

VERSION 12.0

QUICK REFERENCE GUIDE

SCOR

SUPPLY CHAIN OPERATIONS REFERENCE MODEL

SCOR Processes

The Supply Chain Operations Reference (SCOR) model describes the business activities associated with all phases of satisfying a customer’s demand. The model itself is organized around the six primary management processes of Plan, Source, Make, Deliver, Return and Enable. Using these process building blocks, the SCOR model can be used to describe supply chains that are very simple or very complex using a common set of definitions across disparate industries. Today public and private organizations and companies around the world use the model as a foundation for global and site-specific supply chain improvement projects.

SCOR spans all customer interactions (quote to cash), all physical material transactions (procure to payment, including equipment, supplies, spare parts, bulk product, software, etc.) and all market interactions (manufacturing, from the understanding of aggregate demand to the fulfillment of each order).

The model is designed and maintained to support supply chains of various complexities and across multiple industries. The model focuses on three process levels and does not attempt to prescribe how a particular organization should conduct its business or tailor its systems or information flow.

People—Supply Chain Skills

The people section introduced in SCOR 10.0 provides a means for managing talent in the supply chain by incorporating a standard for describing the expertise required to perform tasks and manage processes. The SCOR skills management complements the existing process, metrics, and practice reference components by aligning people and their skills to the processes.

A Skill in SCOR is the capacity to deliver predetermined results with minimal input of time and energy, characterized by a standard definition with associated experience, aptitudes, and training.

Experience is the knowledge or ability acquired by observation or active participation, obtained by doing the work in a real life environment, and undergoing different situations that require different actions.

Training develops a skill or type of behavior through instruction.

All people skills are coded with a capital letter H followed by a capital letter representing the element: S for Skills, E for Experience and T for Training. These are followed by a period and a four digit number. Note: The number in the ID is a unique identifier and does NOT indicate any kind of priority, importance, or other meaning.

sP - Plan					sS - Source			sM - Make			sD - Deliver					
sP1 Plan Supply Chain	sP2 Plan Source	sP3 Plan Make	sP4 Plan Deliver	sP5 Plan Return	sS1 Source Stocked Product	sS2 Source Make-to-Order Product	sS3 Source Engineer-to-Order Product	sM1 Make-to-Stock	sM2 Make-to-Order	sM3 Engineer-to-Order	sD1 Deliver Stocked Product	sD2 Deliver Make-to-Order Product	sD3 Deliver Engineer-to-Order Product	sD4 Deliver Retail Product		
sP1.1: Identify, Prioritize and Aggregate Supply Chain Requirements sP1.2: Identify, Prioritize and Aggregate Supply Chain Resources sP1.3: Balance Supply Chain Resources with SC Requirements sP1.4: Establish and Communicate Supply Chain Plans	sP2.1: Identify, Prioritize and Aggregate Product Requirements sP2.2: Identify, Assess and Aggregate Product Resources sP2.3: Balance Product Resources with Product Requirements sP2.4: Establish Sourcing Plans	sP3.1: Identify, Prioritize and Aggregate Production Requirements sP3.2: Identify, Assess and Aggregate Production Resources sP3.3: Balance Production Resources with Production Requirements sP3.4: Establish Production Plans	sP4.1: Identify, Prioritize and Aggregate Delivery Requirements sP4.2: Identify, Assess and Aggregate Delivery Resources sP4.3: Balance Delivery Resources and Capabilities with Delivery Requirements sP4.4: Establish Delivery Plans	sP5.1: Assess and Aggregate Return Requirements sP5.2: Identify, Assess and Aggregate Return Resources sP5.3: Balance Return Resources with Return Requirements sP5.4: Establish and Communicate Return Plans	sS1.1: Schedule Product Deliveries sS1.2: Receive Product sS1.3: Verify Product sS1.4: Transfer Product sS1.5: Authorize Supplier Payment	sS2.1: Schedule Product Deliveries sS2.2: Receive Product sS2.3: Verify Product sS2.4: Transfer Product sS2.5: Authorize Supplier Payment	sS3.1: Identify Sources of Supply sS3.2: Select Final Supplier and Negotiate sS3.3: Schedule Product Deliveries sS3.4: Receive Product sS3.5: Verify Product sS3.6: Transfer Product sS3.7: Authorize Supplier Payment	sM1.1: Schedule Production Activities sM1.2: Issue Material sM1.3: Produce and Test sM1.4: Package sM1.5: Stage Product sM1.6: Release Product to Deliver sM1.7: Waste Disposal	sM2.1: Schedule Production Activities sM2.2: Issue Sourced/In-Process Product sM2.3: Produce and Test sM2.4: Package sM2.5: Stage Finished Product sM2.6: Release Finished Product to Deliver sM2.7: Waste Disposal	sM3.1: Finalize Production Engineering sM3.2: Schedule Production Activities sM3.3: Issue Sourced/In-Process Product sM3.4: Produce and Test sM3.5: Package sM3.6: Stage Finished Product sM3.7: Release Product to Deliver sM3.8: Waste Disposal	sD1.1: Process Inquiry and Quote sD1.2: Receive, Enter, and Validate Order sD1.3: Reserve Inventory and Determine Delivery Date sD1.4: Consolidate Orders sD1.5: Build Loads sD1.6: Route Shipments sD1.7: Select Carriers and Rate Shipments sD1.8: Receive Product from Source or Make sD1.9: Pick Product sD1.10: Pack Product sD1.11: Load Vehicle & Generate Shipping Docs sD1.12: Ship Product sD1.13: Receive and Verify Product by Customer sD1.14: Install Product sD1.15: Invoice	sD2.1: Process Inquiry and Quote sD2.2: Receive, Configure, Enter and Validate Order sD2.3: Reserve Inventory and Determine Delivery Date sD2.4: Consolidate Orders sD2.5: Build Loads sD2.6: Route Shipments sD2.7: Select Carriers and Rate Shipments sD2.8: Receive Product from Source or Make sD2.9: Pick Product sD2.10: Pack Product sD2.11: Load Product & Generate Shipping Docs sD2.12: Ship Product sD2.13: Receive and Verify Product by Customer sD2.14: Install Product sD2.15: Invoice	sD3.1: Obtain and Respond to RFP/ RFQ sD3.2: Negotiate and Receive Contract sD3.3: Enter Order, Commit Resources & Launch Program sD3.4: Schedule Installation sD3.5: Build Loads sD3.6: Route Shipments sD3.7: Select Carriers & Rate Shipments sD3.8: Receive Product from Source or Make sD3.9: Pick Product sD3.10: Pack Product sD3.11: Load Product & Generate Shipping Docs sD3.12: Ship Product sD3.13: Receive and Verify Product by Customer sD3.14: Install Product sD3.15: Invoice	sD4.1: Generate Stocking Schedule sD4.2: Receive Product at Store sD4.3: Pick Product from backroom sD4.4: Stock Shelf sD4.5: Fill Shopping Cart sD4.6: Checkout sD4.7: Deliver and/or install		
sR - Return						sE - Enable										
sSR1 Source Return Defective Product	sSR2 Source Return MRO Product	sSR3 Source Return Excess Product	sDR1 Deliver Return Defective Product	sDR2 Deliver Return MRO Product	sDR3 Deliver Return Excess Product	sE1 Manage Supply Chain Business Rules	sE2 Manage Supply Chain Performance	sE3 Manage Supply Chain Data and Information	sE4 Manage Supply Chain Human Resources	sE5 Manage Supply Chain Assets	sE6 Manage Supply Chain Contracts	sE7 Manage Supply Chain Network	sE8 Manage Supply Chain Regulatory Compliance	sE9 Manage Supply Chain Risk	sE10 Manage Supply Chain Procurement	sE11 Manage Supply Chain Technology
sSR1.1: Identify Defective Product Condition sSR1.2: Disposition Defective Product sSR1.3: Request Defective Product Return Authorization sSR1.4: Schedule Defective Product Shipment sSR1.5: Return Defective Product	sSR2.1: Identify MRO Product Condition sSR2.2: Disposition MRO Product sSR2.3: Request MRO Return Authorization sSR2.4: Schedule MRO Shipment sSR2.5: Return MRO Product	sSR3.1: Identify Excess Product Condition sSR3.2: Disposition Excess Product sSR3.3: Request Excess Product Return Authorization sSR3.4: Schedule Excess Product Shipment sSR3.5: Return Excess Product	sDR1.1: Authorize Defective Product Return sDR1.2: Schedule Defective Return Receipt sDR1.3: Receive Defective Product (includes verify) sDR1.4: Transfer Defective Product	sDR2.1: Authorize MRO Product Return sDR2.2: Schedule MRO Return Receipt sDR2.3: Receive MRO Product sDR2.4: Transfer MRO Product	sDR3.1: Authorize Excess Product Return sDR3.2: Schedule Excess Return Receipt sDR3.3: Receive Excess Product sDR3.4: Transfer Excess Product	sE1.1: Gather Business Rule Requirements sE1.2: Interpret Business Rule Requirement sE1.3: Document Business Rule sE1.4: Communicate Business Rule sE1.5: Release/Publish Business Rule sE1.6: Retire Business Rule	sE2.1: Initiate Reporting sE2.2: Analyze Reports sE2.3: Find Root Causes sE2.4: Prioritize Root Causes sE2.5: Develop Corrective Actions sE2.6: Approve & Launch	sE3.1: Receive Maintenance Request sE3.2: Determine/Scope Work sE3.3: Maintain Content/Code sE3.4: Maintain Access sE3.5: Publish Information sE3.6: Verify Information	sE4.1: Identify Skills/ Resource Requirement sE4.2: Identify Available Skills/Resources sE4.3: Match Skills/ Resources sE4.4: Determine Hiring/ Redeployment sE4.5: Determine Training/Education sE4.6: Approve, Prioritize and Launch	sE5.1: Schedule Asset Management Activities sE5.2: Take Asset Off-line sE5.3: Inspect and Troubleshoot sE5.4: Install and Configure sE5.5: Clean, Maintain and Repair sE5.6: Decommission and Dispose sE5.7: Inspect Maintenance sE5.8: Reinstate Asset	sE6.1: Receive Contract/ Contract Updates sE6.2: Enter and Distribute Contract sE6.3: Activate/Archive Contract sE6.4: Review Contractual Performance sE6.5: Identify Performance Issues/ Opportunities sE6.6: Identify Resolutions/ Improvements sE6.7: Select, Prioritize and Distribute Resolutions	sE7.1: Select Scope and Organization sE7.2: Gather Input and Data sE7.3: Develop Scenarios sE7.4: Model/Simulate Scenarios sE7.5: Project Impact sE7.6: Select and Approve sE7.7: Develop Change Program sE7.8: Launch Change Program	sE8.1: Monitor Regulatory Entities sE8.2: Assess Regulatory Publications sE8.3: Identify Regulatory Deficiencies sE8.4: Define Remediation sE8.5: Verify/Obtain License sE8.6: Publish Remediation	sE9.1: Establish Context sE9.2: Identify Risk Events sE9.3: Quantify Risks sE9.4: Evaluate Risks sE9.5: Mitigate Risk	sE10.1: Develop Strategy and Plan sE10.2: Pre-Procurement / Market Test and Market Engagement sE10.3: Develop Procurement Documentation sE10.4: Supplier Selection to Participate sE10.5: Issue ITT / RFQ sE10.6: Bid / Tender Evaluation and Validation sE10.7: Contract Award and Implementation	sE11.1: Define Supply Chain Technology Requirements sE11.2: Identify Technology Solution Alternatives sE11.3: Define/Update Supply Chain Technology Roadmap sE11.4: Select Technology Solution sE11.5: Define and Deploy Technology Solution sE11.6: Maintain and Improve Technology Solution sE11.7: Retire Technology Solution

SCOR Practices

A practice is a unique way to configure a process or a set of processes. The uniqueness can be related to the automation of the process, a technology applied in the process, special skills applied to the process, a unique sequence for performing the process, or a unique method for distributing and connecting processes between organizations. All practices have links to one or more processes, one or more metrics and, where available, one or more skills.

SCOR Practices are classified to simplify identification of practices by area of interest:

- Business Process Analysis/Improvement
 - Customer Support
 - Distribution Management
 - Information Management
 - Inventory Management
 - Material Handling
 - New Product Introduction
 - Order Engineering (ETO)
 - Order Management
 - People Management (Training)
- Planning and Forecasting
 - Production Execution
 - Product Lifecycle Management
 - Purchasing/Procurement
 - Reverse Logistics
 - Risk/Security Management
 - Sustainable Supply Chain Management
 - Transportation Management
 - Warehousing

Special Applications

SustainableSCOR

SustainableSCOR is based upon The GRI Sustainability Reporting Standards (GRI Standards) that are within scope of the SCOR model. GRI Standards are free to use and are available at www.globalreporting.org/standards. The following strategic environmental metrics allow the SCOR model to be used as a framework for environmental accounting:

- **Materials Used**
(Weight or Volume)
 - **Energy Consumed**
(Joules,Watt-hours or Multiples)
 - **Water Volume Withdrawn**
(Gallons, Liters or Multiples)
- **Air Emissions**
(Metric Tons or Equivalents)
 - **Liquid and Solid Wastes**
(Gallons, Liters or Multiples, Weight or Volume)

The SCOR framework ties emissions to the originating processes, providing a structure for measuring environmental performance and identifying where performance can be improved. The hierarchical nature of the model allows strategic environmental footprint goals to be translated to specific targets and activities.

SCOR Performance

The performance or metrics section of SCOR focuses on understanding the outcomes of the supply chain and consists of two types of elements: Performance Attributes and Metrics., and introduces the concept of Process/Practice Maturities.

A **performance attribute** is a grouping or categorization of metrics used to express a specific strategy. An attribute itself cannot be measured; it is used to set strategic direction. For example: “The LX product needs to be leading the competition in reliability” and “The XY-market requires us to be among the top 10 agile manufacturers”. Metrics measure the ability to achieve these strategic directions. SCOR recognizes 5 performance attributes:

- Reliability
 - Responsiveness
 - Agility
- Cost
 - Asset Management Efficiency (Assets)

A **metric** is a standard for measurement of the performance of a supply chain or process. SCOR metrics are diagnostic metrics (compare to how diagnosis is used in a medical office). SCOR recognizes three levels of pre-defined metrics:

Level-1 metrics are diagnostics for the overall health of the supply chain. These metrics are also known as strategic metrics and key performance indicators (KPI). Benchmarking level-1 metrics helps establishing realistic targets to support strategic directions.

Level-2 metrics serve as diagnostics for the level-1 metrics. The diagnostic relationship helps to identify the root cause or causes of a performance gap for a level-1 metric.

Level-3 metrics serve as diagnostics for level-2 metrics.

The analysis of performance of metrics from level-1 through 3 is referred to as metrics decomposition, performance diagnosis or metrics root cause analysis. Metrics decomposition is a first step in identifying the processes that need further investigation. (Processes are linked to level-1, level-2 and level-3 metrics).

Reliability	Responsiveness	Agility	Cost	Asset Management Efficiency
RL.1.1 - Perfect Order Fulfillment	RS.1.1 - Order Fulfillment Cycle Time	AG.1.1 - Upside Supply Chain Adaptability	CO.1.1 - Total Supply Chain Management Costs	AM.1.1 - Cash-to-Cash Cycle Time
RL.2.1 - % of Orders Delivered In Full	RS.2.1 - Source Cycle Time	AG.2.1 - Upside Adaptability (Source)	CO.2.1 - Cost to Plan	AM.2.1 - Days Sales Outstanding
RL.3.33 - Delivery Item Accuracy	RS.3.8 - Authorize Supplier Payment Cycle Time	AG.2.2 - Upside Adaptability (Make)	CO.3.1 - Cost to Plan Supply Chain	AM.2.2 - Inventory Days of Supply
RL.3.35 - Delivery Quantity Accuracy	RS.3.35 - Identify Sources of Supply Cycle Time	AG.2.3 - Upside Adaptability (Deliver)	CO.3.2 - Cost to Plan (Source)	AM.3.16 - Inventory Days of Supply (Raw Material)
RL.2.2 - Delivery Performance to Customer Commit Date	RS.3.107 - Receive Product Cycle Time	AG.2.4 - Upside Return Adaptability (Source)	CO.3.3 - Cost to Plan (Make)	AM.3.17 - Inventory Days of Supply (WIP)
RL.3.32 - Customer Commit Date Achievement Time Customer Receiving	RS.3.122 - Schedule Product Deliveries Cycle Time	AG.2.5 - Upside Return Adaptability (Deliver)	CO.3.4 - Cost to Plan (Deliver)	AM.3.23 - Recycle Days of Supply
RL.3.34 - Delivery Location Accuracy	RS.3.125 - Select Supplier and Negotiate Cycle Time	AG.1.2 - Downside Supply Chain Adaptability	CO.3.5 - Cost to Plan (Return)	AM.3.28 - Percentage Defective Inventory
RL.2.3 - Documentation Accuracy	RS.3.139 - Transfer Product Cycle Time	AG.2.6 - Downside Adaptability (Source)	CO.2.2 - Cost to Source	AM.3.37 - Percentage Excess Inventory
RL.3.31 - Compliance Documentation Accuracy	RS.3.140 - Verify Product Cycle Time	AG.2.7 - Downside Adaptability (Make)	CO.3.6 - Cost to Authorize Supplier Payment	AM.3.44 - Percentage Unserviceable MRO Inventory
RL.3.43 - Other Required Documentation Accuracy	RS.2.2 - Make Cycle Time	AG.2.8 - Downside Adaptability (Deliver)	CO.3.7 - Cost to Receive Product	AM.3.45 - Inventory Days of Supply (Finished Goods)
RL.3.45 - Payment Documentation Accuracy	RS.3.33 - Finalize Production Engineering Cycle Time	AG.1.3 - Overall Value at Risk (VAR)	CO.3.8 - Cost to Schedule Product Deliveries	AM.2.3 - Days Payable Outstanding
RL.3.50 - Shipping Documentation Accuracy	RS.3.49 - Issue Material Cycle Time	AG.2.9 - Supplier's/Customer's/ Product's Risk Rating	CO.3.9 - Cost to Transfer Product	AM.1.2 - Return on Supply Chain Fixed Assets
RL.2.4 - Perfect Condition	RS.3.101 - Produce and Test Cycle Time	AG.2.10 - Value at Risk (Plan)	CO.3.10 - Cost to Verify Product	AM.2.4 - Supply Chain Revenue
RL.3.12 - % Of Faultless Installations	RS.3.114 - Release Finished Product to Deliver Cycle Time	AG.2.11 - Value at Risk (Source)	CO.2.3 - Cost to Make	AM.2.5 - Supply Chain Fixed Assets
RL.3.24 - % Orders/Lines Received Damage Free	RS.3.123 - Schedule Production Activities Cycle Time	AG.2.12 - Value at Risk (Make)	CO.3.11 - Direct Material Cost	AM.3.11 - Fixed Asset Value (Deliver)
RL.3.41 - Orders Delivered Damage Free Conformance	RS.3.128 - Stage Finished Product Cycle Time	AG.2.13 - Value at Risk (Deliver)	CO.3.12 - Indirect Cost Related to Production	AM.3.18 - Fixed Asset Value (Make)
RL.3.42 - Orders Delivered Defect Free Conformance	RS.3.142 - Package Cycle Time	AG.2.14 - Value at Risk (Return)	CO.3.13 - Direct Labor Cost	AM.3.20 - Fixed Asset Value (Plan)
RL.3.55 - Warranty and Returns	RS.2.3 - Deliver Cycle Time	AG.2.15 - Time to Recovery (TTR)	CO.2.4 - Cost to Deliver	AM.3.24 - Fixed Asset Value (Return)
	RS.3.16 - Build Loads Cycle Time		CO.3.14 - Order Management Costs	AM.3.27 - Fixed Asset Value (Source)
	RS.3.18 - Consolidate Orders Cycle Time		CO.3.15 - Order Delivery and / or Install Costs	AM.1.3 - Return on Working Capital
	RS.3.46 - Install Product Cycle Time		CO.2.5 - Cost to Return	AM.2.6 - Accounts Payable (Payables Outstanding)
	RS.3.51 - Load Product & Generate Shipping Documentation Cycle Time		CO.3.16 - Cost to Source Return	AM.2.7 - Accounts Receivable (Sales Outstanding)
	RS.3.102 - Receive & Verify Product by Customer Cycle Time		CO.3.17 - Cost to Deliver Return	AM.2.8 - Inventory
	RS.3.110 - Receive Product from Source or Make Cycle Time		CO.2.6 - Mitigation Costs	
	RS.3.111 - Receive, Configure, Enter, & Validate Order Cycle Time		CO.3.18 - Risk Mitigation Costs (Plan)	
	RS.3.116 - Reserve Resources and Determine Delivery Date Cycle Time		CO.3.19 - Risk Mitigation Costs (Source)	
	RS.3.117 - Route Shipments Cycle Time		CO.3.20 - Risk Mitigation Costs (Make)	
	RS.3.120 - Schedule Installation Cycle Time		CO.3.21 - Risk Mitigation Costs (Deliver)	
	RS.3.124 - Select Carriers & Rate Shipments Cycle Time		CO.3.22 - Risk Mitigation Costs (Return)	
	RS.3.126 - Ship Product Cycle Time		CO.1.2 - Costs of Goods Sold	
	RS.2.4 - Delivery Retail Cycle Time		CO.2.7 - Direct Labor Cost	
	RS.3.17 - Checkout Cycle Time		CO.2.8 - Direct Material Cost	
	RS.3.32 - Fill Shopping Cart Cycle Time		CO.2.9 - Indirect Cost Related to Production	
	RS.3.34 - Generate Stocking Schedule Cycle Time			
	RS.3.97 - Pick Product from Backroom Cycle Time			
	RS.3.109 - Receive Product at Store Cycle Time			
	RS.3.129 - Stock Shelf Cycle Time			
	RS.2.5 - Return Cycle Time			



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For more information, visit apics.org/scor.

