

Functional Requirements Document- Spare parts

Prepared for
Technica

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Introduction

1.1 Purpose

The Functional Requirements Document (FRD) describes in common terms:

- An overview of the processes comprising each Work stream
- An overview of each sub-process comprising the Work stream
- Major gaps between the business requirements and the functionality supported by the standard Microsoft Dynamics 365 solution
- The problem summary including current business/environment issues
- Proposed technology to support the new or altered business processes
- How implementation of the proposed solution will benefit the users/stakeholders

The FRD is the starting point of the solution and system development and is a collaborative effort between all business and technology stakeholders. The purpose of the Functional Requirements Document (FRD) is to document requirements for the requested system solution.

The objective of the Functional Requirements Document is to provide enhanced documentation for requirements that are a gap or will require a workaround or process change in order to fit the system solution of the client. The need for any modifications is clarified through the FRD. The FRD forms the basis of the subsequent task concerning the system design.

This document focuses on Warehouse & Maintenance requirements.

1.2 Acronyms

Abbreviation	Explanation
FRD	Functional Requirement Document
System	Dynamics 365
D365FO	Dynamics 365
PR	Purchase Requisition
SP	Spare parts
HSP	Head of Spare parts
FM	Finance manager
MM	Manufacturing manager

1.3 Spare Parts Offer Preparation

1.3.1 Spare Parts Request

Process diagram:

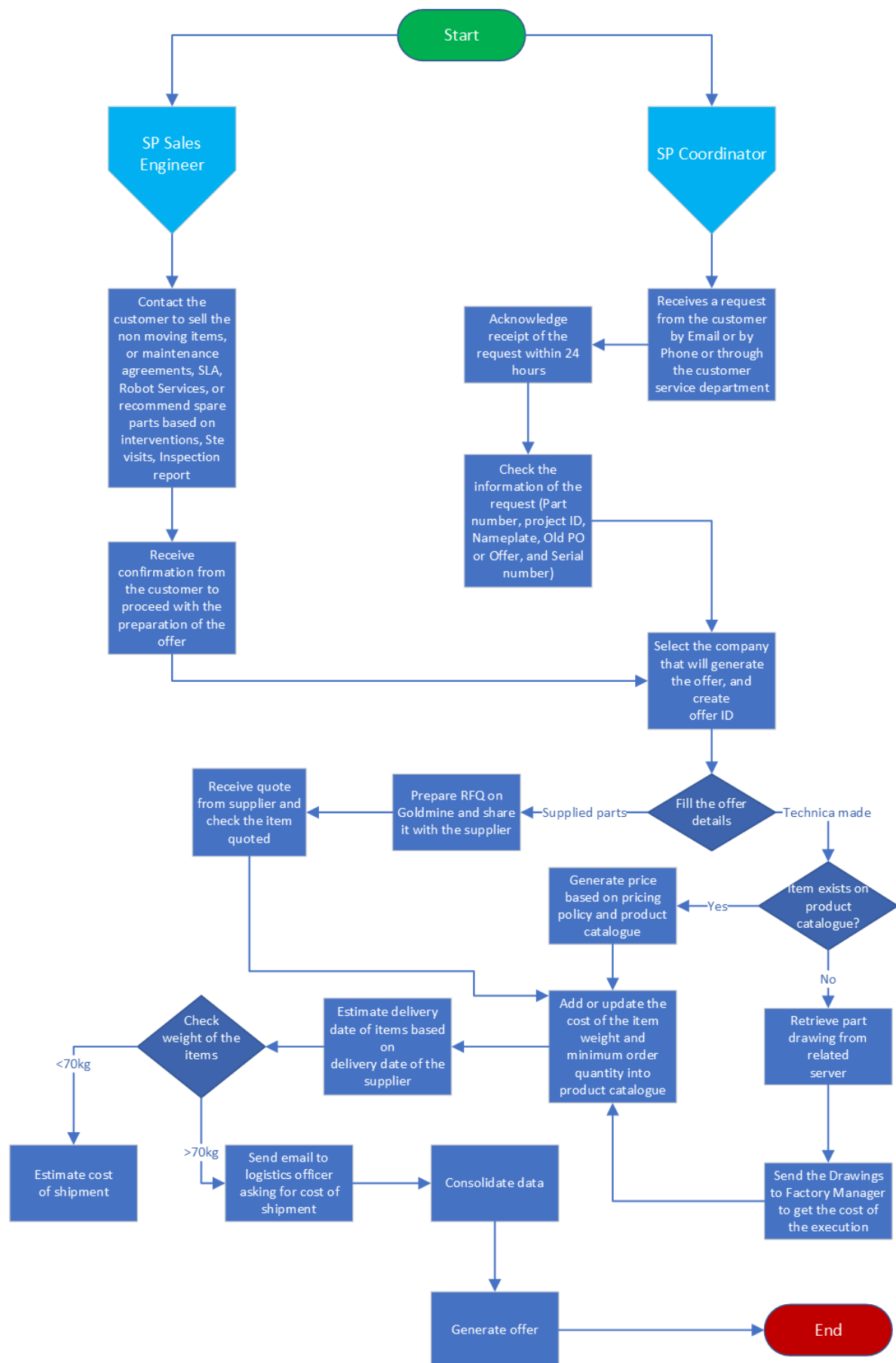


Figure 1 – Spare parts request process diagram

1. The Spare Parts Sales Engineer engages with customers to promote non-moving items, maintenance agreements, SLAs, Robot Services, and suggests spare parts based on interventions, site visits, and inspection reports. Robot Services encompass yearly health checks and maintenance scheduling.
2. Upon customer agreement, the Spare Parts Sales Engineer receives confirmation via email or phone to proceed with offer preparation.
3. The Spare Parts Coordinator can interact with customers directly or receive requests through email, phone, or customer service.
4. Within 24 working hours, the Spare Parts Coordinator acknowledges the receipt of the request via email.
5. The Spare Parts Coordinator validates request details including part number, project ID, nameplate, old purchase order, offer references, and serial numbers.
6. The Spare Parts Coordinator selects the appropriate entity for offer generation, creating an offer ID. For instance, "SPTXXX-YY" for Technica International, "SPEXXX-YY" for Technica Europe, and "SPT Project#" for package-related offers.

To-Be Process on D365: Create a new Sales quotation in the corresponding legal entity and choose the corresponding predefined number sequence. The system will

bring the last used number sequence.

Create customer

Details

Local | LBP | -- | -- | -- | --

Customer account

INTL-000001

Delivery terms

Type

Organization

Mode of delivery

Name

Edy Khoury

Sales tax group

Customer group

Local

Tax exempt number

Currency

LBP

Source code

Terms of payment

Address

Country/region

LBN

City

Figure 2 - Sales quotation creation

7. In **D365FO**, the Spare Parts Coordinator populates customer information, contact person, and requested items. They could be Technica-made or foreign parts.

Sales quotation | Standard view

INTL-000002 : Edy Khoury

Lines | Header

Sales quotation header

Lines

+ Add line

+ Add lines

Remove

Sales quotation line

Inventory

Product and supply

Update line

	Variant number	T...	Item	Product name	Sales category	C
✓						

Figure 3 - Sales quotation details

8. For Technica-made parts, the Spare Parts Coordinator verifies the presence of items in the Released products form in **D365FO**.

9. If items exist in the Released products form, the Spare Parts Coordinator calculates prices based on pricing policies and the product catalog.
In **D365FO**, a price list can be automatically defined based on a matrix between the item and the customer. The Spare Parts coordinator can check the price history of this item.
10. If items are not found in the system, the Spare Parts Coordinator retrieves part drawings from relevant servers or the Vault (e.g., Old Projects, xls1, Ongoing, Closed Projects).
11. The Spare Parts Coordinator sends these drawings via email to the Factory Manager to obtain execution cost estimates.
12. The Head of Production provides execution cost quotes within 3 working days, sending them back to the Spare Parts Coordinator by email.
Then the item will be created in **D365FO**, and a standard cost will be allocated to it.
13. For foreign parts, the Spare Parts Coordinator creates RFQs in **D365FO** for items priced more than two weeks ago. The system will automatically send an RFQ email to suppliers.

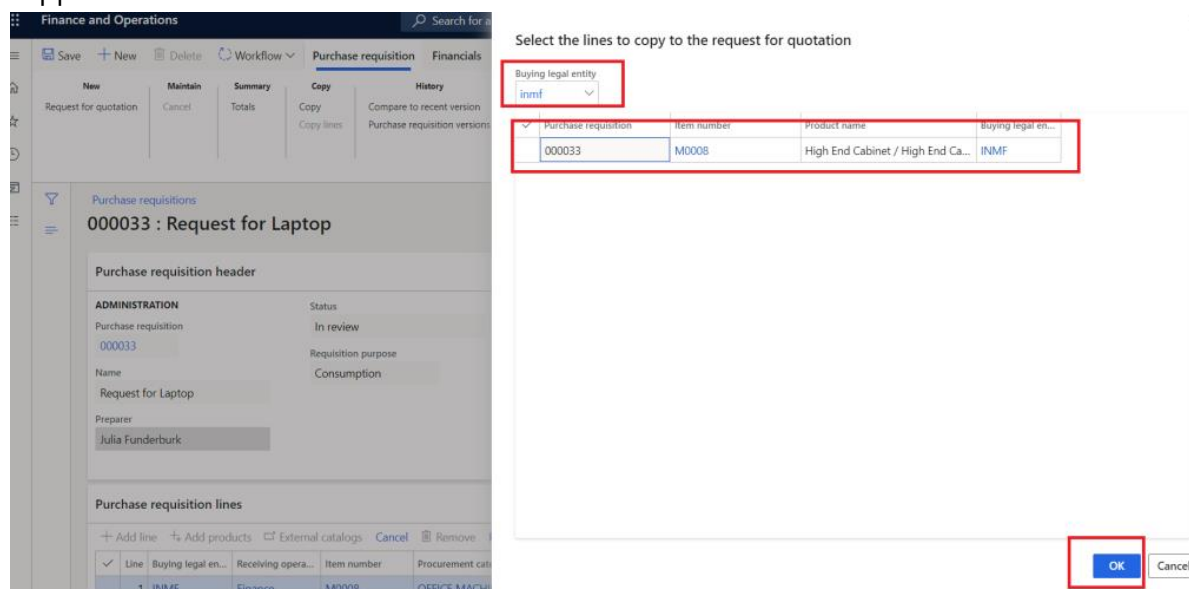


Figure 4 shows the 'Purchase requisition' form in D365FO. The form is titled '000033 : Request for Laptop'. The 'Purchase requisition header' section shows the following details:

- ADMINISTRATION: Status: In review
- Purchase requisition: 000033
- Requisition purpose: Consumption
- Name: Request for Laptop
- Preparer: Julia Funderburk

The 'Purchase requisition lines' section shows a table with the following data:

Line	Buying legal en...	Receiving opera...	Item number	Procurement cat
1	INMF	Finance	M0008	OFFICE MACH

The 'Buying legal entity' is set to 'INMF'. The 'Request for quotation' dialog box is open, showing the 'Select the lines to copy to the request for quotation' screen. The 'Buying legal entity' is set to 'INMF'. The table shows the following data:

Purchase requisition	Item number	Product name	Buying legal en...
000033	M0008	High End Cabinet / High End Ca...	INMF

The 'OK' button is highlighted with a red box.

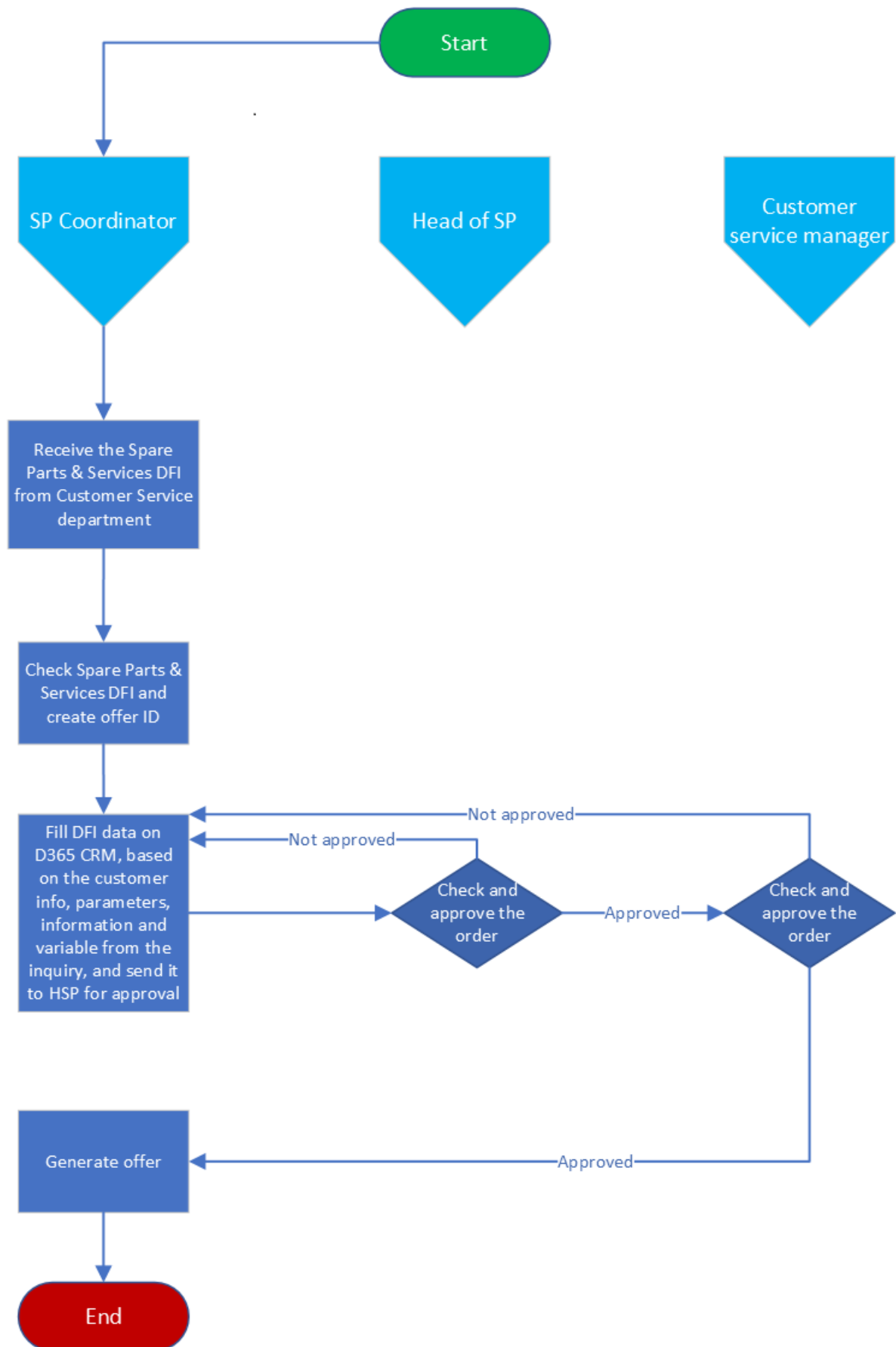
Figure 4 - RFQ Creation

14. The Spare Parts Coordinator receives quotes from suppliers and verifies the alignment with the requested items.
15. In **D365FO**, the Spare Parts Coordinator updates or adds costs, weights, and minimum order quantities in the product catalog and drawings, if applicable.
16. Estimated delivery dates for items are determined by the Spare Parts Coordinator along additional shipping time and specified in **D365FO**.
17. The Spare Parts Coordinator verifies item weights in **D365FO**.
18. If the total weight is under 70kg, the Spare Parts Coordinator calculates shipping costs through the DHL website.

19. If the total weight exceeds 70kg, an email is sent to the logistics officer to request shipment cost estimates.
20. The Spare Parts Coordinator generates a Sales Quotation in **D365FO**.

1.3.2 Service requests

Process Diagram:



1. Spare Parts Coordinator receives the Spare Parts & Services DFI from Customer Service department by e-mail.
2. Spare Parts Coordinator checks Spare Parts & Services DFI and create the Quotation on **D365FO**.
3. Spare Parts Coordinator fills DFI data on **D365 CRM**, based on the customer info, parameters, information and variable from the inquiry, and send it to HSP and CSM for approval. Check "*Service order FRD*" for more details.
4. HSP checks and approves Quotation on **D365FO**. An automated email will be sent from the system since the sales quotation will be subject to workflow approval.
5. The second level approval will reach the CSM, which will check and approve the quotation from **D365FO**.
6. If HSP or CSM does not approve the quotation, Spare parts coordinator revises the quotation and re-send it for approval from the system.
7. If approved, Spare Parts Coordinator sends the quotation confirmation to the customer.

1.3.3 Spare Parts Packages

Process diagram:

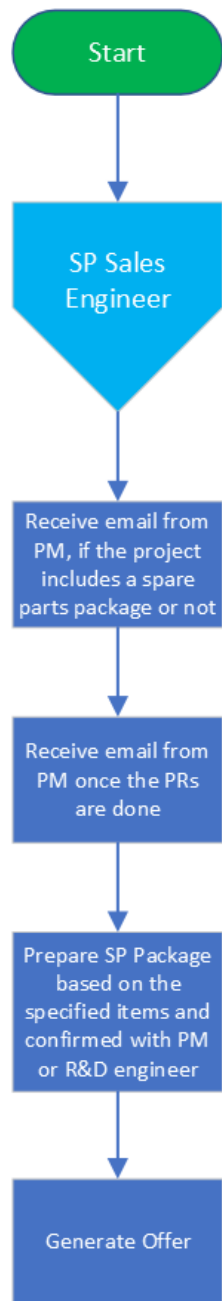


Figure 5 - Spare parts package

1. Spare Parts Sales Engineer receives email from PM, if the project includes a spare parts package or not.
2. Spare Parts Sales Engineer receives email from PM once the PRs are done.
3. Spare Parts Sales Engineer prepares SP Package based on the specified items and confirmed with PM or R&D engineer.
4. Spare Parts Sales Engineer generates offer on **D365FO**.

1.4 Order Execution

Process diagram:

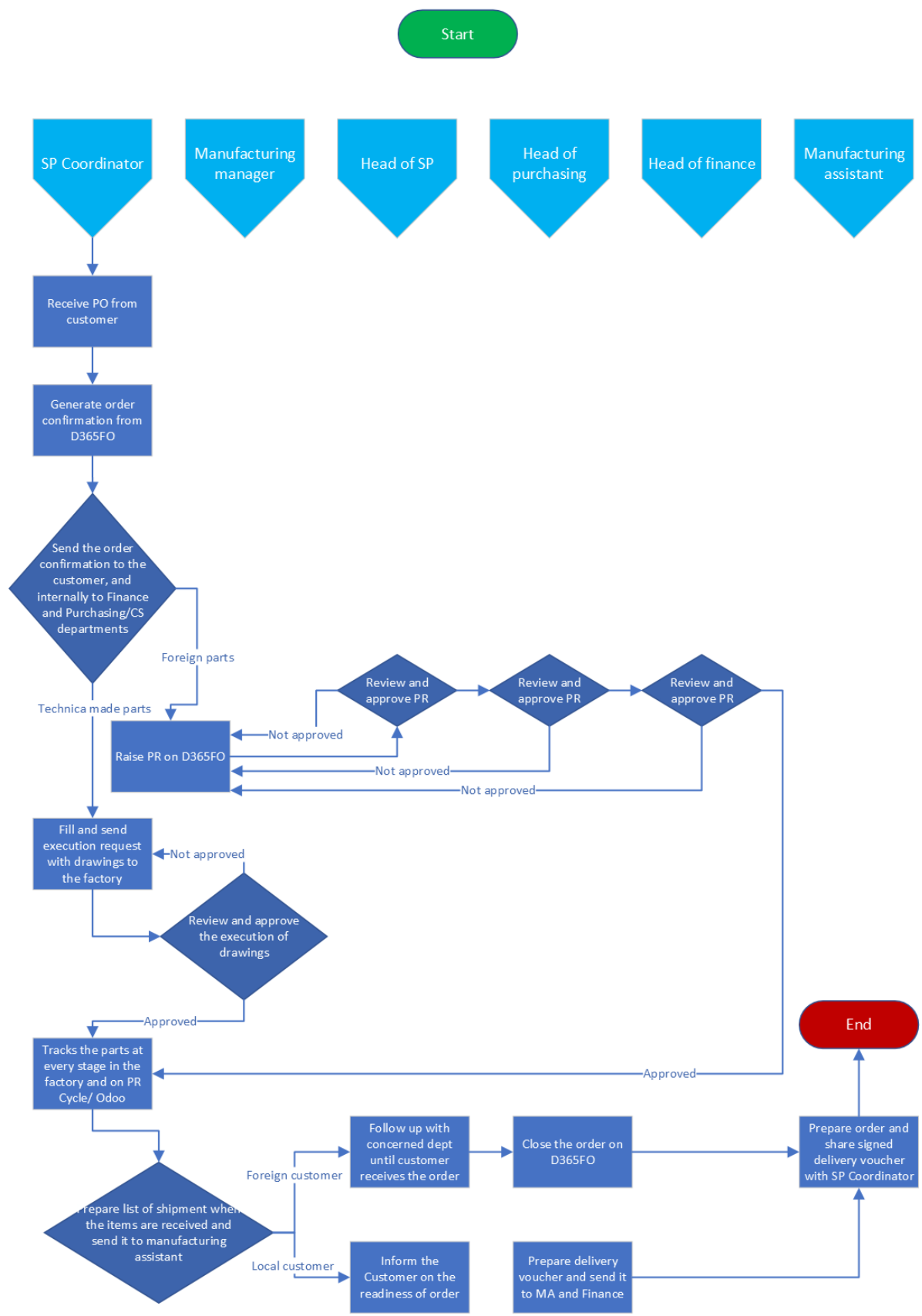


Figure 6 - Order execution

1. Spare Parts Coordinator receives PO from customer by e-mail.
2. Spare Parts Coordinator generates order confirmation from **D365FO** including PO number and delivery date.
3. Spare Parts Coordinator sends the order confirmation to the customer automatically from the system, and internally to Finance and Purchasing/CS departments plus all supporting documents attached on the order in **D365FO**.
4. For foreign parts, Spare Parts Coordinator raises PR on PR **D365FO**
5. HSP reviews and approves PRs on PR **D365FO**. If not approved, Spare parts Coordinator revises the PR.
6. If approved, Purchasing Manager reviews and approves PRs on PR **D365FO**. If not approved, Spare parts Coordinator revises the PR.
7. If approved, FM reviews and approves PRs on PR **D365FO**. If not approved, Spare parts Coordinator revises the PR.
8. For Technica Made Parts, Spare Parts Coordinator fills and sends execution request with drawings to the factory by e-mail.
9. MM reviews and approves the execution drawings by e-mail. If not approved, Spare parts Coordinator revises the Execution Request based on Factory requirements.
10. If approved, Spare parts Coordinator tracks the parts at every stage in the factory and on PR **D365FO**.
11. Spare Parts Coordinator prepares list of shipment when the items are received and send it to the Manufacturing assistant.
12. For Local Customer, Spare Parts Coordinator informs the Customer on the readiness of his order by e-mail.
13. Spare Parts Coordinator prepares delivery voucher and sends it to MA and Finance.
14. MA prepares order and shares signed delivery voucher with SP Coordinator.
15. For Foreign Customers, Spare Parts Coordinator follows up with concerned dept until customer receives the order.
16. Spare Parts Coordinator closes the order on D365FO.

Requirements

ID	Description	Fit/GAP
IN05-001	Send Ackowlegement receipt to customer for confirmation	Gap
IN05-002	Order confirmation notification from customer confirmation is sent to Logistics, finance and Purchasing departments	Gap
IN05-003	Sp&S department to be notified when the spare parts have been received	Fit
IN05-004	The customer is notified that the shipment is ready for dispatch	Fit

1.5 Spare Parts Master Planning

1.5.1 Process Diagram

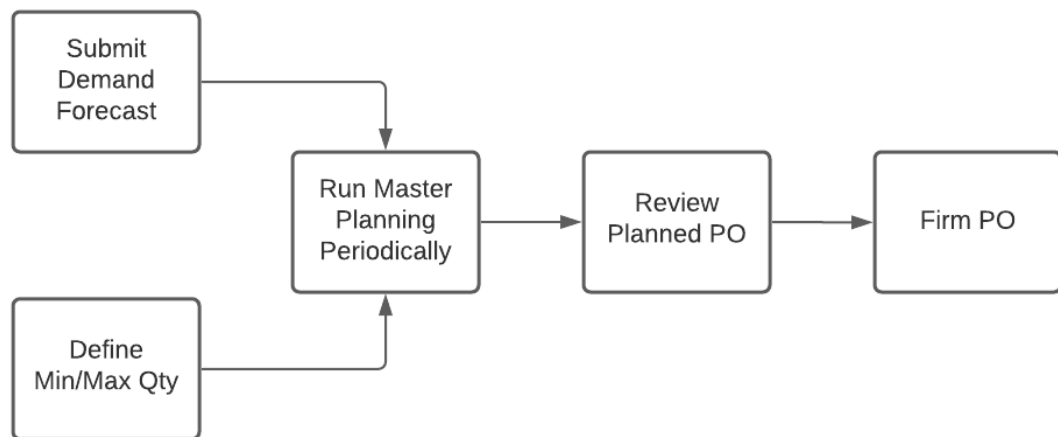


Figure 7 - Materials Master Planning Process

1.5.2 Master Planning Definition

At its core, Master planning allows companies to determine and balance the future need for spare parts to meet company goals. Master planning assesses the following:

- What stock is currently available?
- What stock is required to complete production? For example, what must be manufactured, purchased, transferred, or set aside as safety stock before you can complete production.

Master planning uses the information to calculate the requirements and generate planned orders. It is based on actual current orders and enables companies to control inventory replenishment on a day-to-day basis.

TECHNICA has to define Lead Time for each Vendor and his Supplied Products in order for Master Planning Process to calculate when to Order the Products.

1.5.3 Process Overview

Proposed Process Flow

1. **Inventory/maintenance Department** Defines Min/Max of Spare Parts, So Master Planning Routine will calculate Required Quantities to be Purchased.
2. **Master Planning Engine** will be scheduled periodically to generate Planned PO.

Master planning

Parameters

PARAMETERS

Master plan
StaticPlan

Planning method
Regeneration

Track processing time
No

Number of threads
0

Comment

Records to include

Run in the background

Figure 8 - Master Planning Routine

3. **Requesting Department** will Review Planned PO and firm needed POs.

Finance and Operations

Search for a page

JGT

Copy plan Delete plan Supply schedule Firming history Unfinished planning processes Planned intercompany demand Options

The Master planning job is added to the batch queue.

Master planning

Master plan
Master

Summary of the current plan

Planned orders

Calculated delays

Actions

Master planning

Last run on
8/7/2020 08:14:26 AM

Run History

Intercompany master planning

Urgent

Filter

Firm Modify View

Number	Reference	Item number	Requirement...	Site	Warehouse	Delay (days)	Order date ↑	Delivery date
MPSN000012	Planned purchase orders	PL-0150	50.00	Erbil	FD1-Erbil		8/1/2020	8/1/2020
MPSN000013	Planned purchase orders	PC-0262	2.00	Erbil	FD1-Erbil		8/7/2020	8/7/2020
MPSN000014	Planned purchase orders	PC-0274	45.00	Baghdad	Jamela_FD1		8/7/2020	8/7/2020
MPSN000015	Planned purchase orders	PC-0274	75.00	Baghdad	Jamela_FD1		8/7/2020	8/7/2020
MPSN000016	Planned purchase orders	PC-0303	1.00	Erbil	FD1-Erbil		8/7/2020	8/7/2020
MPSN000017	Planned purchase orders	PC-0887	97.00	Erbil	FD1-Erbil		8/7/2020	8/7/2020
MPSN000018	Planned purchase orders	PC-1030	20.00	Erbil	FD1-Erbil		8/7/2020	8/7/2020
MPSN000019	Planned purchase orders	PC-1399	52.00	Baghdad	WaterPaint		8/7/2020	8/7/2020
MPSN000020	Planned purchase orders	PC-1399	4,800.00	Baghdad	WaterPaint		8/7/2020	8/7/2020
MPSN000021	Planned purchase orders	PC-1399	4,800.00	Baghdad	WaterPaint		8/7/2020	8/7/2020
MPSN000022	Planned purchase orders	PC-1399	800.00	Baghdad	WaterPaint		8/7/2020	8/7/2020
MPSN000023	Planned purchase orders	PC-1399	4,800.00	Baghdad	WaterPaint		8/7/2020	8/7/2020
MPSN000024	Planned purchase orders	PC-1399	4,800.00	Baghdad	WaterPaint		8/7/2020	8/7/2020
MPSN000025	Planned purchase orders	PC-1399	4,800.00	Baghdad	WaterPaint		8/7/2020	8/7/2020
MPSN000026	Planned purchase orders	PC-1489	12.00	Erbil	FD1-Erbil		8/7/2020	8/7/2020
MPSN000029	Planned purchase orders	PC-0011	7,200.00	Baghdad	Jamela_FD1		8/7/2020	8/7/2020

See more

Figure 9 - Planned PO View

4. **Procurement Department** Reviews Confirmed POs and Processes it according to PO Process described below.

1.5.4 Requirements

ID	Desc	Fit/GAP
PR002-001	Master Planning Configuration	Fit
PR002-002	Vendor/Product Lead Time Definition	Fit
PR002-003	Demand Forecast Planning Registration	Fit
PR002-004	Master Planning Scheduling	Fit
PR002-005	Generation of Planned PO	Fit
PR002-006	Firming PO	Fit
PR002-007	Process PO	Fit
PR002-008	Define Min/Max Qty on Items	Fit