Information Management
GE Healthcare ERP Integration

MD60 Functional Design – PDS Data Transformation

The purpose of this document is to outline the process of data flow from various sources like GLPROD, ITCS, SBOM, MWS to PDS.

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Revision History

Revision	Date	Author	Change Reference	Reason for Change	Project/Control Number
1.0	01-Feb-2016	Jyotirup Bhattacharya	Initial Version	Initial Version	
2.0	24-Jan-2017	Soumyadip Ghosh	Section 9.6.6.2 (Point 5,6,7) Section 9.8.6.2 (Point 11)	Functional defect fixes	CC# CHG0092076
3.0	24-May-2017	Priyanka Bali	Section 9.10.6.2 Section 9.11.6.2	Functional defect fixes	CC# CHG0106315
4.0	17-Aug-2017	Soumyadip Ghosh	Section 9.33	Enhancement for PDS Demand Conversion	CC # CHG0117367
5.0	03-Apr-2018	Soumyadip Ghosh	Section 9.34.5.2, 9.34.5.3, 9.34.6.3, 9.34.6.4 Section 9.33.6.10	Enhancement for Washrate Calculation Addition of backup fields to maintain previous data during Demand Data Conversion	CC # CHG0138856
6.0	29-May-2018	Soumyadip Ghosh	Section 9.34.5.4, 9.34.5.5, 9.34.6.5, 9.34.6.6 Section 9.35 Section 9.36 Section 9.37 Section 9.38 Section 9.39 Section 9.40	Return Washrate Calculation Indicated Pool Size Priority Score, Number of Opportunity, Supply Health SKU Transformation Order Plan Transformation Onhand Balances Transformation SPM Review Reason Transformation	CC # CHG0144375
7.0	17-Jul-2018	Soumyadip Ghosh	Section 9.41 Section 9.42	Repair Option Transformation Demand Aggregate Transformation	CC # CHG0149567
8.0	18-Jul-2018	Akhilesh Jha	Section 9.43	Added design for SPM Plan execution metrics	CC # CHG0151589
9.0	12-Sep-2018	Chandra Nandy	Section 9.44	Added design for Allocation Restriction Matrix	CC # GECHG0288132
10.0	10-Jan-2019	Soumyadip Ghosh	Section 9.45	Transaction Data Conversion	CC # GECHG0380380
11.0	15-Jan-2019	Soumyadip Ghosh	Section 9.46	Collaborative Planning Transformation	CC # GECHG0413770

12.0	20-Feb-2019	Soumyadip Ghosh	Section 9.36.5.1, 9.36.6.2 Section 9.11.6.2	Priority Score logic change for Network min Change for SCS	CC # GECHG0518618
13.0	02-Jul-2019	Soumyadip Ghosh	Section 9.30.6.3	Removing condition to check Item Status for Part Changeup Transformation	CC # GECHG0528200
14.0	08-Jul-2019	Soumyadip Ghosh	Section 9.34.5.1, 9.34.6.2	Modification in calculation of Repair Wash Rate	CC # GECHG0531681
15.0	04-Sep-2019	Pushap Saini	Section 9.31.1, 9.31.6.2	Changes in Country Restrictions Matrix corresponding to change in source of data from ITCS to GLPROD	CC # GECHG0584867
16.0	11-Feb-2020	Soumyadip Ghosh	Section 9.11.6.2	Modification in Approved Order Transformation corresponding to the Duplicate Identification and Repair Customization Changes	CC # GECHG0724717
17.0	02-Jun-2020	Chandra Nandy	Section 7.1.2 Section 7.2 Section 9.1 Section 9.2.6.8	Data flow diagram for End-to-End Transformation runs Process Flow Narrative PDS Front End to Insert/Modify Rules PDS Data Flow Business Rules	CC # GECHG0831012
18.0	10-Jun-2020	Akhilesh Jha	Section 9.36.5.1, 9.36.5.3,9.36.6.2, 9.36.6.4	Updated the logic to derive Backorder, network min, Available Onhand and Average Order Quantity.	CC # GECHG0838455
19.0	01-Jul-2020	Pushap Saini	Section 9.47 Section 9.48, 9.49	SPM Master Data Health Check Logic Health Check Reprocessing Logic	CC # GECHG0858356
20.0	25-Aug-2020	Pushap Saini	Section 9.50	Supply Conversion Implementation	CC # GECHG0911924
21.0	03-Sep-2020	Pushap Saini	Section 9.36.1	Added a description for Supply Max Column and logic added into the Priority Score Table	CC # GECHG0924916
22.0	04-Sep-2020	Soumyadip Ghosh	Section 9.51	Portion of Allocation to CEX for Low Health Parts	CC # GECHG0922111
23.0	08-Feb-2021	Chandra Nandy	Section 9.30.5.4, 9.30.6.2	Part Changeup PDS stored data should be considered to create part changeup file	CC # GECHG1056486

			Section 9.38.5.4, 9.38.6.4 Section 9.52, 9.53, 9.54	Order Plan Dashboard Order Plan Variance SPM Forecast Variance Obsolete object cleanup program	
24.0	13-Jul-2021	Pushap Saini	Section 9.44	Allocation Block ID enhancement in Allocation Restriction Metrics	CC # GECHG1187679
25.0	01-Oct-2021	Pushap Saini	Section 9.34.1	Addition of Date Range Parameters for the (Repair/Return) Wash Rate Override Values.	CC # GECHG1249543
26.0	15-Nov-2021	Pushap Saini	Section 9.55	Addition of Supply Forecast Interface	CC # GECHG1287391
27.0	15-Feb-2022	Chandra Nandy	Section 9.37.5.2 9.37.6.2	SKU Override functionality inclusion	CC# GECHG1366314
28.0	07-Apr-2022	Pushap Saini	Section 9.47.8	SMR V4 Report linked as child process in PDS.	CC# GECHG1407218
29.0	15-Oct-2022	Saurav Pawar	Section 9.56, 9.57, 9.58, 9.59, 9.60	Added five new process to accommodate IB Project	CC# GECHG1558448
30.0	26-Sep-2023	Saurav Pawar	Section 9.56.6.2 9.57.6.2,9.58.6.2, 9.59.6.2, 9.60.6.2	Added five business rules into IB project's interfaces (Product, Product Rollout, SBOM and ELF and SCAN)	CC# GECHG1851320
31.0	06-Mar-2024	Saurav Pawar	Section 9.57.6.2,9.58.6.2, 9.60.6.2	Added new business rules into IB project's interfaces (Product Rollout, SBOM and ELF) as per requirement	CC# GECHG1983677

Table of Contents

1. Introduction

Planning Database System (PDS) is an On-premises software (sometimes abbreviated as "on-prem") installed and run on computers on the premises which serves as a platform for data storage. It holds the data which is being sent across various systems. Several logics can be applied on the raw data received from Oracle and other sources before sending it across to destination system i.e. SPM or GLPROD. It also serves the purpose to hold large historical data into PDS.

The data flow through PDS is designed with below prerogatives:

a) Forward flow : Forward flow comprises of the data coming in from various sources like GLPROD, ITCS, SBOM, IB and MWS and flowing into SPM via PDS
b) Reverse flow : Reverse flow is the flow of planning data flowing from SPM to GLPROD via PDS.

These source data will be captured in PDS and several business logics will be applied on the data and thereafter the transformed data will be fed to the destination system.

2. Scope

2.1. In Scope

The process of the data received in PDS and applying the transformation logic on the same and then feeding the processed data to the destination system.

2.2. Out of Scope

All process unrelated to the processing of the received data in PDS.

3. Documentation References

Doc ID	Document Name
DOC1910982	GLPROD_To_SPM_DataFlow_IRS
DOC1824937	GLPROD_MD60_GLPROD_DATA_TO_SPM
DOC1821667	GLPROD_MD60_PLN_SVC_SPM_NEWBUY_RECOMMENDATION.doc
DOC1821676	GLPROD_MD60_PLN_SVC_SPM_ALLOCATION_RECOMMENDATION.doc
DOC1824934	GLPROD_MD60_PLN_SVC_SPM_REPAIR_RECOMMENDATION.doc
DOC1824940	GLPROD_MD60_SVC_SPM_MODIFICATION_RECOMMENDATION.doc
DOC1912200	PDS_SETUP_PLN_TRANSFORMATION

4. Prerequisites

1	All required data in various source system should be extracted and prepared to be picked up by Middleware
2	Middleware will insert the data of the different extracts into the inbound PDS table by invoking the various procedures pertaining to the Middleware side

5. Terminology

Term	Explanation
SPM	Global Parts planning tool
PDS	Planning Database System
IP	Inbound to Process layer flow
PS	Process to Oubound (SPM) layer flow
RDC	Regional Distribution Center
LCT	It is the subinventory where FE consignment gets created
DFD	External system where External Supplier Forecast data is sent for transaparency to suppliers
BI	Business Intelligence
GIB	Global Install Base

6. As Is Process

6.1. Process Flow Diagram

Not Applicable.

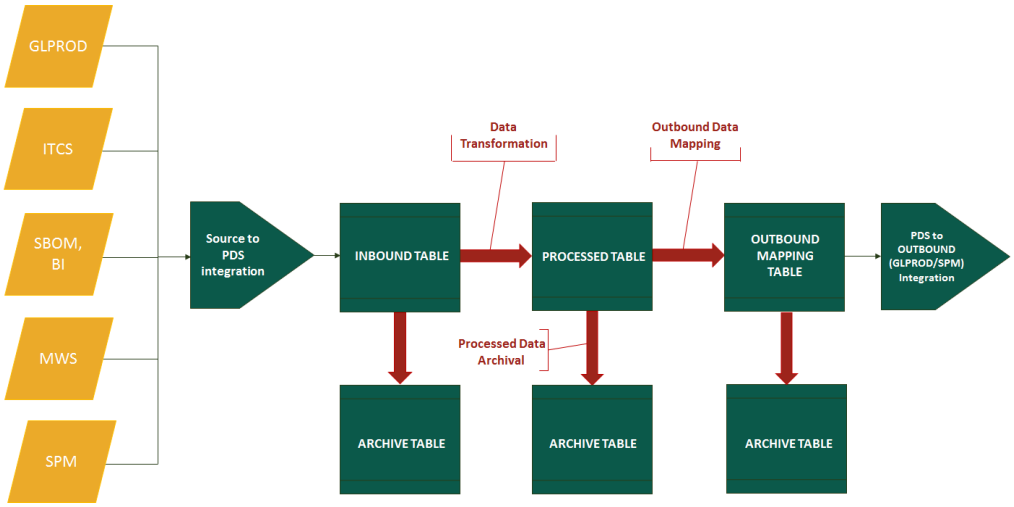
6.2. Process Flow Narrative

Not Applicable.

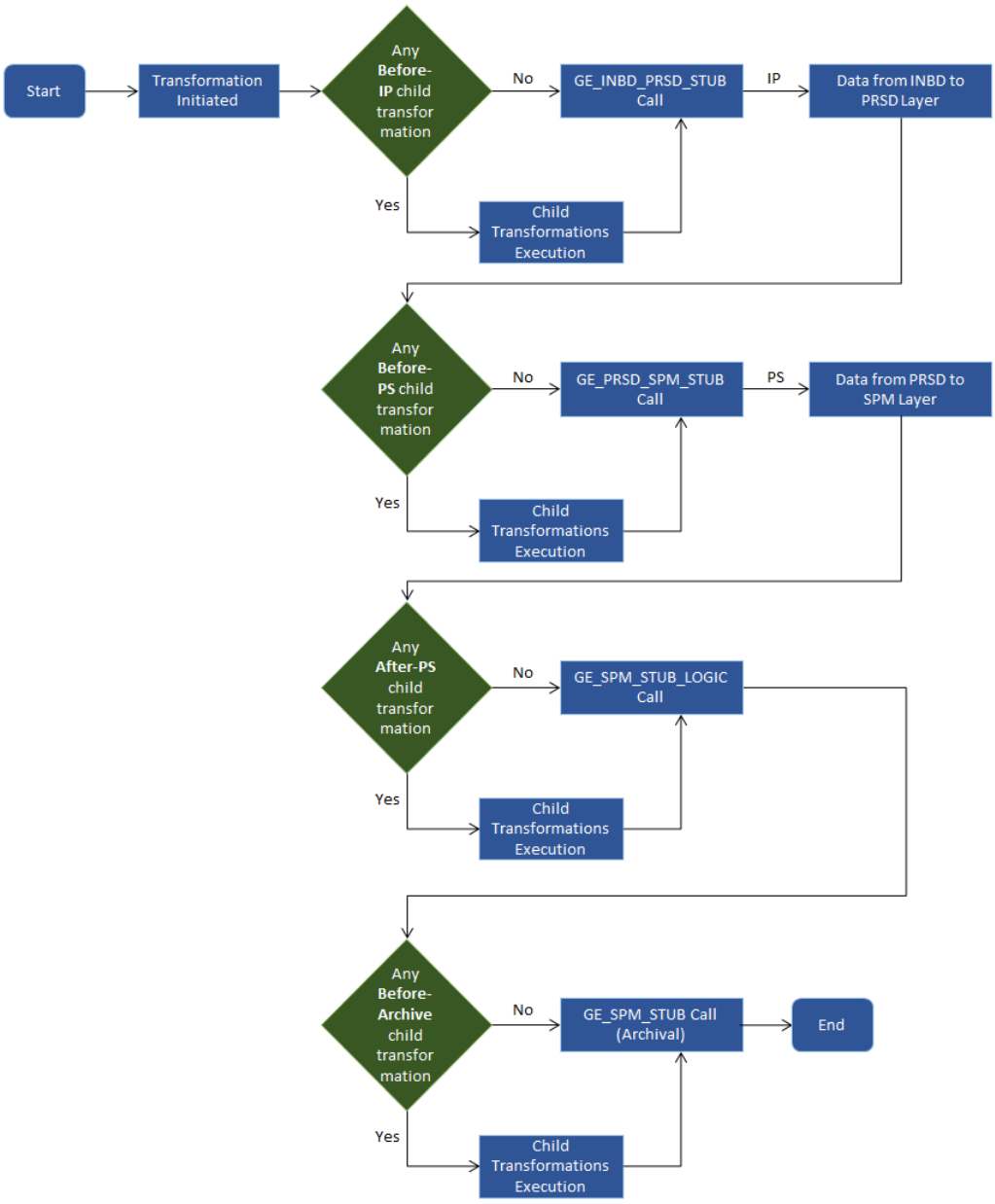
7. To Be Process

7.1. Process Flow Diagram

7.1.1. Data Flow from Various Sources to Outbound (SPM) through PDS.



7.1.2. Data Flow Diagram for End-to-End Transformation runs



7.2. Process Flow Narrative

The data from various sources like GLPROD, IB, SBOM, MWS, SPM is sent as a part of the data feed to PDS. The raw data is thereafter processed by the various logics applied and henceforth the processed data is sent to the destination system based on the Outbound enabled flag (SPM Enabled flag) of the particular data stream for a particular activity name. Also end to end data transparency and archival is ensured.

There will be a set of three layers in PDS required to process the initial raw data into inbound table of PDS. The data is then moved into the processed table based on various transformation logics that are given as rules from PDS front end. Finally the structured data is sent to SPM based on the SPM Enabled flag.
The first layer comprises of the raw data for all the extracts fetched from various source systems which has been inserted into the inbound tables by Middleware named as 'INDB Layer'.
The second layer in PDS consists of the processed data based on the execution of the rules that are entered from the PDS front end. This layer is named as 'PRSD Layer'.
The third layer in PDS comprises of the data that will be finally fed into SPM depending on several SPM business logics. This outbound layer is known as 'SPM Layer'
The processes running to transform data from 'INBD Layer' to 'PRSD Layer' is named as 'IP' Step.
The processes running to transform data from 'PRSD Layer' to 'SPM Layer' is named as 'PS' Step.
Also a functionality is available to run child transformations within any Parent transformations at below levels

i) Before-IP -> Prior to executing IP
ii) Before PS -> After executing IP, Before executing PS
iii) After-PS -> After executing PS
iv) Before-Archive -> After executing PS, before executing Archive

7.3. Performance & Volume

Reference	Requirement
MASTER_TRANSFORMATION	Around 1.2 Million records will be fetched weekly approximately
ONHAND_TRANSFORMATION	Around 400 Thousand records will be fetched Daily approximately
SOURCE_TRANSFORMATION	Around 300 Thousand records will be fetched weekly approximately
DEMAND_TRANSFORMATION	Around 60 Thousand records will be fetched daily approximately
TRANSACTION_TRANSFORMATION	Around 60 Thousand records will be fetched daily approximately
SUPPLY_TRANSFORMATION	Around 60 Thousand records will be fetched daily approximately
FEEDBACK_TRANSFORMATION	Around 5 thousand records will be fetched daily approximately
PRODUCT_DATA_TRANSFORMATION	Around 3.5 Million records will be fetched weekly approximately
PRODUCT_BOM_DATA_TRANSFORMATION	Around 20 Million records will be fetched weekly approximately
FAILURE_RATE_DATA_TRANSFORMATION	Around 1.5 Million records will be fetched weekly approximately
PRODUCT_ROLLOUT_DATA_TRANSFORMATION	Around 1.5 Million records will be fetched weekly approximately
CF_CONTRACT_DATA_TRANSFORMATION	Around 1 Million records will be fetched weekly approximately
CONTRACT_TYPE_DATA_TRANSFORMATION	Around 5 Thousand records will be fetched weekly approximately

INSTALL_SITE_DATA_TRANSFORMATION	Around 500 Thousand records will be fetched weekly approximately
CUSTOMER_DATA_TRANSFORMATION	Around 10 Thousand records will be fetched weekly approximately
DEMAND_LINK_TRANSFORMATION	Around 400 Thousand records will be fetched weekly approximately
PM_ORDERS_TRANSFORMATION	Around 30 Thousand records will be fetched weekly approximately
COUNTRY_RESTRICTION_TRANSFORMATION	Around 15 Thousand records will be fetched daily approximately
PART_CHANGEUP_TRANSFORMATION	Around 20 Thousand records will be fetched weekly approximately
APPROVED_ORDERS_TRANSFORMATION	Around 60 Thousand records will be fetched daily approximately
INTERNAL_SUPPLIER_TRANSFORMATION	Around 60 Thousand records will be fetched daily approximately
EXT_ITEM_SUPPLIER_TRANSFORMATION	Around 90 Thousand records will be fetched daily approximately
EXT_DEMAND_SUPPLIER_TRANSFORMATION	Around 90 Thousand records will be fetched daily approximately
DMD_FORECAST_TRANSFORMATION	Around 7 Million records will be fetched weekly approximately
DMD_HISTORY_TRANSFORMATION	Around 8 Million records will be fetched daily approximately
HIER_TRANSFORMATION	Around 8 Thousand records will be fetched daily approximately
PLN_LVL_TRANSFORMATION	Around 1.5 Million records will be fetched weekly approximately
LOC_TRANSFORMATION	Around 2 Thousand records will be fetched daily approximately

7.4. Security (Encryption & Authorization)

Reference	Requirement
7.4.1	None

8. Critical to Quality and or GxP

This is Non GxP.

9. Functions

The following is the list of functions:

Function Name	Function Description
PDS Front End to Insert/Modify Rules	Insertion, validation, saving and enabling the transformation rules from PDS front end.
Rules and Rule Streams	The rules and rule streams will comprise the base queries for each data stream for all activities.

Function Name	Function Description
Data Flow Logic	This defines the logical flow of data from the Inbound layer to SPM (Outbound) layer through the Processed layer.
PDS Part Master Data Transformation	The part master data comprises of the extract of part information from ERP which is processed and sent to the outbound (SPM) layer.
PDS Part Onhand Data Transformation	The part onhand data contains the onhand information across all GPRS planning enabled organizations and service organizations from ERP which is processed and sent to the outbound (SPM) layer.
PDS Part Master Data Transformation	The part master data comprises of the extract of part information of the Item Master Information from ERP which is processed and sent to the outbound (SPM) layer.
PDS Part Onhand Data Transformation	The part onhand data comprises of the extract of part onhand information across all planning enabled organizations fed from ERP which is processed and sent to the outbound (SPM) layer.
PDS Part Source Data Transformation	The part source data comprises of the extract of the supplier information (external, internal and repair suppliers) and shipping network details across all planning enabled organizations fed from ERP which is processed and sent to the outbound (SPM) layer.
PDS Part Demand Data Transformation	The part demand data comprises of the sales order information which is processed and sent to the outbound (SPM) layer. The data for Part Demand is inserted into the Inbound table by Middleware.
PDS Part Supply Data Transformation	The part supply data comprises of the inbound data information (Purchase Orders, BPAs, Received RMAs, etc) which is processed and sent to the outbound (SPM) layer.
PDS Part Transaction Data Transformation	The part transaction data comprises of the transaction details information which is processed and sent to the outbound (SPM) layer.
PDS Feedback Transformation	The Feedback Transformation consists of the summarized planned data sent from SPM to ERP which needs to reprocessed back into SPM as a part of the flow from ERP to SPM. The PDS analyses the entire data and sends only the failed data to SPM which can be incorporated for subsequent planning.
PDS Approved Order Transformation	Approved Order Transformation comprises of Order records which come as recommendations from the SPM planning tool. They are segregated as Repair, Modification, Allocation and Newbuy.
PDS Internal Supplier Forecast Transformation	Internal Supplier Forecast comprises of the Forecast information for the internal suppliers for future bucket for a specific horizon based on sales history data. The data comes as a recommendation from SPM and sent to ERP where the supplier information is fed.
PDS Item External Supplier Forecast Transformation	Item External Supplier Forecast comprises of the Item Forecast Information for the External suppliers for future bucket for a specific horizon based on sales history data. The data comes as a recommendation from SPM and ultimately processed to DFD Application.

Function Name	Function Description
Demand External Supplier Forecast Transformation	Demand External Supplier Forecast comprises of the Demand Forecast Information for the External suppliers for future bucket for a specific horizon based on sales history data. The data comes as a recommendation from SPM and ultimately processed to DFD Application.
Demand Forecast Transformation	Demand Forecast comprises of the Demand Information that is predicted for individual items based on historic data for a future span of specific timeline. The data comes as a forecast from SPM and are utilized for several planning based algorithms.
Demand History Transformation	Demand History comprises of the historical demand information for the specific timespan. The data comes as an extract from SPM and are utilized for calculations and forecasting in several planning based algorithms.
Hierarchy Transformation	Hierarchy data comprises of the locational hierarchy information for each locations available for transaction of items in GPRS business. The data comes as an extract from SPM and is utilized in location based algorithms for planning
Plan Level Transformation	Plan Level information comprises of the part to location statistical information. The data comes as an extract from SPM and is utilized in planning algorithms
Location Transformation	Location transformation comprises information about geographical establishment of locations in GPRS business
PDS Product Data Transformation	The product data comprises of the extract of System IDs from various source systems like GIB, SIEBEL_INTL, AmericasServiceCRM which feeds BI and is processed and sent to the outbound (SPM) layer.
PDS Product BOM Data Transformation	The product BOM data comprises of the extract of service product BOM information from various source systems like GIB, SIEBEL_INTL, AmericasServiceCRM which feeds BI and is processed and sent to the outbound (SPM) layer.
PDS Product Rollout Data Transformation	The product rollout data comprises of the information of products under contract from various source systems like GIB, SIEBEL_INTL, AmericasServiceCRM which feeds BI and is processed and sent to the outbound (SPM) layer.
PDS Contract Data Transformation	The Contract data comprises of the extract of contract information of the customer from various source systems like GIB, SIEBEL_INTL, AmericasServiceCRM which feeds BI and is processed layer.
PDS Contract Type Data Transformation	The Contract Type Data comprises of the extract of Contract Type information of the Contracts from BI which is processed and sent to the outbound (SPM) layer.
PDS Install Site Data Transformation	The Install Site data comprises of the extract of install site information of the country from various source systems like GIB, SIEBEL_INTL, AmericasServiceCRM which feeds BI and is processed and sent to the outbound (SPM) layer.
PDS Failure Rate Data Transformation	The Failure rate data comprises of the extract of failure rate information of the Product from BI which is processed and sent to the processed layer.

Function Name	Function Description
PDS Customer Data Transformation	The Customer data comprises of the extract of information of the Customer from various source systems like GIB, SIEBEL_INTL, AmericasServiceCRM which feeds BI and is processed and sent to the outbound (SPM) layer.
PDS Demand Link Data Transformation	The Demand Link data comprises of the extract of Sales Orders Demand information from various source systems like GIB, SIEBEL_INTL, AmericasServiceCRM which feeds BI and is processed and sent to the outbound (SPM) layer.
PDS PM Orders Transformation	The PM Orders data comprises of the extract of PM Orders information of the orders from various source systems like GIB, SIEBEL_INTL, AmericasServiceCRM which feeds BI and is processed and sent to the outbound (SPM) layer.
PDS Part Change Up Transformation	The part change up data is the data coming in from MyWorkshop where the Change up information of the Part hierarchy is maintained. The parts to be rolled up to their parent parts or not will be controlled from the change up information.
PDS Country Restriction Transformation	The Country Restriction Matrix data comprises of the extraction of the Refurbished Control List (Country Restriction Matrix) details of parts from source system ITCS (International Trade Compliance System) which is processed and sent to the outbound (SPM) layer.
Order plan execution metrics	This function will build the data for SPM Plan execution metric

9.1 PDS Front End to Insert/Modify Rules.

9.1.1. Approach / Description

The transformation rules for each of the transformation activities will be entered from the PDS Frontend. Based on the transformation rules entered, the corresponding validations will occur. If the transformation rules are validated successfully, the option of saving gets enabled. Upon successful validation of the rules, the rules can be saved and enabled henceforth.

9.1.2. Inputs

The input to this function will be Stream Name, Weightage, Rule Condition

9.1.3. Outputs

The transformation rules can be saved and enabled after successful validation of the transformation rules.

9.1.4. Data Entity

Not Applicable.

9.1.5. Process Flow

Reference	Requirement
9.1.5.1	The transformation rules and base queries are entered from the UI level.
9.1.5.2	The rules will be validated and once validation is successful, the option of saving will get enabled. The validation will be done based on the resultant of the base query and the transformation rules.
9.1.5.3	The rules will be saved and enabled henceforth.

9.1.6. Business Rules

Reference	Business Entity	Rule
9.1.6.1	Data Insertion	Through the PDS front end, users will be able to insert the base query for the various activities depending on the activity type and the logical flow.
9.1.6.2	Data Insertion	Through the PDS front end, users will be able to insert new transformation rules for various activities. The activity names will specifically define the different transformations like part onhand, part supply, part source, etc. The activity name will be taken as an input from the UI. Also existing rules can be modified for any specific activity through the front end UI.
9.1.6.3	Data Insertion	The Data Stream and Data Stream Weightage which defines the sequence of execution of the data stream/rule stream will be entered from the PDS Front end. User also can enable or disable the data stream for any activity name which will define whether the rule is activated or not. SPM enabled flag also can be controlled by which user can assure if the records for the data stream flows to the Outbound (SPM) layer or not.
9.1.6.4	Data Insertion	For any Data Stream, rules can be entered and modified by inserting or modifying the conditions and the sequences. User also can enable and disable a particular condition of a rule.

9.1.7. Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.1.8. Initiation

NA

9.1.9. Error Handling, Reprocessing / Rollback & Error Messaging

None

9.2 PDS Data Flow

9.2.1. Approach / Description

The data flows through PDS to get it arranged as per their data stream for any single activity name. This data flow mainly happens through two layers which are defined below:

a) IP Layer: This is the first layer where the data flows from PDS Inbound table to PDS Processed table for various types of activity names.
b) PS Layer: This is the second layer where the data flows from PDS Processed table to PDS Outbound (SPM) table for various types of activity names.

9.2.2. Inputs

The input to this function will be Stream Name, Weightage and Rule Condition

9.2.3. Outputs

The transformation rules can be saved and enabled after successful validation of the transformation rules.

9.2.4. Data Entity

Not Applicable.

9.2.5. Process Flow

Reference	Requirement
9.2.5.1	The data from various sources (GLPROD, IB, SBOM, MWS and SPM) flows from PDS Inbound table to PDS Processed table.
9.2.5.2	The current inbound table is archived in PDS.
9.2.5.3	The current data in the PDS SPM table is archived for future reference in Archive table of that particular activity name.
9.2.5.4	The current data after archival is truncated as per the process flag in PDS SPM table.
9.2.5.5	The data flows from PDS Processed table to PDS SPM table.
9.2.5.6	The data in PDS Processed table gets archived.

9.2.6. Business Rules

Reference	Business Entity	Rule
9.2.6.1	Data Flow	The Stored Procedure undertakes the end to end data flow from inbound to outbound layers. When the data flows from one layer to another, (say INBOUND to PROCESSED layers), an

Reference	Business Entity	Rule
		INSERT activity occurs first in the destination layer (PROCESSED layer in this case). On completion of the INSERT activity, the UPDATE activity comes into place wherein the data in the source layer (INBOUND layer in this case) gets updated with PROCESSED_FLAG as Y. This activity occurs for each and every rule stream.
9.2.6.2	Data Flow	Data from Inbound table moves to the Processed table based on the process flag and the conditions defined in the rules. The process flag will be initially set to N (determining No) which will determine that the data has not moved from PDS Inbound to PDS Processed tables. As the data flows from PDS Inbound to PDS Processed tables, the process flag will be updated to Y (determining Yes).
9.2.6.3	Data Flow	The process table undergoes flush and fill or appending of data based on the requirement.
9.2.6.4	Data Flow	Data will move from Processed table to Outbound (SPM) table based on the process flag and SPM enabled flag of that particular Data stream. The SPM enabled flag will determine whether the data will flow from PDS Processed table to PDS Outbound (SPM) table.
9.2.6.5	Data Flow	The previous data in the Outbound table will be erased to accommodate the current data for each activity
9.2.6.6	Data Flow	There will be an archive logic implemented for each of the three layers, that is, PDS Inbound, PDS Processed and PDS Outbound (SPM) table. For each of these layers, an archive table will be present. The archival logic will be based on the profile setup in PDS. This profile option can be enabled/disabled on the discretion of the user.
9.2.6.7	Data Flow	There will be a tracking table (GEMS_IFACE_SPM_TABLE) wherein the start date with start time and end date with end time will be populated for each of the activities. When the data flow starts initially, a record is inserted into the above mentioned tracking table with status flag as I (Initiated). After the data flow completes successfully, the status flag is updated to C (Completed). If the data flow completes erroneously, the status flag is updated to E (Error).
9.2.6.8	Data Flow	The sequence and dependencies of child transformation runs can be controlled within any parent transformation run at below levels (This can be handled from PDS Front End) : i) Before-IP -> Prior to executing IP if any child transformation needs to run ii) Before PS -> After executing IP, Before executing PS if any child transformation needs to run iii) After-PS -> After executing PS if any child transformation needs to run iv) Before-Archive -> After executing PS, before executing Archive if any child transformation needs to run

9.2.7. Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.2.8. Initiation

NA

9.2.9. Error Handling, Reprocessing / Rollback & Error Messaging

None

9.3. Rules and Rule Streams:

9.3.1. Approach / Description

The Rules and Rule streams intend implementation of end to end data sanctity. These are added to the base query which is the backbone to form the executable. The base query will be determined by activity type and logical flow. Activity type depicts the type of data modification activity like insert or update. Logical flow determines the layer of flow of data i.e. IP (Dataflow from Inbound table to Processed table in PDS) and PS (Dataflow from Processed table to SPM table in PDS)

9.3.2. Inputs

Activity name, activity type, activity sequence, logical flow, base query, rules and data streams are the inputs.

9.3.3. Outputs

The extract of the result of the final executable query

9.3.4. Data Entity

9.3.4.1 GE_SPM_RULE_HEADERS_ALL

COLUMN_NAME	DATA_TYPE	DATA_LENGTH	NULLABLE	EXPLANATION
HEADER_ID	NUMBER	22	N	Unique number to identify row data in table
ACTIVITY_NAME	VARCHAR2	100	Y	Name of the transformation
DATASTREAM_WEIGHTAGE	NUMBER	22	Y	Sequence priority based on which the data_stream is executed
DATA_STREAM	VARCHAR2	100	Y	The standpoints on which data is segragated
ENABLE_FLAG	VARCHAR2	1	Y	Flag to determine whether a rule is enabled or not
SPM_ENABLE_FLAG	VARCHAR2	1	Y	Flag to determine if data will flow to Outbound (SPM) Table or not

DESCRIPTION	VARCHAR2	2000	Y	Description of data_stream
CREATED_BY	VARCHAR2	20	Y	Identification of user creating the rule
CREATED_DTTM	VARCHAR2	20	Y	Stores date and time of creation of rule
MODIFIED_BY	VARCHAR2	20	Y	Identification of user modifying the rule
MODIFIED_DTTM	VARCHAR2	20	Y	Stores date and time of modification of rule

9.3.4.2. GE_SPM_RULE_LINES_ALL

COLUMN_NAME	DATA_TYPE	DATA_LENGTH	NULLABLE	EXPLANATION
LINE_ID	NUMBER	22	N	Unique number to identify row data in table
HEADER_ID	NUMBER	22	Y	Foreign key connecting to header table
ACTIVITY_NAME	VARCHAR2	100	Y	Name of the transformation
DATA_STREAM	VARCHAR2	100	Y	The standpoints on which data is segregated
SEQUENCE_NUM	NUMBER	22	Y	Sequence priority based on which the condition is added to the base query
LOGICAL_JOIN	VARCHAR2	3	Y	Identification of the level of flow of the data across various table layers
OPEN_BRACE	VARCHAR2	2	Y	(- to include conditional operations
FUNCTION	VARCHAR2	100	Y	Inclusion of functional operations
TABLE_CODE	VARCHAR2	20	Y	Alias name of the main table name
COLUMN_NAME	VARCHAR2	30	Y	Column names included in the queried tables
FUNCTION_VALUE	VARCHAR2	2000	Y	Value of the functional operations that is used
OPERATION	VARCHAR2	20	Y	The logical operators being used

CONDITION	VARCHAR2	2000	Y	The condition required to be met
CLOSE_BRACE	VARCHAR2	2	Y	) - to include conditional operations
ENABLE_FLAG	VARCHAR2	1	Y	Determines whether a row of particular condition is enabled or not
CREATED_BY	VARCHAR2	20	Y	Identification of user creating the rule
CREATED_DTTM	VARCHAR2	20	Y	Stores date and time of creation of rule
MODIFIED_BY	VARCHAR2	20	Y	Identification of user modifying the rule
MODIFIED_DTTM	VARCHAR2	20	Y	Stores date and time of modification of rule

9.3.4.3. GE_PLN_TRANSFORMATION_BASE_DTL

COLUMN_NAME	DATA_TYPE	DATA_LENGTH	NULLABLE	EXPLANATION
ACTIVITY_NAME	VARCHAR2	100	Y	Name of the transformation
ACTIVITY_TYPE	VARCHAR2	100	Y	Activity_type determines the type of data modification query(Insert, Update)
ACTIVITY_SEQUENCE	NUMBER	22	Y	Sequence priority based on which the executable_query is executed
LOGICAL_FLOW	VARCHAR2	100	Y	Determines the data flow of the different layer. Mainly two types of data flows are there. IP: Data Flow from INBD to PRSD table. PS: Data Flow from PRSD to Outbound (SPM) table
BASE_QUERY	CLOB	4000	Y	Base Query
CREATED_BY	VARCHAR2	100	Y	Identification of user creating the rule
CREATED_DTTM	DATE	7	Y	Stores date and time of creation of rule
MODIFIED_BY	VARCHAR2	100	Y	Identification of user modifying the rule
MODIFIED_DTTM	DATE	7	Y	Stores date and time of modification of rule

9.3.4.4. GE_PLN_TRANSFORMATION_EXEC_DTL

COLUMN_NAME	DATA_TYPE	DATA_LENGTH	NULLABLE	EXPLANATION
ACTIVITY_NAME	VARCHAR2	100	Y	Name of the transformation
DATA_STREAM	VARCHAR2	100	Y	The standpoints on which data is segragated
WEIGHTAGE	NUMBER	22	Y	Sequence priority based on which the rule needs to be executed
ACTIVITY_TYPE	VARCHAR2	100	Y	Activity_type detemines the type of data modification query (Insert, Update)

ACTIVITY_SEQUENCE	NUMBER	22	Y	Sequence priority based on which the executable_query for a particular rule is executed
LOGICAL_FLOW	VARCHAR2	100	Y	Determines the data flow of the different layer. Mainly two types of data flows are there. IP: Data Flow from INBD to PRSD table. PS: Data Flow from PRSD to Outbound (SPM) table
FINAL_QUERY	CLOB	4000	Y	Resultant of the base query and the rules which forms the ultimate query

9.3.5 Process Flow

Reference	Requirement
9.2.5.1	The base query is the structural backbone of the execution.
9.2.5.2	The base query is aided by the rules and data streams of a particular activity name to form the executable query. The rules and data streams form the condition for the execution.
9.2.5.3	The rules will be executed according to the activity sequence of a particular data stream.

9.3.6 Business Rules

Reference	Business Entity	Rule
9.3.6.1	Rules and rule streams	There will be a base query for each and every logical flow and activity type for all activity names. The base query depicts the backbone of the data modification wherein constant aspects are handled in base query and variable aspects are separately controlled by the rules and the data streams
9.3.6.2	Rules and rule streams	The variables are the rule streams that are subjected to be inserted by the user from the front end. The base query is appended to the rule stream to form the resultant executable query.
9.3.6.3	Rules and rule streams	The priority in the activity sequence determines the order of the data modification.
9.3.6.4	Rules and rule streams	The execution of the data stream for a particular activity name depends on the weightage value of the data stream. This weightage value can be entered by the users and also can be modified as per business requirement. Lower the weightage value, higher is the priority of execution.
9.3.6.5	Rules and rule streams	The execution of the queries will also depend on the activity type and logical flow. Activity type depicts the type of data modification activity like insert or update. Logical flow determines the layer of flow of data i.e. IP (Dataflow from Inbound table to Processed table in PDS)

Reference	Business Entity	Rule
		and PS (Dataflow from Processed table to SPM table in PDS)

9.3.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.3.8 Initiation

NA

9.3.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.4. PDS Part Master Data Transformation

9.4.1 Approach / Description

The part master data comprises of the extract of part information of the Item Master from ERP which is processed and sent to the outbound (SPM) layer. The data for Part Master is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed tables and then from the Processed to SPM Outbound layer based on the effective rule streams.

9.4.2 Inputs

The input to this function will be the Item Master information which is present in the Inbound tables.

9.4.3 Outputs

The transformed part master data in the SPM Outbound layer.

9.4.4 Data Entity

Not Applicable.

9.4.5 Process Flow

Reference	Requirement
9.4.5.1	Middleware has already inserted the Part Master data into the PDS Inbound layer.
9.4.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.4.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules.

9.4.6 Business Rules

Reference	Business Entity	Rule
9.4.6.1	Part Master Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.4.6.2	Part Master Transformation	The data flow for Part Master from the Inbound to Outbound layer will be governed by the set of rules which are mentioned below : 1. Items in Inbound layer with DRP_Planned_Flag as Yes will be send over to the Outbound layer. So, there should be a restriction on the items having DRP_Planned_Flag as No from sending it over to the Outbound layer. However, the processed table will hold both records having DRP_Planned_Flag as Yes/No. 2. If an item is present in more than one part master organizations, then only the item information record from item master organization GPO will be considered to be send over to the Outbound layer (SPM). This will prevent the flow of duplicate records. 3. There will be a default rule which will send all the data which is not processed through the above mentioned rules.
9.4.6.3	Part Master Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.4.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.4.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.4.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.5. PDS Part Onhand Data Transformation

9.5.1 Approach / Description

The part onhand data comprises of the extract of part onhand information across all planning enabled organizations fed from ERP which is processed and sent to the outbound (SPM) layer. The data for Part Onhand is inserted into the Inbound table by Middleware. From there, a stored procedure is invoked to process the data from the Inbound to the Processed tables and then from the Processed to SPM Outbound layer based on the effective rule streams.

9.5.2 Inputs

The input to this function will be the Part Onhand information which is present in the Inbound tables (already inserted by Middleware)

9.5.3 Outputs

The transformed part onhand data in the SPM Outbound layer.

9.5.4 Data Entity

Not Applicable.

9.5.5 Process Flow

Reference	Requirement
9.5.5.1	Middleware has already inserted the Part Onhand data into the PDS Inbound layer.
9.5.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.5.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules.

9.5.6 Business Rules

Reference	Business Entity	Rule
9.5.6.1	Part Onhand Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.5.6.2	Part Onhand Transformation	The data flow for Part Onhand from the Inbound to Outbound layer will be governed by the set of rules which are mentioned below : 1. The onhands for items which are not assigned in GPO organization will not be send over to SPM (Outbound) layer. 2. There will be a rule to extract all the PUDO Onhand Information wherein the PUDO Onhands will be extracted from the inbound tables and will be fed to the Outbound (SPM) layer. There should be an identification for all the PUDO Onhands in the Processed and Outbound layer as PUDO Stream. PUDO onhand stands for Pick Up and Drop Off onhand which is maintained by Field Engineer whose SSO starts with '9' and it is only applicable for Service Onhand.

Reference	Business Entity	Rule
		3. There will be a rule to extract all the Service Organization Onhand Information wherein the Onhands from FE Subinventories will be extracted from the inbound tables and will be fed to the Outbound (SPM) layer. There should be an identification for all the FE Onhands in the Processed and Outbound layer as SERVICE_ORG_ONHAND Stream. 4. A rule will be there to extract all the Repair Onhand from the organizations wherein the onhands from repair subinventories will be extracted and will be fed to the Outbound (SPM) layer. The identification for all the Repair Onhands in the Processed and Outbound layer is done with the INREPAIR Stream. 5. There will also be a rule to extract the Defective Onhand from the organizations wherein the onhands from the defective subinventories will be extracted and will be fed to the Outbound (SPM) layer. The identification for all the Defective Onhands in the Processed and Outbound layer is done through DEFECTIVE Stream. 6. A rule will be there to extract the RSV Onhands from the organizations wherein the onhands from the RSV subinventories will be extracted and will be fed to the Outbound (SPM) layer. RSV sub inventories are the cross doc sub inventories situated near to the staging area for high demand items. The identification for all the RSV Onhands in the Processed and Outbound layer is done through RSV Stream. 7. A rule will be there to extract the Good Onhands from the organizations wherein the onhands from the Good subinventories will be extracted and will be fed to the Outbound (SPM) layer. There should be an identification for all the GOOD Onhands in the Processed and Outbound layer as GOOD Stream. 8. There will be a default rule which will send all the data which is not processed through the above mentioned rules. 9. There will be a default rule which will send all the data which is not processed through the above mentioned rules.
9.5.6.3	Part Onhand Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.
9.5.6.3	Part Onhand Transformation	Onhand Information for BAD Subinventory is setup once daily earlier to regular forward flow daily and weekly batches to be sent to SPM to enable Repair Upload Automation in SPM

9.5.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.5.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.5.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.6. PDS Part Source Data Transformation

9.6.1 Approach / Description

The part source data comprises of the extract of the supplier information (external, internal and repair suppliers) and shipping network details across all planning enabled organizations fed from ERP which is processed and sent to the outbound (SPM) layer. The data for Part Source is inserted into the Inbound table by Middleware. From there, a stored procedure is invoked to process the data from the Inbound to the Processed tables and then from the Processed to SPM Outbound layer based on the effective rule streams.

9.6.2 Inputs

The input to this function will be the Part Source information which is present in the Inbound tables (already inserted by Middleware)

9.6.3 Outputs

The transformed part source data in the SPM Outbound layer.

9.6.4 Data Entity

Not Applicable.

9.6.5 Process Flow

Reference	Requirement
9.6.5.1	Middleware has already inserted the Part Source data into the PDS Inbound layer.
9.6.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.6.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules.

9.6.6 Business Rules

Reference	Business Entity	Rule
9.6.6.1	Part Source Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.6.6.2	Part Source Transformation	The data flow for Part Source from the Inbound to Outbound layer will be governed by the set of rules which are mentioned below : 1. There will be a rule to extract all the External Supplier Information which will be fed to the Outbound (SPM) layer. The External Suppliers who are the suppliers external to the organization is identified through EXTERNAL SUPPLIER stream in both Processed and Outbound layers. 2. There will be a rule to extract all the Internal Supplier Information which will be fed to the Outbound (SPM) layer. The internal suppliers who are the suppliers internal to the organization are identified through INTERNAL SUPPLIER stream in both Processed and Outbound layers. 3. There will be a rule to extract all the Repair Supplier Information which will be fed to the Outbound (SPM) layer. The repair supplier information data will be identified as REPAIR SUPPLIER stream in both Processed and Outbound layers. 4. Also there will be a rule to extract all the Shipping Network Information which will be fed to the Outbound (SPM) layer. The repair supplier information data will be identified as SHIPPING NETWORK stream in both Processed and Outbound layers. 5. There will be a rule to extract the Internal newbuy source records for child parts based on the Part change up hierarchy. These Internal newbuy source are identified as INTERNAL SUPPLIER CHILD PART stream and are disabled from moving to SPM 6. There will be a rule to extract the External newbuy source records for child parts based on the Part change up hierarchy. These External newbuy source are identified as EXTERNAL SUPPLIER CHILD PART stream and are disabled from moving to SPM 7. Another rule to extract all external Newbuy source records with Invalid BPAs checked from Supply transformation is there. This is identified as EXTERNAL SUPPLIER NOT VALID and are disabled from moving to SPM 8. There will be a default rule which will send all the data which is not processed through the above mentioned rules.
9.6.6.3	Part Source Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM

Reference	Business Entity	Rule
		Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.6.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.6.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.6.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.7. PDS Part Demand Data Transformation

9.7.1 Approach / Description

The part demand data comprises of the sales order information which is processed and sent to the outbound (SPM) layer. The data for Part Demand is inserted into the Inbound table by Middleware. From there, a stored procedure is invoked to process the data from the Inbound to the Processed tables and then from the Processed to SPM Outbound layer based on the effective rule streams.

9.7.2 Inputs

The input to this function will be the Part Demand data which is present in the Inbound tables (already inserted by Middleware)

9.7.3 Outputs

The transformed part demand data in the SPM Outbound layer.

9.7.4 Data Entity

Not Applicable.

9.7.5 Process Flow

Reference	Requirement
9.7.5.1	Middleware has already inserted the Part Demand data into the PDS Inbound layer.
9.7.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.7.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules.

9.7.6 Business Rules

Reference	Business Entity	Rule
9.7.6.1	Part Demand Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.7.6.2	Part Demand Transformation	The data flow for Part Demand from the Inbound to Outbound layer will be governed by the set of rules which are mentioned below : 1. The demand for items which are not assigned in GPO organization will not be send over to SPM (Outbound) layer. 2. A rule will be there to extract the PUDO Demand information which shall be fed to the Outbound (SPM) layer. The PUDO demand data shall be identified as PUDO data stream in both Processed and Outbound layers wherein the Field Engineer against the demand has SSO starting with '9%' 3. There will be a rule to extract the Conversion Orders from the demand data wherein the converted orders will be restricted from reaching the Outbound (SPM) layer. Conversion orders are the information of the sales order which are created through conversion in ERP. They are identified in PDS with CONVERSION_ORD stream. 4. There will be a rule to extract the INVALID demand from the demand data wherein orders with order line status as 'BOOKED','CANCELLED','DRAFT','ENTERED', 'OFFER_EXPIRED' will be restricted from being sent over to the Outbound (SPM) layer. 5. There will be a rule to extract the FE Orders wherein all the orders which have been ordered by the FE's will be send over to the Outbound (SPM) layer. The FE orders data will be identified as FE data stream in both Processed and Outbound layers wherein the Field Engineer SSO starts with '9%' 6. There will be a rule to extract the orders in which both the FE and Ship From Warehouses are Non PARTS organizations and these orders will be prevented from reaching the Outbound (SPM) layer. 7. There will be a rule to extract the orders in which the FE Warehouse will be a PARTS Warehouse and the

Reference	Business Entity	Rule
		Ship From Warehouse will also be a PARTS warehouse. These orders will be send over to the Outbound (SPM) layer and will be identified by DLR_DCOS stream. 8. There will be a rule to extract the orders in which the FE Warehouse will be a PARTS Warehouse and the Ship From Warehouse can be a Non PARTS warehouse. These orders will be send over to the Outbound (SPM) layer and will be identified by DLR_DCOS_MFGSHIP stream. 9. Also a rule will be there to restrict the demand data which are identified through data streams - Invalid FE LCT locations and Invalid PUDO locations. Henceforth, this data will be restricted from being sent to the Outbound (SPM) layer. 10. There will be a check on DRP_PLANNED_FLAG for the items in the demand data and if there are items with DRP_PLANNED_FLAG as No in GPO Organization, the sales orders containing these items will be restricted from being sent to the Outbound (SPM) layer. 11. There will be a rule to extract the PM Orders wherein all PM Orders (orders with transaction type including '%PM%Shipment%') will be sent over to the Outbound (SPM) layer. 12. There will be a default rule which will send all the data which is not processed through the above mentioned rules.
9.7.6.3	Part Demand Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.7.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.7.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.7.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.8. PDS Part Supply Data Transformation

9.8.1 Approach / Description

The part supply data comprises of the inbound data information (Purchase Orders, BPAs, Received RMAs, etc) which is processed and sent to the outbound (SPM) layer. The data for Part Supply is inserted into the Inbound table by Middleware. From there, a stored procedure is invoked to process the data from the Inbound to the Processed tables and then from the Processed to SPM Outbound layer based on the effective rule streams.

9.8.2 Inputs

The input to this function will be the Part Demand data which is present in the Inbound tables (already inserted by Middleware)

9.8.3 Outputs

The transformed part demand data in the SPM Outbound layer.

9.8.4 Data Entity

Not Applicable.

9.8.5 Process Flow

Reference	Requirement
9.8.5.1	Middleware has already inserted the Part Supply data into the PDS Inbound layer.
9.8.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.8.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules.

9.8.6 Business Rules

Reference	Business Entity	Rule
9.8.6.1	Part Supply Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.8.6.2	Part Supply Transformation	The data flow for Part Supply from the Inbound to Outbound layer will be governed by the set of rules which are mentioned below : 1. A rule will be there to extract all the DROPSHIP POs wherein POs which are received in corresponding subinventories (subinventories with name containing %SUS%) will be fetched and these data will be restricted from sending to the Outbound (SPM) layer. 2. There will be a rule to extract all the RDE POs wherein all POs sent for repair will be fetched and these data will be restricted from being sent to the Outbound (SPM) layer. Repair Defective POs are POs for outside

Reference	Business Entity	Rule
		pole repair suppliers which are identified through 'RDE PO' stream in PDS. 3. A rule will be there to extract all the SWAP POs which will be fetched and these data will be sending to the Outbound (SPM) layer. The identification of the swap pos will be through SWAP PO data stream. 4. A rule will be there to extract all the Repair RMAs which will be fetched and these data will be sent to the Outbound (SPM) layer. Repair RMAs are the RMAs through which the repaired part is inbounded back into good stock when the part has been sent for repairing to the internal supplier. They are identified by 'RDE PO' stream. 5. A rule will be there to extract all the Harvest POs which will be fetched and these data will be sent to the Outbound (SPM) layer. The Harvest POs across various poles (EU and US) are identified through streams (HARVEST EU and HARVEST US). 6. A rule will be there to extract all the External Warranty POs (po_header_classification like 'EXT%WAR') will be fetched and these data will be sending to the Outbound (SPM) layer. The identification of the swap pos will be through E_REP data stream. 7. A rule will be there to extract all the Repair POs and these data will be sent to the Outbound (SPM) layer. The identification of the Repair pos will be through REPAIR data stream. 8. A rule will be there to extract all the Allocation POs and these data will be sent to the Outbound (SPM) layer. The identification of the Allocation Pos will be through 'ALLOCATION_PO' data stream. 9. A rule will be there to extract all the Newbuy POs and these data will be sent to the Outbound (SPM) layer. The identification of the Newbuy Pos will be through 'NEWBUY_PO' data stream. 10. A rule will be there to extract all the FE Good Returns (RMAs received in warehouses in GOOD subinventories) and these data will be sent to the Outbound (SPM) layer. The identification of the FE will be through NEWBUY_PO data stream. 11. Logic is incorporated in supply transformation to transform onhand data for both GOOD as well as DEFECTIVE subinventory. These will represent FE Unused and FE Used onhand respectively in sales return feed. 12. There will be a default rule which will send all the data which is not processed through the above mentioned rules.

Reference	Business Entity	Rule
9.8.6.3	Part Supply Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.8.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.8.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.8.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.9. PDS Part Transaction Data Transformation

9.9.1 Approach / Description

The part transaction data comprises of the transaction details information which is processed and sent to the outbound (SPM) layer. The data for Part Transaction is inserted into the Inbound table by Middleware. From there, a stored procedure is invoked to process the data from the Inbound to the Processed tables and then from the Processed to SPM Outbound layer based on the effective rule streams.

9.9.2 Inputs

The input to this function will be the Part Transaction data which is present in the Inbound tables (already inserted by Middleware)

9.9.3 Outputs

The transformed part transaction data in the SPM Outbound layer.

9.9.4 Data Entity

Not Applicable.

9.9.5 Process Flow

Reference	Requirement
9.9.5.1	Middleware has already inserted the Part Transaction data into the PDS Inbound layer.
9.9.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.9.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules.

9.9.6 Business Rules

Reference	Business Entity	Rule
9.9.6.1	Part Transaction Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.9.6.2	Part Transaction Transformation	The data flow for Part Transaction from the Inbound to Outbound layer will be governed by the set of rules which are mentioned below : 1. A rule will be there to extract all the "subinventory transfer" transactions from 'RDC' organization and this data will be fetched and sent to the Outbound (SPM) layer. 2. A rule will be there to extract all the harvest transactions from 'RDC' organization and this data will be fetched and sent to the Outbound (SPM) layer. The harvest transactions are identified by 'HARVEST AS' stream. 3. A rule will be there to extract all the RMA Receipt transactions from all organizations (transaction_type_name is 'GPO RMA Receipt') and this data will be fetched and sent to Outbound (SPM) layer. 4. There will be a default rule which will send all the data which is not processed through the above mentioned rules.
9.9.6.3	Part Transaction Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.9.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.9.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.9.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.10. PDS Feedback Transformation

9.10.1 Approach / Description

The Feedback Transformation consists of the summarized planned data sent from SPM to ERP which needs to reprocessed back into SPM as a part of the flow from ERP to SPM. The PDS analyses the entire data and sends only the failed data to SPM which can be incorporated for subsequent planning.

9.10.2 Inputs

The input to this function will be the Feedback information which is present in the Inbound tables.

9.10.3 Outputs

The transformed part change up data in the SPM Outbound layer.

9.10.4 Data Entity

Not Applicable.

9.10.5 Process Flow

Reference	Requirement
9.10.5.1	Middleware has already inserted the Feedback data into the PDS Inbound layer.
9.10.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.10.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules.

9.10.6 Business Rules

Reference	Business Entity	Rule
9.10.6.1	Feedback Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.10.6.2	Feedback Transformation	The data flow for Feedback from the Inbound to Outbound layer will be governed by the set of rules which are mentioned below :

Reference	Business Entity	Rule
		1. A rule is defined in PDS which extracts all the Processed IR Information i.e. the successfully processed IR information from ERP will be extracted from the inbound tables. These records will be restrained from being sent to Outbound (SPM) layer. There should be an identification for all the Processed IR in the processed layer as PROCESS_IR Stream. 2. There shall be a rule defined in PDS which fetches all records coming in from ERP end with the combination of recommendation, item number, source organization code and destination organization code grouped per the increasing order of transaction ids. Now the highest transaction id is checked for the specific combination containing successful or error records. If this combination arranged per the decreasing order of transaction ids appears to be a successful/processed record, the rule created in PDS will suppress all the other transaction ids for the similar combination of records and thus the error records will be restrained from being sent over to SPM. 3. There shall be a rule defined in PDS which fetches all records coming in from ERP end with the combination of recommendation, item number, source organization code and destination organization grouped according to the increasing order of transaction ids. Now the highest transaction id is checked for the specific combination containing successful or error records. If this combination arranged according to the decreasing order of transaction ids appears to be an error/unprocessed record, the rule created in PDS will send only the error record for such combination which has the highest transaction id among them. 4. There is a rule which extracts all the Error Information related to the below categories • Extracting all the Error PO Information will be fed to the Outbound (SPM) layer from Inbound table • Extracting all the Error IR Information from ERP that will be extracted from the inbound tables and will be fed to the Outbound (SPM) layer • Extracting all the PO Information in ERP which has failed during modification recommendations.

Reference	Business Entity	Rule
		• Extracting all the Error Out Repair Information from the inbound tables which will be fed to the Outbound (SPM) layer. These records will be sent as Open POs in SPM 5. There will be a rule to extract all the Processed PO i.e. the successfully processed PO information from ERP will be extracted from the inbound tables. These records will be restrained from being sent to Outbound (SPM) layer. There should be an identification for all the Processed IR in the processed layer as PROCESS_PO Stream. 6. There will be a rule to extract all the Processed PO Modification Information i.e. the information for only the successfully modified PO in ERP which will be extracted from the inbound tables. . These records will be restrained from being sent to Outbound (SPM) layer. There should be an identification for all the Processed IR in the processed layer as PROCESS_MODIFICATION Stream. 7. There is a rule to extract all the Processed Repair Information i.e. the successful repair PO information will be extracted from the Inbound tables. These records will be restrained from being sent to Outbound (SPM) layer. There should be an identification for all the Processed Repair in the processed layer as PROCESS_REPAIR Stream.
9.10.6.3	Feedback Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.10.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.10.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.10.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.11. PDS Approved Order Transformation

9.11.1 Approach / Description

Approved Order Transformation comprises of Order records which come as recommendations from the SPM planning tool. The target system is GLPROD where the recommendations are created. They are segregated as Repair, Modification, Allocation, Newbuy.

Newbuy - The NewBuy data comprises of the extract of order for parts which needs to be acquired from external suppliers across all planning enabled organizations fed from SPM

Allocation - The allocation data comprises of the extract of order for parts across all planning enabled organizations fed from SPM

Repair - The repair data comprises of the extract of recommendations for repair of parts across all planning enabled organizations fed from SPM

Modification - The Modification data comprises of the extract of recommendation on modification of orders information across all planning enabled organizations fed from SPM

9.11.2 Inputs

The input to this function will be the Approved Order information which is present in the Inbound tables.

9.11.3 Outputs

The transformed Approved Order data in the SPM Outbound layer.

9.11.4 Data Entity

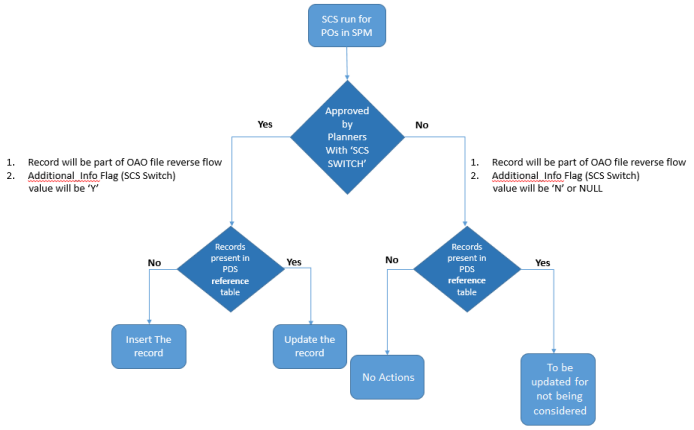
Not Applicable.

9.11.5 Process Flow

Reference	Requirement
9.11.5.1	Middleware has already inserted the Approved Order data into the PDS Inbound layer.
9.11.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.11.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules.

9.11.6 Business Rules

Reference	Business Entity	Rule
9.11.6.1	Approved Order Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.11.6.2	Approved Order Transformation	The data flow for Approved Orders from the Inbound to Outbound layer will be governed by the set of rules which are mentioned below : 1. There is a rule which extracts the LCT organizations and restricts them from being processed to the SPM Layer 2. There will be a default rule which will send all the data which is not processed through the above-mentioned rules. 3. There will be a rule to segregate the duplicate transaction ids arriving on the same day for different load ids. This means that there may be certain cases wherein records with the same transaction ids are being sent from SPM on the same day. These records will be sent to the ERP end with process flag 'E' that depicts that these will not be processed. 4. There will be a rule to segregate the duplicate transaction ids which has arrived previously within 7 days. This means that there may be certain cases wherein records with the same transaction ids are being sent from SPM in the last 7 days. These records will be sent to the ERP end with process flag 'E' that depicts that these will not be processed. 5. There will be a rule to segregate the duplicate transaction ids arriving on the same day for the same load id. This means that there may be certain cases wherein records with the same transaction ids are being sent from SPM in the same load id. These records will be sent to the ERP end with process flag 'E' that depicts that these will not be processed. 6. For modification transformation all the recommendations which arrive as SCS flag (i.e. additional_info_12) 'Y'/'y'/'yes'/'Yes'/'YES' needs to be restricted from being sent as part of normal flow. These records needs to be separately stored in a reference table so that they can further be honored during the forward flow runs at the time of sending Open supply, where these orders will be marked not to be further considered for SCS in SPM. Below is the diagram for the data flow :

Reference	Business Entity	Rule
		 Records from the reference table will be deleted if the need by date greater of need by date and planned order date is less than sysdate. 7. There will be a rule to identify the duplicate transactions being processed based on specific parameter that are TRANSACTION ID | ITEM NUMBER | ORDER TYPE | SOURCE ORGANIZATION CODE | DESTINATION ORGANIZATION CODE | NEED BY DATE. The recommendations are identified to be duplicate if the combination of above mentioned parameters are found to be present in the previously processed recommendations within the same Orders file or within the Orders file processed on the same day or even the Orders in the files processed within the last 1 week. These recommendations are then error out at the final Outbound layer.
9.11.6.3	Approved Order Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound layer.

9.11.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.11.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.11.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.12 PDS Internal Supplier Forecast Transformation

9.12.1 Approach / Description

Internal Supplier Forecast comprises of the Forecast information for the internal suppliers for future bucket for a specific horizon based on sales history data. The data comes as a recommendation from SPM and sent to ERP where the supplier information is fed.

9.12.2 Inputs

The input to this function will be the Internal Supplier Forecast information which is present in the Inbound tables.

9.12.3 Outputs

The transformed Internal Supplier Forecast in the SPM Outbound layer.

9.12.4 Data Entity

Not Applicable.

9.12.5 Process Flow

Reference	Requirement
9.12.5.1	Middleware has already inserted the Internal Supplier Forecast data into the PDS Inbound layer.
9.12.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.12.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules.

9.12.6 Business Rules

Reference	Business Entity	Rule
9.12.6.1	Internal Supplier Forecast Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.12.6.2	Internal Supplier Forecast Transformation	The data flow for Internal Supplier Forecast from the Inbound to Outbound layer will be governed by the rules which are mentioned below : The rule is set to default for which all the data gets mapped from inbound into the outbound layer.
9.12.6.3	Internal Supplier Forecast Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound layer.

9.12.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.12.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.12.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.13 PDS Item External Supplier Forecast Transformation

9.13.1 Approach / Description

Item External Supplier Forecast comprises of the Item Forecast Information for the External suppliers for future bucket for a specific horizon based on sales history data. The data comes as a recommendation from SPM and ultimately processed to DFD Application.

9.13.2 Inputs

The input to this function will be the Item External Supplier Forecast information which is present in the Inbound tables.

9.13.3 Outputs

The transformed Item External Supplier Forecast in the SPM Outbound layer.

9.13.4 Data Entity

Not Applicable.

9.13.5 Process Flow

Reference	Requirement
9.13.5.1	Middleware has already inserted the Item External Supplier Forecast data into the PDS Inbound layer.
9.13.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.13.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules.

9.13.6 Business Rules

Reference	Business Entity	Rule
9.13.6.1	Item External Supplier Forecast Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.13.6.2	Item External Supplier Forecast Transformation	The data flow for Item External Supplier Forecast from the Inbound to Outbound layer will be governed by the rule which is mentioned below : The rule is set to default for which all the data gets mapped from inbound into the outbound layer.
9.13.6.3	Item External Supplier Forecast Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound layer.

9.13.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.13.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.13.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.14 Demand External Supplier Forecast Transformation

9.14.1 Approach / Description

Demand External Supplier Forecast comprises of the Demand Forecast Information for the External suppliers for future bucket for a specific horizon based on sales history data. The data comes as a recommendation from SPM and ultimately processed to DFD Application.

9.14.2 Inputs

The input to this function will be the Demand External Supplier Forecast information which is present in the Inbound tables.

9.14.3 Outputs

The transformed Demand External Supplier Forecast in the SPM Outbound layer.

9.14.4 Data Entity

Not Applicable.

9.14.5 Process Flow

Reference	Requirement
9.14.5.1	Middleware has already inserted the Demand External Supplier Forecast data into the PDS Inbound layer.
9.14.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.14.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules.

9.14.6 Business Rules

Reference	Business Entity	Rule
9.14.6.1	Demand External Supplier Forecast Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.14.6.2	Demand External Supplier	The data flow for Demand External Supplier Forecast from the Inbound to Outbound layer will be governed by the rule which is mentioned below :

Reference	Business Entity	Rule
	Forecast Transformation	There will be a default rule which will send all the data into the SPM Layer.
9.14.6.3	Demand External Supplier Forecast Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound layer.

9.14.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.14.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.14.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.15 Demand Forecast Transformation

9.15.1 Approach / Description

Demand Forecast comprises of the Demand Information that is predicted for individual items based on historic data for a future span of specific timeline. The data comes as a forecast from SPM and are utilized for several planning based algorithms. The data is not sent to any destination system.

9.15.2 Inputs

The input to this function will be the Demand Forecast information which is present in the inbound tables.

9.15.3 Outputs

The Demand Forecast data is stored in the Process layer of PDS.

9.15.4 Data Entity

Not Applicable.

9.15.5 Process Flow

Reference	Requirement
9.15.5.1	Middleware has already inserted the Demand Forecast data into the PDS Inbound layer.
9.15.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.

9.15.6 Business Rules

Reference	Business Entity	Rule
9.15.6.1	Demand Forecast Transformation	The SP is responsible for the data flow from Inbound to Processed Layer
9.15.6.2	Demand Forecast Transformation	The data flow for Demand External Supplier Forecast from the Inbound to Outbound layer will be governed by the rule which is mentioned below : There will be a default rule which will send all the data into the PRSD Layer.
9.15.6.3	Demand Forecast Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not.

9.15.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.15.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.15.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.16 Demand History Transformation

9.16.1 Approach / Description

Demand History comprises of the historical demand information for the specific timespan. The data comes as an extract from SPM and are utilized for calculations and forecasting in several planning based algorithms. The data has no mapping with any destination system.

9.16.2 Inputs

The input to this function will be the Demand History information which is present in the Inbound tables.

9.16.3 Outputs

The Demand History data is stored in the Process layer of PDS.

9.16.4 Data Entity

Not Applicable.

9.16.5 Process Flow

Reference	Requirement
9.16.5.1	Middleware has already inserted the Demand History data into the PDS Inbound layer.
9.16.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.

9.16.6 Business Rules

Reference	Business Entity	Rule
9.16.6.1	Demand History Transformation	The SP is responsible for the data flow from Inbound to Processed Layer
9.16.6.2	Demand History Transformation	The data flow for Demand History Supplier Forecast from the Inbound to Outbound layer will be governed by the rule which is mentioned below : There will be a default rule which will send all the data into the PRSD Layer.
9.16.6.3	Demand History Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not.

9.16.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.16.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.16.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.17 Hierarchy Transformation

9.17.1 Approach / Description

Hierarchy data comprises of the locational hierarchy information for each locations available for transaction of items in GPRS business. The data comes as an extract from SPM and is utilized in location based algorithms for planning. The data is not mapped to any destination system.

9.17.2 Inputs

The input to this function will be the Hierarchy information which is present in the Inbound tables.

9.17.3 Outputs

The Hierarchy data is stored in the Process layer of PDS.

9.17.4 Data Entity

Not Applicable.

9.17.5 Process Flow

Reference	Requirement
9.17.5.1	Middleware has already inserted the Hierarchy data into the PDS Inbound layer.
9.17.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.

9.17.6 Business Rules

Reference	Business Entity	Rule
9.17.6.1	Hierarchy Transformation	The SP is responsible for the data flow from Inbound to Processed Layer
9.17.6.2	Hierarchy Transformation	The data flow for Hierarchy from the Inbound to Outbound layer will be governed by the rule which is mentioned below There will be a default rule which will send all the data into the PRSD Layer.
9.17.6.3	Hierarchy Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not.

9.17.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.17.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.17.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.18 Plan Level Transformation

9.18.1 Approach / Description

Plan Level information comprises of the part to location statistical information. The data comes as an extract from SPM and is utilized in planning algorithms

9.18.2 Inputs

The input to this function will be the Plan Level information which is present in the Inbound tables.

9.18.3 Outputs

The Plan Level information data is stored in the Process layer of PDS.

9.18.4 Data Entity

Not Applicable.

9.18.5 Process Flow

Reference	Requirement
9.18.5.1	Middleware has already inserted the Plan Level data into the PDS Inbound layer.
9.18.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.

9.18.6 Business Rules

Reference	Business Entity	Rule
9.18.6.1	Plan Level Transformation	The SP is responsible for the data flow from Inbound to Processed Layer
9.18.6.2	Plan Level Transformation	The data flow for Plan Level from the Inbound to Outbound layer will be governed by the rule which is mentioned below : There will be a default rule which will send all the data into the PRSD Layer.
9.18.6.3	Plan Level Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not.

9.18.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.18.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.18.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.19 Location Transformation

9.19.1 Approach / Description

Location transformation comprises information about geographical establishment of locations in GPRS business

9.19.2 Inputs

The input to this function will be the Location transformation information which is present in the Inbound tables.

9.19.3 Outputs

The Location transformation data is stored in the Process layer of PDS.

9.19.4 Data Entity

Not Applicable.

9.19.5 Process Flow

Reference	Requirement
9.19.5.1	Middleware has already inserted the Location transformation data into the PDS Inbound layer.
9.19.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.

9.19.6 Business Rules

Reference	Business Entity	Rule
9.19.6.1	Location transformation	The SP is responsible for the data flow from Inbound to Processed Layer
9.19.6.2	Location transformation	The data flow for Location transformation from the Inbound to Outbound layer will be governed by the rule which is mentioned below : There will be a default rule which will send all the data into the PRSD Layer.
9.19.6.3	Location transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not.

9.19.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.19.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.19.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.20 PDS Product Data Transformation

9.20.1 Approach / Description

The product data comprises of the extract of System IDs from various source systems like GIB, SIEBEL_INTL, AmericasServiceCRM which feeds BI and is processed and sent to the outbound (SPM) layer. The data for product is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed tables and then from the Processed to SPM Outbound layer based on the effective rule streams.

9.20.2 Inputs

The input to this function will be the Product data information which is present in the Inbound tables.

9.20.3 Outputs

The transformed product data in the SPM Outbound layer.

9.20.4 Data Entity

Not Applicable.

9.20.5 Process Flow

Reference	Requirement
9.20.5.1	Middleware has already inserted the Product data into the PDS Inbound layer.
9.20.5.2	Stored Procedure (SP) should be initiated to process data from inbound table to processed table with all business logic & then from processed to SPM outbound table with SPM logic.
9.20.5.3	Business and SPM Rules are defined in headers and lines table.
9.20.5.4	Data flow per rule between Inbound to Processed (IP) and then Processed to SPM (PS) are controlled in GE_SPM_RULE_HEADERS_ALL table disabled by ENABLE_FLAG, SPM_ENABLE_FLAG.

9.20.6 Business Rules

Reference	Business Entity	Rule
9.20.6.1	Product Data Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.20.6.2	Product Data Transformation	The data flow for Product from the Inbound to Outbound layer will be governed by the set of rules which are mentioned below : Items in Inbound layer with PRODUCTSTATUS as 'Active' and 'Installed' will be send over to the Outbound layer. So, there should be a restriction on the products having PRODUCTSTATUS other than 'Active' and 'Installed' from sending it over to the Outbound layer. However, the processed table will hold both records . There will be a default rule which will send all the data which is not processed through the above mentioned rules.
9.20.6.3	Product Data Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.20.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.20.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.20.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.21 PDS Product BOM Data Transformation

9.21.1 Approach / Description

The product BOM data comprises of the extract of service product BOM information from various source systems like GIB, SIEBEL_INTL, AmericasServiceCRM which feeds BI and is processed and sent to the outbound (SPM) layer. The data for product BOM is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed tables and then from the Processed to SPM Outbound layer based on the effective rule streams.

9.21.2 Inputs

The input to this function will be the Product BOM data information which is present in the Inbound tables.

9.21.3 Outputs

The transformed Product BOM data in the SPM Outbound layer.

9.21.4 Data Entity

Not Applicable.

9.21.5 Process Flow

Reference	Requirement
9.21.5.1	Middleware has already inserted the Product BOM data into the PDS Inbound layer.
9.21.5.2	Stored Procedure (SP) should be initiated to process data from inbound table to processed table with all business logic & then from processed to SPM outbound table with SPM logic.
9.21.5.3	Business and SPM Rules are defined in headers and lines table.
9.21.5.4	Data flow per rule between Inbound to Processed (IP) and then Processed to SPM (PS) are controlled in GE_SPM_RULE_HEADERS_ALL table disabled by ENABLE_FLAG, SPM_ENABLE_FLAG.

9.21.6 Business Rules

Reference	Business Entity	Rule
9.21.6.1	Product BOM Data Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.21.6.2	Product BOM Data Transformation	The data flow for Product BOM from the Inbound to Outbound layer will be governed by the rule which is mentioned below : 1. There will be a default rule which will send all the data which is not processed through any specified rules.
9.21.6.3	Product BOM Data Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.21.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.21.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.21.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.22 PDS Product Rollout Data Transformation

9.22.1 Approach / Description

The product rollout data comprises of the information of products under contract from various source systems like GIB, SIEBEL_INTL, AmericasServiceCRM which feeds BI and is processed and sent to the outbound (SPM) layer. The data for product rollout is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed tables and then from the Processed to SPM Outbound layer based on the effective rule streams.

9.22.2 Inputs

The input to this function will be the Product rollout data information which is present in the Inbound tables.

9.22.3 Outputs

The transformed Product rollout data in the SPM Outbound layer.

9.22.4 Data Entity

Not Applicable.

9.22.5 Process Flow

Reference	Requirement
9.22.5.1	Middleware has already inserted the Product rollout data into the PDS Inbound layer.
9.22.5.2	Stored Procedure (SP) should be initiated to process data from inbound table to processed table with all business logic & then from processed to SPM outbound table with SPM logic.
9.22.5.3	Business and SPM Rules are defined in headers and lines table.
9.22.5.4	Data flow per rule between Inbound to Processed (IP) and then Processed to SPM (PS) are controlled in GE_SPM_RULE_HEADERS_ALL table disabled by ENABLE_FLAG, SPM_ENABLE_FLAG.

9.22.6 Business Rules

Reference	Business Entity	Rule
9.22.6.1	Product rollout Data Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.22.6.3	Product rollout Data Transformation	The data flow for Product rollout from the Inbound to Outbound layer will be governed by the rule which is mentioned below : 1. There will be a default rule which will send all the data which is not processed through any specified rules.
9.22.6.4	Product rollout Data Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.22.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.22.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.22.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.23 PDS Contract Data Transformation

9.23.1 Approach / Description

The Contract data comprises of the extract of contract information of the customer from various source systems like GIB, SIEBEL_INTL, AmericasServiceCRM which feeds BI and is processed layer. The data for contract is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed table based on the effective rule streams.

9.23.2 Inputs

The input to this function will be the Contract data information which is present in the Inbound tables.

9.23.3 Outputs

The transformed Contract data in the SPM Outbound layer.

9.23.4 Data Entity

Not Applicable.

9.23.5 Process Flow

Reference	Requirement
9.23.5.1	Middleware has already inserted the contract data into the PDS Inbound layer.
9.23.5.2	Stored Procedure (SP) should be initiated to process data from inbound table to processed table with all business logic .
9.23.5.3	Business and SPM Rules are defined in headers and lines table.
9.23.5.3	Data flow per rule between Inbound to Processed (IP) and then Processed to SPM (PS) is are controlled in GE_SPM_RULE_HEADERS_ALL table disabled by ENABLE_FLAG, SPM_ENABLE_FLAG.

9.23.6 Business Rules

Reference	Business Entity	Rule
9.23.6.1	Contract Data Transformation	The SP is responsible for the data flow from Inbound to Processed layer.
9.23.6.2	Contract Data Transformation	The data flow for contract from the Inbound to Outbound layer will be governed by the set of rule which is mentioned below : 1. There will be a default rule which will send all the data to processed layer only.
9.23.6.3	Contract Data Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not.
9.23.6.4	Contract Data Transformation	GEHC will send this manual file to SPM. Data coming from BI will be stored in Processed table and SPM will have data that GEHC will send.

9.23.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target

	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.23.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.23.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.24 PDS Contract Type Data Transformation

9.24.1 Approach / Description

The Contract Type Data comprises of the extract of Contract Type information of the Contracts from BI which is processed and sent to the outbound (SPM) layer. The data for Contract Type is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed tables based on the effective rule streams.

9.24.2 Inputs

The input to this function will be the Contract Type data information which is present in the Inbound tables.

9.24.3 Outputs

The transformed Contract Type data in the SPM Outbound layer.

9.24.4 Data Entity

Not Applicable.

9.24.5 Process Flow

Reference	Requirement
9.24.5.1	Middleware has already inserted the contract type data into the PDS Inbound layer.
9.24.5.2	Stored Procedure (SP) should be initiated to process data from inbound table to processed table with all business .
9.24.5.3	Business and SPM Rules are defined in headers and lines table.
9.24.5.4	Data flow per rule between Inbound to Processed (IP) and then Processed to SPM (PS) are controlled in GE_SPM_RULE_HEADERS_ALL table disabled by ENABLE_FLAG, SPM_ENABLE_FLAG.

9.24.6 Business Rules

Reference	Business Entity	Rule
9.24.6.1	Contract Type Data Transformation	The SP is responsible for the data flow from Inbound to Processed layer.
9.24.6.2	Contract Type Data Transformation	The data flow for Contract Type from the Inbound to Outbound layer will be governed by the rule which is mentioned below : 1. There will be a default rule which will send all the data to processed layer only.
9.24.6.3	Contract Type Data Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not.
9.24.6.4	Contract Type Data Transformation	One Setup will be done by PTC in SPM for this feed.

9.24.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.24.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.24.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.25 PDS Install Site Data Transformation

9.25.1 Approach / Description

The Install Site data comprises of the extract of install site information of the country from various source systems like GIB, SIEBEL_INTL, AmericasServiceCRM which feeds BI and is processed and sent to the outbound (SPM) layer. The data for Install Site is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed tables and then from the Processed to SPM Outbound layer based on the effective rule streams.

9.25.2 Inputs

The input to this function will be the Install Site data information which is present in the Inbound tables.

9.25.3 Outputs

The transformed Install Site data in the SPM Outbound layer.

9.25.4 Data Entity

Not Applicable.

9.25.5 Process Flow

Reference	Requirement
9.25.5.1	Middleware has already inserted the Install site data into the PDS Inbound layer.
9.25.5.2	Stored Procedure (SP) should be initiated to process data from inbound table to processed table with all business logic & then from processed to SPM outbound table with SPM logic.
9.25.5.3	Business and SPM Rules are defined in headers and lines table.
9.25.5.4	Data flow per rule between Inbound to Processed (IP) and then Processed to SPM (PS) are controlled in GE_SPM_RULE_HEADERS_ALL table disabled by ENABLE_FLAG, SPM_ENABLE_FLAG.

9.25.6 Business Rules

Reference	Business Entity	Rule
9.25.6.1	Install Site Data Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.25.6.2	Install Site Data Transformation	The data flow for Install Site from the Inbound to Outbound layer will be governed by the set of rules which are mentioned below : 1. There will be a default rule which will send all the data which is not processed through any specified rules.
9.25.6.3	Install Site Data Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.25.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.25.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.25.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.26 PDS Failure Rate Data Transformation

9.26.1 Approach / Description

The Failure rate data comprises of the extract of failure rate information of the Product from BI which is processed and sent to the processed layer. The data for failure rate is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed table based on the effective rule streams.

9.26.2 Inputs

The input to this function will be the Failure rate data information which is present in the Inbound tables.

9.26.3 Outputs

The transformed Failure rate data in the SPM Processed layer.

9.26.4 Data Entity

Not Applicable.

9.26.5 Process Flow

Reference	Requirement
9.26.5.1	Middleware has already inserted the FAILURE RATE data into the PDS Inbound layer.
9.26.5.2	Stored Procedure (SP) should be initiated to process data from inbound table to processed table with all business logic
9.26.5.3	Business and SPM Rules are defined in headers and lines table.
9.26.5.4	Data flow per rule between Inbound to Processed (IP) is controlled in GE_SPM_RULE_HEADERS_ALL table disabled by ENABLE_FLAG, SPM_ENABLE_FLAG.

9.26.6 Business Rules

Reference	Business Entity	Rule
9.26.6.1	FAILURE RATE Data Transformation	The SP is responsible for the data flow from Inbound to Processed layer.
9.26.6.2	FAILURE RATE Data Transformation	The data flow for failure rate from the Inbound to Processed layer will be governed by the rule which is mentioned below :

Reference	Business Entity	Rule
		1. There will be a default rule which will send all the data to processed layer only.
9.26.6.3	FAILURE RATE Data Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not.

9.26.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.26.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.26.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.27 PDS Customer Data Transformation

9.27.1 Approach / Description

The Customer data comprises of the extract of information of the Customer from various source systems like GIB, SIEBEL_INTL, AmericasServiceCRM which feeds BI and is processed and sent to the outbound (SPM) layer. The data for Customer is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed table.

9.27.2 Inputs

The input to this function will be the Customer data information which is present in the Inbound tables.

9.27.3 Outputs

The transformed Customer data in the SPM Processed layer.

9.27.4 Data Entity

Not Applicable.

9.27.5 Process Flow

Reference	Requirement
9.27.5.1	Middleware has already inserted the Customer data into the PDS Inbound layer.

Reference	Requirement
9.27.5.2	Stored Procedure (SP) should be initiated to process data from inbound table to processed table with all business logic
9.27.5.3	Business and SPM Rules are defined in headers and lines table.
9.27.5.4	Data flow per rule between Inbound to Processed (IP) is controlled in GE_SPM_RULE_HEADERS_ALL table disabled by ENABLE_FLAG, SPM_ENABLE_FLAG.

9.27.6 Business Rules

Reference	Business Entity	Rule
9.27.6.1	Customer Data Transformation	The SP is responsible for the data flow from Inbound to Processed table.
9.27.6.2	Customer Data Transformation	The data flow for Product from the Inbound to Outbound layer will be governed by the rule which is mentioned below : 1. There will be a default rule which will send all the data to processed layer only.
9.27.6.3	Customer Data Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not.

9.27.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.27.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.27.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.28 PDS Demand Link Data Transformation

9.28.1 Approach / Description

The Demand Link data comprises of the extract of Sales Orders Demand information from various source systems like GIB, SIEBEL_INTL, AmericasServiceCRM which feeds BI and is processed and sent to the outbound (SPM) layer. The data for Demand Link is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed tables based on the effective rule streams.

9.28.2 Inputs

The input to this function will be the Sales Orders Demand information which is present in the Inbound tables.

9.28.3 Outputs

The transformed Sales Orders Demand data in the SPM Processed layer.

9.28.4 Data Entity

Not Applicable.

9.28.5 Process Flow

Reference	Requirement
9.28.5.1	Middleware has already inserted the Demand Link data into the PDS Inbound layer.
9.28.5.2	Stored Procedure (SP) should be initiated to process data from inbound table to processed table with all business logic
9.28.5.3	Business and SPM Rules are defined in headers and lines table.
9.28.5.4	Data flow per rule between Inbound to Processed (IP) is controlled in GE_SPM_RULE_HEADERS_ALL table disabled by ENABLE_FLAG, SPM_ENABLE_FLAG.

9.28.6 Business Rules

Reference	Business Entity	Rule
9.28.6.1	Demand Link Data Transformation	The SP is responsible for the data flow from Inbound to Processed table.
9.28.6.2	Demand Link Data Transformation	The data flow for Product from the Inbound to processed layer will be governed by the rule which is mentioned below : 1. There will be a default rule which will send all the data to processed layer only..
9.28.6.3	Demand Link Data Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not.

9.28.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.28.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.28.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.29 PDS PM Orders Transformation

9.29.1 Approach / Description

The PM Orders data comprises of the extract of PM Orders information of the orders from various source systems like GIB, SIEBEL_INTL, AmericasServiceCRM which feeds BI and is processed and sent to the outbound (SPM) layer. The data for PM Orders is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed table based on the effective rule streams.

9.29.2 Inputs

The input to this function will be the PM Orders data information which is present in the Inbound tables.

9.29.3 Outputs

The transformed PM Orders data in the SPM Processed layer.

9.29.4 Data Entity

Not Applicable.

9.29.5 Process Flow

Reference	Requirement
9.29.5.1	Middleware has already inserted the PM Orders data into the PDS Inbound layer.
9.29.5.2	Stored Procedure (SP) should be initiated to process data from inbound table to processed table with all business logic
9.29.5.3	Business and SPM Rules are defined in headers and lines table.
9.29.5.4	Data flow per rule between Inbound to Processed (IP) is controlled in GE_SPM_RULE_HEADERS_ALL table disabled by ENABLE_FLAG, SPM_ENABLE_FLAG.

9.29.6 Business Rules

Reference	Business Entity	Rule
9.29.6.1	PM Orders Data Transformation	The SP is responsible for the data flow from Inbound to Processed layer.
9.29.6.2	PM Orders Data Transformation	The data flow for PM Orders from the Inbound to Processed layer will be governed by the rule which is mentioned below : 1. There will be a default rule which will send all the data to processed layer only.

Reference	Business Entity	Rule
9.29.6.3	PM Orders Data Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not.

9.29.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.29.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.29.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.30 PDS Part Change Up Transformation

9.30.1 Approach / Description

The part change up data is the data coming in from MyWorkshop where the Change up information of the Part hierarchy is maintained. The parts to be rolled up to their parent parts or not will be controlled from the change up information.

9.30.2 Inputs

The input to this function will be the Part change up information which is present in the Inbound tables.

9.30.3 Outputs

The transformed part change up data in the SPM Outbound layer.

9.30.4 Data Entity

Not Applicable.

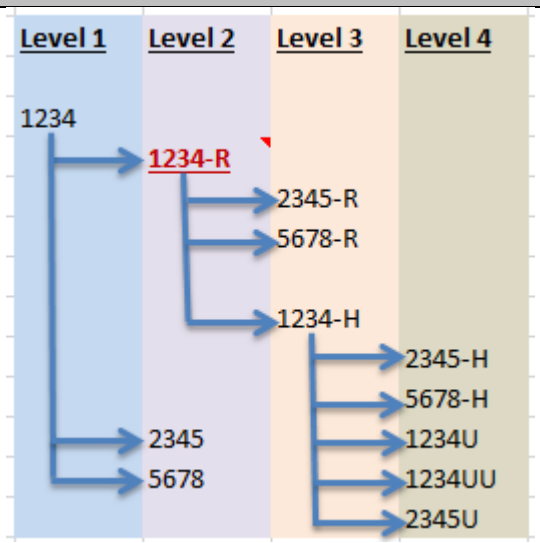
9.30.5 Process Flow

Reference	Requirement
9.30.5.1	Middleware has already inserted the Part Change Up data into the PDS Inbound layer.
9.30.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer.
9.30.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer after some remapping logic of the part hierarchies.

Reference	Requirement
9.30.5.4	There are some parts for which the change up relationship is not maintained in MWS due to constraints in the source system, but the information is needed for planning tool. So, this Change Up Info should be maintained in PDS and Part Change Up transformation should consider this change up info along with the data from MWS to build part chain.

9.30.6 Business Rules

Reference	Business Entity	Rule
9.30.6.1	Part Change Up Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.30.6.2	Part Change Up Transformation	The data flow for Part Change Up from the Inbound to Outbound layer will be governed by some set of hierarchy remapping logic : 1. Part_changeup file as sent from myWorkshop 2. Part Changeup information which are not maintained in MWS but maintained in PDS, should also be populated into INBD layer table along with the data set received from MWS. 3. The part which is in the Part master in GPO organizations will only be taken into contention while determining the hierarchy. 4. There are three categories in which the Parts are segregated Harvest, Repair and Used Harvest – Harvest parts are the one which are recycled. Repair – Parts which are eligible for repair Used – Parts which are consumed by field engineer in the repair job 5. In a Hierarchy there has to be a Child part, it's Parent part to which the part would Roll up to and the Ultimate prime part which stays at the top of the hierarchy 6. Below is the example of one such hierarchy :

Reference	Business Entity	Rule
		 7. The scenarios where the required fields would indicate the hierarchical structure of items are as follows : a. The part of the top of the hierarchy is designated as the Level 1 Part, child of the Level 1 part is treated as Level 2, child of the Level 2 part is treated as Level 3 part. This is the format in which the hierarchy is built b. Under the Level 1 part, the repair part in top of the hierarchy will get the maximum priority to be designated as an Alternate part and will be treated as Level 2 part c. Under the Level 1 part if there is no repair part in the hierarchy, the Harvest part at the top of the hierarchy will be the Alternate part and will be treated as Level 2 part d. All other parts not falling under the above category will follow the hierarchy as-is e. All the children of the Level 2 part will be treated as Level 3 part f. Other parts apart from ultimate prime part will be Replaced parts g. The ultimate prime part will neither be Alternate nor Replace
9.30.6.3	Part Change Up Transformation	The data flow for Part Change Up from the Inbound to Outbound will be considered for all parts defined in GPO irrespective of Item Status
9.30.6.4	Part Change Up Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.30.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.30.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.30.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.31 PDS COUNTRY RESTRICTION Transformation

9.31.1 Approach / Description

The Country Restriction Matrix data comprises of the extraction of the Refurbished Control List (Country Restriction Matrix) details of parts from source system GLPROD which is processed and sent to the outbound (SPM) layer. The data for product is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed tables and then from the Processed to SPM Outbound layer based on the effective rule streams.

Country Restrictions for Refurbished HOLDs was earlier maintained in ITCS system which is to be maintained in GLPROD after the Clear Choice program Go live. GLPROD would be maintaining below forms of hold:

- GE GPO Refurbished Hold : This is the Country restriction hold from ITCS migrated to GLPROD
- GE GPO Regulatory Hold and GE GPO Quality Hold: These are the regulatory holds which were maintained in GE Forms and converted to Hold source in Oracle. Post ClearChoice, they are to be maintained in this form and no more Hold source will be maintained.

Thus GE GPO Refurbished Hold is the one that needs to be taken into consideration as part of Country Restriction Matrix Transformation.

9.31.2 Inputs

The input to this function will be the Country Restriction Matrix information which is present in the Inbound tables.

9.31.3 Outputs

The transformed product data in the SPM Outbound layer.

9.31.4 Data Entity

Not Applicable.

9.31.5 Process Flow

Reference	Requirement
9.31.5.1	Middleware has already inserted the Country Restriction Matrix data into the PDS Inbound layer.
9.31.5.2	Stored Procedure (SP) should be initiated to process data from inbound table to processed table with all business logic & then from processed to SPM outbound table with SPM logic.
9.31.5.3	Business and SPM Rules are defined in Headers and Lines table.
9.31.5.4	Data flow per rule between Inbound to Processed (IP) and then Processed to SPM (PS) are controlled in GE_SPM_RULE_HEADERS_ALL table disabled by ENABLE_FLAG, SPM_ENABLE_FLAG.

9.31.6 Business Rules

Reference	Business Entity	Rule
9.31.6.1	Country Restriction Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.31.6.2	Country Restriction Transformation	The data flow for Country Restriction Matrix from the Inbound to Outbound layer will be governed by the rule which is mentioned below : 1. There will be a rule to extract the 'GE GPO Refurbished Hold' data which will be fed to the Outbound (SPM) layer. This data will be identified as ACTIVE RESTRICTION stream in both Processed and Outbound layers. 2. IF the Hold_flag is 'Y' then REFURBISH_AUTHORISED FLAG will be 'N' and if the Hold_flag is 'N' then REFURBISH_AUTHORISED FLAG will be 'Y' 3. There will be a default rule which will send all the data which is not processed through the any other specified rules.
9.31.6.3	Country Restriction Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.31.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.31.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.31.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.32 Reset Logic

9.32.1 Approach / Description

Reset Logic is used by the BOOMI to understand the current status of the end to end flow through PDS across source and destination systems. Reset logic is controlled and followed by Boomi utilizing the Restart Id.

BOOMI should be having the ability to restart the process where it is failed commencing from the failed step

1. If the interface fails at source system, then need to re-run the process from beginning.

2. If the PDS Stored Procedure fails, then need to re-start SP again after executing the reset process in the PDS end.

3. If the flow fails in the file transfer from PDS to destination system, then middleware will initiate the same again.

9.32.2 Inputs

The activity restart identification denotes the mode of failure:
Restart id 1 signifies end to end flow needs to performed
Restart id 2 signifies the failure at PDS Stored Procedure
Restart id 3 signifies the failure at file transfer from PDS to destination system

The Restart Id is maintained from Boomi when process starts. Also Boomi controls the id after completion of each individual steps and maintains the progress of the flow depending on this id.

9.32.3 Outputs

Successful end to end flow of processes across PDS from source to destination system.

9.32.4 Data Entity

Not applicable

9.32.5 Process Flow

Reference	Requirement
9.32.5.1	Middleware is responsible for the flow of data through PDS from source system to destination system
9.32.5.2	In PDS Stored Procedure (SP) is initiated by Middleware and the data flows from Inbound layer to Processed layer.

Reference	Requirement
9.32.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer.
9.32.5.4	The Middleware after successful execution of Stored Procedure is responsible for the data file to be sent from PDS to the destination system.
9.32.5.5	The progress at every single step is monitored and if failed the Middleware stores the failure point in the Restart id field within PDS. The restart id denotes the point of re-run for end to end data flow.

9.32.6 Business Rules

Reference	Business Entity	Rule
9.31.6.1	Reset Logic	Middleware conducts the end to end flow of data through PDS from Source to Destination system. During the process the status of the flow is maintained as Restart id in PDS
9.31.6.2	Reset Logic	The activity restart identification denotes the mode of failure: Restart id 1 signifies end to end flow needs to performed Restart id 2 signifies the failure at PDS Stored Procedure Restart id 3 signifies the failure at file transfer from PDS to destination system
9.31.6.3	Reset Logic	For dependent process need to re-run from the first SP and not from the failed SP. Therefore, the Reset process needs to be executed for the respective SPs even if they were successful i.e. Transaction, Feedback, Supply, Demand.

9.32.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.32.8 Initiation

The initiation is controlled with respect to the Restart id as per the current status of flow of records through PDS from source to destination system.

9.32.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.33 Demand Data Conversion

9.33.1 Approach / Description

Demand Conversion in PDS enables the business to perform Conversion of Data for Demand for any functional changes that requires the same. Demand conversion could be required due to some change in business processes that requires some functional changes in the ERP and same needs to be transpired in PDS for further SPM planning operations. Also it can handle scenarios where demand data from the legacy system needs to be moved to PDS to appraise SPM on the historical demands.

9.33.2 Inputs

Demand Conversion file, freed from technical and functional errors encountered at various levels of validations while file is fed for Demand Conversion from front end. A file is only allowed to be fed into the destination system if it is pristine from all forms of errors because that would ensure the destination planning tool SPM has the complete demand data based on which it is supposed to generate plan results.

9.33.3 Outputs

Successful end to end flow of complete demand data file to form Demand records in the SPM Processed Layer

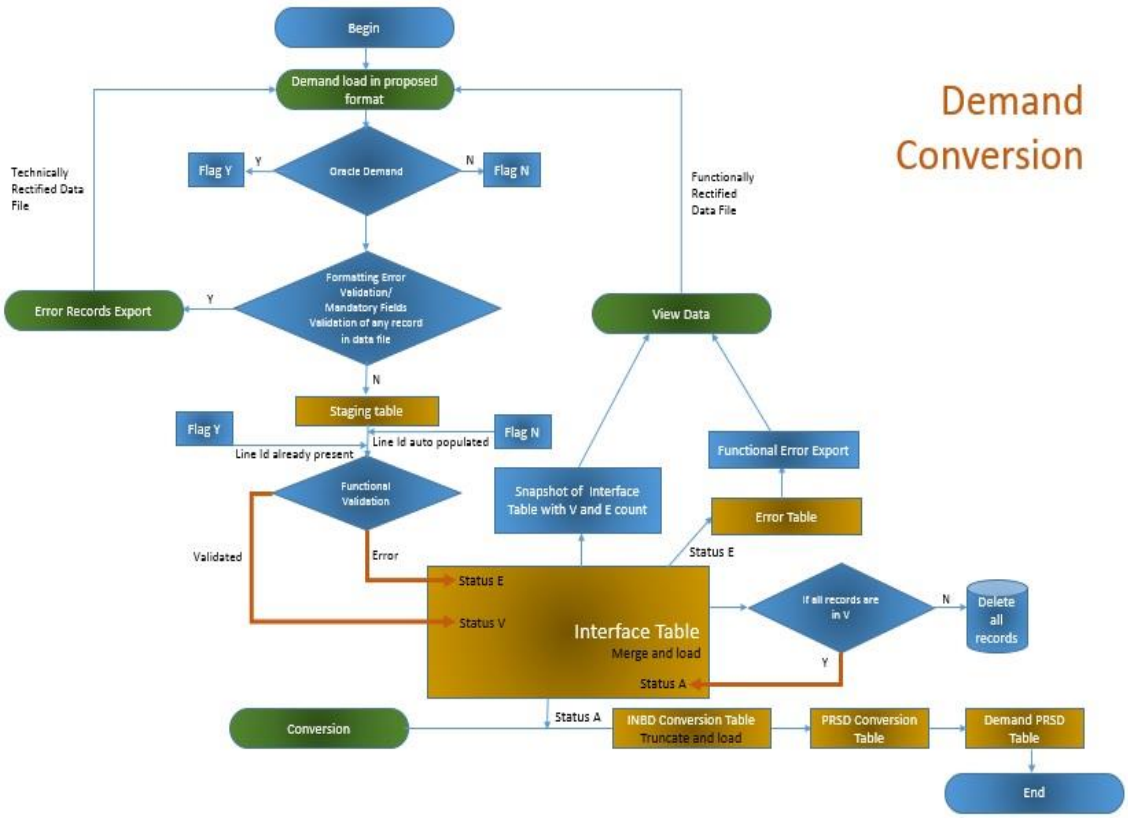
9.33.4 Data Entity

Not applicable

9.33.5 Process Flow

Reference	Requirement
9.33.5.1	Demand conversion data is loaded from PDS front end in the proposed format
9.33.5.2	The records which encounter error due to formatting issue or mandatory parameters missing are presented to the end user.
9.33.5.3	The records go through functional validation and again the records encountering error are reflected for the end user to check
9.33.5.4	Only when the user loads Data conversion data free from all technical and functional errors, the entire data gets loaded to the staging and then the interface layer.
9.33.5.5	Later to that the user initiates the conversion process and data gets loaded from the interface layer first to the Demand Data conversion inbound layer, then to the Demand Data conversion processed layer and finally to the Demand Processed layer.
9.33.5.6	Subsequent data flow happens as per the as is process of PDS Part Demand Data Transformation (9.7)

9.33.6 Business Rules

Reference	Business Entity	Rule
9.33.6.1	Demand Data Conversion	User is enabled to load the Demand Conversion data from the PDS front end.
9.33.6.2	Demand Data Conversion	Below is the flow through which the data undergoes the conversion : 
9.33.6.3	Demand Data Conversion	For Demand Conversion utilizing data from Oracle system or for conversion with a Legacy system, user needs to check a flag (Y/N respectively for Oracle/Legacy system)
9.33.6.4	Demand Data Conversion	The records which encounter error due to formatting issue or mandatory parameters missing are presented to the end user as they can export the errored data
9.33.6.5	Demand Data Conversion	Once the data is free from all technical errors, on the initiation of the Demand Data load again, it is loaded to the Staging layer.
9.33.6.6	Demand Data Conversion	Later to that the Data goes through the below rule based functional validations before it is inserted to the Interface layer : 1. For the Data, which have Oracle Demand Flag as 'Y' i.e. Yes are assumed with their existing line_id, for the Demand Data from the legacy system, line_id is auto populated.

Reference	Business Entity	Rule
		2. The demand for items which are not assigned in GPO organization will fail validation 3. A rule will be there to extract the PUDO Demand information, which shall be passed through validation. The PUDO demand data shall be identified as PUDO data stream in Interface layers wherein the Field Engineer against the demand has SSO starting with '9%' 4. There will be a rule to extract the Conversion Orders from the demand data wherein the converted orders will fail validation in interface table. Conversion orders are the information of the sales order, which are created through conversion in ERP. They are identified in PDS with CONVERSION_ORD stream. 5. There will be a rule to extract the INVALID demand from the demand data wherein orders with order line status as 'BOOKED','CANCELLED','DRAFT','ENTERED', 'OFFER_EXPIRED' will fail validation at the Interface Layer 6. There will be a rule to extract the FE Orders wherein all the orders, which have been ordered by the FE's will pass valdiation. The FE orders data will be identified as FE data stream in both Processed and Outbound layers wherein the Field Engineer SSO starts with '9%' 7. There will be a rule to extract the orders in which both the FE and Ship From Warehouses are Non PARTS organizations and these orders will fail validation at the Interface Layer. 8. There will be a rule to extract the orders in which the FE Warehouse will be a PARTS Warehouse and the Ship From Warehouse will also be a PARTS warehouse. These orders willpass the Validations and will be identified by DLR_DCOS stream. 9. There will be a rule to extract the orders in which the FE Warehouse will be a PARTS Warehouse and the Ship From Warehouse can be a Non PARTS warehouse. These orders will be considered as Validated and will be identified by DLR_DCOS_MFGSHIP stream. 10. Also a rule for the demand data which are identified through data streams - Invalid FE LCT locations and Invalid PUDO locations will be rendered as Error. 11. There will be a check on DRP_PLANNED_FLAG for the items in the demand data and if there are items with DRP_PLANNED_FLAG as No in

Reference	Business Entity	Rule
		GPO Organization, the sales orders containing these items will be identified as Error in the interface Layer. 12. There will be a rule to extract the PM Orders wherein all PM Orders (orders with transaction type including '%PM%Shipment%') will be sent over to the Interface layer as Validated. 13. There will be a default rule, which will send all the data which is not processed through the above mentioned rules as Validated 14. There will be an Enable flag for the rules which will determine whether the rule is active or not. 15. The records which are identified as Validated will be assumed at the interface table with status 'V' and the records which are identified as Error will be assumed as status 'E'
9.33.6.7	Demand Data Conversion	Once the Data reaches the Interface table, below actions will be performed : 1. A Snapshot of the currently inserted Data will be taken to provide the user a visibility from the PDS front end to the status of his inserted records 2. An Error layer will be present which will allow the users to take an extract of the Loaded data furnishing the details of the records that got into Error so that they can rectify/remove such records and initiate the process of Demand Data Load again with pristine data. 3. A check will be done to verify if all the currently inserted records are 'V' signifying all the records are technically and functionally validated. a. If Yes all the records will assume a status of 'A' signifying Authenticated. b. If No, all records will be deleted from the Interface and Staging table, thus allowing the user to carry on with the process mentioned in Step 2. 4. Once all records are in 'A' Status, user can start the Conversion process for the currently inserted records which would pick the data from the Interface layer and send it to the Inbound Conversion Layer
9.33.6.8	Demand Data Conversion	The records from Inbound Conversion Layer will then reach the Processed Conversion Layer on the same initiation of the Conversion. This transformation will undergo the same set of Demand Data Validations as mentioned in section 9.7.6.2

Reference	Business Entity	Rule
9.33.6.9	Demand Data Conversion	Finally the records will be inserted in the Demand Processed Layer where data will be processed to Outbound as per the conventional PDS protocols
9.33.6.10	Demand Data Conversion	A backup of the records prior to conversion is maintained in backup columns of Demand Processed Layer

9.33.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.33.8 Initiation

The initiation is controlled with from the PDS front end where the user is enabled to start the Data conversion process through Data Load first and then by initiating the Conversion

9.33.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.34 Wash Rate Calculation

9.34.1 Approach / Description

Wash Rate calculation in PDS enables the business to record the ratio of all repair consignment loss, which includes scrap, miss id, misdirect and lost in transit, with respect to all consignments created for the part over the period of last twelve months. For a prime part with downchain parts, washrate of prime part will be calculated based on the cumulative loss of all the parts in the chain divided by the total consignments created for the parts. If a part encounters more loss than repair then the washrate should be marked to 100%.

As part of the latest additions into the Wash Rate Extract, we are adding date range parameters for the Repair/Return Wash Rate Override values. This newly added fields would define the date range under which the Wash Rate (Repair/Return) values should be overridden by the Override Values set from the PDS Front End Application.

The Wash Rate values are sent as part of the Part Master extract which is sent to SPM on Daily Basis. Both 'Repair Wash Rate Override' as well as 'Return Wash Rate Override' values would have a separate date range between which these override values would be replacing the calculated 'Repair Wash Rate' or 'Return Wash Rate' values respectively.

9.34.2 Inputs

Inputs to this calculation would be the part master details for the part information, the part chain details for part hierarchies and the transactions the parts go through over a period.

9.34.3 Outputs

Successful end-to-end flow of calculated Wash Rate information into SPM

9.34.4 Data Entity

Not applicable

9.34.5 Process Flow

Reference	Requirement
9.34.5.1	The percentage of loss for a particular part (calculated through transactions of type scrap, misdirect, lost in transit) with respect to all close or cancelled repair expense POs created over a period is considered as Repair Washrate. The mis id transactions should be deducted from consideration as part of repair expense POs.
9.34.5.2	For prime parts which are the top most in a part chain hierarchy, the washrate is calculated cumulatively by summation of the total loss including the downchain parts for the part chain with respect to the total repair consignments created
9.34.5.3	For parts which has more loss than repair i.e. percentage is greater than 100, the washrate is considered as 100%
9.34.5.4	Return washrate is calculated by considering the ratio of sum of Consignments created in the FE Subinventory negating the Good and Bad RMA returns and the used and unused onhand in FE Subinventory with respect to the sum of Consignments created i.e. [Total consignment - (Good and Bad RMA Receipt Return + Used and unused Onhand in FE Subinventory)] * 100 / Total consignment
9.34.5.5	For prime parts which are the top most in a part chain hierarchy, the return washrate is calculated considering the Consignment, Good and Bad RMA Receipt Return and Used and unused Onhand in FE Subinventory cumulatively for the entire part chain and then deriving the return wash rate as mentioned in 9.34.5.4

9.34.6 Business Rules

Reference	Business Entity	Rule
9.34.6.1	Wash Rate Calculation	Wash Rate calculation is initiated on a monthly basis.
9.34.6.2	Wash Rate Calculation	The percentage of loss for a particular part (calculated through transactions of type scrap, misdirect, lost in transit) with respect to all close or cancelled repair expense POs created over a period is considered as Repair Washrate. The MisId transactions should be deducted from consideration as part of repair expense POs. i.e. Repair wash rate = $\frac{(\text{Scrap + MisDir+ LIT})}{(\text{REP}-\text{MisID})}$ x 100
9.34.6.3	Wash Rate Calculation	For prime parts which are the top most in a part chain hierarchy, the washrate is calculated cumulatively by summation of the total loss including the downchain parts for the part chain with respect to the total repair consignments created

Reference	Business Entity	Rule
9.34.6.4	Wash Rate Calculation	For parts which has more loss than repair i.e. percentage is greater than 100, the washrate is considered as 100%
9.34.6.5	Wash Rate Calculation	Return washrate is calculated by considering the ratio of sum of Consignments created in the FE Subinventory negating the Good and Bad RMA returns and the used and unused onhand in FE Subinventory with respect to the sum of Consignments created i.e. [Total consignment - (Good and Bad RMA Receipt Return + Used and unused Onhand in FE Subinventory)] * 100 / Total consignment
9.34.6.6	Wash Rate Calculation	For prime parts which are the top most in a part chain hierarchy, the return washrate is calculated considering the Consignment, Good and Bad RMA Receipt Return and Used and unused Onhand in FE Subinventory cumulatively for the entire part chain and then deriving the return wash rate as mentioned in 9.34.5.4

9.34.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.34.8 Initiation

The initiation is controlled with from the PDS front end where the user is enabled to initiate Wash Rate calculation

9.34.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.35 Indicated Pool Size

9.35.1 Approach / Description

Indicated Pool Size in PDS is calculated with respect to an individual part considering all available onhand for the part. While considering the available good onhand the aspects that are taken into consideration are Available OH GOOD, Available OH BAD, FE UNUSED QTY, FE USED QTY, PUDO OH QTY, DEFECTIVE IT QTY, REPAIR IT QTY.

9.35.2 Inputs

Inputs to this calculation would be the part master details for the part information, the part chain details for part hierarchies, onhand information and the transactions the parts go through over a period.

9.35.3 Outputs

Successful end-to-end flow of calculated Indicated Pool Size information into SPM

9.35.4 Data Entity

Not applicable

9.35.5 Process Flow

Reference	Requirement
9.35.5.1	The Indicated Pool Size is calculated as a summation of below categories : Available OH GOOD - Good onhand for all parts within the part chain where use on hand is Yes Available OH BAD - Defective onhand for all parts within the part chain where use on hand is Yes FE UNUSED QTY - FE Unused onhand for all parts within the part chain where use on hand is Yes FE USED QTY - FE Used onhand for all parts within the part chain where use on hand is Yes PUDO OH QTY - PUDO onhand for all parts within the part chain where use on hand is Yes DEFECTIVE IT QTY - Not Received PO for PO type 'DEFECTIVE' for all parts within the part chain where use onhand is Yes REPAIR IT QTY - Not Received PO for PO type 'REPAIR' for all parts within the part chain where use onhand is Yes
9.34.5.2	For prime parts which are the top most in a part chain hierarchy, the Indicated Pool Size is calculated cumulatively by summation Indicated Pool Size including the downchain parts for the part chain

9.35.6 Business Rules

Reference	Business Entity	Rule
9.35.6.1	Indicated Pool Size	Indicated Pool Size calculation is initiated at fixed intervals.
9.35.6.2	Indicated Pool Size	The Indicated Pool Size is calculated as a summation of below categories : Available OH GOOD - Good onhand for all parts within the part chain where use on hand is Yes Available OH BAD - Defective onhand for all parts within the part chain where use on hand is Yes FE UNUSED QTY - FE Unused onhand for all parts within the part chain where use on hand is Yes FE USED QTY - FE Used onhand for all parts within the part chain where use on hand is Yes PUDO OH QTY - PUDO onhand for all parts within the part chain where use on hand is Yes DEFECTIVE IT QTY - Not Received PO for PO type 'DEFECTIVE' for all parts within the part chain where use onhand is Yes REPAIR IT QTY - Not Received PO for PO type 'REPAIR' for all parts within the part chain where use onhand is Yes

Reference	Business Entity	Rule
9.35.6.3	Indicated Pool Size	For prime parts which are the top most in a part chain hierarchy, the Indicated Pool Size is calculated cumulatively by summation Indicated Pool Size including the downchain parts for the part chain

9.35.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.35.8 Initiation

The initiation is controlled with from the PDS front end where the user is enabled to initiate Indicated Pool Size calculation

9.35.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.36 Priority Score, Number of Opportunities, Supply Health

9.36.1 Approach / Description

Priority Score determines the priority of individual parts considering the backorders, minimum quantity present in the network, maximum quantity present in the network, available onhand, and average order quantity.

Number of Opportunities is calculated through the ratio of minimum quantity present in the network with respect to average order quantity

Supply health determines the supply provisioned for individual parts calculated as the ratio of Sum of Positive Priority Score with respect to Sum of Opportunities subtracted from 1

Network Max - Sum of Safety Stock and EFFOQ for locations that can either Procure, Repair or is the source pole location and Sum of STOCKMAX for locations that replenishes or is FSL

9.36.2 Inputs

Inputs to this calculation would be the part master details for the part information, the part chain details for part hierarchies, onhand information, supply information and the transactions the parts go through over a period.

9.36.3 Outputs

Successful end-to-end flow of calculated Priority Score, Number of Opportunities, Supply Health into SPM

9.36.4 Data Entity

Not applicable

9.36.5 Process Flow

Reference	Requirement
9.36.5.1	Priority Score calculated considering the below categories of data : Backorder – sum Backorders (Open Orders counted in order plan where sales order due date is in past) for all parts across all locations within the part chain Network min - Sum of Safety Stock for locations that can either Procure, Repair or is the source pole location and Sum of ROP for locations that replenishes or is FSL Available Onhand – sum of Good on hand, PUDO(FSL) Onhand and Allocation in transit for all parts across all locations within the part chain where use onhand is Yes Average Order Quantity - Average order quantity (sum of order quantity/number of order lines) for all parts across locations within the part chain Priority Score = (Backorder + Network min - Available Onhand)/ Average Order Quantity
9.36.5.2	For prime parts which are the top most in a part chain hierarchy, the Priority Score is calculated cumulatively by summation Priority Score including the downchain parts for the part chain
9.36.5.3	The Number of Opportunities for individual parts is calculated considering the below categories of data : Network min - Sum of Safety Stock for a location that can either Procure, Repair or is the source pole location and Sum of ROP for a location that replenishes or is FSL Average Order Quantity - Average order quantity (sum of order quantity/number of order lines) for all parts across locations within the part chain Number of Opportunities = Network min/Average Order Quantity
9.36.5.4	The Supply Health for individual parts is calculated as below : 1 – (Sum of Positive priority score/Sum of number of Opportunities)

9.36.6 Business Rules

Reference	Business Entity	Rule
9.36.6.1	Priority Score, Number of Opportunities, Supply Health Calculation	Priority Score, Number of Opportunities, Supply Health calculation is initiated at fixed intervals.
9.36.6.2	Priority Score	Backorder – sum Backorders (Open Orders counted in order plan where sales order due date is in past) for all parts across all locations within the part chain

Reference	Business Entity	Rule
		Network min - Sum of Safety Stock for locations that can either Procure, Repair or is the source pole location and Sum of ROP for locations that replenishes or is FSL Available Onhand – sum of Good on hand, PUDO(FSL) Onhand and Allocation in transit for all parts across all locations within the part chain where use onhand is Yes Average Order Quantity - Average order quantity (sum of order quantity/number of order lines) for all parts across locations within the part chain Priority Score = (Backorder + Network min - Available Onhand)/ Average Order Quantity
9.36.6.3	Priority Score	For prime parts which are the top most in a part chain hierarchy, the Priority Score is calculated cumulatively by summation Priority Score including the downchain parts for the part chain
9.36.6.4	Number of Opportunities	The Number of Opportunities for individual parts is calculated considering the below categories of data: Network min - Sum of Safety Stock for a location that can either Procure, Repair or is the source pole location and Sum of ROP for a location that replenishes or is FSL Average Order Quantity - Average order quantity (sum of order quantity/number of order lines) for all parts across locations within the part chain Number of Opportunities = Network min/Average Order Quantity
9.36.6.4	Supply Health	The Supply Health for individual parts is calculated as below : 1 – (Sum of Positive priority score/Sum of number of Opportunities)

9.36.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.36.8 Initiation

The initiation is controlled with from the PDS front end where the user is enabled to initiate the calculations

9.36.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.37 SKU Transformation

9.37.1 Approach / Description

SKU stands for the Stock Keeping Units information for individual parts based on their locations. The data is fetched from calculations in PDS and sent to SPM so that individual part information can be tracked in the planning system and forecasted accordingly.

9.37.2 Inputs

The input to this function will be fetched from calculations in PDS and stored in Inbound table.

9.37.3 Outputs

The transformed SKU information in the SKU SPM Outbound layer.

9.37.4 Data Entity

Not Applicable.

9.37.5 Process Flow

Reference	Requirement
9.37.5.1	The SKU information is calculated in PDS and stored in Inbound table
9.37.5.2	There will be a functionality to override the calculated SKU value. If any active override value exist, the active override value will get highest priority and will be sent to SPM.
9.37.5.3	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.37.5.4	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules.

9.37.6 Business Rules

Reference	Business Entity	Rule
9.37.6.1	SKU Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.37.6.2	SKU Transformation	The data flow for SKU from the Inbound to Outbound layer will be governed by the rule which is mentioned below : There will be a default rule which will send all the data into the SPM Layer. If there is any active SKU override value exists then the same will get the highest priority and will be sent to SPM.
9.37.6.3	SKU Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM

Reference	Business Entity	Rule
		Enable flag which will determine whether the data will move from the Processed layer to Outbound layer.

9.37.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.37.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.37.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.38 Order Plan Transformation

9.38.1 Approach / Description

Order Plan information is part of the SPM reverse flow where the Order information as in SPM is sent to PDS to maintain the detailed order information. The data is sent from SPM and stored in PDS.

9.38.2 Inputs

The Order Plan information sent from SPM as part of reverse flow and stored in Inbound table.

9.38.3 Outputs

The transformed Order Plan information in the Order Plan Outbound layer.

9.38.4 Data Entity

Not Applicable.

9.38.5 Process Flow

Reference	Requirement
9.38.5.1	The Order Plan file is sent from SPM and stored in PDS Inbound table
9.38.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.38.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules.
9.38.5.4	Once the data will be executed then day1 order count on the current run for all type of recommendations in CDC should be calculated and stored.

9.38.6 Business Rules

Reference	Business Entity	Rule
9.38.6.1	Order Plan Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.38.6.2	Order Plan Transformation	The data flow for Order Plan from the Inbound to Outbound layer will be governed by the rule which is mentioned below : There will be a default rule which will send all the data into the Outbound (SPM) Layer.
9.38.6.3	Order Plan Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound layer.
9.38.6.4	Order Plan Transformation	Once the data will be reached to Final layer then the count and cost will be calculated for all type of DAY1 recommendations and it should be stored to check in future .

9.38.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.39 Onhand Balances Transformation

9.39.1 Approach / Description

Onhand Balances is part of the SPM reverse flow where the detailed Onhand information of individual parts as in SPM is sent to PDS. The data is sent from SPM and stored in PDS.

9.39.2 Inputs

The Onhand Balance information sent from SPM as part of reverse flow and stored in Inbound table.

9.39.3 Outputs

The transformed Onhand Balances information in the Order Plan Outbound layer.

9.39.4 Data Entity

Not Applicable.

9.39.5 Process Flow

Reference	Requirement
9.39.5.1	The Onhand Balances file is sent from SPM and stored in PDS Inbound table
9.39.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.

Reference	Requirement
9.39.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound layer based on the execution of the SPM enabled rules.

9.39.6 Business Rules

Reference	Business Entity	Rule
9.39.6.1	Onhand Balances Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound layer
9.39.6.2	Onhand Balances Transformation	The data flow for Order Balances from the Inbound to Outbound layer will be governed by the rule which is mentioned below : There will be a default rule which will send all the data into the Outbound (SPM) Layer.
9.39.6.3	Onhand Balances Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound layer.

9.39.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.39.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.39.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.40 SPM Review Reason Transformation

9.40.1 Approach / Description

SPM Review Reason Transformation fetches all the Review Reasons applicable to individual parts based on the location applicable for different planners in SPM. The data is sent from SPM and stored in PDS.

9.40.2 Inputs

The SPM Review Reason information sent from SPM as part of reverse flow and stored in Inbound table.

9.40.3 Outputs

The transformed SPM Review Reason Balances information in the Order Plan Outbound layer.

9.40.4 Data Entity

Not Applicable.

9.40.5 Process Flow

Reference	Requirement
9.40.5.1	The SPM Review Reason file is sent from SPM and stored in PDS Inbound table
9.40.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.40.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound layer based on the execution of the SPM enabled rules.

9.40.6 Business Rules

Reference	Business Entity	Rule
9.40.6.1	SPM Review Reason Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound layer
9.40.6.2	SPM Review Reason Transformation	The data flow for SPM Review Reason from the Inbound to Outbound layer will be governed by the rule which is mentioned below : There will be a default rule which will send all the data into the Outbound (SPM) Layer.
9.40.6.3	SPM Review Reason Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound layer.

9.40.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.40.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.40.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.41 Repair Option Transformation

9.41.1 Approach / Description

Repair options is a break up of all probable repair combination for a particular part including with its part chain with respect to the repair orgs and associated repair vendors. The data is fetched from PDS and sent to SPM to be tracked for the planning

9.41.2 Inputs

The input to this function will be fetched in PDS and stored in Inbound table.

9.41.3 Outputs

The transformed Repair Option information in the Repair Option SPM Outbound layer.

9.41.4 Data Entity

Not Applicable.

9.41.5 Process Flow

Reference	Requirement
9.41.5.1	The Repair Option information is derived in PDS and stored in Inbound table
9.41.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.41.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules.

9.41.6 Business Rules

Reference	Business Entity	Rule
9.41.6.1	Repair Option Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.41.6.2	Repair Option Transformation	The data flow for Repair Option from the Inbound to Outbound layer will be governed by the rule which is mentioned below : There will be a default rule which will send all the data into the SPM Layer.
9.37.6.3	Repair Option Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound layer.

9.41.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value

	Not Applicable	Not Applicable	Not Applicable

9.41.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.42 Demand Aggregate Transformation

9.42.1 Approach / Description

Demand Aggregate Transformation is sent from SPM as the historical demand information categorized in monthly bucket to be available in PDS. The data is sent from SPM into PDS as part of Reverse Flow.

9.42.2 Inputs

The SPM Demand Aggregate information is sent from SPM as part of reverse flow and stored in Inbound table.

9.42.3 Outputs

The transformed Demand Aggregate information in the Demand Aggregate Processed layer.

9.42.4 Data Entity

Not Applicable.

9.42.5 Process Flow

Reference	Requirement
9.42.5.1	The SPM Demand Aggregate file is sent from SPM and stored in PDS Inbound table
9.42.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.

9.42.6 Business Rules

Reference	Business Entity	Rule
9.42.6.1	Demand Aggregate Transformation	The SP is responsible for the data flow from Inbound to Processed layer
9.40.6.2	Demand Aggregate Transformation	The data flow for Demand Aggregate from the Inbound to Processed layer will be governed by the rule which is mentioned below : There will be a default rule which will send all the data into the Processed (SPM) Layer.

Reference	Business Entity	Rule
9.40.6.3	Demand Aggregate Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound layer.

9.42.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.42.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.42.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.43 Plan execution metrics

9.43.1 Approach / Description

SPM generates the Order plan and based on auto approval configurations orders either gets auto approved or approved after review in the system. This function will be used to create the base data to build a metric to track end to end execution of SPM Plan.

9.43.2 Inputs

Input to this function will be data elements stored in the PDS system like Approved order, Order Plan, review reasons, plan levels data sent from SPM, Feedback data from GLPROD.

9.43.3 Outputs

Plan execution metrics for the given Week.

9.43.4 Data Entity

Not Applicable.

9.43.5 Process Flow

Reference	Requirement
9.43.5.1	This process will be Initiated after weekly batch run once the Order Plan, Plan level and review reason reverse flow reverse flow data has been processed.
9.43.5.2	Below 3 stored Procedures (SP) will be executed following the Weekly batch on Monday 1. Load Weekly Recommended Data: This Process will truncate and load current weeks recommended data grouped at recommendation type, part and warehouse level. 2. Load Daily Recommended Data: This Process will load current day recommended data grouped at recommendation type, part and warehouse level. 3. Load Review Reasons: This process will load the applicable review reasons against the recommended data. 4. Load Part Attributes: This Process will populate the part attributes against each recommended part.
9.43.5.3	Below stored Procedure (SP) will be executed following the Daily batch from Monday through Thursday 1. Load Daily Recommended Data: This Process will load current day recommended data grouped at recommendation type, part and warehouse level.

Reference	Requirement
9.43.5.4	Below stored Procedures (SP) will be executed following the last Bihourly batch run on Friday 1. Load Approval Data: This Process will load the approved recommendation data for each day of the week grouped at recommendation type, part and warehouse level. Each day approval quantity will be summed up to derive the total approved quantity for the Week. 2. Load Execution Data: This Process will load the approved recommendation data that has been converted into orders for each day of the week grouped at recommendation type, part and warehouse level. Each day Executed qty will be summed up to derive the total executed quantity for the Week. 3. Non-SPM Execution data: This Process will load the order data that has been created outside SPM recommendation each day of the week grouped at recommendation type, part and warehouse level. Each day outside SPM quantity will be summed up to derive the total Outside SPM quantity for the Week. 4. Archive Data: This process will archive the current week Plan execution data into an archive table.

9.43.6 Business Rules

Reference	Business Entity	Rule
9.43.6.1	Recommended Data	This Data will be populated from the Order Plan generated and sent to PDS after weekly batch run completion.
9.43.6.2	Review Reasons	This Data will be populated from the Review reasons data generated and sent to PDS after weekly batch run completion. A list of valid review reasons for planners will be maintained in PDS system and only those review reasons will be populated against each recommended record.
9.43.6.3	Part Attributes	Part related attributes will be populated against each recommended pair using the data from Part Master.
9.43.6.4	Execution Data	1. Approval Data: This Bucket will represents SPM Recommended data that has been approved in the system. 2. Recommendation Converted to Orders: This bucket contains the approved recommendation data from SPM that has been converted into orders in target system (GLPROD). 3. Orders created without SPM recommendations: This bucket represents the orders created directly in the target system (GLPROD) without any recommendation from SPM

9.43.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.43.8 Initiation

The set of procedures part of this Process will be manually invoked either through APEX front end or through back end DB script.

9.43.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.44 Allocation Restriction Matrix Transformation

9.44.1 Approach / Description

Allocation Restriction Matrix provides the control to the functional users to restrict Allocation Recommendations to be processed in Oracle in case of a functional need. The data is sent from PDS to SPM as part of Forward Flow.

The Allocation Block IDs would only be auto-populated for the records which does not have the Allocation Block ID at the time of data upload into the PDS Inbound Table. For the records for which this ID is populated, the same would be considered and sent to SPM after getting processed through PDS.

9.44.2 Inputs

The Allocation Restriction Matrix information is loaded into PDS and stored in Inbound table.

9.44.3 Outputs

The transformed Allocation Restriction Matrix information in the Allocation Restriction Matrix Processed layer.

9.44.4 Data Entity

Not Applicable.

9.44.5 Process Flow

Reference	Requirement
9.44.5.1	The Allocation Restriction Matrix information is loaded in PDS and stored in Inbound table
9.44.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.44.5.3	Also, this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules.

9.44.6 Business Rules

Reference	Business Entity	Rule
9.44.6.1	Allocation Restriction Matrix Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.44.6.2	Allocation Restriction Matrix Transformation	The data flow for Allocation Restriction Matrix from the Inbound to Outbound layer will be governed by the rule which is mentioned below : There will be a default rule which will send all the data into the SPM Layer.
9.44.6.3	Allocation Restriction Matrix Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound layer.

9.44.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.44.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.44.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.45 Transaction Data Conversion

9.45.1 Approach / Description

Transaction Conversion in PDS enables the business to perform Conversion of Data for Transactions for any functional changes that requires the same. Transaction conversion could be required due to some change in business processes that requires some functional changes in the ERP and same needs to be transpired in PDS for further SPM planning operations. Also it can handle scenarios where transactional data from the legacy system needs to be moved to PDS to appraise SPM on the historical demands.

9.45.2 Inputs

Transaction Conversion file, freed from technical and functional errors encountered at various levels of validations while file is fed for Transaction Conversion from front end. A file is only allowed to be fed into the destination system if it is pristine from all forms of errors because

that would ensure the destination planning tool SPM has the complete transaction data based on which it is supposed to generate plan results.

9.45.3 Outputs

Successful end to end flow of complete transaction data file to form Transaction records in the SPM Processed Layer

9.45.4 Data Entity

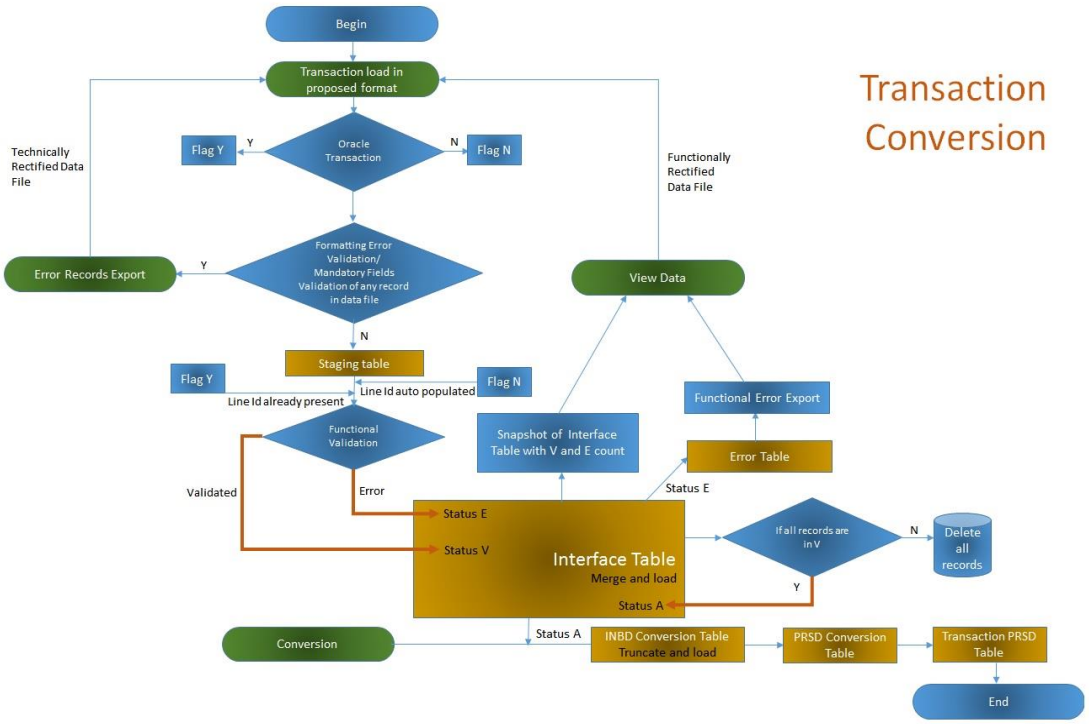
Not applicable

9.45.5 Process Flow

Reference	Requirement
9.45.5.1	Transaction conversion data is loaded from PDS front end in the proposed format
9.45.5.2	The records which encounter error due to formatting issue or mandatory parameters missing are presented to the end user.
9.45.5.3	The records go through functional validation and again the records encountering error are reflected for the end user to check
9.45.5.4	Only when the user loads Data conversion data free from all technical and functional errors, the entire data gets loaded to the staging and then the interface layer.
9.45.5.5	Later to that the user initiates the conversion process and data gets loaded from the interface layer first to the Transaction Data conversion inbound layer, then to the Transaction Data conversion processed layer and finally to the Transaction Processed layer.
9.45.5.6	Subsequent data flow happens as per the as is process of PDS Part Transaction Data Transformation (9.9)

9.45.6 Business Rules

Reference	Business Entity	Rule
9.45.6.1	Transaction Data Conversion	User is enabled to load the Transaction Conversion data from the PDS front end.
9.45.6.2	Transaction Data Conversion	Below is the flow through which the data undergoes the conversion :

Reference	Business Entity	Rule
		
9.45.6.3	Transaction Data Conversion	For Transaction Conversion utilizing data from Oracle system or for conversion with a Legacy system, user needs to check a flag (Y/N respectively for Oracle/Legacy system)
9.45.6.4	Transaction Data Conversion	The records which encounter error due to formatting issue or mandatory parameters missing are presented to the end user as they can export the errored data
9.45.6.5	Transaction Data Conversion	Once the data is free from all technical errors, on the initiation of the Transaction Data load again, it is loaded to the Staging layer.
9.45.6.6	Transaction Data Conversion	Later to that the Data goes through the below rule based functional validations before it is inserted to the Interface layer : 1. For the Data, which have Oracle Transaction Flag as 'Y' i.e. Yes are assumed with their existing transaction_id, for the Transaction Data from the legacy system, transaction_id is auto populated. 2. A rule will be there to extract all the "subinventory transfer" transactions from 'RDC' organization and this data will be fetched and sent to the Outbound (SPM) layer. 3. A rule will be there to extract all the harvest transactions from 'RDC' organization and this data will be fetched and sent to the Outbound (SPM) layer. The harvest transactions are identified by 'HARVEST AS' stream.

Reference	Business Entity	Rule
		4. A rule will be there to extract all the RMA Receipt transactions from all organizations (transaction_type_name is 'GPO RMA Receipt') and this data will be fetched and sent to Outbound (SPM) layer. 5. There will be a default rule which will send all the data which is not processed through the above mentioned rules.
9.45.6.7	Transaction Data Conversion	Once the Data reaches the Interface table, below actions will be performed : 5. A Snapshot of the currently inserted Data will be taken to provide the user a visibility from the PDS front end to the status of his inserted records 6. An Error layer will be present which will allow the users to take an extract of the loaded data furnishing the details of the records that got into Error so that they can rectify/remove such records and initiate the process of Transaction Data Load again with pristine data. 7. A check will be done to verify if all the currently inserted records are 'V' signifying all the records are technically and functionally validated. c. If Yes all the records will assume a status of 'A' signifying Authenticated. d. If No, all records will be deleted from the Interface and Staging table, thus allowing the user to carry on with the process mentioned in Step 2. 8. Once all records are in 'A' Status, user can start the Conversion process for the currently inserted records which would pick the data from the Interface layer and send it to the Inbound Conversion Layer
9.45.6.8	Transaction Data Conversion	The records from Inbound Conversion Layer will then reach the Processed Conversion Layer on the same initiation of the Conversion. This transformation will undergo the same set of Transaction Data Validations as mentioned in section 9.9.6.2
9.45.6.9	Transaction Data Conversion	Finally the records will be inserted in the Transaction Processed Layer where data will be processed to Outbound as per the conventional PDS protocols
9.45.6.10	Transaction Data Conversion	A backup of the records prior to conversion is maintained in backup columns of Transaction Processed Layer

9.45.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.45.8 Initiation

The initiation is controlled with from the PDS front end where the user is enabled to start the Data conversion process through Data Load first and then by initiating the Conversion

9.45.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.46 Collaborative Planning Forecast Transformation

9.46.1 Approach / Description

Collaborative Planning is used as a collaboration mechanism to connect Supplier with Order Forecast information in GE Healthcare planning process. CP is tightly integrated VCP Advanced Supply Chain Planning and the flow is from ASCP to CP.

Service organizations are not planned inside VCP application in GE Healthcare business. SPM is used for service parts planning. As Collaborative Planning will be used to provide order forecast information to external suppliers, there is a need to bring the service order forecast information to collaborative planning.

In order to transform the data compatible to Collaborative planning for Service forecast in PDS, SPM sends Order Plan file which contains data consisting of all the information required to generate the forecast data and more. This Order Plan data is transformed within PDS to construct data for Item and Supply-Demand information for External Supplier Forecast in CP. The data is sent from SPM to PDS and then to Collaborative Planning as part of Reverse Flow.

9.46.2 Inputs

The Order Plan information is loaded into PDS from SPM and stored in Inbound table.

9.46.3 Outputs

The transformed Collaborative Planning forecast information through Item and Supply-Demand data is loaded into the Outbound layer.

9.46.4 Data Entity

Not Applicable.

9.46.5 Process Flow

Reference	Requirement
9.46.5.1	The Order Plan information is loaded in PDS and stored in Inbound table

Reference	Requirement
9.46.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.46.5.3	Also this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules to create the data for CP.

9.46.6 Business Rules

Reference	Business Entity	Rule
9.46.6.1	Collaborative Planning Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.46.6.2	Collaborative Planning Transformation	The data flow for Order Plan from the Inbound to Outbound layer will be governed by the rule which is mentioned below : There will be a default rule which will send all the data into the SPM Layer.
9.46.6.3	Collaborative Planning Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound layer.
9.46.6.4	Collaborative Planning Transformation	The Processed Layer Order Plan Data undergoes transformation to create Item and SupplyDemand Data into the outbound layer.

9.46.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.46.8 Initiation

There are two Stored Procedure in PDS that gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream. The first stored procedure is responsible for obtain data from the processed layer of Order Plan Transformation and create the Item data for Collaborative Planning in the outbound layer. The second stored procedure fetches the same data from Order Plan processed layer and transforms it into the Supply-Demand data to be loaded into the outbound layer. The stored procedure for Item data transformation would be ran prior to the stored procedure for Supply-Demand data transformation as per Boomi schedule.

9.46.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.47 SPM Master data

9.47.1 Approach / Description

SPM Master data report is a report that is used by different teams for different purposes to look at aggregated data at part level for a part. Current this report is created by merging different reports coming out of SPM. This process is complex and time consuming.

Since the data sets based on which SMR is being created is now available in PDS, it is easier to build SMR data set from PDS itself. This process will be faster and efficient. This will also provide a week on week historical data for trending etc.

9.47.2 Inputs

This process does not take any input

9.47.3 Outputs

Table GE_GPO_SPM_MASTER_DATA populated with SMR data set.

9.47.4 Data Entity

Not Applicable.

9.47.5 Process Flow

Reference	Requirement
9.47.5.1	This process will be executed after all reverse flows of weekly batch has been completed.
9.47.5.2	The transformation Stored Procedure (SP) is initiated and the data is populated in table GE_GPO_SPM_MASTER_DATA.
9.47.5.3	Also this SP is responsible for archiving the previous weeks data into table GE_GPO_SPM_MASTER_DATA_AR as per the transformation rules.

9.47.6 Business Rules

Reference	Business Entity	Rule
9.47.6.1	SMR Transformation	The transformation rules are responsible to populate GE_GPO_SPM_MASTER_DATA.
9.47.6.2	SMR Transformation	The transformation rules are responsible to populate GE_GPO_SPM_MASTER_DATA_AR.
9.47.6.3	SMR Transformation	Transformation SP for SMR transformation can be called from APEX.
9.47.6.4	SMR Transformation	Data from table GE_GPO_SPM_MASTER_DATA can be displayed and downloaded from APEX by a user.

9.47.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.47.8 Initiation

As per the new design, the SMR Report process would be initiated automatically after all the required dataset are loaded into PDS. This process is linked as a Child Process to Reverse Flow Demand History which is processed at last every Monday. This process can also be initiated from APEX from where the plan transformation SP for SMR will be invoked.

9.47.9 Error Handling, Reprocessing / Rollback & Error Messaging

Upon error corrective actions will be taken.

9.48 Health Check Logic

9.48.1 Approach / Description

Health check is to implement control over the transformations that send or receive the data to or from SPM. This is to eliminate risk of processing wrong amount of data or inappropriate data in destination system. Below are the checks that needs to be done before the transformations are completed:

1) There will be a provision to enter Manual UCL (Upper Control Limit) within which checks can be implemented over a sub-count of individual data based on different criteria in the transformations (For Example allocation/new buy/repair/modification for OAO file). This count and criteria may be entered through Apex.

2) There will be provision of Systematic UCL for individual criteria calculated as below:

a) UCL = Mean (of file count for files received in last 1 year) + 2 * Standard Deviation (of file count for files received in last 1 year)

The count of the individual criteria counts should fall under this limit

3) In case there is a conflict between the Manual and Systematic UCL values, the one higher amongst the UCLs should be considered

4) There will be provision that these Health Check can be controlled through setups

5) If there is failure for any file for counts not meeting up to the Health checks, there should be provision for Functional COE team in Apex to rectify/restrict the problematic records and further process the file from PDS.

6) A notification mail should be sent to the concerned parties if the files is failed in Health Check. There should be a provision in Apex to control the content and details of the mail and its recipients.

7) The reason of failure should reflect in Apex

9.48.2 Inputs

The Reverse flow files received from SPM and stored in the inbound layer of PDS.

9.48.3 Outputs

Processing the file only if it passes the Health check logic.

9.48.4 Data Entity

Not Applicable.

9.48.5 Process Flow

Reference	Requirement
9.46.5.1	The transformation data is loaded in PDS and stored in Inbound table
9.46.5.2	The Stored Procedure (SP) is initiated after the data is loaded into the inbound layer of PDS. Rules are defined for the Health check to block the transformation data which does not falls under the limit values calculated with the above mentioned logic.

9.48.6 Business Rules

Reference	Business Entity	Rule
9.46.6.1	Health check	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.46.6.2	Health check	The data flow for transformations from the Inbound to Outbound layer will be governed by the rule which is mentioned below : Rules set into the Health Check Headers and Lines all tables will define the data being sent into the Processed Layer. Further, there is also a threshold value calculated from the previously processed data which sets a limit for processing the files received from the transformation flows.
9.46.6.3	Health check	There will be an Enable flag for the rules which will determine whether the rule is active or not.

9.48.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.48.8 Initiation

The Health Check is implemented as a setup based transformation in PDS that gets initiated after the data is inserted into the inbound layer of PDS. This Transformation checks for the threshold values set for processing the files received. Further, the file is only processed if the number of records received falls under the limits set by the threshold values. After the file passes the Health check and is moved to processed layer the data count is stored for that file to consider the count for calculating the thresholds for next files received.

9.48.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.49 Health Check Reprocessing Logic

9.49.1 Approach / Description

Health check Reprocessing is introduced to process the approved records from APEX into PDS. This transformation only fetches the approved records from the extracts sent to APEX and moves them back into the inbound layer of PDS for processing them further into PDS and in some cases up to GLPROD as well.

9.49.2 Inputs

The Approved Records from APEX are stored in Health Check Extracts and then moved into inbound layer of PDS.

9.49.3 Outputs

Only process the records from the Health Check Extracts which are approved from APEX by the Functional COE Team.

9.49.4 Data Entity

Not Applicable.

9.49.5 Process Flow

Reference	Requirement
9.46.5.1	The transformation data is loaded in PDS and stored in Inbound table
9.46.5.2	The Transformation is initiated after the data is loaded into the inbound layer of PDS. Default rule is defined to transfer all the approved records back into the Inbound layer from APEX.

9.49.6 Business Rules

Reference	Business Entity	Rule
9.46.6.1	Health check	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.46.6.2	Health check	The data flow for transformations from the Inbound to Outbound layer will be governed by the rule which is mentioned below : There would be a default rule to process all the approved records from APEX into the inbound layer of PDS.
9.46.6.3	Health check	There will be an Enable flag for the rules which will determine whether the rule is active or not.

9.49.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.49.8 Initiation

The Health Check Reprocessing is implemented as a setup based transformation in PDS that gets initiated after the data is inserted into the inbound layer of PDS and the data is passed through the Health Check (Irrespective of the result, i.e., passed/failed in health check). This Transformation checks for the approved records and move all the approved ones into the inbound layer of PDS. Further, these records are processed normally through the PDS rules defined of its parent process.

9.49.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.50 Supply Data Conversion

9.50.1 Approach / Description

Supply Conversion in PDS enables the business to perform Conversion of Data for Supply for any functional changes that requires the same. Supply conversion could be required due to some change in business processes that requires some functional changes in the ERP and same needs to be transpired in PDS for further SPM planning operations. Also it can handle scenarios where Supply data from the legacy system needs to be moved to PDS to appraise SPM on the historical Supply.

9.50.2 Inputs

Supply Conversion file, freed from technical and functional errors encountered at various levels of validations while file is fed for Supply Conversion from front end. A file is only allowed to be fed into the destination system if it is pristine from all forms of errors because that would ensure the destination planning tool SPM has the complete Supply data based on which it is supposed to generate plan results.

9.50.3 Outputs

Successful end to end flow of complete supply data file to form Supply records in the SPM Processed Layer

9.50.4 Data Entity

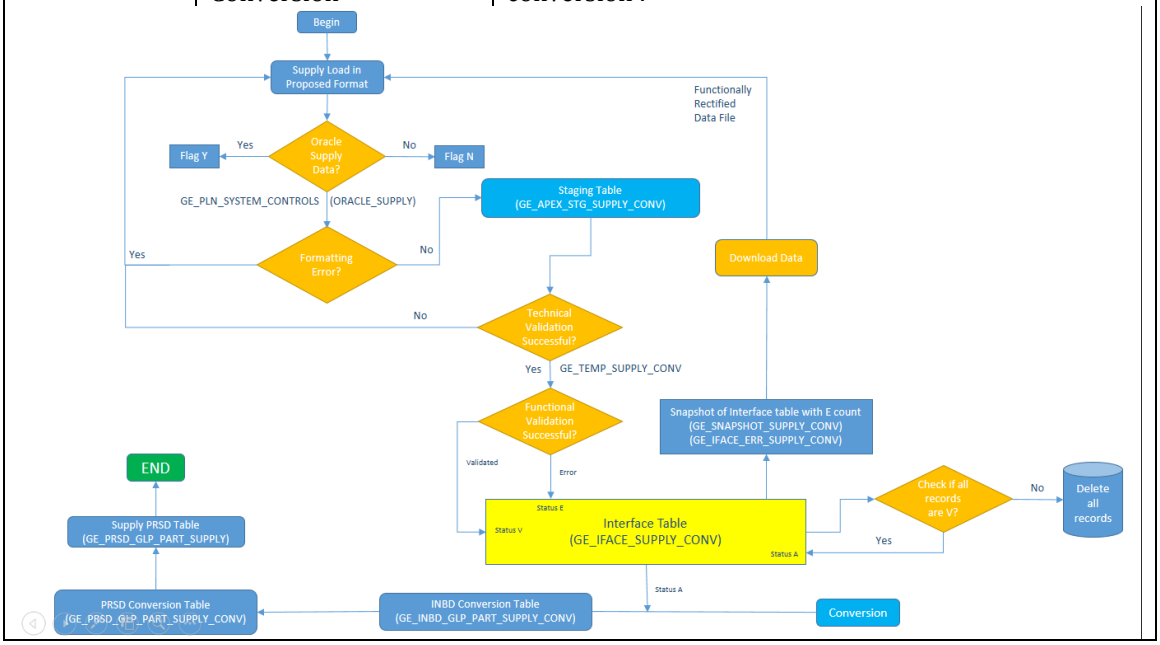
Not applicable

9.50.5 Process Flow

Reference	Requirement
9.50.5.1	Supply conversion data is loaded from PDS front end in the proposed format
9.50.5.2	The records which encounter error due to formatting issue or mandatory parameters missing are presented to the end user.
9.50.5.3	The records go through functional validation and again the records encountering error are reflected for the end user to check
9.50.5.4	Only when the user loads Supply conversion data free from all technical and functional errors, the entire data gets loaded to the staging and then the interface layer.
9.50.5.5	Later to that the user initiates the conversion process and data gets loaded from the interface layer first to the Supply Data conversion inbound layer, then to the Supply Data conversion processed layer and finally to the Supply Processed layer.
9.50.5.6	Subsequent data flow happens as per the as is process of PDS Part Supply Data Transformation (9.8)

9.50.6 Business Rules

Reference	Business Entity	Rule
9.50.6.1	Supply Data Conversion	User is enabled to load the Supply Conversion data from the PDS front end.
9.50.6.2	Supply Data Conversion	Below is the flow through which the data undergoes the conversion :



Reference	Business Entity	Rule
9.50.6.3	Supply Data Conversion	For Supply Conversion utilizing data from Oracle system or for conversion with a Legacy system, user needs to check a flag (Y/N respectively for Oracle/Legacy system)
9.50.6.4	Supply Data Conversion	The records which encounter error due to formatting issue or mandatory parameters missing are presented to the end user as they can export the error data
9.50.6.5	Supply Data Conversion	Once the data is free from all technical errors, on the initiation of the Supply Data load again, it is loaded to the Staging layer.
9.50.6.6	Supply Data Conversion	Later to that the Data goes through the below rule based functional validations before it is inserted to the Interface layer : 1. For the Data, which have Oracle Supply Flag as 'Y' i.e. yes are assumed with their existing po_line_location_id, for the Supply Data from the legacy system, po_line_location_id is auto populated. 2. The supply for items which are not assigned in GPO organization will fail validation 3. A rule will be there to extract all the DROPSHIP POs wherein POs which are received in corresponding subinventories (subinventories with name containing %SUS%) will be fetched and these data will be restricted from sending to the Interface layer. 4. There will be a rule to extract all the RDE POs wherein all POs sent for repair will be fetched and these data will be restricted from being sent to the Interface layer. Repair Defective POs are POs for outside pole repair suppliers which are identified through 'RDE PO' stream in PDS. 5. A rule will be there to extract all the SWAP POs which will be fetched and these data will be sending to the Interface layer. The identification of the swap PO's will be through SWAP PO data stream. 6. A rule will be there to extract all the Repair RMAs which will be fetched and these data will be sent to the Interface layer. Repair RMAs are the RMAs through which the repaired part is inbounded back into good stock when the part has been sent for repairing to the internal supplier. They are identified by 'RDE PO' stream. 7. A rule will be there to extract all the Harvest POs which will be fetched and these data will be sent to the Interface layer. The Harvest POs across various poles (EU and US) are identified

Reference	Business Entity	Rule
		through streams (HARVEST EU and HARVEST US). 8. A rule will be there to extract all the External Warranty POs (po_header_classification like 'EXT%WAR') will be fetched and these data will be sending to the Interface layer. The identification of the swap PO's will be through E_REP data stream. 9. A rule will be there to extract all the Repair POs and these data will be sent to the Interface layer. The identification of the Repair PO's will be through REPAIR data stream. 10. A rule will be there to extract all the Allocation POs and these data will be sent to the Interface layer. The identification of the Allocation PO's will be through 'ALLOCATION_PO' data stream. 11. A rule will be there to extract all the Newbuy POs and these data will be sent to the Interface layer. The identification of the Newbuy PO's will be through 'NEWBUY_PO' data stream. 12. A rule will be there to extract all the FE Good Returns (RMAs received in warehouses in GOOD sub-inventories) and these data will be sent to the Interface layer. The identification of the FE will be through NEWBUY_PO data stream. 13. There will be a default rule, which will send all the data which is not processed through the above mentioned rules as Validated. 14. There will be an Enable flag for the rules which will determine whether the rule is active or not. 15. The records which are identified as Validated will be assumed at the interface table with status 'V' and the records which are identified as Error will be assumed as status 'E'
9.50.6.7	Supply Data Conversion	Once the Data reaches the Interface table, below actions will be performed : 1. A Snapshot of the currently inserted Data will be taken to provide the user a visibility from the PDS front end to the status of his inserted records 2. An Error layer will be present which will allow the users to take an extract of the loaded data furnishing the details of the records that got into Error so that they can rectify/remove such records and initiate the process of Supply Data Load again with pristine data. 3. A check will be done to verify if all the currently inserted records are 'V' signifying all the records are technically and functionally validated.

Reference	Business Entity	Rule
		a. If Yes all the records will assume a status of 'A' signifying Authenticated. b. If No, all records will be deleted from the Interface and Staging table, thus allowing the user to carry on with the process mentioned in Step 2. c. Once all records are in 'A' Status, user can start the Conversion process for the currently inserted records which would pick the data from the Interface layer and send it to the Inbound Conversion Layer
9.50.6.8	Supply Data Conversion	The records from Inbound Conversion Layer will then reach the Processed Conversion Layer on the same initiation of the Conversion. This transformation will undergo the same set of Supply Data Validations as mentioned in section 9.8.6.2
9.50.6.9	Supply Data Conversion	Finally the records will be inserted in the Supply Processed Layer where data will be processed to Outbound as per the conventional PDS protocols

9.50.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.50.8 Initiation

The initiation is controlled with from the PDS front end where the user is enabled to start the Data conversion process through Data Load first and then by initiating the Conversion Setups.

9.50.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.51 Portion of Allocation to CEX for Low Health Parts

9.51.1 Approach / Description

This transformation is implemented to convert a Portion of the SPM Allocated recommendation to Express Allocation when destination is in dire need. The system should be able upgrade a portion of the Allocation recommendations to CEX ship method instead of CRP based on the below criteria:

If the destination warehouse is below safety stock, then quantity required to bring the destination warehouse at its safety stock should be upgraded to CEX

9.51.2 Inputs

The Approved Order Reverse flow files received from SPM and stored in the inbound layer of PDS and then transformed to Processed Layer.

9.51.3 Outputs

Processing the file to Oracle with recommendations split or converted to Express allocation based on the health of the part at the destination.

9.51.4 Data Entity

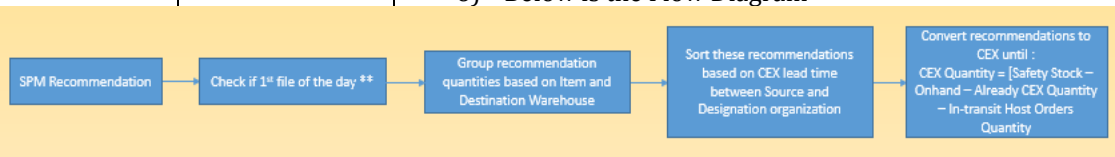
Not Applicable.

9.51.5 Process Flow

Reference	Requirement
9.46.5.1	The transformation data is loaded in PDS and stored in Inbound table
9.46.5.2	The Stored Procedure (SP) for Out Approved Order is initiated. After the data is loaded into the Processed layer of PDS from the Inbound layer of PDS the Allocation CEX Transformation is triggered based on setup. Rules are defined for the Express Allocation conversion which splits or converts the recommendations at the Processed layer to Express allocation based on the health of the part at the destination.

9.51.6 Business Rules

Reference	Business Entity	Rule
9.46.6.1	Allocation CEX Transformation	The Setup is responsible for the data flow from Inbound to Processed layer operating on Approved Orders transformation based on certain criteria
9.46.6.2	Allocation CEX Transformation	The data flow for transformations from the Inbound to Outbound layer will be governed by the rule which is mentioned below : Rules set for Allocation CEX Conversion based on certain criteria. 1) Only first file of the day which is auto approved from SPM Batch with batch type weekly or daily needs to undergo this check. 2) When the Part is unhealthy in destination warehouse of a recommendation, the quantity which is required to push the inventory of the destination organization to safety stock level is calculated by: - Unhealthy Quantity = Safety Stock at destination organization – Onhand at destination organization Also few other parameters are considered: - Already CEX Quantity = Recommendations which are auto approved as Express allocation from SPM

Reference	Business Entity	Rule
		- In-transit Host Orders Quantity = Open Orders that are already in transit for the Part towards the destination Org 3) Thus the number of quantity for the recommendation of a part that needs to be converted to CEX is calculated by: Eligible CEX = Unhealthy Quantity – Already CEX Quantity – In-transit Host Order Quantity 4) When the Part is unhealthy in a Warehouse by quantity which impacts more than one recommendation for the same Part for conversion to CEX, the recommendations should be sorted in ascending order with lower CEX lead time between Source and Destination Org and the recommendation with lesser CEX lead time should be converted or split to CEX recommendation first 5) The data elements are derived as below : Safety Stock at destination organization = Derived from Plan Level Reverse Flow Onhand at destination organization = Derived from Onhand forward flow Already CEX Quantity = Derived from the Recommendations for the 1st file of the day which is in contention In-transit Host Orders Quantity = Derived from Open Order Supply forward flow 6) Below is the Flow Diagram 
9.46.6.3	Allocation CEX Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not.

9.51.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.51.8 Initiation

The Allocation CEX Transformation is implemented as a setup based transformation in PDS that gets initiated as a child transformation to Out Approved Order Transformation after the data is inserted into the processed layer from the Inbound Layer operating over the first Out Approved Order File of the day from SPM Daily/Weekly batch.

9.51.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.52 Order Plan Variance

9.52.1 Approach / Description

Order Plan Variance section is introduced to check for the weekly as well as Daily variance in the Order Plan data received from SPM. This Transformation fetches the data from the Order Plan extract received from SPM and compares it with the Daily/Weekly data received from SPM in the last subsequent run.

9.52.2 Inputs

The Order Plan extract received from SPM is archived in Processed Archive layer in PDS and the same data is used to calculate the Daily/Weekly variance in Order Plan.

9.52.3 Outputs

The variance is calculated and stored in PDS tables and further reflected in the frontend application.

9.52.4 Data Entity

Not Applicable.

9.52.5 Process Flow

Reference	Requirement
9.52.5.1	The transformation data is loaded in PDS and stored in APEX table
9.52.5.2	The Transformation is initiated after the data is loaded into the APEX table of PDS. Default rule is defined to transfer all the stored data back into the APEX table.

9.52.6 Business Rules

Reference	Business Entity	Rule
9.52.6.1	Order Plan Variance	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.52.6.2	Order Plan Variance	The data flow for transformations from the Inbound to Outbound layer will be governed by the rule which is mentioned below : There would be a default rule to process all the records into the APEX table in PDS.
9.52.6.3	Order Plan Variance	There will be an Enable flag for the rules which will determine whether the rule is active or not.

9.52.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.52.8 Initiation

The Order Plan Variance is initiated after the archival of Order Plan extract received from SPM. After archival is done, the child transformation is executed to calculate the variance of the Order Plan based on the different Order Types received in the Order Plan Extract. These calculated values are then stored in APEX table in PDS. Further, these records are processed normally through the PDS rules defined of its parent process.

9.52.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.53 SPM Forecast Variance

9.53.1 Approach / Description

SPM Forecast Variance section is introduced to check for the weekly variance in the SPM Forecast data received from SPM. This Transformation fetches the data from the SPM Forecast extract received from SPM and compares it with the Weekly data received from SPM in the last subsequent run.

9.53.2 Inputs

The SPM Forecast extract received from SPM is archived in Processed Archive layer in PDS and the same data is used to calculate the Weekly variance in SPM Forecast.

9.53.3 Outputs

The variance is calculated and stored in PDS tables and further reflected in the frontend application.

9.53.4 Data Entity

Not Applicable.

9.53.5 Process Flow

Reference	Requirement
9.53.5.1	The transformation data is loaded in PDS and stored in APEX table
9.53.5.2	The Transformation is initiated after the data is loaded into the APEX table of PDS. Default rule is defined to transfer all the stored data back into the APEX table.

9.53.6 Business Rules

Reference	Business Entity	Rule
9.53.6.1	SPM Forecast Variance	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.53.6.2	SPM Forecast Variance	The data flow for transformations from the Inbound to Outbound layer will be governed by the rule which is mentioned below : There would be a default rule to process all the records into the APEX table in PDS.
9.53.6.3	SPM Forecast Variance	There will be an Enable flag for the rules which will determine whether the rule is active or not.

9.53.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.53.8 Initiation

The SPM Forecast Variance is initiated after the archival of SPM Forecast extract received from SPM. After archival is done, the child transformation is executed to calculate the variance of the SPM Forecast based on the data received in the SPM Forecast Extract from SPM. These calculated values are then stored in APEX table in PDS. Further, these records are processed normally through the PDS rules defined of its parent process.

9.53.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.54 Obsolete object cleanup program

9.54.1 Approach / Description

This program will list down all tables in PDS database under PDS schema which is not in use. The list can then be reviewed and finalized for cleanup. After finalizing the list unused tables can be dropped from database using this program.

9.54.2 Inputs

This program does not require any specific input.

9.54.3 Outputs

List of obsolete tables in PDS database.

9.54.4 Data Entity

Not Applicable.

9.54.5 Process Flow

Reference	Requirement
9.54.5.1	Program is initiated from APEX.
9.54.5.2	A list of tables is created and populated in a table after checking below criteria 1. Table is not in use by any code objects (Package, procedures etc.) 2. Table is not in use in any of transformation rules. 3. Table is not part of exception list of tables that are needed to be kept.
9.54.5.3	List can be reviewed, and objects can be marked to be dropped.
9.54.5.4	List of tables marked to be dropped can be dropped.

9.54.6 Business Rules

Reference	Business Entity	Rule
9.54.6.1	Table listing logic	Table should not be in use by any code objects (Package, procedures etc.)
9.54.6.2	Table listing logic	Table should not be in use in any of transformation rules.
9.54.6.3	Table listing logic	Table should not be part of exception list of tables that are needed to be kept.

9.54.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.54.8 Initiation

The process will be initiated from APEX.

9.54.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.55 Supply Forecast Transformation

9.55.1 Approach / Description

Supply Forecast data is received from BI and sent to SPM on Weekly Basis. This extract would contain the historical forecast data of Supply. The data would flow from ODP database via PDS database to SPM SFTP location.

9.55.2 Inputs

The input to this function will be the historical Supply Forecast data which is present in the Inbound tables (already inserted by Middleware)

9.55.3 Outputs

The transformed Supply Forecast data in the SPM Processed layer.

9.55.4 Data Entity

Not Applicable.

9.55.5 Process Flow

Reference	Requirement
9.52.5.1	Middleware has already inserted the Supply Forecast data into the PDS Inbound layer.
9.52.5.2	The Stored Procedure (SP) is initiated and the data flows from Inbound layer to Processed layer based on the execution of the active rules.
9.52.5.3	Also, this SP is responsible for the data flow from the Processed layer to the Outbound (SPM) layer based on the execution of the SPM enabled rules.

9.55.6 Business Rules

Reference	Business Entity	Rule
9.52.6.1	Supply Forecast	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.52.6.2	Supply Forecast	The data flow for transformations from the Inbound to Outbound layer will be governed by the rule which is mentioned below: There would be a default rule to process all the records into the Outbound table in PDS.
9.52.6.3	Supply Forecast	There will be an Enable flag for the rules which will determine whether the rule is active or not.

9.55.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.55.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.55.9 Error Handling, Reprocessing / Rollback & Error Messaging

None

9.56 PRODUCT_ODP_DATA_TRANSFORMATION

9.56.1 Approach / Description

The product ODP data comprises of the extract of all the product/PSI code from ODP source system and is processed and sent to the outbound (SPM) layer. The data for product is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed tables and then from the Processed to SPM Outbound layer based on the effective rule streams.

9.56.2 Inputs

The input to this function will be the Product ODP data information which is present in the Inbound tables.

9.56.3 Outputs

The transformed product ODP data in the SPM Outbound layer.

9.56.4 Data Entity

Not Applicable.

9.56.5 Process Flow

Reference	Requirement
9.56.5.1	Middleware has already inserted the Product ODP data into the PDS Inbound layer.
9.56.5.2	Stored Procedure (SP) should be initiated to process data from inbound table to processed table with all business logic & then from processed to SPM outbound table with SPM logic.
9.56.5.3	Business and SPM Rules are defined in headers and lines table.
9.56.5.4	Data flow per rule between Inbound to Processed (IP) and then Processed to SPM (PS) are controlled in GE_SPM_RULE_HEADERS_ALL table disabled by ENABLE_FLAG, SPM_ENABLE_FLAG.

9.56.6 Business Rules

Reference	Business Entity	Rule
9.56.6.1	Product ODP Data Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer

Reference	Business Entity	Rule
9.56.6.2	Product ODP Data Transformation	The data flow for Product from the Inbound to Outbound layer will be governed by the set of rules which are mentioned below: 1. There is no is rule stream other than default There will be a default rule which will send all the data which is not processed through the above-mentioned rules. In default rule three business conditions gets applied as mentioned below • One of the child processes brings in the Maximum EOL date from ELF data set based on PSI Code. • One process picks up the Min Installed date for PSI code and adds it to same PSI code. • SPM layer will get populated with data having Modality which enabled in Set ups. (i.e. in table GE_PLN_SYSTEM_CONTROLS having CONTROL_TYPE as 'IBBF_MODALITY_SCOP')
9.56.6.3	Product ODP Data Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also, there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.56.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.56.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.56.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.57 SBOM_ODP_DATA_TRANSFORMATION

9.57.1 Approach / Description

The SBOM data comprises of the extract of service product BOM information from ODP source system and is processed and sent to the outbound (SPM) layer. The data for SBOM is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed tables and then from the Processed to SPM Outbound layer based on the effective rule streams.

9.57.2 Inputs

The input to this function will be the SBOM data information which is present in the Inbound tables.

9.57.3 Outputs

The transformed SBOM data in the SPM Outbound layer.

9.57.4 Data Entity

Not Applicable.

9.57.5 Process Flow

Reference	Requirement
9.57.5.1	Middleware has already inserted the Product BOM data into the PDS Inbound layer.
9.57.5.2	Stored Procedure (SP) should be initiated to process data from inbound table to processed table with all business logic & then from processed to SPM outbound table with SPM logic.
9.57.5.3	Business and SPM Rules are defined in headers and lines table.
9.57.5.4	Data flow per rule between Inbound to Processed (IP) and then Processed to SPM (PS) are controlled in GE_SPM_RULE_HEADERS_ALL table disabled by ENABLE_FLAG, SPM_ENABLE_FLAG.

9.57.6 Business Rules

Reference	Business Entity	Rule
9.57.6.1	SBOM ODP Data Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.57.6.2	SBOM ODP Data Transformation	The data flow for SBOM from the Inbound to Outbound layer will be governed by the rule which is mentioned below: There will be a default rule which will send all the data which is not processed through any specified rules. 1. Modality for product will be retrieved from Product rollout data set and added in SBOM data set. 2. Records will be assigned with two-character county codes if same install country have a reference available in table GE_COUNTRY_CODES otherwise records will get assigned with Country codes based on system ids which are present in same reference. if system id is also not available in

Reference	Business Entity	Rule
		the reference, then 'NOT-AVAILABLE' will be populated and such a records will be neglected from further process. 3. SPM layer should be populated with SBOM data for US and Cannada (country code US and CA) as per scope which done in set up based and can be updated from Apex. Data should be grouped on product and part level with following logic. • If the Part is having part chain available, then part should be rolled up to the topmost part and if the part not available in part chain, then the same part will be sent ahead. • Part attach rate and Part include quantity should be populated as 1. • part and product modalities combinations should be aligned with provided set ups combinations if it is not aligned then data will not be processed. • Data for CT, MR and TUB part modality will be considered having specific cost. • Distinct part and product combination which is not available in SBOM should be taken from DBOM and sent it in BOM final data.
9.57.6..3	SBOM ODP Data Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also, there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.57.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.57.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.57.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.58 PRODUCT_ROLLOUT_ODP_DATA_TRANSFORMATION

9.58.1 Approach / Description

The product rollout ODP data comprises of the information of the product/PSI code from ODP source and is processed and sent to the outbound (SPM) layer. The data for product rollout is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed tables and then from the Processed to SPM Outbound layer based on the effective rule streams.

9.58.2 Inputs

The input to this function will be the Product rollout ODP data information which is present in the Inbound tables.

9.58.3 Outputs

The transformed Product rollout ODP data in the SPM Outbound layer.

9.58.4 Data Entity

Not Applicable.

9.58.5 Process Flow

Reference	Requirement
9.58.5.1	Middleware has already inserted the Product rollout ODP data into the PDS Inbound layer.
9.58.5.2	Stored Procedure (SP) should be initiated to process data from inbound table to processed table with all business logic & then from processed to SPM outbound table with SPM logic.
9.58.5.3	Business and SPM Rules are defined in headers and lines table.
9.58.5.4	Data flow per rule between Inbound to Processed (IP) and then Processed to SPM (PS) are controlled in GE_SPM_RULE_HEADERS_ALL table disabled by ENABLE_FLAG, SPM_ENABLE_FLAG.

9.58.6 Business Rules

Reference	Business Entity	Rule
9.58.6.1	Product rollout ODP Data Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.58.6.3	Product rollout ODP Data Transformation	The data flow for Product rollout ODP from the Inbound to Outbound layer will be governed by the rule which is mentioned below: There will be a default rule which will send all the data which is not processed through any specified rules. In default rule three business conditions gets applied as mentioned below 1. Records will be assigned with two-character county codes if same install country have a reference available in

Reference	Business Entity	Rule
		table GE_COUNTRY_CODES otherwise records will get assigned with Country codes based on system ids which are present in same reference. if system id is also not available in the reference, then 'NOT-AVAILABLE' will be populated and such a records will be neglected from further process. 2. Records will be assigned with Organization code in the following sequence in additional_info_14 column of Processed layer. 1. Organization code which is having maximum orders in Demand history data set for the same system id will get assigned to IB rollout records. 2. Otherwise if record have a reference available in table GE_IB_LOCATION_MAP_TABLE in Additional_info_14 column. The records which do not have the reference, will get assigned with Organization codes based on country codes, otherwise 'NOT-AVAILABLE' 3. Otherwise the Warehouse will get updated on basis of country code standardization method. 3. Data will be available in Processed layer on product and system Id level along with two-character country code and hostlocid as per aboeve rules. 4. The final layer should be populated with a timeline of Product Rollout data on Product, Hostlocid and Start date level with total no of active systems in respective start and end date timeframe. 5. Few product specific fields {PRODUCT_GROUP, FAMILY_NAME, PRODUCT_NAME, MODALITY, ADDITIONAL_INFO_1

Reference	Business Entity	Rule
		(Product_G_Desc), ADDITIONAL_INFO_2 (Segment), ADDITIONAL_INFO_4 (Equipment)}are mapped/added Additional info columns as per requirement from SPM which are taken from Final layer of product interface. 6. Timeframe will get automatically decided based on the date which is added into set up and no of months provided in the same set up. If the date is not available in the set up then system will take current date as default date.
9.58.6.4	Product rollout ODP Data Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also, there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.58.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.58.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.58.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.59 SCAN_ODP_DATA_TRANSFORMATION

9.59.1 Approach / Description

The scan data comprises of details of scan done by various machines at different regions, and data comes from ODP and is processed and sent to the outbound (SPM) layer. The data for scan data is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed tables and then from the Processed to SPM Outbound layer based on the effective rule streams.

9.59.2 Inputs

The input to this function will be the scan data information which is present in the Inbound tables.

9.59.3 Outputs

The transformed scan data in the SPM Outbound layer.

9.59.4 Data Entity

Not Applicable.

9.59.5 Process Flow

Reference	Requirement
9.59.5.1	Middleware has already inserted the scan data into the PDS Inbound layer.
9.59.5.2	Stored Procedure (SP) should be initiated to process data from inbound table to processed table with all business logic & then the data from processed layer is sent to SPM layer on Thursday and Friday of each week.
9.59.5.3	Business and SPM Rules are defined in headers and lines table.
9.59.5.4	Data flow per rule between Inbound to Processed (IP) and then Processed to SPM (PS) are controlled in GE_SPM_RULE_HEADERS_ALL table disabled by ENABLE_FLAG, SPM_ENABLE_FLAG.

9.59.6 Business Rules

Reference	Business Entity	Rule
9.59.6.1	Scan ODP Data Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.59.6.2	Scan ODP Data Transformation	The data flow for scan data from the Inbound to Outbound layer will be governed by the set of rules which are mentioned below: There will be a default rule which will send all the data which is not processed through any specified rules. In default rule three business conditions gets applied as mentioned below 1. There will be a child process which will assign each record with two-character county code by checking the county information of the source data. 2. Data which is older than five years (records having ARRG_Date less five years) from current date will not be stored or processed in PDS database.

Reference	Business Entity	Rule
9.59.6.3	Scan ODP Data Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also, there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.59.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	Field Name	Value
	Not Applicable	Not Applicable	Not Applicable

9.59.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.59.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

9.60 ELF_ODP_DATA_TRANSFORMATION

9.60.1 Approach / Description

The Early life failure data comprises of the information of the parts which got failed before specific time, and data comes from ODP and is processed and sent to the outbound (SPM) layer. The data for ELF is inserted into the Inbound table by Middleware. From there, a stored procedure is initiated to process the data from the Inbound to the Processed tables and then from the Processed to SPM Outbound layer based on the effective rule streams.

9.60.2 Inputs

The input to this function will be the ELF data information which is present in the Inbound tables.

9.60.3 Outputs

The transformed ELF data in the SPM Outbound layer.

9.60.4 Data Entity

Not Applicable.

9.60.5 Process Flow

Reference	Requirement
9.60.5.1	Middleware has already inserted the ELF data into the PDS Inbound layer.
9.60.5.2	Stored Procedure (SP) should be initiated to process data from inbound table to processed table with all business logic & then from processed to SPM outbound table with SPM logic.
9.60.5.3	Business and SPM Rules are defined in headers and lines table.
9.60.5.4	Data flow per rule between Inbound to Processed (IP) and then Processed to SPM (PS) are controlled in GE_SPM_RULE_HEADERS_ALL table disabled by ENABLE_FLAG, SPM_ENABLE_FLAG.

9.60.6 Business Rules

Reference	Business Entity	Rule
9.60.6.1	ELF ODP Data Transformation	The SP is responsible for the data flow from Inbound to Processed and then from Processed to Outbound (SPM) layer
9.60.6.2	ELF ODP Data Transformation	The data flow for ELF from the Inbound to Outbound layer will be governed by the set of rules which are mentioned below: There will be a default rule which will send all the data which is not processed through any specified rules. • As per the SPM requirement, currently ELF data is not used in SPM as a result the ELF incremental data will be saved in Processed layer till further notification. • Till then the failure rate data will get generated from rest of the ELF process flow as per below rules and will be sent to SPM through the ELF file. (Failure rate data set is nothing but failure rate of a part for particular product and location pair within a specific period of time) • To generate the Failure rate data set, first Demand BOM and Monthly IB rollup needs to be generated and stored in PDS database. • Demand BOM data: (Demand Bom data set is nothing but Demand quantity for a Part for respective product and location within a Specific period of time) In Demand Bom part is rollout to the topmost part if the part is having part chain and if not, then the same part will be considered.

Reference	Business Entity	Rule
		Below are the set up based filters made available in Apex front end. • The timeframe will be automatically decided based on the date which is added into set up and no of months provided in the same set up (Can be updated from Apex front end). If the date is not available in the set up then the system will take the current date as default date. • Organization filter is applied while preparing the data, Data will get processed if the given organization is enabled in set ups (Can be updated from Apex). • Data which is coming under FE, PM_ROLLUP, DLR_DCOS in Demand history will be considered for Demand BOM generation. • IB_TIED_DEMAND flag will get assigned as Y if the part and product modalities combinations are aligned with provided set ups if it is not then flag will get assigned as N. • Monthly IB rollup: Monthly IB Roll up data is generated on top of the final layer of IB data with same date filtering as in Demand BOM.
9.60.6.3	ELF ODP Data Transformation	There will be an Enable flag for the rules which will determine whether the rule is active or not. Also, there will be an SPM Enable flag which will determine whether the data will move from the Processed layer to Outbound (SPM) layer.

9.60.7 Translations/Transformations (Interfaces Only)

Id#	Source	Target	
	Field Name	**Field Name**	**Value**
	Not Applicable	Not Applicable	Not Applicable

9.60.8 Initiation

The Stored Procedure in PDS gets initiated after middleware invokes it with their relevant schedule for the corresponding data stream

9.60.9 Error Handling, Reprocessing / Rollback & Error Messaging

None.

10 Scheduling

NA

11 Dependent Programs

NA

12 Additional Testing Requirements

None

13 Issues, Risks & Decisions

13.1 Issues Identified

Issue Number	Issue Description
NA	NA

13.2. Response / Resolution to Issues

Response Number	Response Description
NA	NA

14 Appendix

NA