allow to: 1. Detect and fix errors on the migration procedures (i.e. incorrect mapping, wrong transformations). These errors will be fixed by SI. 2. Detect and notify errors on input data (i.e. too large values, mandatory fields left empty, incorrect references to other entities). These errors will be fixed by BLs.	SI + BLs
6	Execution	Migration procedures run from input data to upload data into the production environment	SI
7	Validation	Uploaded data are validated in the production environment.	BLs

Seq.	Activity	Description	Owner
		Dedicated reports will be built to show migrated data, and they will be sent to BLs in order to allow them the comparison with the expected data.	

7 MULESOFT

7.1 Importing Materials from SAP systems to Salesforce

Source System: SAP. Two **csv files** are created with information gathered from the different Marelli's SAP Instances: SD.csv and COPA.csv. This operation is performed by the Marelli's ICT Department.

Both files must be present on the corresponding folders: /integration/SAP/ACTUAL/ for the COPA.csv file and /integration/SAP/FORECAST/ for the SD.csv file.

Target System: Salesforce. PartNumbers (referred as "Materials" on SAP) will be *upserted* (updated if the record exists on Salesforce or inserted if it doesn't exist). Along with each partNumber records, the following records will be created (or updated) in order to store the information provided by the csv files:

- Year Summaries (related to the volumes produced by year)
- Volumes (Actual Volumes in case of COPA.csv import or EDI volumes in case of SD.csv import). Currency and price related information will be also stored on volume's fields. Furthers details below.

Is **important** to note that there is a Master-Detail relationship between PartNumber (child) and Opportunity, which makes a reference to the latter mandatory (Sales Id). In case there's a lack of reference, PartNumbers won't be *upserted*.

7.1.1 About Mulesoft

Marelli has a Mulesoft on-premise installation that only accepts outbound connections. In this process Mulesoft is used to poll the specific folders mentioned before, once a day at 2:00 am, looking for a new file ready to be imported.

7.1.2 The Import process

7.1.2.1 Read a csv file

As just mentioned, Mulesoft will try to read a new file that match all the requirements set (filename: COPA.csv or SD.csv, folder path /integration/SAP/ (ACTUAL/ or FORECAST/ and size – greater than 0 -).

7.1.2.2 Fix malformed csv files

Since the produced csv file had some anomalies that prevents the process to run as expected, a fix process will re-write the file by changing the column headers. This operation writes a new csv file ready to be processed on the following folder: /integration/SAP/temp/ and following the naming convention mentioned before. However, the original file won't be deleted but kept for (eventually) future reference.

7.1.2.3 File Rename Logic

In order to track in which stage the original file is ("read and fixed but not processed for import" or "successfully processed for import") it will be renamed as per the following logic:

- If the file has been fixed but not yet imported, a temporary rename will be performed by appending "_f" to the filename (i.e. COPA.csv will be renamed as COPA_f.csv)

- If the file has been processed it will be renamed by appending the current date to the original filename (i.e. SD.csv will be renamed as SD_{YYYY-MM-DD}.csv). And stored in the original folder for future reference.

7.1.2.4 7.1.2.4 Reading the csv file and entities mapping.

Once the action just performed is completed and a fixed file has been created in the *temp* folder, all the rows will be mapped as Salesforce SObject records. If the file is empty, an error will be raised and the process will exit after sending a failure description email.

The order of *upserts* execution will be the following:

1. PartNumbers (grouped rows distinct by Customer_Part_Number_Code__c + MM_Part_Number_Code__c)
2. YearSummaries (grouped rows distinct by Customer_Part_Number_Code__c + MM_Part_Number_Code__c + Year__c)
3. Volumes (single rows representing a month distinct by Customer_Part_Number_Code__c + MM_Part_Number_Code__c + Year__c + Month__c)

This transformation happens on the Mulesoft core component "*Transform Message*" with the label "*Create Entity Variables*" within the *MappingEntities* flow.

A log with the size of each payload of records created will be printed.

The first record type to be inserted will be set as : Part_Number__c in order to allow the *upsert* component to identify the specific type to be used.

7.1.2.5 Upsert Flow

This process is recursively called for each record type.

A log message with the following info will be printed: UPSERTING ENTITIES: #[vars.ObjectType]

A Mulesoft core component "Choice" will detect the corresponding object type and perform further field mappings and set the external key for that specific type (an external key is mandatory in order to perform *upsert* operations. The external keys are those defined before by concatenating different fields depending on the record type). The fields mapped on this stage are:

- Last_Mulesoft_Integration_Date__c
- CurrencyIsoCode (on Part_Numbers) only if the filename is COPA

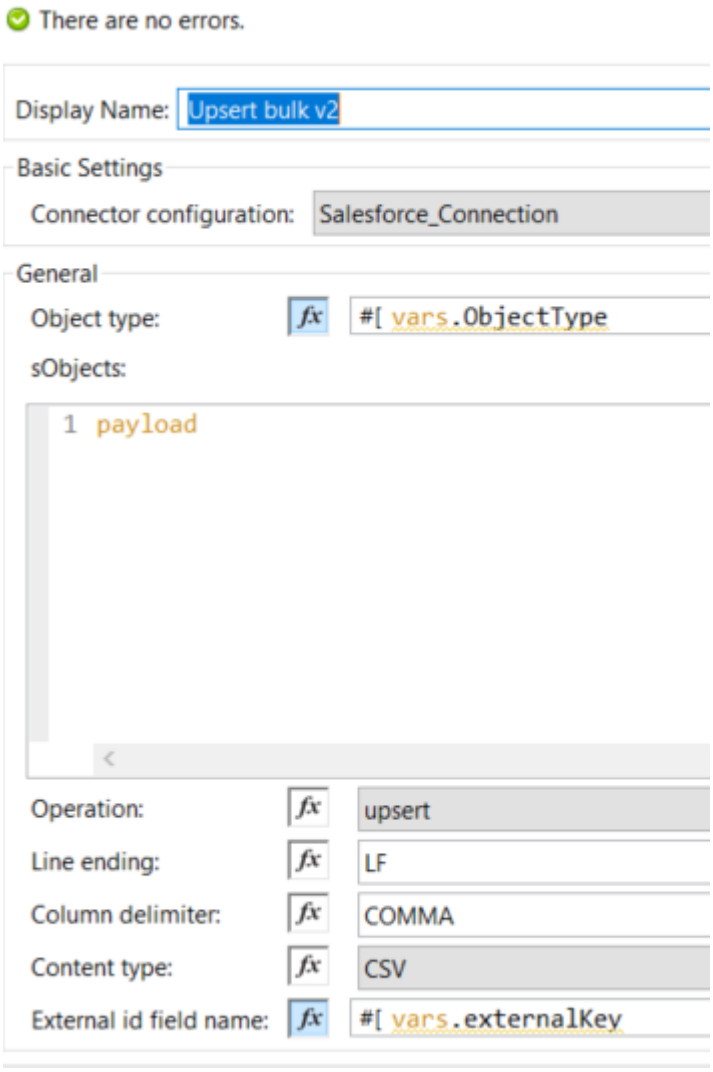
Special rules are applied before mapping some Volume's fields

- ("CurrencyIsoCode": payload01.CurrencyIsoCode) **if** (vars.**FileName == "COPA.csv"**),
- ("**Actual__c**": payload01.Quantity__c) **if** (vars.**FileName == "COPA.csv"**),
- ("**Actual_Turnover__c**": payload01.Actual_Turnover__c) **if** (vars.**FileName == "COPA.csv"),**
- ("**EDI__c**": payload01.Quantity__c) **if** (vars.**FileName == "SD.csv"),**
- Last_Mulesoft_Integration_Date__c : now() as String {format: "yyyy-MM-dd"}

After this step, a log message will be printed: PAYLOAD SIZE #[sizeOf(payload)]

The *Salesforce Component* used to perform bulk API v2 calls is the *CreateJob bulk* component and labeled as "Upsert bulk v2".

This component requires the following mandatory fields to be filled:



Mandatory fields for component

A "set variable" core component (vars.jobId) stores the job Id returned and used later to retrieve job status and results.

7.1.2.6 Retrieving job results

Since the *upsert* process works asynchronously and inbound connections to the Mulesoft servers are not allowed, The job status can only be controlled by polling Salesforce. Test scenarios suggested that polling every 60000 milliseconds (1 minute) would be a reasonable timeframe. Since there's not a core Mulesoft component (runtime version 4.1) suitable for polling, The "Until successful" component has been used to reproduce such behavior. This component works within a "Try-catch" block and contains a child component "Get bulk job state bulk v 2" that makes a request to Salesforce by passing the job Id stored in **vars.jobId** and

checks the response given: If the status is not “jobComplete” an error will be raised, causing the “Until Successful” component to fail and retry sending a request. As expected, when the status is “jobComplete” there will be any error so the polling will stop and the flow continues. The email message will be built using the current objectType and the total records *upserted* successfully or failed.

If the status is “Failed” the SendEmail flow will be triggered to notify the error.

7.1.2.7 Post processing actions

Once the upsert flow is completed, another Salesforce component is used to get information regarding failed records in order to write csv log files. The component used is “Retrieve record failure multiple” and the parameter used is the jobId.

The error message will be mapped and depending on the current record type a csv log file will be created on the /integration/SAP/logs/ folder. The naming will be related to the current record type with the current date appended to it.

Once the log files have been written, the next record type will be set (as mentioned before, the *upsert* flow is called recursively and this parameters allows it to work properly by indicating which record type is next).

In order to set the proper record type, a “Choice” Component is used.

If PartNumber -> new record type = YearSummary

If YearSummary -> the next one will be Volume

If Volume -> there’s no next. Error log will be written.

7.1.2.8 Invoking Salesforce Batch

Once all the records corresponding to the last record type (Volume__c) have been *upserted*, a batch job on Salesforce will be invoked: OpportunityActualsBatch and the batch Id will be logged.

This batch will reflect the partNumber volumes totals on the corresponding opportunity volumes: EDI, Actuals, Actual Turnover. Once the opportunities are up-to-date another batch will update opportunities and partNumbers of the previous Planning Status.

7.1.2.9 Sending email

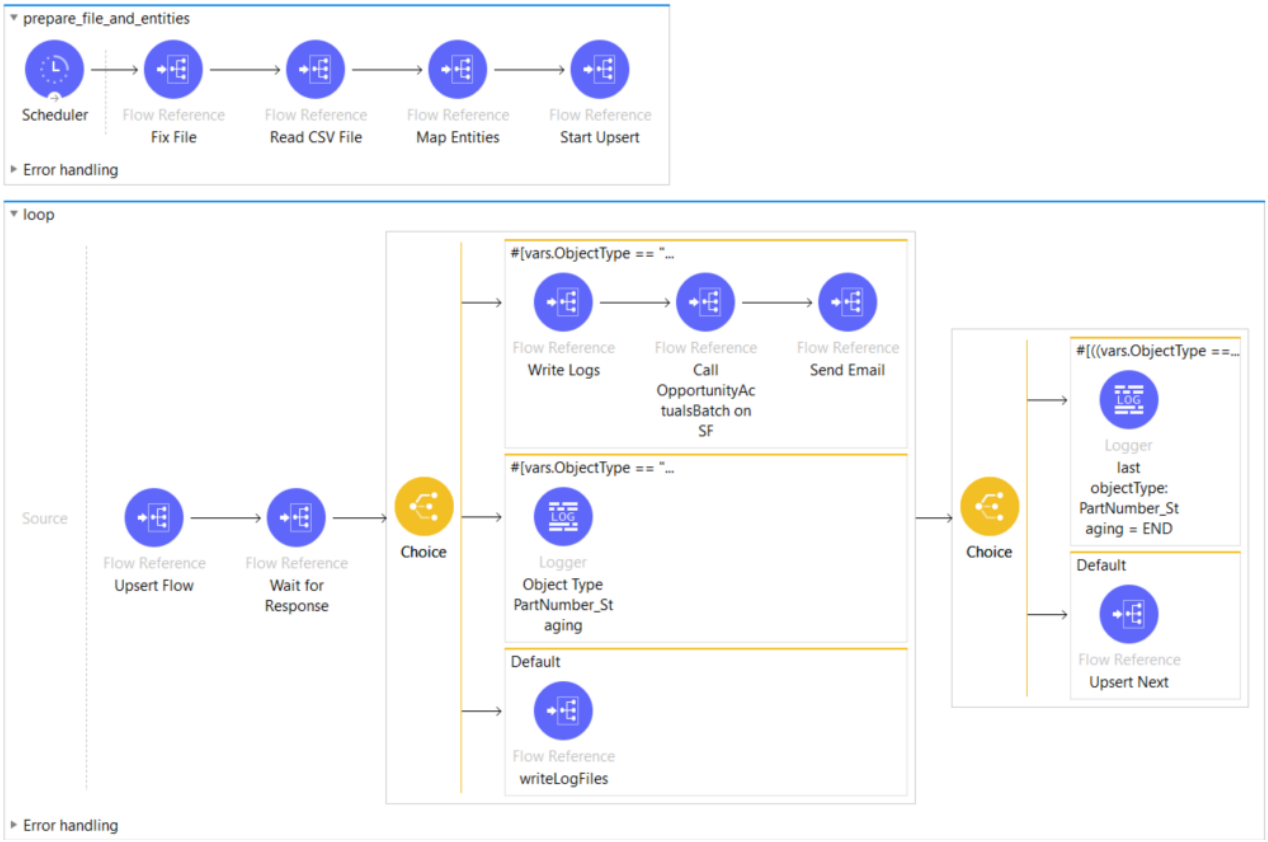
Once all the records are successfully upserted an email will be sent, notifying the records upserted successfully and those failed.

The sendEmail flow will also set a new ObjectType variable: Part_Number_Staging__c

This are partNumbers that have no salesId associated (and as mentioned earlier, a reference to an Opportunity is mandatory) and will upsert them on a staging table: Part_Number_Staging__c for future reference (by the Salesforce to SAP integration process)

The process will stop and restart the next day, looking for the next file to elaborate.

7.1.2.10 Flow controlling



Flow controlling

7.2 Salesforce to SAP

This process allows to associate a SalesId to a partNumber (Material) with a blank reference to the opportunity (SalesId) by using the Customer Part Number Code.

This process runs monthly, each 28th day of each month.

Source System: Salesforce. The process starts on Salesforce by running a batch job that retrieves (if any exists) an opportunity having the same Customer Part Number Code as the part Numbers presents in the Staging area (Part_Number_Staging__c). This table is filled when partNumbers are imported from SAP on Salesforce and contains only partNumbers without a salesId.

Target System: SAP. Currently, we've identified 9 different SAP instances which are referred to (on the Part Number record) by a Source_System code:

Source System	SAP Instance
AL	P55 (010)
CO	P52 (050)

MN	P53 (510)
BZ	P56 (610)
CN	P59 (910)
NA	P50 (010)
MM	P49 (110)
MK	MKP (400)
IN	P51 (310)
AP	P51 (810)

The actual process on Mulesoft starts by executing a query on Salesforce that retrieves all those records (from Part_Number_Staging__c's table) that have a SalesId NOT null and have not been yet elaborated (written on SAP).

The retrieved records are then mapped on the core Mulesoft component "Transform Message" and the records are iterated in order to set an XML payload for each record to perform a request by using the component "Execute BAPI / Function over sRFC" .

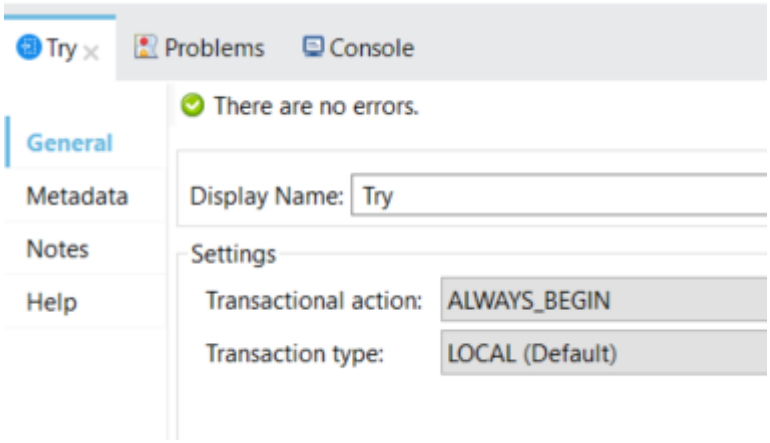
7.2.1 Routing a record to a specific SAP instance

As mentioned before since is mandatory to identify the instance on which update the partNumber record, the Source System code is used to filter the proper instance by using the Mulesoft's core component "Choice" (i.e.: If a given partNumber has "AL" as source system, it will be updated on the P55 (010) server only).

7.2.2 Executing BAPI over sRFC

Inside each possible route there's a "Execute BAPI component" that sends a request (the XML generated before) to the target system and then performs a COMMIT_TRANSACTION.

As per Mulesoft's knowledge base documentation regarding this component, these is the setup needed to "auto-commit":



Setup needed to "auto-commit"

7.3 From Sales DB

7.3.1 Importing Data

The migration procedures is slightly different depending on the Business Lines involved. If the Business Line is Automotive Lightning, the migration will be performed through Mulesoft that connects Salesforce directly with the underlying database of the legacy system (Sales DB). For all the other business lines, a csv (comma separated values) or xls file provided by Marelli's ICT department will be used. In order to set a standard, SI has shared a Template to be filled. Independently of the source, the data has to be cleaned upfront in order to not apply further logic before or after the import. Therefore, data cleansing and data transformation activities will not be performed.

The entities migrated are:

- Central and BL data:
  - Customers
  - Customer Sites
  - Vehicles
  - Products (and Components)
  - Sites
  - Manufacturers
  - Competitors
- Sales data:
  - Opportunities
  - Volumes (Monthly Volumes Price)
  - Savings
  - Lump-sums

The first step on the migration process is to import the data on Salesforce, on staging areas created for this purpose. When the data source is a file, the process is faster and straightforward since the only most time

consuming operation is the field mapping. By using the newest version of the provided template, field mapping is faster since each column has its respective API Name.

To migrate "AL" data a more complex process has been developed. As mentioned before in this case is necessary to connect the legacy system (salesDB) with Salesforce by using Mulesoft. Since there is no API available on SalesDB, the connection is made with the underlying database (for easier comprehension it will be referred as to "SalesDB", indicating the database and not the sales tool).

7.3.2 Mulesoft

The current runtime is the 4.1 version.

The process starts by deleting any existing record on Staging tables in order to prepare them for the import of new data. The Staging tables emptied are (Volumes_Price_Staging__c, Saving_Staging__c, Lump_sum_Staging__c). As one can note, the Opportunity_Staging__c records are not deleted (this should be done manually) in order to keep them for future reference if needed.

Once the staging tables are ready to be written with the new data, the actions performed will be the following:

1. Read data from SalesDB
2. Map database columns into Salesforce object fields
3. *Upsert* (insert if the record doesn't exist, update if already exists) records on Salesforce by using bulk API v2
4. Track asynch job status and when completed start over from point 1 with the next object type. Since Mulesoft runs on-premise and inbound connections are not allowed for security reasons, a polling job has been developed to track the job status by sending a request to Salesforce every 60 seconds. The loop is repeated till the job status is JobCompleted.

Records are *upserted* in the following order:

1. Volumes_Price_Staging__c
2. Saving_Staging__c
3. Lump_sum_Staging__c

Once all the lump sums have been elaborated, the Opportunity_Staging related flow starts. This records are *upserted* in synchronous fashion in batch size of 200 at a time. This is necessary since there's an active trigger linked to this object that runs when a record is inserted or updated. More details later.

7.3.2.1 Mulesoft flows description

The very first action performed is "read" from a config.csv file located on the following directory:

/integration/salesdb-migration/

This file is used to set the planning dates Id that is used as a filter on each query executed to retrieve the relevant data from SalesDB, and to set a label that indicates if the data should be imported under a specific Scenario or Planning Status.

7.3.2.2 Volumes flow

This process will read from SalesDB the volume-related records by executing the following query:

```
select DISTINCT
ph.ID_projectcustomers SALESID,
vc.DATE_YYYY,
vc.VOLUME,vc.Id
FROM projecthistories as ph
JOIN projecthistorydetails as phd
 ON phd.id_projecthistories=ph.id
 join volumesForecast vc on vc.ID_projecthistories=ph.id
 join projectcustomers as pc on pc.id=ph.ID_projectcustomers  join customerteams as ct on
pc.ID_customerteams=ct.id join planningdates as pd on pd.ID=ph.ID_planningdates
where phd.ID_databasemodules=2
AND ph.ID_planningdates=:plan AND id_projectstatus not IN(9)
  AND (id_projectstatus not IN(7,8,9) or phd.LAST_UPDATE_CET > DATEFROMPARTS(2019,1,27))
AND YEAR(eop_YYYYMM) >= '2017'
order BY 1
```

Each column in a record will be mapped to the corresponding Salesforce object field on Volumes_Price_Staging__c

Mapping:

VOLUME : Forecast_Volume__c,
SALESID : Opportunity_ID__c ,
DATE_YYYY : Year__c ,
ID : External_Source_Id__c

Afterwards, the Mulesoft's Salesforce component "Create job bulk v2" is used to perform the *upserts* on Salesforce and the status tracked as explained previously.

7.3.2.3 Savings Flow

This process will read from SalesDB the saving-related records by executing the following query:

```
select distinct
p.ID_projectcustomers, s.* from (
select 'Contractual Saving' as SAVING_TYPE,
 cs.ID as SAVING_ID,

 cs.CONTRACTED_SAVING as PERCENTAGE_VALUE,
 null as ABSOLUTE_VALUE,
 cs.DATE_YYYYMM as SAVING_START_DATE,
 null as EOA_END_DATE,
 ID_projecthistories,
 null as VALUE_OF_VOLUMES_OF_AMORTIZATION,
 null as TYPE_OF_AMORTIZATION
FROM contractedsavings cs
UNION ALL
```

```
select 'Additional Saving' as SAVING_TYPE,
 ads.ID as SAVING_ID,
 ads.ADDITIONAL_SAVING as PERCENTAGE_VALUE,
 null as ABSOLUTE_VALUE,
 ads.DATE_YYYYMM as SAVING_START_DATE,
 null as EOA_END_DATE,
 ID_projecthistories,
 null as VALUE_OF_VOLUMES_OF_AMORTIZATION,
 null as TYPE_OF_AMORTIZATION
FROM additionalsavings as ads
UNION ALL
select 'Technical Saving' as SAVING_TYPE,
 ts.ID as SAVING_ID,
 null as PERCENTAGE_VALUE,
 ts.TECHNICAL_SAVING as ABSOLUTE_VALUE,
 ts.DATE_YYYYMM as SAVING_START_DATE,
 null as EOA_END_DATE,
 ID_projecthistories,
 null as VALUE_OF_VOLUMES_OF_AMORTIZATION,
 null as TYPE_OF_AMORTIZATION
FROM technicalsavings as ts
UNION ALL
select 'End of Amortization' as SAVING_TYPE,
 en.ID as SAVING_ID,
 null as PERCENTAGE_VALUE,
 en.END_OF_AMORTISATION as ABSOLUTE_VALUE,
 en.DATE_YYYYMM as SAVING_START_DATE,
 en.DATE_YYYYMM as EOA_END_DATE,
 ID_projecthistories,
 null as VALUE_OF_VOLUMES_OF_AMORTIZATION,
 null as TYPE_OF_AMORTIZATION
FROM endofamortisations as en) as s, projecthistories p JOIN projecthistorydetails as phd
 ON phd.id_projecthistories=p.id
   join projectcustomers as pc on pc.id=p.ID_projectcustomers join customerteams as ct on
pc.ID_customerteams=ct.id join planningdates as pd on pd.ID=p.ID_planningdates
where s.ID_projecthistories = p.ID
and phd.ID_databasemodules=2
 AND p.ID_planningdates=:plan AND (id_projectstatus not IN(7,8,9)
  or phd.LAST_UPDATE_CET > DATEFROMPARTS(2019,1,27))
AND YEAR(eop_YYYYMM) >= '2017'
order BY 1
```

Each column in a record will be mapped to the corresponding Salesforce object field on Saving_Staging__c

Mapping:

```
SAVING_TYPE                 : Saving_Type__c     ,
PERCENTAGE_VALUE            : Percentage_Value__c ,
ABSOLUTE_VALUE              : Absolute_Value__c   ,
SAVING_START_DATE           : Saving_Start_Date__c,
EOA_END_DATE                : EOA_End_Date__c     ,
ID_projectcustomers         : Opportunity_ID__c   ,
VALUE_OF_VOLUMES_OF_AMORTIZATION : Value_Of_Volumes_Of_Amortization__c,
```

TYPE_OF_AMORTIZATION : Type_Of_Amortization__c ,
SAVING_ID : Saving_Id__c

Afterwards, the Mulesoft's Salesforce component "Create job bulk v2" is used to perform the *upserts* on Salesforce and the status tracked.

7.3.2.4 Lump Sums Flow

This process will read from SalesDB the lump sum-related records by executing the following query:

```
select
ph.ID_projectcustomers SALESID,
ls.DATE_YYYYMM,
ls.LUMP_SUM,ls.Id
FROM projecthistories as ph
JOIN projecthistorydetails as phd
 ON phd.id_projecthistories=ph.id
 join lumpsums ls on ls.ID_projecthistories=ph.id
 join projectcustomers as pc on pc.id=ph.ID_projectcustomers  join customerteams as ct on
pc.ID_customerteams=ct.id join planningdates as pd on pd.ID=ph.ID_planningdates
where phd.ID_databasemodules=2
  AND ph.ID_planningdates=:plan
  AND (id_projectstatus not IN(7,8,9) or phd.LAST_UPDATE_CET > DATEFROMPARTS(2019,1,27))
AND YEAR(eop_YYYYMM) >= '2017'
ORDER BY 1
```

Each column in a record will be mapped to the corresponding Salesforce object field on Lump_Sum_Staging__c

Mapping:

LUMP_SUM : Lump_Sum_Value__c,
DATE_YYYYMM : Lump_Sum_Date__c,
SALESID : Opportunity_ID__c,
Id : Lump_Sum_ID__c

Afterwards, the Mulesoft's Salesforce component "Create job bulk v2" is used to perform the *upserts* on Salesforce and the status tracked.

7.3.2.5 Opportunity Flow

This process will read from SalesDB the opportunity-related records by executing the following query:

```
SELECT DISTINCT
pc.ID as SALESID,
ct.flag_aftermarket AS AFTERMARKET,
'AL' as BL,
'Not available in DBFBP V7.2' as OPPORTUNITY_ID,
ps.PROJECT_STATUS as STAGE,
ps.LEVEL_OF_CONFIDENCE as PROBABILITY,
'Not available in DBFBP V7.2' as GONOGO,
```

```
'Not available in DBFBP V7.2' as LOST_STOP_WON_REASON,
st.SITE as SALES_SITE_NAME,
cuc.COUNTRY as SALES_COUNTRY,
crg.REGION_CODE as SALES_REGION,
st.ID as SALES_SITE_ID,
ph.RFQ_YYYYMM as RFQ_DATE,
ph.RND_TYPE_REFERENCE_SALES_ID as REFERENCE_OPPPORTUNITY_ID,
vm.VEHICLE_MANUFACTURER as MANUFACTURER_NAME,
vm.ID as MANUFACTURER_ID,
phd.REMARKS as REMARKS,
phd.LAST_UPDATE_CET as LAST_UPDATE,
cm.COMPETITOR as MAIN_COMPETITOR_NAME,
'Not available in DBFBP V7.2' as MAIN_COMPETITOR_CODE,
cm.ID as MAIN_COMPETITOR_ID,
rn.RND_TYPE as ENGINEERING_TYPE,
cs.ID as CUSTOMER_ID,
cs.CUSTOMER,
cg.CUSTOMER_GROUP,
ct.CUSTOMER_TEAM_CODE,
'Not available in DBFBP V7.2' as CUSTOMER_FAMILY,
rg.REGION as PRODUCTION_REGION,
rg.REGION_CODE as PRODUCTION_REGION_CODE,
co.COUNTRY as PRODUCTION_COUNTRY,
'Not available in DBFBP V7.2' as CUSTOMER_SITE_NAME,
'Not available in DBFBP V7.2' as CUSTOMER_SITE_ID,
dc.distribution_channel_code as DISTRIBUTION_CHANNEL,
ppv.PARTS_PER_VEHICLE_VALUE as PARTS_PER_VEHICLE,
ph.FLAG_TOOL_CALCULATION as TOOL_CALCULATION,
cu.CURRENCY_CODE as CURRENCY,
ph.START_PRICE_AT_ISOP as PRICE_AT_SOP,
'Not available in DBFBP V7.2' as PROJECT_NAME,
'Not available in DBFBP V7.2' as PROJECT_FAMILY,
'Not available in DBFBP V7.2' as PROJECT_KEY,
'Not available in DBFBP V7.2' as PROJECT_ID,
ph.SPD_YYYYMM as SPD,
ph.SMD_YYYYMM as SMD,
ph.DOD_YYYYMM as DOD,
ph.ISOP_YYYYMM as ISOP,
ph.EOP_YYYYMM as EOP,
vv.ID as VEHICLE_ID,
bg.BRAND_GROUP as BRAND_GROUP,
br.BRAND as BRAND,
prd.FLAG_ACCESSORY as ACCESSORY,
'Not available in DBFBP V7.2' as BRAND_CLASSIFICATION,
CASE WHEN mn.MODEL_NAME='[TBD]'  THEN null when mn.MODEL_NAME='-' THEN null WHEN
mn.MODEL_NAME='[NOT KNOWN]' then null when mn.MODEL_NAME='[N.K.]' then null when
mn.MODEL_NAME='TBD' then null when mn.MODEL_NAME='[N.K]' then null else mn.MODEL_NAME END
as MODEL_NAME ,
CASE WHEN mc.MODEL_CODE='[TBD]'  THEN null when mc.MODEL_CODE='-' THEN null WHEN
mc.MODEL_CODE='[NOT KNOWN]' then null when mc.MODEL_CODE='[N.K.]' then null when
mc.MODEL_CODE='TBD' then null when mc.MODEL_CODE='[N.K]' then null else mc.MODEL_CODE END
as MODEL_CODE,
CASE WHEN gn.GENERATION='[TBD]'  THEN null when gn.GENERATION='-' THEN null WHEN
gn.GENERATION='[NOT KNOWN]' then null when gn.GENERATION='[N.K.]' then null when
```

```
gn.GENERATION='TBD' then null when gn.GENERATION='[N.K]' then null else gn.GENERATION END as
GENERATION,
CASE WHEN gn.GENERATION_CODE='[TBD]'  THEN null when gn.GENERATION_CODE='-' THEN null
WHEN gn.GENERATION_CODE='[NOT KNOWN]' then null when gn.GENERATION_CODE='[N.K.]' then
null when gn.GENERATION_CODE='TBD' then null when gn.GENERATION_CODE='[N.K]' then null else
gn.GENERATION_CODE END as GENERATION_CODE,
CASE WHEN bt.BODY_TYPE='[TBD]'  THEN null when bt.BODY_TYPE='-' THEN null WHEN
bt.BODY_TYPE='[NOT KNOWN]' then null when bt.BODY_TYPE='[N.K.]' then null when
bt.BODY_TYPE='TBD' then null when bt.BODY_TYPE='[N.K]' then null else bt.BODY_TYPE END as
BODY_TYPE,
CASE WHEN bt.BODY_TYPE_CODE='[TBD]'  THEN null when bt.BODY_TYPE_CODE='-' THEN null
WHEN bt.BODY_TYPE_CODE='[NOT KNOWN]' then null when bt.BODY_TYPE_CODE='[N.K.]' then null
when bt.BODY_TYPE_CODE='TBD' then null when bt.BODY_TYPE_CODE='[N.K]' then null else
bt.BODY_TYPE_CODE END as BODY_TYPE_CODE,
CASE WHEN my.MODEL_YEAR='[TBD]'  THEN null when my.MODEL_YEAR='-' THEN null WHEN
my.MODEL_YEAR='[NOT KNOWN]' then null when my.MODEL_YEAR='[N.K.]' then null when
my.MODEL_YEAR='TBD' then null when my.MODEL_YEAR='[N.K]' then null else my.MODEL_YEAR END
as MODEL_YEAR,
CASE WHEN sg.SEGMENT='[TBD]'  THEN null when sg.SEGMENT='-' THEN null WHEN
sg.SEGMENT='[NOT KNOWN]' then null when sg.SEGMENT='[N.K.]' then null when sg.SEGMENT='TBD'
then null when sg.SEGMENT='[N.K]' then null else sg.SEGMENT END as SEGMENT,
CASE WHEN sg.SEGMENT_CODE='[TBD]'  THEN null when sg.SEGMENT_CODE='-' THEN null WHEN
sg.SEGMENT_CODE='[NOT KNOWN]' then null when sg.SEGMENT_CODE='[N.K.]' then null when
sg.SEGMENT_CODE='TBD' then null when sg.SEGMENT_CODE='[N.K]' then null else
sg.SEGMENT_CODE END as SEGMENT_CODE,
pst.SITE as MM_PRODUCTION_SITE,
pst.ID as MM_PRODUCTION_SITE_ID,
prl.PRODUCT_LINE as PRODUCT_LINE,
prg.PRODUCT_GROUP as PRODUCT_GROUP,
prf.PRODUCT_FAMILY as PRODUCT_FAMILY,
prc.PRODUCT_CATEGORY as PRODUCT_CATEGORY,
prd.PRODUCT_DETAILS as PRODUCT_DETAIL,
CASE WHEN pcs.PRODUCT_CLASSIFICATION
IN ('TOOLING','RESEARCH AND DEVELOPMENT','PRICING IRRELEVANT')
THEN 'Price Irrelevant'
WHEN  pcs.PRODUCT_CLASSIFICATION='PRICING RELEVANT'
THEN 'Price Relevant'
WHEN pcs.PRODUCT_CLASSIFICATION='COMPONENT'
THEN 'Component'
END as PRODUCT_CLASSIFICATION,
co.COUNTRY_CODE as PRODUCTION_COUNTRY_CODE,
ho.HOMOLOGATION as HOMOLOGATION,
ho.id as PRODUCT_ID,
pj.SPECIFICATION as SPECIFICATION,
'Not available in DBFBP V7.2' as REPLACEMENT_OPPORTUNITY_ID,
vd.WEEKLY_NOMINAL_DEMAND as WEEKLY_NOMINAL_DEMAND,
vd.WEEKS_PER_YEAR as WEEKS_PER_YEAR,
vd.FLEXIBILITY_OEM_AND_OES_PERCENTAGE as FLEXIBILITY_OEM_AND_OES_PERCENTAGE,
vd.WEEKS_FOR_MAXIMUM_CAPACITY as WEEKS_FOR_MAXIMUM_CAPACITY

FROM projecthistories as ph
JOIN projectcustomers as pc
ON pc.ID = ph.ID_projectcustomers
LEFT JOIN projects as pj
```

```
on pj.ID = pc.ID_projects
LEFT JOIN vehicleversions as vv
ON vv.ID = pj.ID_vehicleversions
LEFT JOIN vehiclegenerations as vg
ON vg.ID = vv.ID_vehiclegenerations
LEFT JOIN modelcodes as mc
ON mc.ID = vg.ID_modelcodes
LEFT JOIN modelnames as mn
ON mn.ID = mc.ID_modelnames
LEFT JOIN generations as gn
ON gn.Id = vg.ID_generations
LEFT JOIN segments as sg
ON sg.Id = vg.ID_segments
LEFT JOIN bodytypes as bt
ON bt.ID = vv.ID_bodytypes
LEFT JOIN projecthistorydetails as phd
on ph.Id = phd.ID_projecthistories
LEFT JOIN customers as cs
on cs.ID = pc.ID_customers
LEFT JOIN customergroups as cg
ON cs.ID_customergroups = cg.ID
left JOIN countries as co
ON pc.ID_countriesCustomerproduction = co.ID
LEFT JOIN regions as rg
on rg.ID = co.ID_regions
LEFT JOIN projectstatus as ps
ON ps.ID = ph.ID_projectstatus
LEFT JOIN sites as pst
on pst.ID = ph.ID_sitesProduction
LEFT JOIN sites as st
on st.ID = ph.ID_sitesSales
left JOIN countries as cuc
ON st.ID_countries = cuc.ID
LEFT JOIN regions as crg
on crg.ID = cuc.ID_regions
LEFT JOIN businesslines as bs
on bs.ID = st.ID_businesslines
LEFT join competitors as cm
ON cm.ID = pj.ID_competitors
LEFT JOIN vehiclemanufacturers as vm
ON vm.ID = pj.ID_vehiclemanufacturers
LEFT JOIN modelyears as my
ON my.ID = vv.ID_modelyears
LEFT JOIN rndtypes as rn
ON rn.ID = ph.ID_rndtypes
LEFT JOIN brands as br
ON br.ID = mn.id_brands
LEFT JOIN brandgroups as bg
ON bg.ID = br.id_brandgroups
LEFT JOIN producthomologations as pho
ON pho.ID = pj.ID_producthomologations
LEFT JOIN homologations as ho
ON ho.ID = pho.ID_homologations
LEFT JOIN productdetails as prd
```

```
ON prd.ID = pho.ID_productdetails
LEFT JOIN productcategories as prc
ON prc.ID = prd.ID_productcategories
LEFT JOIN productfamilies as prf
ON prf.ID = prc.ID_productfamilies
LEFT JOIN productgroups as prg
ON prg.ID = prf.ID_productgroups
LEFT JOIN productlines as prl
ON prl.ID = prg.ID_productlines
JOIN productclassifications as pcs
ON pcs.ID=prf.ID_productclassifications
LEFT JOIN currencies as cu
ON cu.ID = ph.id_currencies
LEFT JOIN volumesDemandsMonthly vd
ON vd.ID_projecthistories = ph.ID
join customerteams as ct on pc.ID_customerteams=ct.id
join distributionchannels dc on id_distributionchannels=dc.id
join partspervehicles ppv on ph.ID_partspervehicles=ppv.id join planningdates as pd on
pd.ID=ph.ID_planningdates
where phd.ID_databasemodules=2
  AND ph.ID_planningdates= :plan AND ps.PROJECT_STATUS_CODE != '[ROM]'
  AND (id_projectstatus not IN(7,8,9) or phd.LAST_UPDATE_CET > DATEFROMPARTS(2019,1,27))
AND YEAR(eop_YYYYMM) >= '2017'
order BY 1
```

Mapping of relevant fields:

Accessory__c	ACCESSORY
Body_Type__c	BODY_TYPE
Body_Type_Code__c	BODY_TYPE_CODE
Brand__c	BRAND
Brand_Group__c	BRAND_GROUP
CurrencyIsoCode	CURRENCY
Customer__c	CUSTOMER
Customer_Group__c	CUSTOMER_GROUP
Customer_Sales_Country__c	SALES_COUNTRY
Customer_Sales_Region__c	SALES_REGION
Customer_Team_Code__c	CUSTOMER_TEAM_CODE
Distribution_Channel__c	DISTRIBUTION_CHANNEL
DOD__c	DOD
Engineering_Type__c	ENGINEERING_TYPE
EOP__c	EOP
Flexibility__c	FLEXIBILITY_OEM_AND_OES_PERCENTAGE
Generation__c	GENERATION
Generation_Code__c	GENERATION_CODE
L_Stop_Won_Reason__c	LOST_STOP_WON_REASON default "[Not Known]"
Main_Competitor_Name__c	MAIN_COMPETITOR_NAME

Manufacturer_Name__c	MANUFACTURER_NAME
MM_Production_Site__c	MM_PRODUCTION_SITE
MM_Sales_Site_Code__c	SALES_SITE_CODE
Model_Code__c	MODEL_CODE
Model_Name__c	MODEL_NAME
Model_Year__c	MODEL_YEAR
Parts_Per_Vehicle__c	PARTS_PER_VEHICLE
Price_at_SOP__c	PRICE_AT_SOP
Product_Category__c	PRODUCT_CATEGORY
Product_Classification__c	PRODUCT_CLASSIFICATION
Product_Detail__c	PRODUCT_DETAIL
Product_Family__c	PRODUCT_FAMILY
Product_Group__c	PRODUCT_GROUP
Product_Line__c	PRODUCT_LINE
Production_Site_Code__c	PRODUCTION_SITECODE
Remarks__c	REMARKS
RFQ_Date__c	RFQ_DATE
Sales_Id__c	SALESID
Segment__c	SEGMENT
Segment_Code__c	SEGMENT_CODE
SMD__c	SMD
SOP__c	ISOP
SPD__c	SPD
Specification__c	SPECIFICATION
Stage__c	STAGE
Tool_Calculation__c	TOOL_CALCULATION
Weekly_Nominal_Demand__c	WEEKLY_NOMINAL_DEMAND
Weeks_For_Maximum_Capacity__c	WEEKS_FOR_MAXIMUM_CAPACITY
Weeks_Per_Year__c	WEEKS_PER_YEAR

7.3.3 Records elaboration on Salesforce

Once all the records have been upserted, there's an active trigger that fills the following lookups:

- Customer_Lookup__c
- Main_Competitor_Lookup__c
- Vehicle_Lookup__c
- Product_Lookup__c
- MM_Production_Site_Lookup__c
- Sales_Site_Lookup__c
- Manufacturer_Lookup__c

The rules to fill this fields are:

- Customer relationship lookup based on: Customer__c + Customer_Group__c
- Main competitor relationship lookup based on: Main_Competitor_Name__c
- Manufacturer relationship lookup based on: Manufacturer_Name__c
- MM Production Site relationship lookup based on: Production_Site_Code__c
- Main Product relationship lookup based on: Business_Line__c + Product_Category__c + Product_Family__c + Product_Group__c + Product_Line__c
- Sales Site relationship lookup based on: MM_Sales_Site_Code__c
- Vehicle relationship lookup based on: Body_type__c + Body_Type_Code__c + Generation__c + Generation_Code__c + Brand__c + Brand_Group__c + Model_code__c + Model_name__c + Model_year__c + Segment__c + Segment_Code__c

If a record has at least one blank lookup field , the following field will be set to false: Lookup_Populated__c

If a lookup field is blank it means that there's no matching records on Salesforce for the provided data (i.e. Missing vehicles, incomplete product hierarchy, wrong site codes, etc.). All these errors are tracked in an Integration_log__c record. Multiple integration log entries could be duplicated.

Once the data is ready to be mapped into the actual relevant records, there's a Batch job instantiated. This asynchronous job is responsible for many different actions that must be performed on every single opportunity:

- Create a Scenario or planning status if needed
- Mapping of the opportunity related fields into Opportunity records
- Create Year Summary records for the opportunity lifetime
- Create Monthly volumes that are then connected with the corresponding years
- Create Savings
- Create Lump sums
- Create junction objects that connects the opportunity with a Scenario and/or with a Component
- Fill Specification related fields
- And all the Opportunity trigger related actions as:
    - Validate dates
    - Verify validation rules
    - Apply exchange rates
    - Apply savings
    - Calculate Turnover
    - Write Warning messages on warning field
    - Calculate Sharing rules