

# Spare Parts Inventory Management and Optimization (SIMO)

While maintaining an appropriate spares inventory is essential for production, reducing purchasing, supply, and inventory costs is critical for increased profitability. SKF offers consultation and structured services to help you achieve minimum TCO (Total Cost of Ownership) and increase Overall Equipment Efficiency through rationalized and optimized spares inventory and auditable reference trails.

## Cost reduction

The need to control and cut costs is a given in today's industrial environment. For asset-intensive enterprises such as process industries, asset management provides one of the primary paths to savings. However, it is a real challenge to maintain high production availability, as well as reduce asset maintenance and inventory costs.

## Increase revenue and profit

When you are able to have the right Spare Part regime in place the availability of the assets improves which result in more production output, thus increasing your revenue and profit!

## What is SIMO?

Spares Inventory Management and Optimization (SIMO) is an SKF process that consists of a systematic approach to reducing spares inventory costs. It is designed and developed for asset-intensive process enterprises burdened with a large number of spare parts for maintenance, repair and operation (MRO).

## What are the goals of SIMO?

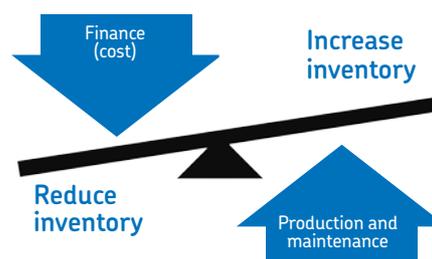
SKF's SIMO process aims to help customers minimize spares stock-out and reduce



spares inventory costs, while satisfying the need for production availability. In addition, it can provide an overview of current asset management status from a spares consumption point of view, identifying which spares on which assets have an abnormally short lifetime. Root cause analysis (RCA) can then be conducted and improvement measures deployed, resulting in a reduction of spares consumption and spares inventory.

## The principle of SIMO

As shown in these illustrations, the reasons for holding spares are in conflict. SIMO resolves these conflicts to balance supply with demand.



## Typical quantifiable benefits after a SIMO project

- 15–20% reduction in inventory budget over 2–3 years
- 10–15% reduction in number of inventory items from duplicates and obsoletes
- 30–50% reduction in stock-out cases
- 15–20% reduction in inventory holding costs over 2–3 years
- 30–60% reduction in inventory planning and time needed to find and purchase spares

## Some intangible benefits after a SIMO project

- Identification of critical spares with abnormally short life time, especially bearings for critical rotating equipment
- Root Cause Analysis (RCA) of bearing life cycle performance by expert SKF personnel
- Recommendation of measures to maximize spares and bearings lifetime
- Improved rotating equipment performance and reduced TCO of spares and bearings

## The Work Process of SIMO

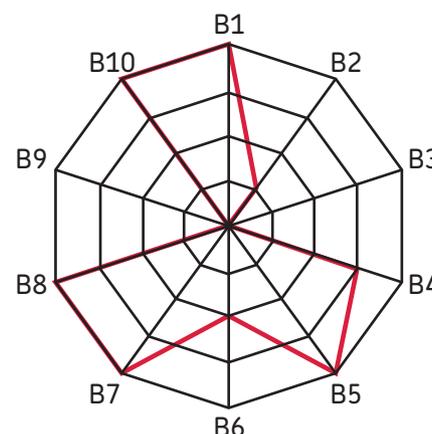
SKF has developed a 4-step SIMO process. The first two steps assess your enterprise's or facility's needs, or demand, for MRO spares; the last two steps rationalize and optimize the supply, i.e., aligning spares inventory with the assessed demand.

- Step A – Spares Identification:**  
 Qualitatively identify what spares are needed for maintaining a defined installation for a defined lifetime. Each identified spare item is assigned a category/type, standard attributes and values, installed assets and quantities.
- Step B – Spares Forecasting:**  
 Each spares consumption history is analyzed and a mathematical equation is developed to accurately simulate the consumption history. Future needs are quantitatively forecasted.
- Step C – Inventory Rationalization:**  
 Spares inventory is rationalized based on the spares forecast and criticality, unit price, lead-time, inventory budget and other factors.
- Step D – Inventory Optimization:**  
 Spares inventory is optimized to minimize Total Cost of Ownership (TCO) including ordering, capital outlay, warehouse costs and stock-out losses. Through this quantitative approach, spares and inventory management supports the customer's overall financial management goals.

Demand		Supply	
Step A Spares Identification	Step B Spares Forecasting	Step C Inventory Rationalization	Step D Inventory Optimization
A1 – Asset Register	B1 – Consumption Analysis	C1 – Spares Criticality	D1 – Parameters Setting
A2 – Asset Criticality	B2 – Spares Classification	C2 – Calculation of Consumables Inventory	D2 – Optimization of Operational Spares
A3 – Bill of Materials	B3 – Identification of Insurance Spares	C3 – Modeling of Operational Spares	D3 – Cost Analysis of Optimal Inventory
A4 – Spares Cataloguing	B4 – Forecasting of Consumable Spares	C4 – Modeling of Insurance Spares	D4 – Cost Analysis of Current Strategy
A5 – Spares Cleansing	B5 – Forecasting of Operational Spares	C5 – Evaluation of Inventory Budget	D5 – Comparison of Strategies
A6 – Spares Interchangeability	B6 – Results of Forecasting	C6 – Evaluation of Current Inventory	D6 – Determination of Optimized Inventory
A7 – Spares Demand List		C7 – Comparison with Current Inventory Strategy	

### Why SKF?

- A rich knowledge in bearing lifetime forecasting and analysis
- Highly effective and efficient practices for product inventory management across the whole supply chain
- Completed SIMO projects for both green and brownfield projects in many industries
- Knowledge-based SIMO templates that can reduce cost and project time
- A wide range of asset management services benefiting from SKF expertise in bearings, seals, lubrication, and condition monitoring



- B1 – Equipment List
- B2 – Equipment Catalogue
- B3 – Equipment Criticality
- B4 – Spares Alignment
- B5 – Spares Category
- B6 – Spares Catalogue
- B7 – Spares Code
- B8 – Spares Cleansing
- B9 – Spares Interchangeability List
- B10 – Spares List

### What is CNA SIMO?

Before conducting a SIMO project, a Client Needs Analysis (CNA) is performed to provide an overview of the current status. The SIMO CNA has been designed and developed by SKF to systematically assess current inventory practices, identify weaknesses, plan an improvement roadmap, and estimate the Return on Investment (ROI).

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**For additional information on how the SIMO process can be applied to your business, please contact your local SKF office.**